STRENGTHENING INTERNATIONAL SCIENCE
FOR THE BENEFIT OF SOCIETY

ANNUAL REPORT

ICSU
International Council for Science

2013

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

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

MESSAGE FROM THE PRESIDENT

In early November 2013, Super Typhoon Haiyan (Yolanda) struck the Philippines. Horrific as the destruction was, it was for many but a taste of "the new normal", a future in which escalating human pressures drive environmental changes beyond known thresholds. What does this mean for the actions and programmes of the International Council for Science?

The ICSU family has the potential to propel humanity towards a sustainable future. Scientists involved in our programmes have always produced excellent science. And a host of new programmes are poised to continue this legacy – Integrated Research on Disaster Risk, Urban Health and Wellbeing, World Data System, Future Earth, and many more. Future Earth, in particular, offers an exciting vision for what sustainability science can do: fully involving stakeholders, mobilizing all regions, and driving better policies at every level – from defining a set of global Sustainable Development Goals to those of nations and cities.

But if we wish to fulfil our potential, we will need to strive even harder, especially on three fronts:

First, let us better harness the tremendous power of our membership. This echoes my words in last year's Annual Report. The April 2013 Unions Meeting in Paris offered a plethora of ideas, suggesting concrete projects where National Members, Unions, Programmes and Regional Offices could collaborate to strengthen research, boost science education, influence policies and more. These should serve as a model for our future efforts: ICSU's core strength lies in its diverse global membership.

Second, let us examine our true impact rigorously. At the General Assembly in August 2014, we will receive early results from the External Review, the first since 1996. This is a tremendous opportunity for ICSU to examine what has been achieved since the 1996 Review and make sure that it is on track for the challenges of the coming decades. I will also pass the Presidency to Professor Gordon McBean, an excellent scientist and leader who has played an active role in ICSU programmes and activities throughout the years. In the five years since my election, humanity marched on in an unsustainable direction. Sustainable development is still an aspiration rather than a reality. We must therefore ask: has ICSU trod the right course? What have we achieved? How can we do better?

Third, we must be much more action-oriented. As Future Earth's vision states, science should have a sense of urgency to contribute to solving real-world problems, to bring about different ways of doing things. That means actively connecting knowledge to action, also by stepping up our communication and engagement with decision-makers and stakeholders. Only then will the evidence we scientists provide make a real difference and ultimately transform the world for better.

A world in which Typhoon Haiyan (Yolanda) is the "new normal" is not the future we want for our children and grandchildren. For humanity to be able to respond to the challenges posed by anthropogenic environmental changes, it needs to rely on solid scientific information providing pathways for humans to adapt to and mitigate these changes. It is our duty as scientists to deliver that knowledge in a timely and useable manner. Let us harness the strengths of our membership, honestly examine the impacts we make, and work relentlessly to connect knowledge to real, tangible action.

Yuan Tseh Lee
President

MESSAGE FROM THE EXECUTIVE DIRECTOR

During 2013, the International Council for Science, with its members, bodies and partners, has made real and substantial progress in delivering its mission – to strengthen international science for the benefit of society. We look forward to our work in 2014 which promises to be a defining year for our endeavours and we will have the outputs from an independent review to help chart the way ahead.

We have made major advances in each of the themes of our strategic plan, with its special focus on disciplinary, regional and organizational integration. Under International Research Collaboration, the new programme on Urban Health and Wellbeing is taking shape. I am delighted that the International Programme Office will be hosted by the Institute of Urban Environment, Chinese Academy of Sciences in Xiamen, China – which will provide a scientifically excellent and inspiring environment to drive the programme forward. Future Earth, a major new programme on research for sustainability is now rapidly moving into full implementation, with the expectation that we will announce new research opportunities and a globally distributed secretariat during 2014. And all of the more established programmes have continued to deliver high-quality, high-impact research.

Under the theme of Science for Policy, building on our work at the Rio+20 Conference on Sustainable Development, ICSU continues to represent science at the UN in the process aimed at establishing a set of global Sustainable Development Goals. In 2013, we also saw the appointment of a UN Scientific Advisory Board for Sustainable Development, a body for which we have long argued. Looking forward, with the help of our GeoUnion cluster, the Integrated Research on Disaster Risk programme, and regional initiatives, we will contribute vital scientific knowledge and capability to the post-Hyogo framework for disaster risk reduction. We are also organizing, together with the Chief Science Advisor to the Prime Minister of New Zealand, a landmark conference of eminent science advisers to the world's leaders. The focus of discussions will be on how, practically, science advice has been used by governments and the opportunities to learn from experiences in different contexts.

ICSU's Committee on Freedom and Responsibility in the conduct of Science (CFRS) continues to act as the guardian of the Principle of Universality. During 2013, issues relating to the visas for scientists to attend international scientific meetings have particularly come to the fore, with serious concerns expressed by ICSU to national authorities worldwide. Looking forward, improving access to research data, particularly for integrated research, is a key topic for two of our data-related bodies, CODATA and the World Data System. To this end, they are jointly co-sponsoring, SciDataCon 2014, a major conference on data sharing and integration for global sustainability, which will be held in New Delhi in November.

This progress during 2013, and our expectations for 2014, would not have been possible without the active support of the ICSU membership, interdisciplinary bodies, partners and a large community of scientists and stakeholders who generously give of their time. We are particularly grateful to the French Government for their continued support and hosting of the Secretariat. As we look towards the General Assembly to be held in August in Auckland, New Zealand, we acknowledge, thank and celebrate all those who have made our continuing achievements possible.

Steven Wilson
Executive Director

INTERNATIONAL RESEARCH COLLABORATION

FUTURE EARTH

2013 was a year of transition for Future Earth, the 10-year research initiative that is aiming to provide the knowledge required to tackle the most urgent challenges to global sustainability. Future Earth is sponsored by the members of the Science and Technology Alliance for Global Sustainability comprising the International Council for Science (ICSU), the International Social Science Council (ISSC), the Belmont Forum of funding agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), the United Nations University (UNU), and the World Meteorological Organization (WMO) as an observer. The Transition Team published its final report, which will underpin the governance structure and research framework for Future Earth, and the programme took great strides towards becoming operational with the appointment of an interim Director and Secretariat.

Frans Berkhout, appointed interim Director of Future Earth in July 2013, is leading its implementation, bringing existing and new research communities and stakeholders together to deliver solutions-oriented knowledge for global sustainability. A further four members of staff have been recruited to the interim Secretariat, which is based at the ICSU offices in Paris.

LAND IGUANA ON GALAPAGOS. PHOTO BY ANDREW HENDRY, CHAIR OF BIOGENESIS, A PROJECT AIMING TO PROVIDE AN EVOLUTIONARY FRAMEWORK FOR BIODIVERSITY SCIENCE

Future Earth will connect science and society, and its role in mobilizing science and stakeholders across the world has been strengthened by a series of meetings and events that took place across the world in 2013. This included a set of national and regional workshops and consultations.

Involving early career researchers is a key priority for Future Earth. A networking conference for young scientists on Food Futures, co-sponsored by Deutsche Forschungsgemeinschaft (DFG), ICSU and ISSC, took place at Villa Vigoni on Lake Como, Italy in April. ICSU's Regional Office for Latin America and the Caribbean, in partnership with The World Academy of Sciences (TWAS), CONACYT (a public organization in charge of the promotion of scientific and technological activities in Mexico), and the Mexican and Brazilian Academies of Sciences, held a Latin America conference for early-career scientists.

JOHAN ROCKSTRÖM, CO-CHAIR OF THE FUTURE EARTH TRANSITION TEAM

Future Earth was presented at key scientific conferences during the year and the Future Earth blog and social media platforms were launched to engage new audiences and highlight research taking place under the initiative. The report of the Transition Team on the initial design of Future Earth was finalized and published in 2013. The Transition Team, co-chaired by Johan Rockström and Diana Liverman, comprised seventeen members from a wide range of disciplines and countries, as well as ex-officio members representing the main partners of the Science and Technology Alliance for Global Sustainability. To ensure that research conducted under the umbrella of Future Earth is actionable, relevant to stakeholders and carried out to the highest scientific standards, the programme will be co-designed, co-produced and co-delivered by the science and stakeholder communities. Led by a multi-stakeholder Governing Council, the ultimate decision-making body, a Science Committee and an Engagement Committee will guide the direction of Future Earth activities; the first Science Committee and an interim Engagement Committee were appointed in 2013.

The Science Committee comprises 18 members, including a Chairperson and two vice-Chairs. Mark Stafford Smith, Science Director of CSIRO's Climate Adaptation Flagship in Canberra, Australia, is the inaugural Chair. Melissa Leach, Director of the Economic and Social Research Council (ESRC) STEPS (Social, Technological and Environmental Pathways to Sustainability) Centre, and incoming Director of the Institute of Development Studies in the UK, and Belinda Reyers, a Chief Scientist at the Council for Scientific and Industrial Research (CSIR) in South Africa, serve

as vice-Chairs. The Chair and vice-Chairs will initially serve from June 2013–2016 and the Science Committee members will serve from June 2013–2015, both terms being extendable.

