Annual Report

2003

Strengthening international science for the benefit of society

ICSU
International Council for Science

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 (101 members) and international scientific unions (27 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 increasingly 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 focuses its activities in the following areas:

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

Supporting in excess of 600 scientific conferences, congresses and symposia per year all around the world.

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, especially the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Third World Academy of Sciences (TWAS).

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.

ICSU Executive Board 2002-2005

In addition to overseeing the operations of ICSU, the Executive Board provides advice and direction on priorities to the General Assembly, taking into consideration the recommendations of the appropriate Committees.

The Executive Board also implements and communicates ICSU's policies and views between General Assemblies.

Officers

President
Jane Lubchenco

Past President (2002-2003)
Hiroyuki Yoshikawa

President-Elect (2004-2005)
Goverdhan Mehta

Vice-President for Scientific Planning and Review
David Parry

Vice-President for External Relations
Peter Tyson

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Michel Denis (IUPsyS)
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Francis Gudyanga (Zimbabwe)
Lucie Lapointe (Canada)

Message from the President

Exciting scientific advances

2003 was another exciting and challenging year for science. Scientists uncovered startling new insights and provided important new understanding about the universe and our world.

The confirmed existence of high-density dark matter indicates that the Universe is stranger than previously imagined. Yang Liwei temporarily became the most celebrated person in China, when he piloted the country's first manned space flight. 'Beagle' and 'Spirit' became household terms late in the year as Europe and the USA competed to land explorers on Mars.

Closer to Earth, the year witnessed major advances on multiple fronts including identification of factors controlling cell behaviour and embryonic development and conclusive evidence that a new drug limiting blood supply to tumors can prolong the life of cancer patients.

An overwhelming amount of evidence accumulated that human actions are affecting climate, modifying fundamental biogeochemical cycles, transforming the land and sea, and disrupting the flow of environmental goods and services to society.

New understanding of complex adaptive systems is providing insight into different approaches to managing human activities to minimize adverse impacts and move toward a transition to a more sustainable way of living.

Global political uncertainties

The global political situation, especially concerns about terrorism, has begun to impact the practice of science.

Science has flourished in recent decades due to the free flow of people, information and ideas. The Universality of Science, as embedded in ICSU's own statutes, has been an exemplary model of what can be achieved when a truly international community, with common goals is allowed to develop.

Recent restrictions on visas, increased controls on scientific information and proposed embargoes on collaborations threaten to undermine the universality and therefore the progress and usefulness of science.

Challenging economic conditions

The global economic situation underwent dramatic shifts in 2003 with the US dollar weakening significantly against other major currencies such as the Euro and the Yen.

As ICSU members will confirm, the currencies of many poorer countries, particularly in Latin America and Africa fared even worse. ICSU was not immune to these fluctuations; the dip in the US dollar wiped out more than 20% of ICSU's annual budget.

Current challenges include both belt-tightening and increasing revenues.

ICSU – building on the past, serving the future

Scientific progress has the potential to illuminate and help alleviate many of the world's most pressing problems.

Now more than ever there is a need for international collaboration across disciplines, for universal and equitable access to scientific data and information, for increased scientific capacity – particularly in the poorer countries, and for better interactions between science and society.

These elements form the cornerstone of our new initiatives, ranging from the International Polar Year to our developing 6-year strategy that will be presented to our membership at the General Assembly in 2005.

Strengthening international science for the benefit of society is even more relevant and urgent at the end of 2003 than it was at the beginning.

"We must harness the full potential of science to help all sectors of society make choices that are informed, objective and forward looking"

Professor Jane Lubchenco
President, ICSU

Preparing a new strategy

ICSU is preparing a new strategy so that it can better respond to the needs of its members and pursue the objective of strengthening international science for the benefit of society.

ICSU's original function was principally to help individual members (Unions and National Members) achieve their objectives.

An independent, in-depth assessment in 1996 encouraged ICSU to evolve towards a more proactive and strategic role in addressing international interdisciplinary issues of importance for science and society.

ICSU is currently evaluating its priorities and processes through consultation with all Members, Interdisciplinary Bodies and Scientific Associates.

Several *ad hoc* expert groups have also been established to carry out strategic Priority Area Assessments (PAAs) of key areas.

A strategic review of the Rights and Responsibilities of Science and Society has been initiated by the Executive Board.

Several new initiatives, principally in relation to sustainable development and energy, but also planning for an International Polar Year, are underway.

The principal outcomes from all of these activities will be integrated into an overall 6-year strategic plan which will be presented to the 28th ICSU General Assembly in October 2005.

Message from the Executive Director

"Our end goal is to transform ICSU into a coordinating body that can mobilize the knowledge and resources of the international science community."

Professor Thomas Rosswall
Executive Director, ICSU

In 2003, ICSU started to implement the key decisions from the previous year's General Assembly.

Developing a clear strategy

Throughout the year, ICSU worked on its six-year strategic plan. This is a complex process in which National Members, Union Members and Interdisciplinary Bodies are fully involved. The first fruits of the planning process were realised with the completion of an assessment of the "Environment and its relation to sustainable development".

Science and policy

Scientific input at the international, and national levels is essential for creating sound economic and social policies.

Following on from the World Summit on Sustainable Development (Johannesbourg, 2002), science was strongly represented at a meeting of the UN Commission on Sustainable Development (CSD-11). ICSU continued to argue for more policy-relevant, problem-oriented, interdisciplinary research that includes the social sciences.

The first phase of the UN World Summit on the Information Society finished with a major Summit meeting in Geneva in December. ICSU worked with several other international science bodies to ensure that the critical role of science in the development of a global information society was clearly recognized in the formal documents that were endorsed by governments.

Building partnerships

ICSU continued to work closely with the UN and its specialized agencies in order to capitalize on the strengths of both governmental and non-governmental bodies.

Our dialogue and partnership with UNESCO was particularly important in 2003. The UNESCO General Conference took place in October and ICSU was explicitly recognized as a key partner in many of the central activities of the Science, Information and Communication, and Education sectors.

We also reinforced our working relationships with Third World Academy of Sciences (TWAS), the InterAcademy Panel on International Issues (IAP) and the InterAcademy Council (IAC) who share a common interest in capacity building for science.

Developing a regional presence

A site for the first of the four proposed new ICSU Regional Offices was identified. Following regional consultation, it was agreed that the Office for Latin America and the Caribbean would be established in the Mexico Academy of Sciences.

Leading new initiatives

The International Polar Year 2007-2008 is expected to be a major scientific event, bringing together scientists from many disciplines and countries and focusing the public's attention on key issues involving the Arctic and Antarctic regions. Planning for this ambitious programme was started by ICSU in partnership with WMO.

