FROM: The Secretariat

Consultative Group Meeting
May 16-20, 1988
Berlin, Federal Republic of Germany

MAIN CONCLUSIONS REACHED AND DECISIONS TAKEN

A mid-term meeting of the Consultative Group was held at the invitation of the Federal Republic of Germany in Berlin from May 16-20, 1988. All meetings of the Group were held at the Reichstag. The business sessions of the Group were preceded by several presentations on German agricultural research and its potential impact on agriculture in developing countries. Mr. Hans Klein, MdB, Federal Minister for Economic Cooperation, addressed the meeting on May 17. The text of his address is attached as Appendix I, and the list of participants as Appendix II.

The agenda of the meeting has been inserted at the beginning of the document, to serve as a table of contents. For those items where a consensus conclusion was reached, a brief statement of that conclusion has been placed at the beginning of the item. These conclusions are grouped together for convenience in Appendix IV.

The secretariat will make available on request a transcript of the proceedings on microfiche.

Attachments

Distribution

CGIAR Members
TAC Chairman, Members, and Secretariat
Center Board Chairpersons
Center Directors
Other Participants
Observers
Consultative Group on International Agricultural Research

Consultative Group Meeting

Berlin, Federal Republic of Germany
May 16-20, 1988

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Chairman's Opening Remarks - Agenda Item 2

1. In his formal opening remarks, CGIAR chairman W. David Hopper said he was pleased that a mid-term meeting was being held in Europe for the second consecutive year. European donors were full and equal partners in the Group, and should feel that way. Mr. Hopper thanked the German hosts of the meeting for the arrangements they had made, as well as for their excellent and informative presentations on German research. The Group had benefited both intellectually and financially from Germany, a founding member.

2. Mr. Hopper, whose remarks covered several aspects of funding, said it was important to remember that non-dollar contributions surpassed dollar sources for the first time in 1987. Small donors were numerous and significant, because collectively their participation added credibility to the system. Mr. Hopper also pointed out that for the first time in a long while, it was possible in 1988 to operate on the basis of full funding for all of the center programs approved by the Group.

3. Mr. Hopper drew the Group's attention to some important recent developments:

- WARDA had moved to its new (temporary) headquarters, and thanks were due to the Government of Liberia for past support and for helping to facilitate the move; to the past and present leaders of the WARDA council of ministers; and to the Government of Cote d'Ivoire for its willingness to receive WARDA.

- Increasing cooperation was taking place between and among the centers. The board and management of IITA had reached agreement with WARDA to eliminate duplication of responsibilities, thus opening a new phase of collaboration. Similarly, on the issue of maize research in West Africa, the CIMMYT board had decided to adopt the approach that IRRI and CIAT had worked out so successfully. IITA would be locally responsible for maize activities in Western and Central Africa, with full backstopping and support from CIMMYT.

- Some of the headquarters agreements inherited from the past were being rationalized. The agreement for CIAT's new headquarters had been ratified; a headquarters agreement between the Government of Mexico and the new international CIMMYT had been signed; and a headquarter's agreement for IITA would be signed shortly.
Initiatives directed at raising productivity and incomes in Africa were moving ahead. Problems of communication with the SACCAR board had been resolved, or were on their way to resolution.

4. Reviewing the broad range of issues before the meeting, Mr. Hopper said the agenda was full and diverse, encompassing some issues that were strategic and others that were at the implementation level. The Group's future relationship with non-associated centers would be addressed. The issue of vegetable research, on the CG's agenda from the beginning, would again be looked at, in an attempt to resolve problems arising from extraneous political factors. The Group would also look further at biotechnology, which was moving towards acceptance at a large number of centers, and would be remitted to the TAC in the future.

5. The dominant theme of the meeting, however, would be the breadth and coverage of the CGIAR. Crucial to that theme was the balance between making use of available productive potential—whether that potential was based on resources or on genetics—and searching for new ways to increase the potential. The principal focus of the CG system until fairly recently was on finding ways to increase that production potential—in practical terms, to add to the "pile of rice" in the world's poorer regions. In some parts of the world, the "pile of rice" had increased significantly, although difficulties remained in Africa, and in certain kinds of fragile environments. The time had come, now, for the Group to contemplate giving increased attention and increased weight to the issues of sustainability and stability that were so important to the long term agricultural outlook of the globe: to making full use of the available production potential with which countries are endowed.

6. A changing environmental context had brought up major challenges to be faced in the years ahead. These ranged from global atmospheric problems through sustaining production on semi-arid soils, to utilizing better the fragile soils of tropical forests and forest lands. Some of these challenges were defined and examined by the report of the Brundtland Commission which would form part of the backdrop when the meeting examined TAC's review of sustainability.

7. The CG could look back with pride on 20 years of extraordinary accomplishment, Mr. Hopper concluded, and would need to look forward to another 20 years of continuing to grapple with the interface between feeding hungry people and finding how this could be done through the application of excellent science, and drawing from that science the implications for technologies.

TAC Chairman's Report - Agenda Item 4

8. Mr. Alexander McCalla reported to the Group for the first time as TAC chairman. He reported mostly on the work of TAC45 in Rome at which two new members, Mr. Raoul Dudal from Belgium and Mr. Scarascia-Mugnozza from Italy joined. Several innovations were introduced into TAC's working procedures. For instance, the first day was set aside for an executive closed session in which only TAC members and the TAC Executive Secretary participated. The session was very useful in securing agreement on new working procedures and in getting the full participation
of every member. It was agreed that the internal structures of TAC would be under continual review; alternative structures were being examined. TAC decided that it would like to be an intellectual body which discussed substantive issues with no holds barred, but that TAC would also have to be a decision-making agency.

