

Celebrating 75 years: 1931-2006



Annual Report

2005

Strengthening international science
for the benefit of society



ICSU

International Council for Science

Mission Statement

In order to strengthen international science for the benefit of society, 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.

Celebrating 75 years: 1931-2006

2006 is the 75th. anniversary of ICSU and the year will be marked by a number of events and publications. All ICSU members and the international scientific community are invited to join the Council in celebrating 75 years of international science for the benefit of society.

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About ICSU



Founded in 1931, the International Council for Science (ICSU) is a non-governmental organization representing a global membership that includes both national scientific bodies (104 members) and international scientific unions (29 members).

ICSU's extensive membership network constitutes an international forum for scientific research and policy development. In broader terms, because of its representative and diverse membership, the Council is frequently called upon to speak on behalf of the global scientific community and to act as an advisor in matters ranging from ethics to the environment.

ICSU activities include:

Planning and coordinating interdisciplinary research to address major issues of relevance to both science and society

Advocating freedom in the conduct of science, promoting equitable access to scientific data and information, and facilitating science education and capacity building

Acting as a focus for the exchange of ideas, the communication of scientific information and the development of scientific standards

ICSU also helps create international and regional networks of scientists with similar interests and maintains close working relationships with a number of intergovernmental and non-governmental organizations.

Message from the Executive Director



“ICSU is first and foremost a scientific organization and excellence in science underpins everything that we do.”

*Thomas Rosswall
Executive Director*

In my introductory presentation to the General Assembly on the process to develop the ICSU Strategic Plan 2006-2011, I cited ‘Alice in the Wonderland’ by Lewis Carroll (1832-1898):

Alice: Can you tell me which way I should take?

The Cat: It depends on where you want to go.

Alice: I don’t know where I want to go.

The Cat: Then it does not matter which way you take.

STRATEGIC PLAN 2006-2011

Like Alice, ICSU itself was not clear exactly where it wanted to go, and the General Assembly in Rio de Janeiro (2002) wisely decided to carry out a broad consultation with the international scientific community as to which road we should take. This decision was followed by an intense review, planning and consultation exercise, where National Members and Scientific Unions, as well as our Interdisciplinary Bodies and Joint Initiatives, contributed generously based on their own visions for the future and experiences of the past. This resulted in the Strategic Plan, 2006-2011. This Plan is, of course, of crucial importance in describing the landscape and lay out the road for ICSU to follow over the next six years. However, the planning process itself was also important in bringing ICSU and its Members closer together through dialogue and interactions.

The focus of ICSU is on strengthening international science for the benefit of science. Two words in this phrase are of particular importance.

INTERNATIONAL SCIENCE

First, ‘international’, which necessitates that ICSU takes into account scientific priorities in all parts of Planet Earth. Traditionally, international research agendas have been almost exclusively dictated by the affluent countries. Through the establishment of Regional Offices, ICSU is now actively involving the scientific communities of developing countries. This process will be even stronger, since the General Assembly in 2005 elected a President, two Vice-Presidents and a

Secretary-General from developing countries.

SCIENCE AND SOCIETY

Second, ‘society’, which clearly indicates that ICSU wishes to strengthen its links to the policy community, business and industry and civil society. The scientific community has started to descend from its ivory tower, but there is still some way to go. However, this is easier said than done. At the World Summit on Sustainable Development (2002), ICSU promised, on behalf of the international scientific community, to develop a more participatory approach to setting research agendas. Initial attempts are being made through the UN Commission on Sustainable Development process to involve civil society and the private sector. But this must be considered as a long-term investment and it is unlikely to yield immediate tangible results.

LINKS TO OTHER ORGANIZATIONS

The links to the policy community have been relatively strong in many areas of ICSU’s portfolio, and 2005 saw an additional involvement with the United Nations Environment Programme (UNEP) to strengthen its science base. We also renewed contacts with the UN International Strategy for Disaster Reduction as part of the planning for an ambitious programme on Natural and Human-induced Environmental Hazards and Disasters. As a further indication of changing times, ICSU, together with WMO, also took the unusual step of inviting two political bodies, the Arctic Council and the Antarctic Treaty, to observer status on the Joint Committee for the International Polar Year 2007-2008.

BASIC SCIENCE

So does all of this mean that ICSU is abandoning basic science or moving away from its roots? My very firm answer is ‘no’. ICSU is first and foremost a scientific organization and excellence in science underpins everything that we do. Fundamental research in physics, chemistry, biology, philosophy and the many other disciplines represented within the ICSU community is the essential foundation of ICSU and that is one thing that is not about change.

Thomas Rosswall, Executive Director

Message from the President

First and foremost, as the new President of ICSU, I would like to express my sincere and heartfelt thanks to my predecessor, Jane Lubchenco. As many ICSU Members witnessed for themselves, her chairing of the General Assembly in Suzhou in October was truly outstanding. Her vision and leadership over the past triennium, during the development of the first ever ICSU Strategic Plan, have left me with a difficult act to follow. Thus, it is with both trepidation and exhilaration that I take over the baton. In so doing, it seems opportune to repeat here a few of the reflections from my inaugural speech in Suzhou.

A WORLD IN TRANSITION

The world is in a major transition that it has seldom, if ever, seen before. The new era of a knowledge driven world is suddenly upon us. We have arrived at this stage through an evolutionary process involving spectacular developments in science and technology, unparalleled economic growth and uncontrolled exploitation of the earth's resources that has now run for nearly a century. While the pivotal role of science & technology in advancing human development, industrial growth and material wealth in the 20th century, in certain regions of the world is undisputed, its role in the 21st century needs to be recalibrated without diminishing its centrality.

THE NEED FOR GREATER SYNERGY

This has become necessary on two counts: firstly, the scientific revolution has outpaced social transformation for over a century now and secondly, progress in science and technology in the recent decades has been somewhat insular and unitary. It is partly for these reasons that the major challenges confronting the world today relating to environment, energy, health, natural hazards, loss of species, unsustainable consumption and, most

importantly, of growing inequalities, did not come into sharper focus soon enough. A lack of timely policy interventions and lack of sensitivity to these issues at both national and global levels has exacerbated matters. The need for greater synergy between scientific and societal progress and broader engagement of natural sciences with other knowledge streams, in particular social and human sciences, is a matter of urgency and prime importance. Such cohabitation will enable the scientific community to better understand the full implications of new discoveries in the context of moral and ethical values and societal concerns on one hand and the sustainability of our planet on the other.

FAIRNESS AND RESPONSIBILITY

Leonardo da Vinci, a renaissance legend wrote in a letter to the Duke of Milan about his idea of building a submarine: "I do not want to precisely describe my method to stay under the water for a long period because people are so ill-natured that they would use it to destroy the keel of boats and to sink the crew"; words whose relevance is not lost in present times as concerns about bio-terrorism, proliferation and human cloning among others stare at us. We scientists must ponder over our inability to transfer the sense of fairness and responsibility that we so effectively deploy in our scientific experiments and search for truth to the other side, namely society's evolution.

It is my conviction that the strong endorsement of the new Strategic Plan in Suzhou marks a critical milestone in the history of ICSU. As the Council enters its 75th year in 2006, it has much to celebrate and a clearly defined role in addressing some of the the key challenges that lie ahead. I am personally committed to doing my utmost over the next 3 years to lead ICSU in this endeavour.

Goverdhan Mehta, President



“The pivotal role of science and technology needs to be recalibrated without diminishing its centrality.”