Improved communication

As a complex organization, ICSU assigns high priority to improving communication with Members and partners.

We have launched an electronic newsletter to accelerate communication and reduce costs. A major effort has gone into re-designing our web-site and we hosted our first on-line forum, "Science in the Information Society".

Building on our strengths

ICSU is in a period of growth and change, which means that we need to keep in mind what makes it unique: the ability to bring together scientists from many nations and disciplines to address issues where an international, interdisciplinary approach is essential.

As Executive Director of ICSU, I feel that we are on the right track: concentrating on what we do best while evolving to meet the challenges of a fast-changing world.

“The PAA on Environment is a major step in the process of developing a new strategy for ICSU.”

David Parry
Vice President of Scientific Planning and Review, ICSU

Ensuring the best scientific evidence for decision-makers

The ICSU Committee on Scientific Planning and Review (CSPR) was established primarily to coordinate the development of proposals for major new scientific initiatives by ICSU and to advise the Executive Board on priorities for such initiatives.

In keeping with this remit, and as part of the groundwork for the new ICSU strategic development plan, the CSPR tasked a nine-member Panel chaired by Robert Watson (World Bank and ICSU Advisory Committee on the Environment, ACE) to prepare the Priority Area Assessment on the Environment.

The Panel took a consultative approach to the report. ICSU Interdisciplinary Bodies, Joint Initiatives, Union Members and National Members all contributed to the preparative phase and reviewed the final report.

The Panel addressed the importance of providing policy-relevant advice through multidisciplinary research involving natural, social, health and engineering sciences.

This broad, in-depth review highlighted the need to strengthen links between research, monitoring and integrated assessments. Whilst considerable progress has been made in this area, further efforts are necessary to ensure that the best scientific evidence is readily available for decision-makers.

Priorities for the Environment and Sustainable Development

Key recommendations of the report

The PAA Environment Panel identified four priority areas for possible ICSU programme development:

- environment and health
- natural and human-induced hazards
- human security and environmental refugees
- transgenic crops and their implication for the environment

In the near term, CSPR and the ICSU Executive Board have advised that environment and health be considered by the newly developed Inter-Union initiative on the Science of Health and Wellbeing, in consultation with the Earth System Science Partnership (ESSP) Initiative on Global Environmental Change and Human Health.

They have also advised that, subject to available funding, the planning for a programme on natural and human-induced hazards should be initiated by convening a consultation meeting involving relevant ICSU Unions, Interdisciplinary Bodies, and outside partners.

The General Assembly in 2005 will be asked to consider the importance of these four priorities in the longer term.

As part of ICSU’s strategy development, the Committee on Scientific Planning and Review (CSPR) commissioned three Priority Area Assessments (PAAs), one of which concerned the Environment and its Relation to Sustainable Development.

The PAA report was published in 2003 and circulated widely to ICSU members and partners, as well as to other bodies with an interest in the field. The findings will help guide ICSU ‘s activities in this domain.

ICSU has traditionally had a strong environmental portfolio and this report marks the first time that these programmes have been examined as an ensemble.

“Bringing natural and social sciences together is essential for research to fully contribute to sustainable development.”

Hebe Vessuri, Co-Chair, *ad hoc* Advisory Group

ICSU and the UN Commission on Sustainable Development (CSD)

ICSU is an active participant in the UN Commission on Sustainable Development (CSD) which received a WSSD mandate in 2002 to continue to promote and monitor the implementation of Agenda 21 and the Johannesburg Plan of Implementation at the global level.

The United Nations invited ICSU to continue to collaborate with the CSD in two ways:

Firstly, ICSU is to act as a “co-organizing partner”, together with the World Federation of Engineering Organizations (WFEO), for the participation of the S&T Community as one of nine “Major Groups” in the work of the CSD.

Secondly, ICSU is to help the CSD draw increasingly on scientific experts for its substantive work and to get the best scientific advice available.

The work of the Commission is organized in two-year cycles, including a review session in year 1 and a policy session in year 2.

In 2004-2005, the CSD will focus on the issues of freshwater, sanitation and human settlements. The 2006-2007 cycle will focus on energy, air pollution, climatic change and industrial development.

United Nations Forum on Forests

In 2003, ICSU was invited to contribute to input to the third Session of the United Nations Forum on Forests (UNFF3).

With its broad expertise and its exceptional network of Interdisciplinary bodies, ICSU is in a unique position to advise on major policy-making processes relevant to science-based sustainable management of the world’s forests.

ICSU provided the scientific community’s in-depth review of the report to UNFF3 through experts identified by several interdisciplinary bodies (IGBP, DIVERSITAS and SCOPE) and by the International Union of Biological Sciences.

The major responsibility for UNFF3 input was with the International Union of Forest Research Organizations (IUFRO) and the report was published by IUFRO and ICSU.

The report is available on the ICSU website.

The United Nations Forum on Forests was established subsequent to the United Nations Conference on Environment and Development (UNCED) held in 1992. Input to the governmental negotiations is provided by nine Major Groups, in a similar manner to CSD and WSSD.

Sustainable Development

Follow-up to the World Summit on Sustainable Development (WSSD)

ICSU’s active participation in the WSSD and the associated Forum on Science, Technology and Innovation (Johannesburg, December 2002) created greater awareness of the potential solutions and policy options that the Science and Technology community can bring to issues of Sustainable Development.

New multi-stakeholder partnerships were established at the WSSD to enhance dialogue, coordination and action on the most pressing economic, social and environmental issues.

The S&T community, in particular, agreed to focus on:

- improving education and S&T capacity building
- bridging the North-South divide in S&T
- clean technologies
- good science for good governance
- long term perspectives and data needs

ICSU’s follow-up activities to the WSSD are guided by the *ad hoc* Advisory Group to the Consortium on Science and Technology for Sustainable Development. In addition to ICSU, the Consortium members are the Third World Academy of Sciences (TWAS) and the Initiative on Science and Technology for Sustainability (ISTS).

The Advisory Group is developing recommendations to help ICSU and its Consortium partners address the complex issues involved in the creation of an integrated agenda for research and development, capacity building, and linking research to action. Its final report is expected to be ready by the end of 2004.

Sustainable Development is one of the most daunting challenges that humanity has ever faced. Fundamental issues must be addressed immediately at local, regional and global levels.

At all scales, scientific knowledge can help provide guidance to solve the economic, social and environmental problems that may make current development paths unsustainable.

