



Regional Office for Latin America and the Caribbean

Annual Report 2009

Strengthening international science
for the benefit of society



About the Regional Office

To ensure that the regional priorities are reflected in the ICSU strategic plan and develop sound regional scientific programs.

About ICSU

Vision

The long-term ICSU vision is for a world where science is used for the benefit of all, excellence in science is valued and scientific knowledge is effectively linked to policy-making. In such a world, universal and equitable access to high quality scientific data and information is a reality and all countries have the scientific capacity to use these and to contribute to generating the new knowledge that is necessary to establish their own development pathways in a sustainable manner.

Mission

ICSU's mission is to strengthen international science for the benefit of society.

To do this, ICSU mobilizes the knowledge and resources of the international science community to:

- Identify and address major issues of importance to science and society.
- Facilitate interaction amongst scientists across all disciplines and from all countries.
- Promote the participation of all scientists — regardless of race, citizenship, language, political stance, or gender — in the international scientific endeavour.
- Provide independent, authoritative advice to stimulate constructive dialogue between the scientific community and governments, civil society, and the private sector.

Joint Message from the Director of the Regional Office



This is the third Annual Report of the ICSU Regional Office for Latin America and the Caribbean, covering activities of 2009.

The year started, as planned, with the 2nd ICSU Regional Consultation for Latin America and the Caribbean, held in Mexico City in March, with the generous support of CONACYT Mexico. The meeting gathered about fifty participants, national members for Latin America and the Caribbean, scientific unions, international organizations and regional government representatives, to discuss the four Science Plans in Biodiversity, Natural Hazards and Disasters, Sustainable Energy and Mathematics Education, and help define the follow up activities for each of them.

The aim of the ICSU Science Plans is to become a reference for the development of scientific research in these areas in the years to come, and to promote the active involvement of the countries of the region in their implementation. The Regional Consultation was an important step in this direction. The documents were very well received and will be available in published form in early 2010, thanks to the support of CONACYT Mexico.

In 2009 two of the awarded 2008 ICSU Grants were completed. A special mention should be made of the *Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy*. A multiple stakeholder consultation, a joint initiative of DIVERSITAS, DiverSus and our Regional Office, with the collaboration of the Inter-American Institute for Global Change Research (IAI) and the Botanical Garden of Rio de Janeiro, held in Brazil in April. The workshop established an initial network of multiple stakeholders, interested in biodiversity, ecosystem services and human well-being in Latin America and the Caribbean, upon which future activities can be built; and identified a set of priorities for research and action in the region.

The project *Mapping Scientific Disciplinary Networks in Latin America and the Caribbean* had the innovative aspect of using webometric techniques to identify and characterize the external visibility of these networks in the internet environment. The project will help the Regional Office in discussing how it should relate to the Regional Networks and assist in their coordination. The development of new networks and the extinction of some of the original ones brought a new context that should be addressed.

The Regional Office continued to engage in strengthening relations with the large and complex ICSU family in 2009. Two important meeting should be mentioned. The 3rd ICSU Regional Consultation for Asia and the Pacific, held in Penang, Malaysia in October, which allowed the three ICSU Regional Offices to explore opportunities for collaboration and mutual learning. The ICSU Officers Meeting, with the presence of the Chairs of Regional Committees and Directors of Regional Offices, held in Budapest, Hungary, in November, provided a stronger platform to link the global and the regional at ICSU.

The relations with the Scientific Unions continued in 2009, and 12 Unions have now appointed a contact person for Latin America and the Caribbean.

and the Chair of the Regional Committee

During 2009, the Regional Office strengthened its contacts with several international organizations, making known the proposed development of the priority areas defined by the Regional Committee and exploring possibilities for collaboration and support. Worth mentioning were the concerted efforts of the Regional Committee and the Regional Office to open possibilities of support for follow up activities.

Two important international meetings were co-sponsored by the Regional Office. The First UNESCO Regional Forum on *Science, Technology and Innovation Policies in Latin America and the Caribbean - Towards a new social contract to science*, held just after the 2nd Regional Consultation, strengthened the collaboration with the UNESCO Regional Bureau for Science in Latin America and the Caribbean.

The Symposium *Women for Science*, promoted by the Mexican Academy of Sciences and the Inter American Network of Academies of Sciences (IANAS), gathered a large number of specialists to discuss the IAC Report "*Women for Science*" from a regional perspective.

In 2009 the Regional Office continued to benefit from the expert guidance of the Regional Committee for Latin America and the Caribbean. Its Seventh Meeting was held in Panama, with the support of the University of Panama and SENACYT Panama.

The year of 2009 was a year of renewal for the Committee, with the appointment of two new members, Patricio Felmer from Chile and Arturo J. Martinez from Argentina. Three other members were re-appointed for a second term of office.

The Office continued to have the generous hosting from the Brazilian Academy of Sciences, and the sustained support from the Brazilian Government, ICSU, and CONACYT Mexico. Other Brazilian agencies, FAPERJ and CNPq, supported specific activities, for which we are grateful.

To have attained so many achievements in the three year period of its activities augurs well for the Regional Office. We look forward for the coming years with great expectation and optimism, certain that the Regional Office for Latin America and the Caribbean will make ICSU well known in the region and proclaim its ideal of strengthening international science for the benefit of society.

Rio de Janeiro and Mexico, March 15th, 2010.

Alice Abreu
Director of the Regional Office

José Antonio de la Peña
Chair of the Regional Committee



Regional Committee

Regional Committee for Latin America and the Caribbean

The 2nd ICSU Regional Consultation for Latin America and the Caribbean

Regional Committee for Latin America and the Caribbean



To assist the Regional Office in its mission a Regional Committee for Latin America and the Caribbean was appointed in late 2006, composed of distinguished scientists from the region. In 2009, the Regional Committee held two meetings.

The 6th Meeting of the ICSU Regional Committee for Latin America and the Caribbean (RCLAC6) took place in Mexico City, Mexico, on March 9, 2009, a one day

meeting that was followed by the 2nd ICSU Regional Consultation for Latin America and the Caribbean, held on March 10 and 11, 2009, and by the UNESCO First Regional Forum on *Science, Technology and Innovation Policies in Latin America and the Caribbean - Towards a new social contract to science*, held at the same venue as the Regional Consultation on March 11 and 12, 2009.

