

INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH



December 2008

Report of the Directorate

Directorate Report to EC - December 2008

Science Program

The **CRN II projects** have completed their second year. All technical reports have been received and approved, funds for Year 3 activities have been transferred. Reports are available upon request from the IAI Directorate or directly from the PIs. The ‘network of networks’ has been further strengthened in particular due to the much stronger role of the IAI Directorate in ‘active’ coordination and management of CRN II and SGP-HD. The Directorate continues its mandate from the Conference of the Parties (CoP) to strengthen the existing set of projects through forming regional and/or thematic clusters and through the provision of strategic additions. The importance and effectiveness of this continuing effort has been confirmed at the Nov. 2008 meeting of the IAI Scientific Advisory Committee (SAC). Participation in the SAC meeting by Principal Investigators of four CRN II projects on biodiversity and ecosystems (CRN 2005, PI G. Sarmiento; CRN 2014, PI R. Berbara, CRN 2015, PI S. Diaz; CRN 2021 PI A. Sanchez) has resulted in concrete enhanced collaboration through unification of sampling protocols and use of remote sensing information. This has created synergies and added value for all projects involved. Short courses and an open source computer tool are being developed to facilitate uniform biodiversity indexing across the continent. There was agreement that monitoring of phenology in relation to climate parameters is a key integrative topic across the projects. As a result, the Directorate, together with the PIs, is now pursuing the establishment of a network of phenology monitoring towers and ground sensors in Argentina, Brazil and Mexico, extending a small network established under project CRN2021 (PI Arturo Sanchez Azofeifa). Such a network is not only expected to be of immediate benefit to the projects involved, but may serve as a nucleus for a larger-scale Latin American phenology network which will refine seasonal NDVI measurements and link phenology to climate-modulated plant physiology. Although not implemented yet, the network has already received interest from other CRN II projects and the IDRC-funded LaPlata basin project.

The CRN II concept of research that is oriented towards problem solving, and the continued work by the Directorate towards greater stakeholder involvement has produced first results. Examples include:

CRN2015, PI Sandra Diaz: 46 participants from local communities and local and regional stakeholders participated in a workshop organized by UAF on “planning and preparing for climate change in NW Alaska” in Kotzebue (Alaska, USA), November 19-20, 2007. These included the NANA Regional Elders Council and tribal and city governments in each village in the region as well as representatives from the Alaska Department of Fish and Game, the Alaska House of Representatives, the National Park Service, the National Weather Service, the Nature Conservancy, the United States Fish and Wildlife Service and the University of Alaska.

In Argentina, FCA held meetings with local and provincial stakeholders. They continued disseminating the objectives pursued by the network and approached other stakeholders to participate and get involved with the research. Among others, at the local level interviewed stakeholders include the manager of the Chancaní Natural Reserve, local politicians, the principal and teachers of two schools, the representatives of the irrigation boards, the representative of one of the farmers unions, scientists of the *Instituto Nacional de Tecnología Agropecuaria* (INTA), extensionists with experience in rural development in the area, and farmers. At the provincial level communication was initiated with the Secretaries of Technological Liaisons (Walter Robledo) and of Scientific Promotion (Juan José Cantero) of the Ministry for Science and Technology of Córdoba Province. The *Diversus* Network has been formally presented to the University of Córdoba in an interview with the University Rector, Silvia Carolina Scottomet, one of the directors of the *Ministerio de Ciencia y Tecnología* of Córdoba province. In Costa Rica, SINAC/MINAE (*Sistema Nacional de Áreas de Conservación, dependiente del Ministerio de Ambiente y Energía*) and FUNDECOR (*Fundación para el Desarrollo de la Cordillera Volcánica Central*) are involved in field work. Additional participation of FUNDECOR is also planned for the collaborative research proposed by CATIE and CINPE on the economics of ecosystem services.

At the request of the High Council of the Universidad Nacional de Córdoba, the CRN2015 team (in collaboration with Secretariat of Science and Technology and the Press Sub-

secretariat of the same university), organized a set of three plenary lectures for the general public by members of the latest IPCC report (Osvaldo Canziani and Graciela Magrín, from Buenos Aires, and Sandra Díaz, from Córdoba) which was followed by a debate with the public. This event was highly publicized and heavily attended.

