

International Group of Funding Agencies
for
Global Change Research (IGFA)

25-27 January 1994
Taipei

Report

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RECORD OF DISCUSSIONS

REPORT OF THE MEETING OF DONORS TO THE CENTRALIZED OPERATIONS OF
THE INTERNATIONAL GEOSPHERE-BIOSPHERE PROGRAMME (IGBP) AND THE
HUMAN DIMENSIONS OF GLOBAL ENVIRONMENTAL CHANGE PROGRAMME (HDP)

REPORT OF THE MINI-WORKSHOP ON THE ROLE OF NEWLY INDUSTRIALIZED
ECONOMIES IN GLOBAL CHANGE RESEARCH

LIST OF PARTICIPANTS

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The Second Bellagio Meeting

1. It was decided to develop communications with the new donors group proposed to be established at the Bellagio Meeting. This group will be asked to designate a liaison with IGFA.

Interactions Between Agencies Funding Global Change Research and Development Aid Agencies

2. It was decided to establish a Task Group on Interaction Between Research Agencies and Aid Agencies with the following terms of reference:

3. Objective:

- a. To investigate the feasibility of sustained long-term funding, from both national, multilateral and private sources, for the various networks for global change research and related capacity building in the developing world. To consider various regions where such a long-term approach to funding could be implemented on a "trial" or "pilot" basis.

4. Specific tasks:

- a. identify options for improving interaction and communication between agencies which fund research and those which fund international aid;
- b. establish linkages for this purpose with START (working especially closely with IGFA Members also Members of the START Standing Committee), with similar regional networks, and with the new donors' group proposed at the recent Bellagio meeting;
- c. consider the possible utility of small workshops and seminars to facilitate this process; and
- d. prepare recommendations for consideration by IGFA at its September 1994 meeting.

5. The Task Group will be chaired by the IGFA Member from The Netherlands and will work primarily via correspondence.

IV. Review and Evaluation of the IGBP

6. IGFA accepted the invitation from ICSU to cosponsor, jointly with ICSU and IGBP, the evaluation of the IGBP. IGFA agreed that the terms of reference for the evaluation are reasonable and provide appropriate emphasis on the need to assure independence in this review. The evaluation should focus on the "added value" of the IGBP and on the linkages between the IGBP and national programs. IGFA designated Dr. Robert Corell and Dr. Werner Menden to serve on the sponsors group. The Chair was asked to convey this information to ICSU and IGBP.

V. The IGFA 1993 Resource Assessment Survey

7. It was agreed that:

- a. the overall area of global change research is probably not underfunded, although this conclusion requires confirmation through a second survey which is more complete and is based on a strengthened methodology;
 - b. the results of the first survey will be distributed as a "preliminary IGFA report" initially to IGFA Members and to the programs which provided input to the survey -- the WCRP, IGBP, HDP and through these to their individual projects. Further distribution is at the discretion of these recipients. The preliminary report -- updated, if possible -- will be made available for the IGBP evaluation with the cooperation of the WG/Resources and its Chair;
 - c. a second assessment will be undertaken; the new Chair of the WG/Resources was asked to propose a timetable for such a second assessment to IGFA at its next meeting in September 1994;
1. the methodology should be improved prior to undertaking the next assessment and should seek to identify funding in at least two categories, "focussed" and "contributing";
- o 2. the next assessment should also address projects for which implementation has begun since the first survey was initiated (including START);
 - o 3. the list of addressees should be broadened to include both national and international agencies/organizations not yet participating in IGFA (e.g., CEOS, the Global Environmental Facility (GEF));

- o 4. countries should identify and describe in their submissions the national projects (not part of the organized international programs) to which they are allocating substantial resources;
- o 5. the international core project/program offices will be asked to review these national project descriptions and identify (1) those projects which are part of core research and (2) those which might appropriately be included; and
- o 6. remaining shortfalls in funding should be brought to the attention of IGFA members and the international programs and projects for their action.

The OECD Megascience Forum on Global Change Research

67. It was agreed that IGFA Members should become involved in the national planning processes for the OECD Science Ministers' Meeting within their own countries. IGFA will invite the OECD to keep it informed of progress in the planning of the Science Ministers' Meeting.

Global Change Research in Support of International Conventions

73. IGFA welcomed ICSU's report that it is maintaining a watching brief with regard to global change research undertaken in relation to implementation of the major conventions recently adopted and under negotiation (FCCC, biodiversity, ozone, desertification, forestry, etc.) and asked ICSU to keep IGFA informed of developments in this area relevant to IGFA's interests.

IGFA's Overall Role and Mode of Operations:

81. It was agreed that IGFA should continue and to operate on an informal basis, while tightening its structure. It was agreed that it is important to maintain the momentum of IGFA's activities; give focus to its discussions; and develop a clear sense of its obligations to tasks.

82. IGFA decided to elect a Chair and Vice-Chair. The Chair will be responsible for assuring effective implementation of the results of IGFA Meetings and will serve for a two-year period. Dr. Robert Corell was elected Chair to serve until the IGFA Meeting in 1995 when IGFA will elect a new Chair. The Vice-Chair will be responsible primarily for arranging for the next Meeting of IGFA.

83. Dr. Corell accepted the chairmanship on the understanding that IGFA would select a new chairman for the resources assessment working group. He agreed to provide the lead for the IGFA secretariat as well. Other IGFA Members were invited to submit nominations for a four- or five-person secretariat. The new Chair offered to work with IGFA to develop an interactive communications network for IGFA and the secretariat; this offer was accepted.

84. IGFA established a Consultative Committee to replace the present Steering Group. This Committee will work intersessionally on follow-up of IGFA Meetings and will serve as a steering group for these meetings. The Committee will include the Chair of IGFA, the Vice-Chair (who will represent the hosts for the next IGFA Meeting), the Chairs of the three Working Groups, and others as considered appropriate.

85. The IGFA Secretariat will continue to be a distributed Secretariat of from four to five people. The country of the Chair will provide the lead and fixed address for the Secretariat for the same two-year period as for the Chair. The Secretariat will be responsible for: assisting with preparations for and keeping records of meetings; maintaining membership lists; communications; information and document distribution; and support the Chair, Vice-Chair, and Consultative Committee as needed.

86. The Secretariat will update and maintain two directories, one of IGFA Members and one of IGFA staff, Working and Task Group Chairs, contact points in other organizations, and others interested in IGFA activities. The Secretariat will also develop and maintain similar directories of IGFA Working and Task Groups. IGFA Members were invited to designate alternate Members of IGFA and to nominate members of the Secretariat as early as possible.

87. The Secretariat was charged with completing the draft report within two months. The Secretariat was also asked to redraft the "What Is IGFA?" statement to bring it up-to-date with the results of recent IGFA activities. This statement should address IGFA's goals, objectives, etc.

