Annual Report 2011

Strengthening international science for the benefit of society

ICSU

International Council for Science

ICSU's vision

The long-term ICSU vision is for a world where excellence in science is effectively translated into policy making and socio-economic development. In such a world, universal and equitable access to 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.

ICSU 30th General Assembly

Introduction

The International Council for Science (ICSU) is a non-governmental organization with a global membership of national scientific bodies (120 members, representing 140 countries) and international scientific unions (31 members). ICSU mobilizes the knowledge and resources of the international scientific community to strengthen international science for the benefit of society.

2011 at a glance

The ICSU 30th General Assembly took place in Rome in September. The new Strategic Plan was agreed upon and in this context a number of important decisions were made on topics that were a major focus of the activities during the year. Key decisions were:

Research Planning and Coordination:

- to work with an Alliance of partners to establish a major new initiative, Future Earth: Research for Global Sustainability;
- to establish a new 10-year interdisciplinary research initiative on Urban Health and Wellbeing;
- to review the needs and mechanism for the future international coordination of polar research;
- to conduct a review of the role of ICSU in Earth Observing Systems;

Science for Policy

- to commit to ICSU being involved with the UN Conference on Sustainable Development (Rio+20) and its follow-up;
- to work with partners to ensure the role of science in the implementation of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES);

Universality of Science

- to approve revised wording for the Principle of Universality of Science (Statute 5), so that it explicitly includes a commitment to responsibilities as well as freedoms;
- to work with Members and across all ICSU initiatives to promote science education by bringing scientists and educators closer together;
- to launch a review of the Committee on Data for Science and Technology (CODATA);
- to consolidate and expand the ICSU World Data System (WDS);

Structure

- to strengthen the activities of the Regional Offices;
- to introduce weighted voting, on financial issues only, at the General Assembly;
- and, to elect a new President-elect, Gordon McBean from Canada.

Message from the Executive

2011 was a year of transition for ICSU in many ways. There were significant changes in the structures, statutes and leadership.

The highlight was the General Assembly in Rome in September, which was generously hosted by the National Member for Italy, the Consiglio Nazionale delle Ricerche, at the UN Food and Agriculture Organization (FAO). The Assembly agreed on key priorities and directions for the next six years, including strengthening the links between science and policy. The UN Conference for Sustainable Development (Rio+20, June 2012) was endorsed as an important target and was a major focus of activity throughout 2011.

Work began also on the transition of existing and new global environmental change activities into a major integrated initiative, Future Earth: Research for Global Sustainability. The Assembly stressed the importance and urgency of this work, which entails a new way of operating for ICSU. This means looking beyond the traditional ICSU science community and UN partners to fully involve the social sciences and to co-design with funding agencies and other interested stakeholders. Building multi-stakeholder partnerships will be a recurrent theme for ICSU in the years ahead, and the lessons learnt from the Future Earth design process will be applied to other new initiatives, such as Urban Health.

The Assembly in Rome approved a revision to ICSU statute 5, the Principle of Universality of Science. This has important implications for ICSU's overall remit and operations as it means that ICSU and its Members are committed not only to defending the freedoms of scientists, but also to embracing their responsibilities.

The year 2011 was marked also by several important changes in ICSU's leadership. After chairing the General Assembly, Catherine Brechignac's term as ICSU President came to an end and she was replaced by Yuan Tseh Lee. The ICSU membership voted for a new President-elect, Gordon McBean and several new Officers and ordinary Members of the Board. There was also a change at the helm of the Secretariat, with the Executive Director, Deliang Chen, leaving at the end of the year (to be replaced by Steven Wilson in April 2012) and new Directors taking over in the Regional Offices in Africa and in Latin America and the Caribbean.

ICSU's future success will depend on achieving a judicious balance between continuity and change. It was heartening to see so many familiar and new faces at the General Assembly in Rome and extremely encouraging to witness the support and commitment of Members and partners for the plans for 2012-2017.

Carthage Smith
Deputy Executive Director

Deliang Chen: Executive Director until January 2012

Message from the President

ICSU had a busy year in 2011 as it transitioned to a new leadership at the 30th General Assembly in Rome and looked ahead to the once-in-a-decade UN Conference on Sustainable Development, Rio+20. It was a year in which ICSU scaled up its efforts to make science a force for global sustainability.

Following a series of reviews and consultations, the planning for a major new initiative, Future Earth: Research for Global Sustainability, began in earnest. To this end, an important new Alliance was formed with the International Social Science Council, the Belmont Group of research funding agencies, and various UN bodies. A transition team of international experts from different disciplines and sectors was charged with developing a science framework and structure that would build on, integrate and expand the activities of the existing global environmental change programmes. This major global initiative promises to become the primary engine of research and knowledge for sustainability solutions.

At the same time, ICSU was in the thick of preparations for Rio+20, as the representative of the global science and technology community. Five ICSU-UNESCO Regional Science and Technology Workshops gathered the views of hundreds of scientists from around the world, which ICSU then fed into the official Rio+20 preparatory process. Many other avenues were exploited to inject the voice of science into the global sustainable development debate. Plans were made for the Planet Under Pressure conference scheduled for London in March 2012, and the Forum for Science, Technology and Innovation for Sustainable Development in Rio de Janeiro in June 2012 to provide more scientific input into the Rio+20 process.

Ultimately, these efforts were united by the same vision: that scientific knowledge must play a central role in the endeavour to secure a sustainable future for humanity. Scientific evidence continues to paint a worrying picture of dangerous climate change, biodiversity decline and ecosystem degradation, alongside persistent poverty, hunger and other challenges. As one of the premier global scientific organizations in the world, ICSU has both the capacity and the responsibility to make sure that ever-better scientific knowledge and innovations shape concrete actions and solutions.

Yuan Tseh Lee
President

Yuan Tseh Lee
President

Strategic Planning

Strategic Plan 2012-2017

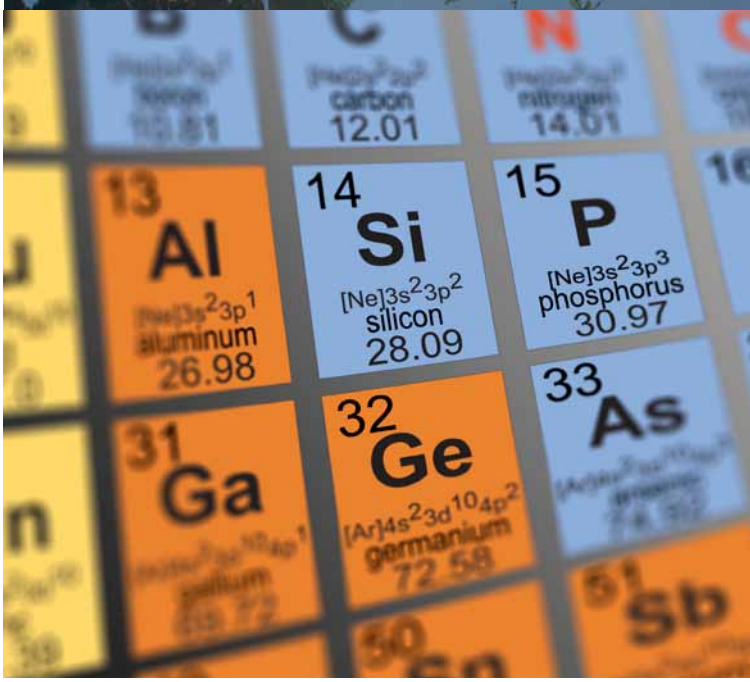
The second ICSU Strategic Plan was approved at the General Assembly in Rome. This sets the directions and priorities for the Council over the next six years as listed at the start of this report (p. 3). The Plan itself was developed by the Committee on Scientific Planning and Review and is the result of a three-year consultation with Members. In addition to specific priorities, the planning exercise identified three cross-cutting issues which ICSU needs to address if it is to fully implement its new strategy. These are:

1. Integrating regional and global activities and bridging the gap to the less developed countries: the Regional Offices have a key role to play in ensuring the universality of science and addressing regional specificities within the framework of global initiatives.

