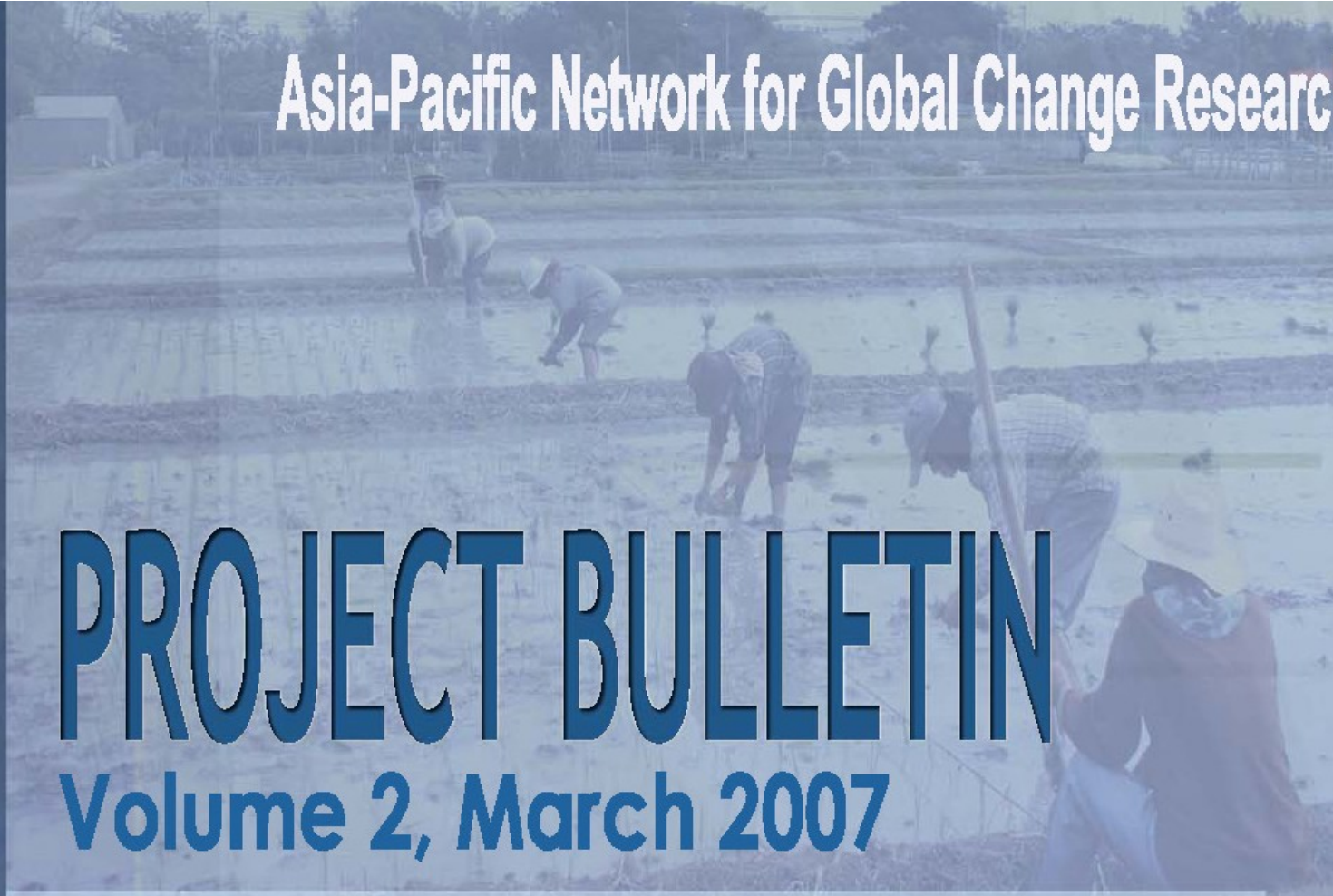
Asia-Pacific Network for Global Change Research



PROJECT BULLETIN

Volume 2, March 2007

APN

Asia-Pacific Network for Global Change Research

APN Project Bulletin
Volume 2, March 2007

The APN Secretariat
5th Floor, IHD Centre Building
1-5-1 Wakinohama Kaigan Dori
Chuo-ku, Kobe 651-0073
JAPAN
Tel: (+81) 078-230-8017
Fax: (+81) 078-230-8016
Email: info@apn-gcr.org
Website: http://www.apn-gcr.org

Contents 2

Preface

The Asia-Pacific Network for Global Change Research is an international network of member governments 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.

Changes in the Earth system are clearly impacting the societies and economies of the countries within the Asia-Pacific region. These countries support more than half of the world's population. Recent research and supporting observations have provided new insights into some of these changes and their impacts, but have at the same time opened a number of new and challenging scientific issues and to promote and encourage regional cooperative research to address these. In doing so, the APN assures that the results of this research contribute to the development of a sound scientific base for decision- and policy-making related to issues for which global change is an important factor.

As part of its dissemination activities, the present publication outlines abstracts of currently-funded activities in the APN under its Annual Regional Call for Proposals (ARCP) and its Capacity Development Programme, CAPaBLE.

The APN supports and encourages the dissemination of the information contained in this publication and specifically notes that the potential results of the present research and capacity development activities can facilitate policy development relating to Global Change in the Asia-Pacific Region.

This publication is also available on the APN website
www.apn-gcr.org

Secretariat
Asia-Pacific Network for Global Change Research (APN)

Section One:
Projects funded under the Annual Regional Call for Proposals (ARCP)

1.1 ARCP2006-01CMY-Ohtani

Project Title: Standardization and Systematization of Carbon-Budget Observation in Asia Terrestrial Ecosystem Based on AsiaFlux Framework

Project Leader: Dr. Yoshikazu Ohtani
Forestry and Forest Products
Research Institute, Matsunosato 1
Tsukuba, Ibaraki, 305-8687 JAPAN
Tel: (+81) 29-873-3211 ext. 369
Fax: (+81) 29-874-3720
Email: ohtan03@ffpri.affrc.go.jp

APN Funding: US$ 25,000
(US$ 25,000 in 2005)

Above: Participants at the AsiaFlux workshop in Chiang Mai, Thailand

Below: Young scientists being trained on methods of flux observation and analysis

Project Summary
The objectives of this project are to promote information exchange and improve the methodology in flux observation and data analysis to provide more reliable carbon budget data in Asian monsoon terrestrial ecosystems. Two AsiaFlux workshops were held: the first in August 2005 in Fujiyoshida, Japan and the second in November 2006 in Chiang Mai, Thailand. These workshops provided an excellent opportunity to exchange and share information on flux measurement and data analysis, and discuss a standardised method of flux observation. A technical manual summarising the new standard method on flux measurements was compiled to help promote the method in Asian countries. Using this manual as a textbook, the first AsiaFlux Training Course was carried out in August 2006 in Tsukuba, Japan. Furthermore, an inter-comparison of measurements was carried out by using data from different types of observation method (open- and closed-path system), and results showed a significant difference in CO_2 flux values. The results will be valuable in evaluating indexes for previously obtained data. Information gathered through this project will be useful in rebuilding an Asiaflux framework to enhance the general technical level of flux observations.

1.2 ARCP2006-02CMY-Marcotullio

Project Title: Application of the Human Ecosystems Model (HEM) to Urban Environmental Management in ASEAN

Project Leader: Dr. Peter Marcotullio
United Nations University Institute of Advanced Studies
6F, International Organizations Center
Pacifico-Yokohama, 1-1-1 Minato-Mirai
Nishiku, Yokohama
220-0012 JAPAN
Tel: (+81) 45-221-2300
Fax: (+81) 45-221-2302
Email: pjm12@columbia.edu

APN Funding: US$ 25,000 (US$ 35,000 in 2005)

Project Summary

Resolving environmental challenges experienced by cities in Asia demands new management approaches. The ecosystem approach to urban environmental management provides opportunities to uncover policy leverage points not always articulated in more traditional, sectoral engineering approaches. This project applies an integrated framework called the Human Ecosystems Model (HEM) to investigate the applicability of the ecosystem approach in relation to climate change impacts in developing cities in ASEAN. The HEM presents a way to examine the relationship between the major social, economic and biophysical elements responsible for the emergence of environmental challenges, and hence a roadmap for addressing harms and proposing effective actions that are locally appropriate. The model is used as a basis to create a capacity building tool for the application of the ecosystem approach for ASEAN urban environmental planning and projects. The expected outputs of this project include a capacity building tool for training city managers to use the HEM, guidelines on the basic principles of the HEM and how to identify policies through its application, and research papers on water challenges in ASEAN.