The Science Committee, working closely with the Engagement Committee, will provide scientific guidance, ensure scientific quality and guide the development of new projects. It will make recommendations on new and existing projects, and emerging priorities for research. It will oversee the transition of the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme (IHDP) and DIVERSITAS activities into Future Earth, secure strong partnership with the World Climate Research Programme (WCRP) community and provide guidance on new activities for Future Earth.

During the transition, the existing programmes and projects continue to deliver world class science with impact. For example, during 2013 the International Geosphere-Biosphere Programme led the preparation of a major new summary of research on oceans acidification which provides clear recommendations for policymakers based on a range of confidence levels. The report was launched at UNFCCC COP-19 in Warsaw, and generated extensive media coverage. DIVERSITAS and IHDP have continued to represent ICSU in the development of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

A Future Earth interim Engagement Committee comprising seven members has been appointed, with Robert Watson as Chair. Members of the interim Engagement Committee will provide strategic advice from a user perspective on Future Earth research, engagement and other activities, to support the implementation of Future Earth and its work with stakeholders, connecting Future Earth science to society. The interim Engagement Committee will work closely with the Science Committee to develop the scientific agenda and ensure that co-design has a prominent role. A call for members of the permanent Engagement Committee has now been published, and members are expected to be appointed in June 2014.

Ensuring continuity and a smooth handover to the permanent Secretariat of Future Earth is a key priority for ICSU and the other members of the Science and Technology Alliance for Global Sustainability. ICSU, on behalf of the Alliance, is overseeing selection of the permanent Secretariat, and an open competitive process for this was launched in September 2013. The permanent Secretariat, with headquarters and regional nodes, will coordinate research activities, handle the day-to-day management of Future Earth, and liaise with key stakeholders. In November 2013 those bidding to host the permanent Secretariat attended a bidders' conference, which brought together more than 70 participants from all over the world. The aim was to familiarize all interested parties with the requirements, and enable bidders to meet with other potential bidders to engage in discussions and consortium building for bids to host the Secretariat. A call for full bids was announced in late 2013, and the permanent Secretariat is expected to be appointed in June 2014.

TACLOBAN CITY, PHILLIPINES, WAS THE WORST HIT BY SUPER TYPHOON HAIYAN

INTEGRATED RESEARCH ON DISASTER RISK — IRDR

During the year the Integrated Research on Disaster Risk (IRDR) programme continued to consolidate its four major projects:

Forensic Investigations of Disasters (FORIN)

Risk Interpretation and Action (RIA)

Assessment of Integrated Research on Disaster Risk (AIRDR)

Disaster Loss Data (DATA)

IRDR has established International Centres of Excellence through the IRDR Scientific Committee and the relevant National or Domestic Committees to provide integrated research and capacity-building foci for the IRDR programme. The first was founded at the Academy of Sciences located in Taipei in late 2010. The second and third such Centres have now been established: the IRDR International Centre of Excellence on Vulnerability and Resilience Metrics (ICOE VARM) was formally established at the Hazards and Vulnerability Research Institute (HVRI) located at the University of South Carolina, Columbia, USA; closely followed by the IRDR ICOE on Community Resilience (ICOE CR) at the Joint Centre for Disaster Research at Massey University, Wellington, New Zealand.

A further Centre will follow in early 2014: the IRDR ICOE in Understanding Risk and Safety (ICOE UR&S) at the Institute of Environmental Studies located at the National University of Colombia, Colombia.

Preparations are underway for the Second International IRDR Conference on Disaster Risk to be held in Beijing on 7–9 June 2014 in Beijing and devoted to the theme “Integrated Disaster Risk Science: A Tool for Sustainability”

TERRACED RICE FIELDS

PROGRAM ON ECOSYSTEM CHANGE AND SOCIETY — PECS

The Earth system upon which human well-being depends is in a period of unprecedented transition. Global changes include profound alterations of social-ecological systems and the services they provide to globally interconnected societies and economies. An increased awareness of these changes is vital for developing effective responses. However, human capacity for action is still impeded by significant gaps in knowledge of the relationships between natural capital, human wellbeing, livelihoods, inequality and poverty. PECS is a ten-year initiative, sponsored by ICSU and UNESCO and hosted by the Stockholm Resilience Centre since 2011, which aims to contribute to filling these gaps.

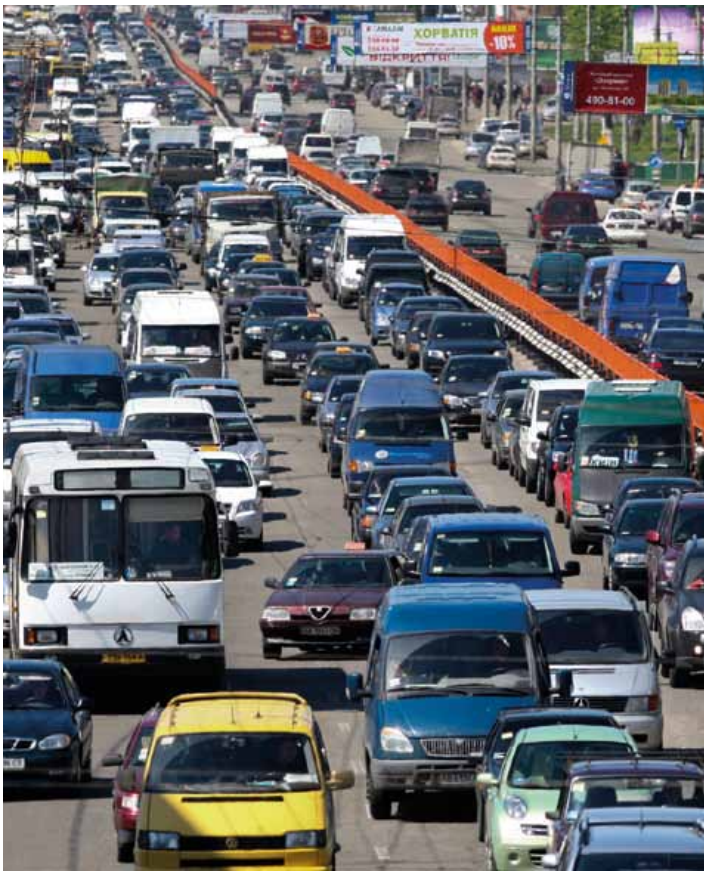
The principal approaches of PECS research are comparisons of place-based, long-term social-ecological case studies and the development of interdisciplinary working groups. PECS brings together a vibrant network of 11 transdisciplinary projects, covering 30 local and regional case-studies around the world. The growing portfolio of PECS case studies provides a wealth of regional and local assessments and generates new insights into the complex and multi-scale dynamics of social-ecological systems. The case studies explore, for example, the synergies and trade-offs among ecosystem services in the Norrström basin (Sweden); the relationships between ecosystems services and well-being of the poor in coastal areas of Africa; the interactions among land use, climate change, ecosystems and sustainable land and resource management solutions in numerous sites including Russia, China, Vietnam and Amazonia; climate change and impacts on biodiversity and ecosystem services in Montreal; and social structures and resilience to climate change in Norway and Switzerland.

In 2013, PECS held a three-day workshop that brought together PECS projects to exchange findings and approaches and develop a common integrated framework for PECS research. A special issue of the journal *Ecology and Society* is to be published based on the outcomes of these exchanges.

URBAN HEALTH AND WELLBEING

A significant year in the development of the new ICSU programme *Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach.*

The Science Committee held its 2nd meeting in Kuala Lumpur in May and held a joint session with members of the Asia and Pacific regional committee for Urban Health. A number of pilot projects are being developed in the region using a Collaborative Conceptual Modelling (CCM) approach, which involves multiple stakeholders in identifying the most relevant determinants of health in a defined system and then using various modelling techniques to explore this system. This approach was the subject of a seminar at the Malaysian Academy of Sciences, which also highlighted one of the pilot projects – green transport for better urban health – and engaged local scientists as well as members of the Science Committee.



In September, the Science Committee held its 3rd meeting in Paris prior to the International Conference on Urban Dynamics and Health, which was co-organized by ICSU together with several French urban policy and research organizations. It brought together natural, social and health sciences as well as architecture and urban planning, and had inter-sectoral representation of urban policy makers. For example, a session on the 'Housing for All' initiative in Canada included a former minister for social development, local government officials and scientists in a lively round table discussion. Conference participants came from 47 countries, and Science Committee and regional committee members played a prominent role – giving plenary presentations and moderating sessions.

These two meetings and the associated events provided a good forum for the development of partnerships. There was strong interest in the programme and several organizations expressed a desire to become involved. In November, the Inter-Academy Medical Panel (IAMP) became a formal co-sponsor of the programme and committed to using its networks of health scientists to promote programme activities. Discussions are ongoing with other potential partners who can also bring complementary skills and communities into the programme.

