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IAI Directorate Report

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IAI Directorate Report to the Conference of the Parties, 2011
for the period of July 2010 - May 2011

1. Centers of Competence initiative

Article IX of the Agreement Establishing the IAI provides for the establishment of Institute Research Centers for the purposes described in its section 3:

The Institute Research Centers shall, inter alia:
a) Conduct and support in-house and extramural interdisciplinary global change research;
b) Collect data and promote the full, open and efficient exchange of data and information between the Institute and the Parties;
c) Strengthen capabilities and facilities of existing institutions;
d) Create regional capacity and provide advanced training in fields relevant to global change;
e) Participate ex-officio, through their respective Directors, in the meetings of the Conference of the Parties, the Executive Council and the Scientific Advisory Committee; and
f) Perform any other functions provided in this Agreement for the Institute Research Centers or entrusted to them by the Conference of the Parties.

The establishment of such research centers is further outlined in sections 1 and 2

1. Institute Research Centers shall be developed and designated by the Conference of the Parties only based upon proposals submitted by Parties interested in hosting such Centers in their own territory.
2. Each Institute Research Center must have a long-term commitment to a program of research within the objectives of the Institute for which the Center shall be responsible to the Institute. Each Research Center shall present its long-range plans and annual program and budget to the Conference of the Parties for its approval, based on advice from the Scientific Advisory Committee and the Institute's needs to integrate the plans and programs of all of the Centers.

Since the signing of the agreement in 1992, no such centers have been initiated by any of the Parties. Arising out of the current science programs, there may now be an opportunity to implement the spirt of the original recommendation. Starting in 2006, the directorate has been coordinating cross-network syntheses as part of its science strategy with a strong emphasis on outreach, and on providing scientific information for informed decision making. Such problem-oriented assessments and policy applications of ongoing science can be improved through intellectual and institutional leadership which may be provided by "Centers of Excellence" that can apply scientific expertise, capacity building potential, and application of science output to adaptation, mitigation and policy.

The current portfolio of IAI research projects is providing an opportunity to explore a cross-disciplinary analysis of water security on the continent. The following projects are contributing research on hydrology, water use, landuse, climate and extreme events:

Collaborative Research Network CRN2031 - "Land use change in the Rio de la Plata Basin: linking biophysical and human factors to understand trends, assess impacts, and support viable strategies for the future" in combination with CRN2094 - "The impact of land cover and land use changes on the hydroclimate of the La Plata Basin" are exploring links between hydrology, land use, and land cover - climate feedback. Extreme events are modeled and historical records established by CRN2048 - "Tropical cyclones: current characteristics and potential changes under a warmer climate" together with CRN2050 - "Paleotempestology of the Caribbean region: A multi-proxy, multi-site study of the

spatial and temporal variability of Caribbean hurricane activity". Climate and hydrological change is examined using streamflow reconstructions and dendrochronlogies by CRN2047 - "Documenting, understanding and projecting changes in the hydrological cycle in the American Cordillera". This CRN is part of the initiative on long-term multi-proxy climate reconstructions and dynamics in South America supported by IGBP-PAGES and has developed the first reconstructions of annual austral surface air temperature, pressure and precipitation for the region 20-55°S for the last 700-900 years using a variety of proxy data. 500-1000 year-long drought and streamflow reconstructions have been developed for Mexico, Chile, Argentina and the Altiplano. These records contribute to the understanding of multi-decadal climate variability and will likely be part of future IAI initiatives on the climate of the Southern Cone. Water use, predictions of future use and availability, and policy applications are examined in collaboration with the above projects by the (Small Grant for the Human Dimensions) SGP-HD005 "Information flows and policy: use of climate diagnostics and cyclone prediction for adaptive water-resources management under climatic uncertainty in western North America", SGP-HD003 "Climate change and irrigated agriculture towards a better understanding of driving forces and feedbacks between decision makers and biophysical environment and their impacts on hydrological cycle and land use" and SGP-HD004 "Coming down the mountain: understanding the vulnerability of Andean communities to hydroclimatologic variability and global environmental change".