88. Efforts will be continued to broaden IGFA's membership to countries earlier identified as especially important for IGFA's objectives -- e.g., Australia, Brazil, India, Indonesia, Mexico, and New Zealand. IGFA Members will take advantage of other interactions with colleagues in these countries to encourage participation in IGFA by representatives of appropriate national funding agencies.

89. IGFA decided to retain its Working Groups on Socio-Economic and Human Dimensions Research and on Resource Issues. The FRG Member agreed to assume the Chairmanship of the WG/Resource Issues. The terms of reference for this WG will be updated to take into account the results of the discussions on resource issues at this meeting. The WG Chair will develop a timetable for the next resources assessment.

90. The Working Group on Global Observations and Data Management for Global Change Research will be retained under the chairmanship of the United Kingdom. The European Commission has offered to work closely with the Working Group. Terms of reference will be developed following the IGFA Meeting and the Working Group will interact closely with CEOS.

91. A new Task Group on Interactions Between Research Funding and Aid Agencies was also established (see paragraphs 45-50).

92. The Chair was asked to communicate with the OECD, summarizing the actions IGFA has taken in response to the conclusions and recommendations developed at the OECD Megascience Forum on Global Change Research.

VII. Socio-Economic and Human Dimensions Research Relevant to Global Change and Planning of the Next IGFA Meeting:

103. The IGFA Meeting took note of the HDP Work Programme (Version 3.1) and the related budget and the draft report of the IGFA Working Group C on Socio-Economic Aspects of Global Change Research. The discussion raised a number of general issues:

104. The interests of national funding agencies in research on the human dimensions of global change encompass the relations between humankind and the environment and thus include not only socio-economic issues in a strict sense (such as research dealing with causes, impacts and responses), but also questions related to cultural perspectives -- law, ethics etc.

105. Such research can be addressed either at a very basic fundamental level of understanding or through broad policy-relevant approaches, although more narrowly circumscribed policy-driven approaches would normally be beyond the scope of human dimensions funding in this context. Interdisciplinarity as raised by the Noordwijk Workshop is important but should be seen as a tool for addressing pressing scientific issues.

106. It was recognized that to encourage social scientists to become involved in global change research will require addressing many potential barriers, such as lack of academic reward and tenure systems in these areas, the peer review system, publication outlets, forms of cooperation in universities, the structure of funding, etc.

107. With regards to the draft Working Group report and its follow-up, it was noted that:

- o a. it is important that IGFA develop and maintain effective communications and interaction with the HDP programme;
- o b. IGFA's (and thus the Working Group's) role should basically be of a fostering character performed through, e.g., successive feedbacks of comments to the HDP programme as their plans and programme develop;
- o c. further attention should be paid to the interplay between HDP activities and the perceived needs as seen from the funders' perspective, taking note of the positive actions

taken by the HDP during the latter half of 1993 to further develop its programme; and

- o d. issues related to non-industrialized countries and NIE's have to be addressed and contributions from such countries sought.

108. The IGFA Working Group is asked to address the following issues at its meeting in February 1994 in Stockholm and beyond in preparation for the IGFA Meeting in September in Vancouver:

- o a. is the perception within the funding agency community about what has to be done in the global agenda in accordance with present HDP planning in substance and procedure?
- o b. the relationship among/between programmes at the global, regional and national levels has to be addressed: what is the distribution of tasks at these various levels? are there, e.g., principles of value addedness or cost effectiveness which can be used? and
- o c. what are the needs for HDP central office and programme development activities and for future project support? what approaches should be taken to address these needs?

VIII. Global Observing Systems:

111. It was agreed that the statement as approved should be sent to the Joint Scientific and Technical Committee for GCOS via the GCOS Office at the WMO with a covering letter which explains why IGFA is interested in this issue and why the statement is being made. IGFA encouraged its Members to bring this statement to the attention of their national delegations to intergovernmental meetings which address global observing system issues.

112. IGFA agreed that the following conclusions from its 1992 Meeting in Toulouse should be reiterated, expanding the references to GCOS to include GOOS and GTOS as well:

- a. "Research funding agencies are supporting global observing systems in conjunction with their support of international global change research while the planning process for such systems GCOS, GOOS, and GTOS is going on and before these systems will actually be implemented as such. It was agreed that GCOS, GOOS, and GTOS will require substantial new resources that do not now exist. In order to obtain such new resources, it will be necessary to convince separate ministries/departments for forecasting, research, and possibly environment or education to jointly endorse these systems."

IX. Data for Global Change Research:

United Kingdom - United States Efforts Regarding Exchange of Data for Global Change Research:

115. Participants welcomed the United Kingdom - United States initiative and supported its follow-up. Members endorsed the efforts being made by CEOS and national space agencies to provide data for global change research. It was agreed that information on the US-UK initiative should be distributed to all IGFA Members for their use in advancing analogous policies through their national systems, as well as for consideration by IGFA Members as a possible basis for an IGFA approach to assuring availability of global change data for researchers which would parallel and complement the CEOS policy for remote sensed data for global change research.

The Committee on Earth Observation Satellites (CEOS):

120. IGFA decided to strengthen its overall communications and interaction with CEOS. IGFA broadened the mandate of its Working Group on Global Observations to include "Data Management" as well as observing system issues (see paragraph 90) and directed the Working Group to interact with the user community through the research programmes (such as the WCRP, IGBP and HDP), CEOS, etc.

121. It was recommended that input from CEOS be sought for integration into the IGFA resource assessment survey process.

SUMMARY REPORT OF THE DONORS MEETING

IGBP:

11. IGFA considered IGBP's five-year plan to be an essential document for long-term planning and welcomed IGBP's decision to publish the document. It was recognized that the large budgetary increase requested by the IGBP for their centralized costs in 1995 would be difficult to provide. IGFA concluded that:

- o a. the IGBP funding scale is generally appropriate, but should be adjusted to reflect changing economic conditions;
- o b. members should contribute to IGBP centralized costs in accordance with their expressed commitments and should include a five percent increase for inflation, as is used by ICSU;
- o c. the IGBP should seek funding to increase participation for developing country scientists (\$250,000) primarily from appropriate international funding sources. Such funding, when obtained, should be included in the START budget;
- o d. the funding identified for intra-core-project activities (\$425,000) should be sought through the funding for core project offices; in addition, IGFA members will welcome proposals for specific intra-core-project activities; and
- o e. IGFA members agreed to examine the possibilities for developing the remainder of the requested increase (\$370,000) which is intended to provide a moderate increase for inter-core-project coordination; to rebuild the IGBP secretariat's scientific staff to 1988 levels; and to provide essential administrative support.

HDP:

19. The meeting welcomed the presentation on the workplan for the HDP. They very strongly welcomed the establishment of the post of HDP Scientific Director; the funding of this post by the Swiss Government; and the contributions of other funding agencies. It was recognized that the HDP has the potential to meet newly emerging needs. IGFA asked, however, that HDP elaborate the scientific rationale, and indicated its preference, for a centralized office.

