APN Newsletter

VOLUME 16, ISSUE 2 *Spring Edition (April 2010)*

IN THIS ISSUE:

MOVING FORWARD
APN in the Next Five Years: Release of the 3rd 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 Third 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, which is the Annual Regional Call for Research Proposals (ARCP) and the Scientific Capacity Building/ Enhancement for Sustainable Development in Developing Countries (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.

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A GLIMPSE OF THE APN SECOND PHASE
How it Advanced towards Achieving its Goals: Release of the APN Evaluation Report

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

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Message from the Director

The Spring Issue of the Newsletter reports to you the main highlights of the work undertaken by the APN in the past quarter. This Edition also provides a glimpse of the APN achievements in 2009 with the conduct of the annual joint Inter-Governmental Meeting (IGM)/Scientific Planning Group (SPG) Meeting in March 2010, Busan, Republic of Korea, which marked the end of a successful 5-year second strategic phase.

We were pleased to be able to hold the 15th IGM/SPG Meeting in the Republic of Korea for the second time; the first one convened nine years ago in Jeju Island. This year's IGM was the culmination of the APN's second strategic phase and I am honoured to have the opportunity to serve as the APN Secretariat Director in the Network's transition from its second strategic phase (2005-2010) to its third strategic phase (2010-2015). It has been a wonderful experience working with you all in the completion of the APN's second strategic phase evaluation and the 3rd Strategic Plan (3SP) formulation.

While more information is provided in the inside pages of this Newsletter Issue, I am happy to report that during the the 15th IGM/SPG Meeting, representatives from APN member countries had the opportunity to reflect on the achievements of the APN over the past years since the IGM in 2005 adopted the APN's 2nd Strategic Plan. The Meeting discussed ways in which the APN could better serve its membership and the global change community in the next strategic phase.

It was pleasing to be able to report significant progress to member country representatives on various areas such as increases in funding, projects to be supported, and new activities. We will soon launch a Call for Proposals for New Focussed Activities and details will shortly be available on the APN website. The Annual Calls for proposals under the ARCP and CAPaBLE Programmes will also be launched as

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Message from the Steering Committee Chair

Members of the APN: First I would like to express my heartfelt appreciation to all the participants in the last APN 15th Inter-Governmental Meeting/Scientific Planning Group Meeting held last March in Busan, Republic of Korea. The meeting ended successfully with your enthusiastic participation and support.

As Bhutan was approved as a member in this meeting, the number of APN members increased to 22. I sincerely welcome our new member, Bhutan, and hope that we will be able to further contribute to resolving environmental problems in the Asia-Pacific region through strong cooperation and close ties among member countries.

This meeting was a fruitful one where many action plans were explored and various opinions expressed. The process of implementing the outcomes of the meeting requires active participation of all members as well as the APN Secretariat. As you are well aware, there is a lot of work accumulated in the APN Secretariat. Thus, for effective and efficient operation of the APN, cooperation of all members is a must.

I will continue to cooperate with the Secretariat in carrying out the decisions of the last meeting. I believe you will also take part in this endeavor.

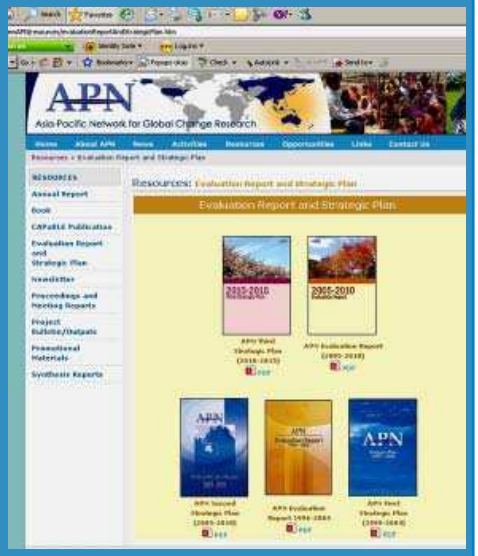
Here in Korea, spring is now in full swing. I hope you will also enjoy the beauty of the season in your country. I wish you and your family continued health and happiness. Thank you.

from page 1 - A Glimpse of the APN Second Phase...

meeting the five (5) goals stated in the APN 2nd 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.

The APN is pleased to share with you the Evaluation Report which can be downloaded from the APN website 'Resources' section: http://www.apn-gcr.org/newAPN/resources/evaluationReportAndStrategicPlan.htm.



from page 1 - Message from the Director

scheduled in late May/early June. We are optimistic and excited to receive quality proposals for research and capacity development activities.

This year's IGM also sees progressive growth in the year ahead with many opportunities as well as challenges for science advancement and institutional development. I ask you to continue to provide invaluable support to the APN. As we would like to engage you more actively in APN's activities, I invite you to approach us with ideas and we will be more than happy to collaborate with you.

The APN is now into its third strategic phase of formal existence following the inaugural IGM and SPG Meeting in 1996 and it continues to grow as demonstrated by the recent joining of Bhutan. Guided by the APN's 3SP, which clearly sets the direction of the APN in the next five (5) years, the Network will face new opportunities and challenges to promote and support global change research in the region and ensure that research outputs are passed on to policy-makers. In facing these challenges, we will continue to count on your cooperation.

Until the next edition of the APN Newsletter, let me take this opportunity to thank you all once again for your commitment and contributions to the APN over the years. I urge you to join me, with the APN Secretariat staff, supportive members and cooperative partner organisations in strengthening the vital role of the APN towards the sustainable development of countries in the Asia-Pacific region. I believe that together we can make a difference to our environment and to our people.

The Asia-Pacific Network for Global Change Research (APN) is an international network of Governments whose mission 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.

APN defines *"global change" as the set of natural and human-induced processes in the Earth's physical, biological, and social systems that, when aggregated, are significant at a global scale.*

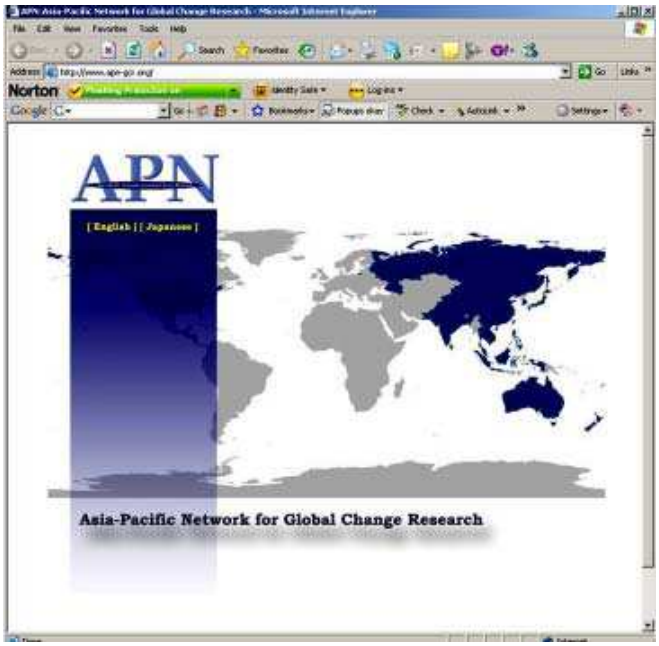
News from the Secretariat

APN Launches its Revamped Website

The APN 3rd Strategic Phase (2010-2015) started with a BANG as it launched its re-designed website. To improve and update the Network's web presence and to focus on the needs of its members and target users, the APN website was revamped with a fresh look, user-friendly interface, more organised content, attractive layout, and quick navigation tools. The following broad categories comprise the re-designed website:

http:// www.apn-gcr.org

- HOME is a "one-stop shop" page containing relevant and latest information: upcoming events, latest news, announcements, new publications and links.
- ABOUT APN contains the basic information about the APN; its vision, mission, goals and strategies, main agendas, unique structure, organs, member countries and major sponsors.
- NEWS section provides a direct link to the Online Calendar, which features upcoming global change events; APN Updates page where APN news and press releases are posted; and Global Change Announcements, which contains the announcements from other organisations within the diverse global change community. Contact the Secretariat (info@apn-gcr.org) should you wish to post an event in this section.
- ACTIVITIES section showcases the major activities of the APN: ARCP and CAPaBLE Programmes, IGM/SPG Meetings, workshops, syntheses and much more.
- RESOURCES section houses the publications and other project-related outputs that APN has produced.
- OPPORTUNITIES section is where the special announcements are placed. Watch out as APN is soon launching a Special Call for Proposals for New Focussed Activities and the Annual Calls for Proposals under the ARCP and CAPaBLE Programmes.



- LINKS section provides quick access to all the network linkages of the APN.
- A new Webmaster account and details on how you may contact the APN Secretariat are provided in the CONTACT US section.

In the next few months, the APN will endeavour to develop the new website further to include the following dynamic features: database connectivity, search function, online library, automated mailing list, and online fora. Meantime, the Webmaster, Ms. Lizhier Coralde, will ensure that the website remains up-to-date. The APN welcomes feedback on how we can further improve the website, which is expected to become a key tool for APN networking. The APN Secretariat wishes to thank all those who contributed in making this launch a success!

APN Welcomes New Member Representatives

Please join the APN Secretariat in welcoming our **new** member representatives:

NATIONAL FOCAL POINTS (nFPs)

Mr. Momin AGHA
Deputy Secretary (Climate Change)Ministry of Environment
Local Government Complex, G-5/2
PAKISTAN

Mr. Eriberto C. ARGETE
Director, Planning and Policy Studies Office
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City 1101
PHILIPPINES

Dr. Andrey V. ADRIANOV
(first appointed nFP for the country)
Institute of Marine Biology
Far East Branch
Russian Academy of Sciences
Palvechevsky Street
17 Vladivostok 690041
RUSSIAN FEDERATION

SCIENTIFIC PLANNING GROUP (SPG) MEMBERS

Dr. Kensuke FUKUSHI
Associate Professor, Integrated Research System for Sustainability Science and Department of Urban Building
Univerity of Tokyo, 7-3-1 Hongo,
Bunkyo-ku, Tokyo 113-8654
JAPAN

Mr. Marcial AMARO, Jr.
Director, Ecosystems Research and Development Bureau
College, Los Baños, Laguna 4031
PHILIPPINES

Likewise, we extend our sincere gratitude and appreciation to the **outgoing** member representatives who have been very supportive of the APN's activities.

Ms. Neelofur HAFEEZ (nFP), PAKISTAN
Mr. Samuel PEÑAFIEL (nFP), PHILIPPINES
Prof. Nobuo MIMURA (SPG Member), JAPAN
Dr. Adeluisa SIAPNO (SPG Member), PHILIPPINES

News from the Secretariat

Launch of the APN's 2010 Special Call for Proposals for Focussed Activities

In celebrating the completion of the APN's Second Strategic Phase and moving dynamically into its Third Strategic Phase, the scientific research and capacity development activities are expected to be undertaken in two of the four new scientific themes highlighted in the Third Strategic Plan (3SP) as follows:

- **Key Focus Area 1**
  - **Theme 2: Ecosystems, Biodiversity and Land Use**
    - **Key Focus Areas: Forestry and REDD-Plus**
- **Key Focus Area 2**
  - **Theme 4: Resources Utilisation and Pathways for Sustainable Development**
    - **Global change implications of efficient resource utilisation**
    - **Action to establish international sound material cycle society**

The kinds of activities that will be supported under the Call for Proposals are as follows:

a. Regional scientific research activities that are in line with the key objectives of the ARCP programme
b. Scientific capacity development activities that are in line with the key objectives of the APN's CAPaBLE programme.

Funding:

The APN expects to award Grants in Key Focus Areas 1 and 2 as follows:

a. Average awards for scientific regional research are in the region of US$45,000 per year for up to 3 years.
b. Average awards for scientific capacity development are in the region of US$30,000 per year for 1 to 2 years.

The kinds of general activities that may be supported include:

- Promoting and strengthening *interdisciplinary regional global change research*, particularly addressing novel research, and/or identifying key gaps via synthesis and assessment work.
- Identifying and developing existing and/or new methodologies for capacity development, particularly in *effective transfer of scientific know-how and technology* to user communities, both science and non-science.
- *Strengthening interfaces between science and policy* communities and society in general for effective pathways to sustainable development.
- *Encouraging initiatives from developing nations* for place-based, integrative research activities.
- *Aligning with other programmes of the global change community*.

Submission of Expression of Interest and eligibility criteria:

All Expressions of Interest must satisfy the basic criteria for eligibility outlined below:

1. The proposed activity must focus on an area of interest and fully comply with the criteria for country participation (see separate Frequently Asked Questions **[FAQ]** on the APN website: http://www.apn-gcr.org/newAPN/opportunities/FAQ.htm)
   - *Specifically, proposals under **(a)** for scientific regional research **MUST** include at least 3 member/approved APN countries, 2 of which **MUST** be developing.*
   - *Specifically, proposals under **(b)** for scientific capacity development **MUST** involve at least one developing member/approved country.*
2. The proposed activity must have high potential to provide positive outcomes for developing countries that could also be used by the international community.
3. The proponent's institution must be based in a member or approved country of the APN (see separate FAQ: http://www.apn-gcr.org/newAPN/opportunities/FAQ.htm)
4. The proponent and/or collaborators must possess the skills necessary to conduct activities in the Key Focus Area(s).
5. The proponent must inform his/her APN country nFP and SPG member (where one exists), in advance, of the intention to submit a proposal. Contact details of APN members are available at http://www.apn-gcr.org/newAPN/aboutAPN/structure.htm
6. The proposed activity must outline policy-relevant questions to be addressed and answered, organisational arrangements of the proposed activity and a publication and dissemination plan. In this respect, strong links with government units and/or agencies are expected.
7. The Expression of Interest (EOI) must follow the template (available for download on the APN website) for each of the key focussed areas and be submitted to Dr. Linda Anne Stevenson (lastevenson@apn-gcr.org) by ***Sunday 23rd May 2010 (12:00 Midnight Japanese Standard Time)***.

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News from the Secretariat

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Proposal submission and tentative review process:

STEPS 1 TO 3	Proponent Deadlines
Step 1 – Submission and review of Expression of Intent (EOI) **[compulsory]** • Proposals Screening for Eligibility (23rd May to 6th June) • Proposals Internal Review by the SPG-SC and CDC Membership (7th June to 21st June) • Successful Proponents Invited to Submit Full Proposal (22nd June)	**Submission: 23rd May 2010**
Step 2 – Submission and Review of Proposal **[by invitation]** • Proposals Screening (6th July to 10th July) • Proposals Internal & External Review (10th July to 31st July) • Reviewers Questions Sent to Proponents (1st August)	**Submission: 6th July**
Step 3 – Response from Proponents to Reviewers Questions **[compulsory]**	**Submission: 15th August**

STEPS 4 TO 6	Approximate Dates
Step 4 – Final grading and decision-making	1st September 2010
Step 5 – Announcement of Results	15th September 2010
Step 6 – Activities expected to start	October 2010

Guidelines and other relevant information:

For quick link to guidelines, APN Third Strategic Plan, Frequently Asked Questions (FAQ), APN Financial Regulations, Expression of Interest Template for both key focussed areas and other relevant information, visit: http://www.apn-gcr.org/newAPN/opportunities/opportunities.htm

Frequently Asked Questions (FAQ):

The questions provided below are intended to guide the proponents when formulating an Expression of Interest (EOI) for submission to the APN for a "Focussed Activity". The answers are provided in this site http://www.apn-gcr.org/newAPN/opportunities/FAQ.htm. If you have further queries, please submit your questions to the APN Secretariat, Dr. Linda Anne Stevenson at lastevenson@apn-gcr.org.

FAQ1. Who is eligible to submit proposals to the APN for funding?
FAQ2. What countries in the Asia-Pacific region are Member or Approved Countries?
FAQ3. How many calls for proposals does the APN launch each year?
FAQ4. When is the deadline for submitting a proposal to the APN?
FAQ5. If I miss the deadline, will the APN still accept my proposal?
FAQ6. Where and to whom do I submit the proposal?
FAQ7. How much funding is available for individual projects?
FAQ8. What is the duration of projects?
FAQ9. Can I charge overhead costs in my proposal budget?
FAQ10. If my proposal is successful, when can I receive funding?
FAQ11. Can I submit more than one proposal?
FAQ12. Can I submit a proposal if I am currently a project leader of an APN-funded project?
FAQ13. What are the criteria for submission of an Expression of Interest (EOI)?
FAQ14. Who reviews my proposal?
FAQ15. When is the decision on project funding made?
FAQ16. Is APN able to provide salary support for project implementation?
FAQ17. Does the APN allow for consultants and/or consultant firms to be engaged in the project, at APN's expense?
FAQ18. Is it necessary that proposals submitted for APN funding has co-funding from other sources?
FAQ19. Before submitting my proposal to APN do I have to get it endorsed by the national Focal Point or SPG member of my country?
FAQ20. Can members of developed countries submit proposals?
FAQ21. What is the difference between the "Focussed Activity" Special Call and the Annual Calls for Proposals under the ARCP and CAPaBLE programmes?

The Annual Regional Call for Research Proposals **(ARCP)** and the Annual Call for Capacity Building Proposals under the Scientific Capacity Building and Enhancement for Sustainable Development in Developing Countries **(CAPaBLE)** Programme **will be launched soon**.

News from the Secretariat

APN Convenes its 15th IGM/ SPG Meeting

The APN 15th Inter-Governmental Meeting (IGM)/Scientific Planning Group (SPG) Meeting and associated committee meetings convened successfully at the APEC Climate Center (APCC), Busan, Republic of Korea (ROK) on 15-19 March 2010 with around 60 participants. The meetings were hosted by the Ministry of Environment, ROK. Delegations from the APN member countries, invited experts in the field of global change, and representatives from key partner organisations discussed the activities to be undertaken and supported by the APN from April 2010 to March 2011 and beyond.

One of the major highlights of this year's IGM is the endorsement of the APN's 3rd Strategic Plan (3SP) and the Evaluation Report (ER) of the APN's second strategic phase. Operating Plans will be devised to ensure the effective implementation of activities outlined under the 3SP's two main agendas, Science Agenda and Institutional Agenda.

Another major outcome was the welcoming of Bhutan as a new member country bringing the number of APN member countries to 22. A representative from the National Environment Commission, Bhutan was invited to give a presentation on global change issues that Bhutan is currently working on and other major environment-related activities in the country.

This year's IGM approved 36 projects for funding (continuing projects and new proposals) under the Annual Regional Call for Research Proposals (ARCP) and Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries (CAPaBLE) Programmes.