ICSU is committed to creating and using scientific knowledge to improve the well-being of people everywhere while maintaining the life support systems of the planet.

Of the three pillars of sustainable development (social, economic, environmental) identified by the United Nations, the environment is the one that has been most closely associated with ICSU.

ICSU has a strong environmental research portfolio which includes bodies and institutions that ICSU sponsors alone or with partner organizations.

“The challenge now is to turn these words into actions. The international science community is willing to play its part.”

Jane Lubchenco, ICSU President, addressing the WSIS plenary session

Preparing the World Summit on the Information Society (WSIS)

In February 2003, ICSU launched an on-line forum on science in the information society in order to gather input from its membership and the wider scientific community.

In March, ICSU organized a workshop in Paris in partnership with its Committee on Data for Science and Technology (CODATA) and UNESCO. This brought together more than 60 leading scientists and representatives of international organizations.

The forum and workshop discussions were focused around four key themes:

- universal access to scientific knowledge
- decision-making governance
- policy issues for scientific information
- improving education and training.

The key recommendations across all these themes were drawn together to produce an agenda for action entitled “Science in the Information Society” that was subsequently formally endorsed by many ICSU member organizations (national science bodies and international science unions) and other international science bodies.

The agenda for action was also adopted by ICSU’s main science partners in the WSIS process: UNESCO, the European Organization for Nuclear Research (CERN) and TWAS. The agenda provided the basis for the concerted input from these organizations in negotiating the content of the formal summit documents before final agreement in Geneva.

WSIS Agenda for Action

1. Ensure that all universities and research institutions have **affordable and reliable high-speed Internet connections** to support their critical role in information and knowledge production, education and training.

2. **Promote sustainable capacity building and education initiatives** to ensure that all countries can benefit from the new opportunities offered by information and communication technologies (ICTs) for the production and sharing of scientific information and data.

3. Ensure that any legislation on database protection guarantees **full and open access to data created with public funding**. In addition, restrictions on proprietary data should be designed to maximise availability for academic research and teaching purposes.

4. **Promote interoperability principles and metadata standards** to facilitate cooperation and effective use of collected information and data.

5.**Provide long-term support** for the systematic collection, preservation, and provision of essential digital data in all countries.

6.Promote electronic publishing, differential pricing schemes, and appropriate open source initiatives to **make scientific information accessible on an equitable basis**.

7. Encourage initiatives to **increase scientific literacy and awareness** of how to interpret web-based scientific information.

8. **Support urgently-needed research** on the use of information technologies in key areas, such as geographical information systems and telemedicine, and on the socio-economic value of public domain information and open access systems.

9. **Recognize the important role for science** in developing and implementing the new governance mechanisms that are necessary in the information society.

The Road to Tunis, 2005

ICSU hopes that the first phase of the WSIS in Geneva will mark the first step towards a more universal and equitable Information and Knowledge Society in which science plays a central role as described in the formal declaration and plan of action.

Since Geneva, the WSIS has started moving into a new phase, focused more on implementation than diplomatic negotiations. ICSU will be assessing its own contribution to this process in the coming year as part of its Priority Area Assessment of Scientific Data and Information.

However it is already clear that a major responsibility for implementation of the Geneva action plan now rests with individual ICSU members and the national and international scientific communities that they represent. The framework is in place and has been endorsed by Governments; what is now needed is commitment and action.

In Tunis in 2005, during the next summit event, the scientific community will have the opportunity to show that it is indeed playing its part in shaping an inclusive and equitable information society.

World Summit on the Information Society

“Your advocacy can help bring about a breakthrough in access to scientific knowledge.”

Kofi Anan speaking about the scientific community
Science, March 7, 2003

Over 11,000 people attended the UN World Summit on the Information Society in Geneva in December 2003.

ICSU worked with partners to prepare timely input to the WSIS process on behalf of the scientific community.

As a result, the majority of the specific actions identified by the international scientific community have now been endorsed by Governments.

There will be a further major summit meeting in Tunis in 2005.

ICSU at the WSIS Geneva Summit

ICSU actively participated in the five official multi-stakeholder preparatory meetings that took place prior to the Geneva Summit in 2002 and 2003 and provided both written and oral input to the negotiations.

Together with key partner organizations, ICSU was also involved in organizing several events to ensure that science was visible at the Summit event itself.

Throughout this process, the four major themes that had been identified by ICSU provided a framework, which was used to present the role of science in the information society to the broad WSIS audience.

These four themes are expanded upon in a series of brochures* that were produced in several languages specifically for the Summit process. An additional brochure – “Optimizing Knowledge in the Information Society” was also produced, just prior to the Geneva Summit, in partnership with the International Social Science Council (ISSC) to inform the developing debate on knowledge societies.

Science figures very strongly in the Declaration and Plan of Action coming out of Geneva; the majority of the specific actions identified by the international scientific community in March 2003 have now been endorsed by Governments. The Declaration that was agreed by Heads of State in Geneva is unequivocal in stating:

“We recognize that science has a central role in the development of the Information Society. Many of the building blocks of the Information Society are the result of scientific and technical advances made possible by the sharing of research results” (para 7) and continues, “We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information….” (para 28).

** These brochures and other documents concerning the WSIS are available on the ICSU website: www.icsu.org*

Scientific discoveries... societal dilemmas

The role of science and new genetic technologies in food production is an area of considerable controversy and concern.

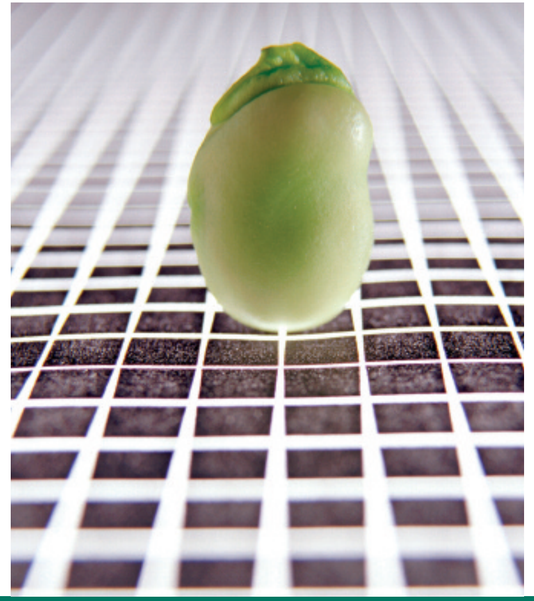
It is an area where there are strongly conflicting views and opinions, where scientific progress and individual morals and beliefs are often opposed and where the science itself is sometimes uncertain and open to interpretation.