Following an open call for proposals to host an International Programme Office for the Urban Health initiative, the ICSU Executive Board agreed in November that the Office should be awarded to the CAS Institute of Urban Environment in the city of Xiamen in southern China. Generous funding has been secured for five years from the host institute, the Xiamen Municipal Government, the China Association for Science and Technology (CAST) and the Chinese Academy of Sciences (CAS). The international search for an Executive Director began in December and it is hoped that the Office will be fully operational in mid-2014.

GRANTS PROGRAMME

The ICSU Grants programme supports collaborative scientific initiatives of relevance to science and society. It is a competitive, peer-reviewed programme for ICSU Scientific Unions, Interdisciplinary Bodies and Joint Initiatives in collaboration with other ICSU bodies including Regional Offices.

In 2013, priority was given to proposals that focused on:

1. Science & Technology for Sustainable Development
2. Capacity Building and Science Education
3. Dissemination of Data and/or Information from Science and Technology
4. Emerging Science – Creation of new Knowledge.

The programme also emphasizes the involvement of young scientists, women scientists, and scientists from developing countries. A key overall aim is to forge new partnerships between organizations that do not routinely collaborate.

A total of €260,000 was available in 2013 with a maximum award of €30,000 per project. The Committee on Scientific Planning and Review awarded funding to nine proposals (see table).

LEAD APPLICANT	SUPPORTING APPLICANTS	REGIONAL OFFICE	TITLE OF PROJECT
IGU	IRDR, Mexico	ROLAC	Landslide networking for disaster studies, capacity building, partnership and engagement in Latin America and the Caribbean
IMU	IUGG, IUTAM, ICIAM, US NAS, Mexico, WCRP, IRDR, CIMAT	ROLAC	Mathematics of climate change, related natural hazards and risks
INQUA	IUGS, IUGG, Mozambique		G@GPS Africa: Long term recharge of large ground water basins
IUPsyS	China: CAST, Chinese Psychological Society, CADS, Univ of Jena	ROAP	Building individual and organizational capacity for psychological intervention after disasters in the asia and pacific region
CODATA	IUCr, IUPAC, IUFoST, VAMAS		The description of materials on the nanoscale
DIVERSITAS	IUBS, Switzerland		The CBD Nagoya Protocol
SCOR	SCAR-IMBER		Identifying Ecosystem Essential Ocean Variables for measuring changes in marine ecosystems
WCRP	CLIVAR-VAMOS, WCRP-CORDEX, IAI, IGP, CIMA, ICTP, ONAMET, CCCCC	ROLAC	CORDEX Latin America and the Caribbean
IUPS	IUBMB, IUBS,IUPHAR, IUIS, IUPESM, IUMS, IBRO, IUFoST		An inter-union initiative on multi scale systems biology

UNIONS MEETING PARIS

BUILDING ON DISCIPLINARY STRENGTHS

ICSU's Union Members play an essential role in providing the disciplinary base of its science programmes and other activities. In this section, key activities and contributions from some of the Union Members during the last year are highlighted. Over time, we plan to feature all of our Union Members and their ICSU-related activities.

UNIONS MEETING

The ICSU Unions met at the Paris Institut d'Astrophysique on 29–30 April to discuss opportunities for enhanced interdisciplinary collaboration between Unions, and between Unions and ICSU, particularly around newly developing areas of work for the ICSU family. The discussions focussed specifically on Future Earth, science education, communication between ICSU and Unions, IRDR, Urban Health, open access and the potential for new interdisciplinary collaborations. There was a strong consensus that the meeting could serve as a model for further Union gatherings, which would provide a good platform for Union-to-Union networking. The formation of thematic Union clusters was seen as a future possibility, as these could strengthen synergies between Unions working in similar fields.

The report from this meeting provided the basis for subsequent strategic discussions at the Committee for Scientific Planning and Review (CSPR) and the Executive Board. It was agreed that a survey of the Unions should be conducted to collect further information, which would provide the basis for developing specific actions to promote the engagement of the Unions in interdisciplinary activities.

GEOUNIONS: REPORT ON GEO-INFORMATION FOR DISASTER AND RISK MANAGEMENT

The ICSU GeoUnions, the Joint Board of Geospatial Information Societies (JBGIS), the United Nations Office for Outer Space Affairs (UNOOSA) and the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) published a new report "The Value of Geo-Information for Disaster and Risk Management (VALID): Benefit Analysis and Stakeholder Assessment" a compilation of case studies on what can be achieved with geo-information to support disaster and risk management – methods, systems and applications.

The ICSU GeoUnions are the International Astronomical Union (IAU), the International Geographical Union (IGU), the International Society for Photogrammetry and Remote Sensing (ISPRS), the International Union for Quaternary Research (INQUA), the International Union of Soil Sciences (IUSS), the International Union of Geological Sciences (IUGS), the International Union of Geodesy and Geosphysics (IUGG) and the Union Radio Scientifique Internationale (URSI).

BIOUNIONS: SYSTEMS BIOLOGY MEETING

With grant support from ICSU, an inter-union symposium on multi-scale systems biology was held on 28–30 July in at the Royal Society's Chicheley Hall, UK as a satellite meeting to the IUPS 2013 congress in Birmingham. Specific focus areas included:

- Systems Biology Approaches to Cell Signalling Systems
- Biology of Immunology and Infection
- Systems Biology Approaches to Drug Discover and Pharacogenomics
- Systems Biology in Neuroscience and Multi-Scale Modeling of Behavior
- Physiome approaches to personalized medicine and Therapy
- Systems Modeling in Population Biology Systems Biology and the Environment

The meeting looked at areas beyond the physiome, to populations and environments and to the potential for systems biology to be applied to complex problems in human health and healthcare delivery. It featured lectures from scientifically and geographically diverse leaders in the field and posters by early-career investigators. Its overall objective was to promote international inter-union cooperation in the field of Systems Biology and its application to improving human health and well-being.

ACTIVE NEURON CELLS, SYNAPSE NETWORK

SUPPORTING INTERDISCIPLINARY SCIENCE

INTERDISCIPLINARY BODIES

ICSU has 19 interdisciplinary bodies (IBs), a number of which are co-sponsored with other organizations and are also known as joint initiatives. These bodies bring together different scientific disciplines to address issues of international relevance that are of interest to ICSU Members. The decision to establish or disband an interdisciplinary body is made by the ICSU General Assembly. These bodies vary considerably in structure and function – ranging from research programmes to expert advisory bodies or coordination nodes for distributed international infrastructures. All are subject to periodic reviews by ICSU and a number of them have scientific committees that are appointed by the ICSU Executive Board.

Earth System science, urban health, disaster risk, and various data activities are all associated with specific bodies. In addition, there are a number of other areas of science, where ICSU structures have being making an important contribution over many years. Some of these, such as the Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF), are very small structures that depend completely on pro bono efforts from committed scientists but play a critical role behind the scenes in underpinning part of the scientific enterprise. Others have their own dedicated secretariats and coordinate research activities in areas such as the Antarctic (SCAR) or oceans (SCOR). The International Network for the Availability of Scientific Publications (INASP) is an established UK charity that carries out capacity building activities for the use of research information in less developed countries. INASP, which was started in 1992 as a small project run by one person, now has an annual turnover and total secretariat size comparable to its parent body, ICSU.

An over-arching principle governing all of these structures is that they should help to deliver ICSU's mission of strengthening international science for the benefit of society. Whilst some have been around for several decades, these have evolved over time. There is continuous renewal and turnover and several interdisciplinary bodies have been disbanded over the past decade and new ones created. Most notable in this regard is the current re-alignment of global environmental change research within the Future Earth programme, a process that will result in the closure of three existing interdisciplinary bodies and the creation of a new over-arching body with a regionally distributed support structure.

QUALITY CONTROL

The Committee on Scientific Planning Review (CSPR) has, as part of its remit, the role of reviewing all of the interdisciplinary bodies at regular intervals. For example, the outcomes of the expert panel review of the Committee on Data for Science and Technology (CODATA) are summarised on p. 26. CSPR carried out a 'summary audit' of all ICSU interdisciplinary bodies in 2013 and agreed on a work-plan for the next 5 years, during which all bodies will be reviewed. The generic questions to be addressed in these reviews are:

1. How does this IB contribute to ICSU's mission and strategic priorities?

2. What is the unique contribution that this IB is making to international science and how is it positioned relative to any organizations with a similar or overlapping remit?

3. Is the IB financially stable and what is its future funding plan?

4. Does the IB work with and/or serve the needs of the ICSU community?

5. Is there a continuing requirement for this IB? Does the IB have a sunset clause and, if not, should it have one?

These reviews, which are carried out by scientific peers, play a critical role in ensuring the quality and continuing relevance of ICSU's activities. The outcomes of the reviews are made publically available and reported to the General Assembly.

SCIENCE
FOR POLICY

ICSU AND THE IPCC

As the IPCC celebrated its 25th anniversary in 2013, it is a good time to look back at ICSU's role in its inception, and the impact it has had on the science policy interface. The scientific community, supported by ICSU, put climate change on the political agenda. It was a long effort involving many actors and organizations that led to the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988.

