



# ANNUAL REPORT 2007

Regional Office for Asia and the Pacific



# ICSU ROAP vision

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

# About ICSU ROAP

This Regional Office was inaugurated on the 19 September 2006 by the Deputy Prime Minister of Malaysia, Y.A.B. Dato' Seri Najib Tun Abdul Razak. The new office will promote the development of science throughout Asia and the Pacific and help strengthen the voice of developing countries in this region. It will also ensure that its scientists become involved in those aspects of the ICSU 2006-2011 Strategic Plan that are especially relevant for this area.

## **Mission Statement**

ICSU mobilizes the knowledge and resources of the international science community for the benefit of society, 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 in the international scientific endeavour, regardless of race, citizenship, language, political stance or gender
- Provide independent, authoritative advice to stimulate constructive dialogue between the scientific community and governments, civil society, and the private sector

## Message from the Director

### Strategic Planning

The ICSU ROAP science planning groups on natural and human-induced environmental hazards and disasters, and on ecosystems have been established. The groups began in the middle of the year the process of preparing the science plans that will guide the work of ROAP. They are expected to be ready in 2008. A draft plan relating to hazards and disasters, and an outline plan for work on ecosystems were presented to the 2nd ICSU Regional Consultation in Chiang Mai in November 2007. The Consultation was hosted by the National Research Council of Thailand (NRCT) and was attended by 60 participants representing ICSU National Members, Unions and Interdisciplinary Bodies, especially those from Asia and the Pacific. Leading scientists from Thailand also attended the consultation. It also deliberated on possible directions of work on sustainable energy in Asia and the Pacific. Members have been requested to nominate candidates for the proposed ROAP Science Planning Group on Sustainable Energy that will begin work in 2008.

### Regional Meetings

The ICSU Regional Committee for Asia and the Pacific (RC) met in March in Tehran and again in November in Chiang Mai. Members were provided with a report of the progress made by the Regional Office, and with an up-date of the implementation of the ICSU Strategic Plan 2006 – 2011.

In March the RC approved the ROAP work plan and budget for 2007 and in November it approved the work plan and budget for 2008. Overall, the average annual budget allocation has been increasing because of contributions from partners such as UNESCO

(Paris, as well as Jakarta Office), and from other partners that enabled ICSU ROAP to participate in activities to plan work related to its priority areas. This included travel grants that enabled ICSU ROAP staff to actively participate in the planning work of UNESCO, the Chinese Society of Theoretical and Applied Mechanics (CSTAM is an Adhering Body of the International Union of Theoretical and Applied Mechanics, IUTAM), the United Nations International Strategy for Disaster Reduction (UN/ISDR), and the United Nations Environment Programme (UNEP). At the end of the year ICSU ROAP participated in the International Planning Meeting of the Inter Academy Panel meeting on International Issues (IAP) on Promoting Access to and Use of Digital Knowledge Resources in Countries with Developing and Transitional Economies. The meeting focussed on the role of Science Academies in the Asia-Pacific Region.

### Future Plans

The forthcoming year is a very important year for ICSU ROAP. A Programme Officer has been recruited who will further develop and begin to implement programmes in all three priority areas of ICSU ROAP's work viz. natural and human induced environmental hazards and disasters, ecosystems and sustainable energy. The General Assembly of ICSU will also be held in 2008 in Mozambique. We look forward to contributing much to the development of science for the benefit of society in the forthcoming years.

**Mohd Nordin Hasan**, *Director*



## Message from the Chairman

ICSU's vision is to have universal and equitable access to scientific development and capacity to use and generate new scientific knowledge across the world. To achieve this vision, ICSU has established Regional Offices in different developing regions of the world. The Regional office for Asia and the Pacific (ROAP) is unique as it covers a region, which includes both the developed and developing countries. This region has been the seat of unprecedented gains in agricultural production during the Green Revolution era, but the region faces enormous problems, ranging from poverty to inadequate infrastructure to harness benefit from advancing frontiers of science. Some of the most challenging issues are related to dwindling natural resources, acute shortage of energy and potable water, rising consumption of milk, food and feed, environmental degradation, natural and human-induced hazards, human health, sustainable development, improving science education, brain-drain and increasing knowledge divide between 'S' and 'N'. Agriculture and health are most vulnerable sectors. The region also has strength. It has the largest pool of scientific manpower. Some countries, spending up to 3% of GDP on R&D, are emerging science powers. The region is also witnessing reverse brain drain and Diaspora helping in establishing centres of excellence engaged in hard-core science. Still the developing countries of the region have a long way to go.