9. TAC would alter the patterns of its meetings, to use its visits to individual centers better. At TAC46 in India (June 13-21, Hyderabad), TAC would spend one full day with ICRISAT and a half day with the Indian national program. TAC members felt very strongly that if TAC was going to travel and visit centers, they should take enough time to get a better understanding of the programs at the center visited. At the same time, TAC would attempt to reduce the duration of its meetings.

10. TAC45 completed work on three items that were on the agenda at Berlin. These were vegetable research, sustainable agriculture, and the mid-term budgets of CIP and IBPGR.

11. Dealing with aquaculture research, Mr. McCalla conveyed TAC45's view that several issues needed further study and analysis. The potential payoff on aquaculture investment versus other terrestrial research opportunities had to be appraised. Questions were raised also about the location, nature and form of the effort, especially in and for Sub-Saharan Africa. A working subcommittee of TAC was appointed to examine the question of aquaculture in greater depth. Their report will be presented to TAC46. It would be difficult to resolve all the questions in time to reach the Group by ICW88. These arrangements did not imply that TAC had changed its attitude towards aquaculture, but reflected a concern that any recommendation on aquaculture should be based on comprehensive analysis, enabling TAC to defend a recommendation on a scientific and technical basis.

12. Mr. McCalla said that TAC had delayed completing its discussion on review processes in the CGIAR for several reasons including TAC's internal discussions, the overview examination of the CG Secretariat, and a possible review of TAC secretariat activities. TAC hoped to have a paper completed by ICW88.

13. A draft policy statement on plant genetic resources would be discussed with the directors general at Hyderabad in June. TAC's view, Mr. McCalla said, was that the joint center-TAC Working Group on this topic should deal with a number of issues including strengthened inter-center collaboration.

14. TAC had also considered how responsibilities should be shared among different partners in the research process. Mr. McCalla said that papers on this broad issue were planned to meet the following schedule: responsibilities sharing among IARCs--ICW88, between IARCs and national systems--Mid-year meeting May 1989, and between IARCs and the private sector--later.

15. TAC had undertaken a preliminary exchange of views on the role and proper relationship of the centers to biotechnology. What was now clear to TAC, Mr. McCalla reported, was that either neglect of or over-investment in biotechnology would have serious consequences for a number of centers.
16. Mr. McCalla reported on the progress of the medium-term allocation process. The programs of IFPRI, ILRAD, and ISNAR were discussed at ICW87. Medium-term programs for CIP and IBPGR were on the agenda for Berlin. ILCA, CIAT and IITA would be discussed at TAC46 and should be ready for ICW88. ICRISAT would have its first discussion at TAC46 and that would leave four centers to complete the first round of discussions: WARDA should finish by May 1989, and IRRI, ICARDA and CIMMYT to finish by ICW89. The main issues that were being considered were those of minimum critical mass and scale of a center, deciding between essential and desirable activities, and obtaining sufficient analytical data for TAC to match program priorities with budgetary recommendations. TAC46 would include a self review, and an examination of the process itself to date. Possible further insights concerning the process might be given at ICW88.

16. In terms of strategic plans, TAC had discussed some elements of ICRISAT's draft plan, and noted that the center contemplated a rapid shift of resources to Sub-Saharan Africa. The WARDA strategic plan had also been discussed, and most members thought it was potentially realistic. TAC supported WARDA's strategy of collaboration with other centers and research institutions.

17. At the Montpellier meeting in May 1987, TAC presented a plan for continuous priority setting, but execution of the plan had proved more difficult than expected. The work involved would include monitoring, evaluation, and some exploration and comment on the use of quantitative models in strategic planning. A draft paper will be a central point for discussion at TAC46.

18. Mr. McCalla concluded his remarks with a summary of the agenda for TAC46: aquaculture; coconut research; CIAT, IITA, ILCA and ICRISAT medium-term programs; a look at maize, as part of the assessment of priorities; external reviews of ICARDA; statements on plant genetic resources, review processes, and biotechnology, and the King Baudouin Award.

19. Mr. McCalla's opening statement was generally acclaimed. Some clarification and additional data were sought on some of the topics he covered. Management aspects of TAC's work were discussed, with particular attention paid to the review process, and to resource allocation. TAC's future interaction with the private commercial sector was also mentioned.

20. Considerable emphasis was placed on aquaculture research. Speakers endorsed Mr. McCalla's assessment that it was prudent to examine all aspects of aquaculture research rigorously before designing and recommending a program for acceptance by the Group. Some speakers felt, however, that they needed to be kept informed of TAC's interim conclusions, so that the Group could be aware of the progress made on this issue, and therefore better prepared to reach decisions when a final report is made.

21. The substance of aquaculture research was also discussed. Speakers suggested that a future program should encompass socioeconomic, acceptability, and implementation research. The ecological consequences of aquaculture, including its effect on indigenous aquatic and fish populations, had to be considered. The question was also asked whether research should
be limited to on-farm aquaculture, or whether the problems of fisheries in coastal waters—some of them, management problems—could also be researched.

22. The issue of genetic resources was raised. The conservation and collection of genetic resources was described as a vital aspect of the CG system’s long term activities. The CGIAR should take a total, systemwide approach to this activity, it was said, with a clear role for IBPGR and other appropriate centers. In this connection, a speaker proposed a stripe review of the genetic resources issue.

Overview of Brundtland Report—Agenda Item 5

23. Our Common Future, the report of the World Commission on the Environment chaired by Gro Harlem Brundtland, Prime Minister of Norway, provided a backdrop to the discussion of TAC’s paper on agricultural sustainability. The Brundtland commission’s report was introduced at the meeting by Jim MacNeill, secretary of the commission, and its connection with the mission of the CGIAR was addressed by Gordon Conway of the International Institute for Environment and Development (IIED).

