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The Inter-Academy Panel and the Inter-Academy Council

Many in the scientific community may not be aware about the existence of the Inter-Academy Panel (IAP) or the newly created Inter-Academy Council (IAC), but these have already acquired an enviable status amongst the science academies globally. Since India played a significant role in their creation and functioning and is expected to make important contributions, it is time to provide a brief account of these scientific enterprises through this prestigious journal. These have already figured briefly in *Science* and *Nature*.

In May 1992, at the invitation of the Royal Society of London and the US National Academy of Sciences, Presidents of ten academies of science representing different regions of the world, met in London, to discuss the desirability of organizing a meeting of the science academies to develop a consensus statement on Population and Development, the subject of an UN conference to be held at Cairo in 1994.

At this meeting it was decided to hold a conference on the subject to which

representatives from all national and regional science academies would be invited. The invitation of the Indian National Science Academy (INSA) to hold this meeting at New Delhi was unanimously approved. Thus a 'Population Summit' was held at Delhi during 24 to 27 October 1993. This was a unique event where more than fifty academies of science participated, probably for the first time ever, to discuss an issue of global concern. Following the deliberations, a consensus statement, subscribed to by the

fifty academies present (and few more by correspondence) emerged. The deliberation of the conference was later published as a monograph, *'Population – The Complex Reality'* by the Royal Society, London. This was later presented to the UN conference on Population and Development held at Cairo in September in 1994. Prompted by the success of this event, it was generally felt that such a mechanism could well be utilized to discuss other regional or global issues of interest to which academies could provide S&T inputs. For this purpose Crispin Tickell, one of the invited speakers from UK, suggested 'that a small standing body should be established, known perhaps as the Inter-Academy Panel'. This suggestion received wide support. The academies decided to go back to their councils with this suggestion for decision.

A proposal to start such a body, initially called Inter-Academy Panel on Population and Development (IAPPD) was circulated to all the academies who had participated in the Population Summit and several others who could be contacted. A questionnaire was sent to them to elicit their views – if they support the idea, would they like to be associated with its activities, would they volunteer to be members of the steering committee, etc. There was an overwhelming positive response.

On 6 January 1995, representatives of 10 academies from amongst those who had evinced interest in being members of the Steering Committee met at INSA and formally approved the creation of the Inter-Academy Panel on International Issues (and not just IAPPD). The main objective of the panel was: 'To act as a Forum through which Academies of Science, worldwide can use their expertise to bring together leading authorities in the natural and social sciences, in order to advise governments and international organizations and to inform public opinion, on scientific aspects of issues of concern internationally or of concern to multiple academies'. It was further decided that, 'The types of activities that may be undertaken by the IAP include: working groups, reports, collaborative research, workshops and conferences. The steering committee will ensure that the activities undertaken by the IAP do not duplicate, conflict with, or compete with the work of international scientific organizations, such as the International

Council of Scientific Unions (ICSU). To facilitate coordination, ICSU will be invited to be an ex-officio member of the steering committee'. The steering committee was later enlarged to 19 by inviting some of the active academies from the regions of the world not present at the Delhi meeting.

P. N. Tandon (Past President INSA) and F. Sherwood Rowland (Foreign Secretary of the US National Academy of Sciences) were elected as the Co-Chairs of the steering committee. The Royal Society of London was requested to serve as the secretariat. The Royal Swedish Academy of Sciences was invited to solicit an academy from a developing country, and together to serve as the initial editors of the newsletter. The Third World Academy of Sciences volunteered to share this responsibility.

During the five years of its existence IAP functioned as an informal body, whose voluntary membership increased to nearly 80. The steering committee of 19 members met approximately once a year. Impressed by the contributions made by the Population Summit, Wally N'Dow, Organizer of the United Nations Habitat II Conference on future of mega cities, requested the IAP to provide inputs for the deliberations of this conference. Accordingly, a declaration emphasizing the role of S&T in this field, was prepared on behalf of the world academies of science by representatives of 15 academies meeting in Washington DC in January 1996. The statement thus prepared was circulated to all member academies of IAP and endorsed by 73 academies. This was further discussed at Istanbul during 31 May to 1 June (just preceding the US conference). During this forum, to which representatives of the Council of Academies of Engineers and Technological Sciences (CAETS) were also invited, 34 academies presented reports on behalf of their academies and discussed the draft statement entitled, 'Science and Technology and the Future of Cities'. Finally this statement was presented to the UN conference on 6 June 1996, by the two Chairs of IAP and the Chairman of CAETS.

In the meanwhile some specific programmes like Mother and Child (French and Swedish academies) and Population and Land use (US, China, India), involving two or more academies were developed. Recognizing the global concern on

sustainable development, towards the end of 1996, a Sustainability Co-ordination Committee of 10 members, representing an appropriate balance among geographic regions, was appointed to provide ongoing coordination and guidance in organization of IAP activities on this topic, the development of the 2000 Conference agenda and programme, and the production of a consensus statement of academies on the subject. A number of academies organized national and regional conferences on the subject and provided their inputs to the coordination committee, which met again in September 1998 at Trinidad/Tobago along with the 10th Anniversary of the Caribbean Academy of Science. IAP was invited to organize a forum on 'Joining Forces for a Sustainable World' at the UNESCO-ICSU World Science Conference held at Budapest in June 1999. World Economic Forum, for its meeting in January 2000 at Davos, Switzerland, invited Presidents of 15 academies of science (almost all members of IAP) along with the two Chairs of IAP and President of ICSU. This provided another opportunity to discuss issues related to the conference on 'Transition to Sustainability' to be held in May 2000 at Tokyo.