20. IGFA recognized that the HDP is at an early stage of development and that their funding problems are not uncommon for such international research programs. It was reported that there are divergent views as to the extent and nature of the scientific program that the HDP should undertake. IGFA asked its Working Group to resolve with the HDP at the Working Group's Meeting in February what the HDP really wants to do and what the HDP office needs to spend.

The Working Group was also asked to compare the HDP program as outlined in the workplan with the donors' perceptions of this program. The relationships among global, regional, and national levels should be addressed.

RECORD OF DISCUSSIONS

I. Opening of the Meeting:

21. Dr. Lin Ho, CHairman of IGFA, opened the Meeting. He introduced Dr. Ching-Piao Hu, Chairman of the Organizing Committee, welcomed the participants to Taipei and to the Meeting.

II. Adoption of the Agenda:

22. The agenda which had been distributed prior to the meeting was adopted. Later, this agenda was revised to reorder the agenda and reallocate the schedule for some items. The revised agenda, as adopted by the Meeting, is attached as Appendix A (not distributed with this fax message, but will be included in the final report).

III. The Role of Newly Industrialized and Developing Countries in Global Change Research:

23. These discussions began with a series of brief presentations on recent meetings and other activities which had addressed issues related to the role of developing countries in global change research.

The Intergovernmental Meeting (IGM) on the World Climate Programme (WCP):

24. The IGM in April of 1993 agreed on a process for developing an integrated biennial report "for the WCP and its associated activities, such as the Global Climate Observing System (GCOS) .. (with emphasis on "four new thrusts: Climate services for sustainable development; new frontiers in climate science and prediction; dedicated observations of the climate system; and studies of climate impact assessments and response strategies to reduce vulnerability".

24.a. The report is to be prepared by the chairpersons of the WCP component programs, working together with the IGBP, HDP, etc., and reviewed by an "Advisory Panel ... drawn from members (of the) international organizations concerned". However, many of the participants in the IGM were not familiar with the IGBP and the HDP.

START:

25. START has been very active over the past year. A major focus of START is networks which are intended to provide a comprehensive framework for global change research and related activities; training and capacity building; data management; synthesis and modelling; and communications among scientists and between them and policymakers.

26. The START program includes regional activities in a number of regions, including Temperate East, Southeast, and South Asia; Northern and Southern Africa; and the

Mediterranean. GEF funding has been received for activities in three regions -- Southeast Asia, Northern Africa, and the Americas, through the Inter-American Institute for Global Change Research (IAI). It was recognized that the boundaries of START regions are dynamic and in some cases are likely to be changed to respond to changing scientific developments and national perspectives.

27. It was recognized that there is widespread interest, motivation and enthusiasm for START -- in developing regional agendas, capacity building, data management, etc. Additional resources will clearly be needed if the expectations now being built up are to be satisfied. However, it is clear that START networks will, in the long term, have to support themselves.

28. It was agreed that, although IGFA should not review START funding requirements at this donors meeting, IGFA would welcome the opportunity to discuss START workplans and budgets in future. The START Secretariat is welcome in future to inform IGFA what they need and what funds they are getting and wherefrom so that IGFA can arrange for effective responses to such requests.

IAI:

29. The Inter-American Institute for Global Change Research (IAI) was established through an intergovernmental agreement in May of 1992. Sixteen countries have signed the agreement; seven have ratified. The IAI will come into existence sixty days after the sixth ratification; that is, in early 1994. The IAI will be a distributed network; costs will be supported by the parties. In developing the research agenda, the IAI has established the office of the executive scientist in Washington. This office is organizing a series of scientific workshops, three of which have already been held.

National Global Change Research Information Offices:

30. It was recognized that a number of countries have taken initiatives to develop information sharing and distribution systems related to global change research. It was proposed that national IGBP and HDP committees be encouraged to develop interactions with such national information initiatives and offices to avoid duplication of efforts in this area.

ENRICH:

31. ENRICH is intended to encourage, promote and support relevant initiatives and programmes. It will seek to identify gaps in Earth system science research and recommend ways in which these gaps can be filled, with emphasis on ensuring coherence among earth system science research conducted in the regions of interest and on capacity-building. Strengthening of partnerships in ecosystems research will be a priority.

32. It is neither a new programme nor a funding mechanism and has no managerial or evaluation function. It does not compete with other initiatives. ENRICH will promote communications among scientists, programmes, and institutions and strengthen the partnerships among these.

APN:

33. The Second APN Workshop was held in mid-January 1994 in Tokyo. The Workshop set up two working groups to work intersessionally: one on the APN scientific agenda (tentatively to be chaired by Indonesia) and the second on a framework/mechanism for the APN (tentatively to be chaired by Australia). The Workshop also agreed that a small secretariat should be established in Japan. The intersessional activities will be coordinated by a steering committee consisting of the Chairs of the two Working Groups and the Director of the Secretariat. It was agreed that the next Workshop should be held in about one year.

34. Deleted.

IGBP:

35. The IGBP's Scientific Advisory Council (SAC) had held its Third Meeting in January of 1993 in Ensenada. Initial scientific results of the IGBP and of the WCRP were presented at this meeting. These results indicated that remarkable progress has been made in implementing the IGBP and a number of its core projects.

36. It was recommended that interaction between the IGBP core projects and regional networks be expanded and improved.

The International Research Institute for Climate Prediction (IRICP):

37. At the mid-life review of TOGA, it had become clear that the ability to predict climate had improved dramatically. An ad hoc international group set up at this review recommended establishment of an IRICP to: address seasonal-to-interannual climate variability; improve indigenous scientific capabilities in this area; prepare experimental climate predictions; and promote relevant research.

38. The group also recommended that the IRICP network include applications centers to be established in various countries in the regions of concern. The U.S. is preparing a proposal for the IRICP for international consideration, and it is expected that the U.S. will invite other countries to join in review of this proposal.

39. A number of centers around the world are involved in climate prediction. The IRICP is involved solely in seasonal-to-interannual climate variability, with special focus on El Nino. It was agreed that focussing on bite-size chunks of regional climate variability would be most

manageable and that it is necessary to consider what kinds and what levels of data are needed for these bite-size predictions, thus building a global database bit-by-bit.

International Networks for Addressing Issues of Global Change, A Workshop, 24-25 August 1993, Durham, North Carolina:

40. This Workshop was intended to follow-up on Agenda 21 and to consider, in particular, institutional arrangements needed to address global change issues. The Workshop proposed establishment of a Global Array of Nested Networks (GANN) which would take advantage of information and data increasingly available to help achieve the objectives of Agenda 21. GANN would be a grass-roots system which would connect everyone through a network of knowledge; a network of academia; and a network building on the existing networks, such as START.