The International Geophysical Year (1957–8) was an ICSU initiative that brought together scientists from more than 60 countries to take part in a series of coordinated observations of geophysical phenomena. It launched the first systematic monitoring of atmospheric carbon dioxide (CO_2) and ozone (O_3). Following its success, the UN General Assembly invited ICSU to work alongside the World Meteorological Organization (WMO) to develop a programme of research on atmospheric science. ICSU and WMO appointed a committee to plan what became the Global Atmospheric Research Programme (GARP), which was launched as a joint ICSU/WMO programme in 1967 and had the objectives of improving weather forecasting and understanding climate change.

This, and several other initiatives, drove the development of the climate science agenda. In 1978, ICSU, the WMO and the United Nations Environment Programme (UNEP) organized an international workshop in Vienna that led to the first World Climate Conference in Geneva in 1979.

A total of 300 scientists from 50 countries looked at the scientific evidence and confirmed the long-term significance of atmospheric CO_2 levels for global climate. This ultimately led to the establishment in 1980 of the joint ICSU/WMO World Climate Research Programme (WCRP) to supersede GARP. WCRP has the broad objectives of determining how far climate can be predicted and the extent of human influence on climate.

The Vienna conference gave rise to a new understanding that climate was not just driven by 'physical' forces, but that interactions with the biosphere played an important role. This awareness eventually led to the launch of the ICSU-sponsored International Geosphere-Biosphere Programme at the ICSU General Assembly in 1986. IGBP addresses the Earth as a system of globally interacting phenomena, and seeks to understand the physical, chemical and biological processes that regulate this system, changes occurring to these processes and the role of human activities in these changes.

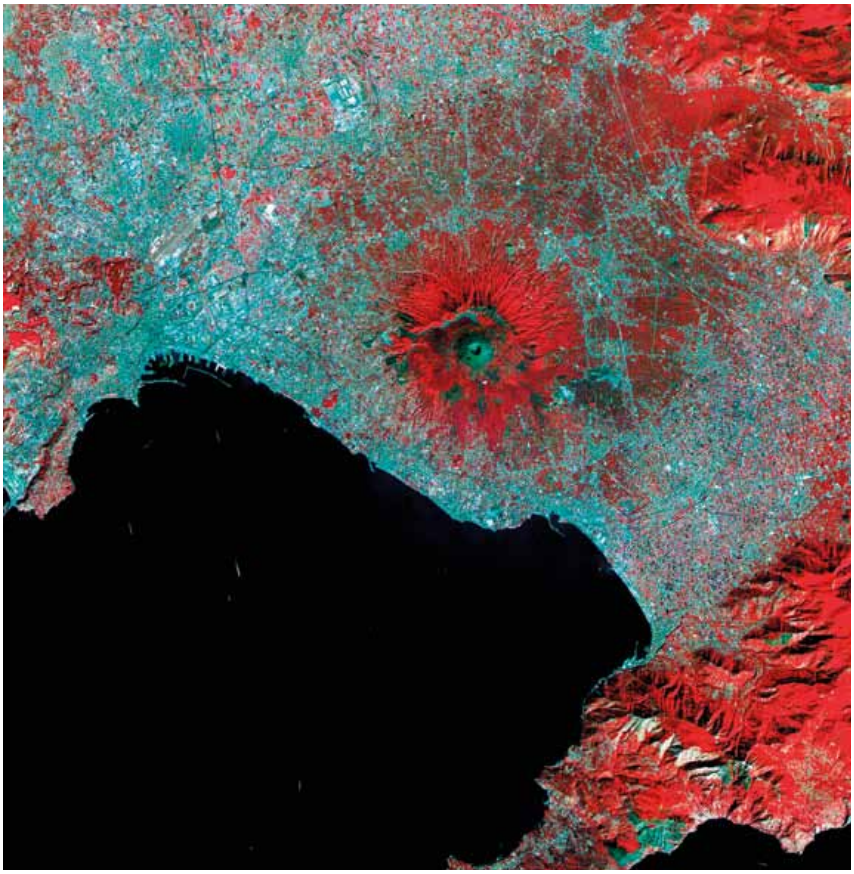
The ICSU-initiated Scientific Committee on Problems of the Environment (SCOPE) – which complemented WCRP's work with more of a science for policy focus – published an important report "The greenhouse effect, climatic change and ecosystems" in 1986. This was the first comprehensive international assessment of the environmental impact of atmospheric greenhouse gases, and coincided with a major conference held in Villach (Austria) organized by ICSU, WMO and UNEP which concluded that the Earth's climate was entering a period of rapid change with potentially far-reaching consequences.

After the Villach conference, an Advisory Group on Greenhouse Gases was appointed, and this group produced several reports on the policy implications of the emerging science. WMO and UNEP, both intergovernmental bodies, then embedded climate science in the policy agenda by establishing, in 1988, the Intergovernmental Panel on Climate Change (IPCC) to regularly take stock of the science for government purposes and examine options for responding to human-induced climate change.

IPCC published its first assessment report in 1990. A key chapter on research priorities was co-authored by the Chairs of the WCRP and the IGBP. The IPCC Second Assessment Report of 1995 provided important material drawn on by negotiators in the run-up to the adoption of the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC) in 1997. The Third Assessment Report was released in 2001 and the Fourth in 2007.

The 2007 IPCC report injected a new sense of urgency into the negotiations of UNFCCC. Developed and developing countries stepped up their efforts to combat climate change and reach a deal on long-term cooperative action by the end of the first commitment period of the Kyoto Protocol in 2012. However, the climate change conference held in Copenhagen in December 2009 failed to reach an agreement. Two years later at the 17th meeting of the Conference of the Parties (COP) to UNFCCC in Durban, an agreement was reached to establish a legally binding deal for all countries by December 2015, at the 21st COP in Paris.

ICSU was key in establishing the international research agenda on climate science on which every IPCC assessment report has been based, including the fifth report which will be published in 2014



MOUNT VESUVIUS SEEN TROUGH ASTER INSTRUMENT

GEO/GEOSS

In 2013, ICSU continued its involvement in and contributions to the Group on Earth Observations (GEO), the implementing arm of the Global Earth Observing System of Systems (GEOSS). Earth observations are an essential cross-cutting capability of Future Earth and GEOSS should become a critical strategic partner of the Future Earth programme, building upon the established cooperation between GEO-GEOSS and the global environmental change research programmes. ICSU used its role as a GEO Participating Organization to facilitate initial links between the Future Earth community and GEO/GEOSS.

The second area of cooperation between ICSU and GEOSS relates to data management and sharing through ICSU's two data-related organizations: CODATA and the World Data System.

CODATA has been a key player in the development and implementation of the GEO Data Sharing Principles via its involvement with the work of the GEO Data Sharing Working Group. This work has progressed further in 2013 and has become a major area of GEO activity that aims to expand the range of open data sharing efforts across a range of societal benefit areas. The G8 Open Data Charter released in 2013 shows the extent to which some governments have moved on these matters.

The World Data System (WDS) has made several steps to ensure a proper contribution of its developing Open Metadata Catalogue to GEOSS. After surveying WDS member organizations, more than 60% declared a willingness to declare their datasets as GEOSS data-CORE, which will significantly increase datasets contributed to GEOSS. WDS is also leading a new initiative, launched in 2013 in collaboration with the Research Data Alliance, to establish a Global Service for Trusted Research Data Repositories. Efforts to ensure proper coordination with relevant GEO activities have been initiated.

Based on a decision taken by the ICSU General Assembly at its session in 2011, ICSU will conduct a review of the role of science in the global observing systems, including consideration of ICSU's role as a co-sponsor of the Global Climate Observing System (GCOS), Global Ocean Observing System (GOOS) and Global Terrestrial Observing System (GTOS). This review is scheduled to start late in 2014, and follows a review of GCOS for its co-sponsors. ICSU has had initial discussions with the GEO Secretariat on its potential involvement with this review.

SUSTAINABLE DEVELOPMENT

One of the main outcomes of the United Nations Conference on Sustainable Development (Rio+20), held in June 2012 in Rio de Janeiro, Brazil, was the agreement to develop a set of universal Sustainable Development Goals (SDGs). In March 2013, a UN Open Working Group (OWG), representative of the world's governments, started its work to define a set of proposed goals for submission to the UN General Assembly in September 2014. The Rio+20 outcome document indicated that the process to develop the SDGs must be coherent with the process to define the post-2015 global development agenda, as a follow-up to the implementation of Millennium Development Goals (MDGs), which will expire in 2015. The Rio+20 decisions also highlighted that defining one set of appropriate goals, targets and indicators for the post-2015 global agenda should benefit from contributions from the scientific community.

METRO TRAIN IN KUALA LUMPUR, MALAYSIA

ICSU provided, at the invitation of the UN, scientific input to the six meetings of the OWG from March to December 2013. These meetings focused on stock taking and information gathering in key areas of sustainable development, such as sustainable food security, sustainable water security, human health, universal clean energy, and sustained economic growth. This input was based on work conducted by relevant interdisciplinary bodies and as part of the planning phase of Future Earth.