*Goverdhan Mehta
President*

28th. General Assembly



Past President, Jane Lubchenco opening the 28th. General Assembly

The 28th ICSU General Assembly, convened every three years, took place in Suzhou, China

The 28th ICSU General Assembly, convened every three years, took place in Suzhou, China, from 18-21 October. It was attended by over 250 representatives from ICSU's National Members, Scientific Unions, Interdisciplinary Bodies, Scientific Associates and key partners. It was very generously, and expertly, hosted by the China Association for Science and Technology (CAST), which also organized a scientific forum and visits to scientific institutes in Shanghai prior to the General Assembly itself. The Unions and National Members also held separate meetings immediately before the Assembly to discuss issues relevant to their particularly constituencies.

The main focus of the debates at the Assembly was the Strategic Plan 2006-2011 which was unanimously adopted, the first ever such plan for ICSU. It is the end result of an extensive series of international reviews and consultations which were undertaken during the preceding three years. The Plan is available on the ICSU website.

Highlights of the Assembly (detailed elsewhere in this Report) were the establishment of the International Polar Year, 2007-2008; planning for a new interdisciplinary programme on Natural and Human-Induced Environmental Hazards and Disasters; and support for the development of a new Scientific Data and Information Forum (SciDIF) to help implement a more coordinated approach across different scientific disciplines and countries.

The Assembly also agreed to establish a new policy Committee on Freedom and Responsibility in the Conduct of Science in order that ICSU play a more proactive role in monitoring and advising on issues that influence the Universality of Science. The Assembly noted with pleasure the establishment of the first Regional Office, that for Africa, and that negotiations for others were progressing well.

Members discussed issues relating to sustainable development, health, energy,

and capacity building, agreed to disband certain ICSU committees and to review others. It approved the outline budget for 2007-2009 and agreed that a review of the dues' structure should be carried out as a matter of urgency.

The General Assembly adopted Resolutions recognizing the importance of working more closely with the social sciences in order to achieve ICSU's scientific goals, and reaffirming ICSU's rejection of pseudoscience and endorsing the teaching of evolution.

A new Executive Board was elected and Goverdhan Mehta (India) took over the presidency from Jane Lubchenco (USA) at the end of the meeting.

Catherine Bréchnignac (France) was elected President-Elect, Khotso Mokhele (South Africa) and Hernan Chaimovich (Brazil) Vice-Presidents for Scientific Planning and Review, and External Relations, respectively. Ana María Cetto (Mexico) was re-elected Secretary General and Roger Elliott Treasurer.

Vision & Strategic Plan



The Strategic Plan 2006-2011 is a significant milestone in ICSU's 75-year history

Vision

The long-term ICSU strategic vision is for a world where science is used for 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. ICSU has a major role to play in leading the global science community, implementing new scientific initiatives and engaging with policy-makers and other sectors of society to help realize this vision. [ICSU Strategic Plan, 2006-2011]

Strategic Plan 2006-2011

The endorsement of the Strategic Plan by the General Assembly in Suzhou in October 2005, represents a very significant milestone: it is ICSU's first strategic plan in its 75 year history. It is the culmination of three years of intensive reviewing and planning activities and extensive consultation with all ICSU Members. The Plan lays out the priority areas, long term goals and shorter-term actions that ICSU will address over the next six years. These can be organized under three over-arching (and over-lapping) themes:

PLANNING AND COORDINATING RESEARCH

International interdisciplinary research is required to address some of the major challenges facing society. In addition to re-structuring some existing activities and conducting detailed reviews of others, a number of major new international interdisciplinary research programmes are planned;

SCIENCE FOR POLICY

In many key areas the development of appropriate policies needs to take account of both scientific knowledge and the needs of science. As the body that is uniquely representative of the international science community, ICSU aims to strengthen its interactions with various inter-governmental bodies and with other sectors of society;

UNIVERSALITY OF SCIENCE

The practice of science should be equitable and without discrimination. ICSU will strengthen its activities to ensure the free exchange of scientists and scientific data and information and build scientific capacity in developing countries.

Planning & coordinating research

ICSU plans and coordinates scientific programmes and activities that bring together scientists from many different countries and disciplines to address key priorities for science and society.

The initial scoping for two potential new programmes, in the areas of hazards and energy, got underway in 2005. There was an overwhelmingly positive response from the international scientific community to the plans for a major polar research programme, which was formally approved by the General Assembly. Significant progress was also made in the discussions to establish a more complete global earth observation system.

At the same time, with the continuing support of UNESCO and additional funding from the USA, ICSU was able to provide seed funding for a number of interdisciplinary activities proposed by Members in specific priority areas.

2005: a year of hazards

In January, ICSU issued a statement on 'Science and Natural Hazards' as a response to the tragic tsunami event of 26 December 2004, one of the deadliest disasters in modern history. In August, the southern coast of the United States was hit by Hurricane Katrina, which was the costliest and one of the deadliest hurricanes in the history of the United States and the sixth strongest Atlantic hurricane ever recorded. In October, the Kashmir earthquake had an official death toll of almost 90,000 people. Most of the affected areas were in mountainous regions with access impeded by landslides that blocked the roads, leaving an estimated 3.3 million homeless in Pakistan.

The frequency of recorded natural disasters rose markedly during the last century, from about 100 per decade up to 1940 to nearly 2800 per decade during the 1990s. Three-quarters of these disasters are triggered by weather-related events (Fig. 1). Population growth in hazardous areas means that more and more people are at risk, and the increasing dependence of urban communities on complex infrastructure brings with it an increasing vulnerability to disruption.

The 2002 World Summit on Sustainable Development highlighted the extent to which progress in development can be wiped out by natural disasters. The Intergovernmental Panel on Climate Change (IPCC) foresees that the severity of the impacts of extreme events will increase in concert with global warming.

The ICSU Priority Area Assessment on Environment and its Relation to Sustainable Development (2003), reviewing strategic options for future ICSU activities related to environmental research, proposed 'Natural and human-induced hazards' as one of four possible new fields of work. This field was also highlighted as an emerging scientific issue in the ICSU Foresight Analysis (2004). ICSU has been involved, as an institutional partner, in preparing the Geohazards Theme of the Integrated Global Observing Strategy Partnership, and has been active in a number of other initiatives related to scientific aspects of natural hazards.



In preparation for the 28th General Assembly, the Executive Board appointed a Scoping Group on Natural and Human-induced Environmental Hazards, which reported back to Members. The General Assembly decided to start the planning for a new programme on Natural and Human-Induced Hazards and Disasters, building on existing initiatives among Scientific Unions and Interdisciplinary Bodies and to disband the existing ICSU Committee on Disaster Reduction, since its functions will be subsumed by this new activity.

Planning & coordinating research

The Scoping Group recommended that a new ICSU initiative should take the form of a programme of research aimed at strengthening international science to provide a firmer basis for policies to prevent natural hazards from becoming disasters. An effective global scientific initiative will require:

- an international collaborative research programme lasting a decade or more;
- the combined insights of the natural, health, social and engineering sciences;
- engagement with populations living in hazardous areas, to understand better the social and cultural determinants of choice in the hazards context;
- engagement with policy-makers at regional, national and international level, to understand better the constraints on policy-making in the hazards context;
- the ability to accommodate both individual hazards and the interplay between hazards;
- a long-term perspective; and
- a focus on delivering new scientific insights for the primary customers: development agencies, humanitarian assistance agencies and governmental policy-makers.