Noteworthy is the endorsement of new activities under Scientific Research Themes 2 (Key Focus Areas: Forestry and REDD-Plus) and 4 (Key Focus Areas: global change implications of efficient resource utilisation and action to establish international sound material cycle society) of the APN's 3SP. More information about these new activities in focussed key areas and criteria for eligibility to receive funding will shortly be available on the APN website.

In strengthening collaboration with the Hyogo Prefectural Government, Japan, a number of activities were endorsed: 1) International Symposium and Public Dialogue on Biodiversity Issues synthesised over three (3) years of APN/ Hyogo International Symposia; 2) Side Event at the Convention on Biological Diversity 10th Meeting of the Conference of the Parties (CBD COP10); and 3) Exhibit at CBD COP10.

The IGM also adopted a Resources Development Strategy and approved the Final Financial Report for 2008-2009 and the Budget Plan for 2010-2011. Japan confirmed its 50% increased contributions while ROK announced a tripled increase in contribution for APN activities.

The meeting also decided to continue its efforts in Sub-Regional Cooperation (SRC). The South Asia (SA) and Southeast (SEA) Asia Sub-Regional Committees had the opportunity to discuss relevant issues at the sub-regional level and their future plans and activities. Representatives of both sub-regional committees reported the results of their respective discussions to the IGM.

New members of the SPG Sub-Committee (SPG-SC), Capacity Development Committee (CDC) and Steering Committee (SC) were also welcomed by all the members. The Secretariat will count on their guidance, expertise, input, support and cooperation in implementing the strategies outlined in the 3SP.

The Meeting announced the imminent launch of the 'new face' of the APN website in April 2010, which is continuously being improved with advanced and dynamic features, enhanced interface and quick navigation. The members acknowledged the importance of the Strategic Information Plan that is being devised to help implement APN's

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Southeast Asia Sub-Regional Committee Ad hoc Meeting

South Asia Sub-Regional Committee Ad hoc Meeting

News from the Secretariat

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Communications Strategy. This system will consist of four (4) major components: Web content management system; automated electronic mailing list; online library; and online collaboration and networking.

For the first time in IGM history, a session was organised to provide the APN Membership, the global change (GC) community and the local science and policy communities in the host country a networking and informal dialogue opportunity. Eighteen (18) young scientists from ROK had the opportunity to display and present their research work via poster presentation to invited esteemed representatives of the scientific and policy communities from within and outside the Asia-Pacific region. APCC and the GC community also highlighted their work to the APN Membership and local ROK young scientists through exhibits that displayed posters and relevant information materials. Of the 18 posters, the APN members selected the best one based on a set of criteria. The IGM Chair presented the winning scientist, Mr. Woo-Seop Lee, the **Mitra Award for Global Change Research** and Mr. Lee provided a 20-minute plenary presentation at the IGM.

The Climate Synthesis Working Group reported on the activities conducted to date and the timeline for synthesis completion, highlighting that two key products were expected: 1) A Synthesis Report targeted for decision-and policy-makers; and 2) an Academic Book largely consisting of peer-reviewed research papers. The synthesis will cover 55 projects funded by the APN under both its ARCP and CAPaBLE Programmes. Maintaining the current timeframe of the Climate Synthesis is deemed crucial to ensure alignment with the timeframe of the Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC AR5).

Global Change Community Exhibit and Young ROK's Scientists' Poster Session

From left: Sri Lankan SPG Member (Mr. Samarasinghe) and nFP alternate (Ms. Batuwitage) scoring the posters

A platform to introduce the concept of low carbon green growth and development policies in selected APN member countries and increase the dialogue and information sharing among the APN member countries and the GC Community in implementing low carbon green growth policies was provided through the Low Carbon Green Growth and Development Session. Delegates from Indonesia, Japan and ROK delivered presentations and shared the various related development policies in their respective countries, which was followed by active discussion among the IGM participants.

The delegates were invited for a half-day study tour around Busan Metropolitan City which started from a traditional Korean dining experience and visit to Haedong Yong Kung Sa "East Ocean Dragon Temple," overlooking the ocean and coastal City of Busan. The Busan Environmental Corporation (BECO) also toured the delegates to BECO's Haeundae Comprehensive (sewage and incinerator) Processing Plants and to Haeundae Resource Energy Center.

Finally, the Government of Sri Lanka confirmed its willingness to host the 16th IGM/SPG Meeting, which was accepted by acclamation. The Proceedings of the Meeting will be made available on the APN website in due course. Meantime, the APN Secretariat would like to express its sincere gratitude to all who were involved in realising a very successful IGM/SPG Meeting.

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The role of the APN in enhancing scientific research capacity in the region becomes more important as the threat of climate change and urgency for mitigation and adaptation responses are becoming greater. In the next five years covering the APN 3rd Strategic Phase, APN will continue to 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 continue to provide robust scientific input to policy decision-making and scientific knowledge to the public and other non-science communities.

The APN is pleased to share with you the APN's 3rd Strategic Plan which can be downloaded from the APN website 'Resources' section: http://www.apn-gcr.org/newAPN/resources/evaluationReportAndStrategicPlan.htm.

News from the Secretariat

APN INTERNATIONAL SYMPOSIUM: Challenge 25 Beyond Borders? - Promoting a Low Carbon Society, 23 January 2010, Kobe, Japan

On 23 January 2010, the APN, together with Hyogo Prefectural Government organised an International Symposium *"Challenge 25 beyond Borders? –Promoting a Low Carbon Society"* in Kobe, Japan. 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. The Symposium 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.

Mr. Yoshitaka Aoyama, Chief Executive Officer for the Environment, Hyogo Prefecture Government gave a welcoming address on behalf of the local hosts. In his talk, he stressed that building a low carbon society is not just a local concern but a task of global importance that transcends borders and requires a global effort, such as through symposiums like this. He encouraged all participants to explore various approaches by which nations and regions faced with diverse environments can address the challenge of preventing global warming.

Copenhagen and Challenge 25: Promoting and Realising a Low Carbon Society

Mr. Masaru Moriya, Deputy Director-General for Global Environmental Affairs, Ministry of the Environment, Japan (MoEJ) began the presentations by providing information on the new initiative of the MoEJ for assisting developing countries to address climate change. The Hatoyama Initiative has committed USD15 billion (USD11 billion of public finance) in the period 2010 to 2012 in response to the collective commitment by developed countries.

In his presentation, Mr. Moriya explained that Japan is taking necessary concrete steps and measures domestically to achieve the 25% and 80% GHG emissions reduction by 2020 and 2050 below the 1990 levels, respectively, including the introduction of a national cap-and-trade system and a feed-in tariff scheme for renewable energy, and taxation scheme to address global warming. The basic policy for such steps and measures are being discussed and formulated under the Committee of Relevant Ministers. He informed the participants that the MoEJ is now drawing up a mid- and long-term road map for measures to address climate change, which is designed to contribute to the deliberation by the Committee from a technical point of view. The Ministry is also in the process of submission of a Basic Law for Climate Change to the Diet, which will establish and promote a basic policy for mid- and long-term GHG reduction.

LCS-RNet and the Research Activities of NIER

On behalf of the International Research Network for Low Carbon Society (LCS-RNet), Dr. Youngsook Lyu, Researcher, National Institute of Environmental Research (NIER), Republic of Korea (ROK) gave an overview on LCS-RNet. The LCS-RNet was founded in March 2009, in response to strong support from participants at the G8 Environment Ministers Meeting (EMM) in Kobe, in 2008. The goal of LCS-RNet is to act as an international platform where research results and data can be provided to policy-makers, the public and other actors for science-based policy-making.

In addition, Dr. Lyu also talked on the Low Carbon Green Growth Policy in ROK and the Research Activities of NIER. Low carbon green growth is the new national paradigm of ROK to achieve both sustainable economic growth and GHG emissions reduction. According to Dr. Lyu, the core elements of Green Growth consist of: 1) minimising energy use per GDP while maintaining robust growth; 2) minimising pollution (GHGs, and etc.) per energy use; 3) developing green technology and environment-friendly industry as new growth; and 4) expanding education on sustainable green growth, green lifestyle and culture.

She stressed that such green growth is needed for ROK since international communities are competing in a heated Green Race to take over the green market earlier, while ROK is required to address the environmental resource crisis and create a new growth engine. To support this new national paradigm, NIER conducts various research activities including developing national scenarios for LCS. NIER will closely cooperate with LCS-Net to contribute to national and international policy-making processes on climate change by communicating research outcomes and recommendations.

Global Carbon Budget and Challenges for Making Low Carbon society - Why Asia Matters?

Dr. Shobhakar Dhakal, Executive Director, Global Carbon Project (GCP) talked about the quantitative details of why Asia is important in global carbon management. He discussed the key drivers to be addressed such as urbanisation, deforestation, growth and others in order to promote low carbon societies in Asia.

The GCP releases the state of the global carbon cycle annually, including the global and national emission estimates, trends of major drivers, and the carbon source-sink dynamics globally and regionally. The latest release for the year 2008 brought additional important

Participants of the APN International Symposium

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insights of carbon and societal relationships including, impact of trade, impact of financial crises, and the effect of slowing deforestation rate in Amazonia. Asia is of paramount importance in this global carbon budget.

Hyogo's Target Measures for Deploying Environmental Efforts towards Creating a LCS

An overview of the 3rd Hyogo Prefecture Basic Plan for the Environment was presented by Mr. Shigeki Fukui, Director General, Environmental Development Bureau, Agricultural and Environmental Affairs Department, Hyogo Prefectural Government. This plan, created in December 2008, aims to hand down an "environmentally oriented society" to the next generation by such means as developing environmental policies to prevent global warming and preserve biodiversity.

Mr. Fukui highlighted that in FY2010, the prefecture will formulate its next Global Warming Prevention Promotion Plan covering the period to 2020, as it will be necessary to set the highest possible achievable targets and engage in all-out mobilisation with a view to achieving Japan's 25% reduction target. For this reason, Hyogo Prefecture is working for the widespread adoption of mechanisms to promote even further initiatives by businesses with high emissions and collaborative CO_2-reduction projects by small and medium-sized businesses, while giving full consideration to trends in national reduction scenarios such as fixed-price electricity purchase systems, global warming taxes, and domestic emission trading schemes, as well as to the division of responsibility between national and local governments.

Furthermore, he noted that Hyogo Prefecture has also engaged in pioneering initiatives with respect to the preservation of biodiversity, which is profoundly related to global warming, such as the restoration of oriental white storks to the wild. Based on the Hyogo Biodiversity Strategy, formulated in March 2009, the prefecture will formulate a new Red Data Book covering not only rare species but also important ecosystems that are at risk, produce a list of alien species and a manual for their prevention and removal, and develop centres for the support of biodiversity-maintaining activities.

Lastly, to nurture a future generation to engage with these environmental issues, he emphasised that the prefecture will also develop environmental learning and training activities appropriate for people at different stages of life, from young children to senior citizens, in which they can experience, discover, and learn about these issues for themselves.

Towards a Sustainable Low Carbon Society: Perspectives from the Business Sector

Mr. Yuji Noritake, Corporate Councillor, RICOH Company Ltd. and a member of the newly established Japan Climate Leader's Partnership discussed the relationship between economic growth and environmental burden. He noted that if economic growth continues and environmental burden increases at the current pace, devastating consequences, including social disorder, will result, and corporate survival will be at stake. He explained that while it is often said that environmental preservation is incompatible with economic development, it should be understood that if we are to ensure corporate survival, we should, among other things, endeavour to confine the environmental burden generated by social and economic activities to a level tolerable for the Earth.

Additionally, he noted that it is necessary to establish a social system, lifestyle, and corporate culture that enable us to achieve both environmental preservation and economic development. With this in mind, the RICOH Group, have set ambitious targets for environmental preservation and continued efforts to achieve these targets.

Panellists during the open discussion with the participants

According to Mr. Noritake, creation of a sustainable low carbon society requires a drastic social system reform comparable in scale to the Industrial Revolution. Such a reform is expected to give rise to new business opportunities and contribute to economic development. With this, and recognising the importance of creating such a sustainable low carbon society, the resulting potential of new business opportunities came together to establish a corporate network called the Japan Climate Leaders' Partnership (Japan-CLP). The member companies of the Japan-CLP are taking positive actions to realise a low carbon society, while actively presenting proposals to policy-makers.

Low Carbon Society and Urban Rural Conditions: Updates from NIES' Research Projects on LCS (Phase One)

A discussion on possible policy options and measures to realise a low carbon society at the local level, focussing on the transport/land use sector in Shiga Prefecture, Japan was made by Prof. Koji Shimada, Faculty of Economics, Ritsumeikan University, Japan. He noted that in order to substantially reduce the local demand for passenger transport by automobiles in the long term, there is a need to reduce both automobile share and trip length. It is important to increase the population density of inhabitable land and to maintain or increase the commuting ratio inside the municipality.

However, residents of densely populated areas or apartment houses are dissatisfied with the small living space and lack of contact with nature. Policies to promote population concentration by increasing access to the natural environment, constructing and attracting development of apartment houses with adequate living space and amenities are effective not only from the perspective of reducing greenhouse gas emissions but also from the perspective of securing vigour of the municipalities.

Prof. Shimada said that Shiga Prefecture has been devising several policies and measures including the formation of a compact city, public transportation and bicycle use promotion. However, sprawling momentum and automobile-dependent lifestyles are difficult to change in reality. The meaning of the back-casting approach should be seriously considered to realise a low carbon society.

Approach of the Forest Carbon Offset in Hyogo Prefecture

Against the backdrop of the declining forestry industry, the Hyogo Prefectural Federations of Forest Owners' Cooperative Associations has launched a new forest-based carbon offset service under the Japan Verified Emission Reduction (J-VER) Scheme of the MoEJ. Mr. Naomi Urakami, Manager, Environmental Business Promotion Room of the said organisation presented on the J-VER Scheme and how this particular service takes advantage of the forest improvement work

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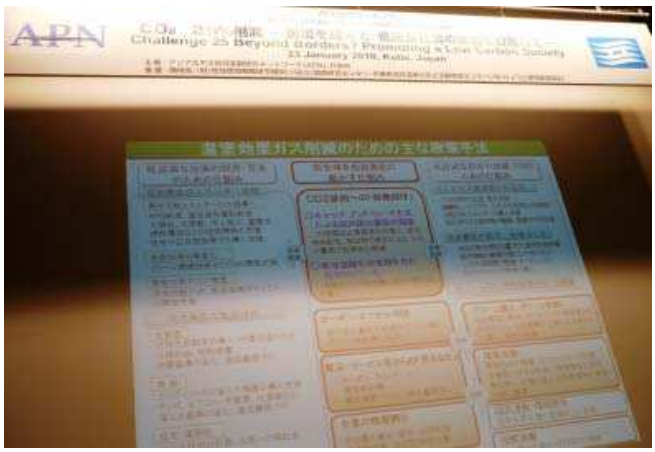
News from the Secretariat

from page 9 - APN INTERNATIONAL SYMPOSIUM: Challenge 25 Beyond Borders? - Promoting a Low Carbon Society



promoted by the Forest Owners' Cooperative Associations. He explained that while various carbon offset measures are available, this Scheme is designed to offer carbon credits earned by CO_2 absorption by forests to companies and individuals to offset their carbon emissions.

He stressed that there are two major problems to be addressed in offering the carbon credits earned by forests under the J-VER Scheme. First, certain difficulties are involved in applying the J-VER Scheme to most Japanese forest owners. A little less than 60% of all forests in Japan are privately owned, and these private owners are mostly individual owners (forestry households). Although there are 920,000 forestry households that own forest land over 1 ha. in size, only around 10% of these households own over 10 ha. It would be extremely difficult to absorb the cost of offering CO_2 absorption by these smaller individually-owned forests as carbon credits under the J-VER Scheme.

Secondly, it is necessary to increase the demand for carbon credits earned by forests. These credits cannot be applied for offsetting emissions as a means of meeting the Kyoto Protocol's target of a 6% reduction in CO_2 emissions. Instead, they can only be applied to Japan's target of a 3.8% CO_2 reduction to be achieved by forests absorbing carbon. These credits, unlike Certified Emission Reduction (CER) carbon credits, should be used as part of voluntary efforts by users to reduce CO_2 emissions.

Mr. Urakami said that they will strongly encourage the use of carbon offset service by emphasising its significance as an easily accessible way of contributing to the preservation of the domestic forest environment, while offering novelty products made of thinned-out wood.

Highlights of the Panel Discussion

Following the presentations was an open discussion moderated by Prof. Hidenori Niizawa, University of Hyogo. In this session, the audience actively participated by soliciting further comments from the presenters who enthusiastically responded and provided new thoughts.

According to Mr. Moriya, premised on "an equal effort by other countries," Japan will submit to the UNFCCC (in accordance with the Copenhagen Accord) its target for reducing emissions by 25% over 1990 levels by the year 2020. This condition implies that Japan will work cooperatively with other countries to address global warming. For Dr. Lyu, ROK's low carbon green growth policy is aimed at giving ROK a superior position in international competition that dominates green markets. Mr. Noritake based on his experiences at RICOH, asserted that tighter regulations could increase the competitiveness of companies and entire industries.

Responding to Dr. Dhakal's assertion that deforestation is a major cause of CO_2 emissions, Mr. Moriya explained that international negotiations are underway to halt deforestation in developing nations. Regarding carbon and forest offsets, Dr. Dhakal cautioned that preserving a forest in one location must not lead to deforestation in another, to which the panellists agreed. Responding to a comment by Dr. Dhakal, Prof. Shimada noted that policy has the ability to handle externalities such as congestion that could potentially occur in compact cities.

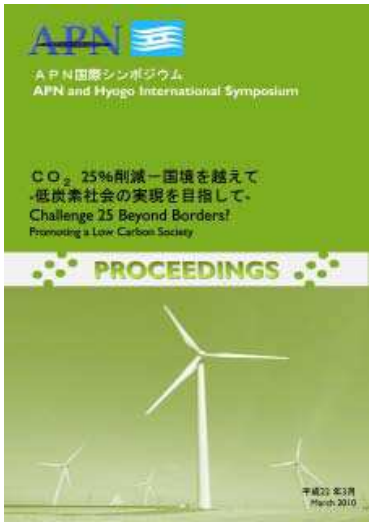
The forest carbon offsets explained by Mr. Urakami and Hyogo Prefecture's carbon offsets tackled by Mr. Fukui are not being actively traded because they currently rely on voluntary buyers. All presenters exchanged opinions and many agreed that emissions trading should be institutionalised. They confirmed that to draw on all of these policies, a concerted effort was needed by all agencies at both the national and the local municipal level, not just their environmental departments.

