2009-2010 APN Annual Report

ISSN 2185-7628

Annual Report 2009/2010
Published in December 2010

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Message from the Director

It is my honour to present to you the first Annual Report of the APN's third strategic phase. This report highlights the major activities of the network including non-technical summaries of APN-funded projects in the Asia-Pacific region carried out and completed in 2009/2010.

APN supported and managed 40 projects under the Annual Regional Call for Research Proposals (ARCP) and Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries (CAPaBLE) Programmes. The Annual Calls for Proposals were launched in May 2009 following the launch of a Special Call for Proposals for a Focussed Activities in the area of Climate Impact and Vulnerability Assessments under the CAPaBLE Programme in April 2009. The facilitation and conduct of the two-tier evaluation of the APN's second strategic phase (science/policy and institutional) and formulation of the 3rd Strategic Plan (3SP) culminated in the release of two publications: *Evaluation Report of the APN Second Strategic Phase (2005-2010)* and APN *3rd Strategic Plan (2010-2015)*. These publications were distributed throughout the global change community and are available on the APN website.

The APN Scoping Workshop for Climate Synthesis was organised in November 2009 and the Climate Synthesis is presently underway. At the International Conference *Greenhouse 2009: Climate Change and Resources*, held on 23-26 March 2009, the APN organised an exhibit and participated in various related events. A Proposal Development Training Workshop (PDTW) was organised and conducted at the 17th Session of the United Nations Commission for Sustainable Development (UNCSD17) Partnerships Fair in New York in May 2009, providing participants with the background knowledge and some of the skills required to write a competitive proposal for APN funding.

In July 2009, the 1st South Asia Sub-Regional Cooperation (SA-SRC) Meeting successfully convened in Sri Lanka. Thailand hosted the 2nd Southeast Asia (SEA) Sub-Regional Committee (SRCom) Meeting in August 2009. In the same month, the APN held, back to back, the 13th Steering Committee (SC) Meeting, an Augmented SC Meeting (ASCM), and a Writing Workshop for the 3rd Strategic Plan, in Kobe, Japan.

Supported by the Hyogo Prefectural Government, the APN/Hyogo Low Carbon Society Scoping Workshop successfully convened in October 2009. As part of the partnership with the Association of Southeast Asian Nations (ASEAN) Centre for Biodiversity, the APN planned a side-event and exhibit booth at the ASEAN Conference on Biodiversity on 21-23 October 2009 in Singapore. The APN attended many other events (listed on pages xx-xx) to highlight global change research and scientific capacity development activities in the region.

As part of the implementation of the APN Communications Strategy, our network redesigned and upgraded its website, which was launched as the APN entered its third strategic phase, in April 2010. The Secretariat is continuously developing the website that boasts a new interface with dynamic features. Many publications were produced and published to provide scientific information to policy-makers and the public, to further promote the network in the region, and to encourage involvement in APN activities. APN is also updating regularly its internal database that generates the ever-growing electronic mailing list (EML) and uses this tool to disseminate information and support the network.

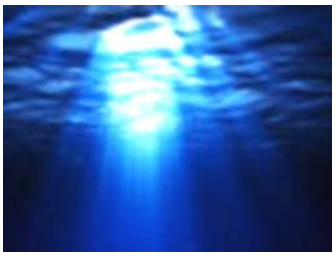
The APN continues to develop capacity through its Fellowship Programme and 2 new Programme Fellows joined the Secretariat in the Autumn of 2009, just prior to our relocation to a new Office, hosted by Hyogo Prefecture in Kobe, in December 2009.

Let me take this opportunity to express my great appreciation to the governments, organisations and members of the APN, who continue to provide their knowledge, shared expertise, and financial as well as in-kind contributions, allowing the APN to strengthen its institutional foundation. The APN would not have accomplished the activities especially highlighted in the present Annual Report without your support, cooperation and dedication.

We are also indebted to our global change research programmes and capacity development partners who share common interests and whose partnerships are invaluable in the pursuit of our goals and objectives. I look forward to continually working with you all and I am very happy to present this publication to you also as a sign of our gratitude.

Tetsuro Fujitsuka
Director, APN Secretariat

Vision and Mission



Vision

Enable countries in the Asia-Pacific region to successfully address global change challenges through science-based response strategies and measures, effective science and policy linkages, and scientific capacity development.

Mission

The mission of the APN is to enable investigations of changes in the Earth's life support systems and their implications for sustainable development in the Asia-Pacific region. The APN, therefore, supports investigations that will:

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.

Goals and Core Strategies

Goals

Goal 1. Supporting regional cooperation in global change research on issues particularly relevant to the region

Goal 2. Strengthening appropriate interactions among scientists and policy-makers, and providing scientific input to policy decision-making and scientific knowledge to the public

Goal 3. Improving the scientific and technical capabilities of nations in the region, including the transfer of know-how and technology

Goal 4. Cooperating with other global change networks and organisations

Core Strategies

The core strategies of the APN are to:

1. Promote and encourage research that can improve understanding of global change and its implications for the region, and contribute to sound scientific basis for policy formulation and decision-making;
2. Promote and encourage activities that will develop scientific capacity and improve the level of awareness on global change issues specific to the region; and
3. Identify and help address, in consultation with policy-makers and other end-users, present and future needs and emerging challenges.

Highlights of 2009/2010

Project Management

- Supported/managed 19 projects (11 new and 8 continuing) from the funded activities budget under the 2008 Annual Regional Call for Research Proposals (ARCP) process

- Supported/managed12 projects (10 new and 2 continuing) capacity building (CBs) projects and 2 new comprehensive research projects (CRPs) from the funded activities budget under the Capacity Building/Enhancement for Sustainable Development in Developing Countries (CAPaBLE)'s Annual Call for Scientific Capacity Development Proposals and CAPaBLE's3rd Phase Call for Comprehensive Research Proposals

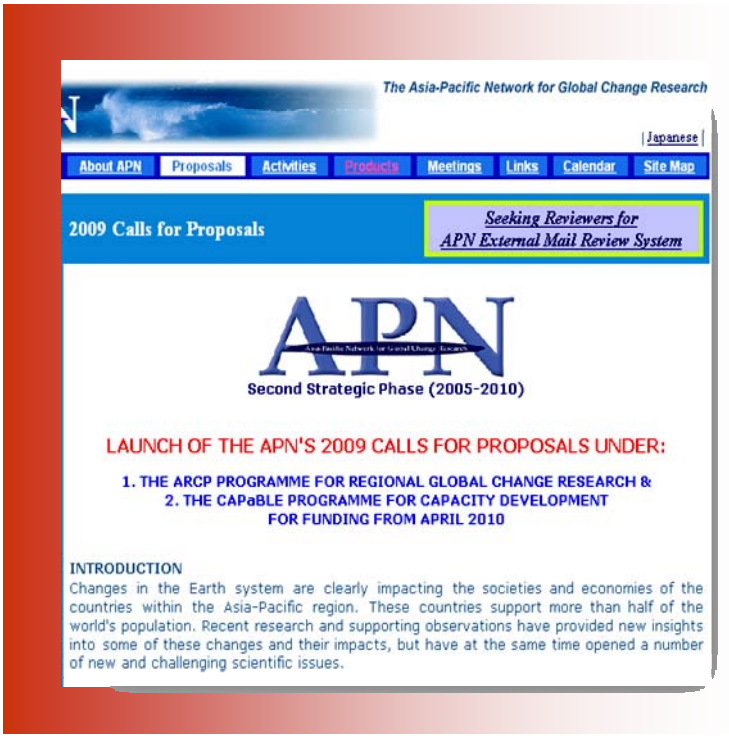
- Supported/managed seven (7) projects from the funded activities budget under the 2009 Special Call for Proposals for Focussed Activities: Scientific Capacity Building for Climate Impact and Vulnerability Assessments (SCBCIA)

Please refer to pages 35-76 for a compilation of non-technical summaries of APN-funded projects.

Calls for Proposals

- Launched and managed a Special Call for Proposals for Focussed Activitieswhere 82 Letters of Intent were received: SCBCIA. Seven (7) projects were selected for funding according to the funds available and began their activities in January 2010

- Launched the 2009 APN Annual Calls for Proposals under the ARCP andCAPaBLE Programmes and managed the proposals submission and review process



Synthesis Activity

- **Organised and conducted anAPN Scoping Workshop for Climate Synthesis. The Secretariat is continuing the facilitation of this activity through to 2011 (synthesis report expected) and 2012 (academic book expected)**

This climate synthesis activity is part of APN's commitment to contribute, through scientific relevance, to the development of policy options as outlined in the APN's Second Strategic Plan. The activity is collatingall of APN's climate-related projects and other related activities in the Asia-Pacific region, and their contribution to the challenges being faced by the global community in the light of climate change and variability. The synthesis aims to identify knowledge gaps and help prioritise research goals and programmes relating to climate in the Asia-Pacific region as well as provide knowledge on climate issues for policy- and decision-making processes.

Sub-Regional Cooperation

- **Organised and conducted the 1st South Asia Sub-Regional Cooperation Meeting (Colombo, Sri Lanka, 27-28 July 2009) and the 2nd Southeast Asia Sub-Regional Committee Meeting (Bangkok, Thailand, 19-20 August 2009)**

1st South Asia Sub-Regional Cooperation Meeting

The APN, being a unique network of governments with participants from both the science and policy communities, welcomes new mechanisms that strengthen interactions between these two groups, and is delighted that the First South Asia Sub-Regional Cooperation (SA-SRC) Meeting successfully convened in Colombo, Sri Lanka, on 27-28 July 2009. In order to achieve its mission of fostering global change research in Asia and the Pacific, the APN continues to strive in ensuring effective communications among its scientists and policy-makers. In this context, the 1st SA-SRC Meeting has allowed the APN to move another step forward in achieving its goals.

2nd Southeast Asia Sub-Regional Committee Meeting

The APN 2nd Southeast Asia Sub-Regional Committee (SEA-SRCom) Meeting successfully convened in Bangkok, Thailand, on 19-20 August 2009. This Meeting provided the perfect opportunity for member countries in SEA, invited experts, and representatives from key partner organisations to discuss and review existing APN mechanisms in terms of strengths, weaknesses, opportunities, and potential threats towards strengthening interactions within the sub-region among APN national Focal Points (nFPs), Scientific Planning Group (SPG) members, project leaders and collaborators, in order to facilitate and ensure smooth and consistent flow of information. The outcomes of this Meeting were presented at the APN SC Meeting, held in Kobe, Japan on 24-25 August 2009.

Please visit the 'News' section of the APN website for detailed summaries of both meetings.

Science-Policy

Contributions to the International Year of Biodiversity (IYB)

- **Organised and conducted the side-event and exhibition booth in preparation for the International Year of Biodiversity and as part of the APN Partnership with the Association of Southeast Asian Nations (ASEAN) Centre for Biodiversity at the ASEAN Conference on Biodiversity on 21-23 October 2009 in Singapore**

  APN was one of the key conference partners and organised a side-event and an exhibit on this occasion.

  Landmark Event. Hosted by the ASEAN Centre for Biodiversity (ACB) and the National Parks Board (NParks) of Singapore, ACB2009 convened at the Republic Polytechnic in Singapore, back-to-back with the ASEAN Ministerial Meeting on the Environment. This conference was one of 2009's most important gatherings of the best minds in the biodiversity arena. As a key partner, APN was pleased that over 250 stakeholders in the ASEAN region, and experts, policy- and decision-makers from other parts of the world gathered for the Conference and discussed emerging trends, issues, and concerns on biodiversity conservation and sustainable management.

Key Issue. In 2002, Parties to the Convention on Biological Diversity (CBD) established the 2010 Biodiversity Target, a commitment to significantly reduce biodiversity loss worldwide by 2010. However, it seems that the target will not be met in time for the International Year of Biodiversity in 2010. Therefore, there is a need to do things differently or more vigorously and nations must work on new targets beyond 2010. New targets must be proposed for 2015 and 2020 based on lessons learned from the assessment of the 2010 target.

Side-event Overview. The APN's side event "APN Seminar Series on Biodiversity: Providing Scientific Knowledge to Civil Society and Preparing for CBD 10th Meeting of the Conference of the Parties (COP10)" was successfully held on the second day of the Conference. As one of three parallel side events, the APN side event attracted around 60 participants. Four experts on biodiversity participated as speakers and panellists.

The main objective of the side event was to showcase and synthesise APN's previous three international seminars in which biodiversity was the central theme. These seminars were aimed at raising civil society awareness on the importance of biodiversity for the Asia-Pacific region particularly in relation to human intervention and sustainable development.

Exhibition. For the duration of the Conference, APN materials/publications including brochures, posters, CD-ROMs, Annual Report, Project Bulletin, proceedings, flyers, etc., were showcased and disseminated at an Exhibition Booth. APN also displayed and distributed materials of partner organisations including the 3rd Hyogo Fundamental Plan for the Environment and the Hyogo Biodiversity Strategy, as well as a number of DIVERSITAS publications.

Please visit the 'News' section of the APN website for detailed summaries of both meetings.

- Delivered a presentation at the International Workshop on Networking Biodiversity Observation Activities in Asia-Pacific, July 2009, Nagoya, Japan

- Actively engaged at the Hyogo Environmental Non-Governmental Organisation/Non-Profit Organisation Symposium – A Biodiversity Crisis: Influence of Global Warming, October 2009, Kobe, Japan

Interaction with Science-Policy Bodies

- **Organised and conducted a Proposal Development Training Workshop (PDTW) at the 17th Session of the United Nations Commission for Sustainable Development (UNCSD17) Partnerships Fair on 7 May 2009 in New York**

With the great success of the APN First Proposal Writing Training Workshop (PWTW) in 2008, the APN held the Proposal Development Training Workshop (PDTW) on 7 May 2009 in New York, U.S.A. The workshop convened as a side event of the UNCSD17 which was held from 4 to 15 May 2009.

The Proposal Development Training Workshop was structured with the goal of providing information on the Annual Calls for Proposals under the APN's regional research programme (ARCP) and its capacity development programme (CAPaBLE) and enhancing the capacity of young/early career scientists in writing proposals intended for submission to the APN to allow them to compete effectively in the proposals process. In addition, the workshop served as a perfect venue for participants from the Asia-Pacific region to discuss common global change issues and strengthen regional collaboration for global change research, capacity development and policy-relevancy. The workshop was intended for young and early career scientists, from the Asia-Pacific region who are attending CSD-17. A total of 32 participants from the Asia-Pacific countries and other countries attended the workshop.

Three excellent speakers gave interesting presentations that generated interest among the participants. Proceedings of the Proposal Development Training Workshop and First Proposal Writing Training Workshop are available for download on the APN website.

- **Actively engaged at the Informal Dialogue Meeting at the 30th Session of the Subsidiary Body for Scientific and Technological Advice (SBSTA30) on June 2009 in Bonn, Germany**

Attendance at the SBSTA meeting again proved an ideal opportunity to highlight the activities of APN to a wide range of policy-makers involved in the general climate change question in addition to a whole range of associated professions including non-governmental organisations (NGOs), the research community, the industrial sector, etc. APN was represented by Dr. Andrew Matthews, SPG Co-Chair and Mr. Tetsuro Fujitsuka, APN Secretariat Director.

The formal component of APN's presence at SBSTA was to participate as an invited contributor to the "SBSTA Dialogue on developments in research activities relevant to the needs of the convention" a special event hosted by the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat on 3 June 2009.

APN presentation by Dr. Matthews displayed the range of APN engagement with activities that are at the core of the work of the UNFCCC. He talked about the new initiatives to build capacity in both the assessment of vulnerability to climate change and adaptation options. Dr. Matthews also highlighted the difficulty of English being the working language in the climate change arena in the Asia-Pacific region. He stressed that APN is attempting to tackle this problem by trying to support the interpretation of findings into local languages as well as holding some capacity development workshops in local languages.

APN participation provided very important exposure, good science-policy linkages and the opportunity to tune its future work through the continuing dialogue with SBSTA.

- **Actively engaged at the UNFCCC COP15 on December 2009, in Copenhagen, Denmark and at the UNFCCC Technical Workshop on Collaboration among Regional Centres and Networks on March 2010 in Apia, Samoa**

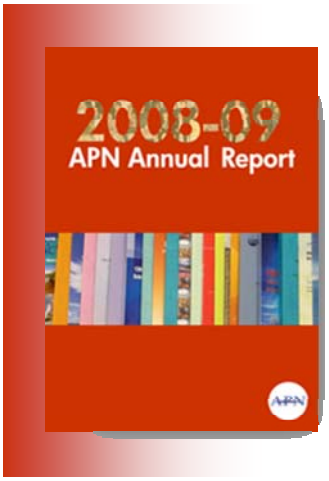
Communications and Outreach

This section contains the major communications and outreach activities undertaken by the APN in 2009/2010, featuring the communication tools that were used to showcase APN and its activities.

Publications

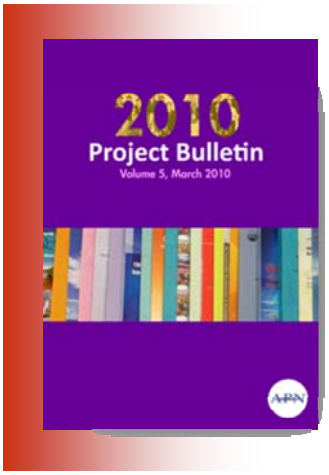
The following publications were produced/published to provide scientific information to policy-makers and the public, to further promote the network in the region, and to encourage involvement in APN activities.

- **Annual Report 2008-2009**



The *Annual Report 2008-2009* presents a summary of APN's efforts in promoting global change research, particularly highlighting the results and outputs of its completed projects conducted under ARCP and CAPaBLE Programmes.

- **Project Bulletin, Volume 5**



The Project Bulletin, Volume 5 contains the abstracts of research and capacity building projects funded by APN under the ARCP and CAPaBLE Programmes. There are 19 projects under the ARCP and 13 under the CAPaBLE. The complete contact details of all project leaders are provided in this publication should interested individuals like to learn more about the project or seek future collaboration with the project leaders.

- ## Quarterly issue of the APN Newsletter (soft/electronic copy only)

The APN publishes a quarterly newsletter which features news from the Secretariat, APN's representation at national and international events, ARCP-funded projects, CAPaBLE Programme updates, list of ongoing projects, people in the APN (members and committees), newsletter questionnaire, crossword challenge and a calendar of events, which highlights particular events supported by the APN. In order to reduce the environmental and economical burden, it was decided to produce the newsletter in electronic format only. All issues of the APN newsletter are available for download in PDF format in the 'Resources' section on the APN website.