Below: Breakout groups reviewing the application of HEM on water-related challenges in ASEAN cities

1.3 ARCP2006-03CMY-Mitra

Project Title: Assessment of the Effect of High Particulate Pollutants on Pulmonary Health Status in Selected Mega-cities of South Asia

Project Leader: Dr. A.P. Mitra
National Physical Laboratory
Dr. K.S. Krishnan Road, New Delhi
110014 INDIA
Tel: (+91) 11-2574-5298
Fax: (+91) 11-2572-6938
Email: apmitra@mail.nplindia.ernet.in

APN Funding: US$ 67,000 (US$ 58,500 in 2005)

Sampling of particulate matter and fine particulate matter in Delhi using High Volume Sampler (*above*) and Quartz Crystal Microbalance (*below*), respectively

Project Summary

This project aims to investigate the impacts of high particulate matter on human respiratory health in selected mega-cities of South Asia where the particulate matter loading, in general, in ambient air is very high due to various anthropogenic activities. The urban air pollution impacts on human health have assumed significant importance in the South Asia region but available studies are few. Through this project, studies are carried out in selected mega-cities of South Asia, viz. Colombo, Delhi, Dhaka, Kathmandu, Kolkata and Lahore, by multi-disciplinary teams consisting of health and aerosol experts. The project teams developed common protocols for air quality sampling and health surveys both for acute and chronic symptoms. Guided by this protocol, air quality data was collected and analysed covering low, medium and high pollution periods in the target mega-cities, and a field surveys of the health status of target populations were carried out. Lung function tests of the selected survey population were also performed using spirometry and/or peak flow meters. Currently, the results are being synthesised and a science-policy workshop will be organised to disseminate the findings of the project.

1.4 ARCP2006-04CMY-Rajan

Project Title: Agriculture Land Use Policy in East and South Asia – Rapidly Changing Landscapes and Its Impacts on Regional Food Security and Its Future Scenario

Project Leader: Dr. K.S. Rajan
Associate Professor
International Institute of Information Technology
Gachibowli, Hyderabad
500019 INDIA
Tel: (+91) 40-2300-1967
Fax: (+91) 40-2300-1413
Email: rajan@iiit.net

APN Funding: US$ 22,500 (US$ 30,000 in 2005)

Project Summary

Agricultural land use changes have been quite dramatic in the last four decades, since the start of the green revolution, leading to intensive use of the land for food production. In South and East Asia, this growth has come from irrigated fields (multiple cropping), increased inputs and government policies. However, there are widespread disparities in productivity, environmental conditions and economic outputs across the region. Also, rapid economic development and demographic changes are resulting in accelerated land-use changes (structure and pattern) in this region, leading to large impacts on the environment, such as soil degradation. Potentially, good policies backed with good models are a major tool for sustained progress. The project focuses on understanding land use characteristics in the region and applies the AGENT-LUC land use model to develop a regional model that is able to take into account both meso- and micro-characteristics and help provide a tool for a more balanced policy to improve the food security in the region. The project is currently in its second year, and the following activities are being conducted: improving the interface of the model, model runs and modifications, model sensitivity checks and food security analysis. An International Symposium on Land Use Modelling is also planned in March 2007, in Hyderabad, India.

1.5 ARCP2006-05CMY-Akimoto

Project Title: Asian Ozone Pollution in Eurasian Perspective

Project Leader: Dr. Hajime Akimoto
Japan Agency for Marine-Earth Science and Technology
3173-25 Showa-machi, Kanazawu-ka, Yokohama
236-0001 JAPAN
Tel: (+81) 45-778-5710
Fax: (+81) 45-778-5496
Email: akimoto@jamstec.go.jp

APN Funding: US$ 37,000
(US$ 40,000 in 2005)

Above: APN participants and hosting staffs in front of the Bose Institute, Darjeeling, India

Project Summary

This project synthesises surface ozone data in Asia in collaboration with existing networks and compiles the data from selected years in a database for the discussion of regional ozone pollution. The data will be analysed with the aid of global and regional chemical transport modelling to provide a solid scientific base for future ozone control policies in Asia including both developed and developing countries in the northern hemisphere. These goals will be accomplished through three workshops: the first on the presentation of observational data from each participating country, the second on the interpretation and discussion of the data together with modelling studies, and the third on integrating the obtained scientific knowledge on ozone pollution in Asia into policy. The first and second workshops were completed with the latter held in New Delhi, India on 30 October 2006. This event, entitled 2nd Symposium on Asian Ozone Pollution in European Perspective, brought together more than 50 participants including 10 students. Audits to three observation stations at Mt. Abu and Darjeeling in India and Tanah Rata, Malaysia were performed, and these were very fruitful in identifying and solving some problems at the stations. Two publications on modelling of regional high ozone episodes and analysis of the seasonal variation of ozone were also published in the *Atmospheric Environment* journal to disseminate the results of the project.

Publications:

Wang, Z. *et al.* (2006). Modeling of regional high ozone episode observed at two mountain sites (Mt. Tai and Huang) in East Asia. *Atmos. Environ., 55 (3),* 253-272.

Yamaji, K. *et al.* (2006). Analysis of the seasonal variation of ozone in the boundary layer in East Asia using the Community Multi-scale Air Quality Model: What controls surface ozone levels over Japan? *Atmos. Environ., 40/10,* 1856-1868.

1.6 ARCP2006-06NMY-Ziegler

Project Title: Sediment Dynamics and Down-Stream Linkages in Tropical Streams as Affected by Projected Land-Cover/Land-Use and Climatic Change

Project Leader: Dr. Alan Ziegler
University of Hawaii, 2424 Maile Way
445 Saunders Hall, Honolulu, Hawaii, 96822 USA
Tel: (+1) 808-956-3524
Fax: (+1) 808-956-3512
Email: adz@hawaii.edu

APN Funding: US$ 40,000 (Year 2 expected funding: US$ 40,000)

Project Summary

The proposed research increases the understanding of how water quality in headwater streams in Montane Mainland Southeast Asia will be affected by plausible changes in both climate and land-cover/land-use. The goals of the project are two-fold: 1) to investigate the issue successfully during a field study in Thailand; and 2) to develop the capacity to conduct similar projects in China, India and Viet Nam. The Thailand field study, with the Mae Sa River Basin as the study site, will coordinate with an on-going NASA-funded investigation of the role of land-cover change in altering regional hydrological processes under a changing climate. Using the sediment dynamics and down-stream linkage data to be collected, it will attempt to distinguish the degree that various types of anthropogenic change will affect erosion, sediment delivery and water quality. The project will generate new data regarding the potential effects of climate change, which is important for developing sound mitigation strategies, as well as determining non-linear vulnerabilities of natural and human systems. The knowledge generated will be transferred to officials who make policy related to sustainability in the region. Sampling was already conducted during the 4 wet-season and 2 dry-season months at the Mae Sa River Basin. Some delays have occurred owing to the destruction of monitoring equipment during flashflood events in 2006, but these problems will be resolved in early 2007. Potential project sites in China and India have already been found for the implementation of the sediment dynamics study.

1.7 ARCP2006-07NMY-Koike

Project Title: The International Integrated Data Access and Transfer in Asia (IIDATA) Project

Project Leader: Prof. Toshio Koike
Department of Civil Engineering
The University of Tokyo
7-3-1 Hongo, Bunkyo-ku
Tokyo 113-8656 JAPAN
Tel: (+81) 3-5841-6106
Fax: (+81) 3-5841-6130
Email: tkoike@hydra.t.u-tokyo.ac.jp

APN Funding: US$ 43,000 (Year 2 expected funding: US$ 43,000)

Project Summary

This project focuses on the Asian water cycle variability within the context of a global climate and the impact of this variability on water resources. It aims to 1) improve knowledge and enhance prediction of the Asian water cycle variation and its impacts on water resources through integrated observation systems and advanced data management and processing capabilities, and 2) support informed decisions on water resources management and promote integrated water resources management (IWRM) strategies. An International Task Team (IIT) was formed to discuss the data policies and to outline the implementation strategy. It was proposed to have demonstration projects (DP) that would show the value of the global integrated data sets for advancing research into the water cycle and for implementing IWRM strategies through the actual application of the available data to selected basins in participating countries. These DPs were introduced at the 2nd Asian Water Cycle Symposium held in Tokyo, Japan on 9-10 January 2007. The baseline of the Asian Water Cycle Initiative implementation plan and the data policy were also discussed, modified and endorsed by the participants at the symposium.