24. Mr. MacNeill said that after 900 days of deliberation, the commission had reached a consensus that was politically the most significant characteristic of its report. The commission’s consensus was that the world faced an "imperative need" to shift to more sustainable forms of development. Rapid changes were taking place in the human world. Population would increase from 6 to 10 billion in the next 35 to 40 years. The size of the world’s economy was already 20 times greater than in 1900. At the same time, the gap between rich and poor nations continued to widen with "pervasive poverty" a threat to survival. Resource degradation was causing a wide range of problems including forest depletion, possible climatic change, air pollution, erosion, and damage to soil. Growth on the scale needed to deal with these changes could not be sustained, the commission felt, if growth rested on a continuing drawdown of the earth’s basic ecological capital.

25. The commission saw the need for goals, policies, and institutions connected with development to be revamped, with sustainability as a central focus. Mr. MacNeill explained that in economic terms this meant "living on the earth’s interest without encroaching on its capital." It also meant "investing to sustain and even enhance the present stocks of environmental resource capital so that future dividends can be ensured and enlarged."

26. Mr. MacNeill said that the report took a positive stance based on the ingenuity and initiative of the human race under pressure—but positive, conditional on the need for the rapid management of change.

27. The CG was in a position to lead, and its decision to incorporate sustainability in its statement of goals was an important first step, a first step that the Brundtland commission hoped would be taken by all agricultural and other institutions, worldwide.
28. Relating the views of the Brundtland commission to the work of the CGIAR, Mr. Conway defined sustainability as a new goal, not just another development "add on." As with agricultural research, technically, ecological progress was easy, but social and economic circumstances made it difficult. There was need to define how the conclusions of the Brundtland commission's report could be translated into practical action. How could the commission's concerns be related to what happened in watersheds, villages, farms—in people's lives? Tradeoffs would be necessary—in terms of time, skills, and money—as the connection was made between sustainability and livelihood. The CG would also have to ask itself how to assess sustainable development and measure sustainable livelihoods. New methods of analysis would clearly be required. That, in turn, would require new institution building, a great deal of training, and special linkages among the international centers.

29. The fact that the report of the Brundtland commission had been placed on the CG's agenda was welcomed in the discussion that followed. The report was an important document that deserved close and serious scrutiny, several speakers said. Mr. MacNeill and Mr. Conway had contributed to that process by bringing major issues into clear and sharp focus. They had warned that mankind was heading towards extinction but they had also suggested—as the Brundtland commission had done—how that fate might be avoided. The threat of imminent or potential tragedy tended to unite people. The tragedy against which the Brundtland commission warned could be averted, speakers felt, by an united international response to the challenge posed.

30. Those challenges were both complex and inter-connected. They could not be faced by an institution or country alone. They went beyond the boundaries of the CG and the CG had to be aware of what other agencies were attempting. Components of the CG system also needed to examine their priorities and programs in the context of the very serious issues raised by the commission. Keeping the connection between development and environment, it was argued, would help the system focus its attention on the changes that would have to be made in the system's approach to its responsibilities, as part of a global response to the challenge of survival.

31. An important lesson to be drawn from the conclusions of the Brundtland commission was that despite human progress mankind faced a knowledge gap. In the agricultural field, for instance, a question that had yet be answered was, how to provide agricultural technology that would secure sustainability even at current levels of production. Rising demands made the question more critical. The CG had to accept the responsibility of ensuring that adequate focus and funds were devoted by the international community to closing that knowledge gap.

32. The assumption that policies for sustainability had to be shaped and applied at the national level was valid, speakers felt. They agreed, however, that national institutions and national policies alone were unequal to the tasks ahead. Ecological issues gave a new meaning and urgency to the concept of interdependence. Cross-border dialogue and cross-border accountability were necessary because environmental irresponsibility caused cross-border damage. A partnership of all parties concerned, from both developed and developing countries
33. Increased flows of assistance would undoubtedly be sought as this process got under way. That was an important consideration, speakers felt, but as important was the need to design appropriate structures and mechanisms for dealing with the question of sustainability. The notion of sustainable agriculture would have to be incorporated from the very beginning into new programs, and training would have to be specially oriented towards this objective. Agreement had to be reached on how to evaluate the sustainability of a technology or a composite of technologies. The knowledge of the scientists and the knowledge of the farmer had to be interlocked, as both approached "our common future."

34. Concerns were also expressed about the need to maintain a growing level of productivity so that productivity and sustainability would not be considered separate and unconnected goals. A necessary condition for a sustainable livelihood was sustainable technology at a field, crop, or farm level. Since centers supported by the CG were engaged in generating technologies, it would fall on them to ensure that the technologies they recommended were sustainable.

35. Some doubts were voiced about whether governments and other institutions possessed the will required to move into the future without further damaging the world's common heritage of resources. How could attitudes be changed to make this possible? Without underestimating the nature and dimensions of the problem, speakers agreed, as did Mr. MacNeill and Mr. Conway, that attitudes had already begun to change and that universally the future was gaining a constituency.

Sustainable Agricultural Production: Implications for International Agricultural Research - Agenda Item 6

36. Conclusions: Sustainability was re-emphasized as part of the CG System's mission and the broad sweep of the TAC paper approved. Responding to suggestions from several donors, the CG chairman said he would set up a small group headed by Mr. Swindale to examine research priorities and specific actions in future programs, from a sustainability perspective. A group from outside the system would be asked to collate the known work on sustainability as it applied to agriculture. TAC would keep in touch with these activities. Mr. Hopper would make a progress report at ICW88. Meanwhile, a popular version of TAC's paper on sustainability would be published.

