

APN

Asia-Pacific Network for Global Change Research

APN Newsletter
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Message from the APN Director

The 8th APN Scientific Planning Group and Inter-Governmental Meetings that convened in Hanoi from 10-14 March concluded with many fruitful outcomes. On behalf of the Secretariat, I would also like to express special thanks to the Ministry of Natural Resources and Environment, as well as to the Ministry of Science and Technology, Viet Nam, for providing important support in hosting and organising the SPG and IGM meetings.

I personally believe that the 8th IGM will be remembered as a meeting of major importance to the APN, as it opened the way to strengthening APN activities by endorsing the "Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries" (CAPaBLE) Programme. More details of the CAPaBLE Programme can be seen in this April edition of the APN newsletter (page 3 and Supplementary Sheets). Furthermore, we have also started to prepare for the evaluation of the APN as we approach our 10th Anniversary in 2005.

It should also be noted that the 8th IGM also opened a new platform for partnership and collaboration crucial to the future of the APN. Financial commitments from Australia and New Zealand to the CAPaBLE Programme, as well as active participation of our global change programmes and networks are certainly promising. I am also pleased to share the impression with you that APN has increasingly been recognized as one of the major forces in global change research activities.

The secretariat will do its best to implement the agreed activities in a successful manner and very much looks forward to an exciting and rewarding year. Last but not least, thanks to all the participants from member countries, and the global change community and networks, who made the SPG and IGM meetings so successful.

— Sombo T. Yamamura

NEWS FROM THE SECRETARIAT

8TH SCIENTIFIC PLANNING GROUP (SPG) MEETING AND INTER-GOVERNMENTAL MEETING (IGM), HANOI, VIET NAM

The APN's 8th Scientific Planning Group (SPG) meeting and Inter-Governmental Meeting (IGM) convened in Hanoi, Viet Nam, on 10-11 and 13-14 March, respectively. The SPG and IGM meetings were

kindly hosted by the Department of Environment and Natural Resources, Viet Nam. Special thanks to APN national Focal Point, Mr. Nguyen Xuan Bao Tam of the Ministry of Natural Resources

and Environment, and SPG member Dr. Dung Le of the Ministry of Science and Technology, and support staff too, for organising and managing successful meetings in Viet Nam. It was also encouraging

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About the APN

The Asia-Pacific Network for Global Change Research (APN) is an inter-governmental network whose mission is to foster global change research in the Asia-Pacific region, increase developing country participation in that research, and strengthen interactions between the science community and policy makers. The APN cooperates closely with various scientific programmes and other networks to achieve these purposes.



8th Scientific Planning Group meeting participants

to see the active participation of some of our global change partners (ENRICH, IAI, IGBP, IHDP, MA and START) at the meetings in Hanoi.

Scientific Planning Group (SPG) meeting

The SPG meeting was opened by Mr. Duc Hai Tran, Ministry of Natural Resources and Environment, Viet Nam, and Co-Chaired for the first time by Dr. Andrew Matthews of New Zealand, and for the last time by Dr. Subramaniam Moten of Malaysia.

It was rewarding to review our yearlong efforts and to share new ideas of how we can strengthen the APN with a progressive outlook to the future as we approach the APN's 10th anniversary in 2005. Furthermore, we were able to propose a number of recommendations for the Inter-Governmental Meeting. In particular, the discussion and comments provided by the SPG members on project funding recommendations, the future directions of the networking and capacity building programme (especially the "Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries" (CAPaBLE) proposal), revisions to the proposals review process, preparation of the annual report, and the scientific evaluation of the APN.

As it was Dr. Moten's last year as SPG Co-Chair, Dr. Amir Muhammed of Pakistan was elected by SPG members to

take on this challenging role. Dr. Moten was thanked for his enormous contribution, not only as an SPG Co-Chair, but also as an active member of APN for many years, and hopefully for many more years to come.

It was also the first time for the Liaison Officers to attend annual APN meetings, and they were given an opportunity to present a regional overview of the past year's activities at both the SPG and IGM. At both meetings their presence, and indeed contribution to APN, was welcomed and appreciated, however, it was agreed that there is a need to strengthen communications between Liaison Officers, APN members, and the Secretariat.



8th Inter-Governmental Meeting participants

APN Global Change Awareness Raising Symposium

Following the first "APN Global Change Awareness Raising Symposium" in Manila last year, another similar meeting was held in Hanoi on 12 March, between the Scientific Planning Group meeting and the Inter-Governmental Meeting. This event, which encouragingly had a high young scientist turnout, provided an opportunity for the APN to further heighten its profile in Viet Nam after the regional capacity building workshop in 2000. The symposium also provided a platform for local scientists to gain more understanding of global change research with presentations from the APN Secretariat, Will Steffen of the International Biosphere-Geosphere Programme (IGBP), Marcus Lee of the Millennium Ecosystem Assessment (MA), and APN Liaison Officer for Southeast Asia, Anond Snidvongs. This symposium also gave local scientists an opportunity to present their studies, and thus, sensitise the global change programmes and networks to current research in Viet Nam. Opportunities for networking and future collaboration were also discussed.

Inter-Governmental Meeting (IGM)

Honoured Guest, Dr. Cong Thanh Nguyen, Vice Minister, Ministry of Natural Resources and Environment, Viet Nam, made an opening statement. In his speech, Dr. Nguyen outlined Viet Nam's environmental protection measures, which have been greatly bolstered with support from international organisations such as APN.

Outcomes of the IGM included the endorsement of the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) programme as an APN activity commencing in April 2003. More details of the CAPaBLE programme can be seen below and are also available on the APN website <www.apn.gr.jp>. Other IGM outcomes include the establishment of an APN resources development committee, and the approval of a two-year APN global change coastal zone synthesis

(incidentally, last year’s land use and cover change synthesis is nearing completion with publication to follow).

The 8th IGM approved seventeen projects for funding in 2003/2004 from an activities budget of approximately 745,000 US dollars. The projects selected cover a variety of important global change issues and activities throughout the Asia-Pacific region. The full list is included on pp7-10 of this newsletter. Out of seventeen funded projects, six are con-

tinuations from projects funded last year. (Such projects were selected after rigorous review of progress made).

Summaries of the SPG and IGM meetings and the 2002/2003 projects, activities and regional reports will also be available on the APN website. A hard copy of the full proceedings and projects, activities and regional reports can also be obtained from the Secretariat. [APN](#)

SCIENTIFIC CAPACITY BUILDING/ENHANCEMENT FOR SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES (CAPaBLE)

As part of its activities, the APN will launch in mid-April 2003 a new Programme—Scientific Capacity Building/Enhancement for Sustainable Development (CAPaBLE), under the framework of the APN. The objective of this new five-year Programme is to develop and enhance scientific capacity in developing countries to improve their decision-making in target areas related to climate change and water and food security that are directly linked to their sustainable development. Phase I of CAPaBLE, which will run from September 2003 to March 2006, will focus on Climate Change. This is expected to be achieved through a two-track approach:

Capacity Enhancement for experienced leading scientists; and Capacity Building for young and aspiring scientists.

As part of the capacity enhancement element of the CAPaBLE Programme, the APN is inviting appropriate proposals for funding, and is able to provide financial support for Comprehensive Research Projects that will run for 30 months. A copy of the “CAPaBLE Call for Proposals for Comprehensive Research Projects” is enclosed within this newsletter, with the deadline for proposals being **Sunday, 15 June 2003, midnight Japanese time.**

Proponents should also use the “CAPaBLE Call for Proposals—Guide for Proponents (for Comprehensive Research Projects)” in making their application, which can be found on the APN website <www.apn.gr.jp>. [APN](#)

For more information, contact: **Dr. Linda Stevenson** <l Stevenson@apn.gr.jp> at the APN Secretariat.

Note: Funding for the CAPaBLE Programme is approximately US \$240,000 for Capacity Enhancement (Comprehensive Research Projects) and US \$240,000 for Capacity Building activities in 2003/2004.

APN CALL FOR PROPOSALS 2003

A copy of the APN Call for Proposals 2003 is enclosed within this newsletter.

The deadline for the optional pre-proposal stage is **Friday, 6 June 2003**. Concerning assistance APN can provide during this stage, please refer to the enclosed Call for Proposals 2003.

The deadline for **full proposals** is **Wednesday, 24 September 2003, midnight Japanese time.**

Proponents should use the “APN Call for Proposals 2003—Guide for Proponents” in making their application, as changes have been made to previous versions. The updated 2003 guide will also be available on the APN website <www.apn.gr.jp> from May. [APN](#)

For more information, contact: **Dr. Linda Stevenson** <l Stevenson@apn.gr.jp> at the APN Secretariat.