In March 2013, the UN, ICSU and ISSC organized an Expert Group Meeting in New York on Science and Sustainable Development Goals, in conjunction with the first meeting of the OWG. The meeting focused on the overriding issue of integrating the goals of keeping the Earth system in a stable Holocene-like state, with universal human well-being goals and post-2015 MDGs. For the following thematic meetings of the OWG, ICSU provided the UN with scientific policy briefs on the themes under discussion and arranged for the participation of scientific experts. At the December meeting of the OWG, ICSU joined UNESCO in organizing a side event on Science, Technology and Innovation for Sustainable Development. ICSU also supported the preparation of a paper on "Sustainable development goals for people and planet", published in Nature in March 2013, which provided further scientific underpinning to the SDGs' discussions at the UN and elsewhere.

ICSU will continue to support the work of the OWG in 2014, in particular when discussing possible SDGs and targets on sustainable cities, disaster risk reduction, biodiversity and oceans and seas.

INTERGOVERNMENTAL PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES — IPBES

IPBES, the Intergovernmental Platform on Biodiversity and Ecosystem Services, was established in April 2012 following seven years of negotiations. IPBES, which now counts 115 Members, is a science-policy platform with similarities to IPCC, which will provide policy relevant scientific information on biodiversity and ecosystem services in response to requests from governments and other stakeholders. IPBES operates under the auspices of UNEP, UNESCO, FAO and UNDP.

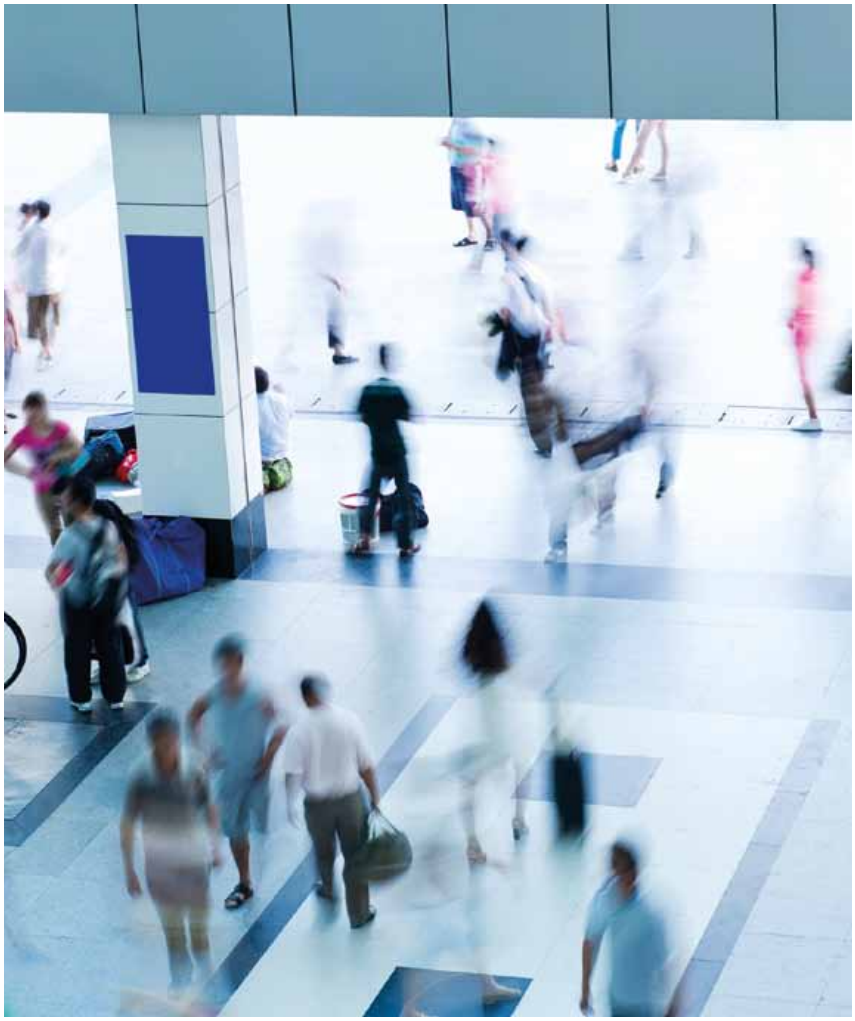
In 2013, IPBES adopted, at its second plenary (December 2013, Antalya, Turkey) an ambitious programme of work for 2014–18, and received pledges of more than half (US$ 25.4 million) of the total US$ 43.5 million required for the entire programme. The work is composed of two main areas. The first is fast-track methodological and thematic assessments of pollination and pollinators associated with food production. The second is scenario analysis and modelling of biodiversity and ecosystem services. IPBES will also initiate scoping processes for a methodological assessment on the conceptualization of values of biodiversity and nature's benefits to people; a thematic assessment of land degradation and restoration; thematic assessment of invasive alien species; a thematic assessment of sustainable use and conservation of biodiversity and strengthening capacities and tools; and a set of regional and sub-regional assessments.

ICSU has been leading the input of the scientific community during the negotiation phase, and is continuing to do so now that IPBES is established. ICSU's role has included providing views (plenary statements, written contributions) on all aspects of IPBES including rules of procedure, the conceptual framework, the programme of work, and the involvement of non-governmental stakeholders. ICSU has been providing names of scientists for expert workshops, and has also convened and co-convened scientific workshops, including on the knowledge generation function of IPBES, or its conceptual framework. ICSU, together with IUCN, has produced a stakeholder engagement strategy, and co-chaired, with IUCN, the multi-stakeholder forum of IPBES.

In the future, ICSU's role in IPBES will be twofold. It will continue to represent the scientific community at IPBES and will provide advice on the IPBES process itself. It will also actively contribute to the knowledge generation function of IPBES, through relevant ICSU activities, and in particular Future Earth, to ensure that the scientific gaps highlighted by IPBES in its future assessments are addressed by the scientific community, since IPBES itself will not carry out new research.

AERIAL VIEW OF FLORIDA EVERGLADES

UNIVERSALITY OF SCIENCE



FREEDOM AND RESPONSIBILITY

The Committee on Freedom and Responsibility in the conduct of Science (CFRS) promotes integrity in science. The Committee was involved in, and co-sponsored, the three World Conferences on Research Integrity (WCRI) that have been held in Lisbon (2007), Singapore (2010) and Montreal (2013). A major outcome of the 2nd WCRI was the "Singapore Statement on Research Integrity", a consensus statement laying out globally applicable principles and responsibilities related to integrity in research and scientific conduct. It attracted international media attention and has since become an important reference point for the international science community.

At the latest WCRI in Montreal, the programme was built around integrity issues in cross-national, cross-disciplinary and cross-sectoral scientific co-operation partnerships. In their presentations at the conference, several members of CFRS highlighted the Committee's work related to responsible public communication of science, industry-academia partnerships and integrity, authorship and integrity in scientific publishing as well as societal responsibilities of scientists. The "Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations" adopted after the conference includes recommendations pertaining to the establishment and management of scientific collaborations and concerning research outcomes resulting from such collaborations. The involvement of CFRS in the conference ensured a representation from the scientific community among the participants who also included representatives from research integrity offices, research funding agencies, university administrations and the publishing sector.

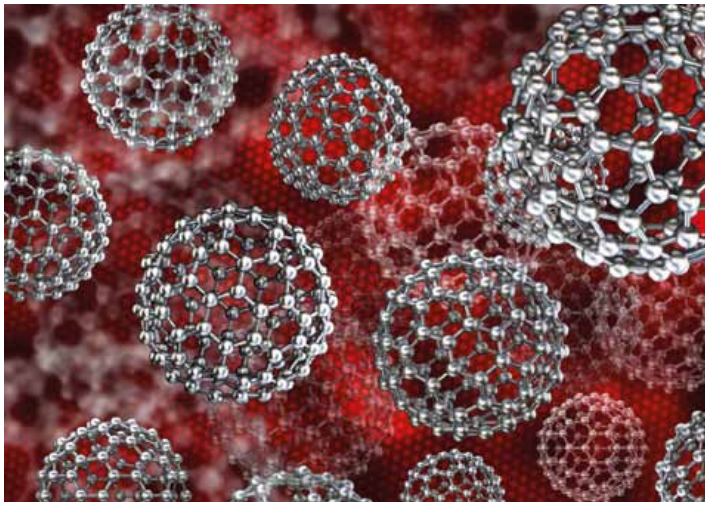
A closer examination of the systemic aspects of scientific integrity, i.e. the institutional dimension and drivers that are conducive to research misconduct, will be one focus of the Committee's future work. The impact of science assessment systems will be considered at a workshop that CFRS is jointly organizing with the China Association for Science and Technology (CAST) and the Chinese Academy of Sciences (CAS) in Beijing in April 2014. Taking the examples of the rapidly growing science systems in Brazil, China and South Africa, the issues and challenges with which scientists are confronted will be discussed.