This formidable network of research networks provides the basis and geographic focus for a proposed Center of Competence. Cross-project synthesis, future program planning and the constitution of the Center of Competence were discussed at a workshop in Los Cabos (Mexico) Feb. 24 to March 4, 2011. The center will be based at the University of Arizona in collaboration with the Catholic University of Santiago, Chile. Both institutions have strong links to government agencies in charge of water management, have vibrant interdisciplinary academic programs, and have centers focusing on policy and global change. The University of Arizona has a long-standing cross-border program on the scientific and practical aspects of water management in the dry areas of the US and Mexico. Activities, funding and institutional agreements for the Center are currently being explored, in part through different funding mechanisms provided by NSF. The Agreement Establishing the IAI in its **Article X** provides a legal framework for such a centre in its *Affiliated Research Institutions:*

1. An institution which submits a proposal for a specific research project, through the appropriate Party, may be designated by the Conference of the Parties as being affiliated to the Institute for the duration of the project. The Conference shall base its decision on a review of the proposal, taking into account the views of the Scientific Advisory Committee as to the scientific merit of the proposed project and its relevance to the objectives of the Institute.

Given the lack of proposals by the Parties for Research Centers over the past 19 years, the IAI Director suggests to develop initiatives like this one that grow out of scientific and institutional competencies as an alternative means to establish IAI centers for research and policy development. Nevertheless, greater country participation in IAI science and funding will be needed if such ventures are to be successful.

2. Program synthesis, policy relevance and capacity building

Both the Collaborative Research Networks and the associated Small Grants for the Human Dimensions have entered their final year and have been extended to allow a more complete cross-program synthesis and an analysis of the effects of science management on the development of interdisciplinarity. Three synthesis meetings were held. Two of the meetings were coordinated with IAI training workshops, so that expert knowledge and research results could be used to enrich the capacity building events and engage students in the use of analytical tools (such as GIS, climate modeling and crop modeling) used in the projects for research analysis. The first of these meetings was held in Buenos Aires in August 2010. Projects on terrestrial ecosystems, climate and biodiversity contributed insights towards a broad synthesis process that will be continued in 2011:

An important finding across the projects was that although science has traditionally concentrated on the biogeochemical effects of landuse change such as reductions in soil fertility and the emission of ecosystem carbon, biophysical changes are just as important. These include changes in land surface reflectivity (albedo) roughness, evapotranspiration, run-off and infiltration that change regional hydrology energy balances and climate. This conclusion and its resulting policy implications will be presented to the UN Climate Change Convention in 2011. In this way, the IAI continues to participate in the Research dialogue of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA). This year's IAI presentation will be made by the principal investigator of CRN2031 on land-cover climate interactions.

The synthesis process also allowed an analysis of societal vulnerabilities to tropical cyclones across several projects. This analysis showed that on the Pacific coast of Mexico and in Central America storm damage is largely related to rainfall, floods and landslides. Storm classification, though, is currently based on wind speeds only. There is a need to consider rainfall intensities if impact prediction is to reflect adequately the potential threat by tropical cyclones.

In the Southern Cone, linking the considerable knowledge developed across different projects on paleoclimate, current regional climate drivers and on ocean currents is now pointing towards a more comprehensive understanding of climate prediction for the continent. The past climate and stream-flow reconstructions show clear signals in climate states from variations in ocean conditions - not only ENSO, but also the North Pacific Oscillation and Antarctic currents. As a result of the knowledge dialogue between these projects the IAI is now discussing initiatives that will permit integration across disciplines towards an understanding of regional climate. Downscaling of GCMs has not provided the predictive capacities needed in the region. Canada and Brazil have an interest in developing regional climate models, and the combined research serves to provide the needed input for regionally appropriate models that can accommodate and superpose the different ocean/climate oscillations and changes in land surface properties that affect the region. Such capability is highly policy relevant in the context of results from the human dimensions research.