- ## APN 2009 General Brochure in nine (9) languages

In APN's continuing efforts to provide general information about APN as part of its Communications Strategy, the 2009 general brochure (English version) was published. The brochure contains information on APN's mission, core strategies, vision, goals, membership, structure, three agendas (Science, Policy and Institutional), major activities conducted and publications produced since the 13th Inter-Governmental Meeting (IGM)/SPG Meeting and a list of the approved and continuing projects for 2009/2010.

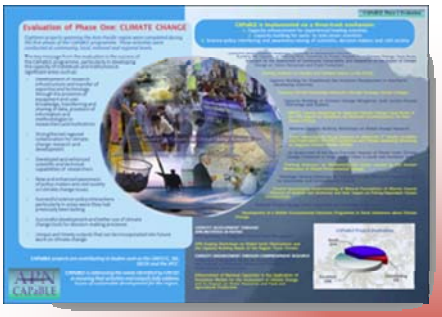
After the successful translation of the APN 2007 General Brochure into 12 local languages of APN member countries in 2007/2008 and the APN 2008 Promotional Flyer into four (4) languages in 2008/2009, the nFPs and SPG Members translated the APN 2009 General Brochure into their vernacular languages to further raise the visibility of the APN. The brochure came out in nine (9) languages:

- *Bahasa Malaysia*
- *Chinese*
- *English*

- *Japanese*
- *Khmer*
- *Laotian*
- *Sinhala*
- *Thai*
- *Urdu*

The APN members also shared in the printing expenses and disseminated the brochure to scientists and policy-makers in various organisations and government institutions which made considerable difference in the visibility of the APN at the national and sub-regional level.

- **Four (4) Posters**



Provides an overview of the CAPaBLE evaluation

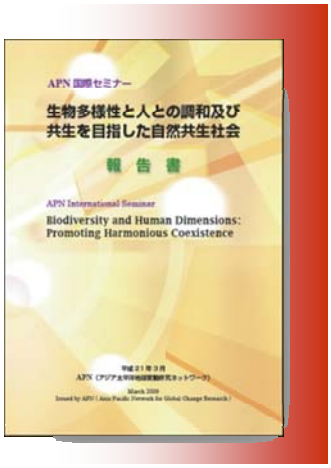
Demonstrates APN objectives and was designed as an introductory/ promotional material

Highlights CAPaBLE as a strong APN pillar

Summarises the key outcomes of the highlighted project of CAPaBLE Phase One: Training Institute on Climate and Extreme Events in the Pacific

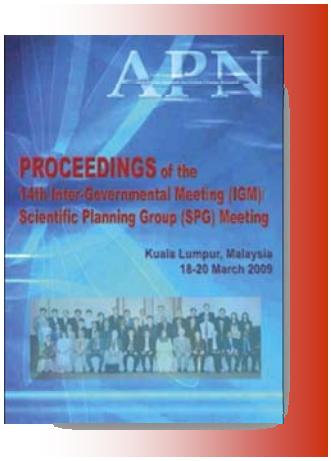
- ## Proceedings of the APN International Seminar on Biodiversity and Human Dimensions: Promoting Harmonious Coexistence

The Proceedings is available in electronic and printed formats. Jointly organised by the APN, Hyogo Prefectural Government of Japan, and DIVERSITAS in Western Pacific and Asia (DIWPA), the Seminar successfully convened on 1 February 2009 in Kobe, Japan.



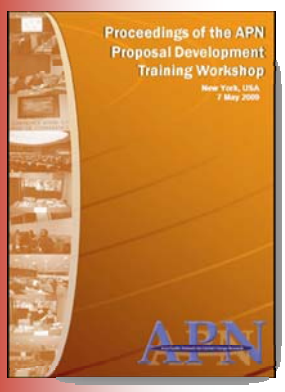
- ## 14th IGM/SPG Meeting Proceedings

This publication summarises the discussions and major action points of the 14th IGM/SPG Meeting that successfully convened in Kuala, Lumpur, 18-20 March 2009. Contained in the Proceedings are major outputs of the Meeting, item papers and slide presentations that also serve as reference materials for the APN members, partner organisations and colleagues inside and outside the Asia-Pacific region that are in interested in APN activities.



• Proceedings/Workshop Reports and Policy Brief

Electronic copies of the following proceedings/workshop reports are available for download on the APN website:



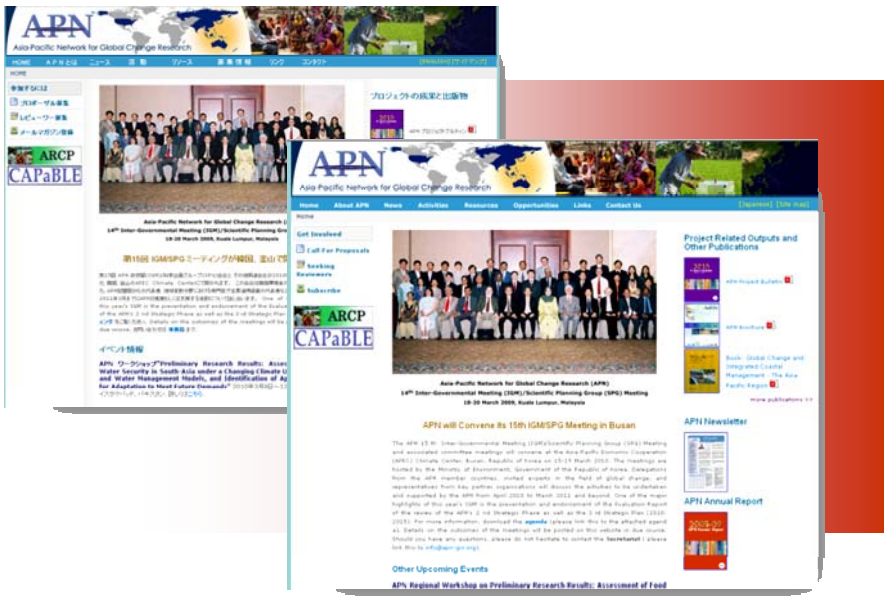
Proceedings of the Proposal Development Training Workshop which was held at the UNCSD17 Partnerships Fair on 07 May 2009 in New York

Proceedings of the APN International Seminar on Challenge 25 Beyond Borders?: Promoting a Low Carbon Society which convened on 23 January 2010 in Kobe, Japan

CAPaBLE Policy Brief, Vol. 1 Issue 1

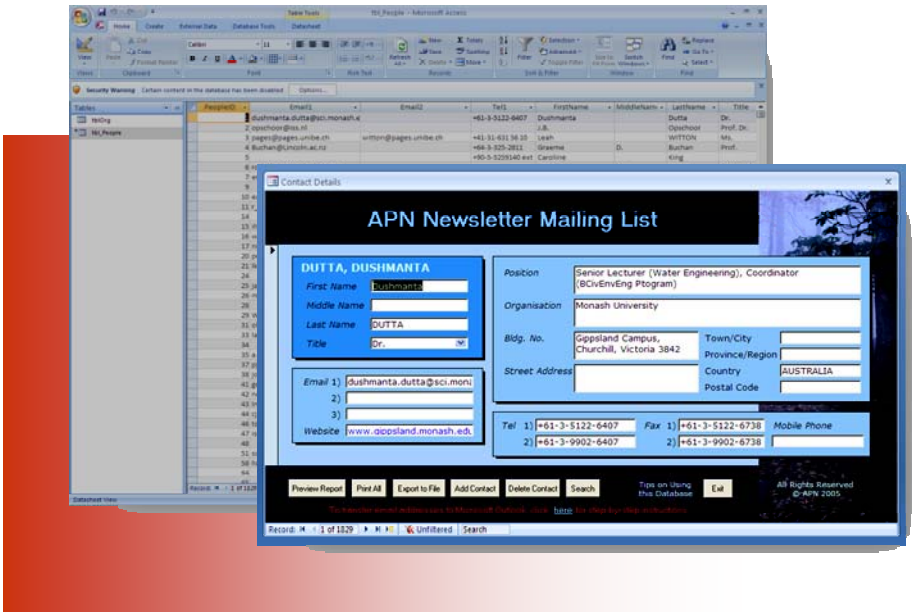
Website and EML

- **Revamped the APN website that was timely launched when the APN enters its third strategic phase, from April 2010 and continuous development of the website that includes a new interface with dynamic features**



This is a an important communication tool of the APN which, from the time it was established, has become a source of useful information about the APN, how it is structured, who are the key players as well as details on the projects that APN supported and is currently funding; publications that were produced; global change events; and other activities that were conducted in the past. The website is maintained daily, providing up-to-the-minute information on the APN and its activities.

- **Regular updating and maintenance of the database and electronic mailing list**



APN maintains an internal database that could generate an electronic mailing list (EML) and uses this tool to strategically disseminate information as well as support the network. Aside from the quarterly Newsletter, periodic announcements and notifications that are related to global/climate change or to APN activities are also sent via the EML. These include: upcoming global change events, call for papers, release of new publications such as technical papers, policy briefs, etc. APN also welcomes requests from partner organisations to post announcements on the website and distribute the information via the APN EML. The Secretariat also subscribes to other mailing list groups of various organisations to be able to receive information and further disseminate it to its Members and the global change community.

Activities Co-organised with Key Organisations

- **Co-sponsored and organised an exhibit on the occasion of Greenhouse 2009: Climate Change and Resources on 23-26 March 2009 in Perth, Australia**

  The APN has made another strategic step to raise its profile in the region by co-sponsoring the GREENHOUSE 2009: Climate Change and Resources that successfully convened on 23-26 March 2009 at the Burswood Convention Centre in Perth, Western Australia. This Conference is the third in the series, following previous successful events in Sydney in 2007 and in Melbourne in 2005. With an overwhelming response, reflecting the enormous recent attention given to climate change science, adaptation and mitigation, this year's conference received excellent feedback from delegates, both formal and informal.

- **Organised and conducted the APN/Hyogo Low Carbon Society Scoping Workshop, 30 October 2009, Kobe, Japan, and the APN International Symposium on Challenge 25 Beyond Borders?: Promoting a Low Carbon Society, 23 January 2010, Kobe, Japan**

Scoping Workshop. In order to facilitate discussing the framework of the International Symposium and to kick off preparations for the Symposium, a Scoping Meeting was organised in Kobe, Japan. Invited experts were asked to give presentations in regard to low carbon society. After the presentations, a brainstorming session was held to identify key issues and priority areas for topics in the coming international symposium.

All participants exchanged ideas and discussed perspectives on low carbon initiatives based on experts' views and APN experience. A wide range of thoughtful perspectives were raised including energy intensity in transport, carbon impact of diverse geographical location within Hyogo, differing energy footprints in rural and urban areas, urban planning/rehabilitation for less carbon intensity, household renewable energy applications in other Asian countries like China and India, environmental and carbon tax impacts on households, the concept of "compact cities" and the Challenge 25 initiative in Japan.

International Symposium. The Symposium, which successfully convened, attracted about 140 people from Hyogo Prefecture and throughout Japan, with a number of foreign participants as well. Eight (8) experts from Japan and abroad were invited as lecturers to discuss general issues and recent developments surrounding the topic of low carbon society and how it can contribute to the global effort to reduce greenhouse gases (GHG) in the atmosphere and reverse the impacts of global warming. Specific measures and activities that will help promote a low carbon society were also discussed.

It was divided into three main sessions: Part One: Challenge 25 beyond Borders? – Responses in Asia-Pacific; Part Two: Challenge 25 Beyond Borders? – Responses in Japan; and Part Three: Panel Discussion/Open Forum. Following the Panel Discussion, a Networking Session, was organised to provide the audience an opportunity to discuss Low Carbon Society issues and interact with the symposium guests and speakers in person.

Representation at National/International Events

APN representatives attended, made presentations, and set up an exhibit or displayed materials at the following selected national and international fora to further raise its visibility/recognition in the region.

April 2009

- Monthly Seminar for Disaster Prevention. Kobe, Japan
- Japan International Cooperation Agency (JICA) Climate Change and Disaster Meeting. Kobe, Japan
- Cool Earth Partnership JICA Training. Osaka, Japan

May 2009

- Institute for Global Environmental Strategies (IGES) Brainstorming Session for its White Paper. Kanagawa, Japan
- Haillym University Symposium: Our Visions and Practices in Confronting Global Climate Changes. Chuncheon, Republic of Korea

June 2009

- United Nations University (UNU) and Integrated Research System for Sustainability Science (IR3S) Consultation Conference on Role of Higher Education in Adapting to Climate Change. Tokyo, Japan
- High-Level Dialogue: Climate Change in Asia and the Pacific - A Development Challenge. Manila, Philippines
- International Forum for Sustainable Asia and the Pacific (ISAP) – Towards Copenhagen: A New Development Pathway to a Low-Carbon Sustainable Asia and the Pacific. Kanagawa, Japan
- IGES 26th Board of Directors Meeting. Kanagawa, Japan

July 2009

- Cool Earth Partnership JICA Training (part of seminar series). Osaka, Japan
- 2nd Monsoon Asia Integrated Regional Study (MAIRS) International Workshop on Dryland Studies. Changchun City, China

August 2009

- Hyogo International Association, Youth Asian Camp. Kobe, Japan

September 2009

- 6th International Symposium on Digital Earth (ISDE6). Beijing, China
- Workshop on Inter-Agency Collaborative Technologies in Earth Observations (EO) for Global Change Research in the Asia-Pacific Region. Ulaanbaatar, Mongolia

- Brainstorming Workshop on Addressing Marine and Coastal Biodiversity Conservation Issues in the Northwest Pacific Action Plan (NOWPAP) Region. Toyama, Japan

- 1st Marine Biodiversity Workshop in the Northwest Pacific Region. Toyama, Japan

October 2009

- Asia-Pacific Economic Cooperation (APEC) Climate Change Symposium (via videoconference). Canberra, Australia

- International Group of Funding Agencies for Global Change Research (IGFA) Annual Meeting. Paris, France

- 18th Asia-Pacific Forum of Environmental Journalists (APFEJ) World Congress of Environmental Journalists. Colombo, Sri Lanka

- Disaster Reduction Institute (DRI) Seminar on Disaster Prevention. Kobe, Japan

November 2009

- International Symposium on Cities and Carbon Management: Towards Enhancing Science-Policy Linkages. Tokyo, Japan Global Ecolabelling Network (GEN) Annual General Meeting. Kobe, Japan

- 9th International Conference on Ecomaterials (ICEM9), Kyoto, Japan
- 2009 East Asian Seas (EAS) Congress. Manila, Philippines
- International Symposium for the Significant Reduction of CO_2 in Household Sector: Learning from Good Practices for Realising Low-Carbon Household. Kobe, Japan

January 2010

- International Symposium on Climate Change/Global Environment and Natural Disaster. Kobe, Japan

Partnerships

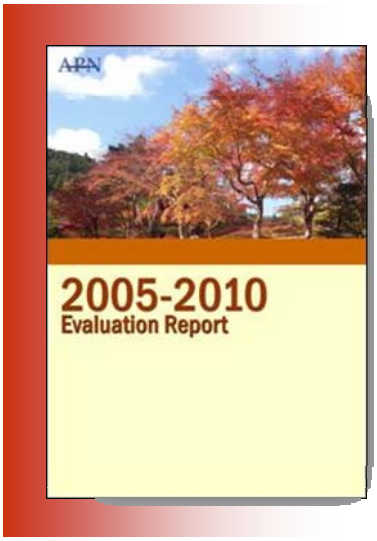
- **GEO/GEOSS-related**
  - Presentation at the 9th Global Earth Observation System of Systems (GEOSS) Capacity Building Committee Meeting, April 2009, Athens, Greece
  - Strong presence at the Japanese Biodiversity Observation Network (JBON) Workshop - first workshop to organise a Japanese committee for promoting Group on Earth Observations (GEO) BON, May 2009, Tokyo, Japan
  - Presentation at the 16th Meeting of the Inter-American Institute for Global Change Research (IAI) Conference of the Parties (CoP), May 2009, Bogota, Columbia
  - Exhibit and participation at GEO VI Plenary Session and related side-events, November 2009, Washington D.C., USA
  - Active participation at the 5th GEOSS/Asian Water Cycle Initiative (AWCI) International Coordination Group (ICG) Meeting, December 2009, Tokyo, Japan and at the 4th GEOSS Asia-Pacific Symposium, March 2010, Bali, Indonesia

- Visit to Global Change System for Analysis, Research and Training (START) International Secretariat and discussed collaboration, May 2009, Washington D.C., USA
- Presentation at the 13th International Council for Science (ICSU) Regional Consultation for Asia and the Pacific, October 2009, Penang, Malaysia

- Strong presence at the Second International Programme of Biodiversity Science (DIVERSITAS) Open Science Conference, October 2009, Cape Town, South Africa

Strengthening APN Institutional Mechanisms

- **Facilitated and conducted the two-tier evaluation of the APN's second strategic phase (science/policy and institutional) and formulation of the 3rd Strategic Plan**

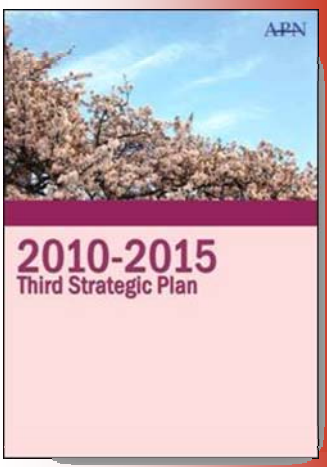


Evaluation of the APN's Second Strategic Phase. *"The APN has made significant progress in promoting research in global change that has implications in the Asia-Pacific region. Significant scientific research has been conducted that has produced strong and robust scientific outputs. Several high-priority collaborative research studies have been implemented that cover a range of cross-cutting issues on climate change and have strengthened global change science in the Asia-Pacific region, particularly in developing countries,"* this is the conclusion of the several months of review work of the APN's three Agendas: Science, Policy, Institutional, under its second strategic phase (2005-2010).

Overall, the evaluation of the APN-funded projects was considered as very successful in terms of meeting the five (5) goals stated in the APN Second Strategic Plan. These projects produced several good publications and contributed to the Intergovernmental Panel on Climate Change (IPCC), particularly the Fourth Assessment Report (AR4). Training courses for young researchers and professionals on methodologies and tools to analyse issues related to global change were conducted reaching many scientists and policy-makers in countries of the region. The APN has also become a stronger network creating new ties and strengthening links among individuals, organisations, countries and sub-regions within and outside the Asia-Pacific region.

In its second strategic phase, the APN has: 1) strengthened its alignment with the global change scientific community; 2) increased engagement with APN members and stakeholders; 3) increased involvement with the policy- and decision-making communities; 4) developed scientific capabilities within the region; 5) conducted successful and policy-relevant scientific research; 6) and enhanced the its networking tools. Although APN still faces challenges that need to be addressed, it fulfilled its goals for the most part during its second phase, resulting in policy-relevant global change science.

