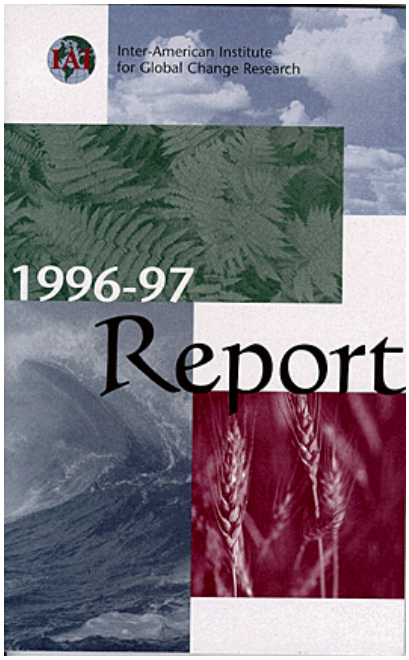
Inter-American Institute for Global Change Research
1996-97 Report



IAI's Mission is to develop the capacity to understand the integrated impact of present and future global changes on regional and continental environments in the Americas and to promote collaborative research and informed action at all levels. (IAI Scientific Advisory Committee, 1997)

Global Change refers to changes in the global environment (including alterations in climate, land productivity, oceans or other water resources, atmospheric chemistry, and ecological systems) that may alter the capacity of the Earth to sustain life. (Extracted from U.S. Global Change Act, 1990)

Contents

Message from the Executive Council Chair

Dear Colleagues,

The last years of this millennium will most likely be seen as a period of explosive growth in our knowledge and understanding of mankind's interaction with the Earth. Enormous improvements in the understanding of the Earth's system have occurred within the last decade -- improvements not only in our understanding of the environment per se, but in terms of a deeper understanding of our role as agents of global change, and of our responsibilities as stewards of the planet.

A few of the recent international scientific accomplishments in global change research stand out: atmospheric ozone chemistry is now largely under stood, and this knowledge has resulted in measurable remedial actions. Deforestation rates are being measured in a more statistically robust manner, and it is now possible to investigate the links among deforestation, people's behavior, and government policies. Climate forecasts have reached a much greater level of accuracy, to the extent that some of these predictions are being used to improve our economies' capacity to adapt and prepare for major climate events up to a year in advance. Major efforts are underway to understand the role of biodiversity and the impact of global change on this poorly understood resource.

Many governments are placing political and budgetary emphasis on global change. The issues contained in treaties such as the Framework Convention on Climate Change are only the beginning of what our societies must address to truly manage global change and create a sustainable future.

The IAI's growing portfolio of investment in first-class research will contribute to a regional understanding of the vulnerabilities of our environment and our societies to global change. Two aspects of the Institute' s work are critical: adapting the results of global change research to regionally tailored scenarios, and promoting the use of this critical information among policymakers and people living in the Americas.

The Executive Council looks forward to another year of encouraging and supporting research of the highest standards; to the hard work of the IAI staff; and especially to the dedication of the Institute-supported researchers throughout our hemisphere who have helped to build the Inter-American Institute for Global Change Research.

Sincerely,

Robert W. Corell
Chair, IAI Executive Council

Introduction from the Director

Dear Friends,

It is an honor to reflect on the accomplishments over the past year of the Inter-American Institute for Global Change Research.

We have made much progress in augmenting ongoing scientific development activities in the Americas. It was during the 1996-1997 period that the Institute began its Initial Science Program (ISP), offering scientists in the region three-year grants to conduct activities in research, training and education, data management, and computer modeling. At the same time, the Institute established its Start-up Grants (SG) program to encourage investigators to begin collaboration in the design of long-term research that will form the core of the future IAI research network. Both programs have had tremendous success as indicated by the quantity and quality of the submitted proposals. Twenty-three projects have already been funded under the ISP program, and 37 proposals were awarded for planning activities under the SG program. By early 1998, 12 to 15 more projects will be funded under the ISP Program, with approximately one-third of them in El Niño-Southern Oscillation (ENSO), in view of the overwhelming importance of this theme for the entire region.

Future IAI scientific development activities will be based on the establishment of coordinated research networks, linking scientists from at least four member countries, working together in three-to five-year projects under the themes of the IAI Science Agenda. During 1996-1997, the Scientific Advisory Committee has, in turn, analyzed the original Science Agenda and is working now to further refine and expand it to include areas of emerging importance in the global change sciences.

The Institute is also contributing to the networking, data information, and training and education needs of the region. The governments of Brazil and the United States are working with the IAI Directorate to develop a Data and Information System (DIS). The IAI's Global Environ-mental Facility (GEF) project continued to build capacity in the region by providing equipment and training in Geographical Information System (GIS) software. The governments of Brazil and Mexico have contributed with scholarships that will enable scientists from all IAI member countries to be trained at graduate and post-doctoral levels on the diverse array of themes included in the Science Agenda.

To truly promote global change research in the Americas, it is imperative that IAI expand its membership to all countries in the region. Important efforts were made during 1996-1997 to facilitate larger involvement of scientists and member countries from Central America and the Caribbean.