Several projects integrating human dimensions with natural science research shifted the characterization of global change processes from the description of "trends" (conventionally used to document change such as rising average temperatures) towards a greater emphasis on variation and volatility. They showed volatility to be a more important risk factor than trends and therefore more relevant to decision making. The

synthesis suggested that a “what if” analysis based on modeling that integrates and superposes different climate states (such as ENSO (Niño-Niña) and Pacific Decadal Oscillation phases) may provide possible "envelopes" for variability and extremes that help define risks and vulnerabilities. Cross-project analysis concluded that such focus on volatility will not detract from the adaptation to risks from long-term trends since adaptation to climate variability also provides the capabilities to adapt to climate change. This importance of variation and volatility will have implications for future research programs.

The extensive characterization by CRN2015 of biodiversity and of the ecosystem services provided by different types of primary and secondary dry Chaco forests was considered in the debate for a new forestry law adopted by Argentina's province of Cordoba, but the ecosystem service accounting developed by the project was not accepted. This resulted in the exclusion of slightly degraded forests from protection. Several CRN and HD projects are therefore now integrating knowledge towards a more rational framework of evaluating the provision of ecosystem services and its dependence on biodiversity.

Several projects have developed models and software to unify data collection and analysis. As these applications mature there may be an opportunity to support web portals through the IAI. The DiverSus portal has been completed with support from IAI and now serves to unify information on functional biodiversity. As the IAI is upgrading its servers there may be opportunities to link such activities during future projects. Environmental sensor networks developed in CRN2021 for monitoring tropical dry forests are now applied in three other projects in the Chaco and in agricultural settings. Cross-project training in the use of these installations and data processing has been provided by the Canadian team. The synthesis meeting served to consolidate this broad application of sensor technology.

A coordinated synthesis and training event on landuse change in the La Plata basin was held in Asuncion in April. The training event provided hands-on experience in GIS and modeling as well as a field trip to research sites, while the synthesis meeting explored the links between landuse, hydrology and regional climate in the context of human livelihoods and regional development.

A third synthesis meeting on hydrology and water security was integrated with the planning meeting for the center of excellence on water security. Participants are still preparing the synthesis papers.

Several projects were given the opportunity to interact with the final scientific steering committee meeting of the Global Environmental Change and Food Security (GECAFS) program in Arizona. This was organized to explore whether the IAI's landuse and agriculture-oriented projects could synthesize their results in a food systems context and also to develop potential future research towards a comprehensive system analysis.

One important conclusion from the series of meetings was that the typical disciplinary and sectoral focus of research needs to be complemented by a territorial and regional focus in order to provide policy relevant results: landuse, food, biofuels, hydrology and regional climate were all shown to be inter-related, crossing disciplinary boundaries in research and sectoral lines in decision making. At the same time, many government and private sector decisions, particularly on development and global change

are taken in a local or regional context. To inform such decision making, IAI programs will continue the synthesis activities throughout the coming year.

The comprehensive assessment on the capacity of the Tropical Andean region to integrate knowledge and conduct research on climate effects on biodiversity was concluded in 2011. The assessment consultations involved 7 national meetings in Bolivia, Colombia, Ecuador and Peru, 4 regional workshops and 1 science-policy forum. Over 400 professionals, from 183 institutions and 12 countries participated in the consultation process contributing knowledge from multiple disciplines, and expertise from the Andes and other regions. The two-year project funded by the MacArthur Foundation resulted in a 350 page science e-book documenting the state-of-the-knowledge on biodiversity and climate change in the region available on-line:
http://www.iai.int/index.php?option=com_content&view=article&id=24&Itemid=134.
A Spanish version will be produced in print later in 2011. The project also produced several assessment reports and policy briefs. The results not only provide the MacArthur Foundation with guidance for future program development but have also resulted in a new research grant to the IAI to conduct biodiversity field research and data analysis along two ecological transects spanning altitude gradients in Colombia-Ecuador and Bolivia-Peru. The project on climate-related risk, vulnerability, and decision making tools for conservation planning is funded with US$ 500,000 for 2011-2013. The IAI is linking the new MacArthur project with SGP-HD 004 on the vulnerability of Andean communities to hydroclimatologic variability and global environmental change. This collaboration will look at local communities´ perceptions of vulnerabilities and risks associated with climate change in two binational transboundary areas of Colombia-Ecuador and Bolivia-Peru. This activity will be carried out in cooperation with another MacArthur grantee - Randi Randi, an NGO based in Ecuador, allowing for inter-project collaboration of both MacArthur and IAI´s projects.