2. Integrating disciplinary perspectives into interdisciplinary initiatives: there is a need to strengthen the role of the Unions in ICSU's activities and also incorporate disciplines that are not currently well represented, including social, health and technological sciences.

3. Structure-function issues: there is scope for optimising ICSU's structures, including composition of Members and Associates as well as mechanisms for implementing new initiatives.

These three challenges require some immediate actions but also have important longer-term implications for how ICSU operates as a whole.
Whilst approving the Strategic Plan, the General Assembly also endorsed a proposal for an external review of ICSU to begin in 2012. A major focus of this review is likely to be how ICSU can best adapt to address these three cross-cutting challenges.



Future Earth

At the General Assembly in September, ICSU members approved the establishment of a new ten-year initiative, Future Earth – Research for Global Sustainability. Future Earth aims to provide the knowledge required for societies to face risks posed by global environmental change and to seize opportunities in a transition to global sustainability. This interdisciplinary body, which is slated to begin interim operations in 2013, will be sponsored by an alliance of partners, including ICSU, the International Social Science Council (ISSC), the Belmont Forum of funding agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP) and the United Nations University (UNU), with active engagement from the World Meteorological Organization (WMO).

Future Earth is the result of a series of consultation processes on priorities for global environmental change research conducted by partners of the Alliance. One of these was the two-year ICSU-ISSC Earth System Visioning exercise, which concluded in 2011. This identified five 'Grand challenges' for Earth System Science for Global Sustainability and emphasized the need for a new overarching institutional structure to promote more effective interdisciplinary research. Future Earth will build on the strengths of existing ICSU co-sponsored global environmental change programmes and their projects by integrating their activities and attracting new capacity. Three of the programmes (DIVERSITAS, IGBP and IHDP) have signalled their willingness to merge into a new single organization; WCRP will be an independent partner, supporting Future Earth strategically and intellectually.

A multi-stakeholder committee, known as the Transition Team, was appointed by the Alliance in June 2011 to provide the initial design for Future Earth. The team has focused on three main priorities, namely the research framework, organizational design options and outreach strategy. It will conclude its mandate at the end of 2012. In 2013, Future Earth will start operations, with an interim Governing Council setting its strategic direction, and a Scientific Committee defining its research agenda.

Future Earth research will answer fundamental questions about how and why the global environment is changing; what are likely future changes; what the implications are for the wellbeing of humans and other species; what choices can be made to enhance resilience, create positive futures, and reduce harmful risks and vulnerabilities; and how this knowledge can support policy decisions and sustainable development.

Future Earth will be presented for the first time in March 2012, at 'Planet Under Pressure', a major scientific conference jointly organized by the global environmental change programmes and ICSU. In June 2012, Future Earth will be officially launched on the sidelines of the Rio+20 Earth Summit at the Forum on Science, Technology and Innovation for Sustainable Development, co-organized by ICSU. There will be further consultations in 2012 with the global environmental change research community and other stakeholders, both globally and regionally.

Foresight: International Science in 2031

A foresight scenarios exercise was launched by the Committee on Scientific Planning and Review (CSPR) in late 2009 and the first outcomes of this were published in 2011. The report includes a description of key 'drivers' that will have a significant impact on the evolution of international science and exploration of how these factors might interact to shape the world. The four exploratory scenarios that are described in the published report were discussed at the General Assembly in Rome and subsequently at the World Science Forum in Budapest. Building on this work, a fifth, more normative and aspirational, 'success scenario' is being developed as part of the long-term vision for the role of ICSU in international science. This Foresight work has attracted considerable interest and was the focus of an article in Nature in November (Nature 479, 447 (24 November 2011); doi: 10.1038/479447a).

Science Education

The work of the Review Panel set up in late 2009 to assess ICSU's past and current science education activities and make recommendations on a possible future role came to a close in early 2011. The Panel's Report was published in final form during April 2011, and taken before the Executive Board and the General Assembly later in the year. The importance of science education activities has been fully recognized, and ICSU was called to work with Union and National Members to facilitate interaction between scientists and educators, and to actively promote science education as a necessary and integral part of existing and new interdisciplinary initiatives, and in particular Future Earth.

International Research Collaboration

Disaster Risk

A first Integrated Research on Disaster Risk (IRDR) Conference was organized by the IRDR International Programme Office and the China Association for Science and Technology (CAST) from 31 October to 2 November in Beijing, China. The event, 'Disaster Risk: Integrating Science and Practice', brought together more than 300 attendees and sought to advance new comprehensive approaches to natural hazards research that investigate the root causes of disasters and incorporate input from scientists, decision-makers and the public. The sessions were themed around IRDR's three main research objectives: characterization of hazards, vulnerability and risk; understanding decision-making in complex and changing risk contexts; and reducing risk and curbing losses through knowledge-based actions.

Urban Health and Wellbeing

The planning for a new ICSU Initiative on urban health began in 2008 and culminated in its approval by the General Assembly in Rome. A scientific committee will now be established to oversee the implementation of the initiative – Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach. The focus is on how multiple determinants of health in urban areas impact health and wellbeing, with the explicit aim of generating new insights for urban decision-makers. The Regional Office for Asia and the Pacific has been heavily involved in the planning and is likely to play an important role in implementation.

Ecosystem Change and Society

The Program on Ecosystem Change and Society (PECS) is a ten-year initiative that aims to fill the knowledge gaps identified by the Millennium Ecosystem Assessment regarding natural capital in relation to governance, ecosystem services, and meeting human needs in a rapidly changing world. PECS complements the global change programmes and provides a stimulating trans-disciplinary arena where researchers develop shared methods for studying social-ecological dynamics and generate new insights through the comparison of long-term, place-based case studies of landscapes and seascapes. The PECS international programme office was established jointly at the Stockholm Resilience Centre, Stockholm University, Sweden, and the Centre for Global Sustainability Studies, Universiti Sains, Malaysia, in January 2011 and initial projects were approved during the year.

Grants Programme

The ICSU Grants Programme provides seed funding to new interdisciplinary projects that are relevant to both science and society. It is a competitive, peer-reviewed programme for ICSU's Scientific Unions and Interdisciplinary Bodies.