The Second Bellagio Meeting:

42. This Meeting in Bellagio consisted of a donor consultation on Agenda 21 research and capacity building, comprising donors from the private, governmental, and intergovernmental sectors. Although IGFA was little discussed and was considered to be a very specialized organization, IGFA represents around \$2 billion in annual funding for global change research.

43. The participants in the Bellagio Meeting proposed to set up a donors forum to focus on research and research capacity building, in developing countries. They anticipate developing effective electronic mail communications among the donors present. They elected a chairman of a transition team and set up a small office to promote such communications and interaction.

Interactions Between Agencies Funding Global Change Research and Development Aid Agencies

45. The question was raised as to whether funding agencies which fund global change research, both national and international, can look far enough ahead with respect to planning and allocation of funds to assure the long-term sustainability of programs such as START.

46. It was pointed out that many such national and multilateral development aid agencies are becoming increasingly interested in global change and in supporting activities/programs in developing countries related to global change. It was suggested that IGFA develop linkages with both national government agencies and international organizations concerned with development aid to enlist them in IGFA efforts related to support of global change research.

IV. Review and Evaluation of the IGBP:

51. It was reported that ICSU reviews each of its programs regularly, usually every five years for long-term programs. The IGBP has requested ICSU to undertake such a review of IGBP

after five years of the initial implementation phase, although a special form of review will be needed because of IGBP's size and complexity. Such an evaluation is important to demonstrate the value and continuing need for the IGBP. This review effort requires a rapid build-up and will be a fairly intensive activity.

52. ICSU has asked IGFA to consider cosponsoring the IGBP evaluation. This would involve IGFA's designating two members of a "sponsors group", with the understanding that ICSU and the IGBP would each also identify two members. It would then be the responsibility of the co-sponsors group to approve terms of reference and a schedule for the review, select a chair for the review group, and work with the chair to select the other members of the group. IGFA agreed that it is essential that this evaluation be undertaken; that IGFA be associated with the review; and that IGFA's co-sponsorship of the review with ICSU and IGBP is consistent with IGFA's informal status.

53. It was stressed that it will be essential to identify an exceptionally well-qualified chair for the group who should be very influential in the selection of the reviewers. The reviewers should include experts familiar with, but not involved in, IGBP projects and experts familiar with the policy-related aspects of IGBP. It was recommended that consideration also be given by the co-sponsors to including in the review group scientists with mandates to advise the policy process and with experience also with the WCRP and HDP.

54. It was agreed that it will be important to consider in this review both the overall IGBP and the core projects. The review would be conducted by a core group, augmented by experts in specific areas of IGBP activity. The members of the core group would be expected to become familiar with the core projects, as well as the overall program, through participation in meetings and other activities of IGBP.

55. A budget for this process has not yet been developed and at this time IGFA is not being approached for funds for the review.

V. The IGFA 1993 Resource Assessment Survey:

57. Dr. Robert Corell, Chair of the Working Group on the Resource Assessment Survey, presented the final draft report on the 1993 resource assessment survey. He noted that seventeen of twenty-five addressees responded to the initial survey, although only seven provided data for the entire period requested. The key trends are that: the number of countries supporting global change research is increasing; the allocations of resources are increasing; and apparent shortfalls reflect a lack of responses and incomplete identification of relevant projects, as well as real differences between reported needs and allocations. Mature programs appear to be supported at the 50-80% level; developing programs at the 10-20% level.

58. Estimated requirements for the programs/projects surveyed are expected to increase from \$500 million to \$750 million in 1996. There are probably real differences between estimated needs and reported allocations, although apparent shortfalls between estimated requirements and allocations result in part from a lack of reporting from IGFA members and from national funding agencies not members of IGFA.

59. Of the total allocations, about 10% of the funding is directed at the major organized international global change research programs. About 30% is directed at what might best be called "contributing" programs; and 60% is directed towards national programs whose relationship to the international projects is not clear. It was suggested that this may reflect a serious imbalance between funding of focussed studies in the major organized international programmes and funding of contributing and/or national programmes. Problems with the methodology include a lack of standardization in the data (e.g., differences in purchasing power have not yet been applied); and the immaturity of some of the programs included.

60. It was agreed that the dialogue should be continued and the methodologies refined. It was suggested that funding agencies be asked to identify specifically the projects which they are funding. Additional programs (e.g., LOICZ, GAIM and LUCC) should be included in the next survey, as should related activities such as major modelling programs and supercomputer time for which substantial funding is now being provided. It was suggested that guidelines be developed for the WCRP, IGBP, and HDP to issue to their core project offices (CPO's) for their inputs to the next survey. A key unresolved question is whether the human resources are available to conduct the research.

63. It was suggested that the report be maintained as an IGFA working document. It was proposed that the chairman of the IGBP evaluation group be provided with the report for the purposes of the review. It was pointed out that some explanatory information has to be developed and added, together with a cover. It was agreed that the report should be distributed to the WCRP, IGBP, and HDP, especially to the scientists and steering groups that provided data as input to the assessment.

64. It was proposed that the survey should be updated, within one to two years at the latest. Dr. Rosswall agreed to inform the IGBP core project officers meeting of the results of the survey.

VI. The Future Role, Functions, and Membership of IGFA:

The OECD Megascience Forum on Global Change Research

66. It was recognized that the report of the OECD Megascience Forum on Global Change Research in July 1993 indicates the breadth and scope of the issues facing such research and facing IGFA as well. The report stressed that development of new international agreements (such as the Framework Convention on Climate Change) has added a new driving force to global

change research. The OECD will convene a Science Ministers' Meeting in 1995 which will review megascience, including the results of the megascience fora. Global change research, as the primary non-facility-driven megascience program, is likely to receive and could benefit from substantial attention at this meeting.

Global Change Research in Support of International Conventions

68. It was recognized that, while IGFA has focussed to date on the major internationally coordinated global change research programs (i.e., the WCRP, IGBP, and HDP), it is clear that substantial funding is going into research that is not formally associated with these three programs. It was proposed that IGFA address such global change-related funding issues more closely in conjunction with the next resource assessment survey.

70. However, it is not clear to what extent IGFA should become involved with identifying and tracking research conducted in relation to international conventions and assessments. Many countries are being stimulated to develop research programs related to such conventions and assessments, but these are generally impact-oriented programs carried out primarily within the framework of governmental institutes -- almost dissociated from the research programs which IGFA agencies sponsor.

72. ICSU reported that they are keeping a "watching brief" on activities, including the IUBS/SCOPE/MAB Diversitas programme, related to the international conventions and assessments, especially with a view towards identifying needs for research in these areas.

IGFA's Overall Role and Mode of Operations:

75. It was suggested that IGFA could continue to function best as an informal body, but with a stronger internal structure to help achieve focussed objectives. The possibility of converting IGFA to a "high-level" and much more formal group which had been discussed at previous IGFA Meetings was not accepted. What has been lacking is, first, identification of action items and the assignment of follow-through responsibilities to specific individuals. It is especially important for an informal group such as IGFA to have a very clear-cut way of working.