However, food security is also one of the major challenges facing humanity and new genetic technologies undoubtedly have potential to help ameliorate the current situation - whereby some 850 million people lack access to sufficient nutritious food at affordable prices.

The international scientific community has a duty to responsibly develop and explain its research in this area.

The final act of ICSU's former Advisory Committee on Genetic Experimentation and Biotechnology (ACOGEB) was to commission a meta-review to establish the current state of scientific knowledge on genetic technologies and food production.

ACOGEB was funded mainly by special contributions from national members of ICSU and this support is gratefully acknowledged.



New Genetics,

Food and Agriculture

The ICSU report **"New Genetics, Food and Agriculture: Scientific Discoveries - Societal Dilemmas"** is a unique analysis of over 50 independent and authoritative scientific enquiries concerning the risks and benefits of applying new genetic discoveries to food and agriculture. The report is based on publications by national academies of science, international agencies and other organizations between 2000 and 2003.

The objective was to provide a clear overview of the state of scientific knowledge on the subject in order to guide public policy development as well as to provide orientation for researchers

The ICSU report analyses key issues, identifies areas of scientific convergence and divergence and highlights gaps in knowledge that need to be addressed by additional research.

It focuses on five key questions concerning genetically modified foods that reflect the concerns of society:

5 key questions

Who needs them?
Are they safe to eat?
Will there be any effects on the environment?
Are the regulations adequate?
Will they affect trade?

The ICSU report, "New genetics, food and agriculture"is available online with abstracts and full texts of all source documents on the ICSU website, www.icsu.org.

Grants for interdisciplinary science

Grants awarded in 2003 for projects to be completed in 2004

Lead Applicant	Title of Proposal
CODATA	*Inter-American Data Workshop Access to Environmental Data*
IAU	*Comet/Asteroid Impacts and Human Society*
IGBP	*Global Iron Connections: Review of Scientific Knowledge of the Global Iron Cycle*
IGBP	*Toward an Integrated Regional Study of the Asian Monsoon System*
IUGS	*Dark Nature – Rapid Natural Change and Human Responses*
IUHPS	*Online Dictionary of National History of Sciences Bibliographies and Archival Sources*
IUPsyS	*Human Dimensions of Global Change: Human Perceptions and Behaviour in Sustainable Water Use*
IUTAM	*Foundation of an African Institute for Mathematical Sciences (AIMS)*
SCL	*Preservation of Data from WWSSN Film Chips*
SCOPE	*International Nitrogen Initiative (INI) - Phase 1, Assessing the state of knowledge of N dynamics in ecosystems*
SCOPE	*Rapid Assessment Project : Biodiversity, Health and the Environment*

Supporting interdisciplinary science

Qualifying for a grant

Projects are always led by an ICSU Scientific Union or by an ICSU Interdisciplinary Body.

Supporting applicants might include ICSU National Members and/or other Unions, Interdisciplinary Bodies and Scientific Associates.

ICSU Scientific Union members, organized by scientific discipline, provide focused expertise. Through their international membership, they play a crucial role as representatives of the world wide scientific community and amplify the impact of ICSU projects in their respective fields.

ICSU Interdisciplinary Bodies are created with a specific mission focused on high priority international research topics.

The ICSU grants programme benefits from the collective scientific knowledge of the entire ICSU community.

ICSU members and interdisciplinary bodies may apply for short-term seed funding of specific projects through the ICSU Grants programme.

This programme is made possible thanks to UNESCO's generous support. It fosters both interdisciplinary research and specialized projects in specific fields.

All projects must have an international component. They are selected in accordance with the priorities set out in an UNESCO/ICSU framework agreement.

A major aim of the program is to strengthen knowledge sharing and skills acquisition. Many initiatives are devoted to sustainable development and to building scientific capacity, particularly in developing countries.

A proactive approach and a degree of financial contribution from ICSU can help launch pilot programmes which will eventually be added to the agendas of other scientific organizations or government agencies. Scale-up of successful experiences is often made possible by additional funding from other sources.








Supporting interdisciplinary science

Projects carried out in 2003

Assessing impacts of biodiversity changes on ecosystems

DIVERSITAS • IGBP • IHDP

DIVERSITAS organized a three-day meeting (Paris, 2003) to produce a science plan and an implementation strategy for a new project on "ecoSERVICES".

This project will study the impacts of biodiversity changes on ecosystem functioning (e.g., predation, productivity, carbon sequestration) and services (e.g., biological control, food, greenhouse gas regulation).

The document produced describes how DIVERSITAS will engage the wider scientific community in:

- developing effective means of linking changes in ecosystem functioning to changes in ecosystem goods and services

- expanding the science of biodiversity and functioning to larger temporal and spatial scales, and over a greater breadth of the biological hierarchy.

The direct human response is to be considered as a critical component of biodiversity and ecosystem functioning.

Building integrated earth system science on the land-atmosphere interface

IGBP • WCRP

The Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS), is a 10-year international research project conducted within the framework of IGBP. The goal of the project is to provide understanding of how physical, chemical and biological processes interact to transport and transform energy and matter through the land-atmosphere interface.

The first Open Science Conference (Helsinki, 2003) outlined and discussed a science plan and an implementation strategy for iLEAPS. About 150 participants from 30 countries attended the meeting, representing both fundamental and applied science in a wide range of fields (chemistry, physics, biology, meteorology, hydrology, etc.).

Gaps in current knowledge were outlined to help plan for future research. New research activities were proposed at local to global scales, taking the present, paleo, and future perspective into account.

Comprehensive information system on natural gas hydrates

CODATA • IUPAC • Russia

Enormous deposits of methane hydrate on the ocean floor and in the permafrost at many worldwide locations offer an alternative energy source for future generations.

During the first phase of this two-year project, a group of international scientists and scientific institutes started to create a world-wide, comprehensive information system on different aspects of gas hydrates. Such an integration system is very important as many agencies are considering the exploitation of these deposits in various countries. The ICSU grant was important in securing additional funding, for starting regional and national research activities in Russia, USA, China and India.

Past hydrological events related to understanding global change

INQUA • IGU • IAHS

Working together, six different research organizations, representing various countries and disciplines, devised a standard approach to the analysis of dated palaeoenvironmental records.

By applying this method to data from the U.K., Poland and Spain, the group was able to produce a detailed record of Holocene alluvial activity which, when compared to patterns of climatic change and anthropogenic activity, will shed light on the principal mechanisms driving river system change.

Consequently and for the first time, it will be possible to undertake a regional comparison of Holocene river activity across Europe, and even extend the method to other areas providing valuable information for water and river managers throughout the world.