As a consequence of the assessment project, one of IAI´s partners – CIIFEN, with the participation of the environment ministries of Bolivia, Ecuador and Peru is developing a “Regional information system on climate change and biodiversity in the Andean countries” to be funded by the Inter-American Development Bank. IAI and CIIFEN will coordinate the information exchange and combine the science, policy and outreach activities of the two projects.

The relationship between the IAI and the MacArthur Foundation has resulted in approximately US$ 1 million in grant funding for research and policy activities in the Andes since 2008 and has been extremely successful. Steve Cornelius, Program Officer of the Conservation and Sustainable Development Division of the MacArthur Foundation, in his communication to the IAI, of December 6, 2010 congratulated "the IAI team and its science and policy partners for an outstanding job on this important project. This was precisely the kind of information I hoped to see emerge from the grant. And, as you and others have pointed out, this lays the foundation for the next phase of the work on better understanding the impact of climate change on Andean biodiversity and assessing how to manage for these effects. … As we complete the design of our new strategy and develop the supporting work plans in the Andes, I may want to circle back to you and your partners in the coming months for both guidance, and to ensure that we don’t miss opportunities for this new project to support future work by others in the same

geographies."

The considerable expertise in IAI programs is shown in the composition of the IPCC's regional team: One third the IPCC's South and Central American Regional panel for Fifth Assessment Report are IAI-associated scientists, providing a timely outlet for IAI science findings.

3. Broader outcomes and applications:

Interaction with the national Weather Services and Municipalities by the urban emission project CRN2017 has provided daily online forecasts of air pollutants which are now posted for Santiago, Medellín and Lima. In Lima the chemical-weather forecast was made possible by capacity building in collaboration with the Peruvian National Meteorology and Hydrology Service (SENAMHI). Project results on urban emissions contributed to air quality management plans in Santiago, Medellín and Bogotá. Technical guidelines for the decontamination plan in the metropolitan area of Medellín (or Aburrá Valley) included the key action of reducing the sulfur content of the fuels used in transport. The project also provided boundary conditions for the climate models used in vulnerability assessments in the context of national communications to the UNFCCC. The associated human dimensions project ADAPTE evaluated and mapped the combined effects of pollution and climate on public health in large cities.

CRN2031 on landuse in the La Plata basin with its associated human dimensions project and CRN2094 on landuse - climate interactions have been linked to an IDRC-funded project which evaluated landuse change in the context of climatic and socio-economic risks and opportunities. Changes in ground water levels and flooding that had been documented in CRN2031 were analyzed in terms of economic losses and potential mitigation: replacing the predominant soybean by pastures or trees in selected landscape segments may reduce economic losses by reducing the severity and duration of future floods. Since the monitoring of ground water levels is being done in collaboration with producers, scientific and economic findings feed back directly into the decision making process. This is being further examined in the synthesis activities.