37. Presenting TAC's sustainability paper to the meeting, Mr. E.T. York highlighted its evolution, beginning with the adoption of sustainability as a CGIAR goal in the 1986 TAC priorities paper, the setting up of a TAC continuing standing committee, the draft to the Group at ICW 87, the special workshop in January 1988, approval by TAC in March 1988 and finally presentation to the Group in May 1988. He described the TAC definition of sustainability as a dynamic one, embracing aspirations for increasing standards of living, and consistent with the definition of the Brundtland Report. He stressed that national governments must bear the weight of the search for
sustainability. CGIAR programs expend only 1.6 per cent of total resources being invested in agricultural research.

38. TAC did not envision a discrete program of sustainability research but believed that all research should be conducted with a sustainability perspective. However, TAC had identified a need for increased research on resource management to give a better balance to the portfolio of the CGIAR system. Mr. York outlined the thirteen major recommendations of the TAC paper.

39. The TAC paper and Mr. York's presentation were welcomed during an intense and generally enthusiastic but sometimes concerned discussion. Members of the Group endorsed TAC's dynamic definition of sustainability. They commended the process by which the report had been developed, as well as its content. Several speakers suggested publication of the substance of the report in a more popular form.

40. Three interrelated issues dominated the discussion from the floor:

- The need for guidance to centers on the specific implications for their programs of the principles set out in the report.
- How to ensure that research initiated by centers on the basis of those principles would be monitored and evaluated.
- The role of national systems, and the support they would need in fulfilling the responsibilities cast on them by the location-specific nature of many sustainability issues.

41. The need to be specific about the implications for center programs of the principles developed, and to outline in concrete terms the next steps to be taken, were repeatedly stressed. A Task Force was proposed to review sustainability at the centers, and the Swiss delegate offered finance for such a body. TAC members responded that it was undesirable to interfere with center managements in a decentralized system. They urged that normal processes would result in operations growing out of the guiding principles of the report. As revised programs were submitted to TAC, they would be evaluated for a sustainability orientation. The EPR and EMR reviews would be given specific terms of reference based on report guidelines on sustainability. Those monitoring and evaluation processes would include coverage of the content of training programs and methodology development for a sustainability orientation where this was a declared program objective.

42. Several speakers said that there was a need for further strategic thinking on a systemwide basis about the sustainability issue, and that financial incentives and perhaps penalties might be useful in motivating centers to move from concept to practice.

43. While acknowledging that the specific application of technology with a sustainability orientation was a role for national systems, a regional representative said that, given
their budget problems and a lack of manpower trained in this
field, considerable help would be needed from the CGIAR system.
The sustainability perspective could readily be added to the
farming system perspective and both used in on-farm research.
More financial and training support would certainly be needed,
but also political awareness would have to be stimulated on the
critical importance of the sustainability issue. Clarification
was asked on how the CG system and national systems could
interact in this area. Some speakers expressed the conviction
that increased policy research on sustainability issues was an
important part of this interaction. Others were unsure whether
the centers had a mandate for policy research in these wider
areas and some were troubled generally about how increased
attention to sustainability, particularly at the level of
technology application, could be reconciled with the strategy of
moving upstream towards more basic research.

44. TAC members in responding to questions raised in the
discussion acknowledged the need for centers to address the
implications for each of their specific programs. They
emphasized again that the normal program, budget and review
process would allow effective monitoring of the centers' actions
by TAC. An intercenter workshop to discuss the development of
techniques for sustainability assessment was proposed.

45. Reviewing some of the issues examined during dis-
cussions of the Brundtland Report and the TAC sustainabili-
ty paper, the chairman said it would be false to assume that
sustainability was a recent discovery of the CG system. The
centers' scientists were acutely aware of the ecological problems
they confront, and were deeply concerned that what they produced
should have a long-lasting effect. The centers were always
engaged in sustainability. What had happened now, Mr. Hopper
continued, was that a large number of questions which confront
the globe had coalesced. There was a recognition that sustaina-
ibility was multidimensional, but the dimensions and their impact
on each other had to be clearly defined and explored. That would
require the development of a science together with its applic-
ation. That task went beyond the CG, but it was a task to which
the system had already contributed.

46. The chairman emphasized that sustainability was not
just another program component requiring more funds, but an
orientation relevant to all research efforts. He urged, however,
that the reorientation of programs should press ahead rather than
waiting for the development of more objective assessment
techniques. Mr. Hopper said he would encourage the centers, with
non-associated centers and others, to put some of their brightest
scientists to work on how the report's guiding principles might
be applied. (See conclusions above.)

TAC Proposal on Vegetables Research - Agenda Item 7

47. Conclusions: The Group endorsed the need for a program
of research on vegetables. There was a lack of consensus,
however, on important aspects of the program proposed, including:

- the choice between a network with a strong central
  research hub, and one relying principally on
  collaborating among existing research
  institutions;
whether the network's headquarters should be in Asia or Africa.

48. A number of donors raised the question of assigning a stronger role in the proposed program to the Asian Vegetable Research and Development Center (AVRDC).

49. The chairman will set up a steering committee to attempt to resolve some of these issues, and if possible proceed with implementation of the program. He will also explore possible means of removing the political obstacles to giving the AVRDC a more central role.

50. Discussion was based on a report developed by a TAC consultant (Colin McClung), and a TAC commentary. The report proposed that a program of vegetables research should be carried out by a network structure through collaborative research groups in Africa, Asia, and Latin America. An autonomous International Service for Vegetable Research (ISVR) headquartered in Southeast Asia—with a CG-style board and competent staff—would provide coordination, leadership, and support.

51. Initially, research would be limited to tomatoes, peppers, onions, and leafy vegetables as a group.

52. Introducing the report, Mr. McCalla said that TAC envisaged a decentralized operation in which ISVR would promote the work of others, particularly that of national research institutions in developing countries. ISVR would also draw on the strengths of existing institutions, such as AVRDC. ISVR would be located in Southeast Asia, but its initial emphasis would be on Africa.