Results will presented during the Geomorphology Conference and the 30th Congress of the International Geographical Union (Glasgow, August 2004).

South African vulnerability initiative

IHDP • IGBP • IGU

Vulnerability is an emerging issue across a variety of themes and political agendas.

This project aimed to incorporate multiple stressors (HIV/AIDS, conflict, globalization, urbanization, water scarcity, and institutional changes) into a framework for assessing how and why different regions and sectors of society in Southern Africa are vulnerable to global environmental change.

A foundation has been laid for forging partnerships amongst scientists working on global environmental change, development agencies and security-vulnerability practitioners in South Africa. This was an opportunity to involve younger scientists and certain agencies that would not typically include global environmental change in their programmes.

Capacity building workshop on X-ray astronomy

COSPAR • IAU • URSI • China

The second X-ray astronomy workshop in the COSPAR Capacity-Building Program (Udaipur, India, 2003) was organized to teach young or isolated scientists to exploit the existing data from the Chandra and XMM-Newton space missions. These archives are readily available over the Internet (together with software for all stages of data analysis) but they are primarily used by scientists in Europe, Japan and the USA.

At the end of the workshop, each of the participants had mastered the analysis of at least the basic elements of X-ray astronomy.

COSPAR's programme of Capacity-Building Workshops is now in its fifth year of development and operation. In addition to India, a workshop in X-ray astronomy was held in Brazil (2001) and further one will be organized in South Africa (2004).

Implementation strategy for global environmental change

DIVERSITAS • IGBP • IHDP

Sponsored by ICSU and other international organizations, DIVERSITAS is an interdisciplinary research programme which focuses on biodiversity science in a global context.

The grant was used to organize scoping meetings focused on "bioSUSTAINABILITY" and "bioDISCOVERY," both identified by DIVERSITAS as priority areas for future activity.

During these meetings, a science plan and an implementation strategy were drafted for each core project. This was an opportunity to stimulate new collaborative partnerships among scientists representing various disciplines, with an initial focus on the link between ecological and economic sciences.

Additional funds have also been raised both for the International Offices and for activities directly related to these projects.

Polygenetic models for Pleistocene paleosols

IUSS • IGU • INQUA

Reconstructing the dynamics of terrestrial paleoenvironments is one way to better understand global climate change.

Different collaborative groups from Germany and Mexico (soil chemical research and rock magnetic properties), from Austria (clay mineralogy), and from Germany and Russia (soil meso/and micromorphology)contributed their specific methods to the study and interpretation of Pleistocene paleosols in relation to the polygenetic models of their development.

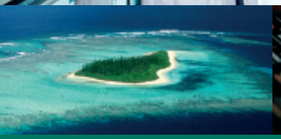
Students participating in this project benefited from a unique experience in international and interdisciplinary cooperation in the course of field research and the presentation of results.

A uniform approach to paleosol description and sampling was devised, making it possible to integrate future laboratory results on collected samples. The models will be viewed as a proxy for environmental history and correlated with sedimentary records.

ICSU 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**

In partnership with UNESCO, and with additional support from the United States, ICSU provides seed funding for interdisciplinary projects with an international scope.



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

Projects carried out in 2003

Supporting interdisciplinary science

Rescue of old analogue magnetograms by converting to digital images

IUGG • WDC

In the course of this project, which involved participants from Russia, India, Japan and the United States, nearly 65,000 old and historic magnetograms (representing 177 station years) were catalogued and converted to digital images.

An automatic system for recording routine observations of the Earth's magnetic field was invented in the 1840's. By the beginning of the 21st century, more than 150 years of geomagnetic recordings had been collected, mainly on paper, analogue magnetograms.

These fragile records, some of which had been unknown to the international community before the project, others which had existed in a single copy, are important for studying long-term variations of the main geomagnetic field, as well as for determining the behaviour of short-term field variations. The latter is a key to understanding long-term trends in solar activity and their impact on global change.

Soils and sediments: biodiversity and ecosystem functioning

SCOPE • DIVERSITAS • The Netherlands

In addition to the publication of numerous articles and a science monograph, a volume on recent advances in soil ecology has been prepared to help explain the importance of biological diversity, and to give examples to a wide audience of how new knowledge about soil life is influencing current management practices.

The United Nations Environment Programme has declared the soil "the largest source of untapped life left on Earth." Two-thirds of the world's biological diversity lives in terrestrial soils and underwater sediments.

Experts from a wide spectrum of disciplines have begun to identify the taxa of these underground communities and highlight their roles in maintaining and restoring vital life processes. However, little of this knowledge has reached other scientists, policy-makers and interested members of the general public (gardeners, farmers, fishermen, conservationists, and teachers).

Promoting open access and the public domain in digital data

CODATA • ICSTI

There is considerable discussion within the scientific community on how to achieve and maintain full and open access to data.

An international meeting on the subject of Open Access (OA) to scientific literature was organized in Paris by ICSTI, INIST and INSERM in January 2003. Scientists and commercial publishers met for a review of the current situation and an examination of possible future developments.

In March, an International Symposium on Open Access and the Public Domain in Digital Data and Information for Science was jointly organized by UNESCO, ICSU, CODATA, the U.S. National Academies and ICSTI. Some 140 experts and managers from both government and academic sectors gathered to discuss the impact of OA on international public research.

International conference on biological sciences, development and society

IUBS • Egypt

An international conference, "Biological Sciences, Development and Society" (Cairo, 2004) was organized at the invitation of the Egyptian Academy of Scientific Research and Technology (ARST).

The Cairo conference was a partnership platform, combining the expertise of the biological community with the strength and resources of a large coalition of international organisations.

Focusing on the challenges of the 21st century, the conference emphasized the more applied aspects of new biology and its implications for development and society. The topics selected concerned not only biologists, but also politicians and decision-makers, economic and environmental actors, educators and the public at large.

Five symposia were devoted respectively to "Bioinformatics and the development of biotechnologies and bioresources", "Stress biology", "Integrative biology", "Biological education, ethics and society" and "Biological sciences in the Arab region".

International perspective on primary and secondary (K-12) education in mathematics

IMU • CCBS

Sometimes there is a gap between primary and secondary teaching practice as perceived by Ministries of Education and university academics, and as experienced by practicing teachers. The exploration of this gap was one of the main focus points of the 2003 Park City Mathematics Institute International Seminar.