Formulation of the APN Third Strategic Plan. Committed to realising its mission of enabling investigations of changes in the Earth's life support systems and their implications for sustainable development in the Asia-Pacific region, the APN's Third Strategic Plan (2010-2015) was developed based on the evaluation of its second strategic phase, which ran from 2005 to 2010. The 3rd Strategic Plan (3SP) focusses on two main agendas: Science Agenda and Institutional Agenda.



Under the Science Agenda, APN will focus on scientific research, scientific capacity development and science-policy interactions via activities organised within the APN, such as syntheses, workshops and assessments; and projects selected from the two main scientific pillars of the APN, the ARCP and CAPaBLE Programmes.

Under the Institutional Agenda, APN will look at the involvement of its member countries; alignment with programmes of the global change community; financial resources; communications and outreach to the science and non-science communities; and developing the network and its institutional arrangements.

- **Organised and conducted the 13th Steering Committee (SC) Meeting, Augmented SC Meeting (ASCM) and Writing Workshop on 24-27 August 2009, Kobe, Japan**

Constructive discussions transpired during the Meeting that touched on the following: Summary of Activities/Action Points since the 14th IGM/SPG Meeting; Financial Management; Sub-Regional Cooperation' Special Call for Proposals for a Focussed Activity: SCBCIA; Membership Development; 15th IGM/SPG Meeting Preparations and Host of the 16th IGM/SPG Meeting; Major Events to April 2010 and APN Participation; and most importantly the second strategic phase Institutional/Network Evaluation and the Brainstorming Session for the third strategic phase.

Following the SC Meeting, an Augmented SC Meeting (ASCM) was held on 25-26 August 2009 in the same venue. ASCM aimed at producing an evaluation of achievements, challenges and impacts of APN-funded scientific activities under the ARCP and CAPaBLE Programmes identified in the 80 Project Sets and making recommendations for the third strategic phase.

Finally, a Writing Workshop convened on 27 August 2009 that produced the draft evaluation report and the 3SP.

- Processed the applications of Programme Fellows (2 new Programme Fellows joined the APN Secretariat in autumn)

APN-Funded Projects

ARCP - Annual Regional Call for Research Proposals

ARCP2008-09CMY-Espaldon

Assessing the Vulnerability of Communities and Understanding Policy Implications of Adaptation Responses to Flood-Related Landslides in Asia

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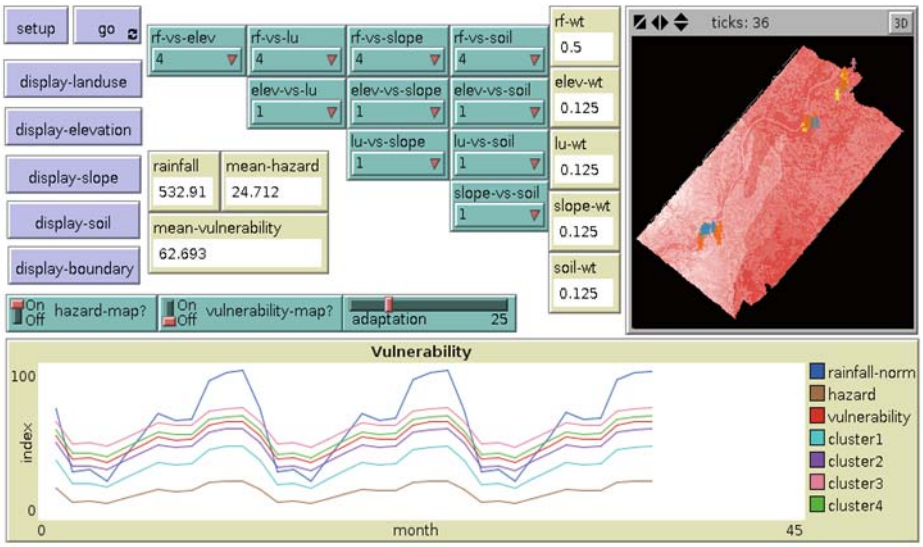
Participating Countries: **China, Nepal, Philippines, Viet Nam**

APN Funding: **US$70,000 (For 2 Years)**

The study characterised the demographic, socio-economic, climatic, biophysical and institutional aspects that contribute to vulnerability of communities to rainfall induced landslides in selected Asian countries namely China, Nepal, Philippines and Viet Nam using an agent-based framework. Adaptation mechanisms were drawn from the survey, key informant interview and focus group discussions conducted among the stakeholders in the respective case study sites. Existing policies and measures in response to landslide occurrence were also evaluated and recommendations to improve capacity to cope with such disasters were given accordingly. The researchers of the participating countries were trained with practical use of complementary methods for vulnerability assessments including vulnerability mapping, vulnerability profiling and agent-based modelling (ABM) using various tools such as Analytical

Hierarchy Process (AHP) technique, cluster analysis, JAVA programming, Geographic Information System (GIS), and remote sensing.

While the different methods of vulnerability can be applied separately for vulnerability assessment, combining them provides added value in terms of focussing case studies only in hotspot areas that need urgent attention, understanding behaviours on adaptation of people with different vulnerability profiles, and developing scenarios on adaptation strategies based on actual disaster experiences.



Netlogo interface of the agent-based model in Infanta, Quezon in the Philippines

However, due to large amount of data required to apply these complementary approaches, application of these methods can be limited at the local level. Moreover, it requires an interdisciplinary research to capture the dynamic interplay between the socio-economic and biophysical systems.

Scientific findings of studies like this using ABM tools and GIS will be a vital input for decision-makers in the improvement of existing policies and mitigation measures related to landslide. However, further study should be done in landslide vulnerable countries in Asia e.g. utilising remote sensing techniques. These will require expertise and significant budget to carry-out such advance studies to achieve better assessment and correct policies for flood-related landslides in Asia Pacific Region. Nonetheless, this is an important research focus because, as the results showed, the biophysical condition affects the level of vulnerability and adaptation of an individual or a group. The socio-economic environment, which provides the foundations for the populations' capacity to survive and sustain before and after the disaster, has a link to the bio-physical environment.

The study concluded that assessment of flood-related landslides in Asia is of paramount importance considering the devastating impacts of global climate change.

Papers presented

- Espaldon M.V.O., Acosta-Michlik L., Magcale-Macandog D., Lalican N., Talubo J.P., Malenab M.C., Abucay E. and A. Salvacion. 2008. *Assessment of Vulnerability of Communities and Understanding Policy Implications of Adaptation Responses to Flood-related Landslides in Infanta, Quezon*. Southeast Asia Geography Association 2008 International Conference, *SEAMEO* Innotech, Diliman, Quezon City. 3-6 June.
- Asuero M., Nelson G.L., Ortega-Espaldon M.V., Acosta-Michlik L., Magcale-Macandog D., Lalican N., Talubo J., Abucay E., Malenab M.C., and A. Salvacion. 2008. *Disasters, Vulnerabilities and Adaptive Strategies of Southeast Asian Communities.* Southeast Asia Geography Association International Conference, *SEAMEO* Innotech, Diliman, Quezon City. 3-6 June.
- E.R. Abucay, D.B. Magcale-Macandog, M.V.O. Espaldon and F.C. Monsalud. 2010. *Developing Site-Specific Spatial and Systems Model of Landslide Susceptibility Index: the case of Gen. Nakar-Infanta, Quezon.* 2010 National Congress of the International Society for Southeast Asian Agricultural Sciences (ISSAAS). Bicol University, Legazpi City, Albay, Philippines. 28-30 September.
- E.R. Abucay, D.B. Magcale-Macandog, M.V.O Espaldon, L.A. Acosta-Michlik, F.C. Monsalud, N.M. Lalican, G. L.M. Nelson, A.J. Jacildo, J.P. Pabico, J.P. Talubo and M.C.T. Malenab. 2010. *Application of Geomatics and Systems Approach Modeling in Assessing Rainfall-Induced Landslides in Infanta, Quezon: Options for Climate Change Adaptation of Human Settlements.* The ISSAAS International Conference, Bali, Indonesia. 14-18 November.
- M.P. Asuero, G.L.M. Nelson, M.V. O. Espaldon, L. A.M. Acosta-Michlick, D. M. Macandog, N.M. Lalican, E.R. Abucay, M.C.T. Malenab, J.P.P. Talubo. 2010. *Social Characteristics and Vulnerabilities of Disaster-prone Communities in Infanta, Quezon, Philippines.* Southeast Asian Geography Association (SEAGA) Conference 2010: Understanding the Changing Space, Place and Cultures of Asia. Hanoi National University of Education, Hanoi, Viet Nam. 23 – 26 November.
- J.P. Talubo, M.V.O. Espaldon, L. Acosta-Michlik, D.M. Macandog, G. Nelson, N. Lalican, A. Jacildo, E.R. Abucay, J. Pabico, M.CT. Malenab, M. Asuero. 2010. *Application of Agent-based Modeling to Landslide Vulnerability in Infanta, Quezon*. SEAGA Conference 2010: Understanding the changing space, place and cultures of Asia. Hanoi National University of Education, Hanoi, Viet Nam. 23 – 26 November.

ARCP2009-03CMY-Nikitina

Reducing Water Insecurity through Stakeholder Participation in River Basin Management in the Asia-Pacific

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Participating Countries: **Australia, China, Russian Federation, Thailand, Viet Nam**

APN Funding: **US$95,000 (For 2 Years)**

Project Website: **http://www.sea-user.org/uweb.php?pg=237**

Pervasive land-use and water-use changes are being compounded by changes in climate to fundamentally alter water insecurity in river basins across the Asia-Pacific. This comparative and synthetic study included gathering of new empirical data and new analyses of water-related risks and responses to reduce them with a particular focus on how stakeholders are engaged. Risk management efforts associated with changes in both water quantity and quality were considered—from floods through to water shortages as well issues of access to good quality water.

The research looked at patterns of stakeholder participation in river basin water management in five Asia-Pacific countries (Viet Nam: Red and Mekong; Russia: Amur; China: Salween; Thailand: Ping-Chao Phraya; Australia: Latrobe). A key finding was that success in dealing with water-related insecurities depends on efforts not only by governments, but also by non-state stakeholders. Different groups of stakeholders take on a subset of roles each with limitations for addressing major water insecurities. To address differences in capacities and interests improving stakeholder coordination and building stakeholder partnerships is crucial and also contributes to good water governance. Effective coordination, for example, is often a precondition for effective policy process, capacity building, and transfer of "good practices" across basins worldwide.

Drought conditions in Southwest China and its impacts

Conclusions

- Existing systems of water management in river basins in five countries of Asia-Pacific under study are diverse and frequently designed to deal with major water-related insecurities
- Institutional reforms undertaken in water sector, however, are frequently unsuccessful both in terms of meeting own mandates and targets and based on assessment against tougher criteria of sustainability and fairness.
- During the recent decade a common trend to incorporate innovative approaches into existing water governance systems is registered in all basins.
- Participation is expanding in all river basins under study, although the scales and forms vary across basins
- The importance of non-state actors in all river basins under study is growing
- Studies indicate that in some countries there are attempts to institutionalise stakeholder engagement.
- There is gradual recognition that successful water policy implementation and water reforms require all stakeholders involved, especially end-users, can have their say in decision-making process and afterwards 'personally' participate in daily action towards sustainable water use and protection
- Stakeholder involvement is a key driver in institutional performance as in their daily practices and concrete practices they routinely contribute to insecurities reductions in the locales.

- REducing Water INsecurities Deliberatively (REWIND) project has identified a number of common features of stakeholder involvement in river basins in the Asia-Pacific. Common and comparatively new feature in the Asia-Pacific river basins is creation, or further development of river basins council type organisations which usually co-exist with river basin authorities.

Publications

- Dutta, D., and Wright, W. (Eds) 2010. Coastal Zones and Climate Change: Assessing the Impacts and Developing Adaptation Strategies. *Proceedings of the International Symposium*. School of Applied Sciences and Engineering, Monash University; 474 pp.
- Kotov, V. 2009. Russia: Changes in Water Management and the Water Law *In* Dellapenna, J. and J. Gupta (Eds) *The Evolution of the Law and Politics of Water*. Springer Science –Business Media BV.
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- Lebel, L., and Sinh, B.T. 2009. Risk Reduction or Redistribution? Flood Management in the Mekong Region. Asian Journal of Environment and Disaster Management 1:23-39.
- Lebel, L., Sinh, B.T. and Nikitina, E. 2010. Governing Risks: Climate Change, Water Insecurities, and Disaster Management. pp. 111-138 *in* Shaw, R. (Ed). Climate Change Adaptation and Disaster Risk Reduction: Issues and challenges. Emerald Publishers, Bingley, UK.
- Lebel, L., Foran, T., Garden, P. and Manuta, B.J. 2009. Adaptation to Climate Change and Social Justice: Challenges for Flood and Disaster Management in Thailand. pp. 125-141 *in* Ludwig, F., Kabat, P., van Schaik H. and van der Valk, M. (Eds). Climate Change Adaptation in the Water Sector. Earthscan, London.
- Lebel, L., Nikitina, E. and Sinh, B. T. (Eds). 2008. Climate Change and the Science and Practice of Managing Floods in Urbanised Regions of Monsoon Asia. *MAIRS Working Papers Series*, N4.
- Lebel, L. 2008. Climate Change, Water Insecurities and Food Systems in Monsoon Asia. pp. 88-99 i*n* Loh, C., Stevenson, A. and Tay, S. (Eds). Climate Change Negotiations: Can Asia Change the Game? Civic Exchange, Hong Kong.
- Lebel, L., J. Xu, R. C. Bastakoti, and A. Lamba. 2010. Pursuits of Adaptiveness in the Shared Rivers of Monsoon Asia. International Environmental Agreements. DOI 10.1007/s10784-010-9141-7.
- Nikitina, E., Ostrovskaya, E. and Fomenko, M. 2009. Towards Better Water Governance in River Basins: Some Lessons Learned from the Volga. *Regional Environmental Change,* Springer, Vol. 9, No. 2.
- Nikitina, E. and Kotov, V. 2008. Reducing Flood Risks through Stakeholder Participation and Partnerships: Lessons Learned from River Basins in Asia and in Europe. Extended Abstract, *International Disaster and Risk Conference, IDRC,* Davos, Switzerland, 29-30 August.
- Sinh, B. T., Lebel, L. and Tung, N.T. 2009. Indigenous Knowledge and Decision Making in Viet Nam: Living with Floods in An Giang Province, Mekong Delta, Viet Nam. Chapter 30 *In* Shaw, R., Sharma, A. and Takeuchi, Y. (Eds). Indigenous Knowledge and Disaster Risk Reduction: From Practice to Policy. NOVA Science Publishers.

- Wright, W., Dutta, D. and Rayment, P. 2010. Flood Vulnerability Analysis in Coastal Zones: A Comparative Analysis Across Five Asia-Pacific Countries, *Proceedings of the International Symposium on International Symposium on Coastal Zones and Climate Change: Assessing the Impacts and Developing Adaptation Strategies,* 12-13 April, Monash University: 433-443.
- Xu, J., Grumbine, R., Shrestha, A., Eriksson, M., Yang, X., Wang, Y. and Wilkes, A. 2009. The Melting Himalayas: Cascading Effects of Climate Change on Water Resources, Biodiversity, and Human Livelihoods in the Greater Himalayas. *Conservation Biology* 23:520-530.
- Xu, J. 2010. The Highlands: A Shared Water Tower in a Changing Climate and Changing Asia in a History of Water. Series 2, Volume 3.
- Xu, J. 2009. The Mekong and Beyond: Institutions and Governance for Climate Change in the Asian Highlands. *In* Ludwig, F., Kabat, P., van Schaik, H. and van der Valk, M. (Eds). *Climate Change Adaptation in the Water Sector*. Earthscan, London

ARCP2009-06CMY-Braimoh

Managing Ecosystem Services in Asia: A Critical Review of Experiences in Montane Upper Tributary Watersheds (ECOSMAG)

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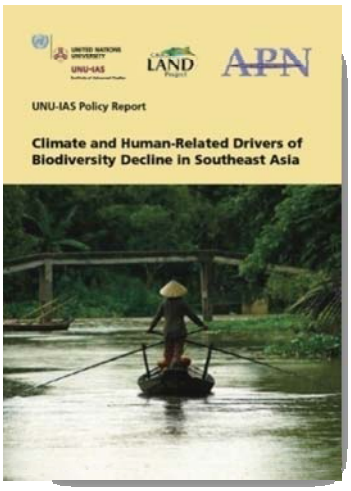

Participating Countries: China, Indonesia, Japan, Thailand

APN Funding: US$90,000 (For 2 Years)

Project Website: http://www.glp.hokudai.ac.jp/ecosmag/

Human well-being depends on the maintenance of ecosystem services. Upper tributary watersheds provide diverse services such as water provision, soil renewal for agriculture, mitigation of floods, groundwater recharge, soil erosion control, nutrient abatement and carbon sequestration. However, policy-makers have found it hard to find ways of incorporating the benefits derived from ecosystem services into decision-making. One reason is the difficulty of characterising ecosystem services in a manner that policy-makers can use it. Another is the challenge of negotiating accountable systems of governance and compensation.

Several promising but still insufficiently tested governance mechanisms are being explored, for example, payments for ecological services. All approaches need to consider costs and other disadvantages or risks of ecosystem services conservation to various user groups, and trade-offs intrinsic to ecosystem maintenance. This project addressed these pertinent issues by reviewing experiences across a wide range of projects and illustrating solutions and their limitations through three in-depth case studies in China, Indonesia and Thailand.

Results

The review of climate and land use impacts documents the biophysical characteristics of Southeast Asia, provided an account of the current state of biodiversity in the region and analysed biodiversity loss vis-à-vis climatic and anthropogenic drivers with special attention to deforestation and habitat loss. Prominent anthropogenic influence on biodiversity includes biofuel production, trade, land tenure systems and urbanisation. Policy responses that can curb biodiversity decline in the region include monitoring and regulation, sustainable land management and a host of other mitigation and adaptation measures.

The review of institutional mechanisms indicated that communities, governments and firms have taken different approaches to prioritising, negotiating and sharing benefits, as well as dealing with trade-offs between them including spatial land-use planning, delineation for biodiversity conservation, watershed protection, forestry, agriculture, tourism or multiple uses. Institutional instruments include quotas, licenses, concessions, seasonal bans as well as other customary rules, taboos and norms. Market-based instruments or other forms of incentives which reward good management practices include payments for environmental services and certification schemes. Raising awareness of ecosystem services through education, support can be gained for their conservation.