In drawing upon these policies, it is necessary to consider if policies should be combined or used for specific purposes. For instance, Mr. Fukui further explained how Hyogo Prefecture introduced a citizens' green tax which is used to make forests more disaster-resistant. Certainly, one case that demonstrates forest improvement may be based on tax funding or offset funding, or a combination thereof.

Closing/Networking Session/End Note

In his closing remarks, Mr. Tetsuro Fujitsuka, Director, APN Secretariat articulated that all presentations offered invaluable insights into the initiatives taking place globally and in the Asia-Pacific region, at both the national and regional levels, not to mention the initiatives going on in industry and the forestry sector. He emphasised that in order to build a low carbon society, not only reducing CO_2 emissions is required, but the visions of nations, regions, and businesses must be identified. He asked everyone to pursue those visions through various initiatives and encouraged them to continue these discussions and incorporate them in future efforts in their own country and workplace.

A Networking Session, which provided the audience an opportunity to discuss Low Carbon Society issues and interact with the symposium guests and speakers in person, was held following the Panel Discussion.



The APN and the Hyogo Prefectural Government would like to thank the following institutions for their support in the success of the Seminar: MoEJ; Institute for Global Environmental Strategies, Kansai Research Centre (IGES-KRC); and Hyogo Centre for Climate Change Actions (Hyogo Environmental Advancement Association).

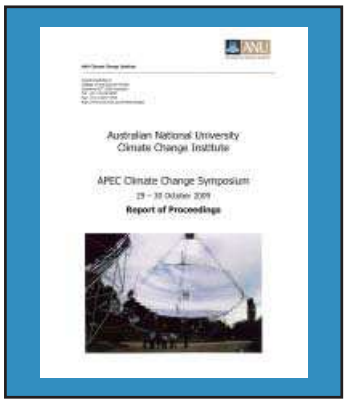
The Proceedings of this Symposium are available for download on the APN website: http://www.apn-gcr.org/newAPN/resources/proceedingsAnd MeetingReports.htm. Please contact the Secretariat (info@apn-gcr.org) if you are interested in receiving a printed copy.

News from the Secretariat

APN Secretariat Changes

The Secretariat waived good-bye to **Ms. Kanako Tamada** who left APN after nine (9) years of excellent service as an Administrative Assistant. The APN is grateful for the valuable support that she provided during her stay at the Secretariat. She has been a tremendous help for much of the day-to-day administrative responsibilities of the Secretariat and was also a great support to all of the staff, both Japanese and international. "The time has come for me to move forward to another challenging chapter of my life", Kanako shared. The Secretariat wishes Kanako all the best of luck and happiness in her future endeavours.

Ms. Yuko Noda took over from Kanako as the Administrative Assistant and the Secretariat members are happy to have her back on board. She was once an Administrative Assistant, though just for a month, when Kanako was on leave. "It's a pleasure to be working again with APN", Yuko noted in the recent APN staff meeting. The Secretariat expresses its support to Yuko and wishes that her stay in APN will be motivating and fun.

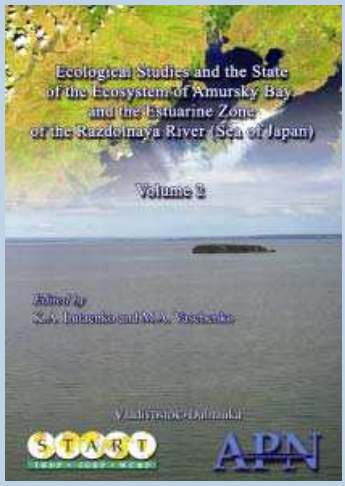


APN AT THE APEC CLIMATE CHANGE SYMPOSIUM: ANU CCI Releases the Report of Proceedings

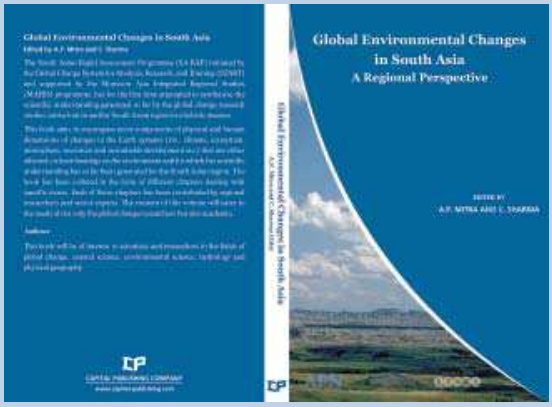
The Australian National University Climate Change Institute (ANU CCI) releases the Report of Proceedings of the APEC Climate Change Symposium that convened in Canberra, Australia on 28-30 October 2009. APN is mentioned in several sections of the Report, including a summary of the presentation that the Secretariat Director, Mr. Tetsuro Fujitsuka addressed to the delegates via video linkup. This was well received and the delegates showed interest on developing collaborative projects in the future, with APN's support. Mr. Fujitsuka provided a comprehensive overview of wide-ranging APN activities that contribute to climate change adaptation and mitigation. To download the report and for more information, visit: http://www.apn-gcr.org/newAPN/news/apnUpdates/2010/apnUpdates-002.htm.

NEWS BRIEF

The APN Regional Workshop on Preliminary Research Results: Assessment of Food and Water Security in South-Asia under a Changing Climate Using Crop Simulation and Water Management Models, and Identification of Appropriate Strategies for Adaptation to Meet Future Demands convened on 8-12 March 2010 at Hotel Crown Plaza, Islamabad, Pakistan. This workshop was hosted by the Global Change Impact Studies Centre (GCISC) and the National Centre for Physics, Islamabad. For more information about the workshop outcomes, please contact the Project Leader, Dr. M. Mohsin Iqbal at mohsin.iqbal@gcisc.org.pk.



A new book *Ecological Studies and the State of the Ecosystem of Amursky Bay and the Estuarine Zone of the Razdolnaya River (Sea of Japan) - Volume 2* has been released. This collective monograph contains results of ecological studies of Amursky Bay and adjacent areas conducted as a part of the international projects *Climate variability and human activities in relation to Northeast Asia land-ocean interactions and their implications for coastal zone management* and *Marine biodiversity of the coastal zones in the Northwest Pacific: Status, regional threats, expected changes and conservation* supported by the APN. Visit APN website for more information: http://www.apn-gcr.org/.



The SARAP (South Asia Rapid Assessment Project) book volume entitled *Global Environmental Changes in South Asia: A Regional Perspective* has been published. A number of South Asian researchers have contributed in this publication in the form of various chapters. This activity was initiated by the Global Change System fr Analysis, research and Training (START) under Monsoon Asia Integrated Regional Study (MAIRS) programme and APN by providing financial support under CAPaBLE project (CBA2006-09NSY-Raha) for a *Scoping Workshop in South Asia Rapid Assessment Project (SARAP) Result for Designing Future Research Agenda and Capacity Building Requirements.* For inquiries, send an email to info@apn-gcr.org.

APN in Action

APN at the China Low Carbon Economy Forum 10-11 April 2010, Beijing, China

Hosted by China Association of Science and Technology Industry Parks, Financial Times, China Environmental News, World Alliance for Decentralised Energy, Taiwan Emission Trading Association, FTChinese, Wall Street Journal, Bloomberg, and PR Newswire Asia and many other organisations, the China Low Carbon Economy Forum 2010 was held on 10-11 April 2010 in Diaoyutai State Guesthouse, Beijing, China. Under the Session 'Founding Green Carbon Corporation and Advocating Low Carbon Life Style (Carbon Neutral)', APN Secretariat Director, Mr. Tetsuro Fujitsuka, who was invited as a resource person, briefed the participants about the activities of APN and also shared some initiatives on Low Carbon Society and Low Carbon Policy.

Countries all over the world are conducting development in the post financial crisis era. Low Carbon economy has been an inexorable trend and important solution to deal with the global financial crisis and realising green recovery while climate is changing severely. In August 2009, Resolution of the Standing Committee of the National People's Congress on Making Active Responses to Climate Change is approved, which indicates that Chinese government will further incorporate the action responding to climate change into the plan of social and economic development and continue to take stronger and harsher measures to develop green Low Carbon economy and recycle economy, industriously propelling the transformation into Low Carbon economy. China is going to have more opportunities brought by green development in 2010.

The forum, under the theme of 'Low Carbon City, Low Carbon Industry and Low Carbon Finance' comprised keynote speech, seminars, panel discussion, projection negotiation and connection, social cocktail, and visit to Low Carbon companies and parks. This forum aimed to: 1) research and forecast the development trend for Chinese and global Low Carbon cities and Low Carbon economy; 2) set up a platform for Low Carbon industry to be more effectively connected with financial capital; 3) share thoughts and experiences of international masters and entrepreneurs in Low Carbon industry; and 4) seize important investment opportunities in Low Carbon industry and Low Carbon gardens.

Environmental protection organisation officers, Low Carbon government, investment banks, officers from carbon funds and green investment institutions, well-known scholars, entrepreneurs in Low Carbon industries were invited to discuss current situation and future of Low Carbon finance and economy after meetings in Copenhagen and the National People's Congress and the Chinese People's Political Consultative Conference, and also to share experiences in industry and conduct communication among project information. For more details about this Forum, please visit: http://www.clcef.org/eng/agenda.asp.

APN at the UNFCCC Technical Workshop on Collaboration among Regional Centres and Networks, 2-5 March 2010, Apia, Samoa

The United Nations Framework Convention on Climate Change (UNFCCC) Secretariat convened the Technical Workshop on Collaboration among Regional Centres and Networks under the guidance of the Chair of the Subsidiary Body for Scientific Technological Advice (SBSTA), in accordance with the conclusions of the SBSTA at its 28th Session. The APN Secretariat Director, Mr. Tetsuro Fujitsuka participated in this event to share and exchange experience as well as showcase the APN activities to other participants.

The objective of the Nairobi work programme is to assist all Parties, in particular developing countries, including the least developed countries and small island developing States, to improve their understanding and assessment of impacts, vulnerability and adaptation, and to make informed decisions on practical actions and measures to respond to climate change on a sound scientific, technical and socio-economic basis, taking into account current and future climate change and variability.

As part of the activities under the Nairobi work programme, the SBSTA requested the UNFCCC Secretariat to organise a technical workshop with representative from Parties, relevant organisations, regional centres and networks, communities and experts, on how regional centres and networks undertaking work relevant to climate change could collaborate, with a view to:

- Providing information on the use of different methods and tools for various users and types of assessment;
- Enabling users to share information on different methods and tools, including details on their application, limitations and usefulness for different types of tasks and users;
- Facilitating a dialogue between users and developers of methods and tools to encourage the development and application of more demand-and stakeholder-driven methods and tools;
- Enabling users to exchange good practices and lessons learned in accessing and applying data;
- Promoting a dialogue between the providers and users of data in order for providers to better meet the needs of different users;
- Disseminating good practices and lessons learned in the development and application of methods and tools;
- Providing information on available climate models, scenarios and downscaled projections, including on their application, limitations and usefulness for different purposes and geographical areas;

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APN in Action

APN at the 4th GEOSS Asia-Pacific Symposium 10-12 March 2010, Bali, Indonesia

Towards a Global Earth Observation System of Systems that supports the societal benefit areas of climate and biodiversity

In order to exchange information on, and enhance common understanding of the Global Earth Observation System of Systems (GEOSS), the 4th GEOSS Asia-Pacific Symposium was organised by the Group on Earth Observations (GEO) Secretariat with the support of the governments of Indonesia and Japan. Mr. Tetsuro Fujitsuka, APN Secretariat Director was invited in the plenary session to introduce APN activities. He also had the opportunity to meet some of the APN former and current project leaders and collaborators who also participated in the Symposium.

The Symposium, which attracted more than 200 participants and considered a major milestone on the road to the Beijing Ministerial Summit, commenced with an Opening Remarks from Prof. Jose Achache, GEO Secretariat Director. This was followed by welcome remarks from the Minister of Research and Technology; opening address from Mr. Eiichi Suzuki, Consul General, Consulate General of Japan in Denpasar; Group Photo Session; and Press Conference.

Keynote speeches were given by Prof. Rachmat Witoelar, Executive Chair of National Council on Climate Change-Indonesia and Dr. Arjun Thapan, Special Senior Advisor for Infrastructure and Water, Office of the President, Asian Development Bank.

A Session on 'GEOSS Highlights and Priorities' focussed on the discussion of the 'GEOSS Architecture and Data Management' and 'Greenhouse Gases Tracking from Space'. Whereas the Session on 'Country and Regional Reports on GEOSS-Related Activities', invited presentations from APN and the following countries: Australia, Bangladesh China, Indonesia, Japan, Nepal, Pakistan, and Philippines. All are APN member countries.

To streamline the discussion, the Symposium included a full day four parallel sessions. The objective was to present and discuss relevant activities, focusing particularly on activities in the Asia-Pacific region, and identify future activities to contribute to GEOSS implementation. The four working groups were as follows:

- Asia Pacific Climate Variability and Monitoring Capacity
- Hydrometeorological-Related Disaster and Water Resources Management
- Forest Carbon Tracking
- Asia-Pacific Biodiversity Observation Network

The Symposium concluded with a **Panel Discussion and Symposium Summary on 'GEOSS's Potential for the Utmost Societal Benefits in Climate and Biodiversity in Asia-Pacific Region'.**

With the successful conduct of the GEO Symposium, international networking among member countries was strengthened. The Symposium promoted national, regional and international synergies for building Earth observation networks that contribute to GEOSS. It also provided recommendations from the Asia-Pacific region to the 2010 GEO Ministerial Summit to be held in Beijing, in November, and at the same time promoted regional collaboration on biodiversity observations as a contribution to the Nagoya Conference of the Convention on Biological Diversity and further forest carbon tracking activities in the Asia-Pacific region.

from page 12 - APN at the UNFCCC Technical Workshop on Collaboration among Regional Centres and Networks

- Facilitating feedback between users and providers of climate models, scenarios and downscaled projections, in order to enable or enhance the development and to improve the usability of regional climate models and scenarios.

Around 60 representatives from Parties, relevant organisations, regional centres and networks, communities, and experts, participated in the workshop to: 1) share climate data and information available in the public domain; 2) exchange views on climate data and information needs within the context of adaptation planning, and 3) discuss possible roles of regional centres and other knowledge intermediaries in improving the provision, dissemination and application of climate data and information.

More information and PDF version of the presentations can be found on this site: http://unfccc.int/adaptation/nairobi_workprogramme/workshops_and_meetings/items/5258.php

Featured Organisation: APCC

APEC Climate Center (APCC) Serves Your Climate Information Needs

Planning across various sectors is getting increasingly difficult due to climate variability and extreme events associated with climate change. Mapping out energy demand for heating and cooling during summers and winters becomes tricky. Droughts associated with the El Niño phenomenon destroy millions of dollars worth of crops and undermine poverty reduction among farmers and fisher folk. Tropical diseases are foreseen to spread more widely as global mean temperatures increase.

The APEC Climate Center (APCC) provides climate information that can serve the needs of various sectors. The target users include people working on national hydrological and meteorological services (NHMS), disaster risk management and emergency preparedness, marine resource conservation, energy security, water management, food security, public health and other sectors.

One of APCC's users, a water resource engineer says, "As part of our planning process, we require seasonal precipitation forecasts for the autumn and winter of 2010 to enable operational planning decisions to be made." He works with Melbourne Water, a state government authority responsible for the management of water resources and water supply in Melbourne, Australia.

Background and History

In 1998, APCC's predecessor, the APEC Climate Network (APCN), was proposed at the 3rd APEC Science and Technology Ministers' Meeting. There was a noticeable gap in terms of capacities of member economies to produce high-quality climate information, as this requires expensive equipment. The objective was for the network to serve as a channel for free climate information exchange among APEC member economies. The proposal to form APCN was later approved at the 17th APEC Industrial Science and Technology Working Group Meeting in Seattle, U.S.A. the following year.

Science and technology Ministers met again in March 2004 in New Zealand where they reached a consensus that climate information needs were growing and that the APCN needed to be institutionalised. Institutionalisation would also further consolidate and advance the achievements of the APCN. It was here that ideas about the establishment of the APCC were sown.

The next year, March 2005, saw the unanimous endorsement of the establishment of APCC by APEC member economies at the First APEC Senior Officials' Meeting, and later that year in November, APEC Ministers welcomed the establishment of APCC in a joint statement in the 17th APEC Ministerial Meeting.

The APEC Climate Center (APCC) was formally launched on 18th November 2005 with the mission of strengthening scientific and technological cooperation across the APEC region in climate information services, research and technical support. This aims to help economies and societies deal with the consequences of current and future climate-related hazards.

Vision and Mission

APCC aims to be a regional hub for climate information services. It aims to contribute to the realisation of the APEC vision of regional prosperity and enhancing human security by providing climate prediction techniques and climate information and application tools.