76. Under present IGFA procedures, the chair is the IGFA member from the country hosting the next IGFA Meeting and the chair serves for one year. The chair under these procedures focuses on preparations for the next IGFA Meeting, rather than on serving as the principal officer of IGFA concerned with the overall matters of the organization.

77. It was proposed that IGFA elect a chair for a fixed term to serve as the principal officer of IGFA and a vice-chair to arrange for the next IGFA Meeting. One year is perhaps too short a term for the chairmanship; two years seems to be necessary and sufficient. Although the title

"acting chair" was suggested for this post, it was argued that this would imply that the chair is in place on only an interim basis.

78. It was recognized that the CEOS charter and terms of reference establish CEOS on a more formal basis than IGFA. It was pointed out that the Chairmanship of CEOS had initially rotated every year among the G-7 countries. As CEOS' workload increased, the structure was changed. The CEOS Secretariat includes three core groups charged with developing and maintaining continuity. A member country agrees to convene each meeting and then is charged with making all of the arrangements for the meeting.

79. It was suggested that an IGFA secretariat be designated and assigned clear authority and responsibilities. It was proposed that IGFA develop a clear understanding of the objectives and format of the reports of IGFA meetings. It was suggested that IGFA also be more explicit about its membership. It was proposed that the lead responsibility for staffing IGFA rotate with the chairmanship for a two-year period since this arrangement would assure continuity of operations and development of an institutional memory and IGFA "file".

80. It was proposed that the "What is IGFA?" document be updated in view of the actions and decisions taken by IGFA since the document was initially prepared and considering the results of the OECD Megascience Forum. Such an updating might be undertaken periodically, but certainly not every year.

VII. Socio-Economic and Human Dimensions Research Relevant to Global Change and Planning of the Next IGFA Meeting:

93. It is widely recognized that global change research issues need attention from the socio-economic perspective. It was noted that research on the "human dimensions" of global change includes studies of all of humankind's interactions with the environment and thus addresses areas such as ethics which would not be included in "socio-economics" research.

94. It was suggested, however, that the relationship between global change research (including human dimensions research) and international policy development requires further definition and clarification. Scientists should be encouraged to assist in this definition and clarification. Such an effort would be useful to funding agencies in their allocation of the limited resources available and to social scientists who are not sure where they and their research fit in global change research overall.

95. Some basic questions which should be addressed are: how can more interdisciplinary research between the natural and social sciences be encouraged? how can communications between national constituencies and the HDP be improved? It is hoped that answers to these questions will emerge, both during the coming months prior to the next IGFA Meeting and at the IGFA Meeting itself. Dr. Alan Fox reported that preparations for the next IGFA Meeting are

well underway. This Meeting will focus on social and economic sciences research and on its relationship to natural sciences research.

96. The IGFA Working Group on Socio-Economic and Human Dimensions Research has been very active. The Working Group has distributed to IGFA a draft report based on two meetings, the first in August 1992 in Paris and the second September 1993 in Noordwijk. The primary objectives of these meetings were to identify the scientific issues being addressed by socio-economic research related to global change; to identify the scientists and institutions involved; and to consider how this research relates to natural sciences research (i.e., interdisciplinarity). The draft report also summarizes the resources now being made available for socio-economic research from countries such as Belgium, Canada, France, Germany, The Netherlands, Norway, Sweden, the United Kingdom, and the United States.

97. It was recognized that concerns have been expressed by the science community that the HDP is driven too much from the top down and, as a result, the opportunity for interdisciplinarity is limited.

98. It was suggested that the HDP should develop criteria and forms of peer review that will provide reviewers, scientists, and science managers with thoughtful and comprehensive analyses of proposed socio-economic research related to global change. Three elements of such criteria might well be interdisciplinarity, subsidiarity, and values added. It was acknowledged that interdisciplinarity is not a goal, but a tool to address issues that demand it.

99. Interdisciplinarity is now being carried further than the classic bringing together of physical and biological or chemical scientists together. The barriers, such as lack of career patterns and cross-department barriers at universities, are even stronger between social and natural scientists than among the natural scientists. The IGFA Working Group considers it essential to address such impediments.

100. However, simply bringing down institutional barriers and bringing scientists together is sometimes not adequate. Changing the funding process may be a way to approach this need. When governments or institutions set up interdisciplinary centers or institutes, then constituencies and career patterns can emerge. It was proposed that IGFA encourage establishment of such centers and systems to review and oversee them effectively.

101. It was acknowledged that funding agency decisions on integrated international projects will be based on recommendations from the international community. However, since socio-economic research is closely linked to underpinning of the policy process, most countries will also have strong national programs which will be peer-reviewed by experts selected by governments. Thus for some social science issues it may be more important to link national, regional and global programs than to develop major new international programs. The Noordwijk meeting urged that a network of institutes/centers be developed which could provide a framework in which interdisciplinary studies could be embedded.

102. It was proposed that the Stockholm and Vancouver meetings address among other things the interaction between economic development and environment; interdisciplinarity and barriers to its development; and interactions between national policy interests and international programs.

VIII. Global Observing Systems:

109. The draft IGFA Statement on the Global Climate Observing System (GCOS) was presented for IGFA's review and approval. This statement had been revised prior to the ad hoc IGFA meetings in January 1993 in Ensenada and had then been reviewed and cleared with the IGFA members with strong interests in this subject. However, since this process had taken some time, it had been decided to bring the revised statement to IGFA at the Taipei Meeting for formal approval. Mr. Brown noted that some changes had been made over this period in response to comments from the GCOS Office at the WMO which considers that such a statement would still be timely.

110. IGFA reconfirmed that national funding agencies which support global change research have a legitimate basis for commenting on the planning, development and implementation of observing systems that are related to this research. It was suggested that the statement be broadened to include both the Global Ocean and Terrestrial Observing Systems (GOOS and GTOS).

IX. Data for Global Change Research:

United Kingdom - United States Efforts Regarding Exchange of Data for Global Change Research:

113. Dr. David Brown reported that, in the United Kingdom it has been recognized that it is important to assure that global change research scientists have access to global change data at minimum cost. The United Kingdom thus brought together the various UK agencies that collect and have such data to develop a common approach to assuring the availability of global change data to researchers. This effort resulted in an interagency framework for access by scientists in the United Kingdom to databases of UK agencies. When this effort had been completed, the United Kingdom approached the United States to open discussions on a bilateral arrangement that might serve as the basis for an IGFA-based international framework for exchange of in situ global change data.

114. It was recognized that difficulties have been experienced in making earth remote sensing data for different purposes, e.g., commercial purposes and research. National agencies such as CNES and NASA have promised to provide data for research activities, such as IGBP.