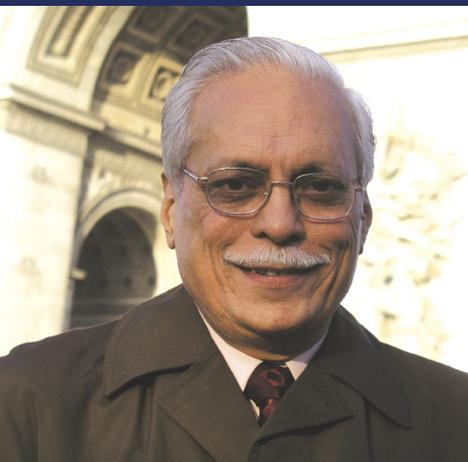
Considering the limited resources available with the ROAP, both in terms of finances and man-power, the Regional Committee for Asia and the Pacific decided to address some of the issues on priority by developing strategic science plans for: natural and human-induced environmental hazards and disasters; sustainable energy; and ecosystems.

In 2007, which, in effect has been first full active year of the ROAP, the Regional Committee established a Planning Group on "Natural and Human-Induced Environmental Hazards and Disasters

in Asia and the Pacific". The Planning Group is finalizing the science plan with a focus on earthquakes, floods and landslides, and also address special vulnerability of islands, which abound in the region. The Planning Group on "Ecosystem Approach in Water Management and Food Production System" is addressing the two major challenges for sustainable development in the region. The Planning Group is being strengthened to prepare a comprehensive science plan to meet the immediate, medium-term and long-term needs of science-based management of water resources and food production systems through ecosystem approach. The rapidly increasing demand for energy in the region is another daunting challenge. The ROAP is in the process of establishing a Planning Group on sustainable energy to address complex issues of energy needs and sustainable solutions.

The Regional Office is actively pursuing the objectives of ICSU by (a) developing strategic partnership and networking with the regional offices of international organizations like UNESCO and TWAS and international unions of ICSU having active programmes in the region; (b) catalyzing intra- and inter-regional, 'S' - 'N' and 'S' - 'S' collaboration; (c) bridging the science-policy interface by advocating the importance of science and technology; (d) information dissemination and creating public awareness, (e) capacity building, and (f) increasing greater participation in ICSU's programmes by encouraging membership of ICSU. I am confident that the ROAP will play a significant role in promoting scientific development in the region to achieve the vision of ICSU.

**Anupam Varma, Chair**



## Milestones in the ICSU ROAP

June 4 & 5	First Meeting Hazards and Disasters Planning Group, Kuala Lumpur
June 6 – 8	ICSU Staff Retreat, Paris
July 16 & 17	First Meeting Ecosystem Approach Planning Group, Kuala Lumpur
November 20 – 23	Regional Committee Meeting and 2nd ICSU Regional Consultation, Chiang Mai.
December 13	Planning on MA Follow-up activities in Sub-Global Assessments (SGA), ICSU ROAP, Kuala Lumpur, Malaysia



Dr. Teerapat Serirangsan, Minister, Prime Minister's Office, Thailand launching the ICSU 2nd Regional Consultation in Chiang Mai, Thailand

Minister of Science and Technology Sri Lanka, Professor Tissa Vitarana launched the workshop for the establishment of the ICSU National Committee of Sri Lanka



## Planning and Coordinating Research

ICSU held a Regional Consultation to define the scope of its work in the short (3 years) and medium-term (6 years) in its priority areas.