The 7th Meeting of the ICSU Regional Committee for Latin America and the Caribbean (RCLAC7) was held in Panama City, Panama, on September 10 and 11, hosted by the University of Panama. The Committee discussed the alternatives being pursued to implement the Science Plans of the four regional priorities and agreed to network with the Organization of American States (OAS) and the InterAmerican Development Bank (IADB) as part of the implementation process.

The year of 2009 was a year of renewal for the Committee, with the appointment of two new members, Patricio Felmer from Chile and Arturo J. Martinez from Argentina, for a three year mandate starting in 2010. Three other members were re-appointed for a second term of office.



ICSU Regional Committee for Latin America and the Caribbean

José Antonio de la Peña - Chair (2006-2012)

Juan A. Asenjo (2006-2009)

Tara Dasgupta (2006-2011)

Sandra Díaz (2006-2009)

Mahabir Gupta (2006-2012)

Patricio Felmer (2010-2012)

Enrique P. Lessa (2006-2011)

Arturo Martinez (2010-2012)

Maria del Carmen Samayoa (2006-2011)

Elena Vigil Santos (2006-2012)



Ex officio

Jerson Lima Silva (ABC)

Sérgio Pastrana (ICSU Executive Board)

Patricia Ocampo-Thomason (ICSU Secretariat)

Alice Abreu (ICSU Regional Office)

Photos:

1. Tara Dasgupta, Elena Vigil, Carmen Samoya, Enrique Lessa, Alice Abreu, Sergio Pastrana, Mahabir Gupta, José Antonio de La Peña, Patricia Ocampo-Thomason and Juan Asenjo.

2. Sergio Pastrana, Mahabir Gupta, Elena Vigil Santos, Sybelle de Jongh, Alice Abreu, Carmen Samoya, Betty Ann Rowe de Catsambanis, Deliang Chen, Patricia Ocampo-Thomason and Tara Dasgupta.

3. Mahabir Gupta, Betty Ann Rowe de Catsambanis and Deliang Chen.

Patricio Felmer is Full Professor at University of Chile. He is a Mathematical Engineer from the University of Chile and holds a Ph.D. in Mathematics from the University of Wisconsin-Madison, USA. He has been Director of the Mathematical Engineering Department (1999-2001), Member of Fondecyt Science Superior Council (2002-2005) and is a corresponding member of the Chilean Academy of Sciences. Professor Felmer has made important scientific contributions in the area of Partial Differential Equations and Nonlinear Analysis. During the last 10 years Professor Felmer has devoted important efforts to the improvement of the education in Chile, especially in mathematics. His focus has been the training of mathematics teachers at elementary and secondary levels.

Arturo Martinez, from Argentina, is Head of the CONICET's Global Programmes. Graduating as an Agricultural Engineer from the University of Buenos Aires, he took his PhD at the Royal Botanic Gardens, Kew and at Reading University, UK, at the Agriculture Botany Department. He worked as Senior Consultant to the Minister of Foreign Relations of Argentina on technical and scientific issues related to biodiversity and on safe use of biotechnology. Chief of the Seed and Plant Genetic Resources Services at FAO, Rome, Italy (2001-2008), he has made important contributions including management of crop and crop biodiversity and on management of pollinators. He was a Senior Technical Officer in the Secretariat of the Convention on Biological Diversity (CBD).

The 2nd ICSU Regional Consultation for Latin America and the Caribbean



The 2nd ICSU Regional Consultation for Latin America and the Caribbean, held in Mexico City, March 10 and 11, with the support of CONACYT Mexico, gathered about fifty participants, national members for Latin America and the Caribbean, scientific unions, international organizations and regional government representatives, to discuss the four Science Plans in Biodiversity, Natural Hazards and Disasters, Sustainable Energy and Mathematics Education, and to formulated a set of detailed objectives and targeted areas of research to be developed in the next few years.

The meeting was opened and first chaired by José Antonio de la Peña, Chair of the Regional Committee for Latin America and the Caribbean and Deputy Director of CONACYT Mexico. The participants of inaugural session were greeted by Reiko Kuroda, ICSU Vice President for External Relations; Jorge Grandi, Director of UNESCO Regional Office for Science, Clovis Baptista, Director of Science and Technology of the Organization of American States, Flora Montealegre Painter, Chief of the Science and Technology Division of the Inter American Development Bank, and Luiz Davidovich, Director of the Brazilian Academy of Sciences and representing the Regional Office for Latin America and the Caribbean of the Academy for the Developing World - TWAS.

The main activity of the Consultation consisted of the presentation of the ICSU-LAC Science Plans: Biodiversity

Knowledge, Research Scope and Priority Areas: an assessment for Latin America and the Caribbean by Mary Kalin from Chile; Understanding and Managing Risk Associated with Natural Hazards: An Integrated Scientific Approach in Latin America and the Caribbean by Allan Lavell from Costa Rica; Sustainable Energy in Latin America and the Caribbean: potentialities for the future by Décio Gazzoni from Brazil and Claudio Estrada from Mexico, and Mathematics Education in Latin America and the Caribbean: a reality to be transformed by Carlos Bosch from Mexico.

In each case they were preceded by the presentation of relevant global or regional programs, aiming to put the ICSU-LAC program in context. Patricia Ocampo-Thomason, ICSU Science Officer, presented the ICSU Biodiversity and Human Well-being Programme; John Millhone, President of Global Energy Metrics and Mosaics, presented the IANAS' Report on Lighting the Way, and José Antonio de la Peña presented The Activities of UMALCA (Unión Matemática para América Latina y el Caribe) in the region.

The meeting had the active participation of all that were present, detailing the main proposals for each area in discussion groups.

In Biodiversity, the proposals emphasized were: development of a Database of terrestrial and marine biodiversity in Latin America and the Caribbean; and definition of policies and collection and data distribution protocols. It was also suggested the establishment of a network of ecological observatories in the region.

Regarding Sustainable Energy the group emphasized the need to assess the energy resource profile in each country, to identify the best combination among traditional and renewable energy resources, with special attention on biomass, solar and aeolic energy. It was also suggested that

a network be created for information exchange among the various countries.

Related to the area of Natural Hazards and Disasters, the central proposal was to maintain the multidisciplinary perspective, integrating social and natural sciences, and focusing the research on the social and human dimension of ecosystem services and conservation of biodiversity, and on the process of climate change adaptation and mitigation.

