

2010 ANNUAL REPORT OF THE IAC EXECUTIVE DIRECTOR

On 29 November 2010, the Chair of the Intergovernmental Panel on Climate Change informed the meeting of the UN Framework Convention on Climate Change, Cancun, Mexico, of the contribution of the 2010 InterAcademy Council review of the IPCC. This included implementation of IAC recommendations for improving IPCC transparency, use of non-peer-reviewed literature, characterization of scientific uncertainty, and public communications; as well as establishment of ad hoc committees to prepare proposals for changing organization and management of IPCC (derived from IAC recommendations) for adoption at IPCC Plenary, May 2011.

Building upon these accomplishments, the IAC objectives for 2011 are to engage more fully government and industrial decision-makers, the scientific and technological community, and the general public; and to secure the required human and financial resources for mobilizing the world's best scientists, engineers, and medical experts. Planning has now begun regarding future contributions of the world's academies for policy analyses and formulation for addressing issues of global sustainability.

IAC PROGRAMS

A. Review of the Intergovernmental Panel on Climate Change (IPCC)

On 10 March 2010, the InterAcademy Council (IAC) was requested by the United Nations Secretary-General and the Chair of the Intergovernmental Panel on Climate Change (IPCC) to conduct an independent review of IPCC processes and procedures. The purpose of this review was to help guide the processes and procedures of the IPCC's fifth report and future assessments of climate change. The final text of the IAC report was publicly released on 30 August, with follow-up in conjunction with IPCC in October 2010 and by UNFCCC in December 2010.

In May 2010, the IAC Board approved a slate of twelve persons to serve on an IAC review committee. The committee was composed of the following persons:

- **Harold T. SHAPIRO** (Canada/US), economist and President Emeritus of Princeton University and the University of Michigan, is a professor in the Department of Economics and the Woodrow Wilson School of Public and International Affairs at Princeton University.
- **Roseanne DIAB** (South Africa) is the Executive Officer of the Academy of Science of South Africa (ASSAf) and Emeritus Professor and Honorary Senior Research Associate at the University of KwaZulu-Natal in Durban.
- **Carlos Henrique de BRITO CRUZ** (Brazil) is the Scientific Director of the São Paulo Research Foundation (FAPESP), in Brazil, and Professor at the "Gleb Wataghin" Physics Institute at the University of Campinas (Unicamp).

- **Maureen CROPPER** (United States) is a Professor of Economics at the University of Maryland, a Senior Fellow at Resources for the Future, and a former Lead Economist at the World Bank.
- **Jingyun FANG** (China) is Cheung Kong Professor and Chair, Department of Ecology, College of Urban and Environmental Sciences, Peking University, in Beijing.
- **Louise O. FRESCO** (The Netherlands) is currently University Professor, University of Amsterdam, The Netherlands where she concentrates on issues of sustainability and scientific policy.
- **Syukuro MANABE** (Japan/US) is a meteorologist who pioneered the use of computers to simulate global climate change and natural climate variations. He is currently a senior meteorologist at the Program in Atmospheric and Oceanic Science, Princeton University.
- **Goverdhan MEHTA** (India) is National Research Professor and Bhatnagar Fellow, Department of Organic Chemistry, Indian Institute of Science, Bangalore, India.
- **José Mario MOLINA-Pasquel Henríquez** (Mexico/US) was a co-recipient (along Paul J. Crutzen and F. Sherwood Rowland) of the 1995 Nobel Prize in Chemistry for his role in elucidating the threat to the Earth's ozone layer of chlorofluorocarbon gases.
- **Sir Peter WILLIAMS FRS** (United Kingdom) is Honorary Treasurer and Vice President of the Royal Society, Chancellor of the University of Leicester, and Chairman of the National Physical Laboratory.
- **Ernst-Ludwig WINNACKER** (Germany) is Secretary General of the Human Frontier Science Program (HSFP).
- **Abdul Hamid ZAKRI** (Malaysia) is Science Advisor to the Prime Minister of Malaysia and holder of the Tuanku Chancellor Chair at Universiti Sains Malaysia.