Hazards & Disasters  
1st & 2nd Meeting



Ecosystem  
1st Meeting and Regional Consultation

### Natural and human-induced environmental hazards and disasters

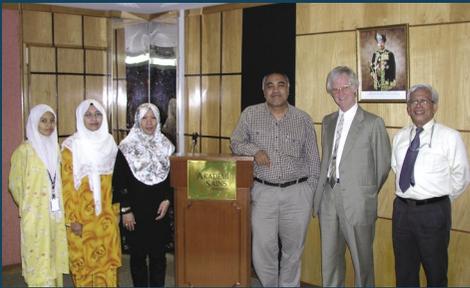
The planning group on hazards and disasters chaired by Professor Harsh Gupta was established in April and had met twice since the 3rd Meeting of the Regional Committee in March. The first meeting was held in June in Kuala Lumpur, and the second in August in Bangkok. An initial draft science plan on hazards and disasters that had been prepared was closely examined in a workshop at the 2nd Regional Consultation in November. A draft final science plan on hazards and disaster will be ready in early 2008. The plan focuses on hazards and disasters related to earthquakes, floods and landslides in Asia and the Pacific. Finalization of the plan will be undertaken in mid-2008.

### Ecosystem

The planning group on ecosystems was established in May and is chaired by Professor Muhamad Awang. The group has met once in July in Kuala Lumpur. The progress of work on ecosystems and background materials for consideration in developing the science plan for work on ecosystems were made available and discussed during the 2nd Regional Consultation in November 2007. ROAP will focus on strengthening the Planning Group and on consolidating its membership prior to embarking on the second stage of its work to prepare the science plan on ecosystems. Closer attention will be given to the relationship of the plan to Millennium Assessment (MA) follow-up activities suggested by the ICSU-UNESCO-UNU Ad Hoc Group.

### Sustainable Energy

The sustainable energy priority area is still at the group formation stage. The Chair of the Inter Academy Council study on sustainable energy Prof Dilip Ahuja, and a member of the ICSU International Science Planning Group on Renewable Energy (ISPRES) Prof H.S. Mukunda made presentations of the status and direction of work on sustainable energy at the global level during the 2nd Regional Consultation. The diversity of the Asia Pacific region with respect to culture, landscapes, country scales, and stages of development presented a major challenge in sustainable energy planning. It was decided during the workshop on sustainable energy that it was necessary to start by identifying particular needs of the region, especially of small and remote communities. It was also acknowledged that the need was for reliable, affordable and user-friendly technologies and particular attention has to be paid to the issue of access and delivery of energy.



IUTAM Vice President visits ICSU  
ROAP

## Universality of Science

### IUTAM Vice President visits ICSU Regional Office for Asia and the Pacific

The Vice President of the International Union for Theoretical and Applied Mechanics (IUTAM), Emeritus Professor Keith Moffat (University of Cambridge), visited the ICSU Regional Office for Asia and the Pacific (ROAP) on 10 December 2007. In conjunction with the visit, a dialogue on enhancing international scientific collaboration in the field of theoretical and applied mechanics was held amongst ICSU, IUTAM, the Academy of Sciences Malaysia (ASM) and the Malaysian Mathematical Science Society (PERSAMA). In attendance were the President of PERSAMA, Professor Mohd Salmi Md. Noorani (National University of Malaysia - UKM), members of the Society Dr Roslinda Nazar (UKM) and Azmin Sham Rambely (UKM). The Director of ICSU ROAP Nordin Hasan, who also represented the ASM moderated the dialogue. Also in attendance was Zaneedar Norman (ICSU ROAP).

IUTAM organizes 7 to 8 symposia annually at various locations around the world; an average of one "Summer School" per year; and its General Assembly which is held biennially. A major event held once every four years is the International Congress of Theoretical and Applied Mechanics (ICTAM). The XXII congress will take place in Adelaide, Australia on 24 - 30 August 2008 (see <http://ictam2008.adelaide.edu.au/>).

The dialogue included discussions on how to further enhance the participation of the mechanics community in Malaysia in research at the international level. This included possible participation of Malaysian scientists in activities organized by IUTAM within the ICSU priority area "Natural and human-induced hazards and disasters", focusing on the mechanics (fluid and solid) of hurricanes, floods, earthquakes and tsunamis, and on problems of pollution (ocean, atmosphere, and urban). IUTAM plans to hold a Summer School and/or Workshop in early in 2009 on "Mechanics of Ocean and Atmosphere in relation to Environmental Hazards", which would have both educational and research objectives. The proposed host is the National University of Singapore (NUS), Institute for Mathematical Sciences (IMS). Possible IUTAM membership of PERSAMA through assistance from ASM was also discussed.