In the area of Mathematics Education, the meeting reiterated the importance of intensifying the relationship of

professional mathematicians with teachers of mathematics, both at the initial teacher training and on the job training. The OBMEP experience, the Brazilian Mathematics Olympiad of Public Schools, was also mentioned as a good example to be followed.

Finally, it is important to underline that the quality of the work presented resulted in the proposal for publication in the three main languages of the region, English, Spanish and Portuguese.

All documents related to the Regional Consultation can be found at the site: <http://www.icsu-lac.org/icsuzone/icsuzone.html>.

SPG Natural Hazards and Disasters

Omar Dario Cardona (Colombia) – Chair
Juan Carlos Bertoni (Argentina)
Michel Hermelin (Colombia)
Tony Gibbs (Barbados)
Allan Lavell (Costa Rica/UK)
(RCLAC *liaison* – Carmen Samayoa)

SPG Sustainable Energy

Décio Luiz Gazzoni (Brazil) – Chair
Claudio Estrada (Mexico)
Gabriel Blanco (Argentina)
Isaías Macedo (Brazil)
Ivan Azurdia Bravo (Guatemala)
(RCLAC *liaison* – Elena Vigil)

SPG Biodiversity

Mary T. Kalin Arroyo (Chile) – Co-chair
Rodolfo Dirzo (Mexico/US) – Co-chair
Carlos Alfredo Joly (Brazil)
Juan Carlos Castillas (Chile)
Francisco Cejas Rodrigues (Cuba)
(RCLAC *liaison* – Mahabir Gupta)

SPG Mathematics Education

Carlos Bosch (Mexico) – Chair
Lilliam Alvarez (Cuba)
Rafael Correa (Chile)
Suely Druck (Brazil)
Raymond McEachin (Jamaica)
(RCLAC *liaison* – Juan Asenjo)



Photos:

1. Alice Abreu, Clovis Baptista, Jorge Grandi, José Antonio de La Peña, Reiko Kuroda, Flora Montealegre Painter and Luiz Davidovich.
2. Patricia Ocampo-Thomason, Juan Asenjo, José Antonio de La Peña and Reiko Kuroda.

ICSU Grants Programme

Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy. A multiple stakeholder consultation.

Mapping Scientific Disciplinary Networks in Latin America and the Caribbean

Grants Programme

ICSU Grants Programme

Two of the awarded projects in the 2008 ICSU Grants Programme were developed with the support of the Regional Office for Latin America and the Caribbean. During 2009 the projects were completed and a concise financial and activities report was sent to ICSU.

Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy. A multiple stakeholder consultation.



The Workshop “Biodiversity and human well-being in Latin America and the Caribbean: identifying priorities for research, management and policy” was held in Rio de Janeiro, Brazil, April 28 to 30, as a joint initiative of DIVERSITAS, DiverSus and the ICSU Regional Office for Latin America and the Caribbean, with the collaboration of the Inter-American Institute for Global Change Research (IAI) and the Botanical Garden of Rio de Janeiro. The workshop had as its main objectives: 1) the identification and prioritization of research activities, management, and necessary policies to face the challenges around biodiversity and human well-being in Latin America and the Caribbean; and 2) the formulation of recommendations on the role of science, management and public policies towards the implementation of specific actions related to the *Millennium Ecosystem Assessment* (MA).

The workshop was preceded by a broad-based electronic consultation carried out by DiverSus, where more than 500 specialists were consulted. This on-line consultation contributed to the definition of the priority themes, which were presented in a Concept Document produced by DiverSus and distributed before the Workshop to all participants. These themes were then used to structure discussions during the workshop.

The Key Note conference was given by Carlos Nobre from INPE, “*Tipping points of Biosphere-atmosphere Interaction in Amazônia*.” Two other presentations, by Nicolás Lucas, Secretary of Sustainable Development and Environment of Tierra del Fuego, Argentina, entitled “*Challenges for Governments to Implement the Recommendations of the Millennium Ecosystem Assessment*”, and by Holm Tiessen, Director of IAI, who presented considerations on the relevance of biodiversity, provided additional context.

The participants were then organized in break-out groups, to discuss key topics that emerged from the electronic survey: 1. Balancing the production of food and fuel for export and the long-term preservation of biodiversity-based ecosystem services; 2. The importance of wild biodiversity for poverty reduction; 3. Ecosystem services in and around protected areas; 4. Synergies between ecosystem service provision and global carbon strategies; 5. The role of biocultural diversity and agro-biodiversity in long-term food security.

On the third day, the participants were once again divided in groups, this time to discuss four cross-cutting issues: 1. Developing interdisciplinary research on biodiversity and ecosystem services; 2. Communicating with the general public; 3. Making relevant ecological knowledge rapidly available to decision makers; 4. Building long-term partnerships with stakeholders.



Major Outcomes

The project carried out the first wide-based, multi-stakeholder, multi-country consultation on the links between biodiversity and well-being in Latin America and the Caribbean. The on-line consultation gave high visibility to the involvement of ICSU-LAC, DIVERSITAS, DiverSus and the IAI in issues surrounding biodiversity, ecosystem services and human well-being in the region. The workshop triggered informal collaborations among scientists, administrators and social leaders that had not been in touch before, and upon which follow-up discussions and projects can be built.

Two major outcomes of the activities were the establishment of an initial network of multiple stakeholders across LAC, interested in biodiversity, ecosystem services and human well-being in LAC, upon which future activities could be built; and the identification of a set of priorities for research and action in the LAC region.

The on-line consultation

A semi-guided questionnaire was sent, in electronic format, in Spanish, Portuguese and English, to 529 experts and stakeholders from the academic, governmental, non-governmental and private sectors living in, or linked to the Latin American and Caribbean region. Respondents identified over 300 different ecosystem services (most of them being regulating services according to the Millennium Ecosystem Assessment's classification). Over 80% of respondents were in fact familiar with the Millennium Assessment and recognized that biodiversity provides a series of key ecosystem services to human societies.

Nearly all respondents agreed that biodiversity is under threat in the region, with land-use change being the most important threat (89% of respondents). Respondents stated that biodiversity was not adequately protected in the region, mainly because of a lack of reliable scientific information (39%) and a lack of legislation and regulation (35%). Most respondents felt that too few resources were assigned to biodiversity and ecosystem services in comparison with other important issues affecting the region and that the capacity of the region's ecosystems to provide ecosystem services in the long-term is an urgent priority, together with making access to ecosystem services more equitable.