The IAI is fully committed to increasing cooperative activities with other national, regional, and international organizations and programs to enhance the existing resources in the region. The Institute began collaborative activities during this year with the National Oceanographic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Admin istration (NASA). The Institute is also pursuing joint funding opportunities with the National Councils for Science and Technology (CONICYTs) of various member countries and collaborative relationships with the international global change research programs. These include the International Human Dimensions of Global Environmental Change Programme (IHDP), the Inter national Geosphere-Biosphere Programme (IGBP), the World Climate Research Programme (WCRP), and the International Research Institute for climate prediction (IRI). The Institute is also working in concert with other regional global research networks, such as the Asia Pacific Network for Global Change Research (APN), the European Network for Research in Global Change (ENRICH), and the Global Change System for Analysis, Research, and Training (START).

This brief description of the IAI's ongoing activities and accomplishments is a clear indication that the Institute is successfully pursuing its challenging mandate. And I very much hope that the Institute will be able to obtain the financial resources necessary to fully implement its important agenda.

The Institute is dedicated to the principles of scientific excellence, international cooperation, and the free and open exchange of information. I expect that this will enable the IAI to continue to profit from the trust and confidence of the scientific community, the IAI's member governments, and the policymakers and people in the Americas who stand to benefit directly from discoveries in the global change sciences.

I want to acknowledge the country representatives to the Conference of the Parties and to the Executive Council for their abiding support of the I AI's institutional development, and the members of the Scientific Advisory Committee for their excellent direction in steering the Institute's scientific agenda. I want to particularly express my sincere appreciation to Dr. Robert W. Corell, Chair of the Executive Council, for his support and intellectual leadership of the IAI. Finally, I wish to sincerely ac knowledge the IAI Directorate staff for its dedication and hard work during the entire year.

Sincerely,

Armando Rabuffetti
IAI Director

Section I: Objectives, Structure, and Support

OBJECTIVES

On May 13, 1992, 16 countries--Argentina, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay, and the United States of America--signed an agreement at Montevideo, Uruguay, that established the Inter-American Institute for Global Change Research.

The Institute pursues the principles of scientific excellence, international cooperation, and the open exchange of scientific information to increase the understanding of global change phenomena and their socio-economic implications and to augment the region's overall scientific capacity.

STRUCTURE

To function as a regional entity and to conduct research that no one nation can undertake on its own, the IAI was conceived as a network of research institutions collaborating to implement the Science Agenda.

In addition, the IAI has four permanent organs: the Conference of the Parties, the Executive Council, the Scientific Advisory Committee, and the Directorate.

The Conference of the Parties (CoP) comprises all countries ratifying the Montevideo Agreement and is the Institute's policymaking organ. It establishes, reviews, and updates the Institute's policies and procedures and evaluates its work.

The Executive Council (EC) is composed of nine members, each of whom is elected by the Conference of the Parties for a two-year term, and has two mandates: (1) to develop policy recommendations for submission to and approval by the Conference of the Parties, and (2) to ensure that policies adopted by the Conference of the Parties are implemented by the Directorate.

The Scientific Advisory Committee (SAC), the Institute's principal scientific advisory body, has ten members elected by the Conference of the Parties for three-year terms. It makes recommendations to the Conference of the Parties regarding the Science Agenda, long-term plans, and the Institute's annual program, and assesses the scientific results of the Institute's funded research.

The Directorate, the Institute's primary administrative organ, is composed of the Director and staff. The Director's primary responsibilities are to:

- promote and represent the Institute within the region and the rest of the world;
- develop proposals for the Institute's long-range plan, financial policies, and annual program and budget; and
- implement and monitor the financial policies, annual program, and budget approved by the Conference of the Parties.

SUPPORT

The following are the IAI's funding mechanisms:

- Core funding, provided by member countries, supports the Directorate's operating costs, including the activities of the Scientific Advisory Committee.
- Program funding, which comes from member countries and other sources, supports the IAI's long-term program activities (data management, training, and education programs, and long-term research programs).
- Project funding from various sources supports limited-term research, training, and education, and other capacity-building activities in the region.

CURRENT MEMBERSHIP

Since 1992, most of the countries that signed the original IAI agreement have ratified it. In addition, other countries have signed on to the agreement and become full IAI members.

The Science Agenda

The overarching goal of the IAI's scientific programs and activities is to produce scientifically rigorous information that will support sound policymaking and economic planning throughout the Americas. The data and research findings generated through the IAI's scientific programs and activities serve many levels of decisionmakers, ranging from the government functionary who must monitor his country's compliance with international regulations on climate change to the farmer who must know what the coming growing season holds before deciding what crops to plant.

The scientific communities and national representatives that make up the IAI have worked together to identify the most pressing scientific issues relevant to the Americas and to the scientific community linked to global change. They identified seven initial research themes for the Science Agenda:

- Tropical Ecosystems and Biogeochemical Cycles
- Impacts of Climate Change on Biodiversity
- El Niño-Southern Oscillation (ENSO) and Interannual Climate Variability
- Ocean/Atmosphere/Land Interactions in the Inter-Tropical Americas
- Comparative Studies of Oceanic, Coastal, and Estuarine Processes in the Temperate Zones
- Comparative Studies of Temperate Terrestrial Ecosystems
- High Latitude Processes

These themes illustrate the immense impact of global change on populations throughout the Americas. For example, in 1997, weather associated with El Niño delayed spring planting in Brazil and Argentina, wreaked havoc on the tourist trade along the west coast of Mexico, and shut down anchovy fishing in Peru for three months, forcing thousands of fishermen out of work. In addition, climate variability associated with El Niño has be en linked to the re-emergence of infectious disease in regions that have received heavier than normal rains. Scientists are also investigating the increasing incidence of toxic "red tides" and other ocean phenomena and their possible connection to warmer temperatures.