## ICSU-SCAR Forum on Warming in the Polar Regions and its Implications of Earth Systems

ICSU-SCAR Forum on warming in the Polar Regions and its implications of the earth systems was held on 23 March 2007 at Universiti Malaysia Sabah, Kota Kinabalu, Malaysia. The Forum consisted of plenary sessions and case studies on topics linking polar research to earth systems analyses, especially with regards to global climate change.

The forum was jointly organized with Malaysian International Seminar on Antarctica (MISA) programme which held every two years under the Malaysian Antarctica Research Programme. The Malaysian International Seminar on Antarctica (MISA) is held every two years under the auspices of the Malaysian Antarctica Research Programme which started in 1999. MISA 1 and MISA 2 were held in Kuala Lumpur and Penang in 2002 and 2004, respectively.

The theme for 2007 seminar was “from the Tropics to the Poles” which in line with the rationale for the IPY. The poles are an integral component of the complex Earth systems. In order to understand these complexities, polar research must involve scientists working together across disciplines and international boundaries. Increasingly, there is also a need to engage scientists from non-traditional polar research countries.

With this theme, the seminar brings together researchers from various polar and non-polar nations to share research findings, forge collaborative research or initiate joint expeditions. Among the activities held in conjunction with the Seminar is an Outreach Program to generate interest on Antarctica among the general public and schoolchildren.





SCA Annual Conference 2007

## The science and practice of flood disaster management in urbanizing Monsoon Asia

The Mekong Programme on Water Environment and Resilience organized a workshop on 4 to 5 April 2007 in Chiang Mai, Thailand that discussed current understanding of changes to flood regimes in urbanizing regions, their consequences for vulnerability of different social groups and what actions should be taken now to reduce risks of flood disasters in Monsoon Asia. The international workshop brought together a group of around 30 flood managers and researchers within the region to define a prioritized agenda for how science and practice could most fruitfully interact in the next five years to reduce vulnerabilities to floods in urbanizing regions of Monsoon Asia

Changes to the Asian monsoon system compound the challenges of managing floods in urbanizing regions. There are several possible pathways. First, increasing sea levels can exacerbate risks of flooding of cities in coastal zone deltas. Second, increasing frequency of extreme precipitation events is important to landslides and the risks for settlements in upland areas or sudden river bank floods in the lower flood plains. Third, climate change impacts on melting glaciers in the uppermost reaches or reduced precipitation in inland continental areas.

## First Session of the Global Platform for Disaster Risk Reduction (GPDRR)

The Global Platform on Disaster Risk Reduction (GPDRR) was originally known as the Inter-Agency Task Force on Disaster Reduction. The Platform will build on and expand the membership of the Inter-Agency Task Force. Participation in the Global Platform will be open to States. It will also include United Nations and other international agencies, regional organizations, civil society organizations and technical and scientific bodies covering the social, economic, humanitarian, political, environmental and scientific fields and committed to disaster risk reduction. The GPDRR aims at recreating an international forum to discuss disaster risk reduction and the advancement of Hyogo Framework of Action (HFA) implementation in country as well as at the regional and international levels. It will provide a forum for devising strategies and policies to reduce disaster risk, monitoring progress and identifying gaps in policies and programmes and recommending remedial action. It will also aim to ensure complementarity of action at all levels of implementation through increased coordination and cooperation. Finally, the Global Platform will also facilitate the sharing of knowledge and lessons among the UN/ISDR system partners.

## Regional Workshop Education for Disaster Risk Reduction, UN/ISDR, Bangkok

The Asia Pacific Regional Workshop on School Education and Disaster Risk Reduction welcomed 304 participants from 24 countries from the Asia and Pacific region. It was held in Bangkok, Thailand on 8 to 10 October 2007. The goal of the workshop was to make a contribution towards reducing the vulnerability of school children to disasters and helping to decrease the loss of lives. It also aimed to improve the resilience of school communities struck by disasters, or in hazard prone areas.

Mindful of the existing key on-going global and regional processes on disaster risk reduction, the workshop took stock of initiatives, good practices and processes developed by Governments, in-country actors and regional partners in the area of disaster risk reduction education. Also significant was the need to build on existing and ongoing processes, bearing in mind a gender-sensitive perspective. Key recommendations emerged, addressed to all stakeholders, on the following priority areas:

1. Integrating Disaster Risk Reduction into School Education.
2. Strengthening Disaster Risk Reduction Education for Community Resilience.
3. Making Schools Safer.
4. Empowering Children for Disaster Risk Reduction.