There is extensive research on individual hazards – how hazardous events are triggered, how to improve forecasting, how events unfold, how they cause damage, etc. The Scoping Group suggested that the greatest shortfall in current research activities lies not so much in scientific work itself as in research on how science is used to shape social and political decision-making in the context of hazards and disasters. This will be one point of departure for the detailed planning that will start in 2006 building on the expertise of the entire ICSU constituency. ICSU is also participating in meetings of the UN International Strategy for Disaster Reduction (ISDR), which is charged with follow-up to the Disaster Summit in Kobe in 2005. Other important partners for the planning effort will be the World Meteorological Organization (WMO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

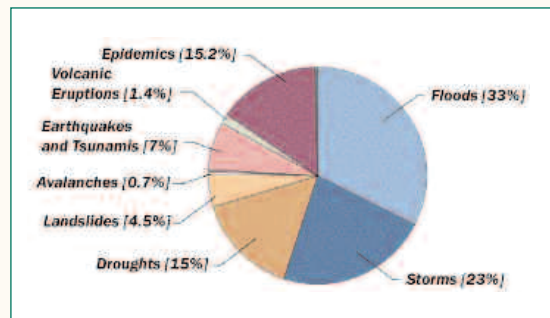


Figure 1.
Natural disasters by triggering hazard averaged across the world, 1994-2003.
Source: EM-DAT: The OFDA/CRED International Disaster Database.



Planning & coordinating research



“Nearly 140 proposals for coordination of polar projects have been endorsed.”

International Polar Year (IPY) 2007-2008

One of the undoubted highlights of the General Assembly was the presentation of the plans for the International Polar Year 2007-2008, which is being co-sponsored with World Meteorological Organization (WMO).

The extreme environments of the Arctic and Antarctic can conceal processes and events that have major implications for the other regions of the Earth. The Framework for International Polar Year (IPY), produced by ICSU, is motivating the international polar research community to work together in an unprecedented interdisciplinary research effort. In response to a first call for

expressions of interest, nearly 140 proposals for coordination of polar projects were endorsed by an ICSU-WMO IPY Joint Committee. These projects involve participants from over 60 countries and focus on the three key areas of scientific research, data management, and education and

outreach. They encompass a broad range of physical, biological and social science topics.

Many national and international research and funding agencies have integrated IPY into their logistical and financial planning and some nations have announced additional funding, for example, Canada has pledged Can\$150 million. In addition to the involvement of countries traditionally associated with Arctic and Antarctic research, countries such as Malaysia and Egypt, that have not previously had strong associations with Polar research, will be active participants in the Year. One of the exciting developments in the area of Outreach, Education and Communication has been the emergence of the IPY Youth Steering Committee to facilitate the involvement of the next generation of polar scientists.

For more information on the Programme, including the full list of IPY projects and information on how to get involved, visit www.ipy.org.

Sustainable energy (ISPRES)

One of the central challenges of sustainable development is to provide clean, affordable technologies that can meet the world's soaring energy demands; and the ICSU community has expressed a clear desire to play a more active role in helping to meet this challenge. It is envisioned that ICSU will engage in a diverse portfolio of activities related to energy R&D in the coming years.

One initial effort in this direction has been to establish a Planning Group to develop a proposal for an International Science Panel on Renewable Energies (ISPRES), an effort that was initially proposed at the 2004 International Conference for Renewable Energies (in Bonn, Germany). The goal of ISPRES would be to provide an international, interdisciplinary source of objective information and strategic guidance for renewable energy R&D efforts worldwide. In 2005, the Planning Group held their first meeting, and the ICSU General Assembly endorsed the effort. This planning activity is being supported by the German government, and carried out in cooperation with the Fraunhofer Institute for Solar Energy Systems.



Planning & coordinating research

New focus for Earth observations

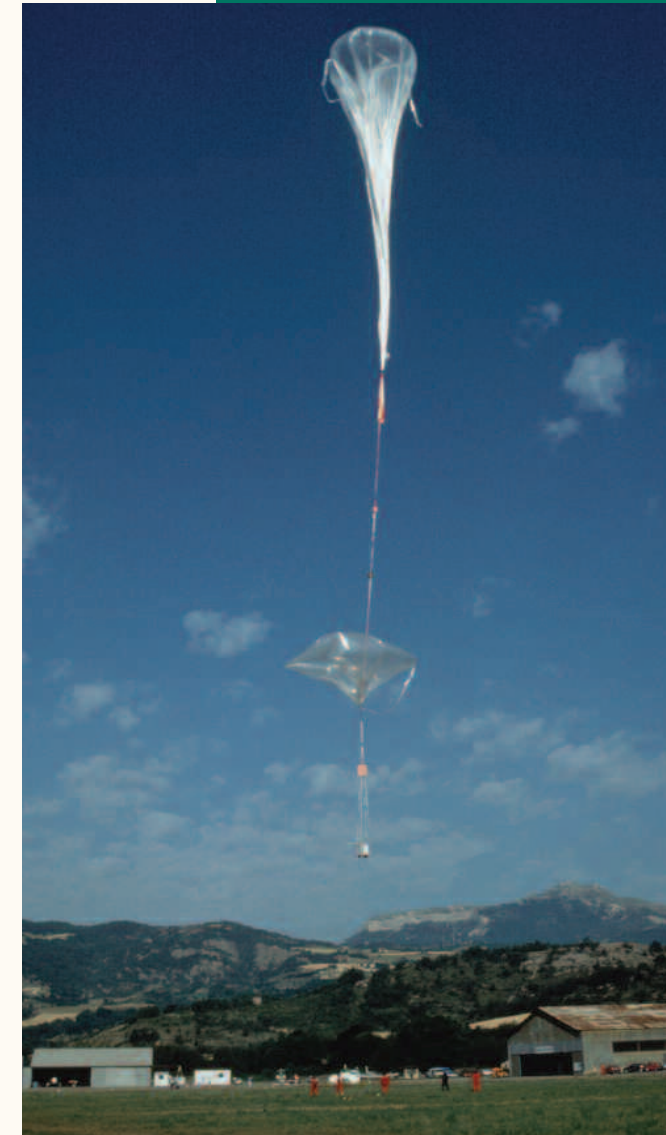
The Group on Earth Observations, GEO, was established by a series of three ministerial-level summits 2003-2005 to guide the development of the Global Earth Observation System of Systems (GEOSS). Earth observation, in this context, refers to the collection, processing, modeling, and dissemination of data about the Earth system. These data are collected through *in situ*, airborne and space-based observations, using satellites, buoys, seismometers, and other devices.

The GEO vision is to realize a future wherein decisions and actions for the benefit of humankind are informed via coordinated, comprehensive and sustained Earth observations and information. GEOSS will build on and add value to existing Earth-observation systems by coordinating their efforts, addressing critical gaps, supporting their interoperability, sharing information, reaching a common understanding of user requirements, and improving delivery of information to users.

GEO currently includes 62 Member Countries, the European Commission, and 43 Participating Organizations. ICSU is one of the Participating Organizations and has played a major role in the preparatory phase and the Ministerial Summits as a strong voice for the international science community. ICSU has for many years, together with various UN agencies, sponsored the current Global Climate Observing System (GCOS), the Global Ocean Observing System (GOOS) and the Global Terrestrial Observing System (GTOS). ICSU is also a member of the Integrated Global Observing Strategy Partnership (IGOS-P), which, in addition to the science community, brings together the relevant UN agencies and the major space agencies.

At the GEO meeting in December, it was decided to establish a GEO Science and Technology Committee with Germany, South Africa and ICSU as co-chairs.

“The GEO vision is to realize a future wherein decisions and actions for the benefit of humankind are informed via coordinated, comprehensive and sustained Earth observations and information.”