Scientists are also struggling to determine which elements of global change are due to nature and which are the result of human activity. Understanding the dynamics of these complex interactions is essential to comprehending the uncertainties surrounding global changes and their impact. One way to approach this problem is by building a record of past changes. For example, the IAI is supporting the development of a database containing information on five to seven millennia of climate change, based on tree-rings from Alaska to Tierra del Fuego. In another IAI project, investigators in South America are being trained to search for rodent dens dating back thousands of years. These dens house hoards of preserved seeds that amount to a detailed record of seed-bearing plants from surrounding areas.

In addition to providing information relevant to the region's environmental priorities, the IAI's Science Agenda is designed to expand in-country expertise for the effective implementation of international agreements and protocols. The Science Agenda is also consistent with international global change research programs and serves as a vehicle through which the region can contribute to these efforts. These programs include the International Human Dimensions of Global Environmental Change Programme (IHDP), the International Geosphere-Biosphere Programme (IGBP), the World Climate Research Programme (WCRP), and the International Research Institute for climate prediction (IRI). The Science Agenda for the IAI is also consistent with the interests of other regional global research networks, such as the Asia Pacific Network for Global Change Research (APN), the Europe an Network for Research in Global Change (ENRICH), and the Global Change System for Analysis, Research, and Training (START).

The most important element of the Science Agenda is its flexibility. The IAI's Science Agenda must evolve in response to changes in the needs of the region's countries, research priorities, and the ability of the scientific community to carry out research that contributes to the solution of specific problems. It is a dynamic Agenda, one that is expected to change as the world changes. Indeed, the IAI has already taken steps to further refine and expand the Science Agenda to include areas of emerging importance in the global change sciences, including land use change, water resources, air and water pollution and integrated assessment of climate change and the human dimensions of global change. These refinements will be highlighted in a forthcoming report.

Action undertaken through the IAI's Science Agenda has already significantly advanced the progress and impact of global change research in the Americas. The exchanges between scientists and policymakers that are fostered through the Science Agenda will continue to serve as catalysts for solutions to the Americas' most pressing environmental problems.

The most important element of the Science Agenda is its flexibility.
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Funded Research

The goal of the IAI's funded research programs is to establish collaborative efforts that will form the basis of ongoing projects and provide decisionmakers with excellent and relevant scientific information as quickly as possible. In this way, the IAI is working to improve the current state of scientific knowledge, while at the same time taking a long-term view of future needs. With this in mind, the IAI provides funding through two programs: the Initial Science Program (ISP) and the Start-Up Grants (SG) program.

Three concepts are key to the financing of both of these funded programs:

- *Scientific Excellence*: All funded initiatives undergo rigorous peer review by members the scientific community throughout the world, and reflect the highest level of scientific excellence.
- *Collaboration*: The IAI encourages interdisciplinary as well as multi-national collaboration.
- *Bridging Science and Policy*: Research funded by the IAI must be relevant to ongoing policy actions.

Grants funded through the Initial Science Program augment ongoing scientific activities in research, training, and education; data and information collection; computer modeling; and a limited number of workshops. These one-time grants have a duration of up to three years. To date, two rounds of the ISP have been successfully completed. The first request for submission of proposals was issued on September 8, 1995, the second on May 15, 1996.

Full funding for these programs, which amounted to about $2.3 million, was provided through the United States' National Science Foundation (NSF). The IAI and the NSF currently share responsibility for administering grants awarded under the first two rounds. Of nearly 200 proposals submitted, 23 have been funded through the Initial Science Program. They range from efforts to monitor the effects of cold waves on Brazil's coffee-growing regions to an ice-core study of the Arctic Peninsula to the development of a South American network for the measurement of ultraviolet radiation. (See the Appendix for a full listing of the funded proposals and participating countries.)

The third round of the ISP, for which $1.3 million has been allocated, was announced in February 1997, and awards are to be made by the first quarter of 1998. The IAI Executive Council has indicated that approximately one-third of funds awarded in this round should be dedicated to research proposals on ENSO, with particular emphasis on the application of regional climate forecasts to specific socio-economic sectors such as agriculture, fisheries, water resources, and human health. The rest of the available funds should be devoted to support other research areas of the Science Agenda, as well as training and education activities. The IAI plays an active role in encouraging investigators to form research teams that, in the aggregate, will carry out a coordinated research program.

The IAI Start-Up Grants program, which is administered by the NSF, provides funding for planning activities exclusively. The SG program was design ed specifically to encourage investigators to begin collaboration on proposals for long-term research that will serve as the core for the IAI research network, which will be developed around the themes set forth in the Science Agenda. Thirty-seven grants, for a total of $1.7 million, were awarded to researchers throughout the Americas under the SG program, and more than 50 planning meetings have been held. (See the Appendix for a full listing of the funded proposals and participating countries.)

These research initiatives are rich in diversity. For example, one project is investigating the impact of natural and human-related changes on mountain environments in the western regions of the Americas. Another is examining new approaches to forest management, with particular emphasis on human interaction with ecosystems. In Argentina and Chile, researchers are studying the impact of solar ultraviolet radiation on aquatic and terrestrial resources.