CRN2076, PI A. Piola: the team has been able to significantly increase the visibility of their project through presentations at various non-scientific fora, by integrating representatives of stakeholders in their discussions, and by publicizing overall scientific activities. Activities include:

Foro para la Conservación del Mar Patagónico y Áreas de Influencia

(<http://www.marpatagonico.org/index.shtml>), whose mission is to promote the synergistic collaboration among organizations to reach the integrity of the ecosystem and the effective management of the Patagonian Sea and areas of influence in association with public and private sectors. The Forum main partners are BirdLife Intl., Conservation Intl., Fundación Ambiente y Recursos Naturales, Ecocentro, Fundación Patagonia Natural, Fundación Vida Silvestre, Oceana, Wildlife Conservation Society and World Wildlife Fund.

F. Cadena Agroindustrial Argentina (<http://www.foroagroindustrial.org.ar/home.php>), a strategic alliance formed by organizations of producers, providers of commodities and equipment of the food industry, transport, and commerce of grains and meat and exporters.

Sea and Sky Project (<http://www.sea-sky.org/>) a scientifically based initiative that promotes ecosystem management for the biodiversity of the Patagonian Sea under a precautionary principle. Main organizations endorsing the project are: CONICET (AR), Wildlife Conservation Society and Pew Institute for Ocean Sciences.

Cámara de Armadores de Pesqueros y Congeladores de la Argentina (<http://www.capeco.org.ar/>), a fishing chamber from Argentina formed by eleven industry groups operating a large fleet of commercial fishing vessels. The IAI project has also been endorsed by the *Centro de Industrias do Rio Grande* (Rio Grande, BR).

Atlas de Sensibilidad Ambiental de la Costa y el Mar Argentino (<http://atlas.ambiente.gov.ar/>), *Secretaría de Ambiente y Desarrollo Sustentable* (AR), financed by the World Bank through a grant from Global Environmental Fund.

CRN2076, together with various institutions from Argentina is co-financing the project entitled “*Advance integrated fishery and oceanographic information system BioMare.*” The *BioMare* system facilitates the transfer of scientific results and knowledge to policy and decision making levels.

A number of investigators have received prizes or other forms of recognition for their work under CRN II, including:

CRN2015 – PI Sandra Diaz

- Sandra Diaz, Fabien Quétier and invited scientist Sandra Lavorel have received the 2007 PNAS (Proceedings of the National Academy of Sciences) Cozzarelli Prize, an award for papers that reflect the highest standards of scientific excellence and originality. The annual award acknowledges papers published in PNAS during the previous year, that reflect exceptional contributions to the scientific disciplines represented by the National Academy of Science. Papers receiving the Cozzarelli Prize were chosen from more than 3,600 research articles published by PNAS in 2007
- As part of the IPCC AR4 team of authors, Co-PIs Sandra Díaz and Marcelo Cabido were co-recipients of the 2008 Nobel Peace Prize
- Co-PIs Sandra Díaz and Marcelo Cabido obtained the 2007 Taborda Award for Outstanding Achievement in Scientific Research of the Association for the Improvement of Education. As a result, their work was given extensive media

CRN2021- PI Arturo Sanchez-Azofeifa

- Co-PI Jon Paul Rodríguez was awarded the 2007 National Prize for Best Science, Technology and Innovation Article in the Natural Sciences (shared with Jennifer K. Balch and Kathryn M. Rodriguez-Clark). Award given by the Ministry of Science and Technology of Venezuela. 23 November 2007
- Arturo Sanchez-Azofeifa was awarded a McCalla Research Professorship by the University of Alberta for his contributions to tropical research. A professor receiving a McCalla Professorship is considered to uphold the values of the University of Alberta most recently articulated in “Dare to Discover: A Vision for a

Greater University and the Academic Plan”. McCalla professors are those who value excellence in teaching, acknowledge the importance of students, conduct themselves in an ethical manner, are collaborative, open to change, take pride in history and traditions and are committed to integrating their research and teaching

- Arturo Sanchez-Azofeifa was awarded the best paper award from the International Journal of Remote Sensing for his contributions on the differentiation of spectral properties of lianas and trees and the 2007 Canadian Forest Service Merit Award for his contribution to Land Use/Cover Change monitoring efforts (both related to the IAI project)

