

REPORT ON IPY CONSULTATIVE FORUM

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Hotel Grand Chancellor, Hobart, Australia

Formal presentations

Introduction

The meeting was called to order by its Chairman, Ian Allison, at 1100. Around 60 people were present. Numbers fluctuated throughout the day as groups came and went from other meetings taking place in parallel. Although there is a list of attendees (Annex 1) it is not an accurate reflection of attendance, since it was only made in the afternoon, by which time many of the morning participants had been replaced by others, and in any case it circulated more slowly than the flux of participants in and out of the room. At a rough guess at least 120 people attended parts of the meeting.

Ian Allison explained that he was a co-Chair of the ICSU-WMO Joint Committee (JC) steering the IPY process, and that this meeting was the one of a series of IPY Open Fora to engage the community in IPY activities; indeed, it was the first such forum to be held in the southern hemisphere. Given its location in association with the XXIX SCAR meeting and XVIII COMNAP meeting, it was inevitable that it would have an Antarctic focus. The pan-Antarctic and multidisciplinary approaches typical of SCAR represented what we would like to see develop within the IPY in a bipolar way.

He explained that the object of the Forum was to get feedback from the floor on how to improve the way in which the IPY could and should work to everyone's advantage.

He then went on to explain the IPY process. The JC had received well over 400 proposals, which had been assessed by the members of the JC, and judged according to the extent to which they met IPY criteria. There was an emphasis on clustering proposals, and on the development of large coordinated programmes tackling major themes. Some 205 proposals had been accepted, 160 of them in science and 45 in education and outreach. A honeycomb diagram was used to categorise approved proposals as either purely Arctic or Antarctic or Bipolar, and to distribute them between broad areas like Land, or Ocean, or Education and Outreach. Few of the 200 or so proposals that were not approved had been rejected. Most had been asked to coordinate their activities with one or other of the approved proposals.

IPY was supported by the Joint Committee, by an International Project Office (IPO), by several subcommittees in topics such as Education and Outreach, or Data, and Observations, and by many newly forming national committees.

Next steps include (i) a science plan to integrate these proposals into a coherent programme; (ii) communication to raise the profile of the IPY; additional support for the IPY subcommittees (in particular for a coordinator for the data subcommittee); (iii) contributions to a trust fund, to enable the IPO to function effectively; (iv) increased investment in IPY at the national level; (v) all IPY scientists working hard nationally to raise the IPY profile. The IPY is the community – not an abstraction. If it is to work well, the whole IPY community needs to work at taking it forward in many different ways including education and outreach within each proposal area, as well as science.

The JC will work with ICSU and WMO to write a letter to all ministers for science to encourage them to invest more in IPY at the national level, to take advantage of this unique opportunity to understand a key environment of our planet.

Major international meetings offered opportunities to spread the word about the IPY. The JC had been working with the organisers of the forthcoming Earth System Science Partnership conference (Beijing in November 2006) to get IPY on the agenda.

The International project office

Dave Carlson, Director of the IPY IPO, then gave a brief introduction to the work of the IPO, explaining that he would be brief because he would be giving a full scale lecture on the IPY and the IPO to the SCAR Plenary on the coming Wednesday (July 12).

Among other things he noted that IPY covers 2 full years in order to allow 12 full months of work during the summer seasons in each hemisphere.

While the IPO is based at BAS in Cambridge, it also has several staff seconded by the national institutions to work for the IPO at their home bases. He welcomed the offer of more such secondments.

The IPO will start producing a Newsletter, in August 2006, to inform national IPY committees about developments. IPO activities included the development of Google Groups for Education and Outreach, for Web Development, and for Google Earth.. There was an On-Line Calendar of Events. Information databases existed or would be developed, on the IPY web site, for Expressions of Interest, Projects, Education activities; and Media summaries of approved proposals. The IPY web site is under development. The structure is such that it could easily be adopted by other international science coordination programmes.

Among other needs, the IPO needs education and outreach contact points in each IPY country.

SCAR and the IPY

Colin Summerhayes, Executive Director of SCAR and a member ex-officio of the JC, set out SCAR's involvement in the IPY. 97 of the proposals approved by the JC are either Antarctic or are Bipolar and therefore contain an Antarctic element. Of these 77% are in science, one is on data and information and the rest are on education and outreach. 70% of the science proposals were either developed as significant components of ongoing SCAR programmes or contribute in some significant way to one or other of the SCAR programmes.

SCAR is keen to see that the IPY makes a major contribution to achieving Article IIIc of the Antarctic Treaty: "*Scientific observations and results from Antarctica shall be exchanged and made freely available*". To that end SCAR has helped to define the IPY strategy for data and information management, and Taco de Bruin, the Chairman of the Joint SCAR/COMNAP Committee on Antarctic Data Management (JCADM), is one of the co-chairs of the IPY Data and Information Sub-committee.