WDS

Around one hundred people gathered at the National Museum of Nature and Science in Tokyo, Japan on 15–16 October 2013 to participate in the International Forum on 'Polar Data Activities in Global Data Systems'. Co-hosted by the ICSU World Data System (WDS), the Forum covered all aspects of effective polar data management – in particular, ensuring the data legacy of the International Polar Year 2007–2008. Participants – data managers, scientists and research coordinators – issued a communique to bring together their observations about the current state of polar data activities and recommendations for enhancing and sustaining core data services into the future.

Development continued in 2013 of a WDS Open Metadata Catalogue and Scalable Knowledge Network and on a community-based Data Publication and Curation Service, with the WDS Scientific Committee setting up two working groups for these services. The WDS Data Publication Working Group active at the first plenary of the new Research Data Alliance (RDA) (18–20 March 2013; Gothenburg, Sweden), where common links between ICSU-WDS and RDA were established with the initiation of two joint interest groups: 'Publishing Data' and 'Certification of Digital Repositories'.

Finally, the Executive Committees of ICSU, WDS and CODATA met to agree details on the organizations' first mutual biennial conference – SciDataCon 2014 – which will be held in November 2014 in New Delhi, India.



3D RENDERING OF A NANO MATERIAL

CODATA

CODATA, the ICSU Committee on Data for Science and Technology has appointed a new Executive Director. Simon Hodson took over from Kathleen Cass, whose contribution to CODATA over more than 10 years was warmly recognized by CODATA President, Professor Guo Huadong.

The task for the new Executive Director is to respond to recommendations in the ICSU review of CODATA (see below) to increase the organization's visibility and impact. In large part this will be done by implementing the Strategic Plan 2013–18, finalized at CODATA's 2013 Executive Committee meeting and through which CODATA addresses data challenges in three areas:

1. Policy Frameworks for Data: defining and promoting a policy agenda for scientific data, addressing national, international and scientific contexts.

2. Frontiers in data science and technology: stimulating and coordinating work at key frontiers of data science and interdisciplinary application areas.

3. Data strategies for international science: supporting international scientific programmes, like Future Earth, to address data management needs, particularly concerning policies processes and standards necessary to assure data legacy.

CODATA will be working increasingly closely with the ICSU World Data System. The first example of this is the co-organized and co-sponsored SciDataCon 2014, a major international conference addressing the challenges of Data Sharing and Integration for Global Sustainability.

With support from ICSU, and in collaboration with VAMAS (the Versailles Project on Advanced Materials and Standards), CODATA has convened and led a Working Group on the Description of Nanomaterials, involving a number of ICSU Unions and other interested organizations. The working group has developed a draft Framework for a Uniform Description System for Materials on the Nanoscale. The framework will be further refined and forms a substantial contribution to the Future Nano Needs project, funded by the European Commission's Framework Programme 7. There is a pressing need to standardize the description and data relating to nanomaterials, covering characteristics which may relate to toxicity and industrial application. However, this is a challenging task in a research area where scientists understanding of significant characteristics is rapidly evolving. CODATA's role in this work – at the heart of its broader mission – is to bring together research scientists, data specialists, experts in ontologies and norms and standards bodies in order to achieve better and more interoperable descriptions of nanomaterials.

CODATA REVIEW

In accordance with the ICSU Strategic Plan II, a review of the Committee on Data for Science and Technology (CODATA) was carried out during the course of 2012–2013 by an expert panel set up for the purpose by CSPR. Most of the Review Report's recommendations have a direct bearing on the working relationship between CODATA and the World Data System (WDS) and a better integration of the data- and information-related activities and concerns of the ICSU family as a whole.

The Report was endorsed by both CSPR and the Executive Board during the course of 2013 and is set to be presented to the upcoming ICSU 31st General Assembly in Auckland. It was published in electronic form in February 2014.

WORKING WITH THE REGIONS

Considerable efforts were made in 2013 to integrate ICSU's global and regional science plans and activities and to build the scientific networks that will take forward these plans over the next decade. This was largely assisted by grant support from the Swedish International Development Cooperation Agency (SIDA) for a series of strategic workshops and community building activities.

FUTURE EARTH

Following initial consultations in 2012, ICSU with its Regional Offices undertook in 2013 a series of activities to engage the regions in shaping Future Earth and to enhance regional support for the programme.

As part of the consultation process for the Middle East and North Africa, a workshop was organized in partnership with the Cyprus Institute (Cyprus, 3–5 June 2013). This workshop was a first step towards building a Future Earth community in the region as well as to establish collaboration with regional and local stakeholders.

Community building efforts continued in other regions throughout 2013. The ICSU Regional Office for Asia and the Pacific (ICSU ROAP) organized an outreach event on Future Earth at the 12th Pacific Science Inter-

FUTURE EARTH WORKSHOP FOR MIDDLE EAST AND NORTH AFRICA, CYPRUS

FUTURE EARTH MENA WORKSHOP PARTICIPANTS DURING A TOUR OF THE CYPRUS INSTITUTE

Congress (Suva, Fiji, 8–12 July 2013). The Official Resolution of the Inter-Congress recorded strong support for Future Earth and encouraged the programme to fully engage with the Pacific Island community.

ICSU ROAP consulted with ICSU Members in the Asia-Pacific region, as well as Interdisciplinary Bodies and Scientific Associates to see how they could best contribute to the development of Future Earth in the region. Similar meetings to engage ICSU Members in Africa and Latin America are planned in 2014.

In 2013, Future Earth saw strong interest from a range of regional and national stakeholders, notably in the Asia-Pacific region where a series of dedicated events ranging from regional and national consultation meetings, regional congresses, symposiums, conferences, roundtable discussions, brainstorming sessions and side events, were carried out by various organisations. These included activities in Thailand, Malaysia, Sri Lanka, China, China: Taipei, and Japan.

Future Earth was also promoted at a number of regional and national scientific events in Latin America and Africa, including Jamaica, Mexico, Uruguay, Ecuador, Panama, Cameroon, Burkina Faso, Zimbabwe, Mozambique, Nigeria and South Africa. In Latin America, a Memorandum of Understanding on Future Earth was signed by the ICSU Regional Office for Latin America and the Caribbean (ICSU ROLAC), the Inter-American Institute for Global Change Research (IAI), and UNESCO's Regional Office in Uruguay. The partners to the MoU agreed to form a consortium that will promote the development of Future Earth in the region.

In addition, cooperation with The World Academy of Sciences (TWAS) has been strengthened. For instance, ICSU ROLAC and TWAS, together with CONACYT as well as the Mexican and Brazilian Academies of Sciences organized a conference engaging early career scientists in Future Earth (Mexico, 5–6 Dec 2013). Outstanding young researchers nominated by National Academies of Sciences representing 18 countries in the region attended this event. Additional joint activities engaging early career scientists are planned for 2014.

In Africa, the ICSU Regional Office for Africa (ICSU ROA) strengthened links with several regional actors likely to play an important role in delivering Future Earth in the region. This relates particularly to members of the African interim Future Earth committee, who provided recommendations on how a regional node for Africa should be designed and setup.

Regional community building efforts ensured strong contributions from the regions to the development of the vision for Future Earth and to setting the programme's initial research agenda; catalysed support for Future Earth at the global, regional and national levels; and increased involvement of early career scientists in the programme. Regional efforts were crucial in mobilizing regional actors in bidding for hosting the permanent Future Earth Secretariat.

HAZARDS AND DISASTERS

Building on the outcomes of the global-regional integration meeting on hazards and disasters (Malaysia, September, 2012) some progress was made in 2013 in integrating ICSU global and regional plans and actions on hazards and disasters. This led to enhanced cooperation between IRDR global and regional structures, particularly in Latin America and Africa.

In 2013, ICSU ROLAC with support from members of the IRDR Science Committee established a regional steering committee on hazards and disasters (with representatives from national scientific institutions from Argentina, Costa Rica, Colombia, Cuba, Chile, Jamaica and Mexico) to promote integrated research on hazards and disasters in the region and to foster science integration in policy making processes.

In Africa, ICSU ROA facilitated the development of collaborative research project proposals on hazards and disasters, engaging members of the IRDR Science Committee as well as several research institutions from the region. To complement this, ICSU ROA is leading the development of a book on hazards and disasters in sub-Saharan Africa to be co-published by the African Institute of South Africa (AISA). A research links grant from Swedish Secretariat for Environmental Earth System Sciences (SSEESS) enabled the hazards and disasters consortium to hold a workshop in South Africa to promote north-south collaboration with Swedish researchers. A group was identified to develop the risk vulnerability aspect to the consortium's portfolio, led by IRDR-linked researchers who attended this workshop. A follow up workshop is envisaged in Sweden during 2014.

In the Asia and the Pacific region, ICSU ROAP, in partnership with ICSU's Union Member International Union of Psychological Science (IUPSYS) and other regional partners, worked on building individual and organizational capacity for psychological intervention after disasters (PIAD) in the region. A series of PIAD training events are planned for 2014–2016.

These regional efforts, which will continue throughout 2014, resulted in an expanded network of scientists and experts and in strengthened partnerships with several regional organizations.