Supporting Interdisciplinary Science



Biodiversity and Ecosystem Carbon Storage

DIVERSITAS, IGBP, IHDP, WCRP

In partnership with UNESCO, ICSU provides seed funding for interdisciplinary projects with an international scope.

The grants programme supports interdisciplinary science in five selected priority areas:

- Emerging science and the creation of new knowledge
- Science and technology for sustainable development
- Capacity building and science education
- Dissemination of data and/or information from science and technology
- Science / policy interface

Grants Awarded in 2005 for projects to be completed in 2006

<i>Lead applicant</i>	<i>Title of Proposal</i>
SCOPE/IUGG, SCOR	Dynamics of Semi-enclosed Marine Ecosystems: the integrated effects of changes in sediment and nutrient inputs from land
IGBP/WRCP	Earth System Vulnerabilities: the permafrost-carbon climate system
IUBS/17 Unions, DIVERSITAS, SCOPE	Science for Health and Well Being (SHWB)

Review of the Grants Programme

Funding from external partners for the grants programme has significantly decreased over the past 3 years to the level that it is no longer sustainable in its current form.

The General Assembly asked for a review of the programme, to be carried out in 2006-2007, during which time the programme will be suspended.

Depending on the outcome of this review, additional funding will be sought to re-launch the programme.

The aims of this project were: i) to review the field of biodiversity and ecosystem functioning and identify the next generation of research challenges and, ii) to explore the links between biodiversity and carbon storage. These topics were addressed in two international workshops in Malaysia in September, the major conclusions of which were as follows:

i. The biodiversity and ecosystem functioning research area has progressed to a stage where experiment and theory provide a robust basis for the subject area. New research is needed which will move beyond the simple systems studied to date, so as to gain a fuller understanding on the impact of biodiversity changes on ecosystem functioning. This is key to linking biodiversity losses to biogeochemistry and ecosystem services.

ii. The question of linkages between biodiversity and carbon storage is new and controversial with little hard data available to address issues. There is a need to further develop a network of expertise of scientists collecting data on biodiversity and carbon sequestration in natural systems, and to engage in continued discussions with policy makers on the implications of this new research. These considerations are critical to biodiversity management in the context of the Kyoto Protocol and related international conventions

These conclusions will form the basis for publications and science plans that will help establish new strategic directions in biodiversity and ecosystems research and new collaborative projects in earth systems science.

Projects carried out in 2005

Augmenting Groundwater Resources by Artificial Recharge in S. E. Asia

IUGG, IUGS

Artificial recharge is one of several techniques being promoted as a solution to water scarcity in many developing countries. The aim of this project was to introduce this technique to South East Asia and to pilot it in a sample region in Vietnam.

An international workshop, attended by more than 40 participants from 9 countries, was held in Vietnam in December 2004, to permit a critical assessment of artificial recharge techniques and initiatives from around the world. This led to the establishment of a collaborative international network, involving many local scientists, which worked together on the pilot project.

Bin Thuan is located on the coastal plain of central Eastern Vietnam, which is characterized by sand dunes and suffers considerable water shortage during the dry season. An experimental barrage was constructed in this area and key parameters of water dynamics and quality were closely monitored over a period of several months.

The pilot project demonstrated that modern techniques for sustainable water management can be successfully applied in this area and other similar regions in South East Asia.

The outcomes have been published and presented at international scientific meetings and to local and national policy makers in Vietnam. The feasibility of a major programme of artificial recharge is being investigated for the whole of the Binh Thuan region.

Annotating Sites for Drug Action in the Human Genome

IUPHAR, IUPAB, IUBMB, IUPS

As the result of the Human Genome Project, it is now known that human DNA codes for approximately 20,000-25,000 genes. It is estimated that about 10% of these genes are likely targets for drugs of the future. The aim of this project was to create an authoritative curated list of specific families of these potential drug target sites.

In a unique international collaborative effort, over 300 leading scientists from academia and industry came together in more than 50 subcommittees to discuss and approve receptor nomenclature and the methodologies involved. The peer-reviewed and validated data and information was then entered into a customized database and made publicly available

The principal outcomes of this effort, to date, include the publication of a comprehensive list of the G-Protein Coupled Receptors encoded by the human genome. A database, which includes pharmacological, chemical, genetic, functional and anatomical information on these receptors, has been created (<http://www.iuphar-db.org>). Updated reviews of the nomenclature and functions of all the ligand-gated ion channels encoded by the genome have been published and similar material on nuclear hormone receptors has been prepared for database posting and publication in 2006. These are proving to be invaluable tools for scientific education and teaching purposes, with the database recording over 30,000 accesses per month from all over the world.

Sustainable Development: Local Partnerships with Teachers and Young Scientists

IGU, IUPsyS, IUBS, IUGS

This programme was designed to engage teachers and young scientists in developing countries in the production of novel science teaching modules that address three major contemporary sustainable development issues: biodiversity, forestry, and water resources. The pedagogical thrust of the programme is teaching through building communities of learners with the capacity to support each other in meaningful and sustainable ways.

An initial 2-week residential training workshop was held in Rome for nine selected graduates from developing and transition countries. Each participant then returned to his or her own country with a training package and worked collaboratively with local educational and governmental officials to train a local group of teachers. The trainers and teachers then further developed and implemented local area projects. In total, 27 local area projects were designed and tested.

The major outcome of the programme was the establishment of an ongoing, self-sustaining mechanism for creating and sharing comparable examples of local-scale sustainable development projects for use in classrooms and in action programs in many parts of the world, especially in developing regions. Descriptions and lessons from the 27 projects will be published and widely disseminated and the IGU is committed to enhancing and expanding the programme.

Scenarios to aid Regional Food Security Policy Formulation

WCRP, IHDP, IGBP

The overall aim of this initiative was to develop the conceptual frameworks and methods necessary to formulate a set of scenarios for researching the interactions between regional food systems and Global Environmental Change (GEC). These scenarios were specifically designed to assist analyses of possible policy and biophysical interventions for adaptation to GEC and to explore the medium- and long-term prospects for food security.

The initiative was organized by Global Environment Change And Food Systems (GECAFS) in collaboration with the UN Food and Agriculture Organization, the Millennium Ecosystem Assessment, the European Environment Agency and the UN Environment Programme. It included an international planning meeting in Rome in April and regional research workshops in Jamaica and Trinidad, involving participants from Caribbean policy and research institutions.

A new operational framework for using scenarios to aid regional food security policy formulation was developed based on theoretical advances in (i) the notion of food systems and their vulnerability to GEC and (ii) downscaling global scenarios to regional level. Its feasibility and practicality were demonstrated through the construction of prototype scenarios, the outcomes of which are being published in several working papers (www.gecafs.org). A major proposal for further research in the Caribbean has been submitted for funding and similar prototype exercises are envisaged in Africa and Asia.

E-science and the Information Society: the road to Tunis

CODATA, ICSTI, INASP, IUPsyS, TWAS, France

Support from ICSU and UNESCO enabled a number of the Council's Interdisciplinary Bodies, Members and Associates to work together in preparation for the second phase of the World Summit on the Information Society (WSIS, Tunis, November 2005).

The Committee on Data for Science and Technology (CODATA) took the lead in compiling an on-line inventory of more than 500 scientific activities that directly related to the implementation of the Agenda of Action that came out of WSIS phase I (Geneva, 2003, see www.codata.org.wsis). The Committee also convened an international workshop, "Creating the Information Commons for e-Science: Toward Institutional Policies and Guidelines for Action" that was hosted by UNESCO in Paris. This brought together both scientific experts and policy makers for 2 days of intensive discussions and was formally recognized as a WSIS preparatory event.