Note: The Regular APN Call for Proposals is NOT related to the CAPaBLE Call for Proposals for “Comprehensive Research Projects”



JOINT WORKSHOP OF THE “CLIMATE VARIABILITY AND WATER RESOURCES IN SOUTH ASIA” AND “GLOBAL CHANGE IMPACT ASSESSMENT FOR HIMALAYAN MOUNTAIN ECOSYSTEM” PROJECTS KATHMANDU, JANUARY 7-13, 2003

*Dr. Amir Muhammed, Rector National University of Computer and Emerging Sciences, Islamabad, Pakistan and
Dr. K. L. Shrestha, President, Institute for Development and Innovation, Kathmandu, Nepal*

A year-end workshop of two APN-supported projects in South Asia, “Water Resources in South Asia: an Assessment of Climate Change-associated Vulnerabilities and Coping Mechanisms”, and “Global Change Impact Assessment for the Himalayan Mountain Region for Environmental Management and Sustainable Development,” was held in Kathmandu, Nepal on January 7-13, 2003. The objective of the meeting was to discuss the progress reports from the participating countries and plan for next year’s activities. The common theme between the two projects was the impact of climate change on water resources since changes in the mountain environment have a profound impact on water resources for the whole region. A total of 40 scientists participated in the meetings including the project associates from within the region and the United States, colleagues from APN, and keynote speakers on selected subjects from within the region.

Project #2002-12: Water Resources in South Asia: an Assessment of Climate Change-associated Vulnerabilities and Coping Mechanisms (Principle Investigator: Amir Muhammed)

The immediate motivation for the project was the recent severe drought in several parts of India and Pakistan that caused huge economic losses and a significant loss of human and animal lives. This coupled with recurring floods especially in North-eastern parts of the region including Bangladesh, India and Nepal constituted a high priority to study the impacts of climate variability and change on the water resources of the region especially the occurrence of extreme climatic events-droughts and floods.

The three-year project (subject to rigorous yearly review) was approved by APN in March 2002 with the following objectives:

- Analyze recent experience in climate variability and extreme events, and their impacts on regional water resources;

- Assess the impacts of projected climate change and variability and associated extreme hydrological events, and socio-economic changes, on the water resources of Bangladesh, India, Nepal, and Pakistan;

- Determine vulnerability of regional water resources to climate change and identify key risks to each sub-region and prioritize adaptation responses;

- Evaluate the efficacy of various adaptation strategies or coping mechanisms that may reduce vulnerability of the regional water resources; and

- Provide inputs to relevant national and regional long-term development strategies.

Regional Collaboration and Capacity Building

The project emphasizes development of a collaborative regional research network of scientists on shared water resources of South Asian nations. Initial steps taken by the Fred J. Hansen Institute for World Peace (HIWP) during 2000/2001 were aimed at engendering regional capacity engaged in global change research and water resources management. With APN funding the project is contributing to this research-driven capacity building activity consistent with the goals of START (Global Change System for Analysis, Research and Training) and APN. The regional collaborative network formed through this project is expected to significantly contribute to national and regional strategies for water resource management. Qualified young scientists from the region will also benefit from the START short-term fellowship/visiting scientists program and participation in the AIACC-sponsored workshops and training courses, adding further value to this project (for more information on AIACC, please refer to Pages 6 and 11 of this edition of the APN newsletter).

The main activity in the project during the first year was to prepare country reports pertaining to historical climate data during the last century and occurrence of extreme events, impact of past climate variability and extreme events on water resources, socio-economic impacts of extreme climatic events, and current adaptation practices and present vulnerability.

The first session of the workshop was devoted to presentation of keynotes by invited speakers from the region relating to regional vulnerabilities of hydrologic systems; regional hydrological fluxes and water resources; socio-economic scenarios, adaptation and coping mechanisms; and *El Nino* and floods in the region. In the next session, the Principle Investigators of the two projects gave an overview of their projects followed by a discussion of common interests and themes.

Main discussions in the workshop focused on the national case studies where project associates from the participating countries presented their reports followed by a lively discussion on past climate changes, occurrence of extreme events and mitigation measures. Plans for the second year of the project were also discussed and finalized in light of the findings of the country presentations and overall plan of work of the three-year project. Plans for collaboration with the USAID country missions in South Asia in water resources and water use efficiency in agriculture as an important mitigation mechanism to meet expected water shortages, were discussed with USAID colleagues.

The Hansen Institute for World Peace which has supported the project from the initial stages will contribute US \$50,000 during the second year of the project (2003/2004) for preparation of training material to train farmers in modified farm practices to meet the challenge of drastically changed water regimes due to drought or flood as a result of the impacts of climate change on water resources.



Mountain and Water Resources Participants in Kathmandu

Expected Results

The main outcomes expected from this project are:

- Assessment of vulnerability of regional water resources to expected climate change;
- Identification of extreme hydrologic events from historical record that had major regional impacts and a thorough analysis of regional vulnerability and adaptation practices that were used to deal with such disasters;
- Assessment of adaptation options and coping mechanisms relevant to anticipated regional climate change and water resource availability and use;
- Inputs to national and regional water resource management and the policy/decision making community as well as the next round of the IPCC Assessments; and
- Several publications in peer-reviewed scientific journals and a book.

Project #2002-03: Global Change Impact Assessment for the Himalayan Mountain Region for Environmental Management and Sustainable Development (Principle Investigator: K.L. Shrestha)

The Himalayan Mountains, the highest, youngest and largest on earth, extend longitudinally over nearly 2,500 km and are home for over 100 million people. The Himalayas are highly susceptible to impacts of a rapidly changing climate often coupled with anthropogenic alterna-

tion of mountain landscapes due to population changes and economic activities. These ranges that trigger orographic precipitation and control the South Asian Monsoon, store water as snow and ice and constitute the most crucial but fragile water tower for almost one-fifth of the world's population living downstream in the Indo-Gangetic plains. Technological innovations in communication and transportation systems combined with linkages to an expanding market economy, use-intensification and over exploitation of environmental resources are leading to high rates of environmental and socio-cultural changes in fragile ecosystems turning these regions into 'critical regions'.

This project aims to detect and articulate through a coordinated and integrated multidisciplinary study, the consequences of global environmental change and globalization on the livelihood of the Himalayan mountain people, and assist local and regional policy-makers in environmental management and sustainable development.

The identification and understanding of key ecological and socio-economic parameters of the Himalayan mountain regions, including their sensitivities and vulnerabilities under global changes and cumulative changes due to ongoing human interventions constitute the major study thrust areas. Project activities focus in particular on mountain agriculture and water resources. While assessing the vulnerability of Himalayan mountain people to global change, the factors that promote resilience of these groups in the face

of multiple and interacting environmental stresses will also be investigated. Based on the synthesis and aggregation of national assessments and other pertinent studies, the objective is to inform on the scientific basis the policymaking processes at local to regional scales regarding global change impacts on food security and water resources in the Himalayan Mountains as well as response strategies for coping/adapting to changes.

Outline of Activities Conducted

Three watersheds representing mountain regions and river basins draining different parts of Himalaya viz: 1) *Kali-Gandaki Valley in Nepal*; 2) *Alaknanda valley (Uttaranchal State) in India*; and 3) *Siran watershed in Pakistan* were selected for this study. Elevation transects within each watershed have been identified for studies on altitudinal and human intervention variations.

Activities during the first year (2002/2003) included country reviews of recent climate variability and extreme events, water availability and agricultural productivity along the Himalayan mountain region and the selected watersheds, as well as assessment of their sensitivities to climate change and variability. The analysis of hydro-meteorological data indicated significant changes in the parameters as well as spatio-temporal variation of the changes in the region. Likewise, the observed resilience and coping capacity of the people during extreme climate events and recent globalization indicated their socio-economic vulnerabilities. Involvement of young researchers including post-graduate students in the research is also contributing to capacity building through participatory exercises.