SCAR has its own IPY committee, which had recommended to the IPY planning community a list of topics that needed to be addressed by the IPY, including such things as: undertaking a major bi-polar ice drilling programme for climate change; obtaining a geological perspective on climate change back to 34 Ma; developing an integrated Southern Ocean observing system; integrating cryospheric observations into a cryospheric observing system; creating a network of autonomous geological and/or geophysical observatories; achieving complete coverage with radars for observing geospace; and carry out a Circum-Antarctic Census of Marine Life (CAML). Many of SCAR's recommendations had been achieved. Some remained unmet – including the need to develop as an IPY product a comprehensive set of geological and geophysical maps of Antarctica and the Southern ocean.

He went on to explain that SCAR saw the need, during the IPY, to carry out a comprehensive evaluation of climate change in the Antarctic. Many climate studies were being done but there was a need for synthesis and analysis. We need to study the climate system:

- to determine how it works now and has worked in the recent past;
- to model how it may behave in the future
- to see how it has affected the ecosystem;
- to try to determine how the ecosystem may respond in future;
- as the basis for designing an observing system to monitor change in key properties in the future.

This work will be integrated across various IPY activities.

The last objective (an observing system to monitor future change) would make a significant contribution to the development of the Global Ocean and Global Climate Observing Systems (GOOS and GCOS), which are in turn components of the Global Earth Observing System of Systems (GEOSS). He noted that the need for and composition of a Southern ocean Observing System will be addressed in the Southern ocean

Observing System (SOOS) workshop planned for the coming Saturday (July 15th).

In discussion it was noted that the IPY Plates and Gates programme will be developing a number of new geological and geophysical maps during IPY.

WCRP and the IPY

Vicky Lytle, Director of the Programme Office for the Climate and Cryosphere (CliC) programme of the World Climate Research Programme (WCRP), introduced the topic of a cryospheric observing system. This system is being developed by the Partners for an integrated Global Observing Strategy (IGOS), which include WCRP, ICSU, the UN agencies and the space agencies. The IGOS partners have already developed integrated observing strategies for a number of areas such as the oceans, the coasts, the carbon cycle, and geohazards, all of which contribute to the achievement of the GEOSS mentioned above. The partners are now developing a cryosphere observing strategy, led by CliC and SCAR.

Much of what is in the strategy, the draft of which can be seen on the IGOS Cryo web page, is based on the CliC science plan, and on the outcomes of SCAR's cryospheric studies over the years. It is also informed by the results of the Global Interagency IPY Polar Snapshot Year project (GIIPSY), which highlights the fact that IPY-era space-borne instrumentation itself represents a huge technological leap beyond what was possible during the International Geophysical Year of 1957-58. In that context she alerted the audience to a recent announcement of opportunity by the European Space Agency (ESA) for research and development in support of the IPY. Proposals have to be submitted by September (see <http://eopi.esa.int/IPY>).

In discussion, Dave Carlson reminded participants that the GEOSS work plan includes a connection to the IPY. It is not clear to what extent that connection is extant at levels below the GEOSS umbrella (e.g. within GOOS or GCOS).

The IPY Youth and Education and Outreach Activities

Dave Carlson then told participants about the IPY Youth programme, which is led by an IPY Youth Steering Committee. There will be a Youth for the Poles conference somewhere in Europe in 2008. Networks of pre-career scientists are being developed to link with young people in high schools. Career building is also being encouraged among early career scientists at PhD and Post-doc level.

Dave then went on to talk about the IPY Education and Outreach (EO) activities. Bearing in mind that there are other international scientific years, IPY is developing links to the International Heliophysical year (IHY), the eGY and the Year of Planet Earth, and ideally will be working in partnership with each of them.

IPY has 50,000 participants in 60 countries.

There are 3 over-riding messages: (i) shrinking snow and ice; (ii) global connections (sea-level; climate); and (iii) people facing change (health, culture).

The audience comprises: (i) citizens, consumers and voters; (ii) is broader than Europe and North America, which was where the audiences of the IGY were focused; (iii) includes current and future scientists; and (iv) embraces policy and decision makers (the funders).

The message is connected to modern concerns like : (i) smart energy choices; (ii) healthy stable populations; and (iii) global and technical cooperation.

Some spectacular tools are available to help us convey our results – not least the new generation of geographic browsers like Google Earth.

We aim to utilise teachers to help to spread the message, through classrooms and museums, The media are also important, as are science funding agencies.