CRN2031, PI Esteban Jobbagy

- As part of the IPCC AR4 team of authors, Jobbágy & Viglizzo were co-recipients of the Nobel Prize for IPCC
- Co-PI José Paruelo was distinguished by Elsevier with the Scopus award 2007 for highest citation impact among Argentine scientists

CRN2047, PI Brian Luckman

- As one of the lead authors of Chapter 6 in the report of IPCC’s Working Group 1 of the IPCC AR4, Co-PI Ricardo Villalba is a co-recipient of the Nobel Peace Prize. His contribution has been recognized by awards from several regional and local agencies in the Mendoza Province

CRN2076, PI Alberto Piola

- Alberto Piola received the “Hombre de Mar” distinction from the International Federation of Maritime Associations and Navy Leagues (FIDALMAR) for the presentation entitled “Los Océanos y el Cambio Climático” at the XXII Asamblea Federación Internacional de Ligas y Asociaciones Marítimas y Navales, Valencia, Spain, 2007
- Bertolotti, Bueno, Acha, Bremec and Mianzan received the Best Article Prize International Institute of Informatics and Systemic for the presentation of the

BioMare system at the 6th Latin American Conference in Systems, Cybernetics and Computer Science, Trimming, FL, July 2007.

Total funding leveraged (Year 1 & Year 2) under CRN II is approximately US\$ 5.500,000. The number of publications reached 108 peer-reviewed journal publications and 28 books or book chapters.

The Small Grants Program for the Human Dimensions (SGP-HD) has completed its first year. Annual technical reports have been received and approved for all projects. Although a basic roadmap has been laid out at the Panama PI meeting in February 2008, the coordination of project activities with the respective CRN II projects requires substantial input from the IAI Directorate to achieve a full integration across the disciplines.

First SGP-HD results clearly show enhanced networking and policy relevance throughout the program, including:

- SGP-HD 004, PI David Gauthier. The different activities have established networking with local and regional organizations going far beyond the area covered by the project. In Chile, several communities (such as Peñablanca, Combarbala and Halcones) are requesting coverage by the project. At the same time the project has allowed researchers to interact with different sectors in order to discuss common problems. The Ministry of Water in Bolivia will soon be adding a transversal climate change element to its program, and the work of the project is expected to contribute. The project's Chilean coordinator (B. Reyes) is providing guidance to the Chilean national climate change strategy. Co-PI P. Diaz (UR, Canada) was a co-author of the Prairies Chapter of the Canadian National Report "From Impacts to Adaptation: Canada in a Changing Climate 2007" which is influencing Canadian climate change policy.

- SGP-HD 005, PI Robert Varady, has developed its Border Climate Summary/Resumen del Clima de la Frontera “ (BCS/Resumen) from prototype to a quarterly operation product. BCS/Resumen is a dissemination tool that allows climate and water information to flow to policy-makers. It is housed on the University of Arizona’s Climate Assessment for the Southwest website (<http://www.climas.arizona.edu/forecasts.html>), with a link on the CICESE Web site. More than 1,500 stakeholders and academic colleagues receive notice of the “BCS/Resumen” through the CLIMAS-News listserv and the Monsoon Region Climate Applications listserv.
- SGP-HD 008, PI Alex Pfaff was invited to train young Latin American environmental economists at the Latin American and Caribbean Environmental Economics Program (LACEEP) training course and to help in the development of a EfD (Environment for Development) center being created at CATIE (Tropical Agricultural Research and Higher Education Center, Costa Rica) alongside LACEEP. This research also led to a seminar at RFF that generated a Mexico replication effort and that is now also being done at CATIE. Project results have been communicated to policy organizations, presentations of the analyses were made directly to FONAFIFO (Costa Rica’s National Forestry Financing Fund). The PI is currently leading an effort to produce ‘Lessons Learned’ on deforestation, funded by the Packard Foundation within ‘Design To Win’, and these results are a part of that outreach. He will also elaborate on lessons learned to a group working for the Moore Foundation, who considers ecosystem services in its grants.