Outline of Future Activities

In the second year/final phase (2003/2004), the project's work will be directed to global change-related vulnerability analysis and integrated impact assessment with respect to food security and water resources including highland-lowland transfer of resources in the region. Attention will be on providing scientific information to policy makers at local and regional levels for reducing vulnerability of Himalayan water resources, agricultural systems and mountain people's livelihood to global change and globalization. **APN**

GUEST ARTICLE



ASSESSMENTS OF IMPACTS AND ADAPTATIONS TO CLIMATE CHANGE (AIACC)

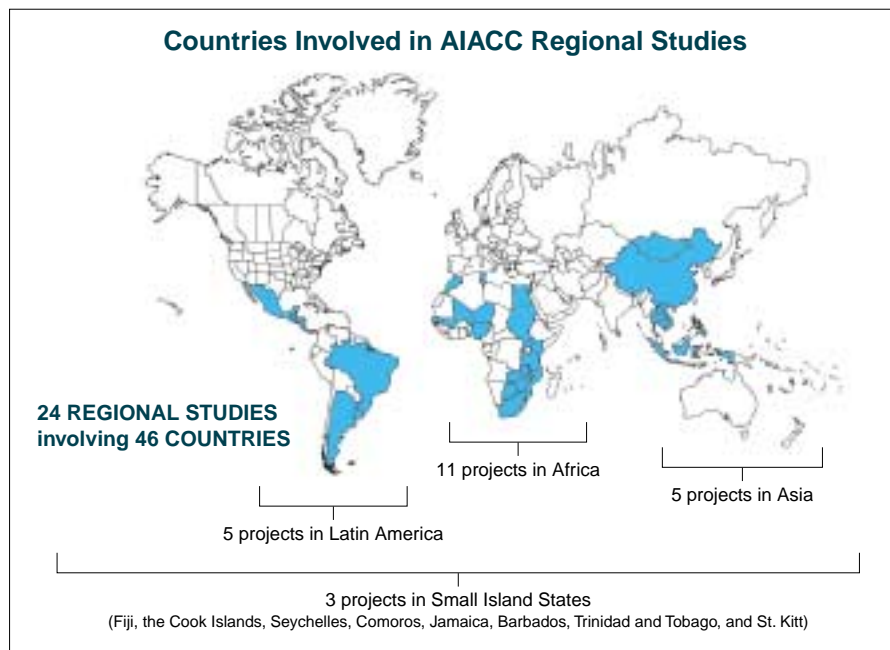


Assessments of Impacts and Adaptations to Climate Change (AIACC) convened meetings from 24-27 March in Bangkok to discuss research and capacity building activities in the Asia-Pacific region. Participating in the meetings hosted by START's Southeast Asia Regional Center were investigators from projects funded by AIACC in Asia and Oceania. Also invited to the meeting were the UNFCCC National Focal Points of countries participating in AIACC, representatives of government ministries, participants in other climate change projects of the region, and representatives of the APN.

The focus of AIACC is to build capacity for advancing scientific understanding of climate change vulnerabilities and adaptation in developing countries and for supporting National Communications to the UNFCCC. AIACC pursues these objectives by funding research projects that address the needs of adaptation decision-makers, providing training and mentoring for participating researchers, engaging decision-makers and other stakeholders in the research, and building a network of researchers and stakeholders that can col-

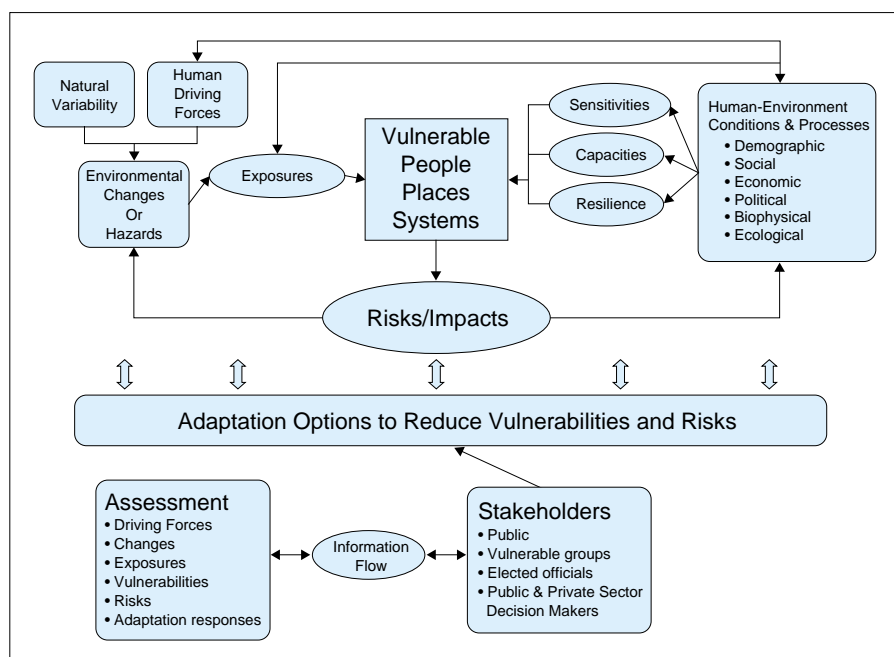
laborate to address the challenges posed by climate change. AIACC, which is funded by the Global Environment Facility, is implemented by the United Nations Environment Programme and is jointly executed by START and the Third World Academy of Sciences.

Twenty-three regional studies in Asia, Oceania, Africa, Indian Ocean, Central America, South America and the Caribbean are being supported by AIACC.



These studies will investigate climate change vulnerabilities and adaptation in forty-five countries of the developing world, with more than two-hundred developing country scientists and more than sixty students in these countries participating. Of the supported studies, five are in the Asia-Pacific region and are briefly summarized here.

The Institute of Meteorology and Hydrology of Mongolia is leading an investigation of grassland and livestock vulnerabilities to climate extremes and change and adaptation options for reducing the vulnerabilities (AIACC study no. AS06). The study, which is closely linked to Mongolia's planning for their 2nd National Communication to the UNFCCC, employs a physiological model (CENTURY) to simulate net primary productivity, soil carbon and nitrogen, pasture capacity and other variables in response to past climate variability and future scenarios of climate change in different ecological zones of Mongolia. Data are being collected and analyzed to determine empirical relationships between livestock production, climate, land-use change, and impacts on pastures. Case studies of past extremes and surveys of herders are being used to link the biophysical effects to their human conse-



Adaptation Options to Reduce Vulnerabilities and Risks

cont'd on page 11, Guest Article

APN Supported Projects 2003-2004

APN 2003-01 *Climate Extremes Indices and Indicators for Monitoring Trends in Climate Extremes*

COUNTRIES INVOLVED: Australia, China, Fiji, French Polynesia, Indonesia, Japan, Malaysia, New Caledonia, New Zealand, Papua New Guinea, Philippines, Republic of Korea, Thailand, Viet Nam

PROJECT LEADER: Michael Manton & Neville Nicholls, Australia

RESEARCH THEME: Climate change & variability

SUMMARY OF PROJECT: The project originates from successful workshops sponsored by the APN in 1999-2000 to promote the analysis of indicators of climate extremes in the Asia Pacific region. This project is also a continuation (year 3) of APN project 2001-01/2002-01 where two workshops were held in Melbourne in April 2001 and December 2002. Following the approval of APN to continue with this project for a third year, it is proposed that further workshops be held annually to maintain the network of scientists focused on the analysis of climate extremes, to provide updated software for the analysis of climate extremes, and to update the regional analyses of climate extremes. The next workshop under this project is scheduled to be held in Melbourne in April 2004 and the highest priority for future activities under this project continues to be seen as the enhanced work on digitization and analysis of historical pressure, rainfall and temperature data.

APN 2003-02 *Applying Climate Information to Enhance the Resilience of Farming Systems Exposed to Climatic Risk in South and Southeast Asia*

COUNTRIES INVOLVED: Australia, India, Indonesia, Nepal, Pakistan, USA

PROJECT LEADER: Holger Meinke, Australia

RESEARCH THEME: Climate change & variability, human dimensions of global change

SUMMARY OF PROJECT: This project is now in its second year of APN funding and builds on previous work in India and Pakistan (APN 2000-17), which has established a network of research teams with capacity to apply agricultural systems modelling to explore and evaluate options for managing climatic risk. Building on that foundation, the new project aims to demonstrate and deliver benefits from climate forecast information for agricultural decision makers, and plot a course for large-scale, sustained operational support of seasonal climate prediction within the target countries (India, Indonesia and Pakistan). This CLIMAG project brings together scientists from key research organisations of the participating developing countries, Australia and the USA. Activities link closely with partner projects such as the Advanced Training Institute on Climatic Variability and Food Security (ATI, funded by Packard Foundation) and AIACC activities in Argentina and Uruguay. The RES AGRICOLA network ensures that tools and methodologies developed in all these projects will be immediately available to the partner projects.

APN 2003-03 *Global Change Impact Assessment for the Himalayan Mountain Region for Environmental Management and Sustainable Development*

COUNTRIES INVOLVED: India, Nepal, Pakistan

PROJECT LEADER: Kedar Lal Shreshta, Nepal

RESEARCH THEME: Climate change & variability, changes in terrestrial ecosystems and biodiversity, cross-cutting issue

SUMMARY OF PROJECT: This project (formerly APN 2002-03) expands on the scoping workshop held in Kathmandu to assess and identify key issues relating to global change impacts on the Himalayan Mountain regions. The results of the analysis are expected to produce scenarios on potential impacts of global change and man-made cumulative change, policy framework for monitoring systems and response strategies to address the impact issues for sustainable development. Information regarding the key findings will be distributed to planners, policy-makers and decision-makers. This two-year project focuses on the following activities in the Himalayan Mountain regions:

- The identification and understanding of key ecological and socio-economic parameters;
- An assessment of the vulnerability to and impacts of global change on food security and water resources;
- An assessment of the vulnerability of Himalayan mountain people to global change; and
- The synthesis and aggregation of national assessments and other pertinent studies to inform on a scientific basis the policymaking processes at local to regional scales.