Publications

- Braimoh, A.K., Suneetha, M.S., Elliott, W.S. and Gasparatos, A. 2010. Climate and Human-Related Drivers of Biodiversity Decline in Southeast Asia. UNU-IAS Report. CBD-COP 10 Meeting, Nagoya, Japan. 18-29 October.
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- Braimoh, A.K., Agboola, J.I., Subramanian S.M. 2009. The Role of Governance in Managing Ecosystem Service Trade-offs. IHDP Update, Issue 3. pp 22-25.
- Braimoh, A.K. and Huang, H.Q. 2009 Addressing Issues for Land Change Science. *Eos Transactions American Geophysical Union* 90 (38):334
- Lebel, L., and Daniel, R. 2009. The Governance of Ecosystem Services from Tropical Upland Watersheds. Current Opinion in Environmental Sustainability, 1:61–68.

ARCP2009-09NSY-Skole

Developing Smallholder Agroforestry Carbon Offset Protocols for Carbon Financial Markets – Twinning Sustainable Livelihoods and Climate Mitigation

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Participating Countries: Lao PDR, Thailand, U.S.A, Viet Nam

APN Funding: US$40,000 (For 1 Year)

Project Website:
http://www.goes.msu.edu/apn_arcp_2009_09/

Protocols and methods for quantifying sequestered carbon in plantation systems and simple landscapes have been developed under the UNFCCC Clean Development Mechanism Afforestation/Reforestation (CDM A/R); however, none exist for more complex agroforestry systems. This project aimed to develop small-holder agroforestry protocols for the Chicago Climate Exchange working directly with farmers and communities in Lao PDR, Thailand, and Viet Nam. The project included capacity building training and the development and preliminary implementation of small-holder agroforestry carbon pilot activities in each of the three countries to help address issues of climate change related to land use change and sustainable development. Working with national level agency personnel and University staff engaged in natural resource management, rural livelihoods, sustainable development and climate change science, the knowledge and understanding shared and developed as a result of the workshops and the pilot agroforestry carbon projects that are central to this activity, helps to foster increased capacity at the national and regional levels for conducting global change research leading to projects that support policies aimed at combating climate change.

Pictures of the project pilot sites - A: Trat, Thailand (Rubber with pineapple), B: Inpang Network, Northeast Thailand (Mixed fruit tree), C: Bac Giang, Vietnam (Litchi), D: Sangthong

The results of the project include the following: 1) workshop materials on agroforestry systems in Lao PDR, Thailand and Viet Nam and carbon offset protocol requirements; 2) symposium material on forestry and agroforestry carbon mitigation opportunities, use of remote sensing in measurement and monitoring of terrestrial carbon offsets, and Web-enabled, Measurement, Reporting and Verification (MRV) management applications; 3) study sites identified; the selection of four agroforestry carbon offset pilot activities; 4) development of field survey instruments and preliminary biometric field data collection; 5) a prototype MRV for small-holder teak woodlots; and 6) a draft "Protocol for Biotic Carbon Sequestration in Small Scale Agroforestry in Developing Countries" under review by the Forestry Offsets Committee of the Chicago Climate Exchange .

Publication

- Samek, J.H., Skole, D.L., Klinhom, U., Butthep, C., Navanugraha, C., Uttaruk, P., Laosuwan, T., Dumrongsukit, S., Sangkanukij, P. and Kulwong, A. 2010. *Inpang Community Network Agroforestry Carbon Bank in Northeast Thailand*. *In* Kumar, B.M. and Nair, P.K.R. (Eds). *In* Carbon Sequestration in Agroforestry: Processes, Policy, and Prospects. Advances in Agroforestry, Springer. The Netherlands. (accepted for publication).

ARCP2009-10NSY-Gautam

Assessment of Role of Community Forests (CFs) in CO_2 Sequestration, Biodiversity and Land Use

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Participating Countries: Indonesia, Japan, Nepal

APN Funding: US$38,050 (For 1 Year)

Project Website: http://www.ndri.org.np/main/PCF/pcf.htm

Community Forestry (CF), a successful programme for protecting and rehabilitating the forests has received highest priority of all the programmes of Nepal's forestry sector since 1978. Community Forests are getting wide attention not only because they constitute a major component of livelihood in the rural areas but also due to emerging policy process such as mainstreaming the climate change issue in development agendas. However, the studies on CO_2 sequestration, species diversity, and land use change relevant to CF are limited. Therefore, this study aimed to: 1) estimate carbon deposit in forest; 2) document tree species diversity, map land use change areas in selected CFs; and 3) analyse the role of CFs in CO_2 sequestration, biodiversity, and land use change.

The study showed that CFs have been playing crucial role in increasing forest cover and tree density in public and private lands, and contributing to a substantial increment in carbon sequestration. The project outcomes are anticipated to support policy and planning, and strengthen the decision-making process of the users and management authorities.

Key results

- CFs have been playing crucial role in increasing forest cover and tree density in public and private lands, and ultimately the sequester carbon.
- The community forest user groups (CFUGs) are unaware about the role of CFs on land use changes and carbon sequestration.
- Compared to other hilly areas of Nepal, the tree species diversity observed at the sites investigated was richer; nevertheless, some species were already extinct and some were largely depleted.
- The project provided CFUGs and other related stakeholders an opportunity to understand the possible benefits of CFs in terms of ecosystem services and carbon trading in addition to the silvicultural practices and social equity of which they were already aware.
- Land use change analysis between 1988 and 2009 in the selected areas of CFs showed great changes in forest and cultivated lands: increase in forest land and decrease in cultivated land in almost all studied areas.
- Carbon deposit was found higher in climax than the secondary succession forests due to the presence of big-sized trees.

CAPaBLE - Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries (CAPaBLE)

CBA2008-07NSY-Schmidt

Social Challenges of Global Change: The 7th International Science Congress on the Human Dimensions of Global Change (IHDP Open Meeting, 26-30 April 2009, Bonn, Germany)

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Participating Countries: **Open to all APN member countries**

APN Funding: **US$25,000 (For 1 Year)**

Project Website: **www.openmeeting2009.org**

The IHDP Open Meeting 2009 was a milestone in the IHDP Strategic Plan 2007-2015. It contributed successfully to the implementation of its pillars on cutting-edge science, capacity development and science-policy interaction. It also provided the human dimensions research community with substantial food for thought, as well as many concrete research collaborations initiated during these days in Bonn. It clearly reasserted to the participants the importance of the human dimensions research agenda in times of rapid change and has motivated IHDP to implement this agenda.

The Open Meeting coincided with an unprecedented momentum for the social sciences and their expected contributions to a better understanding of the challenges of global change. As attention in science and policy is increasingly addressing and further understanding both the impacts of global change on the Earth System and the need to better understand possible response options and sustainability solutions, the social sciences can indeed offer significant contributions to these changes taking place. The conference provided the intellectual set-up for this important task.

With a variety of formats and opportunities for intense debates, the participants engaged actively in the conference. The scientific agenda set by the International Scientific Planning Committee structured the conference according to four major "Social Challenges of Global Change". It was a concerted effort to address the broad scope of the human dimensions of global environmental change research agenda that exceeds the "purely" environmental domain. It was intended to define these challenges in a way that they both add to and complement existing IHDP research. These four challenges were as follows:

- Demographic Challenges
- Resources and Technological Innovation
- Social Equity, Cohesion, and Sustainable Adaptation
- Adaptive Institutions and Governance

Publications

- IHDP Update Magazine Issue No. 1/2009: "Social Challenges of Global Change", Bonn, March 2009.
- IHDP Open Meeting 2009 Report
  http://www.openmeeting2009.org/pdf_files/OM_Report_web.pdf
- Conference Book
  http://www.openmeeting2009.org/pdf_files/Conf%20Book_WEB.pdf
- UGEC Viewpoints No. 2, September 2009 "Urbanisation: a Critical Human Dimension of Global Environmental Change"
  http://www.ugec.org/docs/UGECViewpointsIssue2.pdf
- LOICZ Reports and Studies No. 34 related to issues addressed at the LOICZ OM session: "The Analysis of Governance Responses to Ecosystem Change"

http://www.loicz.org/imperia/md/content/loicz/print/rsreports/34_the_analysis_of_governance_responses_to_ecosystem_change.pdf

- GECHS sessions at the OM contributed to the GECHS synthesis and its synthesis conference of June 2009: IHDP UPDATE magazine 1/2009 "GECHS Synthesis. Human Security in an Era of Global Change" http://www.ihdp.unu.edu/file/IHDP+Updates/Update+2.2009+GECHS/Update+2.2009+GECHS?menu=61

CBA2009-01CMY-Ailikun

Capacity Building for Drought Monitoring and Studying in Monsoon Asia under the Framework of the Asian Water Cycle Initiative (AWCI)

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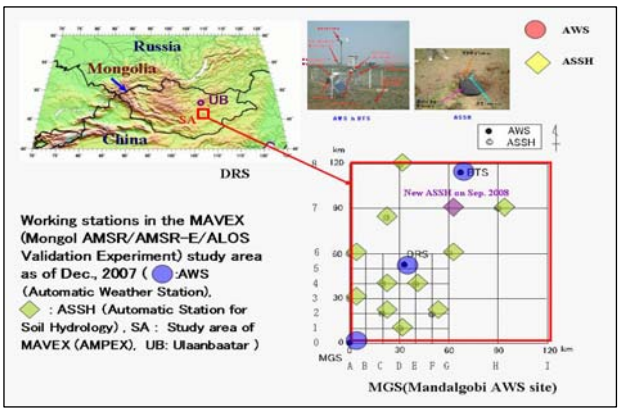
Participating Countries: **Bangladesh, China, Japan, Mongolia**

APN Funding: **US$77,500 (For 2 Years)**

Project Website: **http://monsoon.t.u-tokyo.ac.jp/AWCI/index.htm**

Drought is a crosscutting issue which basically covers the sciences in meteorology, hydrology, agriculture, and water management. There is an urgent need to create greater development of a drought monitoring and research



system. Release of satellite products provides great chance for scientists to improve the techniques and knowledge of drought study. Drought, related to the water issue in Global Earth Observation System of Systems (GEOSS) implementing plan, is getting high concern from the public and policy-makers.

With strong request and the need to conduct drought study and monitoring from and in various Asian countries, the GEOSS/ AWCI led by Prof. Toshio Koike from University of Tokyo, promoted three capacity building groups under AWCI/GEOSS framework, which was drought, flood and water quality in 2008. This project built a network on drought monitoring and drought study in Asian region by using the satellite and ground observation. "AWCI drought monitoring and research working group" was set up, which includes 15 scientists from 10 countries in Asia, and built scientific supporting team to provide advices on the algorithms and validation of soil moisture products retrieval from remote sensing datasets.

The project has collected ground observation data from Mongolia, China, Bangladesh, Pakistan and Viet Nam. Both Advanced Microwave Scanning Radiometer – Earth Observing System (AMSR-E) and Moderate Resolution Imaging Spectroradiometer (MODIS) products were used in retrieval of soil moisture and drought indices in the selected countries. AMSR-E soil moisture products (from JAXA and NASA) are provided to the group members for ground validation and drought index studies. To finish the research targets for this project, five (5) drought workgroup meetings and one (1) training workshop were held from 2008 to 2010.

CBA2009-02CMY-Ishida

The Global Earth Observation System of Systems Asian Water Cycle Initiative Observation Convergence and Data Integration (GEOSS/AWCI/OCDI) for Water Cycle Research and Water Resources Management under Climate Change in Asia

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Participating Countries: **GEOSS/AWCI/OCDI International Coordination Group (ICG) Members from participating countries that are members to the APN**

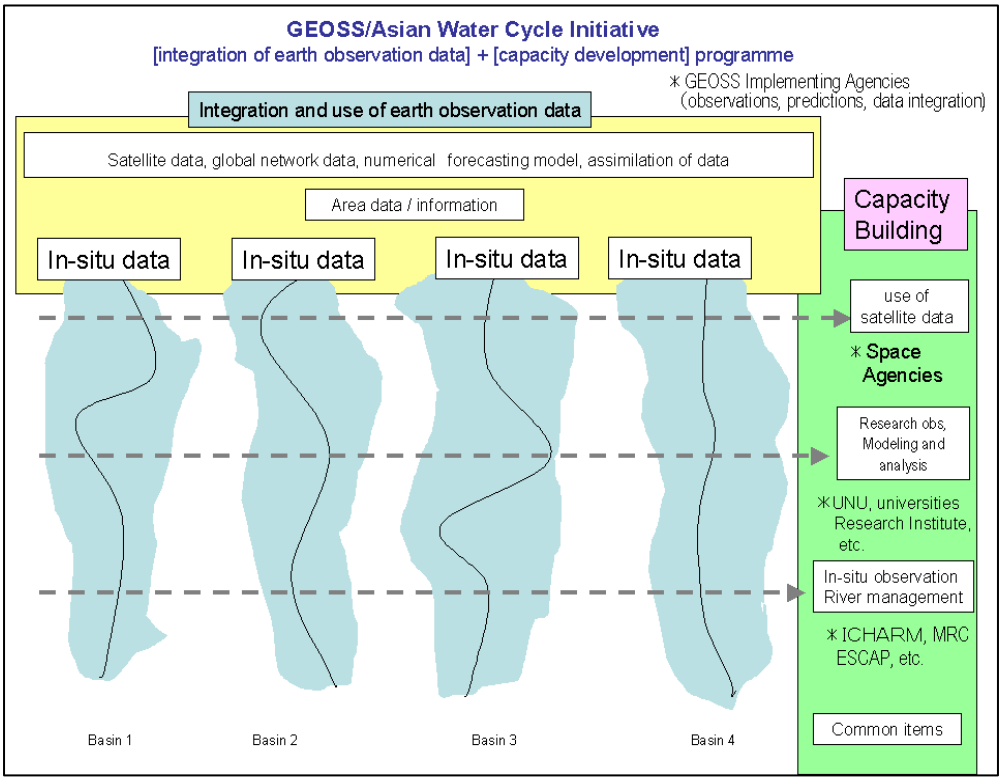
APN Funding: **US$75,000 (For 2 Years)**

Project Website
http://monsoon.t.u-tokyo.ac.jp/AWCI/index.htm
http://web-tutorials.tksc.jaxa.jp/index.html

Recognising the need for accurate, timely, long-term, water cycle information as a basis for sound and effective water resources and risk management and with regards to the ongoing initiatives pursuing to meet this need, the GEOSS/AWCI/OCDI project was initiated. The project followed-up on the data focus of the International Integrated Water Data Access and Transfer in Asia (IIWaDATA) project (ARCP2007-02CMY) and is contributing to the development of a sustainable scheme for water cycle data collection, sharing, exchange, and management at the regional level in Asia, in cooperation with national governments, institutes and research communities and other international organisations.

Through a series of meetings, the IIWaDATA project established a mutual consensus among the participating countries and international organisations that defines data

sharing and exchanging policy and responsibilities for data processing, management and archiving. This strong cooperative framework has evolved into a large regional initiative recognised by the Group on Earth Observations (GEO) as a GEOSS activity. The project has been further significantly contributing to the development of the Data Integration and Analysis System (DIAS) that was launched in 2006 as part of the Earth



Observation and Ocean Exploration System, which is one of five National Key Technologies defined by the 3rd Basic Program for Science and Technology of Japan. Furthermore, GEOSS/AWCI/OCDI has greatly contributed to the reception of the Japan Water Prize in 2010 for its contribution to international cooperation for water resource management.

The GEOSS/AWCI capacity building programme continues in successful implementation of a number of training modules that are based on identified needs in the region as well as individual countries. The web-based interactive repository of available modules and proposed seminars that was developed by UNU is a very supportive tool that facilitates better coordination in planning the events.

With above excellent accomplishments and progress, the participants of the 4th GEOSS Asian Pacific Symposium held in March 10-12, 2010, in Bali, Indonesia, agreed on the statement to the GEO Ministerial Summit held in Beijing on November 2010.

Message to the GEO ministerial summit:

The Summit is requested to recognise the direction and achievements by GEOSS/AWCI as one of the most effective regional approaches for climate change adaptations and to endorse its activities in each country and the Asia-Pacific region in improving the efficiency of operational water resources management.

Publications

- Wang, L., Koike, T., Yang, K. and Yeh, P. 2009. Assessment of a Distributed Biosphere Hydrological Model Against Streamflows and MODIS Land Surface Temperature in the Upper Tone River Basin. Journal of Hydrology, 377, 21-34.
- Wang, L., Koike, T., Yang, D. and Yang, K. 2009. Improving the Hydrology of the Simple Biosphere Model 2 and its Evaluation within the Framework of a Distributed Hydrological Model, Hydrological Sciences Journal, 54(6), 989-1006.
- Wang, L., Nyunt, C. T., Koike, T., Saavedra, O., Nguyen, L.C. and Sap, T.V. 2010. Development of an Integrated Modeling System for Improved Multi-objective Reservoir Operation, Frontiers of Architecture and Civil Engineering in China, 4(1), 47-55.
- Tamura, T. and Koike, T. 2010. Role of Convective Heating in the Seasonal Evolution of the Asian Summer Monsoon. *J. Geophys. Res.*, 115, D14103, doi: 10.1029/2009JD013418.
- Tamura, T., Taniguchi, K. and Koike, T. 2010. The Mechanism of Upper Tropospheric Warming Around the Tibetan Plateau at the Onset Phase of the Asian Summer Monsoon. *J. Geophys. Res.*, 115, D02106, DOI: 10.1029/ 2008JD011678.
- Wang, L., Wang, Z., Koike, T., Yin, H., Yang, D. and He, S. 2010. The Assessment of Surface Water Resources for the Semi-arid Yongding River Basin from 1956 to 2000 and The Impact of Land Use Change. Hydrological Processes, 24, 1123-1132.
- Jaranilla-Sanchez, P.A.T, Wang, L. and Koike, T. 2010. ENSO Influence on the 1982-2000 Hydrological Properties of the Pantabangan-Carranglan Watershed, Philippines. Annual Journal of Hydraulic Engineering-JSCE, 54, 19-24.
- Shrestha, M., Wang, L. and Koike, T. 2010. Investigating the Applicability of WEB-DHM to the Himalayan River Basin of Nepal. Annual Journal of Hydraulic Engineering, JSCE Vol. 54, 55-60, 2010.

CBA2009-03NSY-Bishry

Project Scoping and Training Workshop for REDD in Indonesia, Cambodia, and Lao PDR

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Participating Countries: **Cambodia, Indonesia, Lao PDR, U.S.A.**

Project Website: **http://neonet.bppt.go.id/redd/**

APN Funding: **US$24,400 (For 1 Year)**

As individual nations and the international community collectively work to find ways for mitigating climate change, emerging projects that tie land use activities, aimed at reducing carbon emissions, to financial markets in the model of payments for ecosystem service will grow in importance. Reducing Emissions from Deforestation and Forest Degradation (REDD) projects, however, must demonstrate, through robust methods, true emissions reductions, as well as show leakage is not prevalent. Implementing REDD activities requires a level of understanding in both carbon cycle science and carbon market economics that is currently not usual among scientists or policy–makers.