The Workshop

At the three day workshop, and on the basis of the discussion topics listed above, the following priorities for research and action were identified:

Land-use planning and ecosystem management that balance large scale food and fuel production with other ecosystem services. Workshop participants identified specific actions to be taken, such as (1) assisting in the implementation and monitoring of land-use and environmental planning, in particular in areas or regions of accelerated agricultural expansion and in urban and peri-urban areas; (2) assisting in the development of transparent public platforms for debating and negotiating the balance between ecosystem service provision and other land-uses (such as urbanization or agriculture) and the balance between alternative production methods (e.g. high input or low input farming). In both cases, close collaboration with relevant government agencies and representative of affected parties and sectors was considered of key importance.

Photo:

First row: Jerônimo Sansevero and Francisco Chapela; Second row: Avecita Chicchon, Anne Larigauderie, Martha Lozano, Sandra Díaz, Mary Kalin, Fabien Quetier and Andrea Sánchez; Third row: Hugo Navarrete, Holm Tiessen, Patricia Kollef, Alice Abreu and Aline Leal; Fourth row: Jean Ometto, Mirian Bruno, Arturo Martínez, Carlos Nobre and Bryan Finegan; Last row: Carlos Joly, Ulisses Confalonieri, David Gorla, Ricardo Carrillo, Fábio Scarano and Mário Garbin.

The role of biodiversity and ecosystem services in the diversity of livelihoods in Latin America and the Caribbean.

Workshop participants argued that guidelines and technical innovations should be developed for creating productive yet diverse rural landscapes with patches of varying management intensity that allow traditional land-use practices to sustain themselves and help maintaining biocultural and wild diversity that otherwise would be lost. They also mentioned the need for adapted monitoring schemes and experimental and modeling studies for assessing human impacts on ecosystem service provision in such landscapes.

The role of biodiversity in a context of increased spatial and temporal proximity between diseases and vectors as a consequence of land-use and land-cover changes. Workshop participants mentioned the links between deforestation and leishmaniasis, and between no-till farming and Chagas disease and rodent-transmitted zoonoses as particularly urgent issues. They also mentioned the need for studies aimed at identifying possible new sources of disease and vectors in the Amazon basin, associated with the expansion of the agricultural frontier. They also identified some trade-offs between diversity protection and the expansion of vector-borne diseases that pose considerable challenges to health and conservation public policies.

The role of biodiversity and its derived ecosystem services in adapting to climate change. In addition to studies of climate change impacts on biodiversity, workshop participants suggested that the possible role of the region's biodiversity in providing avenues for adapting to climate change be investigated.

Most propositions acknowledged the importance of the following key points:

- Ecosystem services provided by **landscapes and regions** should be taken into account as well as those provided by specific ecosystems.
- In analyzing the relationships between human well-being and biodiversity, **inequalities in access** (both physical and by law) must be taken into account.
- **Fair and transparent** means of participation, negotiation, monitoring and control are necessary for any initiative to be successful in the long term. They must also be significant and motivating for stakeholders.
- **All the relevant actors and stakeholders must be involved** in the formulation of the agenda and the actual implementation of initiatives for managing biodiversity and ecosystem services in the region.
- Initiatives must take advantage of and build on **existing capital**, be it social or natural capital, knowledge or data-bases.
- Institutional **learning and memory**, as well as creativity and innovation, are essential to adaptive management at all levels.
- Science funding should combine **international objectives** with **regional and local ones**.

The documents of the workshop can be found at the following site: <http://www.icsu-lac.org/diversitas/diversitas.html>. ■

Scientific Committee

Lead Institution - Anne Larigauderie DIVERSITAS, Paris, France

Local Lead Institution - Alice Abreu, ICSU-LAC

Leading Scientist - Sandra Diaz, Córdoba University, Argentina and DiverSus

Local Scientific Coordination - Fabio Scarano, Research Institute of the Rio de Janeiro Botanical Garden

Members of Scientific Committee

Mary Kalin (Institute of Ecology and Biodiversity, Univ. of Chile & SPG in Biodiversity); Rodolfo Dirzo (Stanford University, USA & SPG in Biodiversity); Carlos Joly (UNICAMP, BIOTA FAPESP & SPG in Biodiversity); Holm Tiessen(IAI); Patricia Ocampo-Thomason (ICSU Secretariat, Paris, France), Fabien Quétier,(DiverSus, Argentina)

Mapping Scientific Disciplinary Networks in Latin America and the Caribbean

The main objective of the project, supported by IMU, the International Mathematical Union, was to study the Regional Disciplinary Networks in Latin America and the Caribbean (LAC). The project was developed by a research group of the Institute of Medical Biochemistry of the Federal University of Rio de Janeiro, Brazil, headed by Dr. Jacqueline Leta, with the cooperation of Dr. Fabio Gouveia and of the research assistant Raquel Leal.

The project focussed on seven disciplinary networks in LAC, with 10 or more years of existence: Latin American Biological Sciences Network (RELAB), Latin American Physics Network (RELAFI), Latin American Astronomy Network (RELAA), Latin American Chemistry Network (RELAQ), Latin American Earth Sciences Network (REACT), Latin American Botanic Network (RLB) and Latin American Mathematics Network (UMALCA). The innovative aspect of the project was the use of webometric techniques to identify and characterize the external visibility of these networks in the internet environment.

The information available in ICSU and UNESCO documents shows that the more traditional networks started in the 1970's under the auspices of UNESCO, like RELAB (Latin American Biology Network), which started in 1975 as an International Biosciences Network (IBN) to produce an integration of the biological sciences in Latin America through co-operation and training of young scientists. Other networks were initiated in Latin America using the model of RELAB, such as RELAFI (Latin American Physics Network); RELAQ (Latin American Chemical Science Network); RELAMA (Latin American Mathematics Network); RELAA (Latin American Astronomy Network); REACT (Latin American Earth Sciences Network). The more recent RLB (Latin American Botanic network) was created in the late 1980s.

These networks were very different in structure and mode of operation, reflecting the priorities of their own communities, but several played a significant role for scientists in the region. They also evolved in very different ways.