Program Synthesis

The Directorate, together with the PIs and the SAC, has started the planning of the CRN II and SGP-HD synthesis process. A first synthesis has already been published: the e-book “Applying Ecological Knowledge to Landuse Decisions” involved investigators of both CRN I and CRN II. This analysis was done in cooperation between IAI, Scientific Committee on Problems of the Environment (SCOPE) and the Inter-American Institute for Cooperation on Agriculture (IICA). The book explores how environmental science may

guide landuse decisions. A PDF version of the book is available on the IAI website at http://www.iai.int/files/communications/publications/institutional/Applying_Ecological_Knowledge_to_Landuse_Decisions.pdf. A second activity currently under way is the preparation of an atlas of the South Atlantic which details, bird and marine mammal species distribution, habitats and their relationship with oceanographic regimes. The information is compiled as part of CRN2076 and associated projects, and involves the Wildlife Conservation Society (WCS), New York and the Pew Institute for Ocean Sciences.

Other Activities

CRN II and SGP-HD project ‘factsheets’ are now available on the IAI website at www.iai.int/factsheets. The one-page PDFs provide essential information on each project and will be updated periodically to include latest developments.

The Directorate has started internal discussions on the development of the next round of institutional programs following on CRN II and SGP-HD. In 2009 this discussion will be brought to the SAC, EC and COP to define concrete ideas and next steps to be taken. Input from strategic planning will be required.

The IAI project “**Assessment of research and institutional needs to cope with the effects of Climate Change on Andean Biodiversity**” funded by the MacArthur Foundation is now fully active. In June 2008, national meetings were held in Bolivia, Colombia, Ecuador and Peru. Two regional workshops were held in Bogota, July 2008, and in Lima, September 2008. The Bogota workshop was an initial science consultation that identified knowledge gaps, key priority themes, experts and programs addressing biodiversity, climate change and their interaction. The main result of the workshop was a proposal for a science publication that will synthesize the current knowledge of biodiversity and climate change in the tropical Andes. The Lima workshop was an initial consultation that identified institutional priorities for research, policy, climate change adaptation, data exchange and collaborative networks. As a result of that workshop, 12 institutional themes were identified as potential topics for policy articles. Future project meetings are: *Regional workshop for science consultation with climate and biodiversity scientists* (May 24-29, 2009, Ubatuba,

Brazil): a SCOPE rapid assessment to synthesize climate and biodiversity science. A science book will be produced as output of the assessment project; *Regional workshop for institutional and government consultation* (March 25-27, 2009 (tentative dates), Quito, Ecuador): synthesis of institutional and governance issues surrounding research and adaptation. Policy strategy papers addressing institutional priorities will be produced as an additional output.

The program on **Landuse change and hydrology in the La Plata Basin** has been funded by the International Development Research Center of Canada (IDRC) at CAD 444,000. Following the project inception meeting in Buenos Aires, Argentina, 18-20 March 2008, the five components under the program on ‘Landuse change, rural development and biofuels in the La Plata Basin’, funded by the IDRC of Canada have started their activities. The IAI Directorate is coordinating the project. The first project report prepared by the IAI Directorate has been submitted to IDRC and was approved. The first annual report will be due in March 2009. A second meeting involving the key investigators and stakeholders is to be held in late 2009.

Capacity Building

The second **joint IAI-NCAR colloquium** was principally organized by the IAI Directorate and was hosted by the Argentinean glaciology research institute (IANIGLA) in Mendoza, Argentina. The 49 participants (including lecturers) from 15 countries spent 12 days exploring the themes of seasonality and water resources. Lectures, excursions and working groups generated not only a learning environment but also significant output in the form of policy briefs, a technical bulletin, newsletter and newspaper articles.

As part of the **IAI-INPE/CPTEC Research Internship Program** a third young scientist, PhD student Juan Fernando Salazar (National University of Colombia) began his work in October on "El papel de la vegetación en la modelación de los efectos del cambio climático y la deforestación sobre el ciclo hidrológico". The two scientists who finished their program in 2008 were Dr. Janeet Sanabria (SENAMHI), Peru who studied “The Impacts of

climate change scenarios on agriculture in the Peruvian Altiplano” and Dr. Ana Graciela Ulke, from the University of Buenos Aires, Argentina, who worked on "Modelado y previsión meteorológico y de transporte y dispersión de contaminantes".