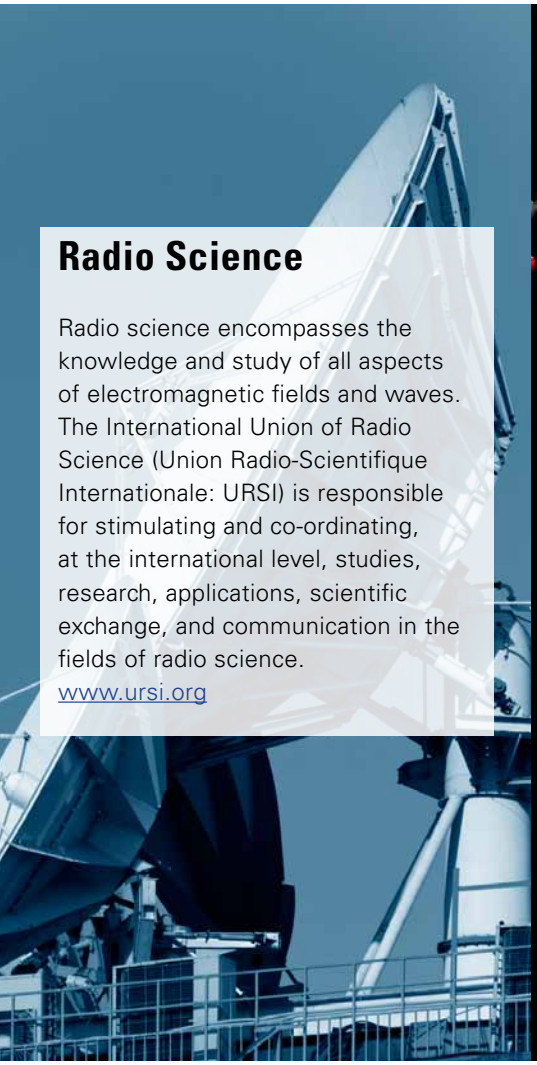
In 2011, priority was given to innovative proposals which focused on the themes of the ICSU Strategic Plan 2006-2011, which were international and multidisciplinary and which promoted the involvement of early career scientists, women scientists and scientists from developing countries as well as those which addressed the strategic priorities of the ICSU Regional Offices and forged new partnerships among organizations which do not routinely collaborate.

A total of 280,000€ was available in 2011, with a maximum award of 30,000€ per project. The Committee on Scientific Planning and Review awarded funding to eight projects (see table), four of which involved collaboration with the Regional Offices.

Applicants (lead applicants in bold)	ICSU Regional Office	Project title
COSPAR IAU, ESA, NASA, UNOOSA		Capacity Building Workshops in Space Science
IGBP IHDP, DIVERSITAS		Policy and public outreach for the 2012 Planet Under Pressure conference: New Knowledge towards Solutions
IGU IUGG, IUPsyS, IUAES, DFG		Transdisciplinary Intercultural Ecological Research for Sustainability (TIERS)
IRDR ROAP	Asia & Pacific	Integrated Research on Disaster Risk workshop
IUGG IUGS, CODATA	Africa	eGYAfrica - better Internet connectivity for research and education institutions in Africa Research on Disaster Risk workshop
IUPsyS ROAP	Asia & Pacific	Building Capacity for Psychological Intervention after Disasters in the Asia and Pacific Region
IUTOX ROA	Africa	Building Capacity for Human Health Risk Assessment in Western and Central Africa
URSI SCOSTEP		A Geophysical approach to assess Natural Disasters and Space Weather impacts on Earth

Building on Disciplinary Strengths

The 31 international Scientific Union Members provide the disciplinary foundation for ICSU's activities. They play a central role in bringing together scientists from all parts of the world to consider issues of particular interest to individual disciplines. This section provides brief reports from Unions that held their major scientific conferences or General Assemblies in 2011.

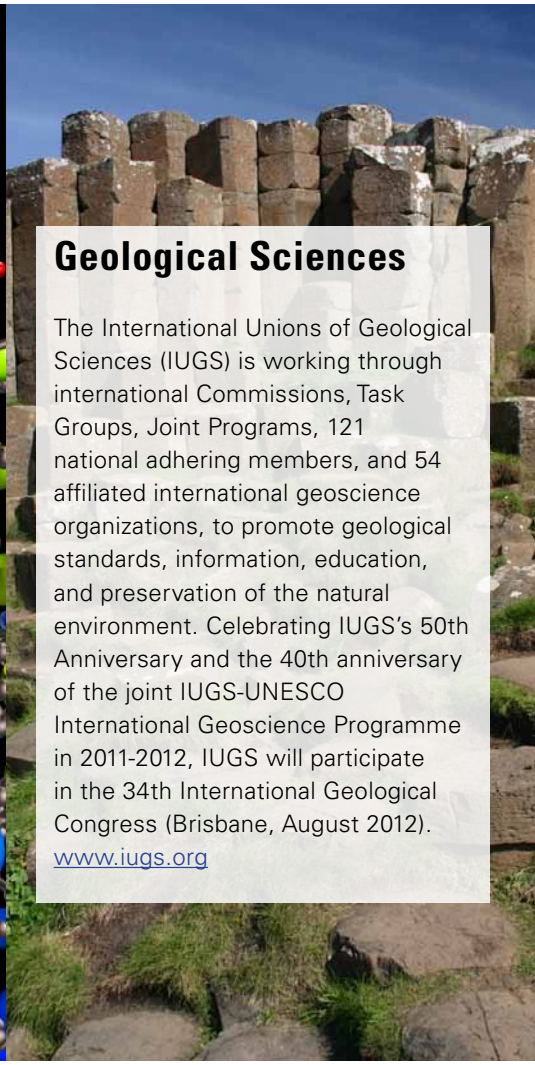


Radio Science

Radio science encompasses the knowledge and study of all aspects of electromagnetic fields and waves. The International Union of Radio Science (Union Radio-Scientifique Internationale: URSI) is responsible for stimulating and co-ordinating, at the international level, studies, research, applications, scientific exchange, and communication in the fields of radio science.
www.ursi.org

Biophysics

The International Union for Pure and Applied Biophysics (IUPAB) supports research and teaching in biophysics. ICSU and IUPAB equally funded the visit of nine young Africans to participate in the 3rd Latin American Postgraduate Course in Biophysics in September 2010 in Rio de Janeiro, Brazil. The highlight of 2011 was the 17th International Biophysics Congress (IBC) held in Beijing, China from October 30 to November 3.
www.iupab.org



Geological Sciences

The International Unions of Geological Sciences (IUGS) is working through international Commissions, Task Groups, Joint Programs, 121 national adhering members, and 54 affiliated international geoscience organizations, to promote geological standards, information, education, and preservation of the natural environment. Celebrating IUGS's 50th Anniversary and the 40th anniversary of the joint IUGS-UNESCO International Geoscience Programme in 2011-2012, IUGS will participate in the 34th International Geological Congress (Brisbane, August 2012).
www.iugs.org

Microbiology

The International Union of Microbiological Societies (IUMS) organized three congresses in Sapporo in 2011 by the divisions of Virology, Mycology and Bacteriology and Applied Microbiology, attracting a total of some 4,300 attendees. The General Assembly was held in September and new members of the Executive Board were elected. The Executive Board was honoured by the visit of Japan's Emperor Akihito.
www.iums.org

Geodesy and Geophysics

The International Union of Geodesy and Geophysics (IUGG) represents 69 countries and encompasses eight international associations across all disciplines of Earth science. About 3,400 participants from 81 countries attended the 25th General Assembly in Melbourne, Australia (27 June – 8 July). Important milestones and decisions made during the General Assembly can be found on the IUGG website.
www.iugg.org

Crystallography

The International Union of Crystallography (IUCr) held its 22nd General Assembly and International Congress in Madrid, Spain, in 2011. The meetings were attended by around 2,800 participants from 73 countries. Bulgaria and the Republic of Ireland were admitted as new members.
www.iucr.org

Quaternary Research

Quaternary Research concerns the mechanisms and evolution of geological, biological and climatic processes and accompanying human evolution during the past 2.6 million years, the period during which large climate swings and sea-level changes were initiated as oscillating glacial and interglacial episodes. The 18th quadrennial congress of the International Union for Quaternary Research (INQUA) was held in Bern, Switzerland, in 2011, and attracted more than 2,100 delegates, more than twice the size of any previous INQUA congress.
www.inqua.org

Pure and Applied Chemistry

The International Union of Pure and Applied Chemistry (IUPAC) strives to promote the chemical sciences worldwide and to apply practical aspects of chemistry in service to humankind. IUPAC co-sponsored the International Year of Chemistry 2011 with UNESCO and conducted its biennial General Assembly and World Chemical Congress in San Juan, Puerto Rico.
www.iupac.org

Brain Research

The International Brain Research Organization (IBRO) held its 8th World Congress in 2011 in Florence, Italy. The Congress was attended by more than 4,000 neuroscientists from around the world and was the occasion to celebrate IBRO's 50th anniversary. IBRO provided support for 200 young researchers from developing regions.
www.ibro.org

Supporting Interdisciplinary Science

The Interdisciplinary Bodies of ICSU bring together different scientific disciplines to address scientific issues of international relevance that are of interest to ICSU Members. Some of these bodies are co-sponsored with other organizations.