The Human Dimensions project SGP-HD014 on risk reduction in agriculture implemented climate-based decision support systems for agricultural practice in close cooperation with cooperatives of soybean producers in Eastern Paraguay and southern Brazil. The web-based climate information system is available for Paraguay (http://py.agroclimate.org/) and is being developed for Brazil. Several cooperatives have invested in their own weather stations to support this system. One effect of the cluster of projects in the La Plata basin has been a much increased involvement of Paraguay in IAI activities, including a Training Institute and Policy Forum in April 2011 hosted at the National University of Asunción and endorsed by the Presidency of Paraguay. The importance of IAI involvement is emphasized by the hosting of the 2011 EC meetings and the CoP.

In project SGP-HD005 researchers examined how effectively knowledge on climate and hydrology is communicated to rural and urban communities in the U.S.-Mexico Border region. A new extension program by project associates has attracted major funding from NOAA and provides support to rural and urban water management and planning. The broad collaborations with multiple agencies in this project have led the

IAI to invite project partners to develop a centre of excellence for water security together with the Catholic University of Santiago, Chile.
The Tropi-Dry (CRN2021) team provided scientific expertise towards an appeals court decision to protect the dry forests in Minas Gerais as part of the Mata Atlantica Biome, overriding a 2010 State law that had lifted protection from some 70% of the forest. The science background to this decision has been prepared by NSF as a narrative and slide show. Similar ecosystem expertise was provided to the Province of Mendoza by the biodiversity project CRN2005 in 2010. Remote sensing data from CRN2021 provided a basis for official national forest cover maps for Costa Rica.

In Chile, the project on Andean hydrology (CRN2047) contributed to the Native Forest chapter for the National Commission for the Environment's (CONAMA) report on the state of the environment. The project contributes to the Native Forest Advisory Council which coordinates water, soil and wetlands protection and subsidies to land owners for forest preservation. Argentinean investigators are leading the national inventory of glaciers, recently awarded to the Instituto de Nivologia, Glaciologia y Ciencias Ambientales (IANIGLA), and have made significant inputs to the development of the national Glacier Protection Law, using IAI-funded research to document the case at National Senate hearings. CRN2047 project investigators act as advisors to the Climate Change Agency (Agencia de Cambio Climático) on resource management policies in the province of Mendoza.

4. Capacity Building

The Training Institute on the use of seasonal climate predictions for applications in Latin America was held from August 2-13, 2010 at the School of Exact and Natural Sciences of the University of Buenos Aires (FCEN/UBA). Thirty-eight participants from 13 countries explored the use of seasonal prediction tailored to user needs in different socioeconomic sectors of Latin America (e.g. agriculture, health, water resources, disaster risk reduction, etc). The training used IRI's Climate Predictability Tool (CPT), a free program that lets users make customized seasonal forecasts. This hands-on training has provided young scientists with a tool to produce seasonal forecasts for climate, streamflow, crop yields, disease incidence and more. As follow up activities to the TI, the IAI will support 2-3 young scientists in the IAI-INPE/CPTEC internship program. They will spend 6 months at Brazil's CPTEC to develop a research project on the application of climate forecasts in the agriculture and water resources sectors. The internship program is co-funded by INPE/CPTEC. One TI participant, who is working on a climate-based early-warning system for respiratory diseases in Buenos Aires, will attend the IRI course on the use of climatic information and application in the health sector at Columbia University. The Training Institute initiated a collaboration between IAI and the Water Center for Arid and Semi-Arid Zones in Latin America and the Caribbean (CAZALAC) to develop joint capacity building activities following the model of the IAI Training Institute on climate, water, society and governance. CAZALAC expects to fund these activities with approximately US$ 50,000 for 2012-2014.

The IAI Training Institute on Urban Responses to Climate Change: Politics, Strategies and Instruments for Latin America and Caribbean was held from 1–6

November, 2010 in Santiago, Chile at CEPAL. Themes were how urban areas are driving but also responding to climate change, and how professionals can integrate those responses with urban development compatible with the sustainability of the region. 37 professionals from 15 countries came from municipalities, ministries of urban planning, climate change programs, universities, research centers, foundations and international organizations (IDB, CEPAL, UNDP). The group visited several sites in Santiago to observe land use trends, social cohesion, population densification, business clusters, rural-urban interface, green building technologies etc. Exercises provided the opportunity to apply the knowledge and information obtained at the TI in participants' areas of expertise, using data from his/her own city. Exercises included control of greenhouse gas emissions, vulnerability reduction to climatic events (floods, mud slides, heat waves, etc.) and adaptation to climate change (environmental services, health, risk reduction, urban economy).