The work by IAI researchers will shed needed light on our understanding of how global changes affect the regional and continental environments in the Americas. Working together, scientists are advancing our capacity for informed action and engaging in new and innovative relationships to explore global change.

Training and Education

The training and education of future scientists is critical to the continued advancement of global change research in the Americas. The IAI plays an active role in training students to carry out research that will move the IAI's Science Agenda forward and allow

them to contribute to the solution of environmental problems in their own countries. The IAI provides training and education to students through fellowships and scholarships and by supporting training and education activities through its Initial Science Program.

Increasingly, global change research is relying on the use of sophisticated computer systems with advanced image processing, database manipulation, and remote sensing capabilities. The scientists of tomorrow must be trained to use these systems, as well as the new supercomputers that are allowing breakthroughs in modeling and simulation.

The IAI recognizes the need for these capabilities among the region's countries. With a $2.75 million grant from the World Bank's Global Environmental Facility (GEF) and a $275,000 contribution from the National Science Foundation, the IAI is setting up and installing a state-of-the-art geographic information and remote sensing image processing system in research institutes throughout Central and South America. The software at the heart of the project, SPRING, was developed by Brazil's National Institute for Space Research (INPE) and was donated to the IAI/GEF project by the government of Brazil.

To date, the IAI's training and education activities have focused on the use of advanced computer technologies in global change research. The government of Brazil and the GEF have contributed fellowship money to meet this need. In addition, the IAI has sponsored courses on the use of SPRING, as well as training workshops in modeling and climate prediction at a supercomputing center.

In addition to training and education activities in computer technologies (image processing, data manipulation, and remote sensing) provided through the GEF project, the IAI is supporting graduate studies and post-doctoral activities through fellowships contributed by the governments of Brazil and Mexico. These fellowship opportunities are open to candidates from all IAI member countries and are oriented toward research within the scope of the Science Agenda themes.

The IAI has provided training and education, including 20 scholarships, to a total of 224 students in 15 countries through the IAI/GEF project. Ten students have been trained on AIX, a type of UNIX operating system that maintains the computer systems being installed through the IAI/GEF project. In addition, 28 students have received training in Metview, a software package, donated by the government of Brazil and the European Center for Medium-Range Weather Forecasting (ECMWF), which facilitates meteorological analysis of satellite images.

For the future, the IAI is interested in exploring the use of new, high-tech teaching methods to advance global change research. For example, the IAI hopes to make available over the Internet educational modules in different languages that may be used for university-level courses on biodiversity, ENSO, and other issues.

The IAI is committed to enhancing the region's human capabilities for carrying out global change research. Training and education will remain a high priority, which the IAI will address through a number of approaches, including scholarships, fellowships, training workshops, short courses, and educational materials.

Section II

Workshops, Conferences, and Seminars

To foster collaboration in global change research, the IAI places a high priority on workshops, conferences, and seminars that bring together the region's scientists and government officials. These meetings are designed to advance the Science Agenda and to increase participation by scientists from all IAI-ratified countries.

SCIENTIFIC DEVELOPMENT

- *Comparative Studies of Oceanic Coastal and Estuarine Processes in the Temperate Zone*, August 2-6, 1993, Montevideo, Uruguay
- *High Latitude Processes*, December 15-17, 1993, Buenos Aires, Argentina

- *Ocean/Land/Atmosphere Interactions in the Inter-Tropical Americas*, February 7-10, 1994, Panama City, Panama
- *Tropical Ecosystems and Biogeochemical Cycles* April 4-7, 1994, SE3o José dos Campos, Brazil
- *ENSO and Interannual Climate Variability*, July 12-15, 1994, Lima, Peru
- *The Comparative Study of Temperate Terrestrial Ecosystems*, July 26-29, 1994, Durham, N.C., U.S.A.
- *The Study of the Impacts of Climate Change on Biodiversity*, August 9-12, 1994, Guadalajara, Mexico
- *Workshop on Global Change Research in the Americas*, August 28-30, 1995, Belém, Brazil
- *Reduction of Climate-Related Vulnerability in Meso America*, November 14-15,1996, Washington, D.C., U.S.A. (sponsored jointly by the IAI and the National Oceanographic and Atmospheric Administration [NOAA])
- *IAI Principal Investigator Meeting*, February 1-2, 1997, Long Beach, CA, U.S.A. (with support from the National Science Foundation)

REGIONAL COLLABORATION

- *Conference on Integration of Central American Countries to the IAI*, April 9-10, 1996, San José, Costa Rica
- *Conference/Workshop on Integration of Caribbean Countries to the IAI*, July 9-10, 1997, Mayaguez, Puerto Rico

INSTITUTIONAL MANAGEMENT

- *Executive Council*: September 16-17, 1996, Havana, Cuba, June 9-10, 1997, Buenos Aires, Argentina
- *Conference of the Parties*: September 18-20, 1996, Havana, Cuba, June 11-12, 1997, Buenos Aires, Argentina

Collaborations

To promote global change research efficiently, the IAI recognizes that it must collaborate with other regional and international global change research organizations and with international development agencies and foundations. Following is a list of important collaborative activities conducted during 1996-1997.

I. IAI-GEF-WMO PROJECT

Regional Cooperative Activities to Support Global Change Research in IAI Countries (The World Bank's Global Environmental Facility and the World Meteorological Organization)

These activities have three objectives: (1) to improve scientific and technical human resource capabilities relevant to global change research in IAI member countries; (2) to establish uniform data processing capabilities in member countries and develop data exchange systems; and (3) to develop standardized methodologies for the collection and processing of basic data relevant to global change research.