Above: 2nd Asian Water Cycle Symposium participants

1.8 ARCP2006-08NMY-Nadaoka

Project Title: Integrating Support System for Managing Environmental Change and Human Impact on Tropical Coastal Ecosystems in East Asia and the Pacific

Project Leader: Prof. Kazuo Nadaoka
Tokyo Institute of Technology
2-12-1 O-okayama, Meguro-ku, Tokyo
152-8552 JAPAN
Tel: (+81) 3-5734-2589
Fax: (+81) 3-5734-2650
Email: nadaoka@mei.titech.ac.jp

APN Funding: US$ 56,500
(over two years)

Above: Professors Zann and Nadaoka discussing with participants the system's approach to research and management in Fiji's coral reefs

Project Summary

Coastal zones in East Asia and the Pacific (mostly archipelagic or small island countries) are extremely vulnerable to disturbances associated with natural climate variability coupled with anthropogenic forcing. Increased environmental loads from adjacent watersheds are of particular concern because of their deleterious effects on coastal habitats. However, information and corresponding analysis tools crucial for management and decision-making are still far from ideal, and the numerous research and monitoring programs involved in data acquisition mostly target marine, coastal, or terrestrial environments and communities or any combination, but rarely encompass all. This project aims to strengthen present and future coastal observational (in-situ and space-based) and modelling capabilities and decision-making process by developing a region-wide, collaborative strategy for data exchange and analysis among coastal scientists and managers. It envisions the production of user-friendly tools capable of hind-casting development patterns and for building scenarios to explore various management options. Project activities have commenced covering both the physical-chemical-biological and the socio-economic aspects of the coastal environment, and a workshop was conducted in Fiji to discuss standardised methods on data processing.

1.9 ARCP2006-09NMY-David

Project Title: Integrating Vulnerability Assessment of Coastal Areas in the Southeast Asian and East Asian Region

Project Leader: Dr. Laura David
Marine Science Institute
University of the Philippines
Velasquez St., UP Diliman, Quezon City
1101 PHILIPPINES
Tel: (+63) 2-922-3962
Fax: (+63) 2-924-7678
Email: ldavid@upmsi.ph; ltd_pawikan@yahoo.com

APN Funding: US$ 80,000 (over three years)

Project Summary

Despite the increasing amount of scientific research on global environmental change (GEC) and its potential impacts on coastal areas, there are still considerable gaps in our knowledge on how multiple biogeographical and anthropogenic processes interact to create risk. A regional collaborative effort is proposed to address this problem focusing on the risk potential in coastal areas in the Southeast Asian and East Asian regions. The influence of the complex and dynamic social, economic and environmental factors in these regions on the vulnerability of coastal communities to GEC including natural hazards need to be comprehensively assessed. The assessment should also include the ability of those affected to cope, recover and adapt to such changes and shocks. The goal of this project is to achieve an integrated analysis of these processes, their effects on human communities, and their implications for management and governance of coastal systems and adaptation capacities. The approach is to focus on training workshops which will expose the regional participants to available tools for assessment and bring together secondary and primary data obtained by scientists from collaborating countries. Further refinement of tools will be done as identified necessary. The guiding principle of the whole endeavour is to effectively influence policy- and decision-makers in the selection of strategic and sustainable adaptive measures to reduce the future impacts of GEC.

1.10 ARCP2006-10NMY-Lasco

Project Title: Linking Climate Change Adaptation to Sustainable Development in Southeast Asia

Project Leader: Dr. Rodel Lasco
Philippine Programme Coordinator
World Agroforestry Centre (ICRAF)
2F CFNR, University of the Philippines
College, Laguna
4031 PHILIPPINES
Tel: (+63) 49-536-2925
Fax: (+63) 49-536-4521
Email: r.lasco@cgiar.org

APN Funding: US$ 35,000 (over two years)

Project Summary
Many countries in Asia are striving to achieve sustainable development, with almost 2 billion people living at less than US$ 2 a day (ADB 2005). One of the factors that could hinder sustainable development efforts is climate change. However, the link between climate change adaptation and sustainable development is not explicitly recognized for a number of reasons. In many cases, the climate change community has little interaction with national development planners. As a result, mainstreaming of climate change adaptation in development efforts is making little headway. This study aims to help clarify the links between climate change adaptation and sustainable development. It will synthesise research on adaptation strategies for climate change and climate variability in Southeast Asian countries and analyse the links of these adaptation strategies to the sustainable development goals of the respective countries. By engaging the policy-maker community and other relevant stakeholders, the project hopes to contribute to the mainstreaming of climate change adaptation to the sustainable development agenda of Southeast Asian countries. Initial coordination with the collaborating countries is being undertaken by ICRAF-Philippines through setting up a project e-group.

1.11 ARCP2006-12NMY-Huda

Project Title: Climate and Crop Disease Risk Management: An International Initiative in the Asia-Pacific Region

Project Leader: Assoc. Prof. Samsul Huda
University of Western Sydney
Hawkesbury Campus, Locked Bag 1797
Penrith South DC, NSW 1797, AUSTRALIA
Tel: (+61) 245-70-1390
Fax: (+61) 245-70-1750
Email: s.huda@uws.edu.au

APN Funding: US$ 35,000
(Year 2 expected funding: US$ 35,000)

Above: Participants at the project's scoping workshop in Hyderabad, India

Project Summary
The project aims to secure regional integration of existing research in the areas of climate, crop, disease epidemiology, and food security through the development of predictive modelling capabilities for proactive risk management. The value of the approach is demonstrated via concurrent application to three index crops (peanut, canola and mustard) in selected areas, and the development of risk communication through engagement with local stakeholders. A range of eminent scientists are providing the required scientific and policy-analytical linkage. The project will develop environmentally friendly management strategies, including limited pesticide usage, thereby increasing sustainability while contributing to strategic food production. A scoping/planning workshop was held in Hyderabad, India, on 6-8 November 2006 to discuss major research interests, investigate opportunities for integrating existing work and future efforts to meet a common goal, and explore common ground between existing modelling for a range of relevant parameters. Potential models and the necessary modifications for successful model application were identified during the workshop. Following the workshop, the participants had an enhanced understanding of the relationships between weather/climate, disease incidence, and reduction in crop yield on a regional level.

1.12 ARCP2006-13NMY-Oanh

Project Title: Investigation on the Impacts of Urban-Rural Air Pollution on Air Quality and Climate in Southeast Asia

Project Leader: Dr. Nguyen Thi Kim Oanh
Environmental Engineering and Management
School of Environment, Resource and Development
Asian Institute of Technology
Pathumthani 12120
THAILAND
Tel: (+66) 2-524-5641
Fax: (+66) 2-524-5625
Email: kimoanh@ait.ac.th

APN Funding: US$ 30,000 (Year 2 expected funding: US$ 30,000)

Project Summary

This research project is designed to characterise and evaluate the air pollution levels in selected countries in Southeast Asia with focus on particles and key gaseous pollutants. Two metropolitan regions are included, namely, Bangkok Metropolitan Region of Thailand and the Hanoi Metropolitan Region of Viet Nam. The goal of this study is to initiate measurements of the climate change-relevant properties of particles in the ambient air in the selected cities which can be further expanded to other countries in Asia. The data generated will be used to characterise the interaction between emission sources, air quality and climate in the region. Modelling tool will be used to identify major contributing sources of air pollution so that appropriate recommendations can be made to prioritise sources for control. The obtained information will be disseminated to public, scientific community and policy-makers through seminars, workshops and direct communication. The project started its sampling activities in Hanoi in January 2007, and preparation is on-going for online measurements in Bangkok.

Above: Particulate matter monitoring in Thuong Dinh, Hanoi, Viet Nam

1.13 ARCP2006-14NSY-Chen

Project Title: Workshop on "Global Water System Hotspots in the Asian Region: Mega Cities and Dams" – 2nd GWSP-Asia Network Meeting

Project Leader: Prof. Jianyao Chen
Sun Yat-sen University (Zhongshan University)
135 West Xing Gang Road, Guangzhou
510275 P.R. CHINA
Tel: (+86) 20-8411-5930
Fax: (+86) 20-8411-4575
Email:
chenjyao@mail.sysu.edu.cn;
chenjianyao@hotmail.com

APN Funding: US$ 24,000

Above: Participants of the 2nd GWSP-Asia Network Meeting

Project Summary

The workshop on "Global Water System Hotspots in the Asian Region: Mega Cities and Dams" was organised by the School of Geography and Planning, Sun Yat-sen University (SYSU) and the International Project Office of the Global Water System Project (GWSP), and took place on 8-11 June 2006, in Guangzhou, China. The workshop was the follow-up of the 1st GWSP-Asia meeting held in Kyoto, Japan in 2005. The objectives of the meeting were to summarise the existing state of knowledge on current cumulative impacts of mega cities and that of dams in Asia and to set and launch a research agenda for mega cities and dams in Asia in the context of the global water system. About 40 participants from 12 countries attended the workshop. The workshop was made up of sessions for presentation and discussion, a discussion of follow-up activities, and an excursion. In addition to APN funding, the workshop was co-sponsored by the Chinese National Committee for GWSP, the Monsoon Asia Integrated Regional Study (MAIRS), the Research Institute for Humanity and Nature (RIHN), and the Land-Ocean Integration in the Coastal Zone (LOICZ). The main goals are considered well-achieved by the presentations, papers and databases introduced during the workshop.