The Tokyo conference in which nearly 50 academies participated, consisted of three and a half days of invited lectures and discussion on issues like population and health, food, water, energy, consumption, knowledge/education. Amartya Sen was invited to deliver a keynote address. Complete proceedings of this conference are available on World Wide Web – *inter-academies.net*. The steering committee met twice just prior to and after the end of the scientific meeting to discuss organizational issues and the future of IAP. There was overwhelming expression by all academies present and (others through their reply to a questionnaire) of the valuable contributions made by IAP during the five years of its existence and the need for its continuation on a more formal basis. Yves Quèrè, Foreign Secretary of French *Académie des Science* and Eduardo Krieger, President of the *Academia Brasileira de Ciências* of Brazil were elected new co-chairs. In place of the steering committee, the two co-chairs will now be assisted by a small Executive Committee consisting of India, China, Caribbean, UK and Sweden. Its secretariat will now be hosted by the

Third World Academy of Sciences at Trieste, Italy.

Inter-Academy Council

Following informal discussions initiated at Budapest, and later continued at Cairo and Davos, it was proposed to create a formal arm of IAP to be called Inter-Academy Council (IAC) as a legal entity to provide scientific advice to international organizations on request. This was based on the realization that decision-makers, in both international organizations and national governments are faced with the fact that major issues and concerns are regional and global, and increasingly intertangled with significant scientific and technological questions. It is therefore, an urgent need for international decision-makers to rely on scientifically credible, cross-disciplinary advice for addressing the complex challenges and opportunities. The existing mechanisms are unable to meet these demands expeditiously. An urgent-task for the worldwide scientific community is there-

fore to develop effective mechanisms for delivering timely advice that utilizes the best scientific expertise, while being clearly so multinational that it cannot be dismissed as reflecting the interests of one nation or particular block of nations. The opinion of all members of IAP was sought through a questionnaire. Finally at the meeting of the IAP steering committee on 14 May 2000 (along with representatives all other member academies present in Tokyo), it was resolved to establish IAC. A draft constitution prepared by a committee consisting of Yves Quèrè (Chair), Eduardo Krieger, E. Winnacker and P. N. Tandon was deliberated upon. It was decided that the Council will consist of 15 Presidents of the IAP member academies (or equivalent national organizations). Bruce Alberts (USA) and Goverdhan Mehta (India) were elected Co-Chairs. The other members of the Council will be Brazil, China, France, Germany, Israel, Japan, Malaysia, Mexico, South Africa, Sweden, Third World Academy of Science, UK, USA. In addition, President of ICSU, one of the Co-

Chairs of IAP and the host academy of the Council will be ex-officio observers. The Royal Dutch Academy, The Netherlands was voted to host the IAC secretariat.

It may be mentioned that IAC, on being requested to provide scientific opinion on a subject of global interest, would constitute an expert group, based on the suggestions received from members of the IAP and then provide assistance through its secretariat, monitor the progress of the operation and get the final report vetted by independent reviewers. The report will be issued in the name of the experts who prepared it and not in the name of IAC. This mechanism is on the line of the established practice already followed by the US National Academy, which produces a large number of such reports primarily for its national use.

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Plant genome initiatives in India

With international competition in plant genomics becoming fierce, foresight led to the setting up of a National Centre of Plant Genome Research (NCPGR) in India as far back as April 1998. NCPGR is an autonomous institute funded by the Department of Biotechnology. Asis Datta, Vice-Chancellor, Jawaharlal Nehru University (JNU), New Delhi, a pioneer of plant genome research in India and an expert in plant molecular biology and genetics, said 'this centre is expected to evolve and develop into a premier research institute on plant genomics'.

Plant genomics in India will receive a big boost, as activities of the NCPGR include a core-research programme with structural, functional and application genomics as components. With its linkage research programme, the centre would provide networking within India between various plant genome research groups. The centre would also actively train manpower required for such research.

The foundation stone of the centre was laid on 30 November 1999 by the Minis-

ter for Human Resource Development, Science and Technology and Ocean Development, Murali Manohar Joshi. In the meantime, working from interim premises in JNU, several research initiatives have begun. They include mapping and sequencing of expressed sequence tags (ESTs) and gene prospecting, i.e. identification and isolation of important genes and promoters from various sources, in the area of structural genomics. The functional genomics programme has ongoing research in genes involved in plant-pathogen interaction, nutrition and nutritional quality and value-added transgenic plants. International and Indian patents have been obtained by the research group led by Datta.

Indian efforts towards genome studies at NCPGR will be strengthened with crops such as chickpea and rice, as well as medicinal plants. Chickpea (*Cicer arietinum*) is the third most important seed legume in the world, with India accounting for 75% of world production. It is a major source of protein in human and

animal diet, with a protein content of 25 to 28% of its total dry weight.

As recently as June 2000, India injected a new excitement and challenge into plant genome efforts by joining hands with ten other countries for the International Rice Genome Sequencing Project (IRGSP). Spurred on by government support and commitment, the Indian initiative has been jointly funded by Department of Biotechnology (DBT) and the Indian Council for Agricultural Research (ICAR).

The project has taken off. Responsibility for sequencing a part of rice chromosome-11, a 10 million base pairs (Mb) segment over the next five years, will rest on the shoulders of two centres at a total cost of Rs 48.83 crores. These are, the Department of Plant Molecular Biology, University of Delhi South Campus (UDSC) with Akhilesh Tyagi as overall Coordinator and J. P. Khurana as Principal Investigator, and the National Research Centre for Plant Biotechnology (NRCPB), Indian Agricultural Research Institute