53. Mr. McCalla said that the proposal reflected the Group's interest in innovative programs. Other important factors were the need for consumers to have a varied diet, the role that vegetables could play in smallholder production, and the need to collaborate with national systems so as to improve their research capacity.

54. Explaining why only a particular set of species had been recommended for the proposed program, Mr. McClung said that he had started off with a list of some 20 species. The criteria by which species had been included in that original list were economic importance, nutritional value, the potential for research to overcome known problems, and the amount of work already in progress. That list had been reduced to the species now proposed because there was unanimity among scientists consulted in Asia, Africa, and Latin America on that particular set.

55. Mr. McClung also said that a network arrangement had several advantages over a new international center. With a network in place, many environments could be sampled and, as the program grew, a greater number of species could be researched. A network also made it easier to disseminate information about technologies.

56. Without exception, there was agreement on the need to undertake a program of vegetable research. There was acceptance,
Several questions were raised, however, both on the structure of the proposed network, and on its operations. The most widely raised questions fell into the following groups:

(I) Several speakers wanted the structure and overhead of the proposed service reduced, in one case to the extent of entrusting all of the work to existing centers with no new entity at all. Many spoke in favor of a network organization with no central research program. Several others, however, said that the new program would be ineffective without a strong central program contributing to problem-solving as international centers had done in other fields.

(II) A number of speakers questioned the location of the headquarters in Asia when the main interest was in producing results for Africa. Others pointed out that if headquarters had very few research functions, it did not much matter where it was located.

(III) Some speakers asked for greater relative attention to the leafy green vegetables, as being of greater interest for Africa than the other species suggested for research.

(iv) Several speakers said that they thought there was a substantial need for research on vegetables to meet the needs of both rural and urban poor in Asia and Latin America, and that Africa should not get exclusive attention.

(v) Some omissions in the research program were suggested, including nutritional expertise, and a focus on marketing.

(vi) A substantial number of speakers said that they thought it desirable that the AVRDC be given a more central role in the program, and expressed the hope that any political obstacles to this result could be dealt with.

57. Mr. Hopper said it was clear the Group would like to go ahead, provided the correct mechanism was found. The extent and nature of the research—the number of commodities, geographic areas of concentration, nutrition, and so on—could be worked out. He undertook to explore formally the political problems arising from AVRDC's location in Taiwan, which clouded that institution's potential involvement in a CG-sponsored program of vegetables research. In the meantime, he would examine some of the other questions raised with a steering committee, as proposed at the discussion. He hoped that the process of establishing a new venture under the CG umbrella would start soon.

Relations with non-associated centers—Agenda Item 9

58. Conclusions: The Group decided to launch an examination of the potential for expanding the system to include a number of non-associated centers. TAC would define the criteria to be used, and draw up a time table for reviewing 10 non-associated centers. The CG secretariat, in association with others, would draft an overall corporate strategy suggesting how the Group might deal with expansion. TAC and the CG secretariat would assess the practical implications for their work.
59. Opening the discussion on non-associated centers, and the CG’s relations with them, Mr. Hopper said that he hoped for a frank and productive exchange on some difficult issues. He had therefore asked all observers to leave the meeting. One such issue was finance, and Mr. Hopper said he could not commit the Bank to increase its contribution to maintain a 15 percent share of an expanded total.

60. Mr. Curtis Farrar, who introduced a paper by the CG secretariat, noted that the last discussion in the Group on the question of association with the centers not funded by the CGIAR, took place in 1977 and 1978. That discussion led to a Group decision not to include the concept of association in the CG vocabulary. So there are supported centers, and centers that are not associated. The secretariat paper described eleven of the latter. The list was not meant to be exhaustive, and the secretariat was aware that several others probably deserved to be on the list. The institutions covered varied widely in terms of maturity, spread of research programs, and other factors. Most non-associated centers experienced greater difficulty in establishing international status than CGIAR centers. He noted that two-thirds of the CGIAR donors were also donors to at least one of the non-associated centers. Most of the eleven centers were dependent for the bulk of their financing on two or three donors.

61. Mr. Farrar directed attention to the criteria (set out in the secretariat paper) which might be applied in making judgements about the CG’s future relations with these centers. The paper highlighted areas in which judgments would have to be made, the intent was not to preempt further process.

62. Mr. Edward Schuh presented a paper based on a three day seminar at the Humphrey Institute of the University of Minnesota in March 1988. The seminar brought together representatives of IBSRAM, ICIPE, ICLARM, ICRAF, IFDC, IIMI and IUFRO. The participants felt that effective collaboration among all the centers concerned with the sustainability problem in developing countries could make a real difference.

63. The development community faced three new challenges, Mr. Schuh said. The first was to safeguard and stabilize food production in line with the needs of an ever-increasing global population. This required that the current resource base be sustained and enhanced. The second challenge was to improve the productivity of cropping and resource systems in less favored environments. The third was to develop effective production technologies that raise productivity without damaging the environment. These objectives required a new research strategy which encompasses more efficient use of existing resources through better management.

64. The new research is different from that carried out for the past thirty years since the emphasis is on a whole system as against system components. It remains multi-disciplinary since the issues are both socio-economic and technical. It needs to be more adaptive and strategic and therefore must be carried out in operating systems in collaboration with those that manage the systems rather than on experiment stations. Mr. Schuh outlined several common features characterizing the programs and
activities of the institutions that had participated in the seminar. He also illustrated the important complementarities between the work of the research centers of the CGIAR and those institutions.

65. Mr. Schuh described several alternatives for ensuring that "non-CGI" institutions remained effective and in existence. The alternatives ranged from taking no specific action to adding all non-associated institutions to the CGIAR family. The system would face challenges in such an expansion, however ways could be found to meet the challenges. Another alternative would be to create a new institutional arrangement for the resource oriented centers. The results to date of the CGIAR in mobilizing significant resources for the generation of new production technologies, and to strengthen the capability of agricultural research to produce such technology, were remarkable. The nature of the basic challenge was changing, however, and the CGIAR needed to take account of this to remain a vibrant force for the future.