Climate Research

The World Climate Research Programme (WCRP) Open Science Conference was held in October 2011, in Denver, Colorado, USA with the theme 'Climate Research in Service to Society', attracting more than 1,900 participants from 86 countries. Participants assessed the current state of knowledge on climate variability and change, identified the most urgent scientific issues and research challenges, and discussed how WCRP can best facilitate trans-disciplinary research in partnership with sister international research programs to make greater progress in the future. Future Earth and the Global Framework for Climate Services, initiatives led by ICSU and the World Meteorological Organization respectively, were presented.
www.wcrp-climate.org/conference2011/

CODATA 45th anniversary

The Committee on Data for Science and Technology (CODATA) celebrated its 45th anniversary at a special meeting in October in Beijing, China entitled, 'Data-Intensive Science and Discovery – CODATA 45 years on'. CODATA's expanded mission "to strengthen international science for the benefit of society by promoting improved scientific and technical data management and use" builds on the original mission laid out by its founders 45 years ago. Leading scientists came together not only to celebrate the successes of CODATA over this period, but also to recognize, as the organization moves forward, the need to adapt to meet future challenges facing the data community.
www.codata.org

Planet Under Pressure

Preparations for the major international scientific conference 'Planet Under Pressure –New Knowledge Towards Solutions', to be held in London in March 2012, continued throughout 2011. The initiative for the conference was taken in 2010 by the Global Environmental Change (GEC) research programmes – co-sponsored by ICSU and their Earth System Science Partnership (ESSP). ICSU is a scientific sponsor of the Conference and ex-officio member of the International Organizing Committee.

This Committee decided in early 2011 that Planet Under Pressure (PUP) would aim to make a major scientific contribution to the UN Conference on Sustainable Development – Rio+20. To this end, it was agreed that, in addition to preparing White Papers in 2011 on the major conference themes, the GEC community and ICSU would prepare nine Policy Briefs to be fed as scientific input into the Rio+20 preparatory process. By the end of 2011, seven of these Policy Briefs had been produced and circulated at regional and global intergovernmental Rio+20 preparatory meetings, and the remaining two were near completion.
www.planetunderpressure2012.net

Science for Policy

Sustainable Development

The United Nations Conference on Sustainable Development (Rio+20) will be held 20-22 June 2012 in Rio de Janeiro, Brazil. Coming 20 years after the first 1992 'Earth Summit' in Rio de Janeiro, the aim of Rio+20 is to reinvigorate international commitment to the sustainable development agenda, with a particular focus on the 'green economy' and reforming institutional frameworks for sustainable development. ICSU was invited by the UN to act as co-organizing partner for the Scientific and Technological Community Major Group. The ICSU Executive Board gave high priority to work for Rio+20 during 2011.

ICSU participated in a series of intergovernmental preparatory meetings both at the global and regional levels. ICSU provided official written input, took part actively in discussions, and organized side events at many of these meetings. The overall aim was to emphasize to government negotiators the importance of fully utilizing the best available scientific evidence in their deliberations, and to try to instil a sense of urgency in the process. In October, ICSU submitted its formal written contribution to the Rio+20 outcome document.

Earlier in the year, ICSU partnered with UNESCO to organize four regional science and technology workshops (for Asia Pacific, Latin America and the Caribbean, Africa, and the Arab States). A fifth workshop, for Europe and North America, was organized by the European Group of ICSU National Members. The workshops brought together natural scientists, social scientists, engineers, policymakers and other stakeholders. The aim was to ensure that regionally specific knowledge and concerns were integrated into ICSU's work and the Rio+20 science agenda. Each workshop produced a series of recommendations that were then reported to that region's official UN regional preparatory meeting by a delegation representing ICSU.

ICSU worked also with the Global Environmental Change (GEC) Research Community to produce a series of policy briefs for Rio+20. The policy briefs are part of the scientific preparations for the international science-policy conference, 'Planet Under Pressure: new knowledge towards solutions' that will take place in March 2012. The briefs specifically target policymakers in the Rio+20 process, aiming to give them access to the latest scientific thinking in thematic areas such as food, water, biodiversity, health and energy.

Towards the end of the year, the planning began for a five-day Forum on Science, Technology and Innovation for Sustainable Development to be held in Rio de Janeiro, just prior to the Rio+20 conference. The Forum will provide a major platform for the scientific community to discuss their views with policymakers and other stakeholders.

The history of the UN Rio Summits, Commission on Sustainable Development, and ICSU

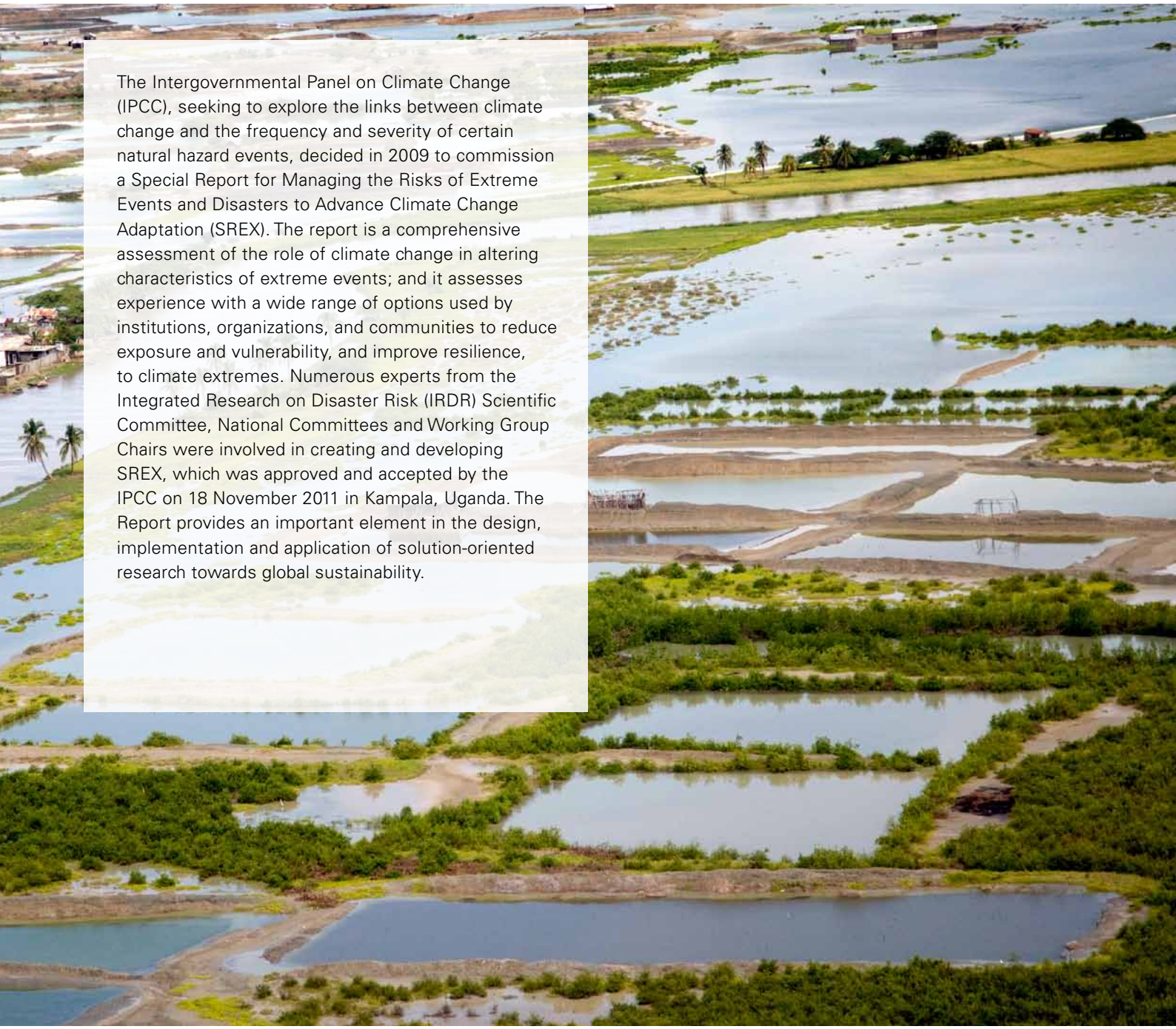
- 1991: ICSU organizes the Agenda of Science for Environment and Development into the 21st century (ASCEND 21) Conference in preparation for the Rio Earth Summit.
- 1992: The first Earth Summit, Rio de Janeiro, Brazil. ICSU is the principal scientific adviser to the summit's secretariat, and provides substantive input for Agenda 21. The summit establishes the UN Commission on Sustainable Development (CSD).
- 2002: the World Summit on Sustainable Development (WSSD) (Johannesburg, South Africa). ICSU becomes co-organizing partner for the Scientific and Technological Community (STC) Major Group. ICSU also holds an official parallel Forum on Science, Technology and Innovation for Sustainable Development and publishes 11 reports on science and technology for sustainable development.
- 2002 onwards: ICSU continues its role with the STC Major Group at the annual meetings of the CSD.
- 2012: The United Nations Conference on Sustainable Development 2012 (Rio+20): ICSU continues its role with the STC Major Group, playing a key role in the Rio+20 process.