The Committee on Earth Observation Satellites (CEOS):

116. Dr. Takeuchi made a brief presentation on CEOS activities on behalf of NASDA and the CEOS Secretariat. CEOS was established in 1984, combining some existing committees. CEOS consists of 19 members, 5 observers, and about 12 affiliates, that is, users of remote sensing data. There are two main CEOS working groups, one on sensor calibration and geophysical variables and one on data. A CEOS database has been compiled and is accessible via Internet. The CEOS 7th Plenary took a number of actions, among which was a decision to convene a workshop on CEOS activities in support of the needs of developing countries. The next CEOS Meeting will be 26-28 September 1994 in the Federal Republic of Germany.

117. High-resolution data is used for both research and commercial purposes. Less high-quality data can also be useful for global change research. Such data will be archived in three regional centers and will be available through these. The International Center for Theoretical Physics in Trieste is offering a course in the use of remote sensed data by developing countries. The Center has a small network in place for this purpose which CEOS might be able to use for distribution of data to developing countries.

118. It was pointed out that at the CEOS Meeting in 1992 in London it had been suggested that the main thrust of CEOS until then had been "supply" oriented and that missions had been designed by the space agencies with little and non-systematic input from the user community. The London Meeting recognized that the users of remote sensed data have increased dramatically both in numbers and variety since many of the missions had been conceived.

119. CEOS has formulated a recommendation which was further articulated at a meeting of European environmental agency users in Bonn that all those who can benefit from remote sensed data should be encouraged to interact with the space agencies. CEOS thus decided to organize "naive" users to help them to better formulate their needs and thus to become a partner on an equal footing in the remote sensing process. This naive users group would then meet with CEOS to assure effective input from the users into the remote sensing process.

Change in the IGBP Secretariat:

122. Dr. Thomas Rosswall informed IGFA that he will soon be leaving his post as Director of the IGBP Secretariat to accept a position as Vice-Chancellor of the Swedish University of Agricultural Sciences at Uppsala.

123. IGFA unanimously thanked Dr. Rosswall for his exceptional service to science and to the IGBP in particular. IGFA noted that Dr. Rosswall has brought a rare internationalism to science that has been evident in all of the IGBP and IGFA meetings. IGFA wished Dr. Rosswall the very best and expressed the hope that he would continue to be involved in global change research.

124. Dr. Rosswall responded that working on global change research issues with the best scientists without a heavy overlay of bureaucracy is the key to the success of the science. The dialogue that the IGBP has developed with IGFA is not only an important, but essential aspect of this approach.

Closing of the Meeting:

125. The new Chairman expressed the thanks and appreciation of IGFA and all of its members and observers to the hosts, under the leadership of Dr. Hu, for the exceptional arrangements they had made for this Meeting . IGFA thanked Dr. Lin Ho for his excellent service as Chairman and Dr. Ho-ching Lee Liu for her outstanding support in making the arrangements necessary for this Meeting.

126. The new Chairman of IGFA introduced Dr. Lin Ho who closed the Meeting.

RECORD OF DISCUSSIONS OF THE DONORS MEETING

1. Drs. Lin Ho and Robert Corell co-chaired the donors' meeting. Dr. Corell provided background on the development of the donors' meeting concept. It was agreed that the IGBP and HDP would present their proposals; these would be reviewed and discussed by the donors; and the meeting would identify any gaps/shortfalls and discuss how best to address these. It was noted with regret that the World Climate Research Programme (WCRP) had declined an invitation to participate in the meeting of donors.

IGBP:

2. Dr. Thomas Rosswall presented the proposal from the IGBP. Six IGBP core projects are now being implemented (IGAC, JGOFS, LOICZ, BAHC, GCTE, and PAGES) and three "framework" activities have been initiated (IGBP-DIS, GAIM and the IGBP/HDP/WCRP sponsored START programme). While there is much support for GAIM, lack of funding for the GAIM office is a major constraint. National activities in support of the IGBP have increased -- there are now approximately 70 national committees for the IGBP.
3. The five-year workplan for the IGBP, developed at IGFA's urging, has been recognized as being of substantial value to IGBP and will be published as an IGBP Report. The preparation of this document has resulted in the projects' consideration of timelines and schedules. IGBP has also proposed that ICSU and IGFA join in an external review and evaluation of its activities at the five-year point; this will be discussed separately in the IGFA Meeting.

4. The OECD Megascience Forum had concluded that a "co-ordinated effort on the part of all major interested countries and intergovernmental organizations" be undertaken to "finance the coordination and integration of (the IGBP, HDP, and WCRP)". To achieve this objective with respect to the IGBP and HDP it is necessary to determine whether their budgets are sound and, if so, how the needed funds could best be obtained.

5. The IGBP requested additional funding in three areas of its proposed programme: (i) inter-core project coordination (\$368,000); (ii) intra-core project coordination (\$425,000); and (iii) participation in IGBP's activities by scientists from developing countries and economies in transition.

6. The budget for inter-project coordination includes a small increase for inflation and an increase for building the staff to four professionals, the level originally foreseen in the 1987 plan, but never realized. It was suggested that the proposal provides a solid rationale for a modest budget increase for inflation -- the standard figure of five percent as used by ICSU -- and to provide support for increased program staff. It was suggested that the budget increase sought for intra-project coordination be addressed by the projects themselves, rather than through the IGBP budget for centralized activities.

8. Additional funding had at one time been sought from UNEP to promote participation by scientists from developing countries and economies in transition in the core projects and the overall IGBP coordination effort. It was suggested that perhaps donors could press their delegations to the UNEP Governing Council to revisit and to approve such UNEP support to IGBP. It was suggested that START had been justified in large part to promote the participation of scientists from developing countries in IGBP activities and thus that funds for such participation should be sought and arranged through START. Other multilateral organizations and foundations might also be approached to develop such support.

9. The IGBP's development of a "scale" for national contributions was also discussed. It was proposed that the IGFA Consultative Committee work with IGBP to consider how the scale might best be adjusted to be made more realistic, in effect, to reflect changes in the GNP's of contributing countries, perhaps by building into the scale an automatic periodic adjustment.

HDP:

12. Dr. Ellen Wiegandt, newly appointed Scientific Director for the HDP, reviewed briefly the history of the development of the HDP and outlined the key elements of the HDP scientific program. These are: land use and land cover; energy production and consumption; industrial transformation; impacts of structures and institutions; perceptions and assessments of global environmental change; social dimensions of resource use; and environmental security and sustainable development.

13. Joint HDP/IGBP planning is furthest advanced for a project on land use and land cover; a draft science plan has been completed and will hopefully be approved in 1994. Draft science plans are also expected to be completed in 1994 on energy production and consumption; industrial transformation; and impacts of structures and institutions. Work on the final three areas is just beginning.

14. It was recognized that the HDP can: be a source of global data; serve as a framework for addressing compatible/cumulative research issues; provide networking; and conduct capacity-building. It was suggested that the HDP might also focus on social and economic interactions associated with the use of energy models.