A follow up to the Paris workshop was held at the Summit in Tunis, where an initiative to create a Global Information Commons for Science was formally launched. ICSU is continuing to work with CODATA and other partners to develop this initiative as a key part of its strategic commitment to help provide universal and equitable access to scientific data and information for research and education.

Science for policy

ICSU promotes dialogue and shared understanding between the scientific community, policy makers and society more broadly. Many of the significant challenges to successfully achieving this are highlighted in the strategic report, *Science and Society: Rights and Responsibilities*.

The Commission on Sustainable Development (CSD) is a good example of a multi-stakeholder forum where ICSU plays an active role. The World Summit on the Information Society is another forum where the contribution of the scientific community, including several ICSU bodies, has been important.

A particular concern of policy-makers and ordinary citizens in many countries is the potential mis-use of science to develop weapons and ICSU co-sponsored an international workshop on this topic in March.

The Council also helped plan and organise several other international meetings that focused on the interfaces between science and development and science and society.

Science and Society: Rights and Responsibilities

The relationship between science and society will centrally influence the directions and practices of science in the 21st century. In order to strengthen science for the benefit of society, scientists need to be responsive to the changing needs and concerns of society; and society, in turn, needs to understand and support the positive role of science.

An ICSU strategic review report, *Science and Society: Rights and Responsibilities*, was published in July 2005 and provides an analysis of the major changes that are occurring within science and at the interface between science and society.

Five key dimensions of change:

1. Changes in the mobility and global flows of science and scientists, and associated challenges to the universality of science;
2. Changes in the production of scientific knowledge and the emergence of hybrid (e.g. public-private) contexts of practice;
3. Changes in the speed and scale of innovation, creating unavoidable new risks and uncertainties;
4. Changes in the governance of science and technology, especially as a consequence of globalization, creating new demands for expert accountability and ethical conduct;
5. Changes in the nature of expertise on the relations between science and society, within both academia and specific civil society groups.

The review considered each of these areas, identified a number of specific needs and gaps in knowledge, and suggested those for which ICSU and its Members are best equipped to take action. It also made an assessment of existing ICSU structures and partnerships, as they relate to these five key dimensions of change.

Many of the important issues identified in the review will be integrated into the development of the new strategic programmes and initiatives that the Council is committed to over the next six years. More immediately, the review will lead to the establishment of a new policy committee on Freedom and Responsibility in Science.



Science for policy



Commission on Sustainable Development

The 2005 meeting of the UN Commission on Sustainable Development (CSD) focused on the issues of water, sanitation, and human settlements. This was a 'policy year' in the CSD cycle, wherein recommendations are made for accelerating progress in implementing commitments made at previous UN world summits. For this meeting, ICSU and the World Federation of Engineering Organisations served as co-organizers of the Scientific and Technological Community, one of nine non-governmental 'Major Groups' that participate in the work of the CSD (the other Major Groups are: Women, Children and Youth, Indigenous People, Farmers, NGOs, Local Authorities, Workers and Trade Unions, and Business and Industry). ICSU submitted a set of policy recommendations on behalf of the S&T community and organized a delegation of scientists and engineers to

participate in the meeting sessions. The official outcome of the meeting – a policy document negotiated by governments – acknowledged the vital role of long-term observing systems, scientific research and technology development, and basic S&T capacity building, in addressing the issues of freshwater, sanitation and human settlements.

ICSU also hosted a side-event focused on S&T priorities for sustainable development, and organized a joint meeting of all CSD Major Groups to discuss the recommendations of a report on Harnessing science, technology and innovation for sustainable development (ICSU-ISTS-TWAS, 2005). The Major Groups enthusiastically endorsed the recommendation to launch a dialogue aimed at sharing perspectives about critical gaps in scientific knowledge and technical capabilities, and at developing common agreement on priorities for future R&D efforts.



Science for policy



“The Summit provided a forum for the advancement of a new Global Information Commons for Science Initiative.”

World Summit on the Information Society

The end of second phase of the World Summit on the Information Society was marked by a major Summit meeting in Tunis in November. ICSU and several Interdisciplinary Bodies and Members played a prominent role in an important side event that preceded the Summit and brought together a diverse range of experts from the public and private sectors to discuss the Past, Present and Future of Research in the Information Society. The principle organizer for the event was the Society for the Social Studies of Science and ICSU was one of several recognised participating organizations.

The Summit also provided a forum for the advancement of a new Global Information Commons for Science Initiative, which aims to bring together various stakeholders interested in the scientific, economic and legal aspects of access regimes for scientific data and information. This initiative is being led by the ICSU Committee on Data for Science and Technology and is supported a number of other ICSU bodies and international organizations. It addresses part of the Council’s broader strategic goal to facilitate a coordinated global approach that ensures equitable access to quality data and information for research, education and informed decision-making.

The main product of the Summit itself was a formal Tunis Commitment, which was agreed by governments. This reaffirmed, and expanded upon, the Action Plan that had been agreed two-years earlier in at the end of the first phase of the summit in Geneva, where ICSU had played a very active role. These documents acknowledge the central importance of science in the information society and call for greater efforts to ensure full access to data and information for research and education purposes. The renewed commitment encompasses a number of specific actions from Geneva included under the heading of ‘e-science’ and specifies responsibilities at the national, regional and international level for implementing these.

World Conference on Science

In 1999, UNESCO and ICSU convened the World Conference on Science Science (WCS) for the 21st Century: A New Commitment. Scientists and policy-makers from 155 countries and over 120 international organizations reached consensus on efforts to be made to build up a new commitment from, and to, science, in order to meet pressing needs of society and help ensure science-based sustainable development.

In March 2005, UNESCO, ICSU and the Academy of Sciences for the Developing World (TWAS) organized a follow-up Symposium on Harnessing Science for Society, in Venice. The symposium brought together some 50 invited experts to present views from different regions and those of the major international scientific organizations actively involved in the WCS follow up.

The symposium sought to:

- overview and evaluate major accomplishments realized in the five years following the WCS, with particular attention given to wise practices and issues that need to be better addressed;



- develop recommendations for the further implementation of follow-up, with emphasis on the concentration of actions, emerging priority issues and a region specific approach, and on the co-ordination of the WCS follow up with that of other major world conferences and the Millennium Development Goals (MDGs).
- increase awareness of the scientific community, decision-makers and the public at large of returns on the WCS, and opportunities for further action.

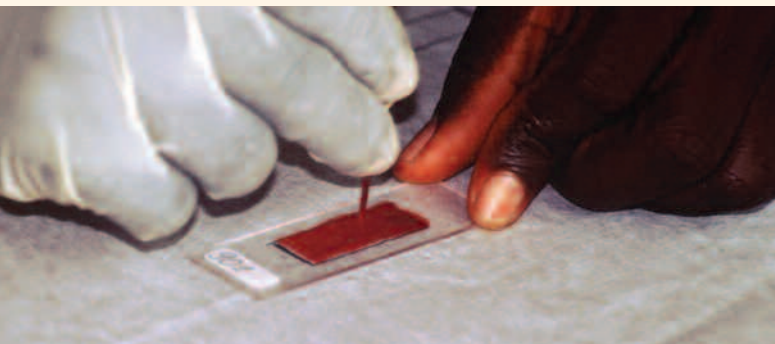
The outcomes from both the Budapest and Venice meetings helped provide a framework for the development of the ICSU Strategic Plan 2006-2011. Thus, ICSU is actively taking forward the many important recommendations from 1999 taking note of the new challenges for science that have developed since Budapest.