1.14 ARCP2006-15NMY-DeCosta

Project Title: Assessment and Management of Change in Coastal Zone Caused by Salinity Intrusion

Project Leader: Dr. Gregory De Costa
Department of Engineering and Construction
Open Polytechnic of New Zealand
86, Wyndrum Ave., Lower Hutt, Wellington
NEW ZEALAND
Tel: (+64) 4-913-5490
Fax: (+64) 4-913-5948
Email: gregory.decosta@openpolytechnic.ac.nz

APN Funding: US$ 44,000 (Year 2 expected funding: US$ 26,000)

Project Summary

Unmanaged extraction of ground water coupled with global warming, sea level rise, and tsunami after-effects have resulted in continuous change within fresh water bodies in coastal zones. Changes in water bodies directly relate to changes in catchments characteristics, which also interact with socio-economic changes. This research investigates changes in coastal zones caused by salinity intrusion, and covers both the catchments socio-economic trends and the water bodies. It will assess and predict the long term salinity intrusion situation, and then develop a simulation model that will actively link the changes in the catchments socio-economic trends to the changes in waters of adjacent coastal zones. Thereby it is envisaged to develop a model that would aid policy-makers to take optimal decisions with multiple objectives to manage the changes occurring in coastal zones including the water bodies, for causes such as global warming, post tsunami effects and planned withdrawal strategies. The following sites will be investigated: the Waiwhetu aquifer in Wellington, New Zealand; Bundaberg aquifer in Queensland, Australia; Goa and/or Andhra Pradesh in India; aquatic systems in the coastal zone of Sri Lanka; Ogawara Lake, Gono River and Izena Island in Japan; and the Indus basin in the Punjab and Sindh provinces in Pakistan.

Section Two:
Projects funded under the CAPaBLE Programme

2.1 2005-CB02-NMY-Taniguchi

Project Title: Guidelines for Environmental Education Focusing on Environmental Ethics and the Human Dimensions of Global Change

Project Leader: Prof. Fumiaki Taniguchi
Faculty of Literature, Konan University
Kobe, JAPAN
Tel: (+81) 771-23-9464
Fax: (+81) 771-23-9464
Email: fumiaki@konan-u.ac.jp

APN Funding: US$ 70,000
(over two years)

Above: Demonstration of environmental education using on-line TV net system between Japan and Thailand

Project Summary

Environmental education is considered as a major tool for sustainable development and is an interaction between the science community, policy-makers and those involved in the education sectors (primary, secondary and tertiary). This project aims to enhance the scientific educational capacity of developing countries in the Asia-Pacific region to incorporate environmental education and sustainability into their mainstream educational systems. It is directed towards making full use of participating countries' experience and knowledge of global change research; formulating guidelines for environmental education and sustainable development; and filling the existing gaps among teachers and other stakeholders involved. An international symposium, entitled "Establishing Guidelines for Environmental Education based on Environmental Ethics", was held in Kobe, Japan on 28-30 January 2006, to assist in the development and promotion of knowledge of natural science related to global change research. This was attended by 314 participants, with the aims to establish preliminary international guidelines for environmental education and establish initial partnerships in the Asia-Pacific region. A second international symposium is planned in April 2007 to be held in Malaysia. The outcomes of both symposia are expected to be used to formulate guidelines for the development of environmental education guidelines to suit the needs of countries in Asia.

2.2 2005-CB04-CMY-Koshy

Project Title: Training Institute on Climate and Extreme Events in the Pacific

Project Leader: Dr. Kanayathu Koshy
PACE-SD, The University of South Pacific
P.O. Box 1168 Suva
FIJI ISLANDS
Tel: (+679) 321-2184
Fax: (+679) 330-9176
Email: koshy_k@usp.ac.fj

APN Funding: US$ 150,000 (over three years)

Project Summary

The Kiribati Training Institute on Climate and Extreme Events (KTICEE) represented the third and final phase of a three-year training and capacity building project being undertaken jointly by the University of the South Pacific (USP), the East-West Center (EWC), and the National Institute of Water and Atmosphere (NIWA). The KTICEE was held from 21 July to 2 August 2006 in Tarawa, Kiribati, and aimed to educate participants about the impacts of climate change so that the population could anticipate problems and respond accordingly. The training provided local participants with tools to review and evaluate existing processes on climate change, and to develop and formulate informed policies and strategies to achieve changes to existing practices. The training was multi-disciplinary and therefore, it enhanced the knowledge of participants on climate change and about the challenges and requirements of four major relevant sectors in Kiribati – water, agriculture, fisheries and coasts – and of other relevant sectors such as the meteorological office, the finance ministry and the media. Through the workshop, a network was built among participants. Participants developed crosscutting strategies and as a starting point, drafted ideas for projects they could implement as long-term and short-term measures to mitigate and adapt to impacts of climate change.

Above: Participants at the training institute in Tarawa, Kiribati

2.3 2005-CB06-NMY-Ali

Project Title: Socio-economic Impact and Lessons Learning from the Management of Social Forestry Program Implemented in Bangladesh

Project Leader: Dr. Quazi Liaquat Ali
Ministry of Environment and Forests
Bldg. 6, 1311 Bangladesh Secretariat
Dhaka 1000, BANGLADESH
Tel: (+88) 02-717-0557
Fax: (+88) 02-716-9210
Email: liaquat@bangla.net

APN Funding: US$ 20,000
(over two years)

Strip plantation *(above)* and woodlot plantation *(below)* sites under Social Forestry Program in Bangladesh

Project Summary

Bangladesh is a densely populated country with scarcity of cultivable land. Therefore, marginal lands, such as road sides and slopes of roads, embankments, fallow/encroached land, and railways, have also been brought under participatory forestry for raising plantations to meet the increasing demand of the country as well as for ecological balance. Participatory forestry started in Bangladesh in 1981 which was implemented in the north and north-western part of the country covering 23 districts. Subsequently, two more participatory forestry projects were carried out, after which the government implemented a follow-up project known as extended social forestry for two years. Different approaches were employed in the social forestry program in the last three decades. This project aims to investigate and analyse these approaches and identify the best approach for providing input to policy- and decision-making for sustainable development. Field work, surveys and a literature review were conducted and following the results of the initial interviews, the gains from the program were evident in terms of securing food and improving the livelihood of families. The program also helped reduce encroachment and theft, developed a sense of ownership from among the beneficiaries, and empowered women through increased participation.

2.4 2005-CB07-NSY-Ieng

Project Title: Development of a 'Mobile Environmental Education Program' to Raise Awareness about Climate Change in Cambodia

Project Leader: Mr. Sovannora Ieng
Ministry of Environment
48 Preah Sihanouk Blvd.
Tonle Bassac, Chamkarmon
Phnom Penh, CAMBODIA
Tel: (+855) 12-879-779
Fax: (+855) 23-212-540
Email: phil@camangkor.com