APN 2003-04 *Water Resources in South Asia: an Assessment of Climate Change – associated Vulnerabilities and Coping Mechanisms*

COUNTRIES INVOLVED: Bangladesh, India, Indonesia, Nepal, Pakistan, USA

PROJECT LEADER: Amir Muhammed, Pakistan

RESEARCH THEME: Climate change & variability, human dimensions of global change, cross-cutting issue

SUMMARY OF PROJECT: This project focuses on the assessment of the impacts of and vulnerability to global climate change on regionally shared water resources in Bangladesh, India, Nepal and Pakistan. In its second year of a three-year APN funded project, substantial field studies will be conducted in the selected hydrological units and will include:

- Data collection/collation, field surveys and key-actor interviews;

- Evaluation/assessment of experience with various adaptation measures, including considerations of economic efficiency, technological feasibility and social acceptability of such measures;
- A set of country specific policy strategies will be recommended; and
- Information will be posted on the SASCOM website for regional and global access and linked to the websites of APN and the Hansen Institute for World Peace who has contributed additional funds to expand the project programme.

APN 2003-05 ***Inventory of Glaciers and Glacial Lakes and the Identification of Potential Glacial Lake Outburst Floods (GLOFs) Affected by Global Warming in the Mountains of India, Pakistan and China/Tibet Autonomous Region***

COUNTRIES INVOLVED: China, Japan, Mongolia, Republic of Korea

PROJECT LEADER: J.G. Campbell, Nepal

RESEARCH THEME: Changes in terrestrial ecosystems & biodiversity, climate change & variability, human dimensions of global change

SUMMARY OF PROJECT: The glaciers are nature's renewable storehouse of fresh water that benefits hundreds of millions of people in the Hindu Kush Himalaya (HKH) region. The glaciers of the region, however, are retreating with rapid accumulation of water forming lakes in the face of accelerated global warming. The sudden breaching of the unstable dam discharges huge amounts of water and debris from the lake known as Glacial Lake Outburst Floods (GLOFs). The GLOFs often have catastrophic effects. Several GLOF events have been documented in the HKH region causing loss of life and property. An inventory of glaciers and glacial lakes is an important undertaking to get the accurate information and knowledge of GLOFs. While the potential GLOF hazards in the region is still unknown, this study will add the database to enhance the ability of researchers, policy makers and water resource planners as well as to understand and mitigate GLOF-associated hazards. In its second year of a three-year APN funded project, the project will establish an extensive GIS and remote sensing database on mountain glaciers, glacial lakes, and potential GLOFs in the mountainous areas of India and Pakistan and China/Tibet autonomous region. Multiple and easily accessible methods of training, knowledge, sharing, networking, dissemination and communication will be employed within the source and downstream nations to prepare institutions to use the knowledge database as well as inform the general public and policymakers.

APN 2003-06 ***PABITRA Network for Collaborative Research on the Ecology of Global Change in Island Landscapes of the Tropical Pacific***

COUNTRIES INVOLVED: Fiji, Indonesia, Japan, Malaysia, New Zealand, Pacific Island Countries, Philippines, USA

PROJECT LEADER: Dieter Mueller-Dombois, USA

RESEARCH THEME: Changes in coastal zones & inland waters, changes in terrestrial ecosystems & biodiversity, cross-cutting issue, human dimensions of global change

SUMMARY OF PROJECT: The primary objective of the PABITRA (Pacific-Asia Biodiversity Transect Network) project is to study the ecology of global change and to involve Pacific Islanders and conservation scientists in a mutually agreeable, reciprocal process of capacity building for understanding the dynamics of Island landscapes as life-support systems. In year one of this two-year APN funded project, a joint Analysis Workshop was held in Fiji where a PABITRA Landscape Transect was established. Future activities will target the establishment of a broad PABITRA Landscape Transect on the Island of Samoa.

APN 2003-07 ***The 1st International Young Scientists' Global Change Conference***

COUNTRIES INVOLVED: Countries within the Asia-Pacific region

PROJECT LEADER: Roland Fuchs, USA

RESEARCH THEME: All research themes under the APN research framework

SUMMARY OF PROJECT: The conference is a forum for encouraging the development of young scientists and is expected to take place on 16-19 November 2003 in Trieste, Italy. One of the major outcomes will be a cadre of talented, enthusiastic young scholars from many regions to provide the basis for the development of future intra- and inter-regional research activities. Senior scientists including the leaders of the core projects of the global change programmes will work with the young scientists to prepare their papers for submission to international journals. This conference is expected to take place every four years.

APN 2003-08 ***Regional, Multi-scaled, Multi-temporal Land Use and Land Cover Data to Support Global Change Research, Land Use Management and Policy Making: A SEARRIN LUCC Project***

COUNTRIES INVOLVED: Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Sri Lanka, USA and Viet Nam

PROJECT LEADER: David Skole, USA

RESEARCH THEME: Changes in terrestrial ecosystems and biodiversity, cross-cutting issue

SUMMARY OF PROJECT: This project will develop a suite of accurate, scientific data products derived from earth observation satellite data at multiple scales for Southeast Asia. Accurate geospatial and multi-temporal land cover and land use data derived through empirical observations at fine and coarse resolutions are imperative, primary data sets for (1) developing more complete understanding of carbon sources and sinks and therefore climate change, (2) identifying impacts on ecosystem as well as species biodiversity at local, national and regional scales, and (3) understanding the complex nexus of human and biophysical impacts on and responses to land use and land cover change. It is the overall goal of this project to develop and provide access to accurate geospatial land use and land cover data, current conditions and forecasting trends of LUCC to the global change science community and to land use managers and policy makers in order to improve our scientific understanding of the processes that link land use and land cover change to the global change issues (impacts of biodiversity, climate change, urbanization, etc.) we currently face, and to allow for informed land use and policy decisions aimed at sustainable development.

APN 2003-09 *Modelling Regional Climate Change for Southeast Asian Countries*

COUNTRIES INVOLVED: Australia, Bangladesh, Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Thailand, Viet Nam

PROJECT LEADER: John McGregor, Australia

RESEARCH THEME: Climate change & variability

SUMMARY OF PROJECT: The countries of Southeast Asia, with only a few exceptions, have very little capability or experience of regional climate modelling. One reason for this is that, until now, large computer systems have been required. The primary motivation of this proposal is to provide such a modelling capability for the participating countries, by developing modelling software and holding training workshops for developing country participants.

APN 2003-10 *Building Local Capacity for Global Change Research: The Millennium Ecosystem Assessment Sub-Global Activities in the Asia-Pacific Region*

COUNTRIES INVOLVED: Australia, China, India, Indonesia, Malaysia, Pacific Island Countries, Viet Nam

PROJECT LEADER: Walter Reid, Malaysia

RESEARCH THEME: Changes in coastal zones and inland waters, changes in terrestrial ecosystems and biodiversity, cross-cutting issues, human dimensions of global change

SUMMARY OF PROJECT: This project will multiply both the capacity-building benefits and the impact of the ongoing MA sub-global working group activities in the Asia Pacific region. APN funds will assure the quality and prominence of the Asia Pacific Sub-Global Assessments by increasing the participation of researchers in the region in the global MA activities. The APN grant will contribute to the long-term capacity of individuals and institutions in the region to produce credible, scientific information about the effects of ecosystem change on human well-being by supporting the involvement of more researchers (including junior scholars) from the Asia Pacific region in MA training workshops and working group meetings.

APN 2003-11 *3rd Workshop on Climate Variability and Trends in Oceania*

COUNTRIES INVOLVED: Australia, Fiji, New Zealand, Pacific Island Countries, USA

PROJECT LEADER: Jim Salinger, New Zealand

RESEARCH THEME: Climate change & variability

SUMMARY OF PROJECT: Oceania occupies a large portion of the Pacific Basin, and is readily affected by large-scale phenomena. The 1st workshop (APN 2000-04) documented historical data resources and established a collaborative project for analysis of change and variability across Oceania. The second workshop (APN 2001-10) analyzed climate trends, provided significant capacity building, and input to a human dimensions programme. This project will hold a 3-day workshop in Auckland, New Zealand to provide methods and techniques, and to develop a simple database to document and store metadata within Oceania countries. A significant component of the workshop will be providing training and software to the participants. Use of the information to contribute to a regional climate information service will be explored. Capacity building will continue through providing on-going technical support before, during and after the workshop and the information will directly contribute to IPCC, GCOS, WCDMP, WCRP, CLIPS and other international global climate programmes. This workshop will update climate trends to 2002 for national reporting requirements under the UNFCCC.