The seminar represented a rare collaboration among mathematics educators from different cultures and regions, including in 2003 for the first time, Cameroon, Ecuador, Iran, Northern Ireland and Romania. Through the course of the seminar, participants shared their wide range of education-related knowledge and personal experiences. Currently practicing teachers made up 50% of seminar participants.

The PCMI seminar is to become an annual event, its proceedings being considered an important contribution to the international dialogue comparing educational policy and practice.

Rapid assessment project: a review of global change in monsoon Asia

IGBP • IHDP • WCRP • DIVERSITAS • START

Three sub-regional Rapid Assessment Projects for China/East Asia, South Asia and Southeast Asia systematically reviewed current knowledge regarding regional aspects of global change in Monsoon Asia.

These Monsoon Asia Integrated regional studies (MAIRS) covered major demographic, socio-economic and institutional drivers for change; effects on atmosphere, water cycle, coastal systems and local ecosystems; impacts on biogeochemical cycles and climate; effects on regional biospheric life support systems.

A conceptual framework was developed and refined. Sub-regional assessment exercises were carried out in East Asia and South Asia. As a result of the meeting, the Chinese Academy of Sciences is now considering hosting an international project office in Beijing. It is planned to publish a book as a way of sharing the outcome of the MAIRS project with the wider community.

Improving on-line access to astronomical and geophysical data

FAGS • IUGG • IAU • URSI

Operating under the joint sponsorship of the International Astronomical Union, the International Union of Geodesy and Geophysics, and the International Union of Radio Science, FAGS was established in 1956 with the objective of setting up international data services related to these disciplines.

Today, as a result of this cross-union initiative, twelve data services have been established.

Each deals with a specific astronomical or geophysical parameter, ranging from sea levels and glaciers to star catalogues. Data and information is collected, analysed and made available to the scientific community in the form of indices, maps and other useful publications.

In keeping with the FAGS objective to widen the application and increase awareness of their work, a web portal was established. This links to all FAGS data services to provide easy access to the most up-to-date data.

South African savannas

SCOPE • IGBP • United Kingdom

Savanna resources in Southern Africa are subject to increasing pressures.The South African Savanna Network was initiated as a cross-disciplinary quantification and assessment project in three vital areas :

- Sustainable management of natural resources (soil, water, flora and fauna)
- Human impact
- Enhancement of social and economic benefits

Over the past three years, a synthesis of research and data gathering projects was carried out in Botswana, Mozambique, South Africa and Zimbabwe. Site-specific results were integrated into national, regional and global perspectives.

The findings, including more sustainable alternatives to certain existing practices and policies, were presented at a workshop in each of the four countries, at international conferences and in scientific publications.

UNESCO and ICSU

ICSU has worked in close partnership with UNESCO since the inter-governmental organization was created in 1946 and our missions are intertwined.

In the early years, UNESCO provided a substantial financial contribution to help ICSU build up the international scientific unions.

ICSU continues to receive valuable UNESCO funding which, since 1996, has been governed by a Framework Agreement that was renewed in 2002 and sets out the mutually agreed priority areas for working jointly together. The amount of this funding is agreed upon biennially by the UNESCO General Conference.

However, the partnership between ICSU and UNESCO goes much deeper than any financial exchange. Many of ICSU's interdisciplinary bodies were established in cooperation with UNESCO and several Unions are closely involved in key UNESCO programmes.

Joint ICSU-UNESCO initiatives in 2003

UNESCO has four main sectors – Science (Natural and Social), Communication and Information, Education and Culture.

Historically ICSU's main relations have been with the Natural Sciences Sector, but in 2003 ICSU strengthened partnerships with other Sectors.

Major joint ICSU-UNESCO activities in 2003 included:

• **World Summit on the Information Society**
ICSU developed an Agenda for Action for science in the information society and co-sponsored events at the Geneva Summit.
- jointly with UNESCO's Communication and Information sector and its Science sector

• **Science for Sustainable Development**
ICSU was actively involved in follow-up to the World Conference on Higher Education and planning for a UN decade for Education for Sustainable Development.
- jointly with UNESCO's Science and Education Sectors

• **International Basic Sciences Programme**
The ICSU executive and several Unions were represented on the 'expert' advisory Group that was convened in 2003 and a preliminary proposal for a new programme was endorsed by the General Conference.
- with UNESCO's Natural Sciences Sector

• **Ethics and Education**
Joint project in 2003 between ICSU and the UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)
- with UNESCO's Social Science Sector

• **Global Partnership on Earth Observation**
Joint input was presented to the Inter-governmental Earth Observation Summit in Washington in July 2003.
- with UNESCO's Natural Sciences Sector

UNESCO General Conference 2003

The UNESCO General Conference, which takes place every 2 years, was held in October 2003 and ICSU was represented by the Executive Director and Deputy Executive Director. Several ICSU bodies and member organizations also attended.

The General Conference provides an opportunity to comment on UNESCO's biennial strategy which includes, for example, sustainable development as a cross-cutting priority.

"This partnership between governmental and non-governmental organizations is crucial for us to achieve our shared goal of strengthening international science for the benefit of society."

Carthage Smith
Deputy Executive Director, ICSU
UNESCO General Conference, October 2003

Working together

International Scientific Unions

Communication between the ICSU executive and the International Scientific Unions was reinforced in 2003 through the participation of the ICSU Executive Director and Members of the Board in several Union General Assemblies/Congresses.

ICSU Board members participated in the following Union General Assemblies/Congresses:

- Astronomy (Sydney, Australia)
- Brain Research (Prague, Czech Republic)
- Biochemistry and Molecular Biology (Toronto, Canada),
- Geodesy and Geophysics (Sapporo, Japan)
- Pure and Applied Chemistry (Ottawa, Canada)

Promising interaction between Unions was apparent at the Food Science and Technology (IUFoST) General Assembly in Chicago in a joint symposium involving scientists from the Soil Sciences and Nutritional Sciences on the "Food Chain". The Executive Director participated in both the GA and the symposium.

Scientific Union General Assemblies/Congresses are major international scientific meetings that bring together thousands of scientists from all over the world in their relevant disciplines. All Unions that adhere to ICSU are non-governmental and non-profit organizations.

National Members

National Member meetings
Stronger interaction between ICSU National Scientific Members and International Scientific Unions was on the agenda of several National Member meetings attended by the Executive Director in 2003: NRC (Canada), KWAS (Netherlands) and the Royal Society (UK).

National Science Foundation and the National Research Council
The Executive Board meeting in Washington was an opportunity to discuss the latest ICSU developments with the National Science Foundation and the National Research Council, USA.

Interacademy meeting
An interacademy meeting of ICSU European National Members was held at the Fondation des Treilles in France, at which the Executive Director explained the process of developing the ICSU Strategy for 2006-2012.