The case of RELAMA is a good example. Since 1995, it was changed into UMALCA (Unión Matemática de América Latina y el Caribe), a network of mathematical societies of Argentina, Brazil, Chile, Colombia, Cuba, México, Peru, Uruguay and Venezuela. UMALCA is self-supported with financial contributions from its members, and promotes the academic exchange of young scientists, as well as providing support to individuals for academic visits or participation in meetings in the region. It organizes the ELAM – as a high level school addressed to young researchers in the region - and the EMALCA - addressed to graduate students from LAC, and organizes, every four years, the Latin American Congress of Mathematicians, that congregates about 500 mathematicians from the region.

RELAB, another good example, is not only recognized by the majority of the governments of Latin America and the Caribbean, but was also at the basis of the Regional Program in Biotechnology UNDP/UNESCO/UNIDO in the early 1980s; of the creation of the Latin American Network of Botanic (RLB) in 1988 and of the Latin American Program of Human Genome in the late 1980s. The RLB is today one of the active networks in the region.

Some of the original networks have slowed down their activity with the end of the UNESCO financial support, like the earth science network, REACT. In the case of Physics, RELAFI, it worked through the Latin American Center for Physics (CLAF), and the Latin American Network of Physics Societies (RELASOFI), created in 1994 comprising CLAF and the 16 physics societies or groups that make up the Latin American Federation of Physics Societies (FELASOFI).

For this project, a webometrics analysis was done aiming at assessing the visibility of their websites in the internet. Using the networks webpage as a source of information the project identified important differences regarding the quality of information on their websites as well as their presence/visibility on the Web. Among the seven studied networks,

UMALCA is by far the network with the best performance on these two criteria, although RELAB, RELAQ and RLB have also active homepages and strong visibility in the web.

For the webometrics analysis, four main indicators were used: (a) Number of pages of the studied Websites, by Google and Yahoo!, (b) Number links to the studied Websites, by Google and Yahoo!, (c) The External Web Impact Factor and (d) Number of pages citing the networks in any manner. The findings from these webometrics' tools revealed that three of the studied networks - RLB, RELAQ and UMALCA - are well connected on the Internet, acting as nodes for collaboration and connection among their members by means of its presence on the Web. These networks have currently with a significant number of inlinks (the concept of inlinks on the web is similar to the concept of citation on papers) and with a structured Website.

Two complementary analyses were also carried out: (a) the Luminosity Index (it may reveal if the Websites from our sample act as aggregators for the thematic area being able to provide links to other Websites related to the same subject) and (b) The WayBackMachine (an Internet tool -www.archive.org – from where the history of the configuration and changes done on the studied Websites can be obtained). For the luminosity index it was found that the websites of RLB, RELAQ and UMALCA are providing paths to other related contents on the Web. Finally, for the analyses of the WayBackMachine, it was found that RELAQ's Website has been recently updated, after probably 5 years without change, but its previous website still represents an important reference to this network on the Internet. For the RLB and UMALCA, the WayBackMachine indicated the whole history of their Websites, mirroring and redirecting to the newer versions; such conduct indicates a serious and professional concern with their visibility on the Internet media. RELAB can be considered as a promising

network Website, since its specific address was created more recently and now has its own SLD. The difference in the level of the Webometrics results obtained for this network in comparison with the other networks analyzed is consistent with the time of existence of its Web presence and its newly created Website.

Major outcomes

The Scientific Unions provide the disciplinary backbone to ICSU. They play a central role in bringing together scientists from all parts of the world to consider issues of particular interest to individual disciplines. In Latin America and the Caribbean, Regional Disciplinary Networks were another expression of disciplinary organization, some of them often closely linked to the ICSU Scientific Unions. These are mutually reinforcing type of organizations. For the International Unions having an active regional community in their discipline is very positive, especially in a region where disciplinary development can be very heterogeneous across countries. The existence of dynamic networks can help greatly the participation of countries that are not as well developed in specific disciplines and will, therefore, strengthen the International Unions as such.

The results of the project will help discuss how the Regional Office for Latin America and the Caribbean should relate to the Regional Networks and assist in their coordination. For the original networks the question of coordination was always an important issue. ICSU and UNESCO supported a Coordination Committee for Latin American Scientific Networks, CCRCLA in its Spanish acronym, still in existence. The development of new networks and the extinction of some of the original ones brought a new context that should be addressed. ■

Reaching out

ICSU Family

International Organizations

Reaching out

Strengthening relations with the ICSU family

The Regional Office continued to engage in strengthening relations with the large and complex ICSU family in 2009.

One of the highlights of the year was its participation at the **3rd ICSU Regional Consultation for Asia and the Pacific**, held in Penang, Malaysia on 13th and 14th October. Organized by the ICSU Regional Office for Asia and the Pacific, the meeting gathered National Members and Unions from the region to present the ROAP priority areas. The presentations by the African and Latin American and Caribbean Offices was an opportunity to explore collaboration and mutual learning.

The first strategic coordination meeting of the **ICSU Officers**, the Regional Committee Chairs, the Regional Directors and the Executive Board *liaisons* to the Regional Committees, held in Budapest, Hungary, on November 3, provided a stronger platform for discussion of the integration of regional and global priorities in developing and implementing ICSU Strategic Plans; and provided an opportunity for exchange of experiences among Regional Offices. This meeting was followed by a dinner meeting with the **International Social Sciences Council (ISSC) Officers**.

The Regional Office also visited the President of **CONICET, Argentina**, as well as its Director of Scientific and Technological Development in early February, in preparation of the 2nd Regional Consultation for Latin America and the Caribbean.

A presentation of the Regional Office and its priority was made to the Executive Board of International Astronomical Union - IAU, during the **IAU XXVII General Assembly**, held in Rio de Janeiro, Brazil, on August 14.

The relations with the Scientific Unions continued in 2009, and 12 Unions have now appointed a contact person for Latin America and the Caribbean:

Scientific Union	Contact
International Astronomical Union	Beatriz Barbuy (until December 2009) Marta Rovira (from December 2009)
International Geographical Union (IGU)	Irasema Alcántara-Ayala
International Mathematical Union (IMU)	Marcelo Viana
International Union of Geodesy and Geophysics (IUGG)	Luiz Paulo Souto Fortes
International Union of Geological Science (IUGS)	Marta Mantovani
International Union for Pure and Applied Biophysics (IUPAB)	Marcelo Morales
International Union of Pure and Applied Chemistry (IUPAC)	Ram S. Lamba
International Union of Pure and Applied Physics (IUPAP)	Carmen Cisneros
International Union of Psychological Sciences (IUPsyS)	Juan Jose Sanchez Sosa
International Union of Theoretical and Applied Mechanics (IUTAM)	Luiz Bevilacqua
International Union of Radio Science (URSI)	Emanoel Costa
International Union of Forest Research Organizations (IUFRO)	Bastiaan Louman

Reaching out to International Organizations

During 2009, the Regional Office continued to extend its contacts to several international organizations, making known the proposed development of the priority areas defined by the Regional Committee and exploring possibilities for collaboration and support.