Biodiversity and Ecosystem Services: A new Policy Platform

After several years of international negotiations, representatives of more than 90 governments met in Nairobi on 3-7 October 2011, for the first of two plenary sessions to design the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). The meeting focused on the principles and rules of procedure, the IPBES governance structure, process and criteria for nominating and considering efforts to host IPBES and preliminary consideration of the work programme.

ICSU, represented by DIVERSITAS Executive Director Anne Larigauderie, represented the scientific community at this first session of the IPBES Plenary. Contributions to the formal process comprised two documents on knowledge generation and the assessment functions of IPBES, a side event on the assessment and knowledge generation functions of IPBES organized by Japan, South Africa, United Nations University (UNU) and ICSU and the co-chairing of a multi-stakeholder day by ICSU and the International Union for Conservation of Nature (IUCN).

Climate Change, Extreme Events and Disasters



The Intergovernmental Panel on Climate Change (IPCC), seeking to explore the links between climate change and the frequency and severity of certain natural hazard events, decided in 2009 to commission a Special Report for Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX). The report is a comprehensive assessment of the role of climate change in altering characteristics of extreme events; and it assesses experience with a wide range of options used by institutions, organizations, and communities to reduce exposure and vulnerability, and improve resilience, to climate extremes. Numerous experts from the Integrated Research on Disaster Risk (IRDR) Scientific Committee, National Committees and Working Group Chairs were involved in creating and developing SREX, which was approved and accepted by the IPCC on 18 November 2011 in Kampala, Uganda. The Report provides an important element in the design, implementation and application of solution-oriented research towards global sustainability.

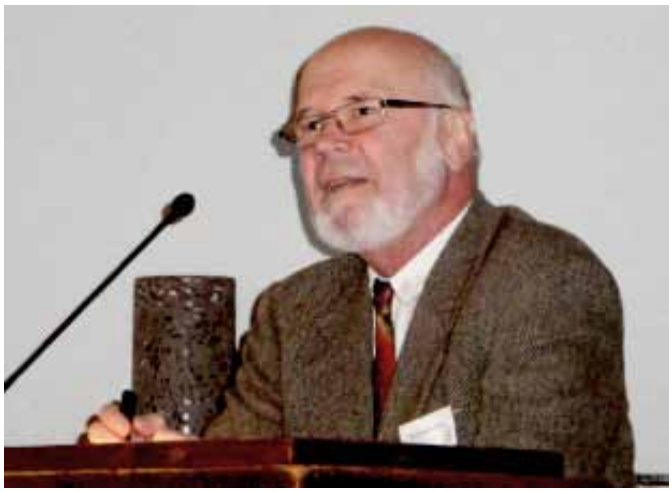
Universality of Science

Freedom and Responsibility

Ensuring freedom in the conduct of science, such that scientists can move and associate freely, has been central to ICSU's mission since its inception. This is enshrined in the Principle of the Universality of Science (ICSU's Statute 5). The Committee on Freedom and Responsibility in the conduct of Science (CFRS) was established in 2006. A key element of the committee's work has been an analysis of the Principle of Universality. As a result, it proposed a revised wording of Statute 5 that would explicitly include responsibilities as well as freedoms. Following consultation with ICSU's members, and a lively debate at the General Assembly in Rome, the essence of the CFRS proposal was unanimously adopted.

In its work, CFRS couples the remit for safeguarding scientific freedom with advice on scientific responsibilities. To raise international awareness of both aspects among the scientific community, it co-sponsored three international workshops during 2011, in collaboration with national partners. These focused on: barriers and challenges to international data access and sharing, with a special focus on developing countries (US National Academies); access to genetic resources and sharing of benefits arising from their use (Swiss Academy of Sciences); and how academia and the private sector can collaborate effectively (Royal Swedish Academy of Sciences). Advisory Notes for the science community were issued following these meetings. An additional note was produced on how to minimize bias in science publishing.

A new 'Freedom & Responsibility Portal' was established on the ICSU website. Aside from information on CFRS and its work, this provides access to documentation on science and human rights, as well as relevant articles and letters.



Bengt Gustafsson – Chair CFRS

ICSU in the regions

Regional Office for Asia and the Pacific

The Regional Office for Asia and the Pacific (ROAP) published its science plan for Health and Wellbeing in the Changing Urban Environment in June. This plan is part of the new global ICSU initiative on urban health and proposes the adoption of a systems approach in planning and conducting research on urban health and wellbeing in Asia-Pacific in the coming years. The regional plan was presented to ICSU's 30th General Assembly in Rome by Indira Nath, Chair of the Science Planning Group.

Mongolia celebrated the 90th anniversary of the establishment of the Mongolian Institutes of Sciences with an International Conference on Science and Society in the 21st Century. ICSU ROAP's Director Nordin Hassan made a presentation on 'Science and Society in the Age of Sustainability'.
ICSU ROAP co-organized the 22nd Pacific Science Congress (PSC-22) in June along with its partners the Academy of Sciences Malaysia (ASM) and the Pacific Science Association (PSA). More than 800 scientists from 48 countries took part in the Congress. The ICSU ROAP science plan on health and wellbeing was officially launched at the congress by Zakri Hamid, Science Advisor to the Prime Minister of Malaysia and ICSU Executive Board member.