The following is a timeline of completion and follow-up to the IAC report on IPCC:

- 1 March – IAC Executive Director informed by UN of intent to ask IAC to review IPCC
- 10 March – UN Secretary-General and IPCC Chair formally announce request to IAC to conduct review of IPCC
- 10 March – IAC press conference at United Nations, New York (Robbert Dijkgraaf, IAC Co-Chair)
- 12 March – IAC Board approves in principle to proceed to develop a project prospectus
- 22 March -- IAC Board approves Review of IPCC at its meeting in Amsterdam
- 24 March -- IAP requests nominations for membership on IAC Review Committee
- 15 April – IAC and UNEP jointly sign Agreement for funding IAC Review of IPCC
- 28 April -- IAC Board approves slate of candidates for IAC Review of IPCC
- April – Staff for Review are appointed (from USNAS, Royal Society, and Netherlands Academy)
- 14-15 May – IAC Review Committee convenes in Amsterdam at Royal Netherlands Academy (KNAW)
- 14 May -- Webcast presentations by IPCC Chair and Secretary, and UN officials.

- May – IAC special website created for public information and public submission of information to IAC
- May-June – Over 400 individual interviews conducted by Review Committee and staff
- May-June – Special interview group sessions convened in Brazil, China, and USA
- 15-16 June – IAC Review Committee convenes in Montreal, Canada, at McGill University
- 15 June -- Webcast presentations by experts on IPCC processes and procedures
- 21-22 July – IAC Review Committee convenes in Chicheley Hall, UK, at Kavli Royal Society Centre
- 1 August – Draft report is completed
- 2 August – Draft report submitted to 12 external peer reviewers
- 7 August – Received 12 external peer reviews of report draft
- 20 August – Revised draft report submitted to Peer Review Monitors (Ralph Cicerone and Kurt Lambeck)
- 24 August – Peer Review Monitors inform IAC Co-Chairs of approval of IAC Peer Review
- 27 August – IAC Board approves public release of IAC Report on IPCC
- 30 August – IAC Report on IPCC is presented to UN Secretary-General and IPCC Chair, New York
- 30 August – UN Secretary-General and IPCC Chair release statements welcoming IAC report
- 30 August – IAC Press Conference, United Nations; WWW release of report and press statement
- 31 August – Over 1000 news stories appear in newspapers and online press worldwide
- 31 August – IPCC transmits IAC report to national governments
- 1 October – National governments submit to IPCC their official responses to IAC report
- 12 October – Sir Peter Williams (Royal Society, IAC Review Committee) makes presentation to IPCC Plenary, Busan, Republic of Korea
- 14 October – IPCC Plenary announces adoption of IAC recommendations on transparency, use of non-peer-reviewed literature, characterization of scientific uncertainty, and public communications; establishment of ad hoc committees to prepare proposals for changing organization and management of IPCC (derived from IAC recommendations) for adoption at IPCC Plenary, May 2011.
- 30 October -- Dissemination of printed IAC report to IAP, CAETS, and IAMP academies
- 29 November – IPCC Chair Statement to meeting of UN Framework Convention on Climate Change, Cancun, Mexico, in which he describes the contribution of the IAC report and the IPCC adoption of IAC recommendations.

B. Global Water Challenges

The InterAcademy Panel has sponsored a program of activities devoted to issues related to water resources. The Brazilian Academy of Sciences serves as lead academy for this IAP Water Research and Management Program. This program has sponsored workshops in several countries focusing on regional water challenges. Major topics include science-based solutions for mitigating major sources of pollution in streams, rivers, and lakes; and improving access to safe drinking water. In support of the IAP Water Research and Management Program, in 2009 the IAC Board began a process to launch an in-depth science-based advisory study on policies for addressing critical needs related to water resources.

First Asian Regional Workshop. An Asian regional workshop on sustainable water challenges was convened in Beijing in 21-22 November 2009, co-sponsored by the Chinese Academy of Sciences and the InterAcademy Council. A follow-up meeting was convened to consider a scope, plan of work, and potential funding for a new IAC study on critical water issues.