Training Institutes

IAI-UICN-GEF/UNDP-CATIE Training Institute on Mainstreaming Adaptation to Climate Change into Environmental Policy in Latin America: Trends and Challenges (November 6-8, 2008, Turrialba, Costa Rica) was held back to back with CATIE’s International Seminar Adaptation to Climate Change: the Role of Ecosystem Services (November 3-5, 2008), which was also attended by IAI investigators. It was the first time the IAI organized a training event for scientists from CRN and SGP-HD programs with scientists and environmental practitioners from NGOs, such as IUCN, Red Cross, Conservation International and regional programs UNDP/GEF and CATIE. The institute brought together natural and social scientists and risk experts to analyze the interactions between current and future climate risks, and natural and human systems; examine assessment tools and policy frameworks; and train scientists, field practitioners and government officials to apply concepts, tools of risk management and adaptation to climate change in water, land and biodiversity projects. Thirty three institutions from 17 countries (Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, USA and Thailand) attended the event. The Institute was the result of programmatic and financial collaboration developed between IAI, IUCN and CATIE.

Institutional cooperation and planning has begun for several **future training institutes**:

- on Remote Sensing Application to Hydrology in Semi-Arid regions (in cooperation with Brazil’s National Institute for Space Research- INPE, the Federal University of Rio Grande do Norte-UFRN and the Brazilian Agriculture Research Institute - EMBRAPA). April 21-24, 2009, Natal, Brazil, to be held back to back with the XIV Brazilian Remote Sensing Symposium (April 25-30, 2009, Natal, Brazil). The Institute will address how to assess regional water availability and vulnerability. Water needs for agriculture, irrigation, cities and industry will be related to potential changes in watershed function under land cover

change. The Institute is an effort to assist policy and decision-makers to take advantage of the available remote sensing technology for information needed for environmental control policies.

- Science-Policy Forum on Ecosystems Services and Climate Change Adaptation in the Andes (tentatively scheduled for March 23-24, 2009, Quito, Ecuador) is part of the MacArthur funded program. It will review biodiversity and ecosystem services in the context of adaptation in the tropical Andes. Institutional collaborations pursued with SENACYT, UICN-Quito, CONDESAN.

- Cities' Responses to Climate Change is being planned for 2010 in Santiago, Chile, with the Economic Commission for Latin America and the Caribbean- ECLAC on how and why cities respond or fail to respond to climate change with mitigation or adaptation. It will be a forum to link urban studies, sustainability, and climate change with practical knowledge, towards policies shaping the construction and functioning of urban areas.

Country contacts

In an effort to develop better collaboration and stronger links with member countries several countries were approached:

Bolivia: Dr. Oscar Paz Rada, director of Bolivia's National Program for Climate Change (PNCC) and country representative to the IAI, has been informed about the development of the IAI project "An assessment of research and institutional needs to cope with the effects of Climate Change on Andean Biodiversity". The deputy-director of PNCC, Dr. Mauricio Zaballa, attended a project meeting, held in September, 2008 in Lima, Peru, on behalf of Dr. Paz. With the assistance of Dr. Paz and Dr. Marilyn Aparicio, health officer of PNCC, and former PI of a Training Institute Seed Grant (TISG), Bolivia made its first contribution to the IAI core budget in 2008.

Colombia: The new director of IDEAM and IAI country representative, Dr. Ricardo Lozano, has been informed about the IAI Andean project. Dr. Lozano met with the IAI Assistant Director for Capacity Building, Marcella Ohira, in July 2008 and reiterated his interest in fulfilling Colombia's commitment to and participation in the IAI. Dr. Lozano has offered to host the next meeting of the IAI Conference of the Parties and Executive Council.

Ecuador: The president of SENACYT and country representative of the IAI has been informed of IAI activities in Ecuador. Marcella Ohira has communicated with Dr. Pedro Montalvo (National Secretary) and Dr. Juan Carlos Parra (General Director) seeking SENACYT's support and active participation in the planning and development of the upcoming IAI Science-Policy Forum on Ecosystems Service and Climate Change to be held in Quito in 2009.

Peru: The country representative, Dr. Pablo Lagos, has been informed of the IAI project in the Andes. Dr. Lagos participated in the first institutional meeting of the project held in Lima, September 2008. The IAI has also contacted Dr. Antonio Brack Egg, the new minister of the recently created Ministry of Environment of Peru, to inform him of the IAI and the Institute's activities.