## Expanding Regional Activities

### NEW ICSU NATIONAL COMMITTEE

#### SRI LANKA

The National Science Foundation has been a member of ICSU since 1972. It represents more than 30 scientific bodies and institutions in Sri Lanka. The scientist of Sri Lanka will be able to contribute towards national development through regional participation as ICSU National Committee.

The National Science Foundation of Sri Lanka held a workshop to discuss the establishment of an ICSU National Committee in Sri Lanka in August. A total of 49 participants representing the main science institutions and association in Sri Lanka attended the workshop. The workshop was launched by the Minister of Science and Technology Sri Lanka, Professor Tissa Vitarana.

The importance of keeping abreast with the growth of knowledge was stressed by Hon. Minister. All countries should have policies that can create an environment conducive for research, and that the science should benefit the country as a whole. The programmes arising from the establishment of the ICSU National Committee in Sri Lanka were hoped to benefit the people of Sri Lanka and even reach the people in rural areas.

The Workshop endorsed the formation of the ICSU National Committee with the NSF as the coordinating body for the initiative. An Interim ICSU National Committee consisting of eight scientists was formed at the end of the Workshop (see list below). This Committee will draft an initial Terms of Reference for the ICSU National Committee and develop required initial guidelines for its operations. This will have at its core, the interests of Sri Lanka in relation to the ICSU mandate (see *ICSU Strategic Plan 2006 – 2011*). It is anticipated that the National Committee will be established by the end of 2007.



Galle Coast Sri Lanka



National Science Foundation  
Workshop on establishment ICSU  
National Committee in Sri Lanka

## REGIONAL COMMITTEE MEETING & CONSULTATION

### ICSU Regional Committee for Asia and the Pacific Meets in Tehran

The ICSU Regional Committee for Asia and the Pacific held its 3rd meeting in Tehran, Iran on 6 and 7 March 2007. It was hosted by the University of Tehran, and was attended by 8 members of the Committee. Conflicts in travel and other schedules prevented four other members from attending. Professor Derek Gardiner, the newest member of the Committee who is based in Fiji attended the meeting for the first time.

The Committee was informed of the activities of the Regional Office for Asia and the Pacific since January by its Director, Professor Mohd Nordin Hasan, and on the implementation of the ICSU Strategic Plan 2006 – 2011 by Professor Thomas Rosswall, the Executive Director of ICSU. Various new activities were discussed including plans to hold a one-day forum on the implications of polar warming on earth systems, a brainstorming workshop to delineate and document the roles of academies and associations of science in Asia and the Pacific, and on a roundtable dialogue on freedom and responsibility in science in conjunction with the forthcoming meeting of the ICSU Committee on Freedom and Responsibility in science that will be held in Kuala Lumpur in October.

The basis of a framework for long-term collaboration with UNESCO was also discussed. It is likely that the focus of this collaboration will be capacity building for enhanced scientific research and understanding on the management and mitigation of hazards and disasters in Asia and the Pacific. It was learnt that the UNESCO office in Jakarta was also keen to involve ICSU in promoting research programmes on bio-energy and on science education.

Perhaps the most important matter discussed during the Meeting was on planning the key focus of research development work at the Regional Office. This had been narrowed down to three main themes: natural and human-induced environmental hazards and disasters; ecosystems; and on sustainable energy. Science plans for hazards and disasters, and for the ecosystems will be prepared and discussed among members of ICSU and key partner organizations at the ICSU 2nd Regional Meeting planned for November. With sustainable energy the Regional Consultation will be used to carefully scope the work of the Regional Office so that it will truly meet the critical needs of Asia and the Pacific.



ICSU Executive Director and  
Chancellor of the University of Tehran



NRCT & ICSU staff at the ICSU 2nd Regional Consultation

## ICSU 4th Regional Committee Meeting and 2nd Regional Consultation

The 4th ICSU Regional Committee Meeting and ICSU 2nd Regional Consultation were held in Chiang Mai from 20 to 23 November 2007. The meeting started with an announcement of new member for RCAP which appointed as ex-officio, Professor Congbin Fu. His presence in RCAP is to enable better engagement between ICSU EB and ROAP since he is one of ICSU Executive Board member.