The goals are to:

- Produce skillful real-time climate predictions and facilitate the sharing of high-cost climate data and information in the region
- Enhance capacity-building in prediction and socio-economic applications of climate information
- Accelerate innovations in climate science research and operational forecasting

The mission is carried out through the following approaches:

- Developing a reliable real-time climate prediction system through multi-model climate prediction system
- Promoting capacity building through the provision of open access data, trainings and workshops
- Coordinating research toward the development of an APEC integrated climate-environment-socio-economic system model

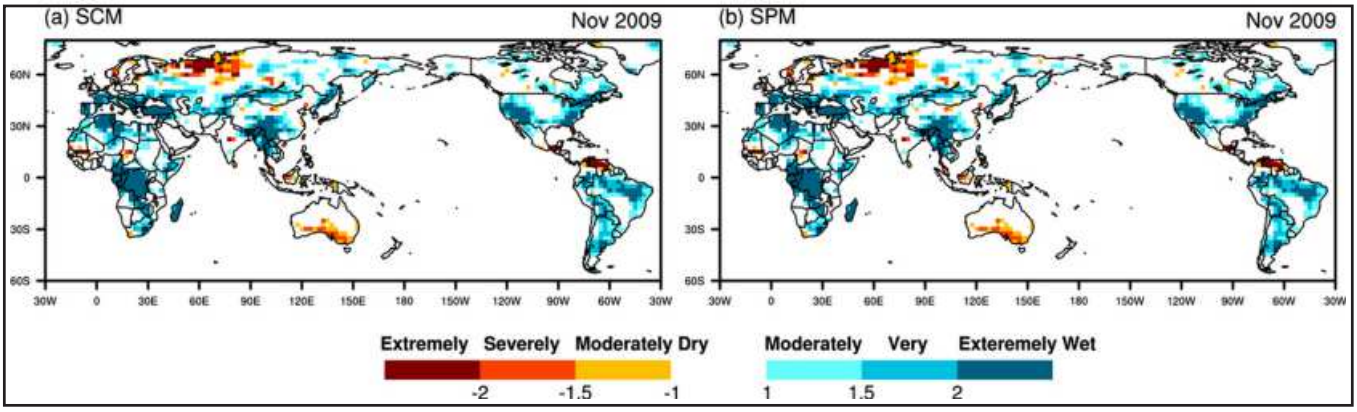
Products and Services

APCC produces high-cost climate data and information by operating a real-time and well-validated climate prediction system based on a multi-model ensemble (MME) technique. Through this technique, APCC gathers information from 17 participating institutions ***[****Australian Bureau of Meteorology (BOM), Beijing Climate Center (BCC), Canadian Meteorological Center (CMC), Center for Ocean-Land-Atmosphere Studies (COLA), Central Weather Bureau of Chinese Taipei (CWB), Institute of Atmospheric Physics of China (IAP), International Research Institute for Climate and Society (IRI), Japan Meteorological Agency (JMA), Korea Meteorological Administration (KMA), Voiekov Main Geophysical Observatory of Russia (MGO), National Aeronautics and Space Administration (NASA), National Center for Environmental Prediction (NCEP), National Institute of Meteorological Research of Korea (NIMR), Russian Federal Service for Hydrometeorology and Environment Monitoring (ROSHYDROMET), Seoul National University (SNU) in the Republic of Korea, the Servicio Nacional de Meteorologica e Hidrologia of Peru (SENAMHI), Pusan National University (PNU)****]*** and processes this data to eliminate the biases inherent in each model prediction. This method has been proven to produce more accurate and reliable climate information. APCC also provides this service for free distribution in the region through its open access policy. Climate data, which would otherwise need to be procured at high cost, is now freely distributed in the region for the benefit of different user groups.

APCC uses MME in providing different products. These include: 1) Three-month climate outlook or forecast published every month; 2) Drought and flood monitoring bulletins; 3) Tropical Indo-Pacific monitoring; and 4) Climate change projections and other climate monitoring products. APCC is also currently experimenting with a six-month climate outlook to increase lead times for better planning. Access to these products is available through www.apcc21.org. Outlook and climate monitoring products are also emailed to various user groups.

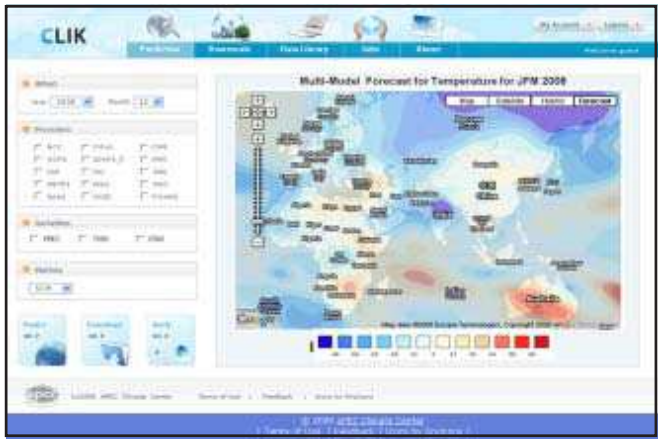
continued on page 15 ...

from page 14 - APEC Climate Center (APCC) Serves Your Climate Information Needs



Global Hydrological Extreme Forecast for MAMJJa2009 (6-month SPI)

Other products include the Climate Information Toolkit (CLIK) and the APCC Data Service System (ADSS). CLIK (www.clik.apcc21.net) is a web-based climate information tool developed to allow users to customise retrieval and use of climate prediction data according to regions and time scales of their interest. ADSS (http://cis.apcc21.net/) is a data collection platform that reduces complexities associated with heterogeneous data from different sources using different conventions. Data is stored in the widely-used NetCDF format. In the future, APCC hopes to replace ADSS with Asia-Pacific Data Exchange Portal (ADEPT). This will have a better user-interface and navigation, allow for seamless access to collections and inventories of prediction data, and allow for the evaluation (through visualisation and metadata review) of data via web services.



APCC is also excited about the launching of Tracking Climate and Environmental Changes (TRACE) sometime this summer. TRACE is envisioned to be a virtual playground for climate scientists and decision-makers. Different users can upload information, discuss, network and collaborate through online discussion forums on the best options for climate adaptation using climate information.

Organisational Structure and Networks

APCC institutional infrastructure consists of the Working Group (WG), Science Advisory Committee (SAC), Executive Council (EC) and Board of Directors. Full time staff includes the Director, Heads of Administrative and Science Divisions and respective staff.

The WG consists of representatives from the NHMS that act as liaisons with home institutions. They facilitate the exchange of climate information and work closely with the APCC Science Division in improving the MME forecasting system. The SAC, with 14 members, provides direction and guidance on various matters relevant to the successful implementation of APCC research and development, programmes and activities.

APCC greatly values benefits derived from networked relationships. Their products and services are based on leveraging cooperation among APEC member economies, and their NHMS. They engage with various fora in APEC including the Task Force for Emergency Preparedness, Health Working Group, Energy Working Group and others. They also have links with the World Meteorological Organisation as a participant in activities of the Climate Variability and Predictability project (CLIVAR). APCC also contributes to the Global Earth Observation Systems of Systems (GEOSS). APCC also has collaborative projects with the University of Hawaii-based Climate Prediction and its Applications to Society (CLiPAS) team, Japan Central Research Institute of Electric Power Industry (CRIEPI), and the Voiekov Main Geophysical Observatory (MGO). APCC has also collaborated with the APN for scientific capacity development of developing countries using CLIK and other APCC information.

Infrastructure

To conduct climate research and operational forecasting, APCC uses supercomputers at the Korea Meteorological Administration and Korea Institute of Science and Technology Information that can calculate a unit of 18.5 and 36.6 tera floating point operations per second respectively. APCC is connected with one gigabit per second high-speed communication network.

APCC facilities, which include a unique globe-shaped auditorium seating 84 people, various conference rooms and five training rooms, allow it to host various activities such as the recently held 15th Inter-Governmental Meeting of the APN and the Monsoon Intraseasonal Variability Workshop organised by the CLIVAR Asian-Australian Monsoon Panel.

APCC is also strategically located in the bustling port city of Busan, which is positioning itself to become a low-carbon green city.

Future Directions

In the next few years, APCC hopes to pursue seasonal forecasting with longer lead times of up to 6 to 12 months. APCC also hopes to improve its web tools in providing accessible and easy-to-use climate data and information through ADEPT, CLIK and TRACE.

To maximise the use of climate information that APCC provides, the people involved hope to clearly identify potential user groups and discuss ways of using their products, particularly for decadal prediction, climate change projections and climate change impact assessments. APCC strives to be an international research and service organisation leading climate science and climate change studies in the region that serves the needs of society.

ARCP-Funded Project

ARCP2009-06CMY – Managing Ecosystems Services in Asia: A Critical Review of Experiences in Montane Upper Tributary Watersheds

Project Leader: Dr. Ademola BRAIMOH

Ecosystem Services Management in Asia (ECOSMAG) Synthesis Meeting 25–26 February 2010, Yokohama, Japan

With primary funding from APN, Ecosystem Services Management in Asia (ECOSMAG) was established to improve understanding of the impacts of land management on ecosystem services provided by upper tributary watersheds. The key objectives of ECOSMAG include developing a framework for analysing Ecosystem Services, analysing governance structures vis-à-vis the delivery of Ecosystem Services, and identifying trade-offs and incentives for Ecosystem Services conservation. The three (3) ecosystem services focussed on hydrology, carbon sequestration and soil fertility with case study locations in China, Indonesia and Thailand (http://www.glp.hokudai.ac.jp/ecosmag).

Since inception in 2008, various activities have been carried out, comprising stakeholder analyses, Ecosystem Services inventory, valuation, modelling and mapping, and governance analyses with respect to flow to different stakeholders. Recent events suggest that ECOSMAG outputs may contribute significantly to several international agendas on Biodiversity, Carbon Management and Interlinkages between Ecosystem Services and Human Wellbeing. The most recent of these events was the ECOSMAG Synthesis Meeting.

The Synthesis Meeting was held at United Nations University Institute of Advanced Studies (UNU-IAS), Yokohama, Japan from 25-26 February 2010. The meeting deliberated research findings to date, as project partners shared concrete results on ECOSMAG and related activities in Asia and discussed outstanding research implementation challenges. To download presentations, please visit the following website: http://www.glp.hokudai.ac.jp/ecosmag/getting involved.htm

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ARCP2009-09NSY – Developing Smallholder Agroforestry Carbon Offset Protocols for Carbon Financial Markets - Twinning Sustainable Livelihoods and Climate Mitigation, *Project Leader: Dr. David SKOLE*

Workshop on Developing Agroforestry Carbon Offset Protocols for Carbon Financial Markets

Adoption of agroforestry systems in developing countries offers a farm-level intervention that can help combat rural poverty and climate change and serve to buffer farmers against climate impacts on agriculture. Transforming landscapes from single species annual cash crops to farms that include a variety of trees and other woody perennials mitigates climate change by sequestering atmospheric carbon dioxide in woody biomass and soil. Farm plant diversity helps hedge against erratic and extreme weather patterns resulting from a changing climate.

Beyond the multiple traditional timber and non-timber tree products that agroforestry systems provide farmers, a new commodity value chain opportunity is emerging for those who grow and manage trees on their farms; carbon. Carbon, a greenhouse gas, is now traded in financial markets. Implementing agroforestry carbon offset projects is challenging and requires new market-approved carbon accounting methods. Opportunities are growing fastest for forestry and agroforestry carbon offsets in the voluntary markets.

Land use change, particularly deforestation, is responsible for approximately 20% of all anthropogenic CO_2 emissions. Replacement of lost vegetation can sequester atmospheric CO_2, offsetting emissions. Carbon financial markets are now an accepted mechanism for trading such offsets.

Governments, industries, communities, and individuals are actively participating in carbon abatement through both compulsory and voluntary carbon markets. Forestry-related projects, unfortunately, have lagged behind other mitigation projects in these markets, and small-holder agroforestry carbon offset projects are almost non-existent. This project aims to develop small-holder agro-forestry protocols for the Chicago Climate Exchange working directly with farmers and communities in Laos, Thailand, and Viet Nam.

Project collaborators from Laos, Thailand, the U.S.A, and Viet Nam held a workshop in Bangkok, Thailand, 15–17 March 2010. The workshop was co-hosted by the National Research Council of Thailand (NRCT) and the Department of Forestry, Michigan State University. Even in the midst of an uncertain political situation in Bangkok, more than 40 people participated in the three-day event including colleagues from the Faculty of Forestry, National University of Laos; National

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ARCP-Funded Project

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Agricultural and Forestry Extension Service, Lao PDR; Ministry of Agriculture and Rural Development, Viet Nam; Viet Nam Forestry University; Forest Science Institute of Viet Nam; Mahasarakham, Mahidol, Kasetsart and Thammasat Universities in Thailand; Inpang Community Network, Thailand; Office of Natural Resources and Environmental Policy and Planning, Thailand; Thailand Greenhouse Gas Management Organisation in addition to the two (2) host organisations.

Participants on Day 1 of the APN Workshop held in Bangkok

The workshop focussed on two (2) important challenges for implementing small-holder, agroforestry carbon offset projects: 1) field level carbon measurements in diverse agroforestry systems; and 2) development of agroforestry carbon offset protocols. The first day of the workshop included three (3) keynote presentations addressing the challenges and opportunities for forest and agroforestry related climate mitigation projects given by Dr. David Skole, Michigan State University; Dr. Natarika V. Cooper, Acting Director of the Policy and Strategy Office of the Thailand Greenhouse Gas Management Organisation; and Ms. Araya Nuntapotidech, Director of the Regional Environment Office, Ministry of Natural Resources and Environment in Thailand. The two (2) afternoon sessions presentations given by colleagues from Lao PDR, Thailand and Viet Nam focussed on agroforestry practices in their respective countries and institutional linkages and requirements for registering a carbon offset farm or area and for realising payments from carbon offset transactions.

On Day 2, a presentation was given showing a live demonstration of the Carbon2Markets registry MRV system for the small-holder teak carbon offset project in Thailand providing an example where new projects will be registered. The country teams organised into breakout groups to: 1) develop field level data collection instruments for registering a farm or landscape areas and for establishing baseline carbon in the agroforestry farmscapes; and 2) discuss the required components needed for developing agroforestry carbon offset protocols based on a subset of specific agroforestry project prototypes. On the final day of the workshop, participants identified potential project pilot sites for data collection and implementation and identified the road maps and timelines for moving from farm-level data collection to realising payments from agroforestry carbon offsets traded on a market.

Carbon2Markets™ web-enabled GIS content management system for measuring, reporting and verification (MRV). Example shows small-holder teak project in Thailand.

The project pilot areas that were identified include: Inpang Community Network in Northeast Thailand, Small-holder agroforestry Para rubber systems in communities in Trat Province, Thailand (working through the extension efforts of the Trat Agroforestry Research Station of Kasetsart University); Litchi agroforestry and reforestation area in Kien Lao Commune, Luc Ngan District, Bac Giang Province, Viet Nam; and a select community (tbd) in the Nam Tone Watershed in Lao PDR.

Opportunities do exist for successful agroforestry carbon offset projects which twin the co-development of market value-chains for sequestered carbon and secondary products creating a win-win situation through removing carbon from the atmosphere and providing new sources of income for farmers worldwide. However, there are both institutional and implementation barriers that must be overcome. Using geospatial tools (remote sensing satellite and GIS data) through an Internet-enabled carbon offset management system, the project team were able to lower the transactions costs for measuring, reporting and verification (see: www.carbon2markets.org) of carbon offset projects.

Developing projects in coordination and cooperation with the responsible National level agencies for climate mitigation and adaptation (like ONEP and TGO in Thailand) ensures institutional linkages required to see carbon offset payments realised at the farm level. Finally, defining the field level agroforestry data collection requirements and protocol components are essential for moving projects forward. The dedication of colleagues from Lao PDR, Thailand, and Viet Nam and the generous support of the APN were highly appreciated.

Examples of agroforestry farmscapes in the region: (A) Forest Farm, Inpang Community Network, Sakhon Nakhon, Thailand; (B) Litchi fruit trees intercropped with beans, Bac Giang, Viet Nam; (C) Para rubber trees intercropped with banana, Trat, Thailand; (D) Jatropha intercropped with pineapple, Bolikhamxay, Lao PDR

ARCP-Funded Project

ARCP2010-06CMY – Quantifying the Role of Dead Wood in Carbon Sequestration, *Project Leader: Dr. Douglas SCHAEFER*

Forests contain 40 to 60 petagrams (Pg; billion metric tons) of carbon as dead woody debris, with almost 3 Pg C per year returned to the atmosphere as CO_2. This flux is controlled by fungal decomposition of lignin, a particularly resistant bio-polymer.

The biology and genomics of fungal lignin decomposition have been extensively studied because of their roles in damaging wooden structures, and their ability to "liberate" cellulose for bio-energy conversion. Those studies have revealed several physical, chemical and biological "control points" that could slow fungal lignolysis.

Detailed examinations of forest wood decomposition rates have shown wide variations, even after controlling for the presumed strongest factors (temperature, moisture and density). Therefore, other identified "control points" could be modified, but no previous study has attempted to alter wood decomposition beyond changing moisture and soil contact area.

Dr. Chen emphasising the significance of APN collaboration with the Xishuangbana Tropical Botanical Garden

Global implications of slowing wood decomposition are substantial. A biome-specific model of wood decomposition has been developed, demonstrating that a 50% global slowing of wood decomposition would reduce CO_2 release to the atmosphere by more than 1 Pg C per year. By comparison, the atmospheric CO_2 pool is now increasing by about 4 Pg C per year, and ways to slow that increase are actively being sought. The present research project aims to add control of wood decomposition to that list, and to make the results available to scientists and policy-managers throughout the Pacific Rim and beyond.

Pprject Leader Dr. Schaefer while leading the workshop discussions

The Licor 820 infra red gas analyser being demonstrated indoors

On 16-20 January 2010 the APN Workshop on Quantifying the Role of Dead Wood in Carbon Sequestration convened in Kunming, China. Prior to the Workshop was a visit to the Xishuangbanna Tropical Botanical Garden at Mengla where the project leaders conducted a field demonstration of measuring CO_2 respiration by coarse woody debris. This demonstration included weight determination by digital field scale, moisture determination by scaled resistivity meter, temperature measurements, and recording data in the field.

The workshop commenced with welcoming remarks by Dr. Chen Jin (Chinese Academy of Sciences Xishuangbanna Tropical Botanical Garden Director and Professor) and a group photograph. Afterwards, the participants discussed the basis and significance of the research project and addressed additional details about how the collaborating sites will conduct parallel research in China, Laos and Viet Nam. The morning workshop session concluded with a detailed discussion of the physical, chemical and biological treatments to be performed on coarse woody debris in replicated field transects.

The Xishuangbanna session of the workshop concluded with additional hands-on practice with the Licor 820 infra red gas analyzer, microcomputer data interface, and further data analysis (using microcomputer spreadsheet programmes) for all Laos and Viet Nam collaborators.

The workshop participants also traveled to the Ailaoshan field station, the site of the wood decomposition experiments undertaken in China. There, they observed the large amount of wood debris available as experimental material, which in some instances is identified to the particular tree species. They also discussed how to set up transects in the field, and gained further field experience with the Licor 820 infra red gas analyser.

Additional discussions at the Ailao Mountain Field Station

The Licor 820 infra red gas analyser being demonstrated at Ailao Mountain

Dr. Chen welcoming the participants of the APN Workshop

ARCP-Funded Project

ARCP2010-04CMY – Building Asian Climate Change Scenarios by Multi-Regional Climate Models Ensemble, *Project Leader: Dr. Shuyu WANG*

The *ARCP2009-16NMY-Wang* Project Workshop on "Building Asian Climate Change Scenario by Multi-Regional Climate Models (RCM) Ensemble" was held on 28-29 January 2010, in Tsukuba, Japan. The project aims to: 1) provide high-confidence scenarios for regional climate change produced by multi-RCM ensemble; 2) provide a scientific base for impact assessment communities and policy-makers to achieve better understanding of Monsoon Asia climate change; and 3) set up a regional climate modelling network and establish connection with other regional climate research networks around the world.