APN Funding: US$ 40,000

Above: Primary schoolchildren as one of the target participants for the MEEP

Project Summary

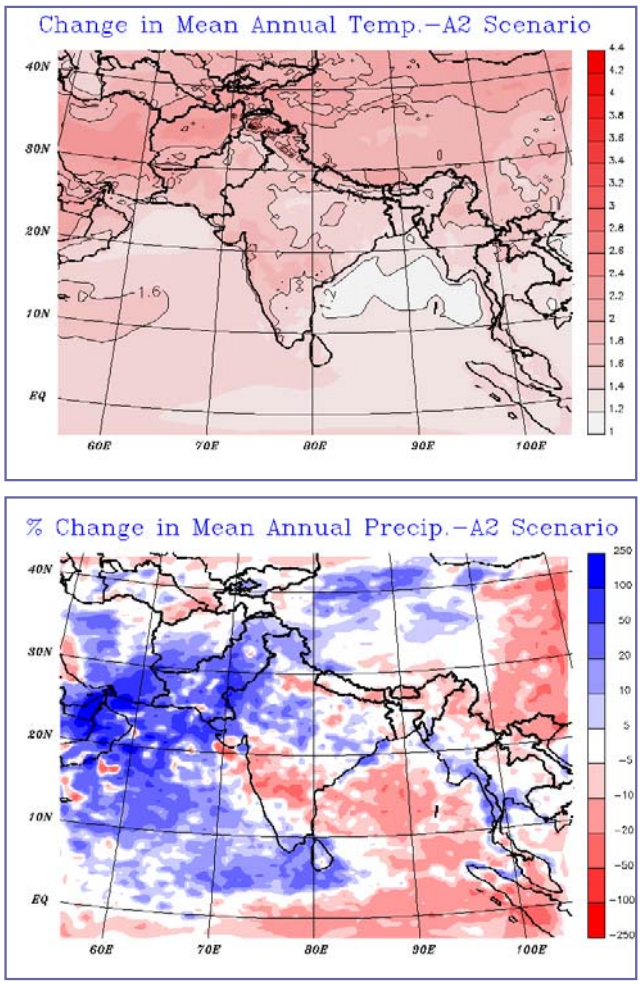
The Mobile Environmental Education Programme (MEEP) represents an innovative means to increase awareness about the causes and impacts of climate change in Cambodia. It targets groups such as policy-makers, students, Buddhist monk novices, civil servants, NGOs and tourists, who will have the greatest influence in developing and implementing Cambodia's response to climate change and environmental protection. The Tonle Sap Lake is the initial study site of the program, and a mobile education centre in the form of a purpose-built boat will be used by participants to visit communities located around the lake. Participants will experience the impacts of climate change and environmental degradation through all five senses, learn from examples of best practices in sustainable development and resource management for rural communities, and monitor the impacts of climate change by measuring and recording various indicators. It is planned that MEEP will be undertaken as a public-private partnership, and will increasingly become self-financing from participant fees. Funding under the CAPaBLE Programme is being used to develop a feasibility study and educational programme for the MEEP, making use of extensive community consultation. This study will subsequently be used as the basis for implementing an initial partnership. If successful, it is hoped that this will form the basis for similar future initiatives in Cambodia and regionally.

2.5 2005-CRP1CMY-Khan

Project Title: Enhancement of National Capacities in the Application of Simulation Models for the Assessment of Climate Change and Its Impacts on Water Resources and Food and Agricultural Production

Project Leader: Dr. Arshad Muhammad Khan
Global Change Impact Studies Centre
1F Saudi-Pak Tower, 61/A
Jinnah Avenue, P.O. Box 3022
Islamabad, PAKISTAN
Tel: (+92) 51-921-9785
Fax: (+92) 51-921-9787
Email: gcisc@comsats.net.pk

APN Funding: US$ 300,000
(over three years)



Projected changes in mean annual temperature (in °C; *above*) and precipitation (in %; *below*) in South Asia region in 2050 obtained with RegCM3.

Project Summary

This project aims to develop the technical capacity of three South Asian countries, namely Bangladesh, Nepal and Pakistan, in climate change research, particularly in the development and use of mathematical models for assessment of the impacts of global climate change and the corresponding impacts on various socio-economic sectors of the respective countries. The models will also be applied in assessing the potential vulnerabilities of each country and exploring various options for adaptation. Statistical analysis of historical data for each country has been completed and country reports are being compiled based on these results. Training workshops have been conducted on Regional Climate Models (RCMs), Crop Simulation Models (CSMs), Watershed Simulation Models (WSMs), and Climate Scenario Development (CSD). Climate change scenarios have been developed for these three countries using an ensemble of six global change models. These are being downscaled to develop high resolution scenarios for the project countries.

2.6 2005-CRP2CMY-Shukla

Project Title: Integrated Assessment Model for Developing Countries and Analysis of Mitigation Options and Sustainable Development Opportunities

Project Leader: Prof. P.R. Shukla
Indian Institute of Management
Vastrapur, Ahmedabad
380015 INDIA
Tel: (+91) 79-2632-4827
Fax: (+91) 79-2630-6896
Email: shukla@iimahd.ernet.in

APN Funding: US$ 300,000 (over three years)

Project Summary

Jointly implemented by the Indian Institute of Management, India, Energy Research Institute, China, and Asian Institute of Technology, Thailand, this project aims to develop an Integrated Model from a developing country perspective for assessment of potential climate change mitigation and options in the context of national sustainable development priorities and policies. So far, it has achieved in developing a model and databases which can facilitate analysis of strategic mitigation options for developing countries. Each partner has performed its country scenario and policy modelling in the context of national development plans and greenhouse gas mitigation. These are being disseminated through the project's website (www.e2models.com), which also displays intellectual resources related to project domain and serves as a channel for project coordination. The project outcomes are being interfaced with various international environmental assessments by the team members participating in activities such as the IPCC's Fourth Assessment Report (AR4), GEO 4, Asia-Pacific Environment Innovation Strategy (APEIS), and the Development and Climate project led by UNEP Risoe Centre on Energy, Climate and Sustainable Development, Denmark.

Above: CAPaBLE workshop participants at ERI, Beijing, 6-7 September 2006

2.7 CBA2006-01NSY-Manner

Project Title: Capacity Building and Meeting Research Needs on the Ecology of Global Change in Island Landscapes of the Republic of Palau

Project Leader: Dr. Harley Manner
Professor of Geography
University of Guam
UOG Station, Mangilao
96923 USA
Tel: (+671) 735-2874
Fax: (+671) 735-5255
Email:
hmanner@uog9.uog.edu

Above: Participants at a fieldtrip in Ngardok Lake, Palau

APN Funding: US$ 42,000

Project Summary

The Pacific-Asia-Biodiversity Transect Network (PABITRA) is a program of the Ecosystem Division in the Pacific Science Association Task Force on Biodiversity. Its aim is to collaborate with resident Pacific Islanders on biodiversity research and ecosystem conservation. Its research strategies are: to encourage comparative studies across Oceania in ecosystems that belong to the same biomes (the horizontal strategy) and to study selected island landscapes from the mountains to the ocean (the vertical strategy). This capacity building project in Palau follows on two previous PABITRA capacity building workshops held in Fiji and Samoa and aims to train Palauan students and scientists in the methods of ecological analysis so that they can conduct the necessary studies and data collection that the country will need for policy development. An Initial Synthesis Meeting was held in Koror, Palau on 7-11 August 2006. A total of 26 local participants attended the meeting, and existing information and base data were brought together and the needs for new ecological approaches were clarified. A fieldtrip was also organized to Lake Ngardok wherein participants were shown how to recognise vegetation patterns (entitation) and conducted a hands-on determination of the minimal plot size for a relevé in a seasonal swamp forest. A joint analysis workshop is planned in March 2007 for a capacity building activity on ecological biodiversity assessment.

2.8 CBA2006-02NSY-ESSP

Project Title: Maximizing Participation of Asia-Pacific Developing Country Scientists in the 2nd Young Scientists' Global Change Conference (YSC) and the Earth System Science Partnership (ESSP) Global Environmental Change Open Science Conference

Project Leaders: Prof. Roland Fuchs
International START Secretariat
2000 Florida Ave., NW
Suite 200, Washington, DC
20009 USA
Tel: (+1) 202-462-2213
Fax: (+1) 202-457-5859
Email: rfuchs@agu.org

Prof. Qin Dahe
China Meteorological Agency
46 Zhongguancun Nandajie
Beijing, 100081 P.R. CHINA
Email: cdccc@cma.gov.cn

APN Funding: US$ 75,000

Above: Plenary session during the ESSP OSC

Project Summary

The 2nd YSC took place on 5-8 November 2006 at the China Meteorological Administration (CMA) campus in Beijing, China. The conference offered a prestigious platform for young scientists from 35 countries around the world to present their research findings to one another and leading scientists in the field. It was intended, and succeeded, to stimulate competition, encourage excellence, reward outstanding performance, and foster the development of personal and institutional networks. Awards were granted for the most outstanding contributions in three categories: best paper, best poster, and best CMA young scientist poster. Meanwhile, the ESSP Open Science Conference held on 9-12 November 2006 at the Beijing International Conference Center was also a major success, with over 900 scientists, policy-makers, and journalists in attendance including all YSC participants. Highlights of the conference included an impressive variety of keynote presentations on advances in Global Environmental Change to Earth System Science and the way forward.

Above: APN-funded participant presenting his poster at the YSC

2.9 CBA2006-03NSY-Sevilla

Project Title: Integrated Participatory Analysis of Sustainability in the Greater Mekong Sub-Region (GMS)

Project Leader: Dr. Ramon Sevilla
Mekong Institute
Khon Kaen, 40002 THAILAND
Tel: (+664) 320-2411 to 2
Fax: (+664) 334-3131
Email: ramon@mekonginstitute.org

APN Funding: US$ 28,000

Project Summary

The project trains young researchers and young professionals on methods and tools for analysing issues related to global change in an integrated and participatory way. The activities include: 1) an intensive training course; 2) policy dialogue (participatory support for problem structuring and awareness raising); and 3) dissemination (transfer of scientific knowledge to the policy sector and the public). Training is being conducted by internationally renowned experts in the fields of integrated analysis, participatory research, and sustainability research. Participants will be trained to engage in global change research by applying practical, problem-oriented, and policy-relevant approaches. The issues being dealt with in the project concern aspects of global change research, including land-use and land-cover change, food and water security, and agricultural practices. There is a clear emphasis on socio-economic drivers of global change on intervention in social systems for sustainable development. Participants shall be enabled to conduct and inform on sustainability research independently and identify relevant national sustainability issues and suggest research strategies to tackle these issues. Coordination for the conduct of the training has commenced, with the announcement disseminated via different channels. Agreement with the editors of the *Review of Cooperation and Development* and *International Journal of Global Environmental Issues* on the guest editorship of a special issue on Sustainable Development in the GMS has been achieved.