Tools include primary education; university and professional education; science and public engagement; major events; and the arts.

It is important that we have a mechanism in place to assess our impact post-IPY.

The EO committee has 14 seats. There is an educational materials development group. There are EO national committees. And EO regional partnerships are developing.

Two endorsed IPY education and outreach projects gave brief presentations.

The IAI (Project 147)

Andrew McMin (University of Tasmania) told participants about the newly developed International Antarctic Institute (IAI), a worldwide consortium of higher educational institutions for education in Antarctic topics. IAI had been formally launched at 0913 this same day in a parallel session. It involved 19 universities from 12 countries. Others with Antarctic education programmes were encouraged to join. IAI included organizations capable of assisting in the development or promotion of educational programmes, such as SCAR. IAI's task was to coordinate promote and develop Antarctic courses and units, and to increase the number of students doing polar science. It would encourage the exchange of staff and students between member institutions, and would have a focus on field courses. The legacy would be largely beyond the IPY. First tasks would be to assess and accredit courses and get them up and available on the web. By 2008 it was expected that new courses and degree structures would be developed.

6th Continent Initiative (Project 191)

Gigi Johnson-Amin of the International Polar Foundation (Brussels) told participants about the 6th Continent Initiative, which is a capacity building activity in partnership with

SCAR and a growing number of national polar institutions. The idea is to use some of the annual SCAR Fellowships, during the IPY, to enable young scientists, especially from non-traditional polar countries, to participate in field projects in Antarctica. The new Belgian base will be available for this purpose, and it is hoped that the South African base in droning Maud Land will also be available. Offers of cooperation have been received from the Alfred Wegener Institute and from New Zealand, and others are sought. While SCAR's contribution will be the fellowship grants, these are not enough to cover the logistics costs involved in getting students to and from Antarctica, so IPF will be seeking additional funds to cover the additional costs. Work programmes will be filmed in anticipation that UNEP may be interested in making a documentary on scientific training in the Antarctic in support of sustainable development. It is possible that the programme could in due course be widened to include artists and writers.

Thomas Mulcaire, from I-TASC (Interpolar Transnational Art Science Constellation), made a plea for the IPY being used to build bridges between artists and scientists, and outlined the possibility of offering fellowships covering people from the Caribbean, Africa and Asia.

In discussion it was noted that the existence of these opportunities could be brought to the attention of non-traditional polar research countries and communities through ICSU (not least its new regional offices in Africa, Asia and Latin America), through the Third World Academy of Sciences (TWAS) and through the Islamic Council of Sciences, as well as through UNESCO.

It was suggested that IPY and SCAR might approach the Antarctic Treaty Consultative Meeting (ATCM) in Delhi in 2007 to see if Antarctic Treaty Parties might be persuaded to make spaces available at their bases for researchers from non-traditional polar countries, and to support the logistical needs of those people, as a means of widening awareness of the importance of the Antarctic to the wider world community.

Paul Egerton (ESF) noted that regional partnerships were developing in some areas (notably Europe) to promote IPY developments, and wondered how this type of development ought to be coordinated with the activities of the IPO. There already is a Europe IPY.org activity for outreach.

Dave Hik from Canada observed that the media need stories to feed on, and warned of the dangers in advertising too much too soon when we have little to show for our efforts as yet. We do not want to develop expectations too highly yet, as they may not be fulfilled for some considerable time.

IPY Data Subcommittee

Taco de Bruin (Co-Chair of the IPY Subcommittee on Data Policy and Management) then told participants what his Committee was trying to achieve. His message was that he expects that in 50 years time the main legacy of the IPY will be the data produced. The Committee has finalized a policy on data management and is now working on developing

an IPY Data and Information Service (DIS), which will be based on existing systems and will follow the successful example of the Data Information Units developed by the World Ocean Circulation Experiment (WOCE).

There was a wide-ranging discussion on data management. It is the intent of the data subcommittee that best use be made of ICSU's World Data Centres (WDCs), although it had to be said that of the 50 or so WDCs, only half were effective. ICSU is aware of the problem and plans a major review of its WDCs.

There is a need for connections to be made between the various existing data systems, like JCADM on the one hand and SCAR's Marine Biodiversity information network (MarBIN) on the other hand. There is also a need for SCAR's Expert Group on Geographical Information (EGGI) to be linked into the process, and indeed for best use to be made, during IPY, of Geographical Information Systems (GIS).

One key question concerns what to do about data management after IPY, when there may be a need to manage the data management process somewhat differently from how it is done at present. This is something for SCAR to think carefully about.

A need was perceived to work with the Antarctic Treaty secretariat (ATS) and the ATCM to get operational practices changed so as to encourage the wider exchange of data.