66. There was very broad participation in the discussion that followed, with all speakers explicitly agreeing that broadening of the CGIAR's should be undertaken, or at least fully considered. For many, the rationale of expanding capacity to deal with the issues of sustainable agriculture was the key point. For others, the CGIAR should extend its concern to the whole field of international agricultural research, and seek recommendations from the TAC about them, without presuming that the response in each case would be financial support from the Group.

67. A number of donors supported the straightforward approach of adopting a number of existing non-associated centers that met an agreed set of criteria. Others raised issues of the overall structure of the CGIAR system which they felt needed thorough reconsideration. Did the progress made by national systems in developing countries mean that the center concept was no longer valid? A number recommended that consideration should be given not to existing centers but to areas of research need, and the most effective means of meeting those needs whether this involved change in centers outside of the CGIAR, or within it. One approach would be to consider what sort of system would be created from scratch today, if the CGIAR did not exist.

68. Several were concerned about balance: among regions, for example, and the issue of whether Latin America might benefit from more active involvement there of international research activities. Balance between international centers on the one hand, and other agencies also needed attention. One had to focus on the roles of national institutions in both developed and developing countries, the private sector, and the networks and other cooperative activities linking these players with each other and with international centers.

69. Overall financial limitations concerned a number of speakers, who felt that funding for international agricultural research activities might have peaked. It would therefore be necessary before adding additional responsibilities to the CGIAR, to find areas of lower priority within existing programs that could be reduced to make room for the new ones. One could not count on non-associated centers bringing with them all of the
support they would need. Some saw a danger that support for the Group might weaken if it were perceived to be losing its sharp focus. Others thought that broadening the scope of the program would also lead to a broadened constituency for the Group and to enhanced support.

70. Many speakers referred to the problems that the TAC and the CG secretariat would have in dealing with a greatly expanded workload. These were problems that would have to be solved, if for substantive reasons it was decided to increase the coverage of the Group. Steps to ensure the maintenance of quality would be critical. To make this possible from the start, there should be clear criteria of both structure and substance that would be applied in the process of considering outside centers. Additional staff resources, and perhaps a working group of the system, might be considered to deal with the large burden of decisions that needed to be made. Several spoke of the dangers of moving too hastily.

71. Several donor representatives, favoring the adoption of outside centers, said that they found it very difficult to manage their support to such centers without the reinforcement of machinery of oversight such as the TAC and the CG secretariat. Expansion of the coverage of the CGIAR was thus operationally required by donors interested in supporting research centers not now part of the system.

72. Mr. Ross Gray, speaking on behalf of center directors general said the CG should continue to be an open and flexible system. Center directors appreciated the benefits of membership in the system, and believed the system could be enhanced by the inclusion of other compatible groups. For this, however, clearly defined procedures and criteria would have to be applied. Procedures leading to membership would include wide acceptance within the CG, and a recommendation by TAC based on an intensive review. A demonstrable research commitment, high scientific quality, and an orientation towards environmentally sound increases in food production were among the criteria that should be applied. Sound financial management, and governing boards with global representation—board members serving in their personal capacity—were also required.

73. Mr. McCalla commented that the question under discussion dealt with broad policy on the scope, magnitude and the nature of the Group. TAC therefore could accept a Group judgment requiring some modifications of its earlier priorities. The second stage in the process, determining criteria and mechanisms for evaluating possible memberships, was obviously more complex and challenging. The third stage would be evaluating one by one the centers or activities proposed for addition, a step similar to the existing EPRs and EMRs conducted by TAC. Although time consuming, this deliberative process would have to be followed to ensure TAC input into the policy question. In workload terms, it was also clear that existing review processes for external reviews and medium-term program plans would have to be modified to deal with an additional eight or ten institutions. This had fundamental implications for TAC processes which needed to be thought about more in detail. While having no problem in principle with a broadening of the system, Mr. McCalla said the TAC as well as other elements of the CG would have to rethink their mode of operation.
Concluding the discussion, Mr. Hopper said the views expressed could be categorized into several sets of concerns. One set was related to the structure of the centers and the system—a need was expressed for a long term strategy for the system, going beyond priorities. The CG secretariat in association with the centers, the TAC chairman, and others would prepare such a paper for discussion at ICW88. Another set was about the content and priority of the research programs of the non-associated centers. This was clearly something of direct concern to TAC, and the Group would look to TAC for advice. Questions of finance formed the third set of concerns. These could not be resolved at this stage and the issue would have to be reviewed against a specific proposition at the appropriate time. The fourth set of questions grouped issues of how to integrate new activities and rationalize the resulting structure. This also was a matter for TAC. The final set was about administration and operational modes. Both TAC and the CG secretariat would look at this last set in some detail over the next several months and come back to the Group at ICW88.

Mr. Hopper then requested the delegates to identify those centers out of the list of eleven included in the secretariat paper which prima facie seemed suitable for further review by TAC. Ten were put on the list without an order of priority. They were: AVRDC, IBSRAM, ICIPE, ICLARM, ICRAF, IFDC, IIMI, INIBAP, IUFRO and ITC. The CG secretariat would prepare a paper on ICIMOD and CATIE (a center suggested by one speaker) for further discussion at ICW88. During the discussion of individual centers, it was agreed that the whole of ICLARM’s program would be considered, not simply the aquaculture portion which had been considered so far by TAC. The related issues of soils, water and fertilizer should be considered in relation to each other, not merely the separate institutions in these fields. And as for IUFRO, there was agreement that the best approach would be to await the report of the Bellagio task force on forestry research needs, in which IUFRO was involved, rather than consider the institution as such. Mr. McCalla added that TAC would bring forward for discussion at ICW88 a first cut at a strategy, a preliminary look at the proposed set of criteria to be applied to outside activities and a proposed timetable. (See conclusions above.)