Regional Office for Africa

The new ICSU Regional Office for Africa Director, Edith Madela-Mntla, took up her functions in January 2011, following the departure of Sospeter Muhongo in February 2010. During the interim period Rocky Skeef from the National Research Foundation, South Africa, served as Acting Director. A new Regional Committee for Africa was appointed in February 2011 by the ICSU Executive Board, and this completed the structure of the Regional Office.

The Office held its first workshop in March in Pretoria to form consortia for the implementation of science plans for Health and Human Wellbeing as well as Global Environmental Change (including Climate Change and Adaptation). Several consortia were set up in the two areas, and they formed teams which started working on project proposals for submission to funders.

The first meeting of the new Regional Committee for Africa was held also in Pretoria in March.

Regional directors

Regional Office for Latin America and the Caribbean

On 1 March, ICSU's Regional Office for Latin America and the Caribbean (ROLAC) was inaugurated in its new home in Mexico City at the Mexican Academy of Sciences (AMC). This followed the conclusion of the previous three-year hosting agreement with the Brazilian Academy of Sciences. The ceremony in Mexico was opened by Arturo Menchaca, President of the AMC, followed by presentations by ICSU Executive Director Deliang Chen, former Regional Director Alice Abreu, and Manuel Limonta, the new Regional Director. Juan Carlos Romero, General Director of the Mexican National Council for Science and Technology (CONACyT), formally closed the ceremony.

During the year, the four science plans related to ICSU ROLAC scientific priority areas, biodiversity, natural hazards, sustainable energy and mathematics education, were published in English and Spanish, with support from CONACyT Mexico.

In June, the final report of a project on sustainable energy, which ICSU ROLAC had coordinated, was presented to the Inter-American Development Bank (IADB). Entitled 'Sustainable Energy Systems for Universal Energy Access and to Mitigate Global Climate Change: Design of a Regional Program for Renewable Energy and Energy Efficiency Research and Innovation Networks in LAC', the report was well received by the IADB.

Data and Information

During the course of 2011, great strides were made in the establishment of the ICSU World Data System (WDS). Early in the year, the WDS Scientific Committee invited institutions to apply for membership, and by the year's end membership status had been accorded to 31 organizations, with scores of other expressions of interest and applications under consideration. To this count could be added two Associate Members and one Partner Member (IUGG).

The first ICSU WDS conference was held in Kyoto, Japan on 3-6 September. Entitled 'Global Data for Global Science', the event was attended by some 155 participants from 22 countries. These included representatives of data centres and services covering a wide range of scientific disciplines, data scientists and engineers working in a variety of fields, as well as data publishers.

Discussions continued throughout the year on the establishment of the WDS International Programme Office on the premises of the National Institute of Information and Communications Technology (NICT) in Tokyo. The formal opening of the Office was scheduled for early 2012.

One initial focus for WDS is the safeguarding of the data legacy of the International Polar Year (IPY), and it continues to recruit new Members that hold IPY-related data. The aim is that the large majority of IPY data will eventually be transitioned into WDS.

The report of the ad-hoc Strategic Coordinating Committee for Information and Data (SCCID) was published in April. SCCID proposed principles of best practice in data and information management for all ICSU programmes and identified a number of issues to be jointly addressed by ICSU's dedicated data and information bodies over the coming years. Recognizing the important role that the Committee on Data for Science and Technology (CODATA) had to play in carrying forward SCCID's recommendations, it was decided by the General Assembly that a review of CODATA was necessary.

Communication and Outreach

The new ICSU website was launched in March 2011. The website has streamlined navigation, new functions and a new visual design, making it much easier to find information.

The websites of the three Regional Offices have also been redeveloped and are now located within the global site, thereby providing a single integrated web presence for the organization. This facilitates closer links between ICSU's global and regional activities, while allowing the Regional Offices to maintain their own web presence.

The online community allows members to keep up to date with what ICSU is doing and allows ICSU to contact community members, for example to invite comments on particular content or documents. This functionality, located in the Member Zone, has been used successfully to invite members to contribute to the Foresight consultation, for example.

The new ICSU website has been visited by 60,000 unique visitors since its launch in March 2011, of which more than 60 percent were new visitors.

Administration and Governance

Financial Summary

Statement of income and expenditure	
International Council for Science for the period 1 January to 31 December 2011	
Income	Euros
Membership dues	
National Members	2,330,504
Scientific Unions	161,966
Scientific Associates	10,500
Provision Arrears	62,042
NSF support for WCRP	382,396
Grants from NSF	613,200
France	500,000
Other grants for IRDR, Rio+20 and Global Sustainability	707,747
Other income	123,240
Cancellation other provisions	-
Investment income	22,288
Total income	**4,913,882**
Expenditure	Euros
Policy committees	493,850
Joint initiatives	1,191,854
ICSU Regional Offices	283,084
Grant Programme	180,000
Special initiatives	551,133
Governance meetings	623,409
Policy & administrative support	1,149,788
Contingency/Provision	111,878
Other expenses	26,411
Investment charges & losses*	48,290
Total expenditure	**4,659,698**
Excess of income over expenditure	**254,184**

* Including provision for unrealized losses on Portfolio for a total amount of 41K €

Balance Sheet	
International Council for Science (ICSU) for the period 1 January to 31 December 2011	
Assets	Euros
Bank & cash balances	2,920,188
Marketable securities	1,417,018
NSF & UNESCO, funds for IRDR & Rio+20	311,522
Other assets	248,426
Fixed assets	116,869
Total assets	**5,014,023**
Liabilities	Euros
External funds allocated	1,386,741
Sundry creditors & accruals	679,341
Provision / Retirement	538,700
Total liabilities	**2,604,782**
Reserves	Euros
Mandatory reserve	1,500,000
General fund / Retained earnings	655,058
Total reserves	**2,155,058**
Net Result	**254,184**

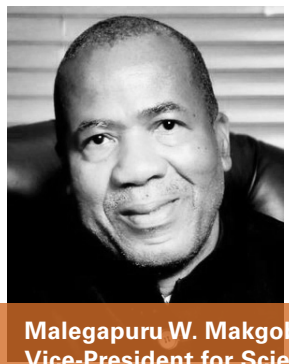
ICSU's principal source of 'core' income is dues from Members and a subvention from the host country France. The other major sources of income are grants from various organizations and foundations. The General Assembly approves draft budgets for the next triennium upon proposals received from the Executive Board, which is charged with finalizing the annual budgets. After consideration by the Committee on Finance and the Executive Board, the audited annual accounts are sent to all Members for approval. The ICSU Regional Offices are mainly supported by their host countries, with some funding from ICSU and other sources.