As a result of this TI, IAI and CEPAL will publish a book on urban responses to climate change in Latin America & Caribbean. Attendees of this Training Institute will develop the book chapters exploring lessons learned, good practices and case studies. In this collaboration between CEPAL and the IAI, CEPAL provided approximately US$ 18,000, with resources from the Spanish government and will continue to link to the science expertise of the IAI. IAI and CEPAL will sign a Memorandum of Understanding to strengthen and facilitate future cooperative activities in research, policy and capacity building.

A Science-Policy Forum with the theme "Agricultural expansion is creating wealth for nations; is it also destroying the natural resource base for development?" was organized by IAI in collaboration with the Facultad de Ciencias Exactas y Naturales of the Universidad Nacional de Asunción (FaCEN-UNA). The forum was held with the Training Institute on Land Use Change Analysis and Water and Food Security in the La Plata Basin Region (April 06-15, 2011) in Asuncion, Paraguay. IAI investigators served as lecturers at both forum and TI. Approximately 370 participants attended the forum, including representatives from Paraguay's government, universities and research centers, and participants of the TI. This event brought together, for the first time, land, climate, hydrology, and social (economics and anthropology) scientists to discuss the interactions and impacts of agricultural expansion in the La Plata Basin.

Young scientists and professionals from 11 countries from universities, agricultural and water research agencies, regional governments, NGOs and rural associations participated. IAI investigators organized a field trip to a research site of SGP-HD014 in Las Colonias Unidas, Southern Paraguay. Many of the participants for the first time had an opportunity for direct contact with producers, visited farms, food processing facilities and the rural association of Las Colonias Unidas. As outputs of the hands-on exercises, 6 groups developed policy documents on problems associated with land use and cover change, water resources, food and water security, and interdisciplinary research. One of these papers has been submitted to EMBRAPA´s newsletter.

As a follow up to the TI, the IAI, the Centro Interdisciplinario de Respuesta al Cambio y Variabilidad Climática (CIRCVC) of Uruguay's Universidad de la República and the Municipality of Montevideo are planning a workshop on agriculture impacts, crop modeling, climate and GIS applications to be held in Montevideo in July. Local

organizers will include 3 TI participants, who are involved in the development of Montevideo's Climate Plan and Uruguay's National System of Responses to Climate Change. This event will involve participants, speakers and IAI investigators who were at the Paraguay and Chile Training Institutes, and will link to the upcoming Agricultural Model Intercomparison and Improvement Project (AgMIP) workshop (August 1-5, 2011, Campinas, Brazil) which will provide input for the 5th assessment report of the IPCC.

The president of Paraguay, Fernando Lugo, and the mayor of Asuncion, Arnaldo Samaniego, officially declared the IAI Training Institute to be of national and municipal interest given its intellectual merit in providing capacity building on important issues such as agriculture, food and water security.
http://www.presidencia.gov.py/v1/wp-content/uploads/2011/04/decreto6414.pdf
http://www.mca.gov.py/noticias/210211_2.htm

The three Training Institutes attracted more than 300 applications, and were evaluated highly by the participants. Attendees considered the networking opportunities, as well as the program, field trips, and practical exercises to be effective in demonstrating the use of analytical tools such as GIS, climate and crop modeling, agent based models. The TIs were considered innovative in their multidisciplinary dialogue, an in encouraging science-policy communication. Research findings from IAI projects enhanced capacity building and generated cross-program interactions.