Two important international meetings were co-sponsored by the Regional Office:

The *First UNESCO Regional Forum on Science, Technology and Innovation Policies in Latin America and the Caribbean - Towards a new social contract to science*, was organized by the UNESCO Regional Bureau for Science in Latin America and the Caribbean and the Scientific and Technological Consultative Forum of Mexico started the process of reviewing the progress and results achieved in science, technology and innovation during the last decade, and to propose further actions to significantly increase STI capacity in the region. A Drafting Committee was appointed for the preparation of a Regional Declaration, which included several RCLAC members.

The final discussions were held at the *Second UNESCO Regional Forum on Science, Technology and Innovation Policies in Latin America and the Caribbean - Towards a*

new social contract to science, held in Buenos Aires, Argentina, hosted by the Ministry of Science, Technology and Productive Innovation of Argentina, on September 23 to 25. The Chair and several members of RCLAC were present and actively contributed to the discussion of the Regional Declaration, presented at the World Science Forum, Budapest, Hungary.



The Symposium Women for Science, promoted by the Mexican Academy of Sciences and the Inter American Network of Academies of Sciences (IANAS), had as its main objective to discuss the InterAcademy Council (IAC) Report "Women for Science." The event gathered a large number of specialists to discuss gender and public policies in education, science and technology; an agenda for change: removing obstacles for a career in science and technology; how to increase the visibility of women in science in Latin America and the Caribbean; and how to improve the collection of gender disaggregated data for S&T policy making. The final recommendations were addressed to the Academies of Sciences.



Photos:

1. ICSU Vice-President Reiko Kuroda at the World Science Forum
2. IANAS Symposium Women for Science at the Mexican Academy of Sciences

Reaching out to international organizations 2009

Visit to the Minister of Science, Technology and Productive Innovation of the Republic of Argentina. February 12.

First UNESCO Regional Forum on Science, Technology and Innovation Policies in Latin America and the Caribbean. Towards a new social contract to science. Mexico City, Mexico, March 11 and 12.

International Sociological Association (ISA). Executive Committee meeting. Paris, France, April 17 and 18.

Symposium Women for Science. Mexico City, Mexico, April 20 and 21.

Visit of the Chair of RCLAC to the Organization of American States. Washington, USA, May 20.

Visit of the Chair of RCLAC to the Inter American Development Bank. Washington, USA, May 20.

Meeting of the Executive Committee of the *Agence inter-établissements de la recherche pour le développement*. Paris, France, June 18.

IANAS "Science Funding Landscape Workshop". Guatemala City, Guatemala, July 26 to 28. Participation of the Chair and other RCLAC members.

Visit to the Organization of American States. Washington, USA, September 21.

Visit to the Inter American Development Bank. Washington, USA, September 22.

Second UNESCO Regional Forum on Science, Technology and Innovation Policies in Latin America and the Caribbean. Towards a new social contract to science. Buenos Aires, Argentina, September 23 and 25. Participation of Chair and members of RCLAC.

World Science Forum. Budapest, Hungary, November 5 to 7.

Meeting of the Executive Committee of the *Agence inter-établissements de la recherche pour le développement*. Marseille, France, November 16.

Meeting of the Executive Committee of the Millennium Scientific Initiative of Chile. Santiago, Chile, November 26.

The Regional Office

Secretariat

Financial Summary

The Regional Office

The Secretariat

The Regional Office for Latin America and the Caribbean is hosted by Brazilian Academy of Sciences. The office had the support of Sybelle de Jongh until September 2009, and of Eliane Sobral from December 2009. The internship program financed, during 2009, four trainees during different periods of time.



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Professional Officer

Sybelle M. M. de Jongh
(up to September 2009)

Interns

Alicia Vargas
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(from July 2009)

Patrick de Melo
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(from September 2009)



Isabella Fontanela
(From January to July 2009)

Karina Ribeiro Teixeira
(From November 2008 to March 2009))

Sergio Gil Santos da Silva
(From April 2007 to April 2009))

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Photos:

1. Patrick de Melo, Alice Abreu,
Eliane Sobral and Alicia Vargas.

2. Sybelle M. M. de Jongh,
Alice Abreu and Isabella
Fontanela

Financial summary

The Regional Office main funding comes from the Brazilian Government, through one of the agencies of the Ministry of Science and Technology, the *Financiadora de Estudos e Projetos*, FINEP.

The Office received a thirty-five thousand Euros grant from ICSU, in January 2009. A twenty-five thousand dollars grant from CONACYT Mexico was received in June 2009.

The Regional Office was a partner in two projects awarded by the 2008 ICSU Grants Programme and in 2009 administered the balance of the funds received the previous year. Grants were received from FAPERJ and CNPq/PROSUL, to supplement the DIVERSITAS ICSU 2008 grant.

In 2009, the Regional Office also received important non-budgetary support from other institutions. The Brazilian Academy of Sciences continued to generously host the Office. The meeting of the Regional Committee and the 2nd ICSU Regional Consultation for Latin America and the Caribbean, in March, was supported by CONACYT Mexico, which funded accommodation and all local expenses. For the September meeting in Panama, the University of Panama and SENACYT Panama covered local expenses.

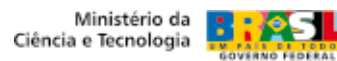
Financial summary 2009				
ICSU-LAC	Income		Expenses	
	Reais (R\$)	(US\$)	Reais (R\$)	(US\$)
FINEP	137 903	63 564	151 931	70 564
ICSU	119 590	58 711	119 436	58 670
CONACYT	51 660	27 945	52 526	28 445
ICSU Grant DIVERSITAS	50 757	24 249	50 757	24 249
ICSU Grant IMU	59 288	31 214	59 288	31 214
CNPq/PROSUL	50 000	21 222	35 693	17 107
FAPERJ	21 032	9 568	21 032	9 658
Total	490 231	236 474	490 663	239 908

OBS. Financial summary using nearest whole numbers

The daily official exchange rate from the Brazilian Central Bank was used to find the dollar equivalent of all credits and expenses. The documents and official records are filed at the Financial Department of the Brazilian Academy of Sciences and are available for consultation.