The World Meteorological Organization (WMO) is the executing agency for these activities, with contributions from the United Nations Development Programme (UNDP) and the governments of the United States and Brazil. Participating countries include: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela.

II. IAI-NOAA

(National Oceanographic and Atmospheric Administration)

Collaborative activities between the IAI and NOAA are designed to integrate emerging El Niño-Southern Oscillation (ENSO) forecasting capabilities into decisionmaking for climate-sensitive sectors such as agriculture, fisheries, hydropower, public health, tourism, and natural disaster responses.

In 1996-1997, the IAI and NOAA initiated a plan for pilot projects in various regions of the Americas, the purpose of which is to bring experiment al regional forecast information to selected socio-economic sectors and evaluate the usefulness of this information in planning and decisionmaking. Forecast information provided by the International Institute for climate prediction (IRI), along with information from regional and national research institutes, is being used to develop these projects.

During 1996-1997, studies on agriculture, hydropower, and human health we re underway in Barbados, Belize, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, and Puerto Rico. Similar activities will be launched soon in other regions of South America.

III. IAI-NASA

(National Aeronautics and Space Administration)

During 1996-1997, planning activities were conducted for a workshop entitled 93Understanding Stratospheric Ozone and Ultraviolet Radiation over the Region of South America: Past Accomplishments and Future Opportunities 2é4 To be held in Argentina in early 1998, the workshop will be sponsored and supported by both organizations.

IV. IAI-WCRP

(World Climate Research Programme)

As part of the World Climate Research Programme, a panel on the "Variability of the American Monsoon System" (VAMOS) was created in April 1997. The IAI will be part of this panel, whose primary objective is to formulate a scientific plan to study climate variability in the Americas.

V. IAI-START

(System for Analysis, Research, and Training)

During 1996-1997, collaborative activities focused on climate research, use of geographical information systems, and data information system implementation.

Signatory and Ratifying Countries

AGREEMENT ENTERED INTO FORCE: MARCH 11, 1994

Argentina*
Bolivia
Brazil*
Canada*
Chile*
Colombia
Costa Rica*
Cuba*
Dominican Republic
Ecuador
Mexico*
Panama*
Paraguay*
Peru*
United States of America*
Uruguay*
Venezuela*

* Ratified as of June 30, 1997

Conference of the Parties, Executive Council, Scientific Advisory Committee, Directorate Staff, and Communications

IAI CONFERENCE OF THE PARTIES (CoP)
CONFERENCIA DE LAS PARTES (CoP) DEL IA

ARGENTINA *	***Carlos Eduardo Ereño,*** Comisión Nacional para el Cambio Global
BRAZIL *	***Marcio Nogueira Barbosa,*** Instituto Nacional de Pesquisas Espaciais, INPE Antonio ***M. A. MacDowell,*** Ministério da Ciência e Tecnologia
CANADA *	***Gordon McBean,*** Environment Canada ***Robert Halliday,*** National Hydrology Research Institute
CHILE *	***Enrique D'Etigny,*** Comisión Nacional de Investigación Científica y Tecnológica (CONICYT)
COSTA RICA *	***Patricia Ramírez Obando,*** Instituto Nacional de Meteorología
CUBA *	***Soledad Díaz Otero,*** Ministerio de Ciencia, Tecnologia y Medio Ambiente ***Bárbara Garea,*** Ministerio de Ciencia, Tecnologia y Medio Ambiente
MEXICO *	***José Carlos Tenorio Marañón,*** Instituto Nacional de Ecología (INE) ***Carlos Gay García,*** Instituto Nacional de Ecología (INE)
PANAMA *	***Arístides Lorlesse Gómez,*** Instituto Nacional de Recursos Naturales Renovables (INRENARE)
PARAGUAY *	***Oscar Ramírez Esquivel*** (a), Facultad de Ciencias Exactas y Naturales, U.N.A. ***Ruben García*** (b), Facultad de Ciencias Exactas y Naturales, U.N.A. ***Genaro Coronel,*** Facultad de Ciencias Exactas y Naturales, U.N.A.
PERU *	***Pablo Lagos,*** Instituto Geofísico del Perú
URUGUAY *	***Federico García Brum*** (a), Comisión Nacional para el Cambio Global ***Raúl Michelini*** (b), Comisión Nacional para el Cambio Global
USA *	***Robert W. Corell (EC Chair),*** National Science Foundation, ***J. Michael Hall,*** National Oceanic and Atmospheric Administration (NOAA) ***Nancy Maynard,*** National Aeronautics and Space Administration (NASA)
VENEZUELA *	***Abraham A. Salcedo C.,*** Ministerio del Ambiente y de los Recursos Naturales Renovables (MARNR)

* Member countries of the Executive Council for the period 1996-1998.
* Países miembros del Consejo Ejecutivo durante el período 1996-1998.
(a) Representatives at EC until February 1997.
(a) Representantes ante el EC hasta febrero de 1997.

(b) Representatives at EC since February 1997.
(b) Representantes ante el EC desde febrero de 1997.