15. It was agreed that an HDP should be developed and that some resources should be provided to catalyze its scientific planning. However, the present HDP scientific plan is not specific with respect to which aspects of human dimensions research are important from the global change perspective. It was proposed that the HDP be asked to specify their needs for funding of their scientific planning; and identify those planning activities which are being funded and those that would not be undertaken if funds were not available. It was pointed out that initial planning for the HDP differs from that for the IGBP which benefitted from the strong existing infrastructure of ICSU.

16. The HDP presently plans to have staff at three locations -- a science office in Geneva; a Secretariat in Barcelona; and a staff person outposted to Stockholm to provide liaison with the IGBP. Funds have been provided for the Scientific Director's post in Geneva. Funding is also apparently available to support the Secretariat in Barcelona. If, for any reason, such funding does not develop, the HDP would eliminate or relocate this office.

17. Improving liaison between the IGBP and HDP was agreed to be very useful. The suggestion was made that, in addition to or following the assignment of an HDP liaison officer to the IGBP Office in Stockholm, it might be useful for an IGBP liaison officer to be located at the HDP scientific office in Geneva.

18. It was stressed that there is strong support among the donors for an HDP endeavor. While in the case of the IGBP there appears to be consensus as to the nature of core projects that need to be undertaken, this kind of consensus does not yet appear to exist in the social sciences community. There are very different views as to the nature and extent of the program that should be undertaken.

Appendix A

What is IGFA?*

IGFA is an informal partnership of national agencies which fund global change research programs and other activities supporting such research. The purpose of the Group is to facilitate international global change research in the natural, social and economic sciences by bringing the perspective of these national funding agencies to strategic planning and implementation of such research.

The Group will:

- exchange information on national global change research programs, supporting programs and facilities;
- discuss approaches to the integration and phasing of implementation of global change research in light of available resources;
- promote coordination of access to and deployment of specialized research facilities; and
- aim to optimize allocation of national contributions to global change research.

Membership

The Group consists of one or two representatives of national coordinating bodies for funding global change research and/or the lead funding agency/agencies for global change research. Acceptance of new members by the Group will be based on demonstrated national agency interest in and support for global change research programs. The Commission of the European Communities participates fully in the Group's activities.

Leadership

The Chair, Vice Chair, Chairs of the three Working Groups, and others as considered appropriate, constitute the Consultative Committee with the responsibility of working interessionally on the follow-up of IGFA Meetings, identifying issues

appropriate for IGFA consideration, and developing agendas for IGFA Meetings.

The Chair provides overall leadership to IGFA and assures effective implementation of the results of IGFA Meetings. The Chair is elected by the Group for a two-year term. The Vice Chair is the member from the host country for the next meeting of IGFA and is responsible for arranging this meeting.

Working Groups

Currently IGFA has three Working Groups that report to IGFA on developments of concern to IGFA relative to their mandate. The three Groups are the: 1) Working Group on Global Observations and Data Management; 2) Working Group on Resource Issues; and 3) Working Group on Socio-Economic and Human Dimensions Research. Task Groups will be established by IGFA as deemed necessary.

Secretariat

The IGFA Secretariat is a distributed Secretariat consisting of between four and five IGFA members. The country of the Chair will provide the lead and fixed address for the Secretariat for the same two-year period as the Chair.

Meetings

The Group intends to meet approximately once a year in September/October for two or three days, depending on the issues to be addressed. Each member will be responsible for expenses associated with their participation in the Group's activities. Invitations to non-members to participate in activities of the Group will be extended by the Consultative Committee in accordance with the agenda for such activities.

* Revisions to this text were made after the Taipei Meeting and agreed to by IGFA via correspondence

Appendix B
IGFA Statement on the
Global Climate Observing System (GCOS)
(Final Approved by IGFA: January 1994)

Appendix C

Meeting Agenda

IGFA and Associated Meetings: Grand Formosa Regent, Taipei
January 24-27, 1994

MONDAY, 24 JANUARY

Mini-Workshop: The Newly Industrialized Economies and Global Change Research (completed)

TUESDAY, 25 JANUARY

9:00 Meeting of IGBP and HDP Donors

This half-day meeting of IGBP and HDP donors will consider the proposals from the IGBP and HDP for shared international funding of their centralized costs, especially those associated with the operations of the IGBP Secretariat in Stockholm and the HDP Secretariat in Barcelona.

The objective of the donors' meeting will be to review the proposals; identify and address any issues which arise; and develop shared international funding arrangements for the support of IGBP and HDP centralized costs.

9:00-10:30 Dr. Thomas Rosswall will introduce the IGBP proposal which will be discussed by the donors. Commitments of resources by donors will be encouraged. If such commitments are less than fully adequate to address the needs, the donors will be invited to address ways in which the remaining resources might best be sought, the potential sources of such funds, etc.

10:45am-
12:30pm Dr. Ellen Wiegandt will introduce the HDP proposal. The discussions will follow the pattern of the IGBP discussions. Dr. Uno Svedin and Dr. Alan Fox are expected to participate in these discussions. The discussions will also address the roles of the February meeting of the IGFA Socio-Economic Working Group and of the next IGFA Meeting in following through on the results of these discussions.

2:00 I. Opening (Informal) of the IGFA Meeting

2:10 II. Adoption of the Agenda

2:20 III. The Role of Newly Industrialized and Developing Economies in Global

Change Research

The objectives of this discussion will be to develop conclusions and recommendations for consideration by IGFA Members to improve, enhance, and expand the participation of newly industrialized and developing countries in global change research. The discussions will consider the needs for and availability of national and international funding of various efforts; the needs for coordination of and communications among the various regional and international institutes and networks being planned and developed; and, in particular, the implications for national funding agencies.

To provide background for these discussions, brief reports (10 minutes each) will be presented on a series of recently completed meetings relevant to this issue.

These activities include:

- o the NIE Mini-Workshop completed on Monday, 24 January, on Newly Industrialized Economies in Global Change Research. A brief summary will be presented from Dr. Paul Cheung.
- o follow-up on the Inter-Governmental Meeting on the World Climate Programme (IGM), 14-16 April 1993, Geneva. Dr. Thomas Rosswall participated in a meeting in December of 1993 to initiate this follow-up and will report on the results.
- o Recent developments under the START Programme, especially with regard to the Southeast Asia Regional Committee for START (SARCS) and the Temperate East Asia Planning Committee for START (TEACOM). SARCS and TEACOM both met recently --SARCS on 27-28 July 1993 in Manila and TEACOM on 25-27 August 1993 in Beijing and 16-17 August 1994 in Tokyo. Dr. Roland Fuchs will report on these activities and will outline START's workplan, activities, and schedule for the next five years.
- o The Third Meeting of the Scientific Advisory Council for the International Geosphere-Biosphere Programme (IGBP), 25-29 January 1993, Ensenada. Dr. Thomas Rosswall and Dr. John Marks will report on relevant results of this meeting.
- o Developments Related to the Inter-American Institute for Global Change Research (IAI); the European Network for Research in Global Change (ENRICH); and the Asia-Pacific Network for Global Environmental Research (APN) will be discussed.