The protocols and methods for establishing REDD projects are complex. While emissions from energy use are primarily a problem in the developed countries (and China and India), deforestation and forest degradation are problems primarily in the tropical, developing countries in South America, West Africa, and Southeast Asia. The questions being tackled today have less to do with understanding source emissions, however, than with how to address them and implement policy that are effective. New opportunities to reduce deforestation are emerging due, in part, to international treaties like the Kyoto Protocol and to the growing international agreement that climate change is real and needs to be addressed.

The project supported regional collaboration of basic research for developing potential REDD carbon offset projects and included both scientist and policy-makers in the project team. The project conducted technical capacity building in remote sensing, GIS,

and carbon models for implementing REDD carbon offset projects, and in understanding markets for REDD activities. The project developed future implementation of REDD in each country (Indonesia, Cambodia, and Lao PDR) and identified prospect sponsorships.

Publications

- Rony Bishry. 2010. *Reducing Emissions from Deforestation and Degradation: A New Commitment or Financial Resources.* Paper presented at International Conference on Climate Change in Developing Countries, Kottayam, Kerala, India. 19-22 February.

CBA2009-05NSY-Salinger

International Workshop on the Content, Communication and Use of Weather and Climate Products and Services for Sustainable Agriculture

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Participating Countries: **Australia, New Zealand, Russian Federation, Cook Islands and selected countries from Asia-Pacific region**

APN Funding: **US$25,000 (For 1 Year)**

Project Website: http://www.climatecookislands.com/

Farmers and farming communities throughout the world have, in most instances, survived and developed by mastering the ability to adapt to widely varying weather and climatic conditions. The dramatic growth in human population is imposing enormous pressure on existing farming production systems. However, long-term climate change and variability demand the use and appropriateness of weather and climate information for farmers globally. Capacity building in the area involved strategies for more targeted weather and climate information and forecasting for increased preparedness to sustainable agricultural development, especially in the Asia-Pacific region.

The workshop brought together leading experts in the field who presented state-of-the-art discussion papers to address the workshop objectives. Participants were encouraged to be discussants to facilitate the interactive dialogue. It provided an opportunity to learn about varying weather and climate conditions imposing pressure on farming systems, developing adaptation strategies to increasing climate variability and change, decision support systems or similar for on-farm applications, communication strategies by which weather and climate products can be supplied to farmers with improved capability in the development and delivery of decision/discussion support systems. A follow-up pilot workshop was held 11-13 January 2010 in Rarotonga, Cook Islands which successfully empowered local farmers and technical experts to understand and use media products to communicate messages from the Cook Islands Meteorological Office and Ministry of Agriculture on climate variability and impacts on agriculture.

A number of useful recommendations were developed by the workshop to improve the content, communication and use of weather and climate products and services for sustainable agriculture. The principal recommendations include the following:

- Countries and institutions with highly developed skills should share their knowledge with developing countries to develop better weather and climate forecasts for farming communities world-wide.
- Climate change projections should be incorporated into agrometeorological products to help farming communities cope with the impacts of climate change.
- Communication of agrometeorological information to any country, culture or user needs to be relevant, timely, targeted and reliable.
- All National Meteorological and Hydrological Services (NMHS) should develop and implement communication plans including media training and effective feedback from users
- Popular print, broadcasting and Internet media should be used to alert farmer users to all available expert information.
- Increased effort needs to be placed on enhancing the availability of information to the user communities through farmer fairs, traditional festive occasions, media contacts, Internet, advanced learning systems ("e-Learning"), roving seminars, open days and other interactive events.
- Introduce curriculum of meteorology and climate change at the school level and involve school teachers in agrometeorological extension.
- Identify and promote champion farmers at the local level who can interact closely with NMHSs and provide information to his/her community.
- Farmer associations/industry organisations should be encouraged to identify a *focal point* who can interact with weather and climate service providers for product development and dissemination of agrometeorological information.

The workshop concluded that agrometeorological products are valuable to farmers and national economies because agriculture is always sensitive to climate and there is unmet demand for climate information in all countries. Despite the advances made in improving weather and climate forecasts, the application of these products at the field level has not been "up to the mark" because of the lack of effective contact between the providers of weather and climate information and farming communities. There remains a need for greater interaction with the farming community to ensure greater agricultural productivity; the NMHSs have not been allocating adequate resources to meet this need.

CBA2009-07NSY-Larigauderie

Second DIVERSITAS Open Science Conference: "Biodiversity and Society: Understanding Connections, Adapting to Change": Ensuring a Strong Scientific Contribution from the Asia-Pacific Region

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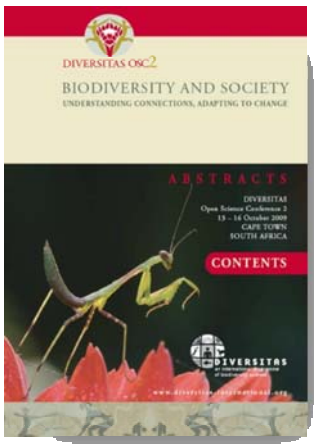


Participating Countries: Open to all APN member countries

APN Funding: US$15,000 (For 1 Year)

Project Website : http://www.diversitas-international.org/?page=diversitas_osc2

The project brought participants from the APN region to the second DIVERSITAS Open Science Conference (OSC2), which took place in Cape Town, South Africa, from 13-16 October 2009.

The conference was entirely dedicated to biodiversity science and its connections to policy. It assembled many perspectives from the natural and social sciences to highlight the causes and consequences of biodiversity change, and discuss solutions to the consequences of this change. The conference featured a mix of plenary lectures, round tables, symposium, oral and poster sessions, presented by invited speakers as well as scientists selected from a call for symposium and a call for abstracts, on the following themes: strengthening biodiversity science; supporting the science-policy interface; and integrated approaches to topical issues and focus on African topics.

The DIVERSITAS OSC2 gave particular importance to the role of science in informing policy. Five (5) science-policy round tables (Intergovernmental Platform on Biodiversity and Ecosystem Services [IPBES], The Economics of Ecosystems and Biodiversity [TEEB],

Access and Benefit Sharing [ABS], Convention on Biological Diversity (CDB) 2010 and agro-biodiversity) provided an opportunity for participants to exchange the latest

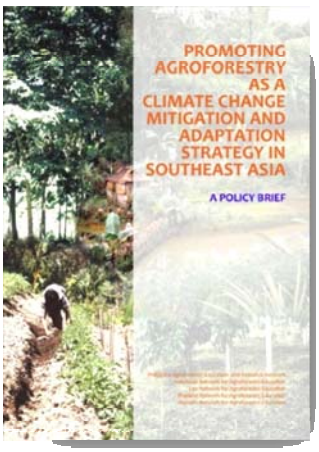
information about key policy developments related to biodiversity and ecosystem services, to hear from various protagonists about the issues at stake for the community, and to provide input into these key debates.

Publications

- Osono T. 2010. DIVERSITAS Open Science Conference 2(OSC2). DIWPA Newsletter 22 February.
- Leadley, P., Pereira, H.M., Alkemade, R., Fernandez-Manjarrés, .JF., Proença, V., Scharlemann , J.P.W. and Walpole, M.J. 2010. Biodiversity Scenarios: Projections of 21st Century Change in Biodiversity and Associated Ecosystem Services. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 50, 132 pages.
- Larigauderie, A. and Mooney, H. A. (Eds) 2010. Special Issue of the volume Biodiversity, Ecosystem Services and Human Wellbeing. Current Opinion in Environmental Sustainability, Vol. 2, Issues 1-2. May 2010. ISSN 1877-3435, DOI: 10.1016/j.cosust.2010.04.001.

CBA2009-08NSY-Almoite

Scaling-Up Agroforestry Promotion towards Mitigating Climate Change in Southeast Asia



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APN Funding: US$35,000 (For 1 Year)

Participating Countries: Indonesia, Lao PDR, Philippines, Thailand, Viet Nam

Many literatures say that agroforestry is one of the strategies for climate change mitigation and adaptation. The multiple benefits from agroforestry such as increased income from diverse sources; increased food production; improved soil fertility and many more, make it a good climate change adaptation strategy. This project was conceived in response to the global climate change that threatens the humanity and the environment, particularly Southeast Asia, which is generally dependent on agriculture, is among the regions that are highly vulnerable to the impacts of climate change.

The project is a regional collaboration of the five country networks of the Southeast Asian Network for Agroforestry Education (SEANAFE), namely: Indonesian Network for Agroforestry Education (INAFE), Lao Network for Agroforestry Education (LaoNAFE), Philippine Agroforestry Education and Research Network (PAFERN), Thailand Network for Agroforestry Education (ThaiNAFE), and the Vietnam Network for Agroforestry Education (VNAFE). The project was composed of five components: 1) Consultative-Meeting Workshop of the Project Facilitating Team (PFT); 2) development of agroforestry information materials; 3) Regional Training-Workshop on Agroforestry and Climate Change; 4) National Agroforestry Roadshows; and, 5) development of a

policy brief on promoting agroforestry as a climate change mitigation and adaptation strategy.

The project is also supportive to the vision and mission of the Philippine Republic Act 9720 otherwise known as "Climate Change Act" of 2010, and in the various initiatives and development programmes in Indonesia, Lao PDR, Thailand and Viet Nam.

Conclusions

- The capability-building component of the project enhanced the technical knowledge of the junior lecturers in the area of agroforestry.
- The public awareness component of the project, particularly the National Agroforestry Roadshows was proven to be an effective mechanism to promote the initiatives that have been undertaken by the practitioners and various sectors in agroforestry development and promotion in Southeast Asia.
- The public awareness program through the National Agroforestry Roadshow is an effective information drive about climate change and its impacts to the environment, and also provided an opportunity to enable the non-agroforestry practitioners to become aware and appreciate the many potentials of agroforestry in climate change mitigation and adaptation.
- The existing partnership of the project team members (as SEANAFE members) facilitated the smooth implementation of project, and at the same time, the project has further strengthened their existing regional collaboration.
- The project enhanced the knowledge sharing and exchange of technical expertise among the participating country networks/SEANAFE member countries.
- The project further strengthened recognition for agroforestry to be among the strategies for climate change mitigation and adaptation.

Overall, project outcomes suggest the need to institutionalise agroforestry not only as a climate change mitigation and adaptation mechanism, but as a development strategy in Southeast Asia.

Publications

- Philippine Agroforestry Education and Research Network (PAFERN). 2010. Promoting Agroforestry as a Climate Change Mitigation and Adaptation Strategy in Southeast Asia: A Policy Brief. 15 pages.

CBA2009-10NSY-Li

Inter-Agency Collaborative Technologies in Earth Observations (EO) for Global Change Research in the Asia-Pacific Region

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Participating Countries: **China, Mongolia, Thailand, U.S.A.**

APN Funding: **US$38,000 (For 1 Year)**

Project Website: **http://int.ceode.ac.cn/apn/**

One of the most difficult problems that APN scientists are facing now is the lack of Earth Observations (EO) data and data usage experience. Global change research mostly depends on multi-disciplinary knowledge and multi-source EO data and scientists in this field mostly have to base their model research and system development on just a few given EO data sets. The next generation of EO data and information infrastructure are focussing on multi-agency collaboration technologies. This provides users with a new way to both utilise and organise their global change studies. As the leading international organisation promoting interoperability and sharing of multi-source EO data, the Working Group of Information Service and Systems in the Committee of Earth Observation Satellites (CEOS/WGISS) has a lot of experience and knowledge on this topic.

The project brought the experience and knowledge from CEOS/WGISS to the global change research scientists in the APN region, especially in Mongolia, to demonstrate how to access and use the next generation EO information technology, and to find appropriate approaches to develop their global change models based on this new EO capability and support. This project was also supported by the United Nations Global Alliance for ICT and Development (UNGAID), ICSU's Committee on Data for Science and Technology (ICSU/CODATA), as well as GEOSS. A series of workshops were held both in China and Mongolia, which collected a number of local scientists to participate and share the experience from leading experts from USA, Europe and Asia. The expected outputs were reached at this stage and many new opportunities were addressed from the discussion.

Publication

- A handbook on collection of leading inter-agency data system's user guide, the EO data sharing principle from GEOSS and CODATA, as well as the technical white-books from leading organisations is planned to be published.

CRP2008-01CMY-Dixit

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

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Participating Countries: Australia, Bangladesh, India, Nepal, Pakistan

APN Funding: US$ 180,000 (For 3 Years)

The IGP is a large plain characterised by fertile soil, favourable climate and abundant supply of water; popularly known as bread basket of South Asia. It is a principle source of food for millions of people in South Asia. Changes are occurring in the environmental aspects of IGP bringing stress in the region generating problem of global environmental change (GEC), directly affecting the food system of the region. Formulation of better policy integrating science, government, and society is needed in the context of food security and GEC. This study attempted to address issues related to climate change and food security by providing new insights and pathways to meet food security needs of people vulnerable to GEC.

The project was carried out through a collaborative network of five (5) research institutions: Nepal, India, Bangladesh, Pakistan, and Australia in four (4) member countries spanning in the IGP, among which NWCF of Nepal provided overall project coordination and all the backstopping support.

The project aimed to: 1) identify the vulnerability of case-study food systems in IGP to GEC in the context of socioeconomic issues/changes; 2) enhance capacity within the APN scientific community to raise awareness of the vulnerability of case study food systems in IGP to GEC within the policy-making community; and 3) improve policy formulation by district and national institutions to enable and enhance district and

national strategies for identifying adaptation strategies to reduce the vulnerability of IGP food systems to GEC.

Results

The policy response to climate change vis-à-vis food system was expedited by

presenting different scenarios and their impacts to the policy-makers. Scenario development is one of the potent tools for displaying various options to address an issue under different sets of assumptions. The study used fifteen (15) Global Climate Models (GCMs), four (4) Regional Climate Models (RCMs), and two (2) Providing Regional Climates for Impacts Studies (PRECIS) models to develop the scenario.

Furthermore the study reflected that, no matter what the climate change scenario in the decades ahead will be; food security will be affected and will hamper the ability of local populations to adapt. Similarly the study also revealed various GEC stresses (water shortages, changing rainfall, flood, drought, increasing humidity, cold waves) increasing the sensitivity of food determinants (reduced production, washed land, damaged road etc) resulting increased or increasing vulnerability. The study done in Ganga basin found that resilience enhancement is dependent on access to basic services such as drinking water, sanitation, education, and energy and these also enable population to adapt.

Conclusion

The vulnerability of food systems in the IGP to GEC is increasing. Food determinants like production levels, land quality and infrastructure are all negatively impacted by GEC stresses, with the result being an increase in food prices, deterioration in food storage and handling, and a decline in household income. Collectively, GEC have increased the vulnerability of a population which already has a low adaptive capacity. Reducing vulnerability and building resilience increases adaptive capacity. To accomplish this requires providing access to core services such as food, drinking water,

sanitation, education and reliable energy. Ensuring that these services are available, accessible, and affordable will reduce food system vulnerabilities.

Publication

- Dixit, Ajaya and Kanchan Mani Dixit (Eds). 2010. Improving Policy Responses to Interactions between Global Environmental Change and Food Security across the Indo-Gangetic Plain (IGP): Summary for Policy Makers. Nepal Water Conservation Foundation, 34pp.

CBA2008-02CMY-Yan

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

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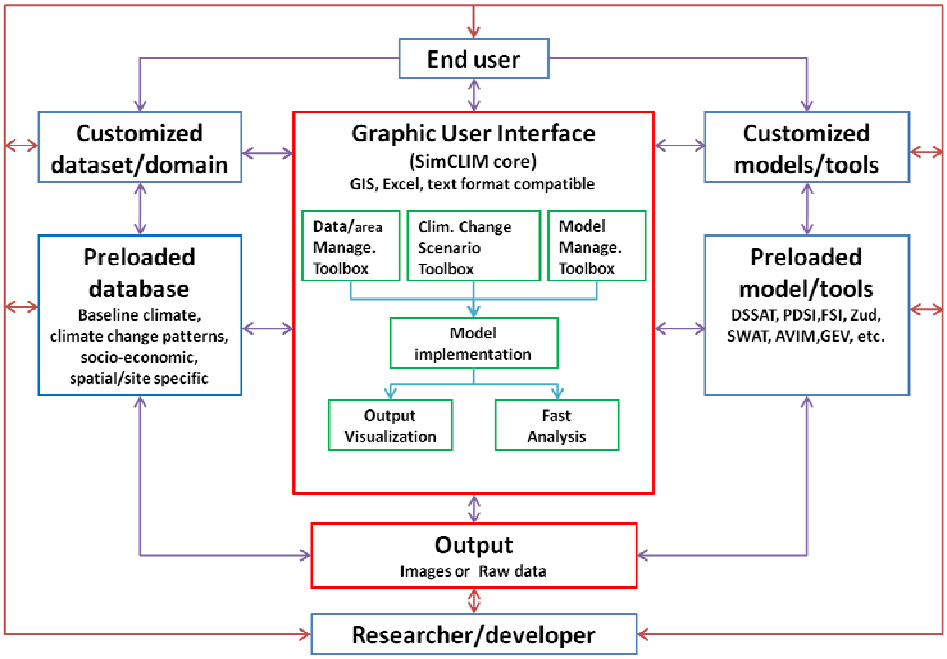
Participating Countries: **China, Mongolia, New Zealand, Russian Federation**

APN Funding: **US$180,000 (For 3 Years)**

Food and water security assessments are important, complicated and challenging, especially in the context of climate change. This APN comprehensive research project aimed to develop a co-evolutionary decision support system, Food and Water Security Integrated Model (FAWSIM), through effective information transfer and communication among members of the scientific community, policy-makers, and stakeholders.

Given its open framework structure, a series of food and water security related models were integrated into the system, including DSSAT, SWAT, PDSI, FSI, and ZUD. Climate change scenarios derived from 21 IPCC AR4 GCMs, and the related observed climate, land cover, and socio-economic data were also incorporated into the system. The integration of data, graphic user interface, impact models, and SimCLIM's open framework makes FAWSIM a co-evolutionary decision support system, which can be upgraded through the communication between the end users and its developers.



FAWSIM Schematic Illustration

FAWSIM also functions as training software for capacity building activities, like the training workshop carried out in Mongolia during the project implementation. This project also delivered a series of publications, including: cropland drought risk assessment, climate change impacts on maize production and potential adaptation options in Jilin province, food security index applications, water footprint analysis in Changchun, partial equilibrium food balance model development with application in China, the analysis of a zud (disaster) index and livestock loss rate in Mongolia, and statistical downscaling methodologies.