Organization of Future Meetings – AgendaItem 10

Conclusion: The main points on which consensus was reached were:

International Centers Week: The meeting should not be lengthened; information sessions, including center presentations, could take place among smaller groups meeting in parallel; non-associated centers should not make presentation; substantive issues requiring CGIAR decisions should be dealt with in plenary session, although experiments with working groups and ad hoc committees to prepare topics for full Group discussion should be continued; simultaneous translation should be provided for formal meetings, including concurrent sessions; and for the time being, no provision should be made for video taping.
77. Mid-Term Meetings: These should be short, small, and have an emphasis on system topics. Host country/Group interaction should be limited to one day.

78. The Group requested the chairman to make a proposal on criteria for inviting observers to CGIAR meetings for circulation and approval by the Group at ICW88.

79. Following on from discussions at both Montpellier and ICW87, the Group was asked to consider various alternatives for future meetings. A working group on future meetings, which was first constituted at ICW87, met again on May 16 and produced a paper aimed at assisting the Group in its deliberations. The conclusions of the working group were presented to the CG meeting by Mr. Farrar.

80. Speakers were generally supportive of the views of the working group and agreed with its recommendation not to address the participation of non-associated centers until the question of the Group's relations with those centers has been clarified.

81. There was considerable discussion on the location of future mid-term meetings. Some speakers suggested a fixed location for the mid-term meeting, while others pointed out that when meetings were held at different locations, each host country was provided with an opportunity to deepen its commitment to the Group. The public awareness value of holding meetings at different locations was also noted. The Group confirmed the decision to meet in Australia (1989) and in the Netherlands (1990).

Regional Representation to the CGIAR - Agenda Item 11

82. Conclusions: The Group decided that the existing system of electing regional representatives to the CG should not be changed, but that the role of developing countries within the system should be enhanced. Actions taken towards this end would be reviewed in four years. Mr. Hopper said he would seek to increase the pool of resources available to regional representatives who particularly wanted to maintain closer and continuing contact with their "constituencies," the national systems of research in their regions.

83. Mr. Farrar summarized a paper which was prepared by the secretariat at the request of a donor at Montpellier. He said there was no obvious alternative to the present system of electing countries through the meetings of the FAO regional conferences for representing developing countries in meetings of the Group.

84. Several steps were suggested to improve the present system:

- Institutionalizing the annual raising of funds for travel and other related purposes, presently $100,000 to $120,000 per year.

- Seating the representatives in alphabetical order, among other participants, instead of in a separate group,
providing additional selective travel, to TAC meetings for example.

- using occasions which brought together leaders of national agricultural research institutions in each region for interchange of information, in addition to the FAO regional conferences,

- having individual representatives focus on specific items on the CGIAR agenda rather than trying to prepare for all,

- urging the representatives to act as the conscience of the Group to ensure that there was sufficient interaction with developing country systems in all aspects of the system's business, and

- encouraging the representatives to report to their constituencies, rather than to the Group.

85. In addition, there were steps unrelated to the representatives which might strengthen the role of developing countries in Group meetings:

- greater use of developing country experts as consultants to the Group when it was wrestling with major questions,

- measures to increase the number of developing countries in the role of donor members,

- increased consultations with developing country organizations in the normal work of the Group and the centers, and

- more effective efforts to increase public awareness of the work of the CGIAR in developing countries (with the regional representatives possibly playing a role in those efforts).

86. In conclusion, the paper suggested that the existing system—which had recently been strengthened—be allowed to operate with such of the additional steps the Group might approve for as much as four years, and then evaluated to determine whether other measures were necessary.

87. Several speakers supported the proposal. Particular attention was called to the idea of seeking more developing country donors, and increasing public awareness in the developing countries. The CG secretariat was asked whether it could consult more regularly with the representatives between meetings.

88. One donor representative thought that the paper was incomplete, and had failed to consider regional organizations which might provide a source of representation for developing countries. Another supported the idea of regional research organizations entering the CGIAR in a donor capacity.

89. Mr. Mumba read a short paper (Appendix III) reflecting views on the secretariat paper of the regional representatives present at a meeting in Rome immediately before the Berlin
meeting. His main points were that there was no mechanism to permit interaction between the representatives and the national systems who were their constituents; that regional research organizations might be invited to meetings of the Group when relevant topics were being discussed; and that ways should be found to promote contact between the representatives and regional research organizations. He said that the representatives sought to do a good job, and offered thanks to the FAO for its commitment to help.

90. Mr. Moscardi reported that the board of the International Federation of Agricultural Research Systems for Development, IFARD, had gone over the document and had supported the FAO system for representation of developing countries in the CGIAR. In addition, the IFARD board supported the idea of regional research organizations becoming contributing members of the CGIAR, and accepted the idea of taking part in the meetings of the CGIAR as an observer. (See conclusions above.)

Reports on Sub-Saharan Africa - Agenda Item 12

91. Prof. Camus reported that the Task Force had launched three initiatives: three processes calling on three different mechanisms in three geographical zones of Africa. The first related to maize-based cropping systems in the mid-evaluation zones of SADCC region, or the SACCAR Initiative. The second concerned maize and cassava in some coastal countries of West Africa. The third involved technology generation in millet-based cropping systems.

92. Some concerns had been expressed by SACCAR, and measures were taken by the Center Directors General and by the Task Force that would lead to a clarification of the relationships among IARCs and between these and the national systems. The initiative in West Africa had been a success so far. Thorough preparation had taken place by way of a general consultation of the countries concerned. Needs and priorities had been formulated, and would be refined during the next months with IITA assuming responsibility for the follow-up in collaboration with France. The outcome would be presented to TAC, to the Group and to SPAAR, at ICW88. An Initiative on the Sahel zone was launched in a similar manner, with ICRISAT as an executing agency and the support of France.