The workshop was attended by about 30 participants from Australia, China, Denmark, Japan, Republic of Korea, Russian Federation, and U.S.A. The participants consisted of project scientists from 11 project groups, invited scientists, and observers. The workshop aimed to: 1) brief the team on the project's execution and progress; and 2) discuss the next steps for the project's future development.

The leading scientists from each group presented their latest research results related to the project, including model validation over the research domain, investigation of the effects of key factors and processes that affect the monsoon system and climate extremes, etc. The topics included:

1. The preliminary analysis of RCM downscaling for both reanalysis and ECHAM5 over Asian Monsoon regions;
2. Uncertainty analysis and biases correction in regional climate simulations and projections;
3. Impacts of regional parameters and physical processes on Asian Monsoon climate change simulations;
4. Impacts of SST on tropical cyclone frequency and East Asia summer climate;
5. Added value of RCM downscaling and experiences on applying high resolution RCM in impact and assessment studies in Japan;

In addition, Dr. William Gutowski, Dr. Jens Christensen (Coordinator of European PRUDENCE project and the key leading scientist in ENSEMBLES project), and Dr. Raymond Arritt (leading scientist of NARCCAP), shared their perspectives and provided information on issues such as coordinating multi-model project, key points in regional climate change projection, etc., with the participants.

To date, the project team noted that they have placed tremendous effort on integration preparations for project implementation. They noted that on-line discussions have been a useful tool for the project team to share opinions and information on the issues that are closely linked with the project objectives, such as simulation design (the simulation periods, domain location and size, driving GCMs, etc.), methodology, potential for collaboration with other multi-model projects, etc.

The common framework of the experiment has been discussed and will be followed by all participating RCMs. The simulation consists of two time slices: periods of 1978-2000 for control climate, and 2038-2070 for Asian high-resolution climate change projection. For both time slices, the two-year spin-up time will be applied.

The domain covers most of the Asia region, with research focus on the East Asia Monsoon region, as well as new attention on the climate change scenarios of the South and Southeast Asia regions. Therefore, integration to produce future climate change scenarios is being well planned and implemented to achieve project objectives. Furthermore, the workshop highlighted important elements, such as human resources, organisational and institutional support, group communication, to better achieve the project objectives.

After extensive discussions, the participants reached agreement on the following action items:

1. Continue to analyse the ECHAM5 downscaling results completed by individual groups, around topics such as the impact of biased SST on monsoon climate simulations;
2. In terms of evaluation, collect and distribute to individual research groups both station and gridded observation data for model validation;
3. Carry out new integrations over project domains for both current and future climate scenarios;
4. Keep in close touch with GCM modellers for up-to-date GCM results;
5. Form analysis teams and set up work on scientific tasks to implement project objectives.

ARCP-Funded Project

ARCP2009-11NSY-ROY – Role of Experiments in Sustainability Transitions in Asia, *Project Leader: Prof. Joyashree Roy*

Active discussion taking place during the worshop

Global Change Programme –Jadavpur University submitted a proposal along with its collaborating institutions for organising two (2) scoping workshops to develop an international research programme on the role of innovative development project-level experiments in 'sustainability transitions' in Asia. Workshops are intended to bring together an international group of academics and practitioners engaged in the field of development studies, actions and innovative experiments towards sustainability transition. The goal has been to develop a collaborative research strategy for: inventorising, classifying and analysing sustainability experiments in an international context.

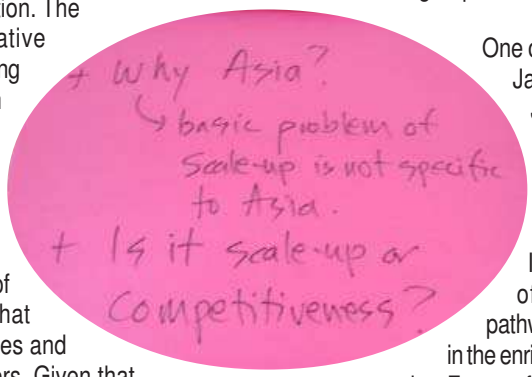
The ultimate aim is to understand how experiments can come to influence Asian development pathways and transform some of the unsustainable systems of provision of mobility, energy, food services; and what lessons can be learned about opportunities and barriers for policy-makers and practitioners. Given that this is a project for two (2) scientific international workshops to prepare research and funding strategies for an international research programme, the plan was to develop a background paper to initiate the discussion during the meeting and, in particular, suggest a conceptual framework to inventorise, classify and analyse sustainability experiments.

It needs special mention that from the stage of conceiving an idea to organise such workshops and submitting a proposal to APN had been a well articulated commonly felt need among multi-institutional, multiple researchers from multiple disciplines. Close collaboration, time commitment and ideas to enrich the original proposal came through emails among the core team members from Netherlands, Thailand and India. IHDP sponsored Industrial transformation dissemination workshop organised by Dutch colleagues almost a year before the proposal submission was the initial starting point for occasional discussions and exchange among core team members who felt the need for more face to face discussion in Asian setting involving more countries, more stakeholders to develop an understanding about nature of Asian Transition pathway. APN provided a most appropriate platform to carry forward a more inclusive participatory process for developing a long-term research agenda.

Personal research interests, relevance to the context, perfect communication among members, persuasive nature of a couple of team members really provided fantastic productive teamwork towards the development of a winning proposal. Above all, leadership and support of the institutions have provided the necessary boost to researchers' enthusiasm.

From the very beginning, the proposal laid out and in practice meant to implement the steps to make the workshops fruitful and goal-oriented. Past vast experience of each of the research partners really helped in convergence to a common goal and steps towards implementation of the project. It was well-planned.

A background paper was prepared and circulated a couple of months ahead of scheduled first workshop among prospective list of participants (core team members decided on the participants based on their search through literature and past collaboration). Reactions were based on country perspectives and based on secondary information and existing bodies of knowledge about sustainability experiments and projects. The proposal, background paper and the set of reactions were used for group work and discussions at the workshop.



One of the two workshops convened in India at Jadavpur University, Kolkata during 14-16 January 2010. The workshop was attended by participants from China, Malaysia, Indonesia, Thailand, Viet Nam, The Netherlands, Germany, UK and India.

In this part of the world, science and policy often at times follow non-overlapping pathways. This dis-joint approach does not help in the enrichment of either scientific research or policy practice. Face-to-face discussions, especially in the presence of practitioners and policy-makers, were very informative and enlightening for both groups.

There were many surprises to challenge researchers view of how the world works and also practitioners found it interesting that many structured discussions are happening among scientists, which in fact help them in framing issues, showcasing their practical on field trials/ experiments and in guiding consistent policy structure that can integrate short-term political interests and long-term social and economic goals.

Country representatives from Asia came up with sufficient examples to question the existing literature and framework. This knowledge-sharing exercise, which is otherwise not available at the published literature level, provided enough resources to help in augmenting and revisiting

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ARCP-Funded Project

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the background paper, which was initially drafted based on developed country experience-led theoretical frameworks applied in an Asian Context.

Diversity and Multiplicity and coexistence of various regimes, which explains the complexity of the Asian Transition pathway, have opened up scope for new interesting research questions. The first workshop was very successful in providing an interactive opportunity for valuable discussions and has clearly concluded that there is a need for Asia-Specific Transition studies. These have the potential to enrich the theoretical literature through empirical research.

Each morning started with plenary session to keep everybody on the same page with respect to concepts, definitions, issues, and research questions. Then, participants were divided into two break-out groups to come up with reactions which were then discussed and collated at the end of the day plenary sessions.

The uniqueness in the Asian growth path is that it is facing simultaneous challenges from economic, social and environmental issues. This is not what the early comers faced in developmental history, where economic, social and environmental issues could be addressed in sequence.

Therefore, sustainability experiments will have multi-dimensional objectives and managing these multi-dimensional objectives is important in the Asian context. With this result emerged many new research questions. The discussions were intense and varied given the diversity in country representation, which cannot be narrated in short space.

All participants felt that a very productive platform was initiated that needs to be sustained through continued dialogue and inventorisation of local sustainability experiments/niches, etc., by country and acrosscountry partners between now and the next workshop scheduled to be held in Chiang Mai, Thailand, 15-17 July.

Each partner is looking for ways and means to strengthen the network of researchers and practitioners. Ideas for the capacity building of young researchers in the group by involving advanced researchers in the network, through strengthening of institutional network are among a few identified common needs among the partners.

Not all partners are equally paced but each one is very productive and oriented towards the goal and have strong institutional support, which is the strength of this network and which can successfully carry forward the research to bring closer and enrich science-policy interactions in the region.

IHDP - Industrial Transformation

APN Asia-Pacific Network for Global Change Research

Announcement

more information will be posted on the APN website

CONFERENCE

Experiments, system innovation and sustainability transitions in Asia

15-17 July 2010 (tentative), AMARI Rincome Hotel, Chiang Mai, Thailand

There is preliminary evidence of a great variety of 'sustainability experiments' – defined as planned initiatives to embody a highly-novel socio-technical configuration likely to lead to substantial (environmental) sustainability gains – underway in Asia. This conference will focus on the nature and role of these spaces for innovation in transforming Asian development pathways in fields such as energy, mobility, agriculture and housing in both urban and rural areas.

The conference will take stock of what has been learned in the IHDP-IT (International Human Dimensions Programme Core Project on Industrial Transformation) over the last years, as well as move forward the new research agenda now supported by the APN. Those international network of researchers, practitioners, policy-makers and other actors who are interested in exploring alternative, more sustainable development pathways are welcome to participate.

Organised under the auspices of the IHDP's Industrial Transformation project; APN; Unit for Social and Environmental research (USER), Chiang Mai University, Thailand; Eindhoven University of Technology, The Netherlands; and the Jadavpur University, India, the conference aims to:

1) Synthesise and reflect on the current knowledge about pathways, barriers and opportunities for sustainability transitions in Asia; and
2) Set up new research agendas on fostering the transformative potential of sustainability experiments in Asia.

CAPaBLE Programme Updates

CBA2009-03NSY – Project Scoping and Training Workshop for REDD in Indonesia, Cambodia, and Lao PDR, *Project Leader: Dr. Rony Bishry*

In preparation for the implementation of Reducing Emissions from Deforestation and Forest Degradation (REDD) programme in developing countries, sponsored by the APN, the *Project Scoping and Training Workshop for REDD in Indonesia, Cambodia and Lao PDR* was held on the 20- 22 January 2010 at the Agency for the Assessment and Application of Technology (BPPT) Jakarta, Indonesia. Scientists and government officials from the three (3) countries and from Michigan State University (MSU), U.S.A., participated.

This project addressed the interrelated topics of: 1) climate; 2) ecosystems and land use; and 3) the use of resources for sustainable development; with the following goals:

- supporting regional collaboration on basic research for developing REDD carbon offset projects
- facilitating project team-work between scientists and policy-makers
- building technical capacity in remote sensing, Geographic Information Systems (GIS) and carbon model usage

Ultimately, the achievement of these goals is meant to increase the understanding of REDD and its implementation and to provide an initial identification of potential REDD activities in each of the participating countries.

In-country dissemination of the workshop findings will be crucial to support future implementation of REDD in each country. It is expected that this workshop will support the implementation of similar workshops in the participating countries and developing nations around the world.

The programme began with Prof. Jana Anggadiredja the Deputy Chairman of BPPT briefing the participants about the identification of transfer of technology for climate change mitigation in Indonesia. Prof. Larry Leefers of (MSU) spoke about the major issues concerning REDD programmes in developing countries. Afterwards, Mr. Jay Samek explained the technical aspects of the programme. Lastly, the REDD programme for The Case of Indonesia was delivered by Dr. Nur Masripatin, The Case of Lao PDR by Dr. Vann Samreth, and the Case of Cambodia by Dr. Thongmanivong.

In this workshop, the project Coordinator, Dr. Rony Bishry, delivered the overview of the programme and a presentation on the community participation in the REDD programme. More information about this can be found at this site: http://neonet.bppt.go.id/redd/.

ARCP 2010/11 Projects

Project Reference: ARCP2010-01CMY-Sthiannopkao
Project Title: Collaborative Research on Sustainable Urban Water Quality Management in Southeast Asian Countries: Analysis of Current Status (comparative study) and Development of a Strategic Plan for Sustainable Development
Research Theme: Use of Resources and Pathways for Sustainable Development; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Cambodia, Indonesia, Republic of Korea, Thailand and Viet Nam
Project Leader: Dr. Suthipong STHIANNOPKAO, Gwangju Institute of Science and Technology (GIST), REPUBLIC OF KOREA;
Email: suthi@gist.ac.kr; suthisuthi@hotmail.com
Abstract: This project undertakes collaborative research in sustainable urban water quality management in Southeast Asian (SEA) countries and aims to establish a Centre of Excellence in the field of sustainable urban water quality management in the region. It is composed of three (3) main parts: Part I - Scientific research; Part II - Database development; and Part III - Implementation of a strategic plan through capacity building programmes. Part I includes a comparative study in SEA on: 1) current and future of urbanisation expansion; 2) current water management policies; 3) water quality impacts caused by urban activities and climate change, and; 4) development of a strategic plan including capacity building programmes. The main outcome of this project will be elements for a dynamic database system that can be used, maintained and further developed by local and regional stakeholders to create better policies and actions to mitigate, minimise or adapt to current and future manifestations of urbanisation and climate change impacts on surface water quality. This project is endorsed by the International Human Dimensions Programme for Global Change Research (IHDP)'s Urbanization and Global Environmental Change (UGEC) Project.

Project Reference: ARCP2010-02CMY-Phua
Project Title: Integrated Prediction of Dipterocarp Species Distribution in Borneo for Supporting Sustainable Use and Conservation Policy Adaptation
Research Theme: Ecosystems, Biodiversity and Land Use; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Malaysia, Indonesia and Japan
Project Leader: Dr. Mui How PHUA, School of International Tropical Forestry, Universiti Malaysia, MALAYSIA;
Email: pmh@ums.edu.my
Abstract: Borneo's lowland rain forest dominated by dipterocarp species has been subject to exploitation under different policy regimes leading to degradation and deforestation. Nevertheless, crucial information on species distribution in both regimes are seriously lacking for sustainable management and conservation efforts. This project aims to fill the gap of missing information regards dipterocarp species distribution and conservation gap at a landscape scale through an integrated approach that combines remote sensing, Geographic Information System (GIS) and field data. The project will also design a hybrid mechanism, which combines incentive and market mechanisms to examine the local people's willingness to participate in keeping forest carbon. Policy and other various issues related to Reducing Emissions from Forest Degradation and Deforestation (REDD) implementation will be examined. All of the results including modelling, conservation gaps and REDD will be presented at various conferences and in a cross-boundary workshop that will be organised to support policy adaptation to better deal with dipterocarp conservation gaps and REDD.

Project Reference: ARCP2010-03CMY-Marambe
Project Title: Vulnerability of Home Garden Systems to Climate Change and its Impacts on Food Security in South Asia
Research Theme: Climate; Ecosystems, Biodiversity and Land Use; Use of Resources and Pathways for Sustainable Development; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Bangladesh, India, Sri Lanka and U.S.A.
Project Leader: Prof. Buddhi MARAMBE, Faculty of Agriculture, University of Peradeniya, SRI LANKA; Email: bmarambe@pdn.ac.lk
Abstract: The influence of climate change on food production and food security has not been well established yet. Food production in many developing countries, especially in South Asia, is carried out in home gardens. Home Garden is a complex sustainable land use system that combines multiple farming components, such as annual and perennial crops, livestock and occasionally fish, of the homestead and provides environmental services, household needs, and employment and income generation opportunities to the households. This study assesses the effects of climate change on home garden systems, which are the predominant types of highland farming in South Asia, under changing climate using bio-economic models. The present study will take stock of the trees, crops and farm animals in the home gardens to establish the current status. The extent to which climate shocks influenced the present status of home gardens will be investigated.

Project Reference: ARCP2010-04CMY-Wang
Project Title: Building Asian Climate Change Scenarios by Multi-Regional Climate Models Ensemble
Research Theme: Climate
Countries Involved: Australia, China, Japan, Republic of Korea, Thailand and U.S.A.
Project Leader: Dr. Shuyu WANG, Institute of Atmospheric Physics, Chinese Academy of Sciences, CHINA; Email: wsy@tea.ac.cn
Abstract: High resolution information about climate change, variability and extremes is required to develop regional climate change scenarios, which are used in impact, vulnerability and adaptation studies. Facing the fact that in most projection studies coarse-resolution Global Climate Models (GCMs) are applied, this project will couple nine (9) Regional Climate Models (RCMs) from five (5) countries with at least one GCM; therefore, high-confidence regional climate change projection with qualified uncertainty range will be provided. Two (2) sets of simulations for both contemporary and future climate will be carried out. The ensemble technique will then be developed and used to estimate the uncertainty and provide more reliable Asian climate change projections. The outputs of the project will contribute to the 5th Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) by providing detailed regional climate change projections in Asia.

Project Reference: ARCP2010-05CMY-Luck
Project Title: The Effects of Climate Change on Pests and Diseases of Major Food Crops in the Asia Pacific Region
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Australia, Bangladesh and India
Project Leader: Dr. Joanne Elizabeth LUCK, Cooperative Research Centre for National Plant Biosecurity, AUSTRALIA;
Email: jo.luck@dpi.vic.gov.au
Abstract: An understanding of any increased impact from pests and diseases of key food crops under climate change will enable the

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ARCP and CAPaBLE 2010/11 Projects' information will soon be uploaded on the APN website.

ARCP 2010/11 Projects

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Asia-Pacific agricultural industries and government agencies to better prepare and adapt to climate change, through changes to existing policy and practices such as time of planting, new resistant varieties, changes to disease management protocols and shift in geographic plantings. The project will investigate the impact of climate change on key pests and diseases of major food crops in the Asia Pacific Region. The influence of increasing temperature, increasing atmospheric CO_2 and moisture availability on high threat pests and pathogens will be examined through sharing of data, collaborative workshops, proposal development and a joint scientific publication. Critically, a new link is proposed between the Cooperative Research Centre (CRC) National Plant Biosecurity, the Australian Grains Free Air CO_2 Enrichment experiment, the Central Research Institute of Dryland Agriculture (CRIDA) Network Project on Climate Change (NPCC) and International Crops Research institute for the Semi-Aris Tropics (ICRISAT).