Executive Board 2011-2014

Yuan Tseh Lee
President

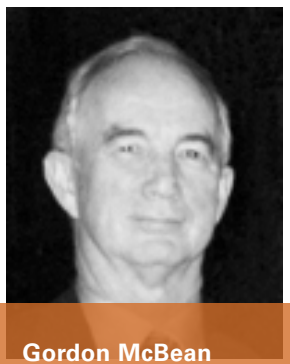
David Black
Secretary-General

Catherine Bréchignac
Past-President

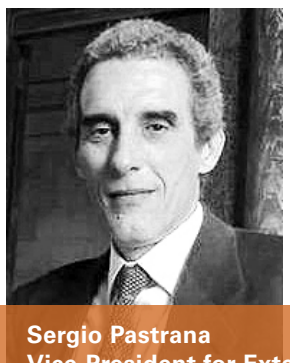


Malegapuru W. Makgoba
Vice-President for Scientific Planning and Review

Hans Rudolf Ott
Treasurer



Gordon McBean
President-Elect



Sergio Pastrana
Vice-President for External Relations

From Union Members:

Orhan Altan	ISPRS
Maria Carla Galavotti	IUHPS
Dov Jaron	IUPESM
Kennedy Reed	IUPAP

From National Members:

John Ball	United Kingdom
Luiz Davidovich	Brazil
Nicole Moreau	France
Guoxiong Wu	China: CAST

Secretariat

Executive

Deliang Chen	Executive Director
Carthage Smith	Deputy Executive Director
Tish Bahmani Fard	Assistant Executive Director

Environment and Sustainable Development

Peter Bates	Science Officer
Gisbert Glaser	Senior Advisor
Leah Goldfarb	Science Officer
Howard Moore	Senior Advisor
Roberta Quadrelli	Science Officer
Rohini Rao	Administrative Officer

Scientific Planning and Special Projects

Maureen Brennan	Administrative Officer
Alexander Hansen	Science Officer on secondment 50% time - based at ISSC
Vivien Lee	Assistant Science Officer on secondment
Patricia Ocampo-Thomason	Science Officer and Regional Offices Liaison

Communication and Information Technology

Jacinta Legg	Science Communications Officer (to Aug 2011)
Mustapha Mokrane	Science and Information Technology Officer/ Webmaster

Committee on Freedom and Responsibility in the conduct of Science

Roger Pfister	Executive Secretary CFRS*

*Located at the Swiss Academy of Sciences in Bern and working 50% time on CFRS

Administrative Staff

Frederica Kostadinoff	Administrative Officer/ gardienne
Eric Leparmentier	General Services
Natacha de Marchi	Accountant
Clare Thirlway	Personal Assistant to the Executive Director

Regional Office for Africa

Edith Madela-Mntla	Director
Andrew Achuo Enow	Programme Specialist in Biological Sciences (to Nov 2011)
Bongani Mahlalela	Communications Officer
Daniel Nyanganyura	Programme Specialist in Physical Sciences
Ursula Weideman	Personal Assistant: Office of Regional Director (to Dec 2011)

Regional Office for Asia and the Pacific

Mohd Nordin Hasan	Director
Nor Zaneedarwaty Norman	Science Officer
Mohd Hizamddin Jaafar	Administrative Officer

Regional Office for Latin America and the Caribbean

Manuel Limonta	Regional Director
Kerstin Schmidt-Verkerk	Science Officer (Feb 2011-)
Maria Teresa Viramontes	Administrative Officer (May 2011-)
Alicia Brown	Administrative Officer (Jan-May 2011)

National Members

ICSU has 120 National Members covering 140 countries. These Members provide input, from a national, multidisciplinary perspective, on priority areas for future ICSU activities. They also play an important role in facilitating links with national governments and science agencies. The majority of ICSU National Members are scientific academies, although some are national funding agencies or other nationally representative science bodies. National Members as at 31 December 2011:

Albania	Academy of Sciences
Angola	Foundation of Science and Development
Argentina	National Scientific and Technological Research Council
Armenia	National Academy of Sciences of the Republic of Armenia
Australia	Austratlian Academy of Science
Austria	Die Osterreichische Akademie der Wissenschaften
Azerbaijan	Azerbaijan National Academy of Sciences**
Bangladesh	Bangladesh Academy of Sciences
Belarus	National Academy of Sciences**
Belgium	Royal Academies for Science and the Arts of Belgium
Bolivia	Academia Nacional de Ciencias de Bolivia**
Bosnia & Herzegovina:	ANUBiH: Academy of Sciences and Arts of Bosnia and Herzegovina ANURS: Academy of Sciences and Arts of the Republic of Srpska
Botswana	Ministry of Infrastructure Science and Technology
Brazil	Academia Brasileira de Ciências
Bulgaria	Bulgarian Academy of Sciences
Burkina Faso	Centre National de la Recherche Scientifique et Technologique**
Cameroon	Cameroon Academy of Sciences
Canada	National Research Council of Canada
Caribbean	Caribbean Academy of Sciences* (1)
Chile	Academia Chilena de Ciencias
China: CAST	China Association for Science and Technology
China: Taipei	Academy of Sciences located in Taipei
Colombia	Academia Colombiana de Ciencias Exactas, Fisicas y Naturales
Costa Rica	Academia Nacional de Ciencias
Côte d'Ivoire	Académie des Sciences, des Arts, des Cultures d'Afrique et des Diasporas Africaines**
Cuba	Academia de Ciencias de Cuba
Czech Republic	Academy of Sciences of the Czech Republic
Denmark	Royal Danish Academy of Sciences and Letters
Dominican Republic	Academy of Sciences of the Dominican Republic
Egypt	Academy of Scientific Research and Technology
Estonia	Estonian Academy of Sciences
Ethiopia	Ethiopian Science and Technology Agency
Finland	Delegation of the Finnish Academies of Science and Letters
France	Académie des Sciences
Georgia	Georgian Academy of Sciences*
Germany	Deutsche Forschungsgemeinschaft
Ghana	Ghana Academy of Arts & Sciences**
Greece	Academy of Athens

Guatemala	Academia de Ciencias Médicas Fisicas y Naturales de Guatemala*
Hungary	Hungarian Academy of Sciences
India	Indian National Science Academy
Indonesia	Indonesian Institute of Sciences
Iran	Islamic Rep. of University of Tehran
Iraq	Ministry of Science and Technology
Ireland	Royal Irish Academy
Israel	Israel Academy of Sciences and Humanities
Italy	Consiglio Nazionale delle Ricerche
Jamaica	Scientific Research Council
Japan	Science Council of Japan
Jordan	Royal Scientific Society*
Kazakhstan	National Academy of Sciences of the Republic of Kazakhstan*
Kenya	Kenya National Academy of Sciences
Korea, DPR	State Academy of Sciences**
Korea, Rep. of	National Academy of Sciences of the Republic of Korea
Lao PDR	Lao National Science Council**
Latvia	Latvian Academy of Sciences
Lebanon	National Council for Scientific Research
Lesotho	Department of Science and Technology
Lithuania	Lithuanian Academy of Sciences
Luxembourg	Fonds National de la Recherche
Macedonia, Former Yugoslav. Rep. of	Macedonian Academy of Sciences and Arts
Madagascar	Ministère de l'Enseignement Supérieur et de la Recherche Scientifique*
Malawi	National Research Council of Malawi
Malaysia	Academy of Sciences Malaysia
Mauritius	Mauritius Research Council
Mexico	Academia Mexicana de Ciencias
Moldova	Academy of Sciences of Moldova
Monaco	Centre Scientifique de Monaco
Mongolia	Mongolian Academy of Sciences
Montenegro	Montenegrin Academy of Sciences and Arts
Morocco	Centre National de la Recherche Scientifique et Technique
Mozambique	Scientific Research Association of Mozambique
Namibia	Ministry of Education: Directorate of Research, Science and Technology
Nepal	Royal Nepal Academy of Science and Technology
Netherlands	Koninklijke Nederlandse Akademie van Wetenschappen
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	Universidad de Panama Peru Academia Nacional de Ciencias
Philippines	National Research Council
Poland	Polish Academy of Sciences
Portugal	Academia das Ciencias de Lisboa
Romania	Academia Româna
Russian Federation	Russian Academy of Sciences
Rwanda	Kigali Institute of Science and Technology**
Saudi Arabia	King Abdulaziz City for Science and Technology
Senegal	Association des Chercheurs Sénégalais**
Serbia	Serbian Academy of Sciences and Arts