The Regional Committee members were requested to participate actively in the 2nd Regional Consultation. Members were made aware of the main actors in the preparation of the plans and the status of development and content of each plan. The need to focus on tangible issues in each of the priority area and to maintain a balanced view was emphasised. Prof Muhammad Awang will chair the plenary session on ecosystems.

The chairs of the plenary sessions of Regional Consultation were local scientists with the exception of Prof Derek Gardiner who chaired Plenary Session 3 on sustainable energy. The facilitators selected for the group discussion on hazards and disasters, ecosystems and sustainable energy were Louis Lebel of Chiang Mai University, Dorji Dhradul of Bhutan and Tanongkiat Kiatsirirot of Chiang Mai University respectively.

The meeting was also informed that the University of the South Pacific has been accepted as ICSU National Member representing 12 South Pacific island nations. ICSU members from Malaysia, Sri Lanka and Thailand have been actively involved with the activities of the Regional Office. The member from Taiwan has hosted a meeting of the CFRS. Unions have also begun to respond to the presence of the Regional Office.



## New Members

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### ICSU NATIONAL MEMBER

#### South Pacific

The University of the South Pacific was accepted as ICSU National Member representing the South Pacific island nations consisting of the Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Western Samoa.

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### ICSU ROAP Regional Committee Member



**Professor Derek J. Gardiner**

Professor Derek J Gardiner is Dean of the Faculty of Science and Technology at the University of the South Pacific whose member states comprise the Cook Islands, Fiji, Kiribati , Marshall Islands , Nauru , Niue , Solomon Islands , Samoa, Tokelau, Tonga, Tuvalu , and Vanuatu . He was Reader and Dean at the School of Applied Sciences, Northumbria University, United Kingdom , for many years before taking up his current appointment in 2006. His research has evolved around the application of optical spectroscopy to materials evaluation and characterisation. Areas of interest include non-aqueous solutions, elastohydrodynamic

lubrication, high temperature corrosion and silicon electronic and micromechanical devices. Along with colleagues, he was inventor of - the “Microline Focus Spectrometer” for high spectral and spatial resolution imaging. Current research involves stress mapping silicon micro-resonators and exploring the integrity and stability of thermal barrier coatings. Professor Gardiner has published over 100 journal papers and articles and was winner of the “Sir Harold Thompson” award in 1986. He is a member of the Royal Society of Chemistry.



**Professor Fu Congbin**

Professor Fu Congbin currently is the Vice President, China Association for Science and Technology, Member of Chinese Academy of Sciences, Research Professor, Institute of Atmospheric Physics (IAP)/Chinese Academy of Sciences (CAS), Director, START Regional Center for Temperate East Asia, Chief Scientist, National Basic Science Project G1999043400 “Predictive Study of Aridification in Northern China in Association with Life-Supporting Environment Changes”, Chair of Scientific Steering Committee, Monsoon Asia Integrated Regional Study (MAIRS) of Earth Science System Partnership (ESSP), Scientific Adviser, Environmental Protection Committee of State Council, China, and Joint Professor, Nanjing University and Lanzhou University. He has long been engaged in the studies on climate variability and

dynamics, including air-sea interaction, air-land interaction, and climate –ecosystem interaction on global and regional scales with particularly the modeling and diagnosis of the variations of monsoon system and its response and feedback to earth system dynamics. He has published about 130 scientific papers, 6 books and more than 10 chapters in co-authored books. Professor Congbin also received second prize of important research result awards on “air-sea interaction and short range climate variation”, and third prize of natural science awards on “El Nino/Southern Oscillation and Asia monsoon variability” “air-sea energy exchange and very-low frequency oscillation” and “air-land interaction” issued by Chinese Academy of Science, received a special award on international co-operation issued by Dr. Zhou Peiyuan Foundation, and received the Second Prize of National Natural Science Award issued by Ministry of Science and Technology of P. R. China on “Response of Monsoon climate-ecosystem to global change”.