2.10 CBA2006-04NMY-Dharmaji

Project Title: Removing Barriers to Capacity Building in Least Developed Countries (LDCs): Transferring Tools and Methodologies for Managing Vulnerability and Adaptation to Climate Change

Project Leaders: Dr. Bhujangarao Dharmaji
IUCN – The World Conservation Union
53, Horton Place, Colombo – 7
SRI LANKA
Tel: (+94) 11-4710-439
Fax: (+94) 11-2662-941
Email: bhujangdharmaji@yahoo.com

Dr. Channa Bambaradeniya
Regional Species
Conservation Programme
53, Horton Place
Colombo – 7, SRI LANKA
Email: cnb@iucnsl.org

Photos above: Training workshop on transferring tools and methodologies for managing vulnerability and adaptation to climate change

APN Funding: US$ 30,000
(Year 2 expected funding: US$ 30,000)

Project Summary

The project aims to translate global thinking into local actions through building scientific capacities of local governments by way of transferring technologies and methods to various stakeholders for assessing vulnerability and adaptation to the global change process at local levels. A regional workshop was organized on 18-22 December 2006 in Hyderabad, India to build capacity and train policy-makers, researchers and NGOs from Bangladesh and Nepal in understanding issues and vulnerability and adaptation to changing climatic regimes. A comprehensive background material dealing with policy and technology issues related to climate change adaptation was prepared along with an Adaptation Resource Kit that was disseminated to all participants. The regional workshop laid emphasis on community-based adaptation approaches, encouraged ground level consultations and multi-stakeholder analyses to disseminate tools and technologies for vulnerability assessments through the sub-regional consultative workshop that was organised for LDC members in South Asia (Bangladesh and Nepal).

2.11 CBA2006-05NMY-Aalbersberg

Project Title: Climate Change and Variability Implications on Biodiversity – Youth Scenario Simulations and Adaptation

Project Leader: Prof. Bill Aalbersberg
University of the South Pacific, Laucala, Suva, FIJI
Tel: (+679) 323-2964
Fax: (+679) 323-1534
Email: aalbersberg@usp.ac.fj

APN Funding: US$ 35,000
(Year 2 expected funding: US$ 35,000)

Above: Fiji youth dramatise forest habitat

Project Summary

The Pacific Islands marine and terrestrial ecosystems have some of the most significant biological diversity in the world, where there are pristine ecosystems and habitats, some of which harbor endemic species. These unique habitats are under threat from the effects of climate change and variability, e.g. modification and/or loss of marine, coastal and terrestrial ecosystems will undermine local food and economic security. Pacific Island communities depend on these for their livelihood and maintaining their traditions and culture. This project will build regional, national and local capacity in climate change and variability implications on biodiversity. It is intended to raise policy-makers' and civil society awareness as well as to pilot adaptations in its Locally Managed Marine Area (LMMA) network resource management projects as a basis for scoping climatic implications on Pacific biodiversity and attempt to provide answers. A regional climate change workshop was held on 18-22 September 2006 in Suva, Fiji with 35 young participants from the region (Tuvalu, Solomon Islands and Fiji). The workshop aimed at building the capacity of youth in climate change, sustainable development, biodiversity, risk assessment and drama as a tool to address and raise awareness on climate change issues. The young participants were able to produce 4 songs, 4 drama scripts and 2 video documentaries as outputs of the workshop. They also returned to their respective communities with eagerness to commence with the next phase of the project.

2.12 CBA2006-06NSY-Towprayoon

Project Title: Greenhouse Gas (GHG) and Aerosol Emissions under Different Vegetation and Land Use in the Mekong River Basin Sub-Region

Project Leader: Dr. Sirintornthep Towprayoon
The Joint Graduate School of Energy and Environment
King Mongkut's University of Technology Thonburi
91 Pracha Uthit Road, Bangmod
Tungkru, Bangkok
10140 THAILAND
Tel: (+66) 2-470-8309 to 10 ext. 4133
Fax: (+66) 2-872-9805
Email: sirin@jgsee.kmutt.ac.th

APN Funding: US$ 30,000

Project Summary

The mitigation of greenhouse gas and aerosol emissions from biogenic sources and biomass burning activities associated to different vegetation land use requires transfer of know-how to regional scientists to perform measurements and to establish appropriate emission inventories. This research focuses on measurement and evaluation of GHG and aerosols emissions from biogenic sources (paddy fields and forest) and biomass burning (rice residues), respectively, in selected sites in Thailand and in Cambodia. The calculation methodology for the estimation of GHG and aerosol emissions from biogenic sources and biomass burning activities, and the data required to perform these calculations have been retrieved from the literature. GIS maps of vegetation land use including forests and rice fields, and maps of vegetation forest hotspots have been collected for all countries of the River Mekong Basin Sub-region. Experimental procedures have also been set up for these activities. A training workshop for capacity building of the scientists and for disseminating scientific information to policy-makers in the region will be organized in March 2007.

Above: Setting up of field experimental procedures in paddy fields for measuring emissions from biogenic sources

2.13 CBA2006-07NSY-Lebel / AOA2006-01NSY-IHDP

Project Title: Institutional Dimensions of Global Environmental Change: Water, Trade and Environment

Project Leader: Dr. Louis Lebel
Unit for Social and Environmental Research (USER)
Faculty of Social Science
Chiang Mai University
Chiang Mai, 50200 THAILAND
Tel: (+66) 53-265-103
Fax: (+66) 53-265-103
Email: louis@sea-user.org

APN Funding: US$ 60,000

Above: IHDW participants at a field trip in one of the mountain watersheds in Chiang Mai

Project Summary

The 5th APN/IHDP biennial International Human Dimensions Workshop (IHDW), with the theme "Water, Trade and Environment – the Institutional Dimensions of Global Environmental Change", took place on 13-26 October 2006, in Chiang Mai, Thailand. It is IHDP's flagship activity in the field of capacity building targeting young scientists mainly from developing countries. Its primary goal was to strengthen the analytical skills of participants in institutional and political analysis. The IHDW was done in partnership with APN, which given its physical location in Asia and strong involvement of Asian-Pacific participants, trainers and case studies, was huge benefit to the workshop. The two main components of the workshop were plenary sessions and working groups. The main focus of attention was "institutional analysis", complemented by discourse analysis, rights based approaches as well as scenario building and negotiation games. In addition a "participants' seminar series" took place, in order to develop individual or group-based research proposals. The "trainer's table" was another component as well as 4 field trips to water-related sites in and around Chiang Mai. Finally, several side-talks and meetings took place throughout the workshop. The final half-day long session was organised by the participants themselves which presented both the outcomes of the 2 weeks work and comprised participants' evaluation. A special segment was Science-Practice Dialogue.

2.14 CBA2006-08NSY-Salinger

Project Title: International Workshop on Coping with Agrometeorological Risks and Uncertainties: Challenges and Opportunities, New Delhi, India, 25-27 October 2006

Project Leader: Dr. M.J. Salinger
NIWA, P.O. Box 109 695
New Market, Auckland
NEW ZEALAND
Tel: (+64) 9-375-2053
Fax: (+64) 9-375-2051
Email: j.salinger@niwa.co.nz

APN Funding: US$ 20,000

Project Summary

The workshop brought together 188 participants from 78 countries with leading experts who presented 27 state-of-the-art discussion papers to address coping with agrometeorological risk and uncertainties and then developing strategies to cope with these risks. In many parts of the world, climate change and extreme climatic events wind one of the biggest production risk and uncertainty factors impacting on agricultural systems performance and management. One of the most important coping strategies is improved use of climate knowledge and technology, which includes the development of monitoring and response mechanisms to current weather and future climate change. This CAPaBLE project provided scientists from 11 APN emerging and developing countries opportunity to interact with experts from different regions. Capacity building in the area of coping strategies for weather and climate risks contributes to sustainable agricultural development, especially in the Asia-Pacific region. The proceedings will be published as a special issue of *Agricultural and Forest Meteorology Journal* during 2007.