National Members

Seychelles	Seychelles Centre for Marine Research and Technology
Singapore	Singapore National Academy of Science
Slovak Republic	Slovak Academy of Sciences
Slovenia	Slovenian Academy of Sciences and Arts*
South Africa	National Research Foundation
South Pacific	University of the South Pacific [2]
Spain	Ministerio de Ciencia y Innovacion
Sri Lanka	National Science Foundation
Sudan	National Centre for Research**
Swaziland	National Research Council**
Sweden	Royal Swedish Academy of Sciences
Switzerland	Swiss Academy of Sciences
Tajikistan	Academy of Sciences of the Republic of Tajikistan**
Tanzania	Tanzania Commission for S&T
Thailand	National Research Council of Thailand
Togo	Chancellerie des Universités du Togo
Tunisia	Université Tunis El Manar*
Turkey	Scientific and Technical Research Council of Turkey**
Uganda	Uganda National Council for Science and Technology
Ukraine	National Academy of Sciences
United Kingdom	Royal Society
United States	National Academy of Sciences
Uruguay	Comisión Consejo Nacional de Innovacion Ciencia y Tecnologia**
Uzbekistan	Uzbekistan Academy of Sciences**
Vatican City State	Pontificia Academia Scientiarum**
Venezuela	Fondo Nacional de Ciencia, Tecnología e Innovación**
Vietnam	Vietnam Union of Science and Technology Associations**
Zambia	Zambia Academy of Sciences**
Zimbabwe	Research Council of Zimbabwe

*National Associate
**National Observer

1. Covering the following: Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago.
2. Covering the following: Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

Scientific Unions

The 31 international Scientific Union Members provide the disciplinary backbone of ICSU. They play a central role in bringing together scientists from all parts of the world to consider the issues of particular interest to individual disciplines.

International Astronomical Union (IAU)
International Brain Research Organization (IBRO)
International Geographical Union (IGU)
International Mathematical Union (IMU)
International Society for Photogrammetry and Remote Sensing (ISPRS)
International Sociological Association (ISA)*
International Union for Physical and Engineering Sciences in Medicine (IUPESM)
International Union for Pure and Applied Biophysics (IUPAB)
International Union for Quaternary Research (INQUA)
International Union of Anthropological and Ethnological Sciences (IUAES)
International Union of Basic and Clinical Pharmacology (IUPHAR)
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 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 of Physiological Sciences (IUPS)
International Union of Psychological Science (IUPsyS)
International Union of Pure and Applied Chemistry (IUPAC)
International Union of Pure and Applied Physics (IUPAP)
International Union of Soil Sciences (IUSS)
International Union of Theoretical and Applied Mechanics (IUTAM)
International Union of Toxicology (IUTOX)
Union Radio Scientifique Internationale (URSI)

*Admitted at the 30th General Assembly in 2011

Interdisciplinary Bodies

The Interdisciplinary Bodies of ICSU bring together different scientific disciplines to address scientific issues of international relevance that are of interest to ICSU Members. Some of these bodies are joint initiatives cosponsored with other organizations.

Thematic Bodies

- Committee on Space Research (COSPAR)
- Integrated Research on Disaster Risk (IRDR)
- Programme on Ecosystem Change and Society (PECS)
- Scientific Committee on Antarctic Research (SCAR)
- Scientific Committee on Oceanic Research (SCOR)
- Scientific Committee on Solar-Terrestrial Physics (SCOSTEP)

Global Environmental Change Programmes

- DIVERSITAS: An International Programme of Biodiversity Science
- 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

- Committee on Data for Science and Technology (CODATA)
- International Network for the Availability of Scientific Publications (INASP)
- Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF)
- World Data System (WDS)

Scientific Associates

Academy of Sciences for the Developing World (TWAS)
Academia de Ciencias de America Latina (ACAL)
Engineering Committee on Oceanic Resources (ECOR)
Federation of Asian Scientific Academies and Societies (FASAS)
International Arctic Science Committee (IASC)
International Association of Hydraulic Engineering and Research (IAHR)
International Cartographic Association (ICA)
International Commission for Acoustics (ICA)
International Commission for Optics (ICO)
International Council for Industrial and Applied Mathematics (ICIAM)
International Council for Laboratory Animal Science (ICLAS)
International Council for Scientific and Technical Information (ICSTI)
International Federation for Information Processing (IFIP)
International Federation of Library Associations and Institutions (IFLA)
International Federation of Societies for Microscopy (IFSM)
International Federation of Surveyors (FIG)
International Foundation for Science (IFS)
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)
Union Internationale de Spéléologie (UIS)

The Principle of Universality of Science

The Principle of Universality (freedom and responsibility) of Science: the free and responsible practice of science is fundamental to scientific advancement and human and environmental well-being. Such practice, in all its aspects, requires freedom of movement, association, expression and communication for scientists, as well as equitable access to data, information, and other resources for research. It requires responsibility at all levels to carry out and communicate scientific work with integrity, respect, fairness, trustworthiness, and transparency, recognising its benefits and possible harms.

In advocating the free and responsible practice of science, ICSU promotes equitable opportunities for access to science and its benefits, and opposes discrimination based on such factors as ethnic origin, religion, citizenship, language, political or other opinion, sex, gender identity, sexual orientation, disability, or age.

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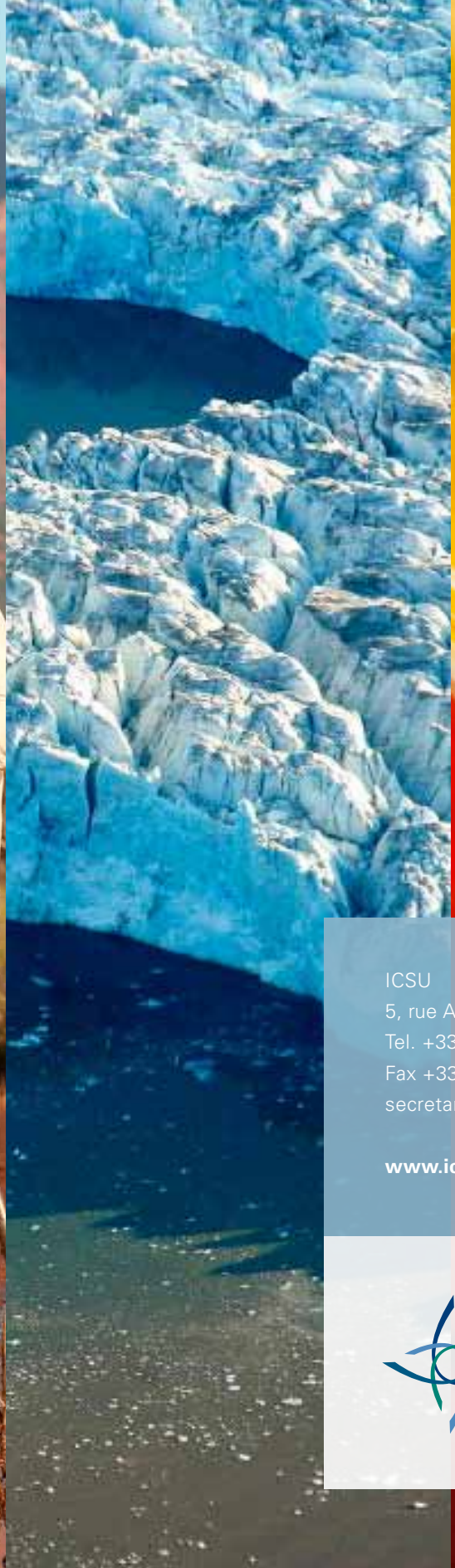


ICSU
5, rue Auguste Vacquerie, 75116 Paris, France
Tel. +33 (0)1 45 25 03 29
Fax +33 (0)1 42 88 94 31
secretariat@icsu.org

www.icsu.org

ICSU
International Council for Science