In the IAI-INPE/CPTEC Research Internship Program a fifth young scientist, Blanca Patricia Vazquez Agüero, from Paraguay's Universidad Nacional de Asunción (UNA) developed her research program on climate models and scenarios for Paraguay and their application in the water resources and health sectors. Her study was supervised by Dr. José Marengo (INPE/CSST) between October 2010-March 2011. Blanca is now providing training to scientists at UNA based on the research developed in Brazil. Currently, the IAI is negotiating the renewal and expansion of the program with CPTEC.

5. Data & Information System and Information Technology

The DIS continues to operate in collaboration with Oakridge National Laboratory (ONL). Standards of interoperability are being maintained. As ONL is switching to a more open-source model, the formal (relatively expensive) collaboration contract remains suspended as new models are being explored. The IAI information manager remains engaged in this joint process. Meanwhile, local operating systems at the directorate are being replaced on principles of open source and open access. Support staff has been trained on Linux-based operating systems using Open Office options. Servers have recently been replaced. The web page is constantly updated, particularly with new science information from the projects, and traffic is being monitored to check visibility of the IAI on the web. Within 3 days of placing the new e-book on Climate Change and Biodiversity in the Tropical Andes onto the IAI page it was downloaded 42 times. The publication was completed to coincide with the regional IPCC meeting, and the information from this project will therefore likely find its way into the AR5 regional assessment.

6. Directorate operations

Staffing issues:

Contracting problems for the Brazilian staff continue to cause significant problems in the operations of the Directorate. Contracts were repeatedly terminated and renewed, at times with brief periods during which staff stayed off work. Although the director of INPE has gone beyond his duty in facilitating a series of "emergency" contracts, no durable solution appears to be in sight. As a result of this instability, the IAI lost its assistant for information technology. The new executive assistant who had been hired and trained in 2009 and had played major role in coordinating member country relations has also left for a more stable institutional setting. The IAI is currently unable to fill these positions with adequately qualified personnel and is relying on temporary staff with little training. Staffing problems were compounded by transition problems in the replacement of the assistant director for science during 2009/10. As a result a number of liaison functions have suffered during the year.

Host country relations

Suggestions for an amendment to the host country agreement had been prepared by the directorate early in 2010 in order to bring the IAI in line with newer legislation and provisions for international institutions in Brazil and also help resolve staffing issues. Despite verbal assurances that this should be easy to move forward, the proposal has remained without official reply more than a year later. None of the communications by the EC over the past 5 years has had any response from the Brazilian government. In contrast to UN and other institutions, the IAI's agreement does not provide for tax and contributions exemptions on payroll, so that the annual fiscal burden to the IAI is substantial and increasing under the current unfavorable exchange rate to the dollar. This situation, together with the intractable staffing problems have led the EC Bureau to issue an invitation to the IAI member countries (including Brazil) to provide offers to host the IAI under appropriate conditions.

Member country relations and core funding:

Paraguay, Bolivia and Ecuador have renewed their interest in IAI activities and have also made payments of past dues. Ecuador has paid all its past dues in the total amount of US$ 50,000. Paraguay has hosted a science synthesis workshop in combination with a training event and a policy forum. These have generated considerable local and national interest with producer organizations in Southern Paraguay supporting a training field excursion and the municipal government of Asuncion declaring its express interest in the science and policy event. Guatemala has for the first time indicated a representative, but has not yet made any payments. Uruguay has also recently indicated a new national representative and requested a contribution balance but no payments have been received up to now. The Chilean government has taken an active interest in the planned excellence center and the science synthesis on hydrology and water security. Two representatives participated in the workshop in Los Cabos, and have since developed links not only with the IAI teams but also with Mexican water authorities. Recently, the Peruvian consulate in São Paulo has verbally communicated to the IAI the designation of a new representative at vice-minister level and alternate representatives at directors level, indicating the importance attributed to the country representation. The US government

has not only paid its back dues but made additional funds available that are crucial for the science synthesis and transition to a new CRN program. Environment Canada has also made additional funds available, covering the outstanding Canadian contribution.