Meetings and Programs	Income		Expenses	
	Reais (R\$)	(US\$)	Reais (R\$)	(US\$)
RCLAC				
RCLAC Travel			12 755	6 065
RCLAC Accommodation			9 167	4 416
SPGs				
SPGs Travel			16 417	6 954
SPGs Accommodation			4 569	2 049
DIVERSITAS ICSU Grant/ CNPq/FAPERJ				
DIVERSITAS Travel			24 628	11 462
DIVERSITAS Accommodation			55 490	26 326
DIVERSITAS Other expenses			22 872	11 358
DIVERSITAS Taxes and Obligations			3 194	1 588
IMU ICSU Grant				
IMU Research Coordination			16 200	8 558
IMU Other Expenses			10 520	5 740
IMU Taxes and Obligations			9 412	5 072
ICSU-LAC Secretariat				
Staff			183 886	92 683
Taxes and Obligations			64 287	31 056
Internships			14 803	7 374
Bank Charges			323	156
Other Services			203	109
Editing and Printing			15 960	6 958
Office Supplies			728	346
Secretariat Travel Expenses			25 251	11 638
Total Expenses			490 663	239 908

OBS. Financial summary using nearest whole numbers



The International Council for Science

Benefits for joining ICSU

Interdisciplinary Bodies

Scientific Unions and Scientific Associates

National Members

International Council for Science

Benefits of Joining ICSU

The benefits of membership in ICSU are manifold and Members make greater or lesser use of the opportunities available to them as they wish. The main difference between full National membership and that of Associates status is that Members may vote and thus help determine ICSU's future direction.

- All Members receive copies of ICSU publications: the electronic newsletter ICSU Insight, Annual Reports, and any other publications or series of publications produced (e.g. the report produced during the preparation of ICSU's Strategic Plan 2006-2011 or the series produced in connection with the World Summit on Sustainable Development (WSSD).
- Members have access to the Member Zone on the ICSU website and thus to documents not made available to the general public and can search the ICSU database. Members also benefit from access to different committees of ICSU, for example, the Committee on Freedom and Responsibility

in the conduct of Science which, *inter alia*, helps solve visa problems for scientist wishing to attend scientific meetings and gives advice to organizers of international meetings. Even more importantly, Members gain access to the world scientific community and the enormous network scientist comprising the membership of ICSU, and the prestige afforded by the ICSU umbrella.

- ICSU's International Scientific Unions and National Scientific Members (National Academies of Science or National Research Councils for the most part) meet every three years in the ICSU General Assembly. Members get an excellence cross-discipline opportunity for the exchange of ideas and also gets access to a wide spectrum of scientific expertise which enables Members to address major international, interdisciplinary issues, which they could not undertake alone.
- For full information on the range of ICSU's activities, see website: www.icsu.org.

Interdisciplinary Bodies

Assessment Bodies

Scientific Committee on Problems of the Environment (SCOPE)

Thematic Bodies

Programme on Ecosystem Change and Society (PECS)

Integrated Research on Disaster Risk (IRDR)

Committee on Space Research (COSPAR)

International Polar Year (IPY)

Scientific Committee on Antarctic Research (SCAR)

Scientific Committee on Oceanic Research (SCOR)

Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)

Global Environmental Change Programmes

An International Programme of Biodiversity Science (DIVERSITAS)

International Geosphere-Biosphere Programme (IGBP)

International Human Dimensions Programme on Global Environmental Change (IHDP)

World Climate Research Programme (WCRP)

Monitoring/Observation Bodies

Global Climate Observing System (GCOS)

Global Ocean Observing System (GOOS)

Global Terrestrial Observing System (GTOS)

Data and Information Bodies

World Data Systems (WDS)

Committee on Data for Science and Technology (CODATA)

Federation of Astronomical and Geophysical Data Analysis Services (FAGS)

International Network for the Availability of Scientific Publications (INASP)

Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF)

Panel on World Data Centres (WDC)

Scientific Unions

International Astronomical Union (IAU)
International Brain Research Organization (IBRO)
International Geographical Union (IGU)
International Mathematical Union (IMU)
International Union for Quaternary Research (INQUA)
International Society for Photogrammetry and Remote Sensing (ISPRS)
International Union of Anthropological and Ethnological Sciences (IUAES)
International Union of Biochemistry and Molecular Biology (IUBMB)
International Union of Biological Sciences (IUBS)
International Union of Crystallography (IUCr)
International Union of Food Science and Technology (IUFoST)
International Union of Forest Research Organizations (IUFRO)
International Union of Geodesy and Geophysics (IUGG)
International Union of Geological Sciences (IUGS)
International Union of the History and Philosophy of Science (IUHPS)
International Union of Immunological Societies (IUIS)
International Union of Materials Research Societies (IUMRS)
International Union of Microbiological Societies (IUMS)
International Union of Nutritional Sciences (IUNS)
International Union for Pure and Applied Biophysics (IUPAB)
International Union of Pure and Applied Chemistry (IUPAC)
International Union of Pure and Applied Physics (IUPAP)
International Union for Physical and Engineering Sciences in Medicine (IUPESM)
International Union of Pharmacology (IUPHAR)
International Union of Physiological Sciences (IUPS)
International Union of Psychological Sciences (IUPsyS)
International Union of Soil Sciences (IUSS)
International Union of Theoretical and Applied Mechanics (IUTAM)
International Union of Toxicology (IUTOX)
Union Radio Scientifique International (URSI)

Scientific Associates

Academia de Ciencias de America Latina (ACAL)
The Academy of Sciences for the Developing World (TWAS)
Federation of Asian Scientific Academies and Societies (FASAS)
International Federation of Surveyors (FIG)
International Association of Hydraulic Engineering and Research (IAHR)
International Arctic Science Committee (IASC)
International Cartographic Association (ICA)
International Commission for Acoustics (ICA)
International Council for Laboratory Animal Science (ICLAS)
International Commission for Optics (ICO)
International Council for Scientific and Technical Information (ICSTI)
International Federation for Information Processing (IFIP)
International Federation of Library Associations and Institutions (IFLA)
International Foundation for Science (IFS)
International Federation of Societies for Microscopy (IFSM)
International Institute for Applied Systems Analysis (IIASA)
International Union for Vacuum Science, Technique and Applications (IUVSTA)
International Water Association (IWA)
Pacific Science Association (PSA)
Society for Social Studies of Science (4S)

National Members

The list includes full Members, National Associates* and Observers**.