Life sciences and biosecurity

In response to public concern, countries are introducing new regulations and mechanisms or re-interpreting existing regulations to ensure against the misuse of life sciences research. In some areas such as bio-safety or public health surveillance, these developments mainly involve the strengthening of existing systems and are largely welcomed by the scientific community. However, in other areas such as access to scientific data and information, personnel screening and additional oversight of fundamental scientific research, there are very significant implications for the practice of science as a whole. Maintaining the openness of science, whilst responding responsibly and visibly to legitimate public concern about the potential mis-use of life sciences research is a major challenge for the international scientific community.

In this context, ICSU joined with the Inter-Academy Panel, Inter-Academy Medical Panel and the US National Academy of Sciences, to sponsor an International Forum on Biosecurity in March 2005. Scientists from several of the International Unions and over 20 countries, from both North and South, participated in 3 days of discussion and debate at Lake Como, Italy. For many this was the first time that they had seriously considered the implications of dual-use but all were convinced at the end of the meeting that they as individuals and the scientific community as a whole have a major and pressing responsibility in this area.

Whilst international law and weapons conventions help to mitigate against the development and use of such weapons, many life scientists are unfamiliar with this legislation. Moreover, the development of appropriate and effective legal tools depends on expert scientific input. ICSU was invited to contribute to a Meeting of Experts on the Biological Weapons Convention (BWC) in June 2005. This meeting was focused on codes of conduct for scientists and raised fundamental questions about the balance between voluntary and legal controls and the responsibility of the scientific community versus that of policy-makers and funders.



Science for policy



“It is never too early to interest children in science – and once enthused, they will become a new generation with a crucially enhanced understanding of science”

World Science Forum - Budapest

The World Science Forum - Budapest was established by the Hungarian Academy of Sciences in 2003. The second Forum was organized in partnership with UNESCO and ICSU, to coincide with the World Science Day in November, on the topic “Knowledge, Ethics and Responsibility”. The Forum brought together scientists, policy makers and representatives of industry to debate the ethical aspects of knowledge and the responsibility of scientists and decision makers in the global society of the 21st century.

ICSU was responsible for organizing one of the six major parallel sessions on “The Perspective from Developing Countries”, which was chaired by the President of ICSU, Professor Goverdhan Mehta. Professor Anupam Varma, Chair of the ICSU Regional Committee for Asia and the Pacific served as rapporteur.

The World Science Forum 2005 General Recommendations were:

- Due to the complexity of science today, the relationships between academia, government, the business sector, and other actors in society need to be recast. This process in turn demands new models for science funding, education and communication.
- To fully benefit from the opportunities of capacity building, experiences and good practices should be exchanged and shared worldwide.
- It is essential to foster mutual understanding to bridge the cultural gap between science and business, with particular attention paid to interconnectedness, interdependence, ethics and human values.

- The rapidly widening gap in capacity, scientific knowledge and achievements in science and technology among different countries and regions should be eliminated by strengthening South-South and South-North cooperation.
- Intrinsic ecological values need to be recognized, including the greater community of life with which we share the planet, and the need to maintain the evolutionary potential of life itself.
- It is never too early to interest children in science – and once enthused, they will become a new generation with a crucially enhanced understanding of science.



Science for policy

Global change and development

Academies of Science in the G8 countries plus those of Brazil, China and India prepared a statement on “Global Response to Climate Change” for the G8 Gleneagles Summit in July. In a subsequent statement to the UN Millennium Summit in September, ICSU and partners argued that: “Stronger worldwide capacities in science and technology are necessary to allow humanity to achieve the UN Millennium Development Goals” (MDGs).

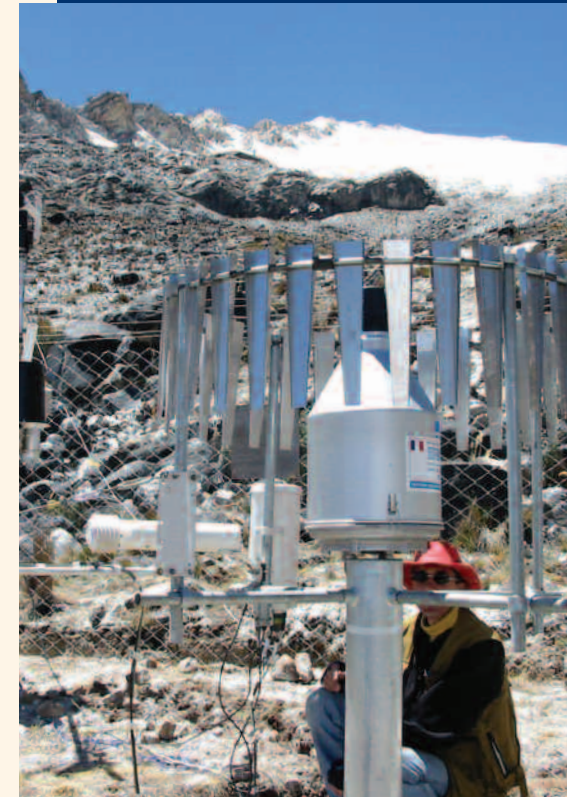
It is clear that climate change needs to be taken into account if nations are to meet the MDGs. However, the global change research community and the development research community have in the past had relatively little interaction. To address the importance of global change for development, ICSU and the International Group of Funding Agencies for Global Change Research (IGFA) organised a workshop in Sweden in May. The workshop brought together global environmental change researchers and funders, as well as development researchers and funders of development-oriented research, to discuss their distinct approaches and areas of possible collaboration. The discussions revealed that while there are some differences in the approaches, language, as well as geographical and temporal scales for the global environmental change versus the development aid



community, there is a considerable area of overlap where there would be substantial benefit in developing a common agenda for action.

In terms of scale, partnering at the regional level was seen as the most natural and beneficial meeting place. Addressing sustainable and resilient livelihoods was proposed as a possible nexus, since it would bring together the expertise of the two communities, as well as involve a science-policy dialogue/process. Follow-up was discussed at the annual IGFA meeting in October and ICSU and IGFA are jointly planning for a session at the Global Change Open Science Conference (November 2006) to continue this dialogue.

ICSU is also involved in various follow-up actions to the Millennium Ecosystem Assessment (MA), which was published in March. ICSU was one of the institutional sponsors of the MA, which documents the importance of ecosystems for human well-being and describes the global changes that are occurring in the ecosystems so vital for humanity. The coupling of ecological and social systems necessitates a broad involvement of many disciplines in order to link the environmental, social and economic pillars of sustainable development. Such efforts were stressed by ICSU in its submission, on behalf of the international science community, to the World Summit on Sustainable Development in 2002. Bringing together the science research and development research communities is an important component in beginning to address this challenge.



Universality of Science

Strengthening regional collaboration

EUROPE

The ICSU National Members in Europe met in Madrid in September to plan for the ICSU General Assembly. Annual meetings of European Members have been arranged for the past few years and offer an excellent platform for discussing matters of common concern.

ASIA AND THE PACIFIC

The First ICSU Regional Meeting for Asia and the Pacific was hosted by the Academy of Sciences Malaysia in April. The meeting was opened by H. E. Dr. Jamaluddin Jarjis, Minister for Science, Technology and Innovation. The meeting recommended that ICSU accept an offer from Malaysia to host the Regional Office. In addition, the meeting decided on initial priorities for its activities. After acceptance of the proposal by ICSU, the Government of Malaysia decided to provide financial support to the Regional Office for an

initial period of five years. ICSU has also appointed a Regional Committee for Asia and the Pacific under the chairmanship of Professor Anupam Varma (India).