SCIENTIFIC ADVISORY COMMITTEE (SAC)
COMITÉ ASESOR CIENTIFICO (SAC)

J. Rubén Lara Lara (SAC Chair)	Centro de Investigaciones Científicas y Educación Superior de Ensenada (CICESE),

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HOMEPAGE

www.geo.nsf.gov/iai

PUBLICATIONS

Administrative Publications

- *Declaration of Montevideo* (May 13, 1992, Montevideo, Uruguay)
- *Agreement Establishing the IAI* (May 13, 1992, Montevideo, Uruguay)
- *Agreement between the IAI and the Government of the Federative Republic of Brazil Concerning the Headquarters of the IAI* (April 28, 1995, Rio de Janeiro, Brazil)

Scientific Publications

- *Global Change Research in the Americas*

  Report on the IAI Workshop, August 28-30, 1995, Belém, Brazil
  Publication code and date: IAI: OES/13.DD/July 1996

- *Impacts of Climate Change on Biodiversity*

  Report on the IAI Workshop, August 9-12, 1994, Guadalajara, Mexico
  Publication code and date: IAI: OES/10.DD/April 1995

- *Comparative Studies of Temperate Terrestrial Ecosystems*

  Report on the IAI Workshop, July 26-29, 1994, Durham, N.C., U.S.A.
  Publication code and date: IAI: OES/9.DD/April 1995

- *ENSO and Interannual Climate Variability*

  Report on the IAI Workshop, July 12-15, 1994, Lima, Peru
  Publication code and date: IAI: OES/8.DD/April 1995

- *Tropical Ecosystems and Biogeochemical Cycles*

  Report on the IAI Workshop, April 4-7, 1994, São José dos Campos, Brazil
  Publication code and date: IAI: OES/7.DD/April 1995

- *Ocean/Land/Atmosphere Interactions in the Inter-Tropical Americas*

  Report on the IAI Workshop, February 7-10, 1994, Panama City, Panama
  Publication code and date: IAI: OES/6.DD/April 1995

- *High Latitude Processes*

Report on the IAI Workshop, December 15-17, 1993, Buenos Aires, Argentina
Publication code and date: IAI: OES/5.DD/April 1995

- *Oceanic, Coastal, and Estuarine Processes*

  Report on the IAI Workshop, August 2-6, 1993, Montevideo, Uruguay
  Publication code and date: IAI: OES/4.DD/April 1995

- *Scientific Development*

  Summary of the seven thematic scientific workshop reports
  Publication code and date: IAI: OES/3.DD/April 1995

IAI Newsletter

Quarterly publications

Grants Announcement

1. Start-up Grants (March 1995)
2. Initial Science Program Round I - ISP I (July 20, 1995)
3. Initial Science Program Round II - ISP II (July 20, 1995)
4. Initial Science Program Round III - ISP III (February 25, 1997)

Financial Statement

STATEMENT OF FINANCIAL POSITION

FOR THE PERIOD JULY 1, 1996-JUNE 30, 1997

ASSETS	US$
CURRENT ASSETS	
Cash and cash equivalents	253,428
Accounts receivable (less allowance for doubtful accounts)	27,530
Other current assets	6,210
Total current assets	**287,168**
FIXED ASSETS	
Computer equipment	9,866
Less: Accumulated depreciation	-1,973
Fixed assets, net	**7,893**

TOTAL	**295,061**
LIABILITIES AND NET ASSETS	US$
CURRENT LIABILITIES	
Accounts payable	30,402
Deferred revenues	31,428
Total current liabilities	**61,830**
NET ASSETS - Unrestricted	**233,231**
TOTAL	**295,061**

STATEMENT OF ACTIVITIES

FOR THE YEAR ENDED JUNE 30, 1997

CHANGES IN UNRESTRICTED NET ASSETS	US$
REVENUES AND DONATIONS	
Contributions from member nations	795,300
Donated services, utilities, and use of fixed assets	741,861
Interest income	2,765
Total revenues and donations	**1,539,926**
EXPENSES	
Management and general expenses	**1,306,695**
INCREASE IN NET ASSETS	**233,231**
NET ASSETS, BEGINNING OF YEAR	**-**
NET ASSETS, END OF YEAR	**233,231**
SCHEDULE OF EXPENSES	US$
Salaries and benefits (international staff)	371,141
Other staff salaries	353,449
Security	92,359
Telecommunications	75,341
Travel	95,334
Rental charges	141,180
Site maintenance costs	43,234
Others (Newsletter, cost of meetings etc)	134,657
TOTAL	**1,306,695**

This information is extracted from IAI's financial statements for the year ending 30th of June, 1997. IAI's financial statements were audited by Deloitte Touche Tohmatsu International, São Paulo. We will be pleased to supply a full copy on request.

Acronyms (siglas)