General Discussion

Ideas emerging from the floor during the general discussions included the following.

A plea was made to create a "Who's Who" of IPY participants.

We need a calendar of events, not least for the media, so they can plan their activities well ahead. People involved with national committees should pass information about national events to the IPO for the EO committee.

The JC needs to think about how best to use the efforts of the regional groups like FAR, AFOPS, EPB, the South American group, and so on.

The web site could feature a different IPY project on its front page every day. The site could also feature a count-down to IPY, and a day-count through the IPY.

National committees could raise awareness of IPY through persuading governments to issue polar stamp series.

Regionally, Canada and the US are already involved in joint discussions to coordinate activities.

New Zealand will raise awareness through taking Sir Edmund Hillary to Scott Base, and will hold a major polar conference in 2007.

The Netherlands has an EO plan for the 2 years of IPY, which will be launched in 2007 by a member of the Dutch royal family.

There is a need to get across to the public what Europe is doing within and what impact IPY will have for Europe.

The Asia Forum for Polar Science (AFOPS) can help to provide a regional view for Asia.

The Arctic Science Summit week earlier this year already profiled the IPY for the Arctic science community.

In Australia, the Royal Society of Victoria has organized two 40-day expeditions on a boat to Antarctica for high school students, to inspire youth towards a career in science and interest in the poles. This is promoted by a scientific teachers' association throughout the country. Each expedition will have some space for international students.

While these initiatives are good in themselves, they do not offer a means of reaching literally tens or even hundreds of thousands of young people. This is a true challenge for IPY.

It is not easy to envisage making space available for high school youngsters on working research vessels, because that means relinquishing berths for working scientists.

Iridium Opportunity for IPY

Terry Wilson noted that many polar science applications are now dependent on Iridium satellite modem communications, for both data transfer and field work (comms from the field to bases and for field safety and medicine). At the EGU meeting for the POLENET remote observatory program for IPY, a discussion emerged about the potential for an international 'Iridium access sharing agreement' to allow widespread, even universal, access to real-time data transfer services during IPY. Subsequent to this meeting, she had asked NSF-OPP how this possibility could be pursued for IPY. NSF-OPP was very interested in the potential to negotiate access with Iridium directly via a 'science users consortium' approach, and initiated a meeting with Iridium representatives to discuss the possibility. The meeting with Iridium was positive, however, Iridium needs to assess the scope of potential use in order to evaluate the potential for such a consortium (i.e., is it a viable business proposition?). There is a need for input from the range of polar science disciplines to determine interest, requirements, etc. – specifically, data needs to be compiled summarizing:

- types of service required,
- numbers of minutes per month or year expected,
- numbers of users,
- numbers of countries represented.

Cynan Ellis-Evans of the international IPY office has taken on the task of compiling data from coordinators of IPY projects. Information from the SCAR community is required, and should be contributed to Cynan (J Cynan Ellis-Evans jcel@bas.ac.uk).

There was general agreement that more should be made of GIS to blend data from different sources to produce new kinds of products for science and the public.

Concern was expressed that IPY should maintain peoples' enthusiasm and interest even if their projects were not accepted as lead projects. Moreover there was a need to expand the numbers of scientists involved in the IPY.

Concern was expressed that it looked as if each project would have to put rather considerable efforts into education and outreach, and it was not easy to see how this would be achieved given the requirements of the funding agencies who wanted to see time spent mainly on science.

Regarding data sharing it was noted that during the IGY, 50 years ago, it was a matter of national pride and individual honour to submit and share data. The culture of today seems much more self centered, and inclined towards the philosophy that if others want your data they should come to you rather than you making any effort to make it generally available. It is unfortunate the evaluation of scientists is based on scientific paper output and gives no brownie points for time spent managing data. Perhaps things would be different if there was a mechanism for publishing data. However, whether publishing houses would want to do this remains to be seen, and it is not obvious that this would be feasible through other than the grey literature, which would not help in scientific career development where the only journals that count are those that are peer reviewed. This is a generic problem in the sciences – not solely something for polar science or the IPY in particular.

Participants agreed that mechanisms did need to be found and promoted for encouraging the making available of IPY data. It may be useful to persuade the ATCM to promote this.

At the end of the meeting a brief presentation was made on the I-TASC concept, which includes (i) developing modular, mobile rapid deployment sustainable polar habitats and work systems; (ii) developing nano satellites as part of a global observing network; (iii) open source open format data commons; and renewable energy and waste management techniques.

In concluding Ian Allison reminded people that “You are IPY”, and asked people to provide written feedback on how IPY management might be improved.

The meeting closed at 1730.