Convening of an IAC Organizing Group. Based on the results of the Beijing workshop report, an IAC Organizing Group was convened in Amsterdam during 21-23 February 2010 to develop a report and a prospectus to the IAC Co-Chairs, to be submitted to the IAC Board for consideration. The Organizing Group included the following persons:

Marcel J.F. STIVE, Co-Chair

Chair Coastal Engineering
Director of Water Research Centre Delft
Department of Hydraulic Engineering,
Faculty of Civil Engineering and Geosciences, Delft University of Technology

Jun XIA, Co-Chair

President, International Water Resources Association (IWRA)
Director & Leading Professor, Key Lab. of Water Cycle & Related Surface Processes,
Chinese Academy of Sciences (CAS)
Director, Center for Water Resources Research, CAS

Asit K. BISWAS

President and Distinguished Visiting Professor
Third World Centre for Water Management, Mexico, and
Institute of Water Policy, Lee Kuan Yew School of Public Policy, Singapore

Ngai Weng CHAN

President Water Watch Penang (WWP)
Board Member of IWRA, Professor of Water Resources
Universiti Sains Malaysia, School of Humanities

Qingyun DUAN

Professor and Chief Scientist, College of Global Change and Earth System Sciences
Director, Earth System Modeling Laboratory
Beijing Normal University

Paulo de GÓES

Head of the International Office, Brazilian Academy of Sciences
Associate Director, InterAcademy Council (IAC)

Rivka KFIR

CEO
Water Research Commission, South Africa

Kalanithy VAIRAVAMOORTHY

Chair of Water Engineering
Department of Civil Engineering, School of Engineering
University of Birmingham

Second Asian International Workshop. The second international workshop for the InterAcademy Council (IAC) water project was held in Beijing on September 17-18, 2010, with the theme of water vulnerability and adaptive governance under climate change and development.

The workshop was organized by the Institute of Geographical Sciences & Natural Resource Research (IGSNRR), Chinese Academy of Sciences (CAS), Center for Water Resources Research, CAS, and Key Laboratory of Water Cycle & Related Land Surface Processes, CAS. Nearly 50 international and domestic experts and professors, mainly from USA, Netherland, Norway, France, Japan, India and Australia, attended the workshop.

The academician of CAS, LIU Changming delivered a keynote presentation during the first day's discussion. He reviewed the temperature and precipitation trends in China over the last 50 years and their influences on the Asian water tower. He mentioned that the snow pack and glacier recession and ecological degradation were the two key issues for the Yangtze, Yellow and Lantsang headwater. In order to solve these problems, enhancing water cycle monitoring, developing water cycle modelling and adopting adaptive water management measures are needed urgently.

Prof. Lars Gottschalk, academician of Norwegian Royal Academy of Sciences, gave a talk on environmental flow assessment. The operational approach provided the inspiration for relative studies on ecological water demand in China. Prof. Marcel J. F. Stive, Co-Chair of the IAC Water Program from Netherland, introduced the IAC sustainable water future project.

Participants also actively participated in the discussions around water shortage problems and countermeasures on part of China, ideas to improve water resources management in arid inland river basins, Northwestern China, quantifying uncertainty in the impacts of

climate change on river discharge in sub-catchments of the River Yangtze and Yellow Basins, adaptive land use and water management in the Pearl River Delta under climate change, climate change and sustainable water use in Asia, vulnerability and adaptation in a highly water dependent community in South Australia, impact and irrigation in the Mediterranean, floods and droughts in the combined land-atmosphere hydrological cycle under climate change, adaptive management of lakes and lake basins, and uncertainties in climate change projections.

Netherlands Consultation Round. In agreement between the two project co-chairs it was decided to conduct a small survey amongst a group of Netherlands water resources specialists to make an initial assessment on the core water issues at stake. The survey is referred to as the 'Netherlands (NL) Consultation Round'. The main objective of this consultation round is to provide a head start on the preparation of the IAC Water project. To this end, a total of 13 experts of different water related disciplines have been consulted in the first months of 2011.

D. Follow-up to IAC Energy Report

In October 2007, the InterAcademy Council released *Lighting the Way: Toward a Sustainable Energy Future*. This report was commissioned by the Governments of Brazil and China. During 2008, copies of the report have been distributed to relevant international organizations, as well as to all scientific, engineering, and medical academies throughout the world for dissemination to academic, governmental, and industrial leaders in their nations. The IAC is providing copies of the report to the general public as requested.