Project Reference: ARCP2010-06CMY-Schaefer
Project Title: Quantifying the Role of Dead Wood in Carbon Sequestration
Research Theme: Climate; Ecosystems, Biodiversity and Land Use
Countries Involved: China, Lao PDR and Viet Nam
Project Leader: Dr. Douglas SCHAEFER, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, CHINA; Email: xiedaoan@xtbg.ac.cn
Abstract: Dead woody debris in the world's forests contains between 40 and 60 petagrams (Pg; billion metric tons) of carbon, with almost 3 Pg C per year being returned to the atmosphere from this pools as CO_2. This return of carbon to the atmosphere is controlled by fungal decomposition of lignin, a particularly resistant bio-polymer. The biology and genomics of fungal lignin decomposition have been extensively studied because of their roles in damaging built (wooden) structures, and their ability to "liberate" cellulose for bio-energy processes. These studies have identified a large number of physical, chemical and biological "control points" with the potential to slow fungal lignolysis. However, no study has previously attempted to alter wood decomposition in forests beyond changing water content and soil contact area. This project will use advanced techniques of respiration monitoring coupled with woody material manipulations to quantify the role of dead wood in carbon sequestration in a variety of Asian forests under a wide range of soil conditions. The resulting respiration rates will complement previous long-term studies of wood dynamics to provide more accurate information for terrestrial carbon modelling. It will further provide policy guidance on which plant species and site conditions are most suitable to maximise carbon sequestration.

Project Reference: ARCP2010-07CMY-Bai
Project Title: Asian Coastal Ecosystems: An Integrated Database and Information Management System (DIMS) for Assessing Impact of Climate Change and its Appraisal
Research Theme: Climate
Countries Involved: India, Malaysia and Singapore
Project Leader: Dr. V. Ramani BAI, University of Nottingham Malaysia Campus, MALAYSIA; Email: Ramani-Bai.V@nottingham.edu.my
Abstract: The Asian coastal region is defined by environmental and economic conditions that transcend state and country boundaries, representing a host of critical integrating and conflicting factors such as mineral resources, fisheries production, ecological habitats for marine life and waterfowl, and human demands with subsequent anthropologic impacts. As more research is being conducted in the region to help understand these conditions and factors, it becomes crucial to make research results, information, and data accessible to all. Understanding the Asian coastal region's ecosystems and its changes is dependent on the quality of documenting and modelling the interrelationships of physical, chemical, and biological parameters. The project would attempt to develop an Integrated DIMS, an easily accessible information outlet. A holistic and integrated approach will be taken to achieve such goal.

Project Reference: ARCP2010-08NSY-Freeman
Project Title: Impact of Climate Change on Food Security and Biosecurity of Crop Production Systems in Small Pacific Nations
Research Theme: Climate; Ecosystems, Biodiversity and Land Use
Countries Involved: Australia, New Zealand and small Pacific Nations
Project Leader: Dr. Angela FREEMAN, Department of Primary Industries, AUSTRALIA; Email: angela.freeman@dpi.vic.gov.au
Abstract: Climate change will impact food security and biosecurity in the Pacific region by degradation of food production areas (sea level rise, salinity, drought), devastation caused by extreme weather events (cyclones, flooding) and impacts of recovery time such as replacement of lost crop germplasm and the need to import food substitutes. This project will identify the key impacts of climate change on the unique cropping systems in four (4) small Pacific nations and provide solid data to enable development of strategies/policies to minimise these risks and identify training and research opportunities. It will examine key issues including the maintenance of crop genetic resources and the availability of varieties adapted to future climate and the need to assess germplasm in collection or initiate breeding efforts; biosecurity impacts of climate change on food crops (including impacts on endemic pests and diseases and likelihood of incursions of exotic pests and diseases) and implications for international trade; and impacts of recovery rates from natural disasters on both food security and biosecurity.

Project Reference: ARCP2010-09NSY-Patwardhan
Project Title: Enhancing Adaptation to Climate Change by Integrating Climate Risk into Long-Term Development Plans and Disaster Management
Research Theme: Climate
Countries Involved: Bangladesh, India and Thailand
Project Leader: Prof. Anand PATWARDHAN, Indian Institute of Technology, INDIA; Email: anand@iitb.ac.in
Abstract: It is now widely accepted that impacts of future climate change will often be observed through changes in the magnitude and frequency of existing climate-related hazards. Therefore, disaster risk reduction and management are important strategies to integrate or mainstream adaptation into decision-making. This project aims to fill the research gap by undertaking a comparative analysis of the immediate to medium-term post-disaster recovery scenario in the aftermath of extreme weather events of flooding faced by vulnerable cities in three (3) Asian developing countries, namely, Mumbai (India), Bangkok (Thailand) and Dhaka (Bangladesh). It also aims to quantify the developmental impacts of flooding with the objective of integrating climate change risk considerations into long-term investment and development plans. The selected Asian cities fall under the densely populated low lying coastal areas described by

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the IPCC Fourth Assessment (AR4) report as 'key societal hotspots of coastal vulnerability'. With millions of people residing in these cities, the risk to life and property increases manifold with vulnerability to extreme weather events such as flooding.

Project Reference: ARCP2010-10NMY-Koike
Project Title: River Management System Development in Asia Based on Data Integration and Analysis System (DIAS) under the GEOSS
Research Theme: Climate; Use of Resources and Pathways to Sustainable Development; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Member countries of Asian Water Cycle Initiative (AWCI)
Project Leader: Prof. Toshio KOIKE, The University of Tokyo, JAPAN; Email: tkoike@hydra.t.u-tokyo.ac.jp
Abstract: Based on the successful achievements in planning, data policy and data archiving which have been supported by APN, the Global Earth Observation System of Systems (GEOSS) Asian Water Cycle Initiative (AWCI), consisting of 19 countries in Asia, forms a well-coordinated regional challenge to support integrated water resources management (IWRM) in each country. This project will develop a prototype of the IWRM system, which can also be used for climate change adaptation in each GEOSS/AWCI demonstration river basin, by integrating in-situ and satellite data, numerical weather prediction (NWP) model outputs, and climate prediction model outputs archived on DIAS, which has been developed by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan.

Project Reference: ARCP2010-11NMY-Asanuma
Project Title: Intercomparison of Landsurface Process Modelling in Asian Drylands
Research Theme: Ecosystems, Biodiversity and Land Use; Changes in Atmospheric, Terrestrial and Marine Domains
Countries Involved: Australia, China, Japan, Mongolia, Pakistan, Republic of Korea and USA
Project Leader: Dr. Jun ASANUMA, Terrestrial Environment Research Center, University of Tsukuba, JAPAN;
Email: asanuma@suiri.tsukuba.ac.jp
Abstract: Dryland accounts for 40% of the Earth's land surface and a similar fraction of Asian land surface. Characterised by dry climate, low vegetation cover and low nutrients, its ecosystem and the society that depends thereon, have inherently large vulnerability to external perturbations such as climate change and land use change. This study aims to assess uncertainties pertained to the prediction of landsurface environment with these models and improve prediction accuracies. Prediction of landsurface environment of drylands can be made with landsurface models (LSMs) and terrestrial ecosystem models (TEMs). Since these models have different process representations and display large differences in their predictive capabilities, these aims are expected to be achieved through an intercomparison study with a suite of models and data from a selected set of well-documented study sites from the Asian dryland region.

Project Reference: ARCP2010-12NMY-Uprety
Project Title: Community Based Forestry and Livelihoods in the Context of Climate Change Adaptation
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Nepal, Thailand and Viet Nam
Project Leader: Dr. Dharam Raj UPRETY, International Forestry Resources and Institutions (IFRI) and Forest Action, NEPAL;
Email: forestaction@wlink.com.np; dharam.uprety@gmail.com
Abstract: Community-based forestry (CF) has received wide attention for its potential roles in reducing Emissions from Forest Deforestation and Degradation (REDD) and sustaining rural livelihoods in developing countries throughout the Asia-Pacific region. Recent studies demonstrate that rural populations dependent on agriculture and forest ecosystems are particularly vulnerable to both direct and indirect impacts of climate change. Increasing temperature, erratic rainfall patterns, and rising sea level are major threats to sustainable livelihoods posed by climate change. The effects of climate change are expected to deepen poverty and adversely affect livelihoods, assets, infrastructure, environmental resources and economic growth. Developing countries have lesser capacity to adapt and are more vulnerable to climate change. Therefore, adaptation is now acknowledged as necessary for responding effectively and equitably to the impacts of both climate change and climate variability. Local communities possess relevant knowledge and experience in coping with climate change. This knowledge needs to be documented and disseminated in order to be used effectively. The present research aims to investigate how climate change is affecting forest-dependent communities in one of the world's most vulnerable regions and the actual and potential adaptation measures that enable households, communities and networks to remain resilient in the changing contexts.

Project Reference: ARCP2010-13NMY-Bae
Project Title: Climate Change Impact Assessment on the Asia-Pacific Water Resources under AWCI/GEOSS
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Bangladesh, Bhutan, Japan, Pakistan and Republic of Korea
Project Leader: Prof. Deg-Hyo BAE, Sejong University, REPUBLIC OF KOREA; Email: dhbae@sejong.ac.kr
Abstract: The Asia Monsoon plays an important role on global water circulation and provides substantial precipitation and water resources to the people living within the domain. It provides many benefits such as power generation and transportation facilities, but also causes serious flood and drought problems. There are various reasons and causes for these water-related disasters but the current impacts of climate change complicates the situation and makes it more difficult to manage disasters. As a part of GEOSS/AWCI research activities, the objectives of this study are to evaluate climate change impact assessments on water resources over the Asia-Pacific regions joining the GEOSS/AWCI and to promote capacity development for climate change impact assessment technology. Two (2) basic approaches will be undertaken in this study: The first is the analysis of past historical observation data to detect some climate change trends over more than 18 countries; the second is to simulate climate and water resources under future greenhouse gas emission (GHG) scenarios. A non-parametric Mann-Kendall's test and regression analysis are to be used for the former, while GCM outputs with downscaling schemes and hydrologic models are to be used for the latter.

Project Reference: ARCP2010-14NMY-Li
Project Title: Analysis on Urban Land-Use Changes and its Impacts on Food Security in Different Asian Cities of four Developing Countries using Modified Cellular Automata (CA)

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Research Theme: Ecosystems, Biodiversity and Land Use
Countries Involved: Australia, China, India, USA and Viet Nam
Project Leader: Prof. Jianlong LI, The Global Change Research Institute, College of Life Science, Nanjing University, CHINA;
Email: jlli2008@nju.edu.cn; jianlongli@sina.com.cn
Abstract: Urbanisation, as a significant cause of global change, has led to conflicts between peoples' needs and sustainable development in the agriculturally important precincts of large Asian cities. Under this background, ecological problems in urban areas were predicted to become more important. Arable land reduction and food shortages will lead to decreased agricultural production, food security instability and ecological degradations. The Cellular Automata (CA) model will be used to assess changes in urban expansion, land use and food security in three (3) core cities of three (3) developing countries and to analyse different urban land use patterns and mechanisms leading to food shortages. The focus of this study is to build and enhance scientific capacity in three (3) developing countries and explore the quantifying urbanisation level from the aspect of land use and connecting land use patterns with urbanisation processes. This project will be realised to provide an integrated technical report of the land use/land cover change and urban landscape pattern for farmers, policy-makers and the international community.

Project Reference: ARCP2010-15NMY-Han
Project Title: The Impact of Spatial Parameters on Greenhouse Gas Emissions: A Comparative Study between Cities in China and India
Research Theme: Ecosystems, Biodiversity and Land Use; Use of Resources and Pathways for Sustainable Development
Countries Involved: Australia, China and India
Project Leader: Dr. Sun Sheng HAN, The University of Melbourne, AUSTRALIA; Email: sshan@unimelb.edu.au
Abstract: This project aims to examine the role of urban spatial restructuring in reducing greenhouse gas (GHG) emissions by assessing the impacts of urban spatial parameters in China and India. Xi'an and Bangalore will be used as study areas. By analysing geo-coded primary data at the household level, this study will produce findings that: 1) propose alternative methodologies in urban land use planning and management to GHG emissions control; 2) address a cross-country dimension in GHG emissions associated with urban land use; and 3) tackle carbon emissions problems in two (2) fast growing economies. Statistical and simulation models will be developed to inform planning and design actions aimed at realising low carbon urban development.

Project Reference: ARCP2010-16NMY-Huda
Project Title: Food Security and Climate Change in the Asia-Pacific Region: Evaluating Mismatch between Crop Development and Water Availability
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Australia, China and India
Project Leader: Prof. Samsul HUDA, University of Western Sydney, AUSTRALIA; Email: s.huda@uws.edu.au
Abstract: Phenological development is the single most important attribute of crop adaptation to shifting environments. The project will focus on crops of local importance including rice, wheat, maize, sorghum, chickpea and cotton on key sites in India, China and Australia. Four (4) questions will be addressed: a) What are the expected temporal shifts in crop phenology under future climates? b) What are the likely shifts in the pattern of rain and water availability? c) To what extent climate change will contribute to any mismatch between crop phenology and water availability? and d) What are the expected consequences of this mismatch for food security? Research outputs will allow appropriate adaptation to build the resilience of communities and the natural resources. This project has evolved out of and expands on the former APN project 'Climate and Crop Disease Risk Management' (ARCP2007-06CMY).

Project Reference: ARCP2010-17NMY-Towprayoon
Project Title: Strategic Rice Cultivation for Sustainable Low Carbon Society Development in Southeast Asia
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Indonesia, Japan and Thailand
Project Leader: Assoc. Prof. Dr. Sirintornthep TOWPRAYOON, King Mongkut's University of Technology, THAILAND;
Email: sirin@jgsee.kmutt.ac.th
Abstract: This project addresses strategic rice cultivation to solve both climate and energy security issues by rotating rice with energy crops, e.g. corn or cassava in order to fully utilise the rice plantation fallow period to optimise rice and energy feedstock. The proposed cultivation practice aims at reducing GHG emissions while increasing potential long-term soil carbon stock by optimising land use change and cultivation practice. Sustainable development will be considered in terms of enhancing economic and social benefits while developing low carbon society to reduce net GHG emissions. The overall goal of the project is to identify strategic rice cultivation practices enabling Southeast Asia (SEA) to develop towards a sustainable low carbon society while enhancing adaptive capacity in the agriculture sector. The specific objectives of this project are: 1) To develop sustainable low carbon agriculture in SEA through improved cultivation practices of rice and energy crops (crop rotation); 2) To develop long-term field studies to measure, monitor and evaluate the impacts of various cultivation practices on climate change and identify potential adaptive measures and mitigation options; and 3) To enhance regional capacity of scientists and policy-makers in SEA to contribute to sustainable low carbon development for society.

Project Reference: ARCP2010-18NMY-Lutaenko
Project Title: Coastal Marine Biodiversity of Viet Nam: Regional and Local Challenges and Coastal Zone Management for Sustainable Development
Research Theme: Ecosystems, Biodiversity and Land Use
Countries Involved: Republic of Korea, Russian Federation and Viet Nam
Project Leader: Dr. Konstantin LUTANEKO, Institute of Marine Biology, RUSSIAN FEDERATION;
Email: lutaenko@mail.primorye.ru; lutaenko@mail.ru
Abstract: Coral reefs and related tropical ecosystems are the most productive among coastal marine areas contributing essentially to the Viet Nam economy. Biodiversity and biological resources of coral reefs show the reduction/decline in light of global environmental and climatic changes throughout the world. The survey of the biodiversity of healthy and depressed coral reef/tropical ecosystems based on corals, mollusks, crustaceans and echinoderms and development of methods for monitoring their status would allow finding common patterns, understanding temporal changes and their causes, and predicting future modifications of the ecosystems/environments. These studies are highly important for practical purposes of coastal ecosystems management, coral reefs restoration and marine farming. The data obtained and interpretations of the coastal/ecosystem changes will be useful for local/regional/national decision- and policy-makers and will contribute to the current understanding of tropical ecosystems in the South China Sea, the largest in the world.

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Project Reference: CBA2010-01CMY-Sang-arun
Project Title: Promoting Sustainable Use of Waste Biomass in Cambodia, Lao People's Democratic Republic and Thailand: Combining Food Security, Bio-energy and Climate Protection Benefits
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Cambodia, Japan, Lao PDR and Thailand
Project Leader: Dr. Janya SANG-ARUN, Institute for Global Environmental Strategies, JAPAN; Email: sang-arun@iges.or.jp
Abstract: Urban and agricultural wastes in Cambodia, Lao PDR and Thailand comprise the largest amount of biomass, which can be utilised for food and energy security. Mismanagement of this waste, by open burning and disposal in landfills that have no gas recovery system, could release greenhouse gas to atmosphere. This project aims to identify suitable technologies for urban and agricultural waste biomass utilisation, factors for both failed and successful implementation, and operation strategies with the potential to contribute to sustainable development and climate change mitigation. The study focusses on food and energy production. Based on a comprehensive review, field surveys and communication with local practitioners, a decision tool, implementation guidelines and training program will be developed to assist national and local governments of the target countries to choose approaches suited to local conditions and needs. The research outcomes will be disseminated to policy- and decision-makers at regional, national and local levels. After the project end, Thailand, as the most developed among the three countries, is expected to play a key role to coordinate and sustain a regional movement on this issue in the form of South-South cooperation among the target countries.

Project Reference: CBA2010-02CMY-Togtohyn
Project Title: Dryland Development Paradigm (DDP) Application for the Most Vulnerable to Climate and Land Use Change of Pastoral Systems in the Southern Khangai Mountains of Mongolia (DDPPaS)
Research Theme: Climate; Ecosystems, Biodiversity and Land Use
Country Involved: Mongolia
Project Leader: Dr. Chuluun TOGTOHYN, Institute for Dryland Sustainability (IDS), National University of Mongolia, MONGOLIA; Email: chuluun@nrel.colostate.edu
Abstract: Combined effects of global warming and land use changes have resulted in the dramatic reduction of water and forage resources, leaving many herders in extremely vulnerable conditions. Desertification is already occurring in this area. The herders are not fully aware that interactive climatic and human forces are leading to catastrophic consequences. Poverty and vulnerability reduction, and traditional resilience are critical for adaptive sustainability of pastoral social-ecological systems. The project goal is to develop a policy framework for sustainable development of drylands in the Tuin and the Baidrag river basins of Bayanhongor aimag, located in the Southern Khangai Mountains, in order to increase its adaptive capacity and resilience to climate change. Dryland development strategies for the Southern Khangai Mountains will be developed with the participation of local stakeholders.