APN 2003-12 *The Mega-Deltas of Asia: A Conceptual Model and its Application to Future Delta Vulnerability*

COUNTRIES INVOLVED: Australia, Bangladesh, Cambodia, China, India, Japan, Pakistan, Thailand, USA, Viet Nam

PROJECT LEADER: Zhongyuan Chen

RESEARCH THEME: Changes in coastal zones and inland waters, climate change and variability, human dimensions of global change

SUMMARY OF PROJECT: This two-year project focuses on developing a conceptual model for the geological processes and response behaviour of Asian mega deltas, which are affected by strong monsoons, high river flow and sediment load, and frequent geo-hazard events. Existing databases will be integrated based on the input of many experienced Asian delta scientists, each of whom has been working with specific geological issues that include subsidence from groundwater withdrawal, sea-level rise impacts, and coastal erosion, saltwater intrusion and river channel dry-up from damming and water diversion. Databases will be further incorporated with on-going field measures to better understand the geological framework of the delta basins. Thus, the project is expected to allow for substantial improvements in hazard assessments and mitigation policies in the face of global change issues.

APN 2003-13 *Capacity Development Training for Monitoring Persistent Organic Pollutants (POPs) in the East Asian Hydrosphere*

COUNTRIES INVOLVED: China, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Thailand, Viet Nam

PROJECT LEADER: Zafar Adeel, Japan

RESEARCH THEME: Changes in coastal zones and inland waters, human dimensions of global change

SUMMARY OF PROJECT: A training workshop is planned for laboratory staff from the UNU environmental monitoring and governance network in the East Asian region (participants out with the region are also expected to be involved). The purpose of this project is to build the capacity to undertake monitoring of Persistent Organic Pollutants (POPs) and the capacity to evaluate threats through an early warning system. The work focuses on POPs found in coastal and inland water and sediments. POPs are chemical substances that persist in the environment, bio accumulate through the food web, and pose a risk of causing adverse effects to human population and the environment. There has been a realization that these pollutants, upon exposure to human population, can cause serious health effects ranging from increased incidence of cancer to disruption of the hormonal system. Developing countries are particularly vulnerable due to the often indiscriminate use and disposal of POPs.

APN 2003-14

The 2003 Open Meeting of the Human Dimensions of Global Environmental Change Research Community

COUNTRIES INVOLVED: Countries within the Asia-Pacific region

PROJECT LEADER: Ben Malayang III, Philippines

RESEARCH THEME: Human dimensions of global change

SUMMARY OF PROJECT: This project will provide funding for Asia-Pacific participation in the Open Meeting of the Human Dimensions Research Community. The next Open Meeting is scheduled for 16-18 October 2003 in Montreal, Canada. The Open Meetings are a major activity within the Human Dimensions community to stimulate the exchange of information on research on a trans-national and -regional basis. In the past they have been excellent vehicles to integrate researchers into the community who haven't been involved before. The Open Meetings are a unique venue for meeting scholars from a wide range of disciplines who are working in areas of common substantive interest.

APN 2003-15

Travel Support for Asia-Pacific Marine Scientists to Attend the Final JGOFS Open Science Conference

COUNTRIES INVOLVED: China, India, Pakistan, Republic of Korea

PROJECT LEADER: Mary Zawoosky, Roger B. Hanson, USA

RESEARCH THEME: Changes in atmospheric composition, changes in coastal zones and inland waters, climate change and variability, cross-cutting issue, human dimensions of global change

SUMMARY OF PROJECT: The project will provide APN travel support for marine scientists from the Asia-Pacific region to attend the Final JGOFS Open Science Conference "A Sea of Change: JGOFS Accomplishments and the Future of Ocean Biogeochemistry" scheduled for 5-8 May 2003 at the National Academy of Sciences, Washington DC, USA. Around 300-500 marine scientists, global change programme representatives and policy makers from 25 countries are expected to attend, and the programme has been planned to appeal to a diverse audience. With support of marine scientists from the Asia-Pacific region, the interests of APN and JGOFS are well represented and those relevant scientists most closely aligned with APN and JGOFS are supported in the important closing event of the JGOFS project.

APN 2003-16

Integrating Carbon Management into Development Strategies of Cities — Establishing a Network of Case Studies of Urbanisation in the Asia-Pacific

COUNTRIES INVOLVED: Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Thailand, USA, Viet Nam

PROJECT LEADER: Rodel Lasco, Philippines

RESEARCH THEME: Changes in atmospheric composition, changes in terrestrial ecosystems and biodiversity, cross-cutting issue, human dimensions of global change

SUMMARY OF PROJECT: There is a growing realization among earth system scientists and policy makers concerned with global change that the way urbanization unfolds has profound implications for future growth in energy use and emissions in Asia. Cities offer many potential environmental protection benefits, arising from efficiencies in transport, energy used in cooling and heating, as well as opportunities to sequester additional carbon on land released from use for human settlements. On the other hand, cities have often been centres of wealth, high consumption growth, and serious air pollution. This project aims to draw on past and current research efforts on emissions and urban management, and establish a new set of coordinated case studies that will address how carbon management can be integrated into development strategies for cities. Four case studies (Bangkok, Manila, Delhi, and Jambi, Indonesia) will be conducted under this which are expected to contribute directly to new initiatives on human settlements and regional patterns of development in the international global change science programmes, especially, the joint Global Carbon Project.

APN 2003-17SG

Seed Grant for Proposal Development: Integrating Climate Variability and Human Activities in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management

COUNTRIES INVOLVED: China, Republic of Korea, Russia

PROJECT LEADER: Vladimir Kasyanov, Russia

RESEARCH THEME: Changes in coastal zones & inland waters, climate change & variability, cross-cutting issue, human dimensions of global change

SUMMARY OF PROJECT: This seed grant has been provided to develop a proposal submitted under the 2003 Call for Proposals. A proposal development workshop will be held to develop and plan a project which will investigate and assess recent environmental effects of the natural climatic variability and socio-economic development in selected major river basins in East Asia.

For more information on past and present APN supported projects, please consult the APN website <www.apn.gr.jp> or contact:

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cont'd from page 6, Guest Article

quences and possible responses. Representatives of national ministries, local government agencies, research institutions, private sector and non-governmental organizations are being engaged in the project through joint workshops.

The Southeast Asia START Regional Center in Thailand is investigating social and economic vulnerabilities to changes in climate, hydrology and land-cover in the Mekong River basin (AIACC study no. AS07). High-resolution climate and hydrological scenarios are being developed for analysis using a model of the watershed (SEA-BASINS—outcome of previous APN/START funded project). Preliminary analyses suggest that vulnerabilities may arise from reduced water supply, more intense and longer flooding in parts of the basin, drying out of some wetlands, and impacts on rain fed rice yields. A series of round-tables and expert workshops, the first of which was held in November 2002, are engaging the National Committee for Climate Change of Thailand and other stakeholders in the research and will guide the assessment of social and economic vulnerabilities to model-simulated changes in the watershed. Adaptation to address identified vulnerabilities will be developed and analyzed and recommendations for adaptation will be disseminated to policy makers and managers in 6 major Southeast Asian languages.

The Sri Lanka Association for the Advancement of Science, the Coconut Research Institute and the Tea Research Institute are collaborating in a study of the potential impacts of climate change on plantation agriculture (AIACC study AS12). Empirical relationships between coconut and tea productivity with climate variables are being estimated and chamber experiments of coconut and tea plant responses to CO₂ enrichment are being conducted. These efforts will provide input to the development of dynamic physiological models of these important export crops, which will be used for simulation of changes in coconut and tea production for different scenarios of climate change and CO₂ enrichment. An integrated assessment framework is being developed with assistance from the International Global Change Institute (IGCI) of the University of Waikato to facilitate analysis of the social and economic consequences. Adaptation strate-

gies that could be applied at the national level in Sri Lanka, and to the South and Southeast Asia region generally, will be identified, evaluated and communicated to planters. Stakeholder surveys and consultations are contributing to the integrated assessment and identification and evaluation of adaptation strategies. The Ministry of Environment, which is responsible for Sri Lanka's National Communication to the UNFCCC, is closely engaged in this study and expects it to complement studies of other sectors that are intended to contribute to Sri Lanka's National Communication.