As a crucial next step following the release of *Lighting the Way*, a series of regional workshops of scientists and technologists began during 2008-2009 by multinational associations of scientific and technological academies in the Americas, Europe, Africa, Asia, and the Middle East. The purpose of these conferences are (1) to develop a common agenda among scientific organizations for ongoing engagement in issues related to the needed transitions to sustainable energy resources and utilization and (2) to promote an action agenda by individual scientific organizations for engaging their own memberships and governments in efforts for achieving a sustainable energy future.

Regional IAC/IAP workshop reports

1) "Inventing a Better Future: A Strategy for Building Regional Capacities in Science and Technology", organized by IANAS and hosted by the Brazilian Academy of Sciences in Brasília from 21-23 July 2010

In the framework of IANAS Capacity Building Programme, the Brazilian Academy of Sciences hosted the "IANAS Inventing a Better Future Workshop: A Strategy for Building Regional Capacities in Science and Technology" workshop. The event took place in Brasília between July 21st and 23rd, at the headquarters of the Brazilian National Council for Scientific and

Technological Development (CNPq), being also supported by the Global Network of Science Academies (IAP).

The major objectives of this workshop were to (1) present success cases in the Americas where Science Academies and National Research Councils had a central role in the elaboration of S,T&I national strategies; (2) present and discuss examples of successful S,T&I National Plans; (3) plan and set up S,T&I priorities for countries in the region; (4) consider how decision makers adopt measures to strengthen the scientific and technological capacity of their countries; and (5) discuss integration and coordination of local actions among the countries of IANAS member Academies and other partner institutions to generate a synergistic relation that can benefit the parties involved.

Representatives from 17 countries of the Americas attended the workshop, which assembled high-level officers from 5 National Research Councils (Brazil, Ecuador, Guatemala, Dominican Republic, and Paraguay), representatives from 14 IANAS member Academies, and representatives from Nicaragua, Paraguay, Panama and Ecuador.

2) Regional workshop of “Lighting the Way Toward a Sustainable Energy Future” focusing on *Jatropha curcas*-derived biofuel as a renewable energy source, organised by NASAC and hosted by the African Academy of Sciences from 22-23 February 2010

The IAC “Lighting the Way” report formed the basis of the *Jatropha curcas* conference organised by AAS and NASAC, which had representation from over 7 countries in Africa. Various case studies on *Jatropha* production and processing were shared and an overarching observation was the lack of support from the respective governments. Development of biofuels will not produce the desired outcomes unless the policy and regulatory framework, instruments, price signals, market incentives and standards are in place. In addition, the governments’ support is vital in creating an enabling environment for *Jatropha* development.

Several presentations were made on the various business models that can maximise returns. The best models are those which financially rewards everyone in the supply chain and not just a few. Critical to the success of biofuels development in Africa will be the relentless pursuit of the most promising technology that can deliver solutions by uplifting the living standards of the people who are engaged in the supply chain.

IAP-IAC COOPERATION

Creation of new IAP/IAC Development Advisory Committee (DAC). In the Fall 2010, the Co-Chairs of the IAP and IAC appointed a committee of persons to serve as advisors in development of new programs and initiatives. Current members include the following:

- FRANCISCO J. AYALA [DAC Co-Chair], University Professor and Donald Bren Professor of Biological Sciences, Ecology & Evolutionary Biology, School of Biological Sciences UC Irvine Professor of Philosophy, Philosophy School of Humanities UC Irvine

Professor of Logic and the Philosophy of Science, Logic & Philosophy of Science,
School of Social Sciences UC Irvine