Project Reference: CBA2010-03NSY-Indrawan
Project Title: Developing the Capacity for Teaching Biodiversity and Conservation in the Asia-Pacific Region
Research Theme: Ecosystems, Biodiversity and Land Use
Countries Involved: Indonesia and China
Project Leader: Dr. Mochamad INDRAWAN, University of Indonesia, INDONESIA; Email: jamblang@cbn.net.id
Abstract:
Improved environmental resource management in the region will depend on new cohorts of well-trained local scientists, in both academic and managerial positions, motivated to develop research projects, apply research findings to environmental problems, and engage in environmental issues. However, students in developing countries have few opportunities to obtain such high quality training in field research and data analysis. The problem is self-reinforcing, because faculty have rarely received adequate training and thus lack the knowledge to teach advanced courses. This project aims to break this negative feedback cycle by increasing the capacity of institutions in regional developing countries to conduct research on environmental issues and to teach advanced courses on topics related to environmental resource management by providing high-level training in biological field research and data analysis for students in junior faculty positions.

Project Reference: CBA2010-04NSY-Dhakal
Project Title: Carbon Governance in Asia: Bridging Scales and Disciplines
Research Theme: Climate; Changes in Atmospheric, Terrestrial and Marine Domains; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Collaboration between the Global Carbon Project (GCP) and Earth System Governance (ESG) Project of **International Human Dimensions Programme in Global Environmental Change (IHDP)**
Project Leader: Dr. Shobhakar DHAKAL, GCP, National Institute for Environmental Studies (NIES), JAPAN;
Email: shobhakar.dhakal@nies.go.jp
Abstract: Asia is a key region that is rapidly growing economically. The Asian contribution is already dominating the global carbon emissions and Asia will play a greater role in global carbon management in the foreseeable future. However, within Asia, huge differences in welfare, governance systems, and carbon emission trajectories exist and thus pose a carbon governance challenge. A better understanding of carbon management challenges across multiple scales is necessary for Asia, which is less understood as of now. Such understanding will provide important insights to design an optimised carbon governance structure. In order to address this, a workshop will be organised as a means for the capacity development of young researchers from the Asian region as well as to discuss issues and opportunities for carbon governance for developing low carbon societies in Asia. The workshop will bridge scientific disciplines and will pay special attention to the concept of scale in carbon governance.

Project Reference: CBA2010-05NSY-Lorrey
Project Title: Improving Pacific Island Meteorological Data Rescue and Data Visualisation Capabilities through Involvement in Emerging Climate Research Programmes
Research Theme: Climate; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Australia, Fiji, New Zealand, USA and Pacific Island Countries (PICs)
Project Leader: Dr. Andrew LORREY, National Institute of Water and Atmospheric Research, Ltd., NEW ZEALAND;
Email: a.lorrey@niwa.co.nz
Abstract: The project primary goals are to increase Pacific Island National Meteorological Services (PINMS) awareness and involvement in new climate and weather research initiatives, and to train them in data rescue and data visualisation techniques. This endeavour will allow PINMS access to emerging knowledge about

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regional climate dynamics, tuition on the importance of rescuing data, developing and maintaining databases, and enabling access to new tools that can support more effective communication about weather and climate to Pacific Island end users. A workshop will be held to address some of the gaps that APN has identified for capacity building needs in the Pacific region, including collaboration with new science initiatives, increasing regional opportunities for gaining research experience, and the priority actions of rescue, interpretation, and use of archived meteorological and climate data.

Project Reference: CBA2010-06NSY-Kench
Project Title: Improving Understanding of Local-Scale Vulnerability in Atoll Island Countries: Developing Capacity to Improve In-Country Approaches and Research
Research Theme: Climate; Crosscutting Issues and Science-Policy Linkages
Countries Involved: New Zealand, Tuvalu and Marshall Islands
Project Leader: Assoc. Prof. Paul KENCH, The University of Auckland, NEW ZEALAND; Email: p.kench@auckland.ac.nz
Abstract: Low-lying atoll countries are considered to be among the most vulnerable on earth. However, existing national evaluations of vulnerability are bereft of detailed, ground truth assessments of the physical impacts of climatic change on reef islands or the variation in vulnerability that can be expected in island nations. This activity builds field based capabilities of researchers in Pacific Atoll Island countries to undertake physical vulnerability assessments of low-lying atoll islands. A case study approach is adopted to deliver in-country training on methods to undertake rapid assessment of the vulnerability of reef islands to sea-level rise and climatic variability and explore local-scale variations in vulnerability.

Project Reference: CBA2010-07NSY-Stone
Project Title: Web-based 'Discussion-support' Agricultural-Climate Information for Regional India
Research Theme: Climate; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Australia and India
Project Leader: Prof. Roger STONE, University of Southern Queensland, AUSTRALIA; Email: stone@usq.edu.au
Abstract: The key objective of this project is the creation of a 'virtual' discussion-support-system for integrating climate variability and climate change (at a range of scales) with practical farming operations by utilising breakthrough developments in web-based portals. This system will be developed for farmers in regional India by using the extensive regional internet kiosk network being made available by the Indian Government. The flow-on objective is to improve access by farmers to information related to climate variability, climate change and farm-related information, to climate experts and specialist extension officers. Additionally, participatory workshops will be developed to obtain key aspects of farm management decision–systems and to identify key aspects of the agro-climatic information and forecasts appropriate for farm decisions.

Project Reference: CBA2010-08NSY-Salinger
Project Title: Addressing the Livelihood Crisis for Farmers: Weather and Climate Services for Sustainable Agriculture – Development of Tools
Research Theme: Climate; Use of Resources and Pathways for Sustainable Development
Countries Involved: Australia, Cambodia, China, India, Indonesia, Japan, Malaysia, Mongolia, New Zealand, Pacific Islands, Philippines, Russian Federation and Viet Nam
Project Leader: Dr. Jim SALINGER, University of Auckland, NEW ZEALAND; Email: j.salinger@auckland.ac.nz
Abstract: There are 450 million smallholder farms in the world and several weather and climate issues in the recent years are threatening their very livelihoods. To address the livelihood crisis of farmers, there is an urgent need to increase productivity on their farms. An international workshop will be held from 12-14 July 2010 in Belo Horizonte, Brazil to identify the weather and climate risks and uncertainties in different regions of the world which affect the livelihoods of farmers extreme climatic events, climate variability and climate change, lack of timely information on weather and climate risks and uncertainties. Various weather and climate services for the farming community, communication methods and ways to implement new tools for dissemination of the weather and climate products and services, especially in regions most vulnerable to weather and climate extremes will be identified. Tools aimed at climate risk management will be assessed in three APN developing countries. This will provide capacity building in strategic areas for more targeted weather and climate information and forecasting for increased preparedness to sustainable agricultural development, especially in the Asia-Pacific region, and also assist policy-makers and civil society in responding effectively to varying weather and climate conditions.

Project Reference: CBA2010-09NSY-Rupakheti
Project Title: Scientific Capacity Development of the Trainers and Policy Makers for Climate Change Adaptation Planning in Asia and the Pacific
Research Theme: Climate; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Australia, China, India, Japan, Philippines, Republic of Korea and Thailand
Project Leader: Dr. Maheswar RUPAKHETI, UNEP Regional Resource Centre for Asia and the Pacific, THAILAND;
Email: Maheswar.Rupakheti@rrcap.unep.org
Abstract: This project aims at building capacity of key stakeholders such as trainers, policy-makers, and development practitioners in the Asia-Pacific region in order to mainstream climate change adaptation principles and practices into development planning in some of the targeted countries of the Asia Pacific Climate Change Adaptation Network (APCCAN). This project also aims to transfer knowledge and skills on vulnerability assessment methodologies and tools, the use of climate information for decision-making, and adaptation planning under uncertainty from developed countries to developing countries through involving members of the Network. The project will assess training needs of trainers and other key stakeholders in adaptation; and design training modules. The trainers training programs will be implemented in the extended phase of the project. Provisional training contents could include, but are not limited to: a) vulnerability and risk assessments, b) adaptation planning; c) science-based decision making strategies; d) development of information dissemination and awareness raising strategies.

Project Reference: CBA2010-10NSY-Chen
Project Title: Promoting a Data Sharing Environment within the Earth Observation System of Systems: The Asia-Pacific Perspective
Research Theme: Crosscutting Issues and Science-Policy Linkages
Countries Involved: Australia, China, India, Indonesia, Japan, Republic of Korea, Russia, and USA

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Project Leader: Dr. Robert S. Chen, CODATA/CIESIN, Columbia University, USA; Email: bchen@ciesin.columbia.edu
Abstract: Changes in the Earth system are having a profound impact around the world. This has led to increasing global demand for Earth observation data at local, regional, and global scales. Both scientists and policy-makers recognise the importance of widespread data sharing for scientific research, capacity building, and sustainable development. However, many legal, economic, technological, and political barriers must be overcome before an effective working environment for data sharing can be realised. This project aims to highlight specific barriers to data sharing important in the Asia-Pacific region and to develop strategies to overcome them. The project will bring together major stakeholders from the scientific, legal, and policy communities within the region, reviewing experiences around the world, suggesting solutions based on best practices, and identifying useful models and tools, e.g., open access licenses. This project will highlight and promote the importance of data sharing within and between Earth observation systems in the Asia-Pacific region for research and applications in key societal benefit areas, e.g., disasters, health, energy, climate, water, weather, ecosystems, agriculture, and biodiversity.

Project Reference: CBA2010-11NSY-De Guzman
Project Title: Capacity Building for Research and Monitoring of Marine Protected Areas (MPA): An Adaptive Mechanism for Climate Change in the Asia-Pacific Region
Research Theme: Climate; Changes in Atmospheric, Terrestrial and Marine Domains
Countries Involved: Indonesia and Philippines
Project Leader: Dr. Asuncion DE GUZMAN, Mindanao State University, PHIILIPPINES; Email: sony_deguzman@yahoo.com
Abstract: The introduction of Marine Protected Area (MPA) systems are considered as a potential measure for climate change adaptation, particularly in buffering the threat of coral bleaching resulting from increasing ocean temperatures and hastening recovery from both climate-induced stresses and overfishing. Effective MPA management, however, is constrained by weak monitoring programs due to inadequate trained manpower. The project seeks to build the capacity of MPA managers and technical staff of local government units in the Philippines and Indonesia. As members of the Coral Triangle Initiative in the Asia-Pacific region, these two countries have established a large number of MPAs as adaptive mechanisms for natural and anthropogenic impacts. Training of MPA monitoring teams will employ scientifically sound research and assessment methods of coral reef, seagrass, and mangrove communities. Developing a pool of MPA researchers and monitoring and evaluation (M&E) practitioners will hopefully help member countries increase their ability to adapt to climate change and human-induced stresses and contribute to the sustainable development of coastal ecosystems in the Asia-Pacific region.

Project Reference: CBA2010-12NSY-Pradhananga
Project Title: Graduate Conference on Climate Change and People
Research Theme: Climate
Countries Involved: Bangladesh, China, India, Nepal, Pakistan, Republic of Korea, Sri Lanka and U.S.A.
Project Leader: Mr. Dhiraj PRADHANANGA, The Small Earth Nepal (SEN), NEPAL; Email: dhirajmet@hotmail.com; smallearth@wlink.com.np
Abstract: Global warming is one of the several negative impacts resulting from unsustainable consumption of natural resources and waste generation. Climate change and other related phenomena are growing concerns and among the most important issues for the sustainability of the mankind, particularly for those living in the most vulnerable areas of the Asia-Pacific region, including coastal areas and the high Himalayas. This project focusses on scientific capacity building of the postgraduate student of different majors/disciplines through knowledge and experience-sharing by experts in climate affairs. The ultimate goal is the scientific capacity building of young students from multiple disciplines, networking and awareness for sustainable development options in the region that will allow them to prepare for appropriate measures to combat climate change and incorporate this into their future careers. Taking a multi-disciplinary approach, the project is planned as a socio-scientific knowledge and experience sharing that addresses Asian region-specific climate issues from an interdisciplinary approach.

Project Reference: CBA2010-13NMY-Furukawa
Project Title: Capacity Building of Biodiversity Research in the Coastal Zones of the Asia Pacific Region: Phycology Taxonomy Analysis Training Using Genetic Marker
Research Theme: Ecosystems, Biodiversity and Land Use
Countries Involved: Australia, China, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Republic of Korea and Russian Federation
Project Leader: Mr. Masakazu FURUKAWA, Environmental Management of Enclosed Coastal Seas (EMECS) Secretariat, JAPAN; Email: furukawa@emecs.or.jp
Abstract: Taxonomy is regarded as one of the bases of biodiversity and is required to establish certain objective standards to identify alien species, together with traditional morphological approaches. Identification methodology using genetic markers is nowadays recognised to reinforce the shortage of the traditional approach. The project aims to provide capacity building/training for young researchers from the developing countries of the Asia–Pacific region on biological identification analysis using genetic markers in the field of phycology taxonomy to contribute to national-level biodiversity conservation. It also aims to contribute to the Parties of the Convention on Biodiversity through: 1) facilitating taxonomical information exchange among young researchers from Southeast Asian nations who master this capacity development course; 2) promoting the establishment of a network among traditional morphological taxonomy groups; and 3) seeking involvement in the PICES' network to foster information exchange.

Project Reference: CBA2010-14NMY-Kaihotsu
Project Title: Drought Monitoring System Development by Integrating In-situ Data, Satellite Data and Numerical Model Output
Research Theme: Climate; Use of Resources and Pathways to Sustainable Development
Countries Involved: Bangladesh, China, Japan, Nepal, Pakistan, Philippines, Thailand and Viet Nam
Project Leader: Prof. Ichirow KAIHOTSU, Hiroshima University, JAPAN; Email: kaihotu@hiroshima-u.ac.jp
Abstract: Drought, which develops gradually and slowly, is an unexpected creeping hazard and has a prolonged existence. It produces a complex web of impacts, which span many sectors of the economy, especially agriculture, energy production, transportation, tourism and recreation, forest and wild land fires, urban water supply, environment and human health. State of the art tools and techniques are not available operationally in most developing

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CAPaBLE 2010/11 Projects

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countries for inferring drought conditions. The ground-based routine data in each country, satellite and numerical model products for drought studies have not been widely used due to the lack of capacity development in many Asian countries. There is an urgent need to create greater development of a drought monitoring and assessment system. This project aims to establish and develop a drought monitoring system by integrating in-situ data, satellite data and numerical model outputs.

Project Reference: CBA2010-15NMY-South
Project Title: Global Change and Coral Reef Management Capacity in the Pacific: Engaging Scientists and Policy-Makers in Fiji, Samoa, Tuvalu and Tonga
Research Theme: Changes in Atmospheric, Terrestrial and Marine Domains; Crosscutting Issues and Science-Policy Linkages
Countries Involved: Fiji, Samoa, Tuvalu and Tonga
Project Leader: Prof G. Robin SOUTH, Institute of Marine Resources, University of the South Pacific, FIJI;
Email: robin.south@orda.com.au; south_g@usp.ac.fj
Abstract: Healthy coral reefs are vital to the sustainability of the peoples' livelihoods in the Pacific Islands. Global change has increasing impacts on Pacific coral reefs, including sea level rise, increased sea surface temperature, ocean acidification, and natural phenomena like cyclones, leading to increased vulnerability of coastal communities. Integrating this knowledge of global change across various national government sectors, then translating this into policies that lead to sustainable management of coastal ecosystems remains a challenge. This project aims to improve natural marine resource and coastal management capacity and governance in Pacific Island countries, in response to global change. The objective will be achieved through face-to-face discussions (workshops) between scientists and government personnel, designed to improve their understanding of the scientific issues relating to the impacts of climate change on coral reefs. The resulting development of national policies focussing on the sustainable management of the natural resource goods and services derived from coral reefs will enhance the food security in Pacific island populations.

Project Reference: CRP2010-01CMY-Weber
Project Title: Vulnerability Mapping as a Policy Tool in Developing Countries
Research Theme: Vulnerability, People and Places
Countries Involved: Fiji, India and Thailand
Project Leader: Dr. Eberhard WEBER, The University of the South Pacific, FIJI; Email: weber_e@usp.ac.fj
Abstract: This project investigates the vulnerability of people related to climate change, focussing on the ways they sustain their livelihoods and how they cope with/adapt to adverse events. Relevant indicators are developed and used to map spatial distribution of vulnerability providing spatial information needed by governments and non-governmental organisations (NGOs) as basis for informed planning and decision-making to predict, prevent and mitigate negative results of climate change. A key to better understand negative impacts and to manage vulnerability lies in knowing the spatial distribution of vulnerable people as well as on how hazards affect space. Mapping Vulnerability looks into both aspects: 1) where are the most vulnerable people; and 2) how do hazards impact space differentially (and thus people who live there). This project aims to develop a comprehensive tool to learn: who are the people at risk; how many are they; where (and where not) do they live; why are they vulnerable; and how can interventions make a difference in reducing vulnerability, strengthening resilience and supporting sustainable livelihoods.

Project Reference: CRP2010-02CMY-Pereira
Project Title: Strengthening Capacity for Policy Research on Mainstreaming Adaptation to Climate Change in Agriculture and Water Sectors
Research Theme: Climate Change, Adaptation, Agriculture and Water Resources
Countries Involved: Malaysia, India, Japan and Viet Nam
Project Leader: Dr. Joy Jacqueline PEREIRA, Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia (UKM), MALAYSIA; Email: joy@ukm.my
Abstract: The objectives of this project are to: 1) strengthen research capacity on mainstreaming climate change adaptation concerns in to agricultural and water policies; and 2) create a network for adaptation policy research in Asia (**ARPNAP**: **A**daptation **R**esearch and **P**olicy **N**etwork for **A**sia and the **P**acific). Analysis of policies in selected countries revealed that important decisions in the agriculture and water sectors, including reservoir construction and canal design, are often implemented without considering projected impacts of climate change. One of the most important barriers identified was the limited capacity of researchers in the region to provide adaptation policy-relevant information. For example, research on indicators for monitoring the effectiveness of adaptation options at different spatial scales is completely lacking. Networking and communication among researchers and policy-makers focussing on adaptation is also extremely limited. This activity addresses these barriers and enhances capacity to bridge gaps in adaptation research, policy and implementation.