AMS	American Meteorological Society
AMS	Sociedad Americana de Meteorología
APN	Asia Pacific Network for Global Change Research
APN	Red de Asia y el Pacífico para la Investigación del Cambio Global
CEOS IDN	Committee for Earth Observation Satellites International Directory Network
CEOS IDN	Red Internacional de Directorios del Comité de Satélites de Observación de la Tierra
CFO	IAI Chief Financial Officer
CFO	Oficial Financiero Principal del IAI
CONICYT	National Councils for Science and Technology
CONICYT	CONICYT Consejos Nacionales de Ciencia y Tecnología
CoP	IAI Conference of the Parties
CoP	Conferencia de las Partes del IAI
CSO	IAI Chief Scientific Officer
CSO	Oficial Científico Principal del IAI
DIS	Data and Information System
DIS	DIS Sistema de datos e información
EC	IAI Executive Council
EC	Consejo Ejecutivo del IAI
ECMWF	European Center for Medium-Range Weather Forecasting
ECMWF	Centro Europeo de Predicción Meteorológica de Mediano Alcance
ENRICH	European Network for Research in Global Change
ENRICH	Red Europea de Investigación sobre el Cambio Global
ENSO	El Niño-Southern Oscillation
ENSO	El Niño-Oscilación Sur
EOS DIS	NASA's Earth Observing System Data and Information System
EOS DIS	Sistema de Datos e Información del Sistema de Observación de la Tierra de la NASA
GAIM	IGBP's Global Analysis, Interpretation, and Modeling
GAIM	Análisis, Interpretación y Modelado Global
GEF	Global Environmental Facility
GEF	Fondo para el Medio Ambiente Mundial
GIS	Geographical Information System
SIG	SIG Sistema de Información Geográfica
IGBP	International Geosphere-Biosphere Programme
PIGB	Programa Internacional de la Geosfera y la Biosfera
IHDP	International Human Dimensions of Global Environmental Change Programme
IHDP	Programa Internacional de la Dimensión Humana del Cambio Ambiental a la Escala Global
INPE	National Institute for Space Research
INPE	Instituto Nacional de Investigaciones Espaciales
INPE	Instituto Nacional de Pesquisas Espaciais
IOC	Intergovernmental Oceanographic Commission
COI	Comisión Oceanográfica Intergubernamental
IPCC	Intergovernmental Panel on Climate Change
IPCC	Grupo Intergubernamental de Expertos sobre Cambios Climáticos

IRI	International Research Institute for climate prediction
IRI	Instituto Internacional de Investigaciones sobre la predicción del clima
ISP	IAI Initial Science Program
ISP	Programa Científico Inicial del IAI
NAFTA	North American Free Trade Agreement
TLC	Tratado de Libre Comercio
NASA	U.S. National Aeronautics and Space Administration
NASA	Administración Nacional de la Aeronáutica y el Espacio de los EE.UU.
NOAA	U.S. National Oceanographic and Atmospheric Administration
NOAA	Administración Nacional de los Océanos y la Atmósfera de los EE.UU.
NSF	U.S. National Science Foundation
NSF	Fundación Nacional de Ciencias de los EE.UU.
PAGES	Past Global Changes
PAGES	Cambios Globales del Pasado
SAC	IAI's Scientific Advisory Committee
SAC	Comité Asesor Científico del IAI
SG	IAI's Start-Up Grants Program
SG	Programa de Subsidios Iniciales de Investigación del IAI
START	Global Change System for Analysis, Research, and Training
START	Sistema para el Análisis, Investigación y Entrenamiento en Cambio Global
UNDP	United Nations Development Program
PNUD	Programa de las Naciones Unidas para el Desarrollo
UNEP GRID PNUMA/GRID	United Nations Environment Programme Global Resource Information Data Base Programa de las Naciones Unidas para el Medio Ambiente/ Base de Datos sobre los Recursos Mundiales
UNESCO	United Nations Education, Scientific, and Cultural Organization
UNESCO	Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura
USGCRP	United States Global Change Research Program
USGCRP	Programa de los EE.UU. de Investigación del Cambio Global
VAMOS	Variability of the American Monsoon System
VAMOS	Variabilidad del Sistema de Monzones de las Américas
WCRP	World Climate Research Programme
WCRP	Programa Mundial de Investigaciones Climáticas
WMO	World Meteorological Organization
OMM	Organización Meteorológica Mundial

Appendix (apéndice)

PROPOSAL TITLE	ORGANIZING COUNTRIES
START-UP GRANTS	
Biogeochemical Consequences of Land Use Change in the Amazon Basin	USA, Brazil
Hidroclimatology and Dynamics of the Rio de la Plata System and the Patos-	Uruguay, USA, Brazil,

Mirim Complex and Their influence on the Fluxes and Productivity of the Adjacent Shelf Waters	Argentina
First Implementation Meeting of the Large-Scale Biosphere-Atmosphere in Amazonia (LBA)	Brazil, Peru, Bolivia
IAI Research Center on Interannual Climate Variability in Central and Southern South America	Argentina, Brazil, USA
Integrated Study of Temperate Coast Estuaries	Argentina, USA, Canada, Chile
Andean Amazon Rivers Analysis and Monitoring (AARAM) Project Start-up Activities	USA, Brazil, Peru, Bolivia
Comparative Studies of Small Pelagic Fish and Climate Change (SPACC) in the Americas	USA, Mexico
Global Change Assessment in Temperate Agricultural Systems of America	Argentina, USA
Land Use Changes and Water Quality Conservation in the Temperate Forests of the Americas	Chile
Workshop to Implement a Research and Training Network for Plant-Soil Interactions in the Semi-Arid Tropics	Canada, Brazil, Venezuela
Fire and Global Change in Temperate Ecosystems of Western North and South America: An IAI Workshop Proposal	USA
A Proposal for the Planning of the Trade Convergence Climate Complex	USA, Panama, Ecuador, Colombia, Costa Rica
IAI for Global Change Start-Up Grants - Phase I	USA
Experimental and Time Series Approaches to Global Change Research in the Americas: A Proposal for Coordination and Action	Canada
The Impact of Solar UV Radiation on Aquatic and Terrestrial Resources in Patagonia Argentina-Chile	USA
Earth System Science and Global Change Education in Support of the Inter-American Institute	USA
Biological Invaders -- Their Increasing Role as Disrupters of Earth System Processes	Chile, USA
Design of a Scientific Research Plan for Conducting Comparative Studies of the Physical and Biological Environments of the Upwelling Temperate Areas: Toward the Regime Governing Mechanisms	Mexico
The Assessment of Present, Past, and Future Climate Variability in the Americas from Treeline Environments	Canada
Planning Proposal for the Creation of a Training and Education Center on Radar Remote Sensing Science and Technology	Peru, USA, Germany
Organization of a Regional Center for Climate Studies in Mexico, the USA, Central America, and the Caribbean as Part of the IAI	Mexico
Global Change Effects in the Southwestern Atlantic	USA
Pelagic Ecosystem Studies Between the Chilean and Hawaii Ocean Time-Series: Initial Phase	USA, Chile
Development of an IAI Research Center on Red Tides and Harmful Algal Blooms	USA