REGIONAL MEETING IN UKRAINE

A regional meeting of the ICSU National Members in Belarus, Moldova, Russia and Ukraine was hosted by the Ukrainian Academy of Sciences in May. The focus was on the strengthening of the participation of these National Members, and others in the region, in implementing the ICSU Strategic Plan. A follow-up meeting is planned for National Members in the Commonwealth of Independent States, including the Balkans, in collaboration with the UNESCO Regional Bureau for Science and Culture in Europe (BRESCE) in 2006 or 2007.

Regional Office for Africa

The Regional Office for Africa became fully operational during 2005, with the appointment of a Director, Sospeter Muhongo. The formal inauguration took place on 1 September at the National Research Foundation (NRF) in Pretoria. Over 300 invitees, including representatives of several ICSU Unions and Bodies and leading scientists from Africa, Europe and Asia attended this ceremony, which was presided by the ICSU President, Jane Lubchenco. Distinguished guests included the South African Minister for Science and Technology, Hon. Mosibudi Mangena, and the Minister for Science, Technology and Higher Education of Tanzania, Hon. Dr. Pius Ng'wandu. Key regional partners, including the Academy of Sciences for the Developing World and UNESCO were also represented.

The Regional Committee for Africa met on three occasions and launched the process for developing a regional science strategy.- Taking the overall ICSU Strategic Plan 2006-2011 as a starting point, four priority areas were identified for the Regional Office: Health and Human Wellbeing; Sustainable Energy; Natural and Human-Induced Hazards and Disasters; Global Change. Four scoping groups comprising leading African scientists were set up to develop work plans for each of these topics. It is expected that these preliminary plans will be completed in 2006 and the necessary funding will then be sought to initiate regional interdisciplinary programmes. Concomitantly, a new Diaspora project is being explored with the aim of utilizing African human capital and associated research infrastructure to develop capacity building activities with support from the Regional Office.



*Hon. Mosibudi Mangena,
Jane Lubchenco and
Hon. Pius Ng'wandu*

Universality of Science



Khotso Mokhele, ICSU vice-President, speaking at the inauguration of the Regional Office for Africa

The Regional Committee met jointly with the ICSU Policy Committee for Developing Countries in August. As the regional strategy and activities develop, close liaison between these two committees and with ICSU's overall Committee on Scientific Planning and Review (CSPR) will be important. The African Office is currently pathing the way in terms of ensuring that developing countries are more fully involved in ICSU.

Freedom and responsibilities

With a changing international political picture, the widening gap between rich and poor countries and concerns about international terrorism and national security, the challenges to freedom and responsibilities in science are different today to those of the past.

One of the key decisions of the 28th General Assembly was to establish a new policy committee on Freedom and Responsibilities in the conduct of Science. This committee will replace the former Standing Committee on Freedom in the Conduct of Science and, as the new title suggests, it will have a broader remit than its erstwhile predecessor. In addition to providing advice and assistance for individual scientists, it will play an active role in promoting the universality of science and the associated responsibilities of scientists. Working with Members, it will actively monitor threats to the international exchange of science and scientists and advise ICSU on appropriate policies and actions.

International Council for Science Statute 5: the Universality of Science

"The Principle of the Universality of Science is fundamental to scientific progress. This principle embodies freedom of movement, association, expression and communication for scientists as well as equitable access to data, information and research materials. In pursuing its objectives in respect of the rights and responsibilities of scientists, the International Council for Science (ICSU) actively upholds this principle, and, in so doing, opposes any discrimination on the basis of such factors as ethnic origin, religion, citizenship, language, political stance, gender, sex or age. ICSU shall not accept disruption of its own activities by statements or actions that intentionally or otherwise prevent the application of this principle."

Revised wording agreed by the 28th ICSU General Assembly, 2005

A founding principle of ICSU is that the practice of science should be equitable and without discrimination. A new policy committee on Freedom and Responsibilities in Science will have an important role in safeguarding this Principle of Universality.

The past year also saw considerable progress in the Council's efforts to strengthen science in developing and transition countries and ensure the full inclusion of scientists from those countries in international science activities.

The first ICSU Regional Office for Africa become operational, with the appointment of Sospeter Muhongo as Director, and a formal inauguration ceremony took place in August. The Regional Committee agreed on the first steps towards the development of a strategy for research in Africa. Significant progress was also made towards establishing Regional Offices in Asia and the Pacific and Latin America and the Caribbean. An important meeting took place in Kiev late in the year and brought together national Members from the Commonwealth of Independent States (CIS).

New Members



“International Scientific Unions and National Scientific Members met prior to the 28th ICSU General Assembly in China.”



International Scientific Unions

Three Unions were admitted to membership in ICSU by the 28th General Assembly, bringing the total number of International Scientific Unions to 29:

International Union of Materials Research Societies (IUMRS)

The materials research field is a product of the innovation and basic scientific insight that result from cross-fertilization of ideas among more traditional scientific disciplines such as physics, chemistry, biosciences, ceramics, metallurgy, geology, engineering, mathematics, device technology, and nanotechnology. The International Union of Materials Research Societies (IUMRS) was established in 1991 to advance international collaboration and networking in the pursuit of materials research and materials education, and in the development of resulting technologies, resources, insights and strategies to benefit the global community.

International Union of Forest Research Organizations (IUFRO)

The International Union of Forest Research Organizations (IUFRO) is "the" global network for forest science cooperation with a tradition dating back to 1892. It is open to all individuals and organizations dedicated to forest and forest products research and related disciplines. The mission of IUFRO is to promote the coordination of, and international cooperation in, scientific studies embracing the whole field of research related to forests and trees for the well-being of forests and the people that depend on them.

International Union for Quaternary Science (INQUA)

The International Union for Quaternary Research (INQUA) is a global network of over 5000 scientists in 50 countries. It focuses on the most recent period of Earth history (the Quaternary; the last 2.6 million years), and on the interplay between humans and the contemporary Earth system. The aim of INQUA is to foster integrated, interdisciplinary scientific research by bringing together scientists working in archaeology, anthropology, palaeobiology, soil science, ecology, geology, geochemistry, geophysics, geochronology, geography, glaciology, climatology, oceanography, and social science. An important focus of INQUA is research on applied issues such as hazardous geophysical processes, climate and environmental change, and impacts of that change on humans.

National Scientific Member

One National Scientific Member was admitted making a total of 104 National Members (including Associates and Observers) and improving ICSU's presence in Africa.

Mauritius Research Council

The Mauritius Research Council (MRC) was set up in May 1992 to promote and coordinate the Government's investment in research. It acts as a central body to advise the Government on S&T issues and to influence the direction of technological innovation by funding research projects in areas of national priority and encouraging strategic partnerships. It promotes and pioneers research for sustainable development to enhance the quality of life of the people of Mauritius and aims at rationalising research efforts, developing synergies, and promoting partnerships among the public sector, academia and the business community.

International Scientific Associate

International Commission for Optics (ICO)

With the admission by the 28th General Assembly of the International Commission for Optics, ICSU now has 21 International Scientific Associates. The ICO was created in 1947 to contribute, on an international basis, to the progress and diffusion of knowledge in Optics.

Financial Summary

ICSU's principal source of "core" income is Member dues. The other major sources of income are grants from various organizations and Foundations, including a contribution from UNESCO. As well as supporting the Secretariat and the various Policy and Advisory Committees, a proportion of this income is returned to members via a competitive grants scheme.

The General Assembly approves draft budgetary outlines for each ensuing triennium upon proposals received from the Executive Board, which is charged with finalizing the annual budgets. The Executive Board is also responsible for the examination and closure of the audited accounts which have to be approved by all Members.