FAWSIM system

The main features of the FAWSIM system are:

- It was developed as an integrated assessment model and database. Its open framework helps end-users to define the assessment questions for their area of interest.
- Allows multi-scale, multi-disciplinary impact assessment.
- Allows climate change scenario uncertainty analysis.
- With a built-in GIS tool, the assessment results can be visualised and further analysed in FAWSIM, facilitating training and capacity building.

Publications

- Li, Y., Ye, W., Wang, M., Yan, X., and Togtohyn, C. 2010. Toward the Synthesis of Implications of Climate Change for Regional Food Security: Modelling Approaches and Case Studies. Poster presented at the 2010 Climate Adaptation Futures Conference, Australia.
- Yin, C., Li, Y., Ye, W., Bornman, J. and Yan, X. 2010. Statistical Downscaling of Regional Daily Precipitation over Southeast Australia based on Self-organising Maps, *Applied and Theoretical Climatology*. DOI: 10.1007/s00704-010-0371-y.
- Li, Y., Ye, W., Wang, M., and Yan, X. 2009. Climate Change and Drought: A Risk Assessment of Crop-yield Impacts. *Climate Research*, 39: 31–46.

CBA2008-03CMY-Jintrawet

Climate Change in Southeast Asia and Assessment on Impacts, Vulnerability and Adaptation on Rice Production and Water Resources

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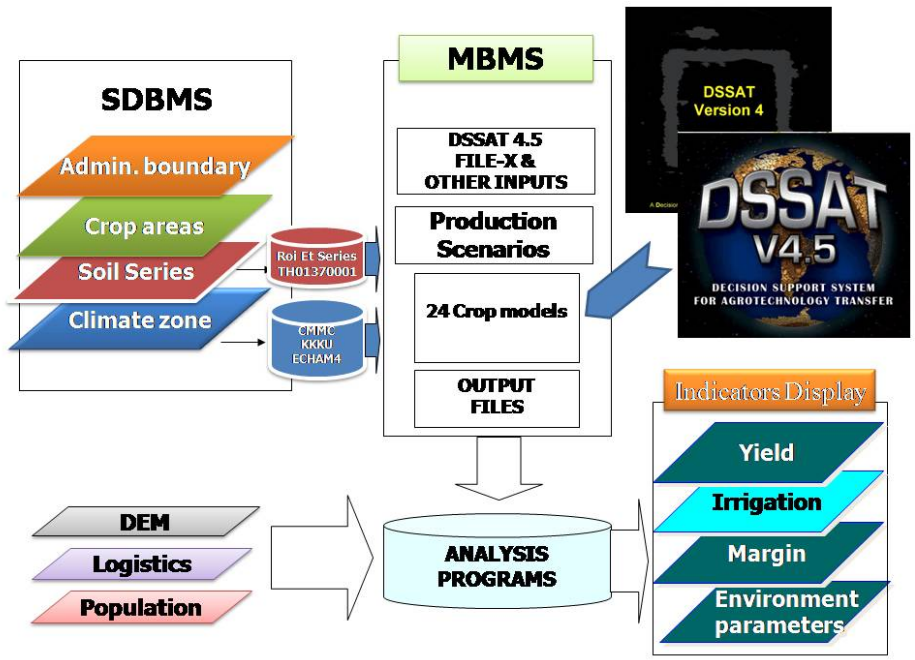
Participating Countries: **Lao PDR, Thailand, Viet Nam**

APN Funding: **US$180,000 (For 3 Years)**

This comprehensive research project aimed to enhance research capacity of scientists in Southeast Asia on the subject of climate change with a focus on impact, vulnerability and adaptation, especially on rice production and water resource. Activities under this research project included developing of high resolution future climate scenarios for Southeast Asia region as well as southern region of People Republic of China-based regional climate model simulation. A field experiment was conducted to measure rice productivity under different soil fertility treatments and weather conditions.

Impacts of climate change was assessed as pilot study in two scales: watershed scale, which assessed the future rice productivity and concerns on water resource in the Chi and Mun river basins, and also at the community scale, which focussed on risk and adaptation to future climate change of farmer communities in the Chi watershed and in central region of Lao PDR. The assessment at watershed scale showed various plausible futures of rice productivity under influence of climate change and change in cropping area, which may be driven by future socio-economic condition. Changing climate and cropping pattern may alter water demand for agriculture activity, in this regard; concern on water resource in the Chi-Mun river basins was assessed.

At the community scale, the assessment was conducted at Lao-oi District, Chi river watershed in Thailand and Champhone District, central region of Lao PDR, which addressed risk and possible adaptation to cope with future risk from changing climate. The major outcomes from this project consists of data, which has been used for many studies on climate change in Southeast Asia region, and method on climate change impact, vulnerability and adaptation assessment was tested, of which knowledge gained from the research activities was transferred to number of researchers in the region. The output of this project will contribute directly to the preparation of Second National Communication to UNFCCC and support climate change policy planning for the countries in the region as well as be used as foundation for further study or assessment in various aspects of climate change in Southeast Asia as well as Mekong River basin.



Schematic of CROPDSS Shell Interface

Results

- High resolution future climate scenarios for Southeast Asia region (downscale result from PRECIS regional climate model base on ECHAM4 GCM A2 and B2 SRES scenarios).
- Field test result on soil fertility and rice productivity under different weather patterns.
- Framework on assessment of risk, vulnerability and adaptation of system/sector/community to climate change.
- Policy support data and information: data and part of research finding were used to support the preparation of the Second National Communication of Thailand to UNFCCC, National Target Program to Response to Climate Change (Viet Nam), Climate Change Adaptation Initiative of Mekong River Commission, etc.

Publications

- Chinvanno, S., Luang-Aram, V., Sangmanee, C. and Thanakijmethavu, J. 2009. Simulation of Future Climate Scenario for Thailand and Surrounding Countries. Southeast Asia START Regional Center technical report. Bangkok, Thailand. (Thai edition)
- TKK & SEA START RC. 2009. Water and Climate Change in the Lower Mekong Basin: Diagnosis and Recommendations for Adaptation, Water and Development Research Group, Helsinki University of Technology (TKK), and Southeast Asia START Regional Center (SEA START RC), Chulalongkorn University. Water and Development Publications, Helsinki University of Technology, Espoo, Finland.

CAPaBLE Focussed Activity on Scientific Capacity Building for Climate Impact and Vulnerability Assessments (SCBCIA)

CIA2009-01-Snidvongs

Climate Change Vulnerability Assessment of Floods and Urban Development Planning for Asian Coastal Cities

Project Leader: Dr. Anond Snidvongs
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(SEA START RC) Chulalongkorn University
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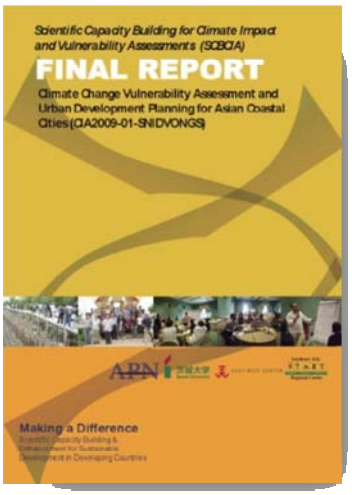

Participating Countries: India, Indonesia, Japan, Philippines, Thailand, U.S.A., Viet Nam

APN Funding: US$45,000 (For 1 Year)

This 'Cities at Risk' workshop, *Climate Change Vulnerability Assessment and Urban Development Planning for Asian Coastal Cities*, was built on the first workshop held in 2009 in Bangkok, and specifically addressed the limited capacity to carry out risk and vulnerability assessments in coastal Asian cities. It brought together over 40 participants including academics, urban planners/government representatives, and experts in disaster management.

The workshop clarified the current information/knowledge gaps and challenges, and identified future research opportunities for addressing climate change-related risks

and vulnerability assessments in Bangkok, Ho Chi Minh, Jakarta, Manila, and Mumbai. Key findings distilled from the workshop were grouped into three categories: 1) assessment of climate change related risk; 2) information/knowledge management; and 3) governance. Specific observations and recommendations for future research were identified.

Two major projects are anticipated to commence in 2011, one of which is also funded by the APN (ARCP2010-09NSY-Patankar: Enhancing Adaptation to Climate Change by Integrating Climate Risk into Long-term Development Plans and Disaster Management), thereby offering the opportunity to address the identified gaps in information/knowledge faced by the cities. These projects demonstrate how the 'Cities at Risk 'workshops are encouraging communication and generating collaboration in addressing the impacts of climate change on cities in Asia and beyond.

CIA2009-06-Duc

Capacity Development for Adaptation to Climate Change in the Rural Coastal Zone of Viet Nam

Project Leader: **Assoc. Prof. Dr. Do Minh Duc**
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Participating Countries: **Japan and Viet Nam**

APN Funding: **US$28,500 (For 1 Year)**

Climate change is the most serious environmental problem facing the world today. It puts more pressure on all socio-economic activities. In terms of climate change-related losses, it can easily recognise a much larger potential damages in urban to rural areas. Therefore, many efforts were focussed in urban areas, especially coastal mega-cities.

The rural areas are not properly considered in some cases. This project investigated the potential vulnerability of rural coastal zone in Viet Nam. It aimed to help the local authority and community to know the new risks of climate change and gain initiative in adaptation to climate change, capacity development and exchange of experiences on climate change risk assessment and coastal protection. Activities were concentrated on capacity building and workshops.

Residents in rural coastal areas are more vulnerable to climate change because of lower awareness and poor infrastructure. Although their awareness on climate change impacts has increased through workshops and training courses, they still lack the knowledge about wise adaptation to climate change. To address this, a sound emergence of science should be taken into account. Two workshops with the participation of experts from Japan, Germany, and concerning institutions were organised to share experiences on wise adaptation to climate change. A comparative study on counter measures coastal protection between Hai Hau (Viet Nam) and Japan confirmed the important role of natural and socio-economic conditions.

The following were identified as elements of wise adaptation measures: impact/vulnerability assessment at local level; monitoring and early warning; incorporating with renewal cycle of infrastructure; co-benefit approaches for mitigation and adaptation; collaboration of ministries; and participation of stakeholders and capacity building.

Publications

- Do Minh Duc, 2010. Coastal Protection in the Context of Climate Change: A Case Study of Hai Hau Coast. Vietnam Geotechnical Journal (English Series).

New Publications from APN Completed Projects

APN 2001-06: Building Adaptive Capacity to Environmental Change in Southeast Asia: Integrating Contributions from Theory, Models and Case Studies for Better Development Strategies. Project Leader: Dr. Louis Lebel

- *Lebel, L., Garden , P., Subsin, N., Na Nan, S., 2009. Averted crises, contested transitions: water management in the Upper Ping River basin, northern Thailand In: Huitema, D., Meijerink, S. (Eds.), Water policy entrepreneurs. A research companion to water transitions around the globe. Edward Elgar, Cheltenham, UK, pp. 137-157.*

APN2005-01-CMY: Institutional Capacity in Natural Disasters Risk Reduction: A Comparative Analysis of Institutions, National Policies, and Cooperative Responses to Floods in Asia. Project Leader: Dr. Elena Nikitina

- *Lebel, L., B. J. Manuta, and P. Garden 2010. Institutional traps and vulnerability to changes in climate and flood regimes in Thailand. Regional Environmental Change DOI: 10.1007/s10113-010-0118-4.*

APN2005-04-CMY: Integrated Regional Studies of Global Change in Monsoon Asia: Phase 1: APN/SCOPE/START Rapid Assessment Project of Global Change in Monsoon Asia. Project Leader: Dr. Anond Snidvongs

- *Lebel, L. 2009. The SARCS integrated study of Southeast Asia: research and assessment with networks. Pages 332-351 in C. G. Knight, and J. Jager, editors. Integrated regional assessment of global climate change. Cambridge University Press, Cambridge.*

ARCP2008-04CMY-Park: Regional Collaborative Research on Climate Change Impacts on Surface Water Quality in Eastern Monsoon Asia: Towards Sound Management of Climate Risks. Project Leader: Dr. Ji-Hyung Park

- *Park, J.-H., Duan, L., Kim, B., Mitchell, M.J., and Shibata, H. 2010. Potential effects of climate change and variability on watershed biogeochemical processes and water quality in Northeast Asia. Environment International 36: 212-225.*
- *Duong CN, Ra JS, Cho J, Kim SD, Choi HK, Park JH, Kim KW, Inam E, Kim SD. 2010. Estrogenic chemicals and estrogenicity in river waters of South Korea and seven Asian countries. Chemosphere 78: 286-293.*

ARCP2008-05CMY-Adrianov, Marine Biodiversity of the Coastal Zones in the Northwest Pacific: Status, Regional Threats, Expected Changes and Conservation. Project Leader: Dr. Andrey V. Adrianov

- *Lutaenko, K.A. and M.A. Vaschenko (Eds). 2009. Ecological Studies and the State of the Ecosystem of Amursky Bay and the Estuarine Zone of the Razdolnaya River (Sea of Japan). Volume 2. Vladivostok: Dalnauka, 331 p.*

ARCP2008-06CMY-Li, Quantification of Land-use Urbanisation Level in Three Developing Asia Countries Based on the Analysis of Scale Effects in Landscape Pattern. Project Leader: Prof. Jianlong Li

- *Gan, X. et. Al. 2009. Effect of Sensor Spatial Resolutions and Classification Themes on Urban Landscape Analysis: A Case Study in Shanghai, China. Canadian Journal of Remote Sensing. Vol. 35, No.4, pp. 1-12 2009.*

CBA2006-09NSY: Scoping Workshop on South Asia MAIRS Rapid Assessment Project's (SA/RAP) Results for Designing Future Research Agenda and Capacity Building Requirements. Project Leader: Dr. Sibaji Raha

- *Mitra, A.P† and C. Sharma (Eds.) 2010. Global Environmental Change in South Asia: A Regional Perspective. 356pp.*

Young Scientist's Section

ARCP2009-03CMY-Nikitina

- **Oleg Astakhov, Institute for World Economy and International Relations, Russian Academy of Sciences, Russian Federation**
  Oleg participated in case-study research for Amur River Basin in Russian Federation with focus on social dimension and public participation. He was doing the interviews with the NGOs functional in the Amur provinces. He has a Master Degree in law, specialising on recent social reforms in Russian Federation. "*Experience in REWIND project will contribute to my PhD on public participation in sustainable development in the northern and Siberian regions of Russia".*

  Email: astakhov@imemo.ru

- **Ha Hai Duong , Institute of Water and Environment (MARD), Viet Nam**
  Ha carried out case-study research in the Red River Basin, Viet Nam. He specialises in analysis of water-related risks and water resources management. He took part in preparation of the report from the REWIND workshop in Hanoi. *"REWIND experience is very important for my further research on water problems, adding global dimension to my professional interests".*

  Email: hahaiduongcwe@yahoo.com

- **Olga Smaragdova, EcoPolicy, Russian Federation**
  Olga, during the entire phase of the project, has been engaged in REWIND international and domestic networking activities, in public relations and promoting links with policy-makers, in project administration and events organisation. *"I have Masters Degree in business administration, and my involvement in the project is an extremely useful experience for my professional career".*

  Email: o.smaragdova@destima.ru

ARCP2009-06CMY-Braimoh

- **Songphonsak Rattinawilailak ('Mulu'), Unit for Social and Environmental Research (USER), Chiang Mai University, Thailand**
  Mulu carried out most of the field work for this study including interviews in local Karen language and their summary and translation into Thai. He has a Masters Degree in Non-formal Education and has been a Research Assistant at USER, Chiang Mai University for three years. He is a co-author of Chapter 4 and lead

author of some of the publications derived from it as well as a junior author of other related-publications. "*This study helped me develop skills as a field researcher. I gained knowledge on how to do design surveys and manage data collection and processing. I also learnt a lot about traditional and modern leaders and their roles in watershed management*".

Email: mulu1212@hotmail.com

CBA2009-05NSY-Salinger

- **Azhar Bin Ishak, Malaysian Meteorological Department, Malaysia**
  Azhar participated in the project workshop. *"The international workshop met the overall objective especially the recommendation for enhancing more effective transfer and dissemination of agrometeorological information, services and products to farmers at the local level through identification a focal point by farmer associations and industry organisations. Close contact to farmer focal point with current systems of communication could speed up the delivery of products directly to farmers at the grassroots level. The recommendations for improvements in advisories and forecasts for long-term strategic planning at the farm level are very important. I would like to thank the President of the Commission for Agricultural Meteorology of WMO, University of Southern Queensland, Australia, and APN for supporting my attendance to this workshop".*

  Email: azhar@met.gov.my

- **Alexander Kleshchenko, Institute of Agricultural Meteorology of ROSGIDROMET, Russian Federation**
  Alexander participated in the project workshop. *"The three-day workshop is very interesting. There is a special system for agricultural users and farmers in Russia and the workshop results would be included in that system. The improved system would be used by the farmers. The round-table discussion was very useful and informative".*

  Email: cxm-diz@obninsk.org

CBA2009-07NSY-Larigauderie

- **Allwin Jesudasan, The Ashoka Trust for Research in Ecology and the Environment (ATREE), India**

Allwin delivered a presentation at the Second DIVERSITAS Open Science Conference (OSC2). *"The presentation I gave at DIVERSITAS OSC2 drew some interesting comments and suggestion which I have incorporated in my manuscript. The conference also gave me the opportunity to listen to other people's work which had so much diversity. These gave me ideas on how to link the various disciplines that conservation science needs. What I was pleasantly surprised was that I was able to interact with my senior colleagues who are otherwise held up when at office. The conference was like breaking ice with them. I am now in constant touch with them discussing my ideas. Being in India, I did not imagine travelling to another country. The whole trip has made me a lot more confident and has given me fresh ideas to take my conservation career forward. I am thankful to APN for funding my travel which gave me this wonderful opportunity".*

Email: allwin.jesudasan@atree.org

- **Bishnu Raj Upreti, National Centre of Competence in Research (NCCR), Nepal**

Bishnu's abstract was accepted for oral presentation at the DIVERSITAS OSC2. "*The audiences of the conference were experts in the field and their comments and suggestions in my presentation greatly helped me to refine my work. Further, it was a great opportunity to meet globally known experts in the field of biodiversity. As a social scientist, it was a unique opportunity to interact with natural scientists and learn from them. In essence, it was also an excellent forum for networking. The field visit to the conservation area was really beneficial via exposure to South African biodiversity and its management.*

The materials collected from the conference are valuable resources to further my research and teaching. I am extensively using the collected resource materials and knowledge gained from the conference in my teaching and research at the Human and Natural Resources Studies Centre of Kathmandu University, and conducting

research in the field of social dimensions of natural resources and biodiversity for which participation in this conference aided me significantly.