Austral Chilean Coast and Inland Sea (ACCIS)	USA, Chile
Comparative Studies on Oceanic & Coastal Processes in Temperate Zones of the Eastern Pacific	USA, Mexico
Climate Variability in Southeastern South America and Applications	Brazil, Argentina, Uruguay
Dendrochronological Studies in Tropical South America with Special Emphasis on Bolivian Forests	Argentina, Bolivia
Workshop on Climate Variability in the Americas from High Elevation Ice Cores	USA
Workshop on Landscape Fragmentation Effects on Faunal Biodiversity in the Americas	USA, Chile
Nanavut Environmental Assessment Transect (NEAT)	Canada
Global Change in the Southwestern Atlantic from the Coast to Adjacent Deep Basins	Brazil, USA, Argentina
Application of Remote Sensing in Microbial Ecology	USA
Effects of UV Radiation on High Latitude Aquatic Ecosystems	Canada, Argentina, USA
Human Dimensions of Global Change and Sustainable Forest Management	Canada, USA, Brazil
Potential Use of Biological Proxy Data as Climatic Change Impact Indicators in South American Ecosystems	Chile, Argentina, Brazil
The Solar UV-B Induced Reduction of Photosynthesis by Marine Phytoplankton in the Lower Latitudes (-30 degrees latitude)	Mexico

INITIAL SCIENCE PROGRAM I

Biogeochemical Determinants of Land Cover Changes and Land Use in Savanna-Cultivation-Grazing Systems	Brazil, Canada, Mexico, Venezuela
Request for Partial Support for a Workshop on a Comparative Analysis of Nitrogen Cycling in the Americas	Argentina, Chile, USA
Initial Climate Research within the Trade Convergence Climate Complex	Chile, Colombia, Cuba
Rainfall Studies in the Amazon Basin and Central South America	Argentina, Brazil, USA
Exchange through the Yucatán Strait and its Importance for Climate Change Studies	Cuba, Mexico, USA
The Last Four Centuries of the California Current Calibration and Interpretation from the Laminated Sediments, Tree-Rings, and Historical Records of Southern Alta California and Baja California	Mexico, USA
Vegetation History from Fossil Rodent Middens in Mid-Latitude American Deserts	Argentina, Brazil, Canada, France
Ice-Core Study on the Environment and the Climate of the Antarctic Peninsula and the Southern Part of South America	Argentina, Brazil, Canada, France
Hydrological Budgets for Amazonia	USA, Brazil
A South American Modeling Center for Global Change-Related Oceanic, Coastal, and Estuarine Processes	Argentina, Brazil, Uruguay, USA
Comparative Studies in North and South America along an Aridity Gradient: A Methodological Approach to Upscaling the Functional Role of Biodiversity within Plant Communities	Argentina, Mexico, USA

INITIAL SCIENCE PROGRAM II

The Impact of Climate Change on Nearshore Marine Biodiversity in the Gulf of California	USA, Mexico
Support for Short Course: Instrumentation and Measurement Methodologies in Atmospheric Chemistry	USA, Brazil
Desertification and Ecosystem Processes: Overgrazing, Grass Transpiration, and Soil-Water Balance	USA, Argentina
Global Change Effects on Biodiversity and Functioning: Manipulation of a Keystone Process	Argentina, USA
Climate Variability and Agriculture in Argentina and Uruguay: Assessment of ENSO Effects and Perspectives for Use of Climate Forecasts	Uruguay, Argentina, USA
Links Between Coastal Productivity, Benthic Communities, and Biogeographic Boundaries in Chile and California	USA, Chile
The Effect of UV-B Radiation on Salt-Marsh Vegetation along a Latitudinal Gradient	USA, Brazil, Argentina
Coastal Upwelling along the Western Americas: Past, Present, and Future	USA, Chile, Argentina, Peru
Precipitation in Southeastern South America: Influence of SEA Surface Temperatures, Predictability, and Variability	Uruguay, Brazil, Argentina
Diagnosing, Monitoring, and Predicting Cold Waves ("Friagens") in the Coffee-Growing Areas of Southeastern Brazil	Brazil, USA, Argentina, Peru
Biophysical Coupling in the Pelagic Ecosystem of the Southern California Current	Mexico, USA
A South American Network for the Measurement of Ultraviolet Radiation	USA, Argentina, Chile