Members from Latin America and the Caribbean are highlighted

Argentina • CONICET
Armenia • Nat. Acad. of Sciences of the Republic of Armenia
Australia • Australian Acad. of Science
Austria • Austrian Acad. of Sciences
Azerbaijan** • Azerbaijan Nat. Academy of Sciences
Bangladesh • Bangladesh Acad. of Sciences
Belarus** • Nat. Academy of Sciences
Belgium • Royal Academies for Science and the Arts of Belgium
Bolivia • Nat. Academy of Sciences of Bolivia
Botswana • Ministry of Communications Science and Technology
Brazil • Brazilian Academy of Sciences
Bulgaria • Bulgarian Acad. of Sciences
Burkina Faso* • National Centre for Scientific Research & Technology
Cameroon • Cameroon Academy of Sciences
Canada • National Research Council of Canada
Caribbean1* • Caribbean Academy of Sciences
Chile • Chilean Academy of Sciences
China • China Association for S&T
China • Taipei Academy of Sciences
Colombia • Colombian Academy of Exact, Physical and Natural Sciences
Costa Rica** • Nat. Academy of Sciences
Côte d'Ivoire* • Federation of Scientific Associations of Côte d'Ivoire
Croatia • Croatian Academy of Sciences and Arts
Cuba • Academy of Sciences of Cuba
Czech Republic • Academy of Sciences of Czech Republic
Dominican Republic • Acad. of Sciences of the Dominican Republic
Denmark • Royal Danish Academy of Sciences and Letters
Egypt • Academy of Scientific Research and Technology
Estonia • Estonian Academy of Sciences
Ethiopia • Ethiopian S&T Agency
Finland • Delegation of Finnish Academies of Science and Letters
France • Academy of Sciences
Georgia* • Georgian Acad. of Sciences
Germany • German Research Foundation
Ghana • Ghana Acad. of Arts & Sciences
Greece • Academy of Athens
Guatemala* • Acad. of Medical, Physical and Natural Sciences of Guatemala
Hungary • Hungarian Acad. of Sciences
India • Indian Nat. Science Academy
Indonesia • Indonesian Inst. of Sciences
Iran • University of Tehran
Iraq** • Ministry of S&T
Ireland • Royal Irish Academy
Israel • Israel Academy of Sciences and Humanities
Italy • National Research Council
Jamaica • Scientific Research Council
Japan • Science Council of Japan
Jordan* • Royal Scientific Society
Kazakhstan* • National Academy of Sciences of Republic of Kazakhstan
Kenya • Kenya Nat. Acad. of Sciences

1 The following countries are covered: Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

Korea, Democratic People's Republic of** • State Academy of Sciences
 Korea, Republic of • National Academy of Sciences, Republic of Korea
 Lao, People's Democratic Republic • Lao National Science Council
 Latvia • Latvian Academy of Sciences
 Lebanon • National Council for Scientific Research
 Lesotho • Lesotho Dept of S&T
 Lithuania • Lithuanian Acad. of Sciences
 Luxembourg • National Research Fund
 Macedonia, Former Yugoslav Rep. of • Macedonian Acad. of Sci. & Arts
 Madagascar* • Ministry of Higher Education and Scientific Research
 Malawi • Nat. Research Council of Malawi
 Malaysia • Acad. of Sciences Malaysia
 Mauritius • Mauritius Research Council
 Mexico • Mexican Academy of Sciences
 Moldova** • Acad. of Sci. of Moldova
 Monaco • Monaco Scientific Center
 Mongolia • Mongolian Academy of Sciences
 Montenegro • Montenegrin Academy of Sciences and Arts
 Morocco • National Centre for Scientific and Technical Research
 Mozambique • Scientific Research Association of Mozambique
 Namibia • Ministry of Education. Directorate of Research, S&T
 Nepal • Royal Nepal Academy of Science and Technology
 Netherlands • Royal Netherlands Academy of Arts and Sciences
 New Zealand • Royal Society of New Zealand
 Nigeria • Nigerian Academy of Science
 Norway • Norwegian Academy of Sciences and Letters
 Pakistan • Pakistan Association for the Advancement of Science
 Panama • University of Panama
 Peru • National Academy of Sciences
 Philippines • Nat. Research Council
 Poland • Polish Academy of Sciences
 Portugal • Acad. of Sciences of Lisbon
 Romania • Romanian Academy
 Russia • Russian Academy of Sciences
 Rwanda • Kigali Institute of S&T
 Saudi Arabia • King Abdulaziz City S&T
 Senegal • Association of Senegalese Researchers
 Serbia • Serbian Academy of Sciences and Arts
 Seychelles • Seychelles Centre for Marine Research and Technology
 Singapore • Singapore National Academy of Science
 Slovak Republic • Slovak Academy of Sciences
 South Africa • Nat. Research Foundation
 South Pacific² • Univ. of South Pacific
 Spain • Ministry of Educ. & Science
 Sri Lanka • National Science Foundation
 Sudan • National Centre for Research
 Swaziland • National Research Council
 Sweden • Royal Swedish Academy of Sciences
 Switzerland • Swiss Acad. of Sciences
 Tajikistan** • Academy of Sciences of Republic of Tajikistan
 Tanzania • Tanzania Commission for Science and Technology
 Thailand • Nat. Research Council of Thailand
 Togo • Chancellery of the Universities of Togo
 Tunisia* • University Tunis El Manar
 Turkey • Scientific and Technical Research Council of Turkey
 Uganda* • Uganda Nat. Council for S&T
 Ukraine • National Academy of Sciences
 United Kingdom • Royal Society
 United States • National Academy of Sciences
 Uruguay** • CONICYT
 Uzbekistan • Uzbekistan Academy of Sciences
 Vatican City State • Pontifical Academy of Sciences
 Venezuela** • Ministry of S&T
 Vietnam** • Vietnam Union of Science and Technology Associations
 Zambia • Zambia Academy of Sciences
 Zimbabwe • Research Council of Zimbabwe

² The following countries are covered: Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Samoa.



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