I use the knowledge and skills/experiences gained from the conference in my daily life. My ambition is to be a part of this global biodiversity conservation network. I would like to thank the APN for providing me funding support to participate in this important event and its commitment to support other aspiring young scientists in the region. I sincerely feel that this support from APN has a great contribution in my capacity enhancement".

Email: bupreti@nccr.wlink.com.np

CIA2009-01-Snidvongs

- **Indra Surbakti, National Bureau of Statistics, Indonesia**

Indra participated in 'Cities at Risk' Workshop. *"The workshop enabled me not just to gain new knowledge about the impacts of climate change, but also to obtain additional knowledge on developing a social vulnerability index to climate change that can be adopted by developing countries. More importantly, my Jakarta Team and I were able to widen our research network because we met new and knowledgeable people on climate change and its impacts. I was particularly excited to meet several experts on the social issues of climate change and the indicators designed to monitor the impacts of climate change on people, because in my view the people affected by climate change are also as important as the physical impacts. I can sincerely say that my participation in the workshop was a success in view of the knowledge gained. It allows me to continue my quest to develop social indicators for future use. It is also my hope that the Jakarta Team will continue their collaboration to continuously address the issue of climate change".*

Email: indrams@bps.go.id

- **Archana Patankar, K J Somaiya Institute of Management Studies and Research, India**

Archana participated in 'Cities at Risk' Workshop. "*I had the opportunity to participate in this Workshop as part of the Mumbai City Team and also presented the City Report providing an overview of general awareness about climate change impacts and current adaptation efforts in the City. The five days of the Workshop were filled with a number of sessions conducted by*

international experts on varied but interlinked themes of risk and vulnerability mapping, socio-economic vulnerability assessments, Geographic Information System (GIS)-based hazard assessments, and participatory processes to develop stakeholder partnerships and linking disaster risk reduction and climate change adaptation for adaptive urban governance. The organisers also scheduled a field visit to the nearby Muang District in Samut Sakhon Province to demonstrate how community involvement was successful in developing coping mechanisms against flooding, or for mangrove protection by using traditional adaptation techniques.

This Workshop was a great learning experience for all of us to understand and appreciate the similarity of problems faced by our coastal cities, the current climate change adaptation and mitigation efforts and need to mainstream the climate agenda into long-term development plans for the coastal cities. I have been immensely benefited personally and professionally by developing close contacts with the research community during the Workshop and hope to carry on the interaction that would culminate in joint research endeavours in future.

Email: archana.patankar09@gmail.com

- **Lam Vu Thanh Noi, Asian Institute of Technology (AIT), Thailand**

Lam participated in 'Cities at Risk' Workshop. She is a Vietnamese student doing research on integrated risk assessment of climate change and urban water management at AIT. "*The workshop was great, it provided me the platform to meet various climate change researchers and interested parties from Asia-Pacific countries. I also had the opportunity to join the network of Regional and International START, East-West Center, Pacific Disaster Center, United Nation University, and Ibaraki University through APN. I gained new ideas about climate change risk in the context of urbanisation mainly through the field trip and workshop presentations.*

I would like to express my sincere gratitude to APN and the organisers of this workshop for the opportunity to attend in this event and for the support they extended to me. While I was discussing with Ms. Perlyn Pulhin of the APN Secretariat and through her presentation, I came to know more about APN's support on research activities in the climate change area. I hope that in the near future, I will get opportunities to work with APN or become a project leader/collaborator. I believe that such training, workshop and conference are very useful for young researchers because we can share our experiences and enhance effective communications among academic institutions and participating organisations at the regional and international levels".

Email: lamnoi2002@yahoo.com

- **Phu Le Vo, Ph.D, Ho Chi Minh City University of Technology, Viet Nam**

Phu participated in 'Cities at Risk' Workshop. "*Being a member of the Ho Chi Minh City Team, I found that it was a great opportunity to participate in that one-week workshop. I gained profound useful information on climate change impacts on Asian coastal cities which are potential risks to coastal flooding and climate-related disasters. Importantly, I grasped comprehensive approaches to climate risk and disaster assessment given by various academic researchers and experts from Ibaraki University, Pacific Disaster Center and UN University-Institute for Environment and Human Security (UNU-EHS). Interestingly, a number of discussions were stimulated by researchers from East-West Center and START. In addition, I and my team members had a great opportunity to learn from and share experience with other colleagues through their case studies in Bangkok, Manila, Jakarta and Mumbai.*

Most importantly, I brought knowledge and information on climate change vulnerability assessments from the Workshop to share with Vietnamese colleagues. Given the context that Ho Chi Minh City (HCMC) is one of the top 10 Asian cities at risk from coastal flooding, it is imperative to conduct research projects related social and economic vulnerability assessments in HCMC. However, there is currently a lack of necessary and relevant tools and approaches to climate change vulnerability assessments in HCMC. I have since taken the opportunity to promote joint research collaborating with colleagues of the Department of Urban Planning – Ho Chi Minh City University of Architecture. Accordingly, a future climate change research project has been proposed for socio-economic vulnerability assessment of riverine and coastal communities which are most vulnerable".

Email: lephuvo@yahoo.com

- **Vikas Lakhani, Jamsetji Tata Centre for Disaster Management (JTCDM), India**

Phu participated in 'Cities at Risk' Workshop. "*I was fortunate to attend the 'Cities at Risk' Workshop. It was an amazing experience where I got the opportunity to share my work and ideas with some of the most recognised scholars of this field. The workshop covered an extensive range of topics.*

The members of the five City Teams from different countries exchanged ideas and discussed the outcomes of the research initiatives in their respective countries and areas of expertise. In the field of disaster studies and climate change, where innumerable people are working in different places at different levels, it is important to share the kind of work others are doing and understand the relations and synergies towards an integrated work and potential partnership.
The workshop provided a platform for teams and researchers to sharpen the focus of their work. Currently, all the teams are working towards preparing a common document and hopefully, we will continue to work in close collaboration with each other. The organisers should be given the credit for systematising the sessions with theory and practice wisely. The resource persons are leading academicians/researchers and they showed immense enthusiasm in every session.

For a young researcher like me, it is imperative that we get enough exposure in order to improve our research skills. I am working on my doctoral proposal and this workshop enabled me to explore the possibilities for carrying out the PhD proposal as well as helped me to improve the quality of my work. I wish all the very best to APN and associates for their upcoming ventures and would be happy to contribute to their initiatives with sincere gratitude".

Email: vikas.tiss@gmail.com

People in the APN

The APN is made up of dedicated experts who play an active role in promoting the APN programme and its activities in their countries, sub-regions and the global change community.

The lists below are current, at the time of publication, December 2010.

APN national Focal Points (nFP) and Scientific Planning Group (SPG) Members

Each member country appoints one nFP who sets policy for programmes, finances and other APN activities, and one SPG Member, who recommends science themes and activities for the Inter-Governmental Meeting (IGM) to consider for support.

Australia
(Identifying nominees is in progress)

Bangladesh
A.N. Shamsuddin Azad CHOWDHURY **(nFP)**
Ministry of Environment and Forests
Giashuddin MIAH **(SPG)**
Bangabandhu Sheikh Mujibur Rahman Agricultural University

Bhutan
G. Karma CHHOPEL **(nFP)**
National Environment Commission
Peldon TSHERING **(SPG)**
National Environment Commission

Cambodia
Sundara SEM **(nFP)**
Ministry of Environment
Khieu HOURT **(SPG)**
Cambodia National Mekong Committee

China
Sun CHENGYONG **(nFP)**
Nation Ministry of Science and Technology
Wenjie DONG **(SPG)**
Beijing Normal University

Fiji
(Identifying nominees is in progress)

India
Subodh SHARMA **(nFP)**
Ministry of Environment and Forests
B.N. GOSWAMI **(SPG)**
Indian Institute of Tropical Meteorology

Indonesia
Liana BRATASIDA **(nFP)**
Ministry of Environment
Erna Sri ADININGSIH (SPG)
National Institute of Aeronautics and Space (LAPAN)

Japan
Yutaka MATSUZAWA **(nFP)**
Ministry of the Environment
Kensuke FUKUSHI **(SPG)**
The University of Tokyo

Lao People's Democratic Republic
Bountanh BOUNVILAY **(nFP)**
Water Resources and Environment Research Institute
Oulaphone ONGKEO **(SPG)**
Water Resources and Environment Research Institute

Malaysia

***Kok Seng YAP* (nFP)**
Malaysian Meteorological Department
***Subramaniam MOTEN* (SPG)**
Malaysian Meteorological Department

Mongolia

***Bayarbat DASHZEVEG* (nFP)**
Ministry of Nature and Environment and Tourism
Tsogtbaatar JAMSRAN (SPG)
Mongolian Academy of Sciences

Nepal

***Meena KHANAL* (nFP)**
Ministry of Environment, Science and Technology
***Madan Lall SHRESTHA* (SPG)**
Nepal Academy of Science and Technology

New Zealand

***W. Andrew MATTHEWS* (nFP/SPG)**
New Zealand National Commission for UNESCO

Pakistan

***Momin AGHA* (nFP)**
Ministry of Environment
***Amir MUHAMMED* (SPG)**
National University of Computer and Emerging Sciences

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National Institute of Environmental Research

Russian Federation

***Andrey V. ADRIANOV* (nFP)**
Russian Academy of Sciences
***Alexander STERIN* (SPG)**
Russian Research Institute for Hydrometeorological Information - World Data Center

Sri Lanka

***R.H.S. SAMARATUNGA* (nFP)**
Ministry of Environment
***G.B. SAMARASINGHE* (SPG)**
Department of Meteorology

Thailand

***Chote TRACHU* (nFP)**
Ministry of Natural Resources and Environment
***Jariya BOONJAWAT* (SPG)** Chulalongkorn University

United States of America

***Louis BROWN* (nFP)**
U.S. Climate Change Science Program; National Science Foundation
***Luis M. TUPAS* (SPG)**
US Department of Agriculture

Viet Nam

***Xuan Bao Tam NGUYEN* (nFP)**
Ministry of Natural Resources and Environment
***Nga MAI NGOC* (SPG)**
Center for Support of Social Development Programmes

Invited Experts to the SPG

International organisations and research institutions involved in global change research activities may attend the SPG Meeting as observers and to participate in SPG activities.

Congbin FU, START Regional Committee for Temperate East Asia
Kanayathu KOSHY, Centre for Global Sustainability Studies, Universiti Sains Malaysia
Chao Han LIU, Southeast Asia START Regional Committee

Members of the Steering Committee (SC)

The SC acts on behalf of the IGM during the period between IGMs, implementing IGM decisions, with assistance from the Secretariat.

Elected Members

Su-ho SEONG, Republic of Korea (Chair)
Kok Seng YAP, Malaysia (Vice-Chair)
Bayarbat DASHZEVEG, Mongolia

Host of the 16th IGM/SPG Meeting

R.H.S. SAMARATUNGA, *Sri Lanka*

Ex-Officio

Erna Sri ADININGSIH, SPG Member for Indonesia
Luis M. TUPAS, SPG Member for USA

Co-opted Members

Louis BROWN, nFP for USA
Roland FUCHS, Senior Fellow, East-West Center (former START Secretariat Director)
W. Andrew MATTHEWS, nFP/SPG Member for New Zealand
Yutaka MATSUZAWA, nFP for Japan
Kazu TAKEMOTO, Senior Adviser to the Minister, Ministry of the Environment, Japan

Members of the Capacity Development Committee (CDC)

The CDC oversees the processes related to the operation of the CAPaBLE Programme and the development of strategies for its advancement.

SPG Co-Chair

Erna Sri ADININGSIH, SPG Member for Indonesia
Luis M. TUPAS, SPG Member for USA

SC Chair

Su-ho SEONG, nFP for Republic of Korea

Donor Representative

Yutaka MATSUZAWA, nFP for Japan

Capacity Building Experts

Roland FUCHS, East-West Center
Srikantha HERATH, Institute for Sustainability and Peace, United Nations University
W. Andrew MATTHEWS, nFP/SPG Member for New Zealand
Harini NAGENDRA, Ashoka Trust for Research in Ecology and the Environment

Members of the SPG Sub-Committee

The SPG Sub-Committee oversees the implementation and development of the APN scientific activities, particularly the Annual Regional Call for Research Proposals.

Erna Sri ADININGSIH, SPG Member for Indonesia
Luis TUPAS, SPG Member for USA
Giashuddin MIAH, SPG Member for Bangladesh
Madan Lall SHRESTHA, SPG Member for Nepal
Alexander STERIN, SPG Member for Russian Federation

Secretariat

The Secretariat performs the daily operations of the APN and, in particular, assists the IGM, the SC, the SPG and the CDC, in implementing the APN's Strategic Plan and Operational Plans; programme; budget; and other activities, as appropriate. Its Office is located in Kobe, Japan, under the support of the Hyogo Prefectural Government.

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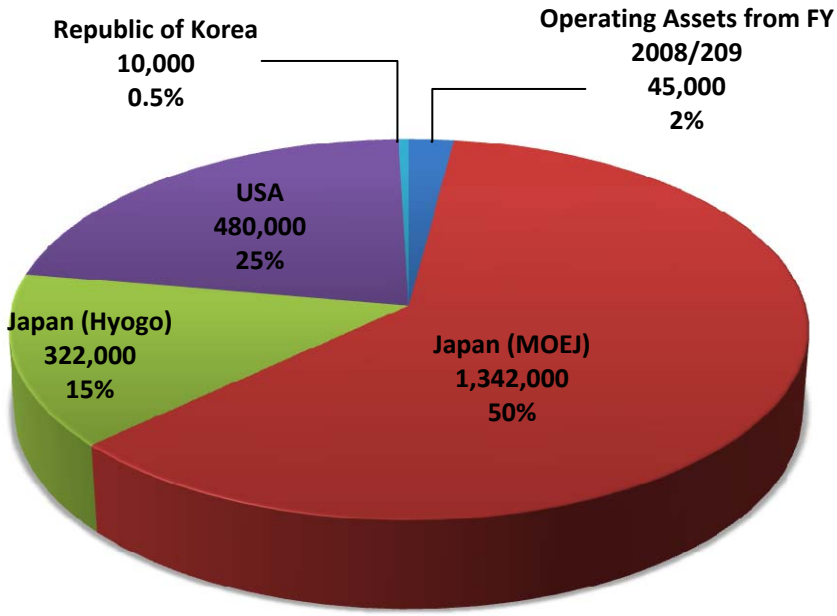
Financial Resources

The following member countries provided direct financial support to the APN for its activities in 2009/2010: Japan (Ministry of the Environment and Hyogo Prefectural Government); USA (National Science Foundation/United States Global Change Research Program); and Republic of Korea (Ministry of Environment). The figure below displays member countries' contributions.

Resources in FY 2009/2010 (US$)



Also, APN's 22 member country governments, including Hyogo Prefectural Government, the host of the APN Secretariat in Kobe, Japan, together with the staff from a whole range of institutions, strongly support the network with in-kind contributions including providing their time and equipment, supplies and other support. In addition, national Focal Points and Scientific Planning Group Members spend considerable time on issues directly related to the APN. These include:

- Attending annual IGM/SPG and Sub-Regional Cooperation Meetings;
- Hosting APN Meetings;
- Reviewing the science activities and agendas of the APN;
- Reviewing proposals under the APN annual Calls for Proposals;

- Producing APN materials in vernacular languages and distributing at strategic events and to in-country institutions;
- Communicating with the Secretariat on issues that require regular input throughout the year; and
- Promoting APN and its programmes and activities on various occasions at the national, sub-regional and international levels.

The Hyogo Prefectural Government generously supports the Secretariat by providing office space and fixtures, etc. This in-kind support amounts to more than US$ 500,000/year.

Furthermore, in order to successfully conduct many APN-funded projects/activities, substantial in-kind support, as well as additional resources, in the form of matching funds, are in the order of US$ 3 million/year by the institutions of the Leaders and Collaborators of the projects/activities and other sources of funding.

Of the completed projects in 2009/2010, the following successfully secured in-kind contributions and fund-matching from other sources. Other projects did not specify the amount of in-kind contributions and fund-matching secured.

ARCP:

- *ARCP2009-03CMY-Nikitina: US$ 160,000*
- *ARCP2009-06CMY-Braimoh: US$ 101,000*
- *ARCP2009-09NSY-Skole: US$ 19,300*

CAPaBLE:

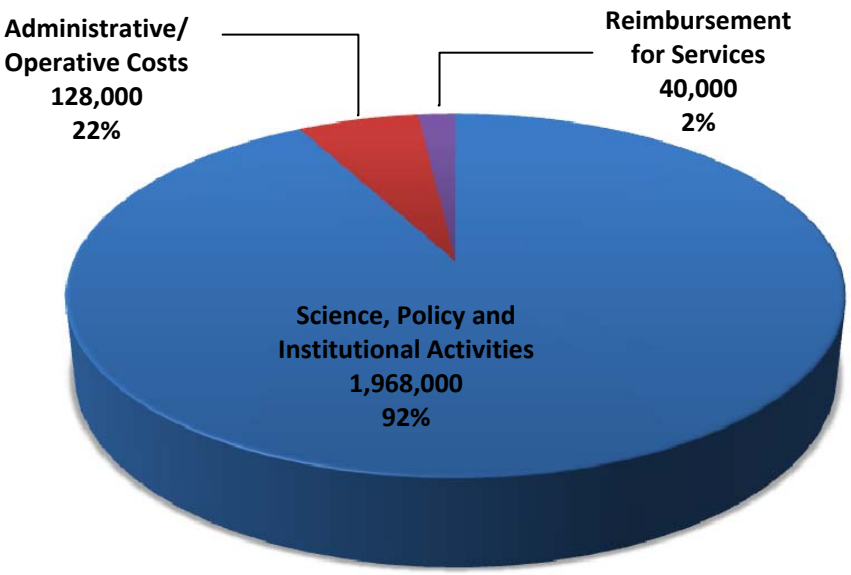
- *CRP2008-01CMY-Dixit: US$ 160,000*
- *CRP2008-03CMY-Jintrawet: US$ 58,700*
- *CBA2009-01CMY-Ailikun: US$ 40,000*
- *CBA2009-03NSY-Bishry: US$ 2,600*
- *CBA2009-05NSY-Sallinger: US$ 77,000*
- *CBA2009-07NSY-Larigauderie: US$ 521,573*
- *CBA2009-10NSY-Li: US$ 11,000*

SCBCIA:

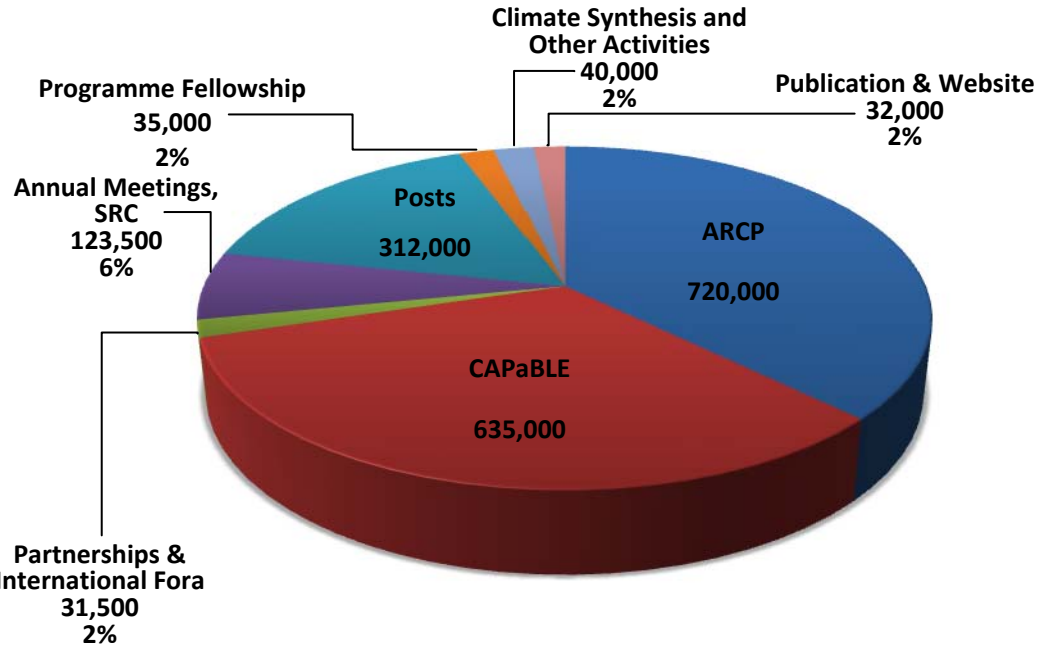
- *CIA2009-01-Snidvongs: US$ 5,000*

Majority (92%) of the overall direct cash contribution to APN was invested in supporting/conducting global change research, capacity development, and networking activities. Investments were also made in fellowship programmes and science/policy fora. Twenty-two (22%) was spent on administrative/operative costs while reimbursement for services used the remaining 2%. The below figures show the breakdown of expenditure in 2009/2010.