The University of the Philippines, Los Baños, the Department of Environment and Natural Resources in the Philippines, and the Climatology Laboratory of Bogor Agricultural University in Indonesia are working together to assess the impacts of climate change and land-use and land-cover change on selected watersheds in their respective countries (AIACC study no. AS21). They provided training and funding for similar but smaller scale investigation by scientists from Viet Nam, Lao PDR and Cambodia. Research on climate changes using MAGICC-SCENGEN, on water resource changes using the SEA-BASINS model, carbon pool changes using CO₂-Fix model, land-cover changes using the CLUE model, and local community impacts, livelihood changes, and adaptation options using participatory techniques are to be integrated to achieve a comprehensive understanding of vulnerabilities and effective adaptation strategies. Information obtained from the above studies is being shared with the Millennium Ecosystem Assessment study in the Philippines, which may employ similar models and methods in their assessment of ecosystems in the Laguna Lake Basin. Science-policy workshops were conducted by the study investigators to consult the policy communities of the Philippines and Indonesia and to facilitate contributions to future national communications of these countries.

An integrated assessment of coastal hazards and vulnerabilities in Fiji and the Cook Islands that are related to climate change is being undertaken by the University of the South Pacific, the South Pacific Regional Environment Programme (SPREP), and the International Global Change Institute (AIACC study no. SIS09). Reconnaissance visits to study

sites have been made by the investigators to meet with local organizations and leaders to learn their chief concerns and to shape the planned study accordingly. The study sites represent a variety of exposures to coastal hazards and development patterns that are expected to present different vulnerabilities. Modifications to the CLIMPACTS integrated assessment model have been initiated to incorporate human dimensions and adaptation options, as well as to improve the biophysical modules for simulating impacts. The modified model will provide a framework for the assessment and will be applied to the case study sites. This AIACC study is closely linked and coordinated with a project funded by the Canadian International Development Agency titled "Developing and Implementing Adaptation Measures in the Pacific Island Countries through Integrated Approaches". All three partners in the study, USP, SPREP and IGCI, played active roles in the first National Communications under the Pacific Islands Climate Change Assistance Program (PICCAP) and are working to build links between the AIACC study and preparations of second National Communications of Pacific islands.

AIACC hopes to soon fund a sixth study in the region. The International Earth System Sciences Institute at Nanjing University, the Cold and Arid Regions Environmental and Engineering Research Institute in Lanzhou, China and the Sustainable Development Research Institute at the University of British Columbia have proposed an integrated assessment of climate change vulnerabilities and adaptations in Western China that has successfully passed AIACC's scientific peer review. The investigators for this proposed study have had a series of productive meetings with officials of the National Climate Change Committee of China and other key researchers in China. The meetings have provided important linkages between the study proposed for AIACC funds and other research being conducted by China in its western region and have produced an understanding of how these efforts can benefit each other. An agreement to implement this study in China is expected shortly. **APN**

More information about the AIACC Project can be found on the web at http://www.start.org/Projects/AIACC_Project/aiacc.html



OCEANIA

USP Post-graduate Student granted START Fellowship Award

Congratulations to our first recipient of the START Fellowship Award from Oceania. Francis Mani, a post-graduate student at the Chemistry Department, USP, is currently completing his Masters research on methane monitoring in the region. Through the fellowship, Mr. Mani was on 4 weeks training from 7 February–6 March at the National Institute of Water and Atmospheric Research (NIWA), New Zealand, to further his skills in methane monitoring techniques.

Tuvalu Coastal Monitoring Fieldtrip, 20-23 January 2003

As part of the APN project 'Atoll island change and linkages to sea level variations in Oceania', lead by Prof. Nick Harvey (University of Adelaide), the Tuvalu trip was aimed at setting up sites to monitor erosion as a result of "global change". The project aims to develop a regional research network and support mechanism for the collation, collection and analysis of atoll island change data. The team consisted of Professor Harvey, Dr. Paul Kench (Auckland University), Mrs. Naomi Atauea (Kiribatis) and Miss Leigh-Anne Buliruarua (APN/START), with the assistance of the Lands Department, who are primarily responsible for coastal monitoring in Tuvalu.

World Water Forum, Kyoto, Japan

The global water community has acknowledged the vulnerability and particular needs of Small Island States, by the inclusion of a "Water in Small Island Countries" theme at the 3rd World Water Forum in Kyoto, Japan from 16-23 March 2003. The South Pacific Applied Geoscience Commission (SOPAC) and the Asia Development Bank (ADB) organised the Pacific preparations through a Planning Meeting held from 31 January to 1 February 2002 in Port Vila, Vanuatu and a regional consultation meeting on sustainable water management held from 29 July–3 August 2002 in Sigatoka, Fiji. The outcomes of the Pacific regional consultation including a Regional Action

Plan and a Ministerial Declaration were incorporated into a partnership arrangement under the so-called Type II initiatives submitted by the Pacific Island Countries to the Commission for Sustainable Development (CSD) in Johannesburg during the World Summit for Sustainable Development (WSSD) in August 2002. The main session on Water in Small Island Countries highlighted the particular water issues and needs of Small Island Countries through the presentation and discussion of national experiences, success stories and best practices.

Regional Stakeholder Consultations on Implementing WSSD and Preparations for Barbados +10, Nadi, Fiji

The meeting was held to update countries of the WSSD and other related important international agreements and targets; to update and engage countries on the development of the Pacific Umbrella Initiatives, and proposed process for their coordination, management and monitoring; to receive feedback and endorsement for the process forward on development of the Initiatives and most effective means for national engagement; countries to update on national developments since WSSD; and to receive feedback on the preparatory process for BpoA+A (2004).

Sustainable Development and Economic Policy and Planning Workshop, Nadi, Fiji

The meeting was organised by the Pacific Islands Forum Secretariat (Forum Sec) and the South Pacific Regional Environment Programme (SPREP). Meeting objectives included an effective setting and implementation of economic development strategies that are coherent with HRD and environment priorities through:

- Improved understanding of the importance of integration of economic planning with HRD and environment;
- Development of "best practice" tools relevant to island country settings; and
- Improved policy advice to governments.

Compiled from report by APN Liaison Officer Ms. Leigh-Anne Buliruarua

SOUTH ASIA

APN/SASCOM/LOICZ Regional Workshop on Assessment of Material

Fluxes to the Coastal Zone in South Asia and their Impacts, Negombo, Sri Lanka

During the workshop, presentations were made on the studies carried out in Bangladesh, India, Pakistan and Sri Lanka related to the deliveries to the coastal zones, bio-geochemistry, material concentrations in coastal waters and coastal impacts. Participants also got hands on training on the LOICZ-CABARET model to quantify the nutrient fluxes based on their own data. Country reports of Bangladesh, India, Nepal, Pakistan, and Sri Lanka were also presented in the workshop. Participants had detailed discussions on several issues, including the need for generating meta-data, research needs for appropriate policy formulation, participation of stakeholders in the decision-making process and management, and ranking and assessment of South Asia, etc. Workshop participants decided to produce two reports; one on 'biogeochemical budget' comprising of the budgets of nutrient fluxes calculated by the project and another report in the form of a 'regional assessment report'.

SASCOM OTC Data Synthesis Meeting, New Delhi, India

A meeting was organized under the auspices of SASCOM in New Delhi in which the members of country teams carrying out the Open Top Chamber (OTC) studies for the effect of elevated carbon dioxide on agriculture yields in Bangladesh, India, Nepal, and Sri Lanka were invited to synthesize the results obtained thus far. The OTC program in South Asia was initially developed with APN funding but is presently being run independently by each country groups using their own resources. The objectives of the meeting were to strengthen the existing OTC network and provide an opportunity to exchange data for synthesis to help in generating transfer functions for extrapolation of FACE results. In the South Asian region, the FACE facility is currently functioning at the Indian Agriculture Research Institute (IARI), New Delhi. The participants also gained exposure to the agriculture modelling capabilities of the IARI.

Delhi Sustainable Development Summit 2003 (DSDS 2003), New Delhi, India
Tata Energy Research Institute (TERI) organized the 'Delhi Sustainable Development Summit 2003 (DSDS 2003)' in

New Delhi during 6-9 February 2003 to revitalize the global commitment to sustainable development as a shared future goal. In this meeting Nobel laureates, political leaders, leading decision-makers from governments, representatives of the corporate sector, scientists, media persons, researchers, and representatives of non-governmental organizations from across the world participated.

The Rio Earth Summit of 1992 underlined the imperative of integrating economic growth, social justice, and environmental concerns to satisfy the world without ravaging the earth. The awareness, unfortunately, has not been fully translated into action on the scale required to achieve true sustainability. Recognizing the need for action, the WSSD (World Summit on Sustainable Development) set priorities for the same and resolved to make a concerted endeavour to realize the vision of a safe; just world that fulfils the needs of present and future generations. The deliberations at DSDS 2003 essentially focused on translating these priorities into action. It will add value to the WSSD process through many action-oriented suggestions for the global community to realize the goal of sustainable development.