Non-member countries: Contacts have been established with professionals from El Salvador, Honduras and Nicaragua who showed interest in learning more about the IAI. They participated in the IAI-UICN-GEF/UNDP Training Institute held recently in Costa Rica. The IAI has sent institutional information about country membership. In the case of Nicaragua, communication has been made with Raomir Manzanarez, General Secretary of the Environment (until Feb. of 2008) and current advisor to the Commission on Environment of the National Assembly.

Institutional cooperation

IAI-CIIFEN: A Memorandum of Understanding between the IAI and the International Research Center on El Niño (CIIFEN) exists since 2004: IAI and CIIFEN now work together in the development of the Andean project. CIIFEN is a key partner in the organization of the Science-Policy Forum on Ecosystems Services to be held in Ecuador, in 2009.

Meetings, presentations member contacts and outreach (in addition to above program activities)

Holm Tiessen:

19-20 July , Earth System Science Partnership (ESSP) meeting on bioenergy Piracicaba,
Brazil

1-4 September, Project visit and seminars, University of Alberta, Edmonton, Canada.

20-25 September Global water systems planning meeting, Sao José dos Campos.
29 Sept- 3 Oct IGFA meeting DF, Mexico.
11-17 October, IAI-NCAR joint Colloquium, Mendoza, Argentina
24 October meeting with environmental department Municipality of São José dos Campos,
Brazil
5-7 November, IAI SAC and Strategic Planning Committee (SPC), Miami, USA
8-13 November, presentations to NSF, USDA, State Department, Microsoft research
department, and Heinz Center, Washington, DC, USA
27-28 November IGBP regional meeting, São Jose dos Campos, Brazil
15-17 December Global Food Systems (GECAFS) scientific advisory committee meeting,
Rome, Italy

Gerhard Breulmann

19-20 May 2008, Large-Scale Biosphere Atmosphere (LBA) project SSC meeting,
Campinas, Brazil – discussions on involvement of upper Amazon countries in LBA
phase I.
30 May – 5 Jun 2008, UNFCCC SBSTA, Bonn, Germany. Participation in ‘research
informal session’; Chaired joint side-event with the Asia Pacific Network for Global
Change Research (APN) on ‘Building joint capacities in science and policy sectors for
environmental decision making.
17 July 2008 - Visit to APN Secretariat, Kobe, Japan. Discussions on future joint IAI-APN
activities (e.g. training course, joint publication, side-events at SBSTA).
23-25 Sep 2008, Global Water System Project SSC Meeting, Sao Jose dos Campos, Brazil,
Observer
5-7 November, IAI SAC and Strategic Planning Committee (SPC), Miami, USA
20-21 Nov 2008, High-level intergovernmental segment of the ‘International Conference
on Biofuels’. Sao Paulo, Brazil. Observer.
27-28 Nov 2008 Participation in IGBP Regional National Committee meeting, Sao Jose dos
Campos, Brazil. Discussions on regional global change science, the role of IGBP,
ICSU, IAI and collaboration

The Directorate

The website was redesigned with new layout. It now provides fact sheets on all current projects

The 28th meeting of the IAI SAC was held from 5-7 November in Miami, USA hosted by NOAA's Atlantic Oceanographic and Meteorological Laboratory (AOML).

Back-to-back a meeting of the IAI Strategic Planning Committee (SPC) was held on 7 November 2008, following up on the discussions at EC26/COP15 in Buenos Aires, 17-20 June 2008 and in preparation of a strategic planning workshop involving a broader audience to be held in early 2009.

As one of the lead authors of the IPCC, Holm Tiessen was a co-recipient of the 2008 Nobel Peace Prize

Local staff, provided under the host country agreement, has received lay-off notices in September 2008. Two staff were permanently laid off to accommodate the new funding situation. The remainder was re-hired either by the IAI directly or by the Brazilian contractor. First experiences with the new contractor are positive, although the salaries do not correspond to the requirements of the staffing. Isabel Vega, who had been the science program assistant for many years has rejoined the directorate team as part of permanent staff as a junior assistant and also works as a project assistant in the MacArthur - funded Andean program.

São José dos Campos

Dec. 15, 2008