Use of Resources in FY 2009/2010 (US$)



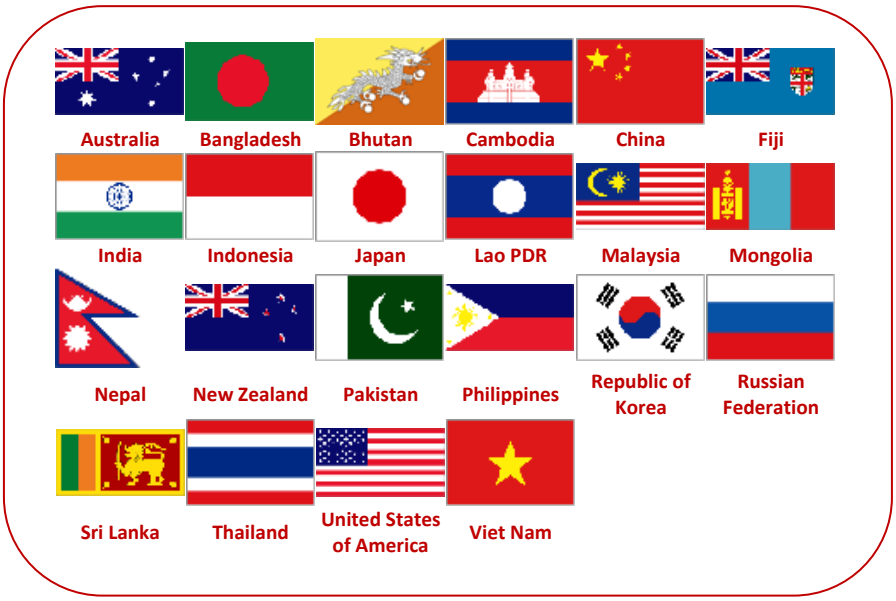
Breakdown in the Use of Resources for Science, Policy and Institutional Activities (US$)



Member Countries

The APN relies heavily on the generosity and commitment of all its member countries for financial and in-kind support.

The APN's membership has grown from 12 countries in 1996 to the current 22 member countries: Australia, Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Russian Federation, Sri Lanka, Thailand, United States of America, and Viet Nam.



Individuals and organisations in Pacific Island States and Singapore are able to participate in all APN programme activities and are considered to be from an APN Approved Country under the programme membership participation criterion.

Sponsors

The following sponsors provide direct funding for the APN that is complimented by in-kind support from APN members, such as hosting workshops and seminars and the sharing of scientific and management expertise.

Hyogo Prefectural Government, Japan

Ministry of the Environment, Japan

Ministry for the Environment, New Zealand

Ministry of Environment, Republic of Korea

National Science Foundation, United States of America

US Global Change Research Program, United States of America

Partner Organisations

The APN believes in the value of partnerships and networks and considers working with other organisations involved in global change research, capacity building and policy development a crucial effort in fostering global change research in the region. Together with the organisations and institutions that are directly co-implementing APN projects and activities, the following are among APN's key partners:

ESSP – Earth System Science Partnership

It is a joint initiative of four global environmental change programmes: DIVERSITAS, IGBP, IHDP, and WCRP bringing together researchers from diverse fields and from across the globes, to undertake an integrated study of the Earth System, the way that it is changing, and the implications for global and regional sustainability.

DIVERSITAS – International Programme of Biodiversity Science

The mission of DIVERSITAS is to promote an integrative biodiversity science, linking biological, ecological and social disciplines in an effort to produce socially relevant new knowledge; and provide the scientific basis for the conservation and sustainable use of biodiversity.

GEO – Group on Earth Observations

GEO is a voluntary partnership of governments and international organisations. It provides a framework within which these partners can develop new projects and coordinate their strategies and investments. GEO is coordinating efforts to build a Global Earth Observation System of Systems (GEOSS) on the basis of a 10-Year Implementation Plan for the period 2005-2015.

IAI – Inter-American Institute for Global Change Research

IAI is an intergovernmental organisation with a mandate to understand the environmental and social impacts of global change in the Americas. IAI promotes cross-border research to augment scientific capacity and to generate knowledge for free and open exchange towards scientific advice for policy-makers on critical global change issues in the region.

ICSU – The International Council for Science

ICSU is a non-governmental organisation representing a global membership that includes both national scientific bodies (117 members) and international scientific unions (30 members). Through this extensive international network, ICSU provides a forum for discussion of issues relevant to policy for international science and the importance of international science for policy issues.

ICSU ROAP – ICSU Regional Office for Asia and the Pacific

The Office promotes the development of science throughout Asia and the Pacific and helps strengthen the participation of developing country scientist in international research in the region. It also strives to ensure that Asia Pacific scientists become involved in those aspects of the ICSU 2006-2011 Strategic Plan that are especially relevant for Asia and the Pacific.

IGBP – International Geosphere-Biosphere Programme

It is a research programme that studies the interactions between biological, chemical and physical processes and interactions with human systems and collaborates with other programmes to develop and impart the understanding necessary to respond to global change and also to provide scientific knowledge to improve the sustainability of the living Earth.

IHDP – International Human Dimensions Programme on Global Environmental Change

The IHDP is an international, interdisciplinary science programme, dedicated to promoting social science research that helps humans to understand and address the challenges of global environmental change and improve societal responses. It also fosters capacity-development, networking and science-policy interaction toward a shared understanding of the social causes and implications of global changes.

WCRP – World Climate Research Programme

It provides the international forum to align the efforts of the climate scientists worldwide towards the aim of determining climate predictability and human impact on climate. WCRP's mission is to improve the predictive skill of climate models from seasons to centuries and from global to local scales and to make the resulting information and knowledge available to all nations

around the world for climate adaptation, mitigation and risk management.

START – Global Change SysTem for Analysis, Research and Training

START is a non-governmental research organisation, assisting developing countries to build the expertise and knowledge needed to explore the drivers of and solutions to global and regional environmental change. Through our growing regional networks of collaborating scientists and institutions, START strives to reduce vulnerability through informed decision making.

Recognising that it cannot achieve its goal on its own, APN is constantly exploring opportunities to find new synergies for funding, research, and network-building, etc.

Next Steps

As the threat of climate change and need for mitigation and adaptation responses are becoming immense, the crucial role of the APN in the region becomes more essential. Next year and the succeeding years covering the APN 3rd Strategic Phase (2010-2015), APN is committed to further enhance collaborative scientific research capacity in the Asia-Pacific region, particularly in developing countries. The APN will create more opportunities for scientists and policy-makers to interact effectively and will persist to provide robust scientific input to policy decision-making and scientific knowledge to the public and other non-science communities.

With the active participation of the 22 member countries and cooperation of partner organisations and agencies, APN is confident that it will continue to play a key role in supporting global change research. APN Science Agenda is focussed on scientific research, scientific capacity development and science-policy in the following areas: Climate Change and Climate Variability; Ecosystems, Biodiversity, and Land Use; Changes in the Atmospheric, Terrestrial and Marine Domains; and Resources Utilisation and Pathways for Sustainable Development. More activities will be organised such as synthesis, workshops, assessments and those that are project-related under the two main scientific pillars of the APN, which are the ARCP and CAPaBLE Programmes and also under the focussed activities that were launched through a Special Call for Proposals.

The APN will continue to count on the expertise of its Scientific Planning Group (SPG) and the pool of external expert reviewers in providing sound and fair judgement on which proposals submitted to APN will be deliberated and considered for funding and finally recommended at the Inter-Governmental Meeting (IGM). With support and guidance from the SPG Sub-Committee, Capacity Development Committee (CDC), SPG, and the Steering Committee (SC), the APN Secretariat, will continue to mainstream the Proposal Submission and Review Process as well as the Project Financial Reporting. More Proposal Development Training Workshops will be organised to increase the

capacity of early-career scientists to submit a competitive proposal to APN for its Annual Calls for Proposals in key scientific areas for sustainable development in the Asia-Pacific region.

APN hopes to further strengthen the institutional Policy on Data Access/Sharing and Management and the Policy on Reviewer Conflict of Interest. Consultation with the members is in progress and the policies are being prepared for endorsement at the 16th IGM/SPG Meeting. Devising criteria that define successful science-policy linkage(s) is also an ongoing effort.

Alongside is the implementation of the strategies stipulated under the Institutional Agenda. The APN will pay closer attention to the following areas: Involvement of member countries; alignment with programmes of the global change community; financial resources; communications and outreach; and enhancing the network and institutional arrangements. APN aims to implement a more robust 'Resources Development Strategy'. This is fundamental in this time where countries in the world are facing global economic depression. With guidance from the SC and the ad hoc committee that was created at the 16th SC Meeting to focus on resources development, strategic mechanisms will be devised in order to encourage more support (monetary and in-kind) from members, partners and other potential sources such as the private sector.

The APN will also continue to update and implement the actions in the Annual Operating Plan (work in progress). These actions will be reviewed to ensure that the activities outlined in the 3SP under the two main agendas (Science and Institutional) are effectively implemented.

Acronyms

3SP	3rd Strategic Plan
ABM	agent-based modelling
ABS	Access and Benefit Sharing
ACB	ASEAN Centre for Biodiversity
AHP	Analytical Hierarchy Process
AIT	Asian Institute of Technology
AMSR-E	Advanced Microwave Scanning Radiometer – Earth Observing System
APEC	Asia-Pacific Economic Cooperation
APFEJ	Asia-Pacific Forum of Environmental Journalists
APN	Asia-Pacific Network for Global Change Research
AR4	Fourth Assessment Report
ARCP	Annual Regional Call for Research Proposals
ASCM	Augmented Steering Committee Meeting
ASEAN	Association of Southeast Asian Nations
ATREE	The Ashoka Trust for Research in Ecology and the Environment
AWCI	Asian Water Cycle Initiative
BPPT	The Agency for the Assessment and Application of Technology
CAPaBLE	Capacity Building/Enhancement for Sustainable Development in Developing Countries
CB	capacity building
CBD	Convention on Biological Diversity
CDC	Capacity Development Committee
CDM A/R	Clean Development Mechanism Afforestation/Reforestation
CEOS	Committee on Earth Observation Satellites
CF	Community Forestry
CFs	Community Forests
CFUGs	community forest user groups
CODATA	Committee on Data for Science and Technology
CoP	Conference of the Parties
COP10	10th Meeting of the Conference of the Parties
CRPs	comprehensive research projects
DIAS	Data Integration and Analysis System
DIVERSITAS	International Programme of Biodiversity Science
DIWPA	DIVERSITAS in Western Pacific and Asia
DRI	Disaster Reduction Institute
DSSAT	Decision Support System for Agrotechnology Transfer

EAS	East Asian Seas
ECHAM	European Centre Hamburg Model (global climate model)
ECOSMAG	Ecosystem Services Management in Asia
EHS	Institute for Environment and Human Security
EML	Electronic Mailing List
ENSO	El Niño/La Niña-Southern Oscillation
EO	Earth Observations
ERDB	Ecosystems Research and Development Bureau
FAWSIM	Food and Water Security Integrated Model
GCMs	Global Climate Models
GEC	global environmental change
GECHS	Global Environmental Change and Human Security
GEN	Global Ecolabelling Network
GEO	Group on Earth Observations
GEOSS	Global Earth Observation System of Systems
GHG	greenhouse gases
HCMC	Ho Chi Minh City
ICG	International Coordination Group
IAI	Inter-American Institute for Global Change Research
ICEM9	9th International Conference on Ecomaterials
ICG	International Coordination Group
ICSU	International Council for Science
IDRC	International Development Research Centre
IGES	Institute for Global Environmental Strategies
IGFA	International Group of Funding Agencies
IGM	Inter-Governmental Meeting
IGP	Indo-Gangetic Plain
IHDP	International Human Dimensions Programme on Global Environmental Change
IIWaDATA	International Integrated Water Data Access and Transfer in Asia
INAFE	Indonesian Network for Agroforestry Education
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IR3S	Integrated Research System for Sustainability Science
ISAP	International Forum for Sustainable Asia and the Pacific
ISDE6	6th International Symposium on Digital Earth
ISSAAS	International Society for Southeast Asian Agricultural Sciences
IYB	International Year of Biodiversity
JAXA	Japan Aerospace Exploration Agency
JBON	Japanese Biodiversity Observation Network

JICA	Japan International Cooperation Agency
JSCE	Japan Society of Civil Engineers
JTCDM	Jamsetji Tata Centre for Disaster Management
LaoNAFE	Lao Network for Agroforestry Education
LAPAN	National Institute of Aeronautics and Space
LOICZ	Land-Ocean Interactions in the Coastal Zone
MAIRS	Monsoon Asia Integrated Regional Study
MARD	Institute of Water and Environment
MODIS	Moderate Resolution Imaging Spectroradiometer
NASA	National Aeronautics and Space Administration
NDRI	Nepal Development Research Institute
nFP	national Focal Point
NGO	non-governmental organisation
NISTPSS	National Institute for Science and Technology Policy and Strategy Studies
NMHS	National Meteorological and Hydrological Services
NOWPAP	Northwest Pacific Action Plan
NParks	National Parks Board
NWCF	Nepal Water Conservation Foundation
OCDI	Observation Convergence and Data Integration
OM	Open Meeting
OSC2	2nd Open Science Conference
PAFERN	Philippine Agroforestry Education and Research Network
PDSI	Palmer Drought Severity Index
PDTW	Proposal Development Training Workshop
PFT	Project Facilitating Team
PRECIS	Providing Regional Climates for Impacts Studies
PWTW	Proposal Writing Training Workshop
RCE-TEA	Regional Climate-Environment Research for Temperate East Asia
RCMs	Regional Climate Models
REDD	Reducing Emissions from Deforestation and Forest Degradation
REWIND	REducing Water INsecurities Deliberatively
ROSGIDROMET	Russia's Federal Service on Hydrometeorology and Environment Monitoring
SA-SRC	South Asia Sub-Regional Cooperation
SARCS	Southeast Asia START Regional Committee
SBSTA	Session of the Subsidiary Body for Scientific and Technological Advice
SC	Steering Committee
SCBCIA	Scientific Capacity Building for Climate Impact and Vulnerability Assessments
SEA	Southeast Asia

SEA START RC	Southeast Asia START Regional Center
SEA-SRCom	Second Southeast Asia Sub-Regional Committee
SEAGA	Southeast Asian Geography Association
SEAMEO	Southeast Asian Ministers of Education Organisation
SEANAFE	Southeast Asian Network for Agroforestry Education
SESAM	School of Environmental Science and Management
SPG	Scientific Planning Group
SRCom	Sub-Regional Committee
SRES	Special Report on Emissions Scenarios
START	Global Change System for Analysis, Research and Training
SWAT	Soil and Water Assessment Tool
TEACOM	START Regional Centre for Temperate East Asia
TEEB	The Economics of Ecosystems and Biodiversity
ThaiNAFE	Thailand Network for Agroforestry Education
TKK	Helsinki University of Technology
UGEC	Urbanisation and Global Environmental Change
UNCSD	United Nations Commission for Sustainable Development
UNFCCC	United Nations Framework Convention on Climate Change
UNGAID	United Nations Global Alliance for ICT and Development
UNU-IAS	United Nations University-Institute of Advance Studies
USER	Unit for Social and Environmental Research
VNAFE	Vietnam Network for Agroforestry Education
WGISS	Working Group of Information Service and Systems in the Committee of Earth Observation Satellites
WMO	World Meteorological Organisation

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

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<table>
<tr><td colspan="3">Contact Details</td></tr>
<tr><td colspan="2">Full Name (write LAST NAME in CAPS)</td><td>Title (select as appropriate)
☐ Dr. ☐ Prof.
☐ Mr. ☐ Mrs. ☐ Ms.
☐ Other _____</td></tr>
<tr><td colspan="3">Qualifications/Specialty</td></tr>
<tr><td colspan="3">Specific areas of interest relating to Global Environmental Change</td></tr>
<tr><td colspan="2">Name of Organisation</td><td>Designation/Position</td></tr>
<tr><td colspan="3">Type of Organisation:
☐ Government Agencies ☐ Educational Institutions ☐ NGOs/NPOs
☐ Private Foundations ☐ Professional Societies ☐ Others</td></tr>
<tr><td colspan="2" rowspan="2">Business Address</td><td>Postal Code</td></tr>
<tr><td>Country (in CAPS)</td></tr>
<tr><td>Telephone</td><td colspan="2">Facsimile</td></tr>
<tr><td>Email</td><td colspan="2">Website</td></tr>
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