SOLAR POWER PLANT, SEVILLE, SPAIN

SUSTAINABLE ENERGY

Sustainable energy is a strategic priority for ICSU. While each of the three ICSU Regional Offices has developed its own Science Plan focusing on different priorities for action, ICSU does not have a global programme on sustainable energy. To identify ICSU's niche in the field of sustainable energy, ICSU ROLAC hosted a Global-Regional Integration Workshop on Sustainable Energy (8–9 April 2013, Mexico), engaging regional scientists involved in the preparation of the regional science plans on sustainable energy, representatives of key regional energy initiatives and international organisations.

At the meeting, it was concluded that ICSU should not establish a new stand-alone programme on sustainable energy but rather work with existing initiatives on sustainable energy at regional and global levels. ICSU will focus on promoting integrated trans-disciplinary research and capacity building activities on sustainable energy under the framework of Future Earth and other relevant programmes.

Building on the outcomes of this meeting, ICSU ROA held an African Regional Implementation Workshop on Sustainable Energy (6–7 May 2013, Kenya) that explored how ICSU ROA can contribute to the field of sustainable energy and identified key partners with whom collaboration should be strengthened.

As a result of these workshops, ICSU Regional Offices managed to strengthen cooperation on sustainable energy with several regional organizations. For instance, sustainable energy is an area of common interest for ICSU ROLAC – IAI – UNESCO cooperation.

ICSU ROA expanded its network of scientists and experts, representing national and regional research organizations, as well as established links with organizations from outside the region).

BY 2030, SIX OUT OF 10 PEOPLE WILL LIVE IN CITIES

URBAN HEALTH AND WELLBEING

Significant progress was made in 2013 in implementing ICSU's new global programme on Health and Wellbeing in the Changing Urban Environment: a Systems Analysis Approach. There is a potential role for all of the Regional Offices in promoting this programme. A regional steering committee on urban health in Asia and the Pacific has been established and six interdisciplinary pilot projects focusing on different urban systems in different countries are being developed. These projects featured in a joint meeting of the global and regional scientific committees in Kuala Lumpur in May and the conference on intra-urban dynamics and health in Paris in September.

Discussions were held to explore involvement of the other two regions, i.e. Africa and Latin America, in the Urban Health programme, including approaching Sida to consider ICSU's proposal to include support for Urban health in its grant application for the next five years

COMMUNICATIONS

futureearth
research for global sustainability

ICSU Communications had a varied and exciting year in 2013, with an accent on Future Earth. A distinctive new logo for the programme was developed; and it has been well-received and used successfully across a range of products both digital and print. These include the final design report of the Transition Team and a pocket-sized executive summary, the Future Earth blog as well as the new Future Earth website, due for launch in early 2014.

The Future Earth blog was launched in July to showcase content across the spectrum of global sustainability for a broad audience. One of the aims in launching a blog was to build a community around Future Earth, raise awareness of and interest in Future Earth and global sustainability and establish Future Earth as a credible brand and go-to place for this issue. Dedicated social media channels were launched at the same time as the blog, and the stream of constantly updated content on the blog has been a key component in the social media strategy to engage and grow a core community of followers. Readership of the blog built steadily throughout 2013, and outreach efforts will increase with the launch of the new website in 2014.

ICSU Communications also provided support for a number of Future Earth events in 2013, among these a panel discussion at the European Geosciences Union's Annual Meeting in Vienna in April. In June, ICSU Communications attended a Future Earth meeting at the Royal Society in London and developed a series of videos featuring new members of the Future Earth scientific leadership and other leading voices of the scientific community.

During the DFG-ICSU-ISSC young scientists networking conference at Villa Vigoni in April, a short documentary video was developed. Putting the young scientists present at the centre of the action, it explores the wide range of research across disciplines that were brought together at the event. Launched online on World Food Day, the video serves both to highlight the current challenges in providing the research needed to feed a population of nine billion in the future, and to introduce the series of conferences held at Villa Vigoni. The next one, on the topic of "Ecosystems and human wellbeing in the green economy", will be held in May 2014, and a further video will be developed for this.

Aside from Future Earth, ICSU also continued to provide outreach and social media support to its interdisciplinary bodies, members and partners. An example of this was outreach support for the media launch of the IGBP Oceans Acidification summary for policy makers at the UNFCCC's climate negotiations in Warsaw in November.

ADMINISTRATION AND GOVERNANCE

FINANCIAL SUMMARY

STATEMENT OF INCOME AND EXPENDITURE

International Council for Science (ICSU)
for the period 1 January to 31 December 2013

INCOME	Euros
Membership dues	
Members	2,472,515
Scientific Unions	179,632
Scientific Associates	10,500
Provision Arrears	–154,486
NSF support for WCRP	–
Grants from NSF	184,506
France	500,000
Other grants for IRDR, Rio+20 and Global Sustainability	991,988
Other income	42,178
Cancellation other provision	19,281
Investment Income	49,461
Total Income	**4,295,574**

EXPENDITURE	Euros
Policy committees	384,250
Joint initiatives	834,765
ICSU Regional Offices	586,515
Grant Programme	260,000
Special initiatives	297,430
Governance meetings	612,634
Policy & administrative support	1,327,336
Contingency/Provision	131,557
Other expenses	19,301
Investment charges & losses*	44,826
Total expenditure	**4,498,614**
Excess of income over expenditure	**–203,040**

BALANCE SHEET

International Council for Science (ICSU)
for the period 1 January to 31 December 2013

ASSETS	Euros
Bank & cash balances	3,042,823
Marketable securities	1,466,422
NSF & UNESCO, funds for IRDR & RIO+20	249,112
Others assets	146,568
Fixed assets	69,148
Total assets	**4,974,073**

LIABILITIES	Euros
External funds allocated	1,167,980
Sundry creditors & accruals	842,199
Provision / Retirement	436,306
Total liabilities	**2,446,485**

RESERVES	Euros
Mandatory reserve	1,500,000
General fund / Retained earnings	1,230,628
Total reserves	**2,730,628**
Net Result	**–203,040**

* Including provision for unrealized losses on Portfolio for a total amount of 11K €

EXECUTIVE BOARD 2011–2014

YUAN TSEH LEE President
DAVID BLACK Secretary-General
CATHERINE BRÉCHIGNAC Past-President
MALEGAPURU W. MAKGOBA Vice-President for Scientific Planning and Review
SERGIO PASTRANA Vice-President for External Relations
HANS RUDOLF OTT Treasurer
GORDON MCBEAN President-Elect

FROM UNION MEMBERS

ORHAN ALTAN (ISPRS)
MARIA CARLA GALAVOTTI (IUHPS)
DOV JARON (IUPESM)
KENNEDY REED (IUPAP)

FROM NATIONAL MEMBERS

JOHN BALL (United Kingdom)
LUIZ DAVIDOVICH (Brazil)
NICOLE MOREAU (France)
GUOXIONG WU (China: CAST)

SECRETARIAT

EXECUTIVE

STEVEN WILSON Executive Director
CARTHAGE SMITH Deputy Executive Director
TISH BAHMANI FARD Assistant Executive Director
CLARE THIRLWAY Head of Human Resources
DENISE YOUNG Head of Communications

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

PETER BATES Science Officer (to 30/04/2013)
GISBERT GLASER Senior Advisor
HOWARD MOORE Senior Advisor
KATSIA PAULAVETS Project Coordinator
ROBERTA QUADRELLI Science Officer (to 13/02/2013)
ROHINI RAO Administrative Officer
ANNE-SOPHIE STEVANCE Science Officer

SCIENTIFIC PLANNING AND SPECIAL PROJECTS

MAUREEN BRENNAN Administrative Officer
ALEXANDER HANSEN Science Officer on secondment 50% time – based at ISSC (to 31/05/2013)
VIVIEN LEE Assistant Science Officer on secondment

COMMUNICATION AND INFORMATION TECHNOLOGY

YUN-KANG AHN IT Officer
JOHANNES MENGEL Online Editor/Communications Officer

ADMINISTRATIVE STAFF

ALEXANDRA GUENNEC Payroll and HR Administration Officer (from 18/11/2013)
FREDERICA KOSTADINOFF Administrative Officer/caretaker
ERIC LEPARMENTIER General Services
NATACHA DE MARCHI Accountant

COMMITTEE ON FREEDOM AND RESPONSIBILITY IN THE CONDUCT OF SCIENCE

ROGER PFISTER Executive Secretary CFRS
50% time – based at the Swiss Academy of Sciences

FUTURE EARTH INTERIM SECRETARIAT

FRANS BERKHOUT Interim Director on secondment (from 01/07/2013)
DIANA GREENSLADE Science Officer (from 08/07/2013)
LIZZIE SAYER Communications Coordinator (from 04/11/2013)
MIIA YLÖSTALO-JOUBERT Administrative Officer (from 22/10/2013)