The renewed interest and activity by several member countries means that in April 2011, there are no member countries deemed to be inactive under the rules of the Conference of the Parties,

Remaining serious issues are the long-term underpayment by Venezuela and the cessation of payments by Mexico since 2009. Costa Rica continues to make partial payments amounting to about 70% of dues.

Country contacts:

In September and November of 2010, the IAI organized 4 meetings in Bolivia, Colombia, Ecuador, and Peru to disseminate the results and publications of the IAI-MacArthur Foundation project. The Assistant Director for Capacity Building met with delegates from Andean IAI countries and with representatives from the scientific and policy communities:

Bolivia: September 13, 2010, hosted by Instituto de Ecologia – Universidad Mayor San Andrés.

Peru: September 15, 2010, hosted by Servicio Nacional de Meteorologia y Hidrologia (SENAMHI) and the Climate Change Adaptation Division – Ministry of the Environment.

Ecuador: September 16, 2010, hosted by Centro Internacional para la Investigación del Fenómeno El Niño (CIIFEN).

Colombia: November 23, 2010 hosted by the Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM) of the Ministry of the Environment.

About 153 participants attended from government agencies, research institutions and universities, non-governmental organizations, cooperation agencies, and international organizations.

On occasions of the dissemination meetings, the Assistant Director visited the following authorities and country representatives in order to strengthen the relationship between the IAI and its member countries:

Peru: Rosario Gómez Gamarra, Vice-Minister of the Environment; Alberto Hart Potestá, Minister, Sub-secretaria de Asuntos Multilaterales del Ministerio de Relaciones Exteriores; Luis Alberto Oliveros, Advisor, Ministerio del Ambiente; Wilar Gamarrra Molina, President, Servicio Nacional de Meteorologia e Hidrologia (SENAMHI); Elizabeth Silvestre Espinoza, Science Director, SENAMHI; Ena Jaimes, Head of the Climate Division, SENAMHI; Juan Tarazona, Science Director, Consejo Nacional de Ciencia y tecnología (CONCYTEC); Laura Avellaneda, División Programa de Adaptación al Cambio Climático, Ministerio del Ambiente. As a result of this meeting at the end of 2010, the Peruvian government showed interest in participating more actively in the Institute's meetings and activities.

Bolivia: Carlos Salinas Torrico, Coordinator, Programa Nacional de Cambio Climatico (PNCC); Consuelo Luna, advisor to the PNCC Coordinator.

Ecuador: Jorge Vargas G., Chief, División de Cooperación Internacional, Secretaría Nacional de Ciencia y Tecnología (SENACYT); Magdalena López, Director, División de

Innovación Científica, SENACYT; Carlos Naranjo J., Executive Director, Instituto Nacional de Meteorología e Hidrologia (INAMHI); Maria Victoria Chiriboga, Director, Oficina de Cambio Climático, Ministerio del Ambiente; Carolina Zambrano, Director, Oficina de Cambio Climático, Gobierno Municipal de Quito.

Colombia: Ricardo Lozano, Director, Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM), Ministerio de Ambiente, Vivienda y Desarrollo Territorial; Luz Marina Arevalo Sanchez, Sub-Directora de Ecosistemas e Información Ambiental, IDEAM; CarlosSarmiento, Instituto de Investigación en Recursos Biológicos Alexander von Humboldt; Néstor Garzón Cadena, Ministerio de Ambiente, Vivienda y Desarrollo Territorial, Grupo de Cambio Climático; Javier Mendoza, Ministerio de Ambiente, Vivienda y Desarrollo Territorial, Grupo de Cambio Climático, Dirección de Ecosistemas.

Ecuador: On February 10, 2011, Marcella Ohira met with Mercy Borbor Cordova, Vice-Minister of the Environment and as a result of the meetings with Ecuadorian authorities, including SENESCYT, Ecuador has paid its present and past dues to the IAI core budget.