In addition to the meetings held outside the Secretariat, representatives from many National and Union Members visited the Secretariat in Paris to discuss topics of mutual interest.

An ICSU National Scientific Member can be a scientific academy, research council or scientific institution.

Facilitating exchange...

START Young Scientists Conference

The START Young Scientists Conference on Global Change was hosted by the Third World Academy of Sciences in Trieste, Italy from 17-19 November 2003.

The Young Scientists Conference stemmed from the Earth System Science Partnership (ESSP) Open Science Conference on Global Change (Amsterdam, 2001). As a follow-up, START was asked to organize a high-level international conference for young scientists.

Over 1000 applications were received, from which over 80 young scientists were selected to make oral presentations and posters. Selection was based solely on scientific merit and there was an even balance between the number of women and men presenting and between participants from developed and developing countries, reflecting the universal interest in global change research.

Energy and Sustainable Development Conference

ICSU cosponsored the "Energy and Sustainable Development" conference which was organized in Tokyo in December 2003 by the Science Council of Japan.

The objective of the conference was to examine how the scientific community can contribute to the goals of providing clean, reliable, sustainable energy to the world's rapidly growing and urbanizing population.

Immediately after the conference, ICSU convened an *ad hoc* working group to evaluate the potential roles for ICSU in advancing research and development related to the challenges of sustainable energy. The group is preparing a brief report with recommendations that will be incorporated into ICSU's larger strategic planning process.

Education and Sustainable Development

The first and second Ubuntu Alliance Meetings were held in 2003 as a follow-up to the World Summit on Sustainable Development.

A first Ubuntu Alliance Meeting (Tokyo, April 2003) was convened by the UNU Institute for Advanced Studies to inventory actions undertaken and planned by Alliance members.

A second Alliance Meeting was hosted by ICSU (Paris, June 2003).

A focal point of this meeting was the importance of education in creating the conditions for sustainable development - both within schools and in society as a whole.

The Ubuntu Declaration, signed in 2002 by eleven of the world's foremost educational and scientific organizations, seeks global educational alliance for sustainable development.

The Ubuntu Declaration states that greater global emphasis on education is essential to reaching sustainable development goals, and that there is a need to integrate a sustainable development focus into the curriculum at every level of education, starting in primary school.

The Declaration effectively creates a major global alliance to promote science and technology courses and teaching throughout educational systems worldwide.

It identifies four major goals:

- curriculum development
- North-South networking
- strategic educational planning and policy-making
- capacity building in scientific research and learning for Sustainable Development

ICSU plays a central role in Sustainable Development programmes at global and local levels.

...and developing scientific partnerships

Third World Academy of Sciences (TWAS)

ICSU President Jane Lubchenco addressed the Third World Academy of Sciences 20th Anniversary celebrations in Beijing and pledged ICSU's commitment to strengthening science in and for developing countries in partnership with TWAS. The ICSU Executive Director, Thomas Rosswall was welcomed as a newly elected Associate Fellow of TWAS.

TWAS has been invited to serve ex officio on ICSU's new Policy Committee on Developing Countries (PCDC). The ICSU Regional Offices will provide an excellent opportunity for strengthened collaboration, since TWAS is also establishing regional offices.

The Third World Academy of Sciences (TWAS) is one of ICSU's main partners. Current collaborative activities include the ICSU-TWAS-UNESCO-UNU Visiting Scientists Programme and partnership in the Consortium on Science and Technology for Sustainable Development.

InterAcademy Panel (IAP)

ICSU President Jane Lubchenco participated in the IAP 10th Anniversary celebrations in Mexico City. This offered an excellent opportunity to present ICSU's new initiatives and strategic developments.

In 2003, the InterAcademy Panel on International Issues worked with TWAS on the strengthening of academies of sciences in developing countries and the establishment of new academies.

Having a strong network of national academies in all regions is important for ICSU. The work of IAP and TWAS should help strengthen the ICSU presence in countries where it is not currently well represented.

ICSU works with its key partners to facilitate international scientific exchange and encourage scientific networking.

Global Forum on Higher Education, Research and Knowledge

UNESCO and the Swedish International Development Agency (SIDA) have launched a forum on higher education, research and knowledge.

ICSU is represented on the forum's Coordinating Committee. With its broad knowledge of the current situation in global scientific research, ICSU has an important advisory role as the Forum develops.

The Global Forum provides regional platforms for researchers, policy makers and experts to discuss research issues concerning higher education. The objective is to widen understanding of relevant systems, structures, policies, trends and developments.

A formal project cooperation agreement is under discussion and likely to be signed in 2004.

Looking ahead

Regional Offices

In 2002, ICSU initiated a planning process for the establishment of four Regional Offices in developing countries.

This is a major step in order to strengthen the involvement of the scientific communities of developing countries in international agenda setting.

In 2003, ICSU National Members in Latin America recommended that the ICSU Regional Office for Latin America and the Caribbean be established at the Mexican Academy of Sciences.

Following this recommendation, the Mexican Academy of Sciences, which is the ICSU National Member, and CONACYT (National Council for Science and Technology) offered to host and financially support the Regional Office.

The Executive Board has enthusiastically accepted the proposal and it is expected that the office will open in 2004.

Other ICSU Regional Offices are to be located in Africa, the Arab Region and Asia. All offices will have two prinicipal goals:

- to enhance participation of scientists and scientific organizations from the region in ICSU's research and policy activities

- to enable ICSU to play a more effective role in strengthening science within the context of regional priorities, and in building capacity through South-South and North-South collaboration.

International Polar Year (IPY) 2007-2008

In response to considerable interest from scientists and polar and global research bodies, the ICSU Executive Board established an international planning group in February 2003 to develop the concept of an International Polar Year (IPY) in 2007-08.

As with previous Polar Years, and the International Geophysical Year (1957-58), this IPY has the potential to capture the public's imagination and increase awareness of the crucial role of the Polar Regions.

IPY 2007-2008 is envisioned to be an intense campaign of coordinated polar observations and analysis covering both the Arctic and the Antarctic. IPY will be bipolar in focus, multidisciplinary in scope, and truly international in participation. Activities organized over the 12-month period will hopefully attract and develop the next generation of polar scientists.

The scientific goal is to increase understanding of the role of Polar Regions in planetary processes and to explore polar environments. It will also address the human dimension associated with the rapid changes now occurring in these regions.

A key objective will be the exploitation of opportunities afforded by new Information Technologies to achieve previously unprecedented participation in polar science.