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

SOUTHEAST ASIA

2nd International Symposium on the Management of Large Rivers for Fisheries: Sustaining Livelihoods and Biodiversity in the New Millennium. Phnom Penh, Cambodia, February 11-14, 2003

The symposium was convened by the Mekong River Commission (MRC) and the Cambodian Department of Fisheries (DOF), in collaboration with the Food and Agricultural Organization of the United Nations (FAO), the World Wide Fund for Nature (WWF), and the World Conservation Union (IUCN). Scientists and representatives from repatriation country participated in this symposium.

The objectives of the meeting were to:

- Provide, for people working on the management and development of rivers, a forum to review and synthesize the current status of large river systems, covering

topics such as ecology, fisheries, environmental impacts assessments, multiple uses of resources and associated socio-economic considerations;

- Raise the political, public and scientific awareness of the importance of river systems, the living aquatic resources they support and the people that depend upon them; and

- Contribute to better management, conservation and restoration of the living aquatic resources of large rivers. The Symposium focused on the management (i.e. conservation and sustainable use) of living aquatic resources of large rivers, including the impacts of human activities on these.

1st Southeast Asian Ocean Forecasting Models Inter-comparison Workshop. Kuala Lumpur, Malaysia, February 19-24, 2003

As there are several ocean and marine forecasting systems developed independently and that these forecasting results are crucial for public safety, the 1st Southeast Asian Ocean Forecasting Models Inter-comparison Workshop was organized under the framework of the capacity building initiative for Southeast Asia of the IOC/WMO Joint Commission on Oceanography and Marine Meteorology (JCOMM) and the Tropical Cyclone Program (TCP) of the WMO.

This workshop offered an opportunity for participants to run their forecasting systems concurrently so that data results could be compared and discussed during the session. Participants were able to re-analyze and simulate meteorological data to be used to force the systems to improve the reliability and consistency of their forecasting. The main focus of this 1st workshop was wave and storm surges.

20th Pacific Science Congress. Bangkok, Thailand, March 17-21, 2003

The National Research Council of Thailand (NRCT) in collaboration with the Thai Academy of Science and Technology (TAST), the Agricultural Science Society of Thailand (ASST) with the support of the Pacific Science Association (PSA) hosted the 20th Pacific Science Congress in Bangkok, Thailand. PSA members and scientists from public and private sectors from Asia-Pacific, South America and Europe attended this Congress.

The Congress theme was “Science and Technology for Healthy Environments” and focused on three major themes; i.e. natural resource challenges, social challenges, and science and technology challenges; featuring the rich natural resources and biodiversity of the Asia-Pacific region.

Global Change issues were also manifested as a sub-theme under the Symposiums “Adaptation of Asia-Pacific to Global Change” and “Climate-related Extreme and Coupled Resilience and Improving Decision-Making”. About thirty papers were presented in the first symposium relating to global change research. The second symposium was organized in panel form to facilitate the sharing of individual experience and a discussion of a set of integrating themes that lead to collaboration at the regional level and a future plan.

Planning Meeting for an Integrated Regional Study of Monsoon Asia. Bangkok, Thailand, March 22-24, 2003

The International START Secretariat with program sponsors (IGBP, WCRP, IHDP) organized a meeting on a global change integrated regional study of Monsoon Asia. During the meeting, the steering committee prepared an outline for and contributors to a rapid assessment (an inventory of latest work; a foundation for future activities) of current knowledge relevant to a future integrated study of Monsoon Asia. Moreover, the planning meeting considered potential conceptual and broad frameworks as a basis for sub-regional or national—level studies. The event was held at the Southeast Asia START Regional Center (SEA START RC), Chulalongkorn University, Bangkok, Thailand. About 25 participants attended this meeting; including the APN Secretariat.

Effect of Atmospheric Aerosols on Solar Radiation, Cloud and Regional Climate (PI: Jariya Boonjawat) February 2003

The Atmospheric Research group, Southeast Asia START Regional Center (SEA START RC) with support from NASA, have conducted a project on the “Effect of Atmospheric Aerosols on Solar Radiation, Cloud and Regional Climate” This investigation promotes education in atmospheric science and provides collaborative research opportunities for scientists in developing countries in Southeast Asia. Expected outcomes will be:

- Validated datasets on aerosol optical depth in Southeast Asia;
- Integrated aerosol database with land use databases;
- Regional collaboration on analysis of impact of atmospheric aerosol particles on radiative forcing and cloud/haze formation by using ground-based data and satellite data; and
- Policy brief summarizing key conclusions for regional policy makers and non-specialists.

Compiled from report by APN Liaison Officer
Dr. Anond Snidvongs

TEMPERATE EAST ASIA

5th Workshop on the Transport of Air Pollutants in Asia (Model Inter-comparison Study-MICS-Asia), January 20-21, 2003

At the 4th Workshop on the Transport of Air Pollutants in Asia (MICS-Asia) in October 2001, it was concluded that a further model intercomparison study (MICS-Asia Phase II) would be useful to improve the understanding of the long-range transport of air pollutants in Asia. The next phase of MICS-Asia will focus on sulfur and nitrogen compounds, ozone and aerosols. This fifth workshop, held in January 2003, identified participating models and a system for implementing the model inter-comparison. It was suggested that, as a first-step, some episodes in 2001 that are of special interest for gaining insights into important conditions in Asia would be explored. The Acid Deposition and Oxidant Research Center (ADORC) plans to propose some

individual episodes in 2001 based on the availability of EANET monitoring data.

Ecological Sustainability in Grasslands of Inner Mongolia, P. R. China

This workshop prepared a joint German-Sino research proposal on "Influence of Grazing Intensity on Matter Fluxes in Grasslands of Inner Mongolia-Bases for the development of concepts for a sustainable use", which was submitted to the German Science Foundation (DFG) in March 2003.

5th CLIVAR Asian-Australian Monsoon Panel (AAMP) Meeting

As part of the World Climate Research Program (WCRP), the 5th CLIVAR Asian-Australian Monsoon Panel Meeting was held at the New Environmental Science and Technology Building, Georgia Institute of Technology. The objectives of this meeting were:

- Review progress in observing, understanding and predicting the Asian-Australian monsoon system, and to identify research and infrastructure priorities for the near future;
- Develop a long-term strategy for model evaluation and improvement, building on the GEWEX/CEOP initiative, and in collaboration with other CLIVAR panels, GEWEX, and the WCRP modelling working groups (WGNE, WGCM);
- Discuss the observation network for the Indian Ocean and surrounding seas in the light of Mauritius IOGOOS meeting and to consider the need for an Indian Ocean Panel; and
- Discuss the status of CLIVAR-AAMP implementation plans and considers its future development.

The next AAMP meeting will be hosted by IPRC, Honolulu, in February 2004 in combination with AMIP East Asian Climate Subproject and the IPRC Regional Climate Modeling Workshop.

8th International Conference on Atmospheric Sciences and Applications to Air Quality (ASAAQ2003), March 11-13, 2003, Tsukuba, Japan

This conference focused on issues of atmospheric chemistry, air pollution meteorology, atmospheric modeling and monitoring of air pollutants with a particular emphasis on the Pacific Rim region and Asia.

The main topic of the conference was the "Impact of Aerosol, —Human Health to Climate Change—." The conference also focused on atmospheric sciences and air quality.

Specific topics to be covered included aerosols; atmospheric chemistry; acid deposition (dry or wet); long-range transport; climate change; measurement and monitoring; urban air pollution and modeling; meteorology and air quality; pollution control; impact assessment and emission inventories.

Papers presented at the conference will be published in the Atmospheric Environment Journal.

Publications

The Regional Climate Effect of Replacing Farmland and Greening the Desertification Lands with Forests or Grassland in West China Advances of Atmospheric Sciences Vol. 20(1): 45-54 (Shi W. and H. Wang, 2003). [APN](#)

Compiled from report by APN Liaison Officer
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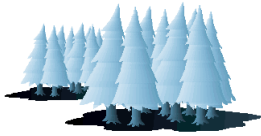
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TEACOM

Prof. Congbin Fu (SPG)

* Indicates Co-Chair of SPG

PROJECTS FUNDED BY APN IN 2003/2004

The APN's 8th Inter-Governmental Meeting decided to fund 17 projects from an APN funded activities budget of approximately 750,000 US dollars contributed by the Ministry of Environment (Japan), the US Global Change Research Programme (USGCRP), and Hyogo Prefectural Government. Projects may also be funded from other sources not noted here, including in-kind support from countries.