CAPaBLE - SCBCIA

2009/10 Projects under the CAPaBLE Focused Activity on Scientiifc Capacity Building for Climate Impact and VUlnerability Assessments

Project Reference Number: CIA2009-01-SNIDVONGS
Project Leader: Dr. Anond Snidvongs, (anond@start.or.th)
Southeast Asia (SEA) Global Change System for Analysis, Research, and Training (START) Regional Center, Chulalongkorn University, Thailand
Project Title: Climate Change Vulnerability Assessment and Urban Development Planning for Asian Coastal Cities

Project Reference Number: CIA2009-02-PULHIN
Project Leader: Dr. Juan Pulhin (jmpulhin@uplb.edu.ph), Department of Forestry and Forest Governance, College of Forestry and Natural Resource, University of the Philippines Los Baños, Philippines
Project Title: Capacity Development on Integration of Science and Local Knowledge for Climate Change Impacts and Vulnerability Assessments

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CAPaBLE - SCBCIA

from page 30

Project Reference Number: CIA2009-03-LUN
Project Leader: Dr. Yin Lun (lun.yin@gmail.com), Centre for Tibetan Regional Sustainable Development, China
Project Title: Climate Change in Eastern Himalayas: Advancing Community-Based Scientific Capacity to Support Climate Change Adaptation

Project Reference Number: CIA2009-04-GAOL
Project Leader: Dr. Jonson Lumban Gaol (jonsonrt@yahoo.com), Department of Marine Science and Technology, Bogor Agricultural University, Indonesia
Project Title: Increasing Capacity of Local Scientists for Climate Change Impact and Vulnerability Assessments in Indonesia Archipelagos: Training in In-Situ/Satellite Sea Level Measurements

Project Reference Number: CIA2009-05-JITPRAPHAI
Project Leader: Dr. Somrudee Jitpraphai (somdeem@yahoo.com), SEA START Regional Center (RC), Thailand
Project Title: Building Research Capacity on Assessing Community Livelihood Vulnerability to Climate Change Impacts in Central Viet Nam and the Mekong River Delta

Project Reference Number: CIA2009-06-DUC
Project Leader: Dr. Do Minh Duc (ducdm@vnu.edu.vn), Faculty of Geology, Hanoi University of Science, Viet Nam
Project Title: Capacity Development for Adaptation to Climate Change in the Rural Coastal Zone of Viet Nam

Project Reference Number: CIA2009-07-LOTIA
Project Leader: Ms. Hina Lotia (hlotia@lead.org.pk), Programme Development Department, Leadership for Environment and Development (LEAD), Islamabad, Pakistan
Project Title: Capacity Development of the Scientific Community for Assessing the Health Impacts of Climate Change

Announcement

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

Co-organized by SEA-START and The East-West Center and sponsored by APN
23 August – 1 September 2010, Bangkok, Thailand

APN Project Reference: CIA-01NSY-Snidvongs under the APN's SCBCIA

Severe flooding regularly devastates the coastal regions of Asia's mega-deltas, particularly when high tides are combined with storm surges and high river flows. Large coastal cities are particularly at risk from rising sea levels, storms and storm surges, heat stress and other aspects of climate change. Continued urban growth in low-lying coastal zones increases the likelihood of substantial loss of life and infrastructure.

Workshop objectives include:

1) The development of capacity on the part of urban planners, managers, and researchers in climate change risk and vulnerability assessments and its application to urban development planning and governance.
2) The promotion of locally led risk and vulnerability research in Asian coastal cities that is linked to user needs.
3) The development of partnerships between researchers, planners, and policy-makers that encourage "communities of knowledge" for vulnerability assessments in each participating city.

Topics to be addressed in the workshop include:

1) Analysis of risks of coastal floods
2) Analysis of socio-economic vulnerability to flooding and vulnerability mapping
3) Risk and vulnerability communication and visualisation
4) Integration of risk vulnerability analysis with urban planning, development and governance

The workshop agenda will include lectures, group discussions, participant reports and hands-on practical exercises. Workshop participants will be expected to prepare city reports.

Additional Information:
For more information about the workshop, please contact car2@start.or.th

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Elected members

1. Republic of Korea: Mr. Suho SEONG (Chair)
2. Malaysia: Dr. Kok Seng YAP (Vice-Chair)
3. Mongolia: Mr. Bayarbat DASHZEVEG
4. Sri Lanka: Mr. M.A.R.D. JAYATILAKE (Host of the 16th IGM/SPG Meeting)

Ex-officio (SPG Co-Chairs)

5. Indonesia: Dr. Erna Sri ADININGSIH
6. USA: Dr. Luis TUPAS

Co-opted members

7. USA: Mr. Louis BROWN (Donor Member)
8. Prof. Roland FUCHS of East-West Center (Invited Expert)
9. Dr. W. Andrew MATTHEWS (Invited Expert)
10. Japan: Mr. Hiroshi ONO (Donor Member)

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Luis M. TUPAS, *SPG Co-Chair, USA*

Roland FUCHS, *invited expert (Senior Fellow, East-West Center); Email: Fuchsr@EastWestCenter.org*

Srikantha HERATH, *invited expert (Senior Academic Programme Officer, United Nations University) Email: Herath@unu.edu*

Andrew MATTHEWS, *invited expert (nFP/SPG Member for New Zeland)*

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Newsletter Questionnaire

We want to hear from you! Please help us improve the APN Newsletter by filling out this questionnaire and returning it by fax to the APN Secretariat at: +81-78-230-8017. Alternatively, you can download this form at http://www.apn-gcr.org/newAPN/resources/newsletter/FeedbackForm.doc and send it as an attachment to ppulhin@apn-gcr.org. Thank you for your cooperation.

1. How do you rate the APN Newsletter overall?
   ___ poor ___ fair ___ good ___ very good

2. How would you describe the APN Newsletter as a source for information?
   ___ not so informative ___ informative ___ very informative

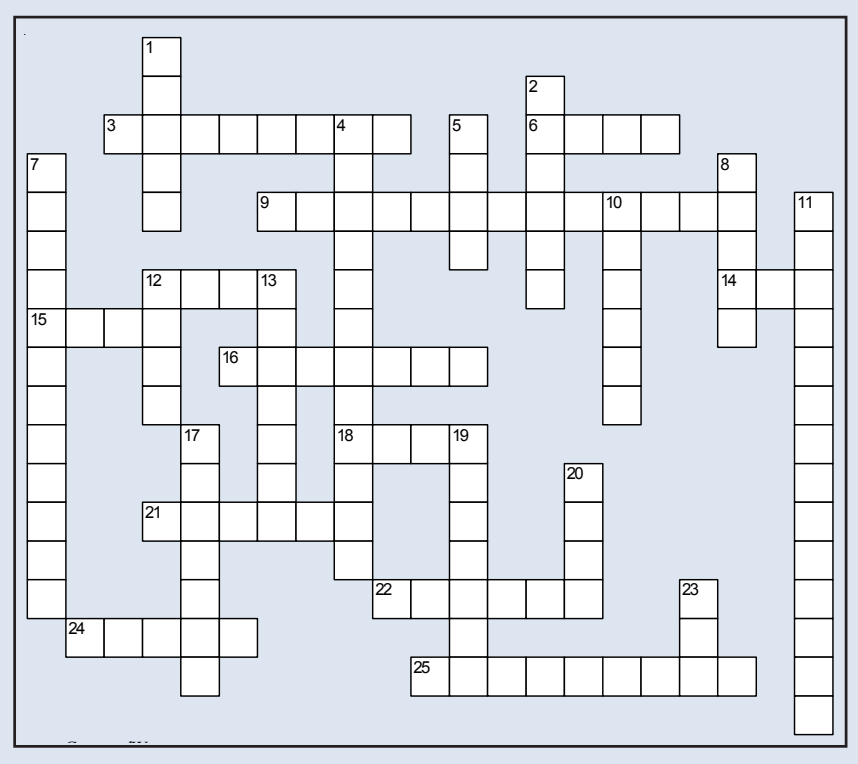
3. Do you still want to continue receiving an electronic copy of the APN Newsletter?
   ___ yes ___ no

4. If you know other people or institutions who are interested in receiving a copy of the APN Newsletter, please provide us with their contact details:
   Name: _____
   Position: _____
   Division: _____
   Organization: _____
   Postal street address: _____
   Postcode and city: _____
   Province/Region: _____ Country: _____
   Phone: _____ Fax: _____
   Email: _____ Website: _____

5. We look forward to receiving any additional remarks or suggestions about what you would like to see in the APN Newsletter.
   _____

Crossword Challenge

Try the APN Crossword Challenge! All answers can be found throughout the newsletter, so read the newsletter and then test your knowledge on Global Change issues and APN-related activities.



Across

3 regarded as one of the bases of biodiversity and is required to establish certain objective standard to identify alien species, together with traditional morphological approaches

6 (abbr.) a data collection platform that reduces complexities associated with heterogeneous data from different sources using different conventions

9 Poverty and _____reduction, and traditional resilience are critical for adaptive sustainability of pastoral social-ecological systems

12 (abbr.) aims to be a regional hub for climate information services and contribute to the realisation of the APEC vision of regional prosperity and enhancing human security by providing climate prediction techniques and climate information and application tools

14 (abbr.) releases the state of the global carbon cycle annually, including the global and national emission estimates, trends of major drivers, and the carbon source-sink dynamics globally and regionally

15 a category in the APN website that provides a direct link to the Online Calendar, APN Updates, and Global Change Announcements

16 accounts for 40% of the Earth's land surface and also a similar fraction of Asian land surface

18 (abbr.) a web-based climate information tool developed to allow users to customise retrieval and use of climate prediction data according to regions and time scales of their interest

21 contain 40 to 60 petagrams (Pg; billion metric tons) of carbon as dead woody debris, with almost 3 Pg C per year returned to the atmosphere as CO2.

22 country in South Asia that recently joined the APN membership

24 venue of the APN 15th IGM/SPG Meeting

25 a section in the APN revamped website that houses the publications and other project-related outputs that APN has produced

Down

1 (abbr.) is envisioned to be a virtual playground for climate scientists and decision-makers where they can upload information, discuss, network and collaborate through online discussion forums on the best options for climate adaptation using climate information

2 a greenhouse gas that is now traded in financial markets

4 Diversity and _____and coexistence of various regimes which explains complexity of Asian Transition pathway have opened up scope for new interesting research questions

5 host of the major international Open Science Conference to be held in October 2011, Colorado, USA

7 as a significant cause of global change, has led to conflicts between peoples' needs and sustainable development in the agriculturally important precincts of big Asian cities

8 a Prefecture in Japan that has engaged in pioneering initiatives with respect to the preservation of biodiversity, which is profoundly related to global warming, such as the restoration of oriental white storks to the wild

10 a particularly resistant bio-polymer

11 infrastructure that can calculate a unit of 18.5 and 36.6 tera floating point operations per second respectively and used to conduct climate research and operational forecasting

12 continent that is considered of paramount importance in the global carbon budget

13 APN Webmaster (surname)

17 was established to improve understanding of the impacts of land management on ecosystem services provided by upper tributary watersheds

19 APN new Scientific Planning Group Member for Japan (first name)

20 (abbr.) APCC's predecessor that was proposed at the 3rd APEC Science and Technology Ministers' Meeting to serve as a channel for free climate information exchange among APEC member economies

23 (abbr.) used to provide different products such as climate change projections and other climate monitoring products

Calendar of Global Change Events

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

APRIL

10-11 APR. China Low Carbon Economy Forum 2010. Beijing, China. Contact Tracy Liu at tracy.liu@clcef.org

12-13 APR. **International Symposium on Coastal Zones and Climate Change: Assessing the Impact and Developing Adaptation Strategies**, Monash University, Victoria, Australia. Please visit: http://www.monash.edu.au/cemo/czcc2010/ or Contact oce@adm.monash.edu.au

12-13 APR. **Web-GIS modeling for the Project "Asian Coastal Ecosystems: An Integrated Database and Information Management System (DIMS) for Assessing Impact of Climate Change and its Appraisal"**, Singapore. Contact Dr.Bai at Ramani-Bai.V@nottingham.edu.my

14-16 APR. **Joint Regional Workshop for the Project "Human Impact on Land-cover Changes in the Heart of Asia"**. SCERT, Tomsk, Russia. Contact: oig@scert.ru

25 APR. **Mekong Stakeholder Meeting for the Project "Assessment of Role of Community Foreststs (CFs) in CO_2**

continued on page 36 ...

Announcement

The **World Climate Research Programme** (http://wcrp.wmo.int) will host a major international Open Science Conference (OSC) on 24-28 October 2011 in Denver, Colorado, USA.

WCRP is sponsored by the World Meteorological Organization (WMO), the International Council for Science (ICSU) and the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO).

A better understanding of the behaviour of the climate system and its interactions with other Earth system components is critical to predict its future evolution, reduce vulnerability to high impact weather and climate events, and sustain life. To prepare for meeting these challenges, the WCRP OSC provides a unique opportunity to bring together major disciplines and leaders of the Earth system research community to help identify opportunities to advance further understanding and prediction of variability and change in the Earth's climate system from seasons to centuries, and from regions to the entire globe.

Through active dialogue among the international environmental change research experts, the OSC will:

- Appraise the current state of climate science, thereby making a measurable scientific contribution to the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC);
- Identify key opportunities and challenges in observations, modelling and analysis towards understanding and predicting the Earth's climate system;
- Facilitate discussion on interdisciplinary research required to understand and predict responses of the Earth as a system to climate variability and change, thus helping chart the path forward over the ensuing decades
- Highlight priority research in support of the Global Framework for Climate Services initiated at the World Climate Conference -3.

By entraining early career scientists and students from across the world, especially less-developed and developing nations and regions, the OSC will facilitate growth of the diverse future workforce needed to meet the increasingly complex scientific challenges of the future.

The conference aims to attract the world's experts to provide a unique synthesis of current research findings on climate variability and change, to identify the most urgent scientific issues and research challenges, and to ascertain how the WCRP can best facilitate research and develop partnerships critical for progress in the future.

For more information, please visit the conference webpage: www.wcrp-climate.org/conference2011 or contact the Conference Secretariat: info.conf2011@wcrp-climate.org.

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Calendar of Global Change Events

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

Sequestration, Biodiversity and Land Use Change", Dhulikhel, Nepal. Contact: info@ndri.org.np

26-27 APR. Mekong Environment and Climate Symposium 2010, Phan Thiet City, Viet Nam. Please visit: http://www.mrcmekong.org/MRC_news/Mekong-Env-Climate-symposium2010.htm or contact Mr. Sukthawee Suwannachairop at Sukthawee@mrcmekong.org

26-29 APR. Climate Change Effects on Fish and Fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies, Sendai, Japan

26-30 APR. **Training in the concepts of climate change impacts and vulnerability and the use of SimClim**. Albay, Philippines. Contact: jmpulhin@uplb.edu.ph

MAY

4-7 MAY. CGIAR Climate Change Programme on Climate Change, Agriculture and Food Security, Nairobi, Kenya

9-10 MAY. **Regional Workshop and Stakeholders Meeting for the Project "Peri-Urban Developmend and Environmental Sustainability: Examples from China and India",** Wuhan, China. Contact Dr. Sellers at sellers@usc.edu

10-13 MAY. Earth System Science 2010: Global Change, Climate and People, Edinburgh, UK. Please visit: http://quest.bris.ac.uk/workshops/AIMES-OSC/index.html

12-19 MAY. **Chicago Climate Exchange workshop for the Project "Developing Small-holder Agroforestry Carbon Offset Protocols for Carbon Financial Markets – Twinning Sustainable Livelihoods and Climate Mitigation"**, Chicago, IL, USA. Contact Dr. Skole at skole@msu.edu

17-26 MAY. **Training on Measurement of Sea Level and GIS Applications to Assess the Impact and Vulnerability of Coastal Regions from the Sea Level Rise**, Jakarta, Indonesia

17-28 MAY. 2010 Summer Institute on Climate Information for Public Health, New York. Please visit: http://iri.columbia.edu/education/summerinstitute10/ or contact: si2010@iri.columbia.edu

28-30 MAY. Resilient Cities 2010 - First Annual Global Forum on Urban Resilience and Adaptation to Climate Change, Bonn, Germany. Contact the Congress Secretariat at bonn2010@iclei.org or visit http://resilient-cities.iclei.org/bonn2010/

31 MAY- 11 JUNE. 32nd session of the UNFCCC Convention subsidiary bodies, Bonn, Germany. Contact the secretariat at secretariat@unfccc.int

JUNE

14-16 JUNE. **Regional Workshop and Dissemination Meeting for the Project "Impacts of Global Change on the Dynamics of Snow, Glaciers and Runoff over the Himalayan Mountains and their Consequences for Highland and Downstream Regions"**. Kathmandu, Nepal. Contact: klshrestha@wlink.com.np

14-18 JUNE. Managing Transitions to Sustainable Communities and Regions, Ithaca, NY. Contact Natalie Mahowald at nmm63@cornell.edu or CCSF-SummerInst@cornell.edu

29 JUNE–1 JULY. 2010 International Climate Change Adaptation Conference: Climate Adaptation Futures: preparing for the unavoidable impacts of climate change, Gold Coast, Queensland, Australia. Please visit: www.nccarf.edu.au/conference2010

JULY

5-11 JULY. **International Conference and Early Career Scientists School on Environmental Observations, Modeling and Information Systems ENVIROMIS-2010,** Tomsk, Russia. Please visit: http://www.scert.ru/en/conferences/

10-11 JULY. **Open Meeting of APN Project "Human Impact on Land-cover Changes in the Heart of Asia"**, Tomsk, Russia. Contact: Dr. Igor Okladnikov at igor.okladnikov@gmail.com

12-14 JULY. **WMO International Workshop on Addressing the Livelihood Crisis of Farmers: Weather and Climate Services**, Belo Horizonte, Brazil

12-16 JULY. **Second Workshop of the Project Vulnerability Mapping as Policy Tool in Developing Countries",** Chennai, India. Contact Dr. Weber at weber_e@usp.ac.fj

13-15 JULY. Environment and Climate Change Conference, EC^{3}o Asia-2010, Prof. K.S. Hegde Auditorium, Anna University, Chennai, India. Contact: centralsecretariat@ecccoasia.org

14-17 JULY. **IHDP-IT and APN Conference "Experiments, System Innovation and Sustainability Transitions in Asia"**, AMARI Rincome Hotel, Chiang Mai, Thailand. Contact Anna J. Wieczorek at anna.wieczorek@ivm.vu.nl

25-26 JULY. **International Workshop for the Project "Assessment of Role of Community Forests (CFs) in CO_2 Sequestration, Biodiversity, and Land Use Change"**, Kathmandu, Nepal. Contact: info@ndri.org.np

Visit our website for a more extensive lst of events: http://www.apn-gcr.org/newAPN/news/news.htm

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