Above: Participants at the International Workshop on Agrometeorological Risk Management

2.15 CBA2006-09NSY-Raha

Project Title: Scoping Workshop on South Asia Rapid Assessment Project's (SARAP) Results for Designing Future Research Agenda and Capacity Building Requirements

Project Leader: Prof. Sibaji Raha
Centre for Astroparticle Physics & Space Science
Bose Institute, 93/1 A.P.C. Road
Kolkata 700 009, INDIA
Tel: (+91) 33-2350-2402
Fax: (+91) 33-2350-6790
Email: sibaji@bosemain.boseinst.ac.in

APN Funding: US$ 20,000

Project Summary

The APN-sponsored Scoping Workshop on South Asia's Rapid Assessment Project (SARAP) took place in Darjeeling, India on 9-11 October 2006. SARAP, under the Monsoon Asia Integrated Regional Study (MAIRS), synthesises global change-related research in South Asia, which include all the components of physical and human dimensions of change in the Earth system (viz. climate, ecosystem, atmosphere, resources and sustainable development). The salient features of each chapter of the SARAP book volume were presented and discussions for further refinement were made. In addition, key issues emerging out of the SARAP program were discussed in the workshop and areas for capacity building were identified. In conclusion, the workshop participants adopted the recommended priority research themes for South Asia, viz. Himalaya and the Indo-Gangetic Plain, coastal zones, and monsoon stability. The workshop was elaborately covered by the local newspaper and raised awareness among local stakeholders on key issues related to global change in South Asian perspectives.

Study on fickle weather

THE TELEGRAPH 11 OCT 2006

OUR CORRESPONDENT

Darjeeling, Oct. 10: Scientists from across Asia have decided to come together to study the instability of the monsoon and its consequences on the global climatic system along with its socio-economic impact in the region.

A workshop, which started on October 8 and will continue till tomorrow, is being held at Cedar Inn here where the scientists are chalking out the final draft.

The researchers, working under a newly formed Monsoon Asia Integrated Regional Study (MAIRS), which is headquartered in Beijing, has decided to divide the research areas into three zones — South Asia, South East Asia and East Asia (China) — to come up with a comprehensive data base.

The final compilation of the findings are expected to be completed within a year and the experts from across the continent are expected to throw light on issues like whether the Asian monsoon system is still resilient to human activities.

The team of 30 scientists from Nepal, India, Bangladesh, Pakistan and other neighbouring countries are currently making the final draft of the findings of researchers from South Asia.

Mitra, the former director-general of Council for Scientific and Industrial Research, and a member of MAIRS, said the findings so far have indicated that the extent of global warming in the mountainous region was much higher than in other areas. But he added that the facts were only indicative for the moment.

"For over 100 years, monsoon has remained stable with a particular range, but there are indications as well that it may not remain so," Mitra said.

Members of the MAIRS has identified four focal areas namely, the coastal region, mountainous region, semi arid zones and urban areas, for its study and Darjeeling is expected to feature prominently as part of one of the centres.

Efforts are also on to the turn the unit of Bose Institute in Darjeeling into a venue for annual training programme on measurements for scientists. The centre, along with IIT, Kharagpur, is also likely to be a centre for study of atmospheric brown clouds, which might be affecting climatic changes, an official said.

Scientists at the workshop. Picture by Suman Tamang

Above: APN-sponsored SARAP Scoping Workshop in the local news

2.16 CBA2006-10NSY-Sari

Project Title: Institutional Dimensions of Global Environmental Change (IDGEC) Synthesis Conference: Institutions for Sustainable Development in the Face of Global Environmental Change: Questioning – Explaining – Demystifying (QED)

Project Leader: Dr. Agus Sari
Pelangi – Ecosecurities
Jalan Pangeran Antasari 10
Jakarta 12150
INDONESIA
Tel: (+62) 21-7280-1172
Fax: (+62) 21-7280-1174
Email: agus.sari@ecosecurities.com

APN Funding: US$ 20,000

Project Summary

Our understanding of the role of institutions both as drivers of environmental change and as a response to such change has matured substantially over the past ten years. From stand-alone entities to institutional complexes featuring interactions, institutions are now viewed as governance systems in a highly dynamic socio-ecological environment where change may be abrupt, nasty and irreversible. The IDGEC Synthesis Conference aimed to: 1) harvest the results of 10 years of research on the role of institutions in the human/environment interface; 2) explore the policy relevance of these findings; and 3) identify gaps and emerging questions for new research in this field. It was held successfully in Bali, Indonesia, on 6-9 December 2006, with 135 participants from 35 countries and roughly a third of which from the Asia-Pacific region. The conference exhibited a very high level of scholarship. The structure of the conference worked well to distill major research findings and explore their policy relevance. A highly diverse group of participants ensured lively debate and momentum for the next phase of research on institutions and environmental change.

Above: IDGEC Synthesis Conference plenary session

2.17 CBA2006-11NSY-Dai

Project Title: Strengthening Scientific Capacity in the Surface Ocean Lower Atmosphere Study (SOLAS): The 2007 SOLAS Open Science Meeting in Xiamen, China

Project Leader: Prof. Minhan Dai
State Key Laboratory of Marine Environmental Science
Xiamen University, Xiamen
361005 P.R. CHINA
Tel: (+86) 592-218-2132
Fax: (+86) 592-218-0655
Email: mdai@xmu.edu.cn

APN Funding: US$ 20,000

Project Summary

The Surface Ocean Lower Atmosphere Study (SOLAS) is a core project of the International Geosphere-Biosphere Programme (IGBP). SOLAS research strives to resolve the biogeochemical interactions between the air and sea, and the investigation of changes to air-sea interaction is one of the fundamental keys to understanding future global climate. The 2007 SOLAS Open Science Meeting in Xiamen, China aims to bring scientists from around the globe into a forum where networking, regional cooperation, and scientific collaboration will be fostered. As the meeting will take place with an APN nation, it is of particular importance to provide opportunities for APN-region scientists to participate. An announcement of solicitation of applications for conference participation was made to the SOLAS network, and about 30 legitimate applications were received by the SOLAS International Project Office. All applications were vetted by a subset of the SOLAS OSM Scientific Organizing Committee, and nineteen awards have been made. Awards have been provided to applicants from India (5), Thailand (1), Bangladesh (1), Indonesia (1), China (6), Republic of Korea (2), Japan (2), and the USA (1).

2.18 CRP2006-01NMY-Dixit

Project Title: Improving Policy Responses to Interactions between Global Environmental Change and Food Security across the Indo-Gangetic Plain (IGP)

Project Leader: Mr. Ajaya Dixit
Nepal Water Conservation Foundation
Post Box 2221, Patan Dhoka, Lalitpur
NEPAL
Tel: (+977) 1-552-811, 554-2354
Fax: (+977) 1-552-4816
Email: nwcf@wlink.com.np

APN Funding: US$ 60,000 (US$ 180,000 over three years)

Project Summary

Floods and droughts are recurrent phenomena on the Ganga Basin, which affects food security as well as other means of livelihood. There is growing concern among national policy-makers in the IGP that global environmental change (GEC) will seriously affect the production and equitable provision of food in the region, and undermine efforts aimed at socio-economic development. Principal concerns related to policy formulation in response to changes in the availability, quality and distribution of surface and ground waters, and changes in climate variability and mean values. The improved management of water resources is therefore a central aspect to all these policy goals, especially in the context of GEC. The project is expected to address the question on how will GEC affect water availability, and what will the consequences of these changes be for food systems in five case study districts across the IGP. Nepal Water Conservation Foundation is leading the study and has been providing overall project coordination and all the backstopping support for the project. A collaborative network of five research institutes in four member countries spanning the IGP Plain has been carrying out the project.

2.19 CRP2006-02NMY-Yan

Project Title: Integrated Model Development for Water and Food Security Assessments and Analysis of the Potential of Mitigation Options and Sustainable Development Opportunities in Temperate Northeast Asia

Project Leader: Prof. Xiaodong Yan
START Regional Centre for Temperate East Asia
Institute of Atmospheric Physics
Chinese Academy of Sciences
Deshengmenwai, Qijiahuozi, Beijing
100029 P.R. CHINA
Tel: (+86) 10-6238-3015
Fax: (+86) 10-6204-5230
Email: yxd@tea.ac.cn

APN Funding: US$ 60,000 (US$ 180,000 over three years)

Above: Participants at workshop on integrated model development

Project Summary

Water scarcity and land degradation have put the local sustainable agriculture development in great danger in the north China, Mongolia and Russia Far East region, due to climate change and intensified human activities, seriously threatening regional water and food security. This project focuses on the development of an integrated water and food security assessment model which will contribute effectively to water and food security assessments, and therefore explore the potential of mitigation options and sustainable development opportunities in this region. The project held its first workshop in Beijing on 13-15 November 2006. This was attended by 20 experts from China, Mongolia, Russia, New Zealand and England, and discussions were made on the project planning and implementation, detailed research method, as well as future collaboration. Major model components have been reviewed and validated, such as the SimCLIM, DSSAT crop model, and two hydrological models – DHVSM and SWAT. The CAPSiM model will be used as the main structure of the food security social economic model. Model coding and testing work are on-going.