#2003-01 *Indices and Indicators for Monitoring Trends in Climate Extremes*

Project Leader: Michael Manton,
Bureau of Meteorology Research Centre, Australia
Email: m.manton@bom.gov.au

#2003-02 *Applying Climate Information to Enhance the Resilience of Farming Systems Exposed to Climatic Risk in South and Southeast Asia*

Project Leader: Holger Meinke,
Department of Primary Industries, Australia
Email: meinkeh@dpi.qld.gov.au

#2003-03 *Global Change Impact Assessment for the Himalayan Mountain Region for Environmental Management and Sustainable Development*

Project Leader: Kedar Lal Shrestha,
Institute for Development and Innovation, Nepal
Email: klshrestha@wlink.com.np

#2003-04 *Water Resources in South Asia: an Assessment of Climate Change-associated Vulnerabilities and Coping Mechanisms*

Project Leader: Amir Muhammed,
National University for Computer and Emerging Sciences, Pakistan
Email: amir@nu.edu.pk

#2003-05 *Inventory of Glaciers and Glacial Lakes and the Identification of Potential Glacial Lake Outburst Floods (GLOFs) Affected by Global Warming in the Mountains of India, Pakistan and China/Tibet Autonomous Region*

Project Leader: J.G. Campbell,
International Centre for Integrated Mountain Development, Nepal
Email: basanta@icimod.org.np

#2003-06 *PABITRA Network for Collaborative Research on the Ecology of Global Change in Island Landscapes of the Tropical Pacific*

Project Leader: Dieter Mueller-Dombois, University of Hawaii, USA
Email: amdhawaii@aol.com

#2003-07 *The 1st International Young Scientists' Global Change Conference, November 16-19, 2003, Trieste, Italy*

Project Leader: Roland Fuchs,
International START Secretariat, USA
Email: rfuchs@agu.org

#2003-08 *Regional, Multi-scaled, Multi-temporal Land-use and Land Cover Data to Support Global Change Research, and Policy Making: A SEARRIN LUCC Project*

Project Leader: David Skole,
Michigan State University, USA
Email: skole@msu.edu

#2003-09 *Modelling Regional Climate Change for Southeast Asian Countries*

Project Leader: John MacGregor,
CSIRO Atmospheric Research, Australia
Email: John.McGregor@csiro.au

#2003-10 *Building Local Capacity for Global Change Research: The Millennium Ecosystem Assessment Sub-global Activities in the Asia-Pacific Region*

Project Leader: Walter Reid, Millennium Ecosystem Assessment, Malaysia
Email: reid@millenniumassessment.org

#2003-11 *3rd Workshop on Climate Variability and Trends in Oceania*

Project Leader: Jim Salinger, National Institute of Water and Atmospheric Research, New Zealand
Email: j.salinger@niwa.com

#2003-12 *The Mega-Deltas of Asia: A Conceptual Model and its Application to Future Delta Vulnerability*

Project Leader: Zhongyuan Chen, East China Normal University, China
Email: Z.Chen@sklec.ecnu.edu.cn

#2003-13 *Capacity Development Training for Monitoring of Persistent Organic Pollutants (POPs) in the East Asian Hydrosphere*

Project Leader: Zafar Adeel, United Nations University, Japan
Email: king@hq.unu.edu

#2003-14 *The 2003 Open Meeting of the Human Dimensions of Global Environmental Change Research Community*

Project Leader: Ben Malayang III,
University of the Philippines, Philippines
Email: mmmm@laguna.net

#2003-15 *Travel Support for Asia Marine Scientists to Attend the Final JGOFS Open Science Conference*

Project Leader: Mary Zawoysky, U.S. JGOFS Planning and Data Management Office, USA
Email: mzawoysky@whoi.edu

#2003-16 *Integrating Carbon Management into Development Strategies of Cities—Establishing a Network of Case Studies of Urbanisation in the Asia-Pacific*

Project Leader: Rodel Lasco,
University of the Philippines, Philippines
Email: rlasco@laguna.net

#2003-17SG *Seed Grant for Proposal Development: Integrating Climate Variability and Human Activities in Relation to Northeast Asian Land-Ocean Interactions and their Implications for Coastal Zone Management*

Project Leader: Vladimir Kasyanov,
Institute of Marine Biology FEB RAS, Russian Federation
Email: inmarbio@mail.primorye.ru

CALENDAR OF GLOBAL CHANGE RESEARCH ACTIVITIES



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

2003

- 16-18 APR** Framing Land Use Dynamics. Integrating knowledge on spatial dynamics in socio-economic and environmental systems for spatial planning in western urbanized countries. Utrecht, the Netherlands. Contact: Web <<http://networks.geog.uu.nl/conference/>>
- 5-8 MAY** **Final JGOFS Open Science Conference "A Sea of Change: JGOFS Accomplishments and the Future of Ocean Biogeochemistry."** Washington DC, USA. Contact: **Mary Zawoysky** <mzawoysky@whoi.edu>
- 18-23 MAY** International Forum on Ecosystem Approaches to Human Health. Montreal, Canada. Contact: Anne-Marie Legault <forum2003@idrc.ca> Web <<http://www.idrc.ca/forum2003>>
- 27-29 MAY** The XIVth Global Warming International Conference & Expo: Extreme Events & Energy, Agriculture, and Natural Resource Management. Boston, USA. Contact: <gw14@globalwarming.net> Web <www.GlobalWarming.Net>
- 3-6 JUNE** Urban Dimensions of Environmental Change: Science, Exposures, Policies and Technologies. Shanghai, China. Contact: <<http://www.montclair.edu/globaled/shanghai/index.htm>>
- 21-25 JUNE** First CLIVAR Open Science Conference. Baltimore, USA. Contact: Web <<http://clivar-search.cms.udel.edu/calendar/default.htm>>
- 13-17 JULY** Coastal Zone Management through Time. Baltimore, USA. Contact: Web <www.csc.noaa.gov/cz2003>
- 16-18 JULY** International Conference on the Impact of Global Environmental Problems on Continental and Coastal Marine Waters. Geneva, Switzerland. Contact: Web <www.unige.ch/sciences/near/>
- 4-22 AUG** Advanced Institute on Urbanization, Emissions, and the Carbon Cycle. Colorado, U.S.A. Contact: International START Secretariat, Amy Friese <afreise@agu.org>
- 13-16 AUG** Studying Land Use Effects in Coastal Zones with Remote Sensing and GIS. Antalya/Kemer, Turkey. Contact: Derya Maktav <dmaktav@ins.itu.edu.tr> Web <<http://www.ins.itu.edu.tr/rslucoat1>>
- 15-19 SEP** International Conference on Earth System Modelling. Hamburg, Germany. Contact: Web <<http://www.mpimet.mpg.de>>
- 19-22 SEP** PAGES: World System History and Global Environmental Change. Lund, Sweden. Contact: Web <www.pages.unibe.ch/calendar/2003/lund.html>
- 29 SEP-3 OCT** World Climate Change Conference 2003. Moscow, Russian Federation. Contact: Secretariat <wccc2003@mecomru>
- 4-10 OCT** Joint International Forum on Biodiversity Information: Building Capacity in Asia and Oceania. Tsukuba, Japan. Contact: <biodiv@ics-inc.co.jp> Web <<http://www.gti.nies.go.jp/forum2003>>
- 16-18 OCT** **Open Meeting of the Human Dimensions of Global Environmental Change Research Community.** Montreal, Canada. Contact: Web <www.sedac.ciesin.columbia.edu/openmeeting>
- 16-19 NOV** **The 1st International Young Scientists' Global Change Conference.** Trieste, Italy. Contact: **Kristy Ross** <kristy@crg.bpb.wits.ac.za>
- 18-21 NOV** **EMECS 2003. 6th International Conference on the Management of Enclosed Coastal Seas.** Bangkok, Thailand. Contact: **EMECS Secretariat** <secretariat@emecs2003.com>
- 1-4 DEC** Open Science Conference on Global Change and the Terrestrial Human-Environment System (Land Core Project). Morelia, Mexico. Contact: Websites: GCTE <<http://www.gcte.org>> and LUCC <<http://www.geo.ucl.ac.be/LUCC/lucc.html>>

2004

- 31 MAR-3 APR** IOC-SCOR-GLOBEC Symposium on Quantitative Ecosystem Indicators for Fisheries Management. Paris, France. Contact: Philippe Cury <curypm@uctvms.uct.ac.za> or Villy Christensen <v.christensen@fisheries.ubc.ca>
- 2-6 MAY** Fourth World Fisheries Congress. Reconciling Fisheries with Conservation: The Challenge of Managing Aquatic Ecosystems. Vancouver, Canada. Contact: Congress Secretariat <fish2004@advance-group.com> Web <www.worldfisheries2004.org>

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Views expressed in this newsletter do not necessarily represent those of the APN Secretariat.

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