## Regional Committee for Asia and the Pacific

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## Financial Summary

### Income

	MYR	EUR
Government of Malaysia	498,000.00	99,514.15
ICSU	171,033.80	34,177.47
UNESCO Jakarta	1,734.75	346.67
<b>TOTAL INCOME</b>	<b>670,768.55</b>	<b>134,047.30</b>

### Expenditure

Meetings, consultations and activities	120,990.32	24,162.68
Regional Consultation & Staff Travel	125,255.12	25,018.78
Emoluments	265,325.27	59,994.24
Communications & Utilities	24,645.60	4,922.54
Supplies/other materials	20,531.83	4,079.39
Maintenance & Repairs	3,404.25	676.38
Services	573.65	113.85
<b>TOTAL EXPENDITURE</b>	<b>560,726.04</b>	<b>111,280.17</b>
<b>BALANCE (TO CARRY FORWARD)</b>	<b>110,406.51</b>	<b>22,019.45</b>

## Benefits of Joining ICSU

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

- All Members receive copies of ICSU publications: the electronic newsletter ICSU Insight, Annual Reports, and any other publications or series of publications produced (e.g. the report produced during the preparation of ICSU's Strategic Plan 2006-2011 or the series produced in connection with the World Summit on Sustainable Development (WSSD))
- Members have access to the Member Zone on the ICSU website and thus to documents not made available to the general public and can search the ICSU database. Members also benefit from access to different committees of ICSU, for example, the Committee on Freedom and Responsibility in the conduct of Science which, inter alia, helps solve visa problems for scientist wishing to attend scientific meetings and gives advice to organizers of international meetings. Even more importantly, Members gain access to the world scientific community and the enormous network scientist comprising the membership of ICSU, and the prestige afforded by the ICSU umbrella.
- ICSU's International Scientific Unions and National Scientific Members (National Academies of Science or National Research Councils for the most part) meet every three years in the ICSU General Assembly. Members gets an excellence cross-discipline opportunity for the exchange of ideas and also gets access to a wide spectrum of scientific expertise which enables Members to address major international, interdisciplinary issues, which they could not undertake alone.
- For full information on the range of ICSU's activities, see website: **[www.icsu.org](http://www.icsu.org)**

# Membership of ICSU

## National Members

ICSU's National 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. The following list includes full Members, Scientific Associates\*, and Observers\*\*. Pacific Islands includes Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.

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

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## Scientific Unions

International Union for Quaternary Research (NQUA)  
International Union of Anthropological and Ethnological Sciences (UAES)  
International Union of Biochemistry and Molecular Biology (IUBMB)  
International Union of Biological Sciences (IUBS)  
International Union of Crystallography (IUCr)  
International Union of Food Science and Technology (IUFoST)  
International Union of Forest Organisations (IUFRO)  
International Union of Geodesy & Geophysics (IUGG)  
International Union of Geological Sciences (IUGS)  
International Union of the History and Philosophy of Science (IUHPS)  
International Union of Materials Research Societies (IUMRS)  
International Union of Microbiological Societies (IUMS)  
International Union of Nutritional Sciences (IUNS)  
International Union of Pharmacology (IUPHAR)  
International Union of Physiological Sciences (IUPS)  
International Union of Psychological Sciences (IUPsyS)  
International Union of Pure and Applied Chemistry (IUPAC)  
International Union of Pure and Applied Physics (IUPAP)  
International Union of Soil Sciences (IUSS)  
International Union of Theoretical and Applied Mechanics (IUTAM)  
International Union of Toxicology (IUTOX)  
Union Radio Scientifique International (URSI)

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## Scientific Associates

Academia de Ciencias de América Latina  
Federation of Asian Scientific Academies and Societies  
Federation Internationale des Geometres  
International Association of Hydraulic Engineering and Research  
International Arctic Science Committee  
International Commission for Acoustics  
International Cartographic Association  
International Council for Laboratory Animal Science  
International Commission for Optics  
International Council for Scientific and Technical Information  
International Federation for Information Processing  
International Federation of Library Associations and Institutions  
International Foundation for Science  
International Federation of Societies for Microscopy  
International Institute for Applied System Analysis  
International Union for Vacuum Science, Technique and Applications  
International Water Association  
Pacific Science Association  
The Academy of Sciences for the Developing World



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