REGIONAL OFFICE FOR AFRICA

EDITH MADELA-MNTLA Director
RICHARD GLOVER Programme Specialist in Biological Sciences
BONGANI MAHLALELA Communications Officer
HAZAEL NAIDOO Administrative Assistant
DANIEL NYANGANYURA Programme Specialist in Physics, Mathematics and Engineering Sciences

REGIONAL OFFICE FOR ASIA AND THE PACIFIC

MOHD NORDIN HASAN Director
TENGKU SHARIZAD TENGKU DAHLAN Senior Science Officer
MOHD HIZAMDDIN JAAFAR Administrative Officer
NORIZAN AB RAHMAN Science Officer (Programme)

REGIONAL OFFICE FOR LATIN AMERICA AND THE CARIBBEAN

MANUEL LIMONTA Director
ANGÉLICA BUCIO Communications Officer (from January 2013)
CAMILO GARCÍA Administrative Officer (from January 2013)
GABRIEL ITURRIAGA Science Officer (to December 2013)

NATIONAL MEMBERS

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

ALBANIA Academy of Sciences
ARGENTINA National Scientific and Technological Research Council (CONICET)
ARMENIA National Academy of Sciences of the Republic of Armenia
AUSTRALIA Australian Academy of Science
AUSTRIA Die Osterreichische Akademie der Wissenschaften
AZERBAIJAN Azerbaijan National Academy of Sciences**
BANGLADESH Bangladesh Academy of Sciences
BELARUS National Academy of Sciences (NASB)**
BELGIUM Royal Academies for Science and the Arts of Belgium (RASAB)
BOLIVIA Academia Nacional de Ciencias de Bolivia (ANCB)**
BOSNIA & HERZEGOVINA ANUBiH Academy of Sciences and Arts of Bosnia and Herzegovina
BOSNIA & HERZEGOVINA ANURS Academy of Sciences and Arts of the Republic of Srpska
BOTSWANA Ministry of Infrastructure Science and Technology**
BRAZIL Academia Brasileira de Ciências (ABC)
BULGARIA Bulgarian Academy of Sciences (BAS)
BURKINA FASO Centre National de la Recherche Scientifique et Technologique**
CAMEROON Cameroon Academy of Sciences
CANADA National Research Council of Canada
CARIBBEAN Caribbean Academy of Sciences (CAS)*
CHILE Academia Chilena de Ciencias
CHINA CAST China Association for Science and Technology (CAST)
CHINA TAIPEI Academy of Sciences located in Taipei
COLOMBIA Academia Colombiana de Ciencias Exactas, Fisicas y Naturales
COSTA RICA Academia Nacional de Ciencias
CÔTE D'IVOIRE Académie des Sciences, des Arts, des Cultures d'Afrique et des Diasporas Africaines (ASCAD)**
CUBA Academia de Ciencias de Cuba
CZECH REPUBLIC Academy of Sciences of the Czech Republic
DENMARK Royal Danish Academy of Sciences and Letters
DOMINICAN REPUBLIC Academy of Sciences of the Dominican Republic
EGYPT Academy of Scientific Research and Technology (ASRT)
EL SALVADOR Vice Ministry of Science and Technology
ESTONIA Estonian Academy of Sciences
ETHIOPIA Ethiopian Science and Technology Agency**
FINLAND Delegation of the Finnish Academies of Science and Letters
FRANCE Académie des Sciences
GEORGIA Georgian Academy of Sciences*
GERMANY Deutsche Forschungsgemeinschaft (DFG)
GHANA Ghana Academy of Arts & Sciences**
GREECE Academy of Athens
GUATEMALA Academia de Ciencias Médicas Fisicas y Naturales de Guatemala*
HUNGARY Hungarian Academy of Sciences
INDIA Indian National Science Academy
INDONESIA Indonesian Institute of Sciences (LIPI)
IRAN Islamic Rep. of University of Tehran
IRAQ Ministry of Science and Technology
IRELAND Royal Irish Academy
ISRAEL Israel Academy of Sciences and Humanities
ITALY Consiglio Nazionale delle Ricerche
JAMAICA Scientific Research Council
JAPAN Science Council of Japan
JORDAN Royal Scientific Society*
KAZAKHSTAN National Academy of Sciences of the Republic of Kazakhstan*

KENYA Kenya National Academy of Sciences
KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF State Academy of Sciences**
KOREA, REPUBLIC OF National Academy of Sciences of the Republic of Korea
LAO, PEOPLES DEMOCRATIC REPUBLIC OF Lao National Science Council**
LATVIA Latvian Academy of Sciences
LEBANON National Council for Scientific Research
LESOTHO Department of Science and Technology
LITHUANIA Lithuanian Academy of Sciences
LUXEMBOURG Fonds National de la Recherche
MACEDONIA, FORMER YUGOSLAV REP. OF Macedonian Academy of Sciences and Arts
MADAGASCAR Ministère de l'Enseignement Supérieur et de la Recherche Scientifique*
MALAWI National Research Council of Malawi
MALAYSIA Academy of Sciences Malaysia
MAURITIUS Mauritius Research Council
MEXICO Academia Mexicana de Ciencias
MOLDOVA Academy of Sciences of Moldova
MONACO, PRINCIPAUTÉ DE Centre Scientifique de Monaco
MONGOLIA Mongolian Academy of Sciences
MONTENEGRO Montenegrin Academy of Sciences and Arts
MOROCCO Centre National de la Recherche Scientifique et Technique
MOZAMBIQUE Scientific Research Association of Mozambique (AICIMO)**
NAMIBIA Ministry of Education: Directorate of Research, Science and Technology
NEPAL Royal Nepal Academy of Science and Technology
NETHERLANDS Koninklijke Nederlandse Akademie van Wetenschappen
NEW ZEALAND Royal Society of New Zealand
NIGERIA Nigerian Academy of Science
NORWAY Norwegian Academy of Sciences and Letters
PAKISTAN Pakistan Association for the Advancement of Science
PANAMA Universidad de Panama
PERU Academia Nacional de Ciencias
PHILIPPINES National Research Council
POLAND Polish Academy of Sciences
PORTUGAL Academia das Ciencias de Lisboa
ROMANIA Academia Româna
RUSSIAN FEDERATION Russian Academy of Sciences
RWANDA Kigali Institute of Science and Technology (KIST), Rwanda**
SAUDI ARABIA, KINGDOM OF King Abdulaziz City for Science and Technology (KACST)
SENEGAL Association des Chercheurs Sénégalais**
SERBIA Serbian Academy of Sciences and Arts
SEYCHELLES Seychelles Centre for Marine Research and Technology
SINGAPORE Singapore National Academy of Science
SLOVAK REPUBLIC Slovak Academy of Sciences
SLOVENIA Slovenian Academy of Sciences and Arts*
SOUTH AFRICA National Research Foundation (NRF)
SOUTH PACIFIC University of the South Pacific
SPAIN Ministerio de Ciencia y Innovacion
SRI LANKA National Science Foundation
SUDAN Republic of National Centre for Research**
SWAZILAND National Research Council**
SWEDEN Royal Swedish Academy of Sciences
SWITZERLAND Swiss Academy of Sciences
TAJIKISTAN Academy of Sciences of the Republic of Tajikistan**
TANZANIA, UNITED REPUBLIC OF Tanzania Commission for S&T
THAILAND National Research Council of Thailand
TOGO Chancellerie des Universités du Togo
TUNISIA Université Tunis El Manar*
TURKEY Scientific and Technical Research Council of Turkey**
UGANDA Uganda National Council for Science and Technology (UNCST)
UKRAINE National Academy of Sciences
UNITED KINGDOM Royal Society
UNITED STATES National Academy of Sciences
URUGUAY Comisión Consejo Nacional de Innovacion Ciencia y Tecnologia (CONICYT)
UZBEKISTAN, REPUBLIC OF Uzbekistan Academy of Sciences**
VATICAN CITY STATE Pontificia Academia Scientiarum**
VENEZUELA Fondo Nacional de Ciencia, Tecnología e Innovación**
VIETNAM Vietnam Union of Science and Technology Associations**
ZAMBIA Zambia Academy of Sciences**
ZIMBABWE Research Council of Zimbabwe

*National Associate
**National Observer

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

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International Geographical Union (IGU)
International Mathematical Union (IMU)
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International Union for Quaternary Research (INQUA)
International Union of Anthropological and Ethnological Sciences (IUAES)*
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International Union of Crystallography (IUCr)
International Union of Food Science and Technology (IUFoST)
International Union of Forest Research Organizations (IUFRO)
International Union of Geodesy and Geophysics (IUGG)
International Union of Geological Sciences (IUGS)
International Union of History and Philosophy of Science (IUHPS)
International Union of Immunological Societies (IUIS)
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*Observer as of 2012

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Urban Health and Wellbeing

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Future Earth
International Geosphere-Biosphere Programme (IGBP)
International Human Dimensions Programme on Global Environmental Change (IHDP)
World Climate Research Programme (WCRP)

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Global Ocean Observing System (GOOS)
Global Terrestrial Observing System (GTOS)

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

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International Cartographic Association (ICA)
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International Commission for Optics (ICO)
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International Foundation for Science (IFS)
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