The IAI has held a series of meetings this year, including the first in a series of scientific planning workshops (Dr. Robert Corell will report). A major workshop on ENRICH planning was held on 11-13 November in Seville (Dr. Pierre Mathy will report). The second APN Workshop was held 20-21 January 1994 in Japan (Mr. Kazuhiko Takemoto will report).

- 3:45-5:00 III. The Role of Newly Industrialized and Developing Economies in Global Change Research (continued)
- o Planning for an International Research Institute for Climate Prediction (IRICP). Dr. Robert Corell and Mr. Louis Brown will report on recent developments.
 - o The Workshop on "International Networks for Addressing Global Change Issues", 24-25 August 1993 in Durham, North Carolina. Dr. Werner Menden will report on the results of this workshop.

The Group will consider follow-up actions for intersessional implementation. These could include broadening of IGFA membership and/or sponsorship (possibly jointly with CEOS, ICSU, etc.) of future activities.

- 5:15-6:30 The IGFA Steering Group will meet on an ad hoc basis in the meeting office.

WEDNESDAY, 26 JANUARY

- 9:00-9:30am Formal Opening of the Meeting

- 9:30-10:00 IV. Evaluation of the IGBP at the Five-Year Point

ICSU has extended an invitation to IGFA to join with ICSU and IGBP in co-sponsoring a programme-wide evaluation review of the IGBP. IGFA is invited to consider this request and develop a reply to ICSU. The invitation and a short document on the proposed scope of the evaluation has been distributed.

- 10:00-10:30 V. The IGFA Resource Assessment

The Final Draft of the First IGFA Resource Assessment will be reviewed and approved taking into account the recommendations of the IGFA Ad Hoc Meeting on the Resource Assessment held in July in Paris. Dr. Robert Corell will present the Final Draft and will introduce the results. The Group is invited to discuss these results and their implications for both the international global change

research programs and the funding agencies. The requirements, improved methodologies, and scheduling for such assessments will be discussed.

10:45am-
12:30pm V. The IGFA Resource Assessment (continued)

2:00-3:30 VI. The Future Role, Functions, and Membership of IGFA

This discussion is intended to include a review of IGFA's present functions and status to determine if they should be updated. Dr. Robert Corell will present some options for IGFA's consideration. The following documents are also relevant to this discussion: Conclusions of the OECD Megascience Forum on Global Change Research; the CEOS Terms of Reference; and the report on "The Mode of Operation of IGFA" from the 1991 IGFA Meeting in The Hague. If it is decided that IGFA should redefine its role and functions, an intersessional process to accomplish these goals will be considered.

3:45-5:00 VI. The Future Role, Functions, and Membership of IGFA (continued)

THURSDAY, 27 JANUARY

9:00-10:30 VII. Socio-Economic and Human Dimensions Research Relevant to Global Change Change and Planning of the Next IGFA Meeting

A report will be presented on the activities undertaken by the Working Group, especially the results of the Working Group's Preparatory Meeting held in 12-14 September in Leiden and plans for a follow-on working meeting scheduled for 8-9 February 1994 in Stockholm. Dr. Uno Svedin will present this item. Plans will be discussed for the next IGFA Meeting scheduled for September 1994 in Vancouver.

10:30-10:45 Coffee Break

10:45-11:30 VIII. Global Observing Systems

Following the ad hoc meeting of the IGFA Steering Group in Ensenada last January, the revised draft IGFA statement on GCOS was cleared via correspondence with the IGFA Members who had expressed reservations with the wording. However, since this wording has not been discussed in a full IGFA Meeting, IGFA is asked to approve this text. Mr. Louis Brown will introduce this item.

11:30-
12:30pm

IX. Data for Global Change Research

A report will be presented on recent discussion among scientists and officials from the United Kingdom and the United States on ways to promote and facilitate the exchange of data for global change research. Issues to be discussed will include how to promote and encourage such exchange; how to minimize or eliminate costs; and how research funding agencies and national agencies involved in global change data management can cooperate to assure the effective archiving of and access to data needed for global change research.

2:00-3:30

VI. The Future Role, Functions, and Membership of IGFA (continued)

3:30

Adjourn for Preparation of Executive Summary of the Meeting Report, Including Action Items

5:00-5:30

Adoption of the Executive Summary

Appendix D
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Appendix E

List of Acronyms

APN	Asia-Pacific Network for Global Change Research
BAHC	Biological Aspects of the Hydrological Cycle (IGBP)
CEOS	Committee on Earth Observation Satellites
CNES	Centre National d'Etudes Spatiales (France)
CPO	Core Project Office (IGBP)
ENRICH	European Network for Research in Global Change (CEC)
FGCC	Framework Convention on Climate Change (UN)
GAIM	Global Analysis, Interpretation and Modelling (IGBP)
GANN	Global Array of Nested Networks
GCOS	Global Climate Observing System (WMO/IOC/UNEP/ICSU)
GCTE	Global Change and Terrestrial Ecosystems (IGBP)
GEF	Global Environmental Facility (UNDP/UNEP/World Bank)
GOOS	Global Ocean Observing System (WMO/IOC)
GTOS	Global Terrestrial Observing System
HDP	Human Dimensions of Global Environmental Change Programme
IAI	Inter-American Institute for Global Change Research
ICSU	International Council of Scientific Unions
IGAC	International Global Atmospheric Chemistry Project (IGBP)
IGBP	International Geosphere-Biosphere Programme (ICSU)
IGBP-DIS	International Geosphere-Biosphere Programme-Data and Information System
IGFA	International Group of Funding Agencies for Global Change Research
IGM	Intergovernmental Meeting (on the WCP)
IRICP	International Research Institute for Climate Prediction
JGOFS	Joint Global Ocean Flux Study (SCOR/IGBP)
LOICZ	Land-Ocean Interactions in the Coastal Zone (IGBP)
LUCC	Land Use/Cover Change project (IGBP/HDP)
MAB	Man and the Biosphere programme (UNESCO)
NASA	National Aeronautics and Space Administration (USA)
NASDA	National Space Development Agency of Japan
NIE	Newly Industrialized Economies
OECD	Organisation for Economic Co-operation and Development
PAGES	Past Global Changes (IGBP)
SAC	Scientific Advisory Council (IGBP)
SCOPE	Scientific Committee on Problems of the Environment (ICSU)
START	Global Change System for Analysis, Research and Training
TOGA	Tropical Oceans and Global Atmosphere Programme (WCRP)
UNEP	United Nations Environment Programme
WCP	World Climate Programme
WCRP	World Climate Research Programme (WMO/ICSU)

WMO World Meteorological Organization (UN)