2.20 CRP2006-03NMY-Jintrawet

Project Title: Climate Change in Southeast Asia and An Assessment on the Impacts, Vulnerability and Adaptation on Rice Production and Water Resources

Project Leader: Dr. Attachai Jintrawet
Multiple Cropping Centre, Faculty of Agriculture
Chiang Mai University, Chiang Mai
50200 THAILAND
Tel: (+66) 53-221275
Fax: (+66) 53-210000
Email: attachai@chiangmai.ac.th

APN Funding: US$ 60,000 (US$ 180,000 over three years)

Project Summary

This 3-year project aims to enhance the research capacity of scientists in Southeast Asia in the study of climate change, impact, vulnerability and adaptation. It will investigate how long term climate change may have impacts on crop production and water resources in the region and also the vulnerability and adaptation of these systems. A regional climate model will be used to generate high resolution future climate conditions in the Southeast Asia region. The analysis on the impacts of climate change on rice production will cover field experiments to observe rice productivity under different crop seasons as well as different crop treatments in order to monitor the impacts of climate on crop productivity, which will use rice cultivation as a case study, as well as soil fertility. The data gathered from field experiments will be used to adjust and calibrate the rice crop simulation model for the simulation of rice productivity under future climate conditions. In addition, this research project also covers the study of climate change impacts on water resources by analysing change in the hydrological regime in selected watersheds under different climate scenarios.

Above: Seedbed preparation for the field experimental set-up on rice productivity

2.21 CBA2006-12CMY-Boer

Project Title: Increasing Adaptive Capacity of Farmers to Extreme Climate Events and Climate Variability through Enhancement of Policy-Science-Community Networking

Project Leader: Dr. Rizaldi Boer
Bogor Agricultural University
Kampus IPB Darmaga
INDONESIA
Tel: (+62) 251-623850
Fax: (+62) 251-623850
Email: rizaldiboer@gmail.com

APN Funding: US$ 30,000
(US$ 45,000 in 2005; Year 3 expected funding: US$ 20,000)

Project Summary

The purpose of this project is to increase understanding and develop the capacity of local scientists on climate information application and enhance their working relationship with policy-makers in assisting farmers to address climate-related problems. It has successfully established research nodes in five regions in Indonesia and delivered training for scientists on the research methodology for climate risk management in the agriculture sector and on the use of climate prediction tools developed by the International Research Institute for Climate and Society (IRI). Scientists from the regions have been exposed to scientific discussion with international leading experts from the University of Stanford, Asia-Pacific Economic Cooperation (APEC) and IRI working in the area of climate forecasting and its applications. They have used the tools and methodologies delivered in the training for identifying climate related problems and potential application of climate forecasting information in managing these problems through a Participatory Rural Appraisal (PRA) survey. Local workshops have also been completed to enhance the connection between the APN CAPaBLE activities and local government programs.

Above: Scientific discussion with experts from the University of Stanford

UPDATED PROJECT LEADER CONTACT INFORMATION

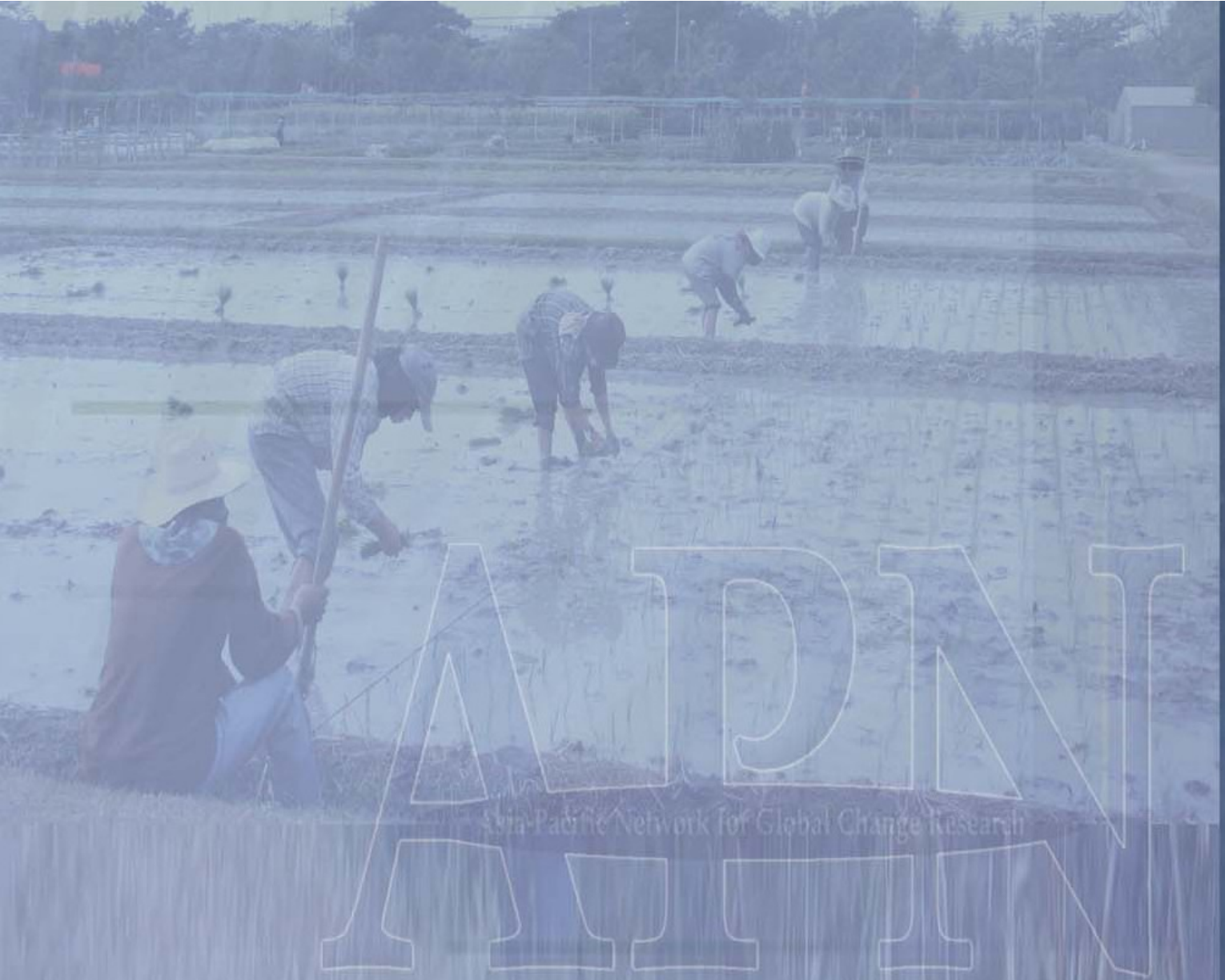
Should the contact information of any of the Project Leaders listed in this publication have changed, please kindly fill out the form below and return it by fax or email to:

The APN Secretariat
5th Floor, IHD Centre Building
1-5-1 Wakinohama Kaigan Dori
Chuo-ku, Kobe 651-0073
JAPAN
Tel: (+81) 078-230-8017
Fax: (+81) 078-230-8018
Email: info@apn-gcr.org

Contact Details	
Full Name (write LAST NAME in CAPS)	*Title* (select as appropriate) ☐Dr. ☐Prof. ☐Mr. ☐Mrs. ☐ Ms. ☐Other _____
Qualifications/Specialty	
Specific areas of interest relating to Global Environmental Change	
Name of Organisation	*Designation/Position*
Type of Organisation: ☐Government Agencies ☐Educational Institutions ☐NGOs/NPOs ☐Private Foundations ☐Professional Societies ☐Others	
Business Address	*Postal Code* *Country* (in CAPS)
Telephone	*Facsimile*
Email	*Website*

This form may also be downloaded from this link:
http://www.apn-gcr.org/en/downloads/blankform_apndirectory.pdf

Photo on back and front covers:
Preparation of seedbed for field experimentation on rice productivity from APN CAPaBLE CRP project CRP2006-03NMY-Jintrawet.



The APN Secretariat
5th Floor, IHD Centre Building
1-5-1 Wakinohama Kaigan Dori
Chuo-ku, Kobe 651-0073, JAPAN

Tel: +81-78-230-8017
Fax: +81-78-230-8018
Email: info@apn-gcr.org
Website: http://www.apn-gcr.org