- CARLOS H. DE BRITO CRUZ [DAC Co-Chair], Scientific Director FAPESP, Rua Pio XI, 1500 - 05468-901 – SP – Brazil
- PEDRO GARCIA BARRENO, Director del Hospital General Universitario Gregorio Marañón de Madrid. Es catedrático de Fisiopatología y Propedéutica Quirúrgicas en la Universidad Complutense de Madrid. PROFESSOR ARNOLD MIGUS, Cour des Comptes (French Supreme Court of Audit) Adviser to the President of the École polytechnique, Paris Former General Director of CNRS, France
- TONY HEY, Corporate Vice President of External Research, Microsoft Research
- R A MASHELKAR, CSIR Bhatnagar Fellow, National Chemical Laboratory Dr. Homi Bhabha Road, Pune, India
- CHRISTINA LAMPE-ONNERUD, Founder and Chief Executive Officer, Boston Power, Inc
- JOSEPH ROTMAN, Chair of the Canada Council for the Arts, Chairman of Grand Challenges Canada (GCC), Founding Chair of the Ontario Brain Institute (OBI), Chairman of Roy-L Capital Corporation.

The Development Advisory Committee will have the following objectives:

1. To advise IAP and IAC on the development agenda, including future development objectives, initiatives, prospectus and communications strategy.
2. To review existing, past and future activities of both organizations, including their strategic plans and possible sources of funding.
3. To advise and inform IAP and IAC of relevant external developments, initiatives and opportunities.
4. To assist IAP and IAC in forging new relationships, partnerships, organizational structures, fundraising campaigns, committees and materials.

The first meeting of the DAC will occur in Washington, DC on 27 March 2011.

IAC BOARD AND CO-CHAIRS

During 2010, the IAC Board had the following members:

Robbert DIJKGRAAF, Co-Chair

President, Royal Netherlands Academy of Arts and Sciences

LU Yongxiang, Co-Chair
President, Chinese Academy of Sciences

Howard ALPER, Ex Officio Member
Co-Chair, InterAcademy Panel on International Issues

Eduardo CHARREAU, Member
President, Argentina National Academy of Exact, Physical and Natural Sciences

Ralph CICERONE, Member
President, U.S. National Academy of Sciences

Robin CREWE, Member
President, Academy of Science of South Africa

Mohamed H.A. HASSAN, Member
President, African Academy of Sciences

Ichiro KANAZAWA, Member
President, Science Council of Japan

Yücel KANPOLAT, Member
President, Turkish Academy of Sciences

Eduardo Moacyr KRIEGER, Member
Former President, Brazilian Academy of Sciences

Kurt LAMBECK, Member
President, Australian Academy of Science

Sangkot MARZUKI, Member
President, Indonesian Academy of Sciences

Volker ter MEULEN, Member
President, German National Academy of Sciences Leopoldina

Jacob PALIS, Member
President, Academy of Sciences for the Developing World (TWAS)

Martin REES, Member
President, The Royal Society, United Kingdom

Jean SALENÇON, Member
President, Académie des Sciences, France

Guy de THÉ, Ex Officio Member
Co-Chair, InterAcademy Medical Panel

Achiel VAN CAUWENBERGHE, Ex Officio Member
Former President, International Council of Academies of Engineering and
Technological Sciences (CAETS)

M. VIJAYAN, Member
President, Indian National Science Academy

Goverdhan MEHTA, Observer
Former President, International Council for Science (ICSU)

Ed NOORT, Observer
Foreign Secretary, Royal Netherlands Academy of Arts and Sciences (KNAW)

THE IAC SECRETARIAT

The IAC Secretariat is hosted by the Royal Netherlands Academy of Arts and Sciences in Amsterdam. The IAC continues to be located at the Royal Netherlands Academy of Arts and Sciences (KNAW) in Amsterdam under the current agreement between the IAC and the KNAW. The IAC Co-Chairs look forward to an even stronger partnership between the KNAW and the IAC in the next years. **John P. Campbell** continues to serve as IAC Executive Director. He assumed this position in May 2005 and re-located to Amsterdam from Washington, DC, where he had been a staff officer at the U.S. National Academies. **Paulo de Goes** serves as IAC Associate Director. **Albert Koers**, former IAC Executive Director, continued as IAC General Counsel until Summer 2010. In September 2008, **Anne Muller** joined the IAC staff as Program Coordinator. The IAC continues to employ consultants, serving as needed for professional staffing of studies and publication development.

John P. Campbell
IAC Executive Director
18 March 2011