ICSU secretariat

Thomas Rosswall
Executive Director

Carthage Smith
Deputy Executive Director

Tish Bahmani Fard
Assistant Executive Director

Administrative Staff

Maureen Brennan
Membership

Eric Leparmentier
General Services

Natacha de Marchi
Accountant

Miiko Anderson
Administrative Assistant

Communications and IT

Mustapha Mokrane
IT Officer / Webmaster

Mary Galambert
Communications Officer

Special Assistants in 2003

Hervé Barioulet
World Summit on the Information Society

Daniel Rodary
Environment and Sustainable Development

Environment & Sustainable Development

Leah Goldfarb
Science Officer

Gisbert Glaser
Senior Advisor

Elisabeth Merle
Administrative Officer

Scientific Planning & Review

Laurie Geller
Science Officer

Rohini Rao
Administrative Officer

Financial Summary

ICSU's principal source of "central/core" income is member dues. The other major sources of income are grants from other organizations and Foundations, including a contribution from UNESCO. As well as supporting the Secretariat and the various Policy and Advisory Committees, a significant 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 approval of the audited accounts of ICSU.

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. Each Scientific Union and National Scientific Member of ICSU may choose its own category for payment of dues. Each International and Regional Scientific Associate shall pay annual dues determined by the General Assembly. National Associates pay no dues".

Statement of income and expenditure

International Council for Science (ICSU).
For the period 1 January 2003 to 31 December 2003

	Euros
INCOME	
Membership dues	
National Members and Scientific Unions	1 820 297
Scientific Associates	10 373
Cancellation Provision Arrears	95 481
Membership dues for WCRP	340 960
Grants from:	
UNESCO	305 260
US NAS	341 785
NSF	689 737
Other foundations	371 891
Other income	884 448
Investment income	67 614
Total income	**4 927 845**
EXPENDITURE	
Policy committees	183 009
Other ICSU committees	78 877
Joint initiatives	1 063 971
Grants programme	800 042
New initiatives	411 091
Governance meetings	148 503
Policy and administrative support	2 389 043
Contingency/Provision	58 533
Investment charges	13 558
Total expenditure	**5 146 626**
Excess of income over expenditure	***-218 781***

Balance sheet

International Council for Science (ICSU).
For the period 1 January 2003 to 31 December 2003

	Euros
ASSETS	
Bank and cash balances	1 488 922
Marketable securities	1 669 549
UNESCO subvention	25 260
Sundry debtors and prepayments	478 880
Fixed assets	119 549
Total assets	**3 782 161**
LIABILITIES	
Interdisciplinary bodies	67 329
Others activities	-
Sundry creditors and accruals	847 295
New Initiatives fund	-
Provision	58 533
General fund	1 463 834
Mandatory reserve	1 563 950
Total liabilities	**4 000 942**
Net Result	***-218 781***

National Members

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

**Associates*
***Observers*

Scientific Associates

Academia de Ciencias de America Latina (ACAL)
Engineering Committee on Oceanic Resources (ECOR)
Federation of Asian Scientific Academies and Societies (FASAS)
International Association of Hydraulic Engineering and Research (IAHR)
International Cartographic Association (ICA)
International Cell Research Organization (ICRO)
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 Quaternary Research (INQUA)
International Union for Vacuum Science, Technique and Applications (IUVSTA)
International Union of Forest Research Organizations (IUFRO)
International Water Association (IWA)
Pacific Science Association (PSA)
Third World Academy of Sciences (TWAS)

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 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 Geodesy and Geophysics (IUGG)
International Union of Geological Sciences (IUGS)
International Union of Immunological Societies (IUIS)
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 the History and Philosophy of Science (IUHPS)
International Union of Theoretical and Applied Mechanics (IUTAM)
International Union of Toxicology (IUTOX)
Union Radio-scientifique Internationale (URSI)

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)
Panel on World Data Centres (WDC)
Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF)

*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.*

*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.*

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

*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.*

Acronyms

AIST	National Institute of Advanced Industrial Science and Technology (Japan)
CCBS	Committee on Capacity Building in Science
CERN	European Organization for Nuclear Research
CODATA	Committee on Data for Science and Technology
COSPAR	Committee on Space Research
CSD	UN Commission on Sustainable Development
CSPR	Committee on Scientific Planning and Review
ESSP	Earth System Science Partnership
FAGS	Federation of Astronomical and Geophysical data Analysis Services
GA	General Assembly
IAHS	International Association of Hydrological Sciences
IAP	InterAcademy Panel on International Issues
IAU	International Astronomical Union
ICSTI	International Council for Scientific and Technical Information
IGBP	International Geosphere-Biosphere Programme
IGU	International Geographical Union
IHDP	International Human Dimensions Programme on Global Environmental Change
IMU	International Mathematical Union
INQUA	International Union for Quaternary Research
ISSC	International Social Science Council
ISTS	International Initiative on Science and Technology for Sustainability
IUBS	International Union of Biological Sciences
IUGG	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
IUHPS	International Union of the History and Philosophy of Science
IUPAC	International Union of Pure and Applied Chemistry
IUPsyS	International Union of Psychological Sciences
IUSS	International Union of Soil Sciences
IUTAM	International Union of Theoretical and Applied Mechanics
MA	Millennium Ecosystem Assessment
PAA	Priority Area Assessment
S&T	Science and Technology
SCFCS	Standing Committee on Freedom in the Conduct of Science
SCL	Scientific Committee on the Lithosphere
SCOPE	Scientific Committee on Problems of the Environment
SCRES	Scientific Committee on Responsibility and Ethics in Science
START	Global Change SysTem for Analysis, Research and Training
TWAS	Third World Academy of Sciences
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
URSI	Union Radio-Scientifique Internationale
WCRP	World Climate Research Programme
WDC	World Data Centres
WFEO	World Federation of Engineering Organizations
WSIS	World Summit on the Information Society
WSSD	World Summit on Sustainable Development

The Universality of Science

The essential elements of the Principle of the Universality of Science are non-discrimination and equity (ICSU Statute N° 5).

In accordance with this principle, all scientists should have the possibility to participate, without discrimination and on an equitable basis, in legitimate scientific activities, whether they be conducted in a national, transnational or international context.

ICSU has long promoted this principle, in particular by defending the rights of scientists to freely associate in international scientific meetings.

Matters related to this principle are dealt with by ICSU'S Standing Committee on Freedom in the Conduct of Science (SCFCS).

Recognizing the changing environment and new threats to this fundamental freedom, ICSU is currently undertaking a review of the Universality of Science Principle.

ICSU
International Council for Science

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