Annual dues are paid in accordance with Statute 43: "Each Member of ICSU shall pay annual dues within a scale determined by the General Assembly". The General Assembly in 2005 decided that, as of 2007, dues should be paid in Euros as opposed to US Dollars. It also requested an urgent review of the dues structure, which will be carried out in 2006.

Statement of income and expenditure

*International Council for Science (ICSU)
for the period 1 January 2005 to 31 December 2005*

Income	<i>Euros</i>
Membership dues	
National Members	1 565 936
Scientific Unions	128 679
Scientific Associates	6 579
Cancellation provision arrears	29 704
Membership dues for WCRP	167 874
Grants from	
UNESCO	169 535
US NAS	430 142
NSF	371 460
France & China for ICSU GA	99 740
Other income	58 114
Cancellation of provisions	109 004
Investment income	5 704
Total income	3 142 472
Expenditure	
Policy committees	32 854
Joint initiatives	526 597
Grant programme	367 226
New initiatives	103 137
Governance meetings	102 083
Policy & administrative support	1 609 324
Contingency/Provision	236
Other expenses	61 306
Investment charges	11 228
Total expenditure	2 813 990
Excess of income over expenditure	328 482

Balance sheet

*International Council for Science (ICSU) for the period
1 January 2005 to 31 December 2005*

Assets	<i>Euros</i>
Bank & cash balances	1 228 529
Marketable securities	1 378 956
UNESCO subvention	88 825
Sundry debtors & prepayments	265 114
Fixed assets	42 351
Total assets	2 985 768
Liabilities	
Interdisciplinary Bodies	8 415
Sundry creditors & accruals	437 459
Provision	71 400
General fund	640 011
Mandatory reserve	1 500 000
Total liabilities	2 657 286
Net Result	328 482

Executive Board



President, Goverdan Mehta



Vice-President for Scientific Planning and Review, Khotso Mokhele



Vice-President for External Relations, Hernan Chaimovich



Secretary General, Ana María Cetto



Treasurer, Roger Elliott



Past President, Jane Lubchenco



President-Elect, Catherine Bréchnignac

Officers

		First appointment to Executive Board	Term of office (as of October 2005)
Goverdhan Mehta	President	1999	3 years
Jane Lubchenco	Past President	2001	18 months to early 2007
Catherine Bréchnignac	President-Elect	2007	18 months from early 2007
Khotso Mokhele	Vice-President for Scientific Planning and Review	2005	3 years
Hernan Chaimovich	Vice-President for External Relations	2002	3 years
Ana María Cetto	Secretary General	2002	3 years
Roger Elliott	Treasurer	2002	3 years

Ordinary Members

From Union Members:

Giovanni Berlucchi	IBRO	2002	3 years
Michel Denis	IUPsyS	2002	3 years
Bryan Henry	IUPAC	2005	3 years
Uri Shamir	IUGG	2005	3 years

From National Members:

Cynthia Beall	USA	2005	3 years
Fu Congbin	China	2005	3 years
Francis Gudyanga	Zimbabwe	2002	3 years
Sergio Pastrana	Cuba	2005	3 years

ICSU Secretariat



Above - ICSU staff retreat, May 2005.

Below - Sospeter Muhongo, Director of the ICSU Regional Office for Africa



Executive

Thomas Rosswall
Executive Director

Carthage Smith
Deputy Executive Director

Tish Bahmani Fard
Assistant Executive Director

Environment and Sustainable Development

Leah Goldfarb
Science Officer

Gisbert Glaser
Senior Advisor

Rohini Rao
Administrative Officer

Scientific Planning and Special Projects

Laurie Geller
Science Officer

Maureen Brennan
Administrative Officer

Communication and Information Technology

Mustapha Mokrane
IT Officer / Webmaster

Administrative Staff

Eric Leparmentier
General Services

Natacha de Marchi
Accountant

Elisabeth Merle
Administrative Officer

On secondment (April-October 2005)

Peter Collins (UK Royal Society)
Environmental Hazards project

Regional Office for Africa

Sospeter Muhongo
Director

Robert Kriger
Science Officer

Masela Pillay
Administrative Officer

Kathy Potgieter
Administrative Officer

ICSU Members

Scientific Unions

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 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 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 Materials Research Societies (IUMRS)
International Union of Microbiological Societies (IUMS)
International Union of Nutritional Sciences (IUNS)
International Union of Pharmacology (IUPHAR)
International Union of Physiological Sciences (IUPS)
International Union of Psychological Sciences (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 International (URSI)

ICSU Union Members provide scientific expertise and input on priority issues from an international, disciplinary perspective. Union Members play an essential role as representatives of the wider scientific community.

Interdisciplinary Bodies

ASSESSMENT BODIES

Millennium Ecosystem Assessment (MA)
Scientific Committee on Problems of the Environment (SCOPE)

THEMATIC BODIES

Committee on Space Research (COSPAR)
Scientific Committee on Antarctic Research (SCAR)
Scientific Committee on the Lithosphere (SCL)
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)
Integrated Global Observing System (IGOS)

DATA AND INFORMATION BODIES

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)

ICSU Interdisciplinary Bodies focus on specific areas of international research. Their roles usually combine both operational and policy/advisory functions. Several are jointly sponsored by ICSU and other international organizations.

National Members

Argentina	Georgia*	Monaco	Tanzania
Armenia	Germany	Mongolia	Thailand
Australia	Ghana	Morocco	Togo
Austria	Greece	Mozambique*	Tunisia*
Azerbaijan**	Guatemala*	Nepal	Turkey
Bangladesh	Hungary	Netherlands	Uganda*
Belarus**	India	New Zealand	Ukraine
Belgium	Indonesia	Nigeria	United Kingdom
Bolivia	Iran	Norway	USA
Brazil	Iraq	Pakistan	Uruguay**
Bulgaria	Ireland	Panama**	Uzbekistan
Burkina Faso*	Israel	Peru	Vatican City State
Cameroon*	Italy	Philippines	Venezuela**
Canada	Jamaica	Poland	Vietnam**
Caribbean*	Japan	Portugal	Zimbabwe
Chile	Jordan*	Romania	
China: CAST	Kazakhstan*	Russia	*Associates
China: Taipei	Kenya	Saudi Arabia	**Observers
Colombia	Korea (DPR)**	Senegal*	
Costa Rica**	Korea, Rep. of	Seychelles*	
Côte d'Ivoire*	Latvia	Singapore	
Croatia	Lebanon	Slovak Republic	
Cuba	Lithuania	South Africa	
Czech Republic	Luxemburg	Spain	
Denmark	Macedonia	Sri Lanka	
Egypt**	Madagascar*	Sudan**	
Estonia	Malaysia	Swaziland**	
Ethiopia	Mauritius	Sweden	
Finland	Mexico	Switzerland	
France	Moldova**	Tajikistan**	

ICSU's **National Members** provide input from a national, multi-disciplinary 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.

Scientific Associates

Academia de Ciencias de America Latina (ACAL)
 Academy of Sciences for the Developing World (TWAS)
 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 Cell Research Organization (ICRO)
 International Commission for Optics (ICO)
 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 Science Editors (IFSE)
 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 Radiation Protection Association (IRPA)
 International Society of Endocrinology (ISE)
 International Union for Vacuum Science, Technique and Applications (IUVSTA)
 International Water Association (IWA)
 Pacific Science Association (PSA)

The **Scientific Associates** bring their own particular perspectives to ICSU's activities. For example, the Academy of Sciences for the Developing World (TWAS) is a key partner in defining ICSU's strategy for science in developing countries.



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