93. Mr. Stifel, chairman of the standing committee of center directors on Sub-Saharan Africa, said that the committee was conducting a number of activities in the region, some in collaboration with the Task Force, others independent of it. Examples of the latter were ISNAR's preparation of an inventory of agricultural research activities in Africa, and a paper on agricultural research needs in Africa being prepared by IFPRI. Describing some of these activities in detail, Mr. Stifel said he expected to report more fully at ICW88.

94. Mr. Hopper said that the initiatives described were breaking new ground and centers directors were acting in a statesmanlike manner to make this possible.
95. **Conclusion:** CIP's medium term program for 1989-92 was approved as presented.

96. Introducing the medium-term program, Mr. Sawyer, director-general said that the medium term program covering the four years 1989-92 represented a slice of CIP's long term plan and strategy, developed in its first long-term strategic planning publication, the Profile which runs to 2010. CIP considered the Profile a critical document which placed activities within time frames, showed specific progress to be made and provided for some older activities to be phased down, and new programs initiated. Developing country scientists were involved in all aspects of the priority setting process. CIP had a very wide program whose operations grew outwards from its headquarters in Peru.

97. Until recently, CIP was a single commodity center, dealing only with potatoes. At ICGW7 the Group added sweet potato to CIP's mandate. CIP was proud to have the privilege of conducting research, transfer of technology, and training activities, on the fourth and fifth most important food commodities to the developing world after rice, wheat and maize. CIP's five year budget did not project any growth beyond that already provided in 1988 for starting work on sweet potato. This did not mean that the program would remain static as new or additional priorities were addressed and older priority research was completed or transferred.

98. Mr. Sawyer then further outlined the contents of the medium term program document which described CIP's departmental approach to organization and its eight regional programs serving as the focal points for technology transfer. Other aspects mentioned were CIP's use of research contracts--fifty were operational at present--and five major collaborative research networks. The eight regional programs were dynamic as demonstrated by changes in two locations in the past two years responding to client needs. CIP was proud that its networks were research networks involving joint research planning and individual countries taking responsibility for elements of research on behalf of the network.

99. Mr. Sawyer reminded the Group that within a few months the entire world potato collection, cleaned for viruses and in test tubes, would be available at CIP and at another location. CIP was already working on the same process with sweet potatoes. Major progress had been made in incorporating resistance to the three most critical viruses affecting seed production in tropical climates. Meanwhile, the movement of true seed from the experiment station to growers' fields was truly impressive. CIP had encouraged commercial production of true potato seed, and a new venture is underway in Chile by two major companies.

100. Mr. Sawyer also described CIP's role in the area of training. CIP was associated with over 5,500 developing country researchers, extensionists, and educators from over 80 developing countries in various forms of training.

101. Many speakers expressed their satisfaction with and appreciation of CIP's work and its medium term program. CIP's
collaboration with IITA and AVRDC concerning the conduct of research on sweet potato was commended. The smooth reorganization of CIP's research programs to add sweet potato to its work was considered remarkable. Many developing countries were now particularly concerned with agriculture and income prospects from marginal lands, and in this respect sweet potato was of great interest. On CIP's relationship with national programs, the possibility of accelerating the progress made by CIP was raised. CIP's co-operation with the private sector was seen as an important new dimension of CGIAR's work. In this light, the question of how patents would be handled, and the prospects of raising finance from the private sector were also discussed.

102. The balance between resources for CGIAR centers and national programs, and the possibility that CIP's regional programs might require regional representatives from CIP were among other points made.

103. In his response, Mr. Sawyer agreed that the question of balanced growth as well as devolution to national programs was important. CIP was making every effort to keep this in mind and had a no growth in senior staff policy on the books for quite some time. CIP believed in redeployment to the extent practical. Relationships with the private sector were emerging rapidly. However, in the near term the value added would be in terms of research collaboration, rather than in finance. The handling of patents would be an important dimension of this relationship. CIP held one in the area of biological control. Mr. Sawyer pointed out that the high cost per senior scientist did not mean higher salaries but each scientist acting as a research manager of a large program. He referred to the secretariat commentary on this topic.

104. In closing the discussion, Mr. Hopper expressed his own appreciation of the CIP program and its director general dating back to his involvement in TAC in the mid-seventies. He described CIP's program as truly remarkable. Based on the discussion, he added, it was clear that CIP's medium term program was approved by the Group in its entirety.

Report of the CGIAR Committee on IBPGR - Agenda Item 14

105. A report from the CGIAR Committee on the IBPGR was distributed. The report said that the FAO had not been willing to extend its agreement with the IBPGR indefinitely beyond its expiry date of December 31, 1988. Instead a two-year extension was proposed. No further office space would be allocated to IBPGR by FAO during that period. From the start of 1989, the FAO would charge rent and services to the IBPGR trustfund, previously provided by FAO. According to the management of the IBPGR, the approximate costs in 1989 for these items, plus rental of additional needed premises and the salaries for support staff charged to the IBPGR from 1988 but not in the budget, would be about $700,000 for the full year. The chairman said that these costs would be included and considered when the IBPGR estimates for 1989 are presented in the annual fund request at ICW88.

106. Mr. Peacock, the chair of IBPGR, said that the recommendations of the subcommittee, requesting the board to study the situation and propose appropriate actions, were
welcome. The board was confident of the program, and felt that the long period of uncertainty must be brought to an end. They would study long term options and have a recommendation to make to the Group at centers week in October 1989.

Presentation and Approval of Medium-Term Program for IBPGR -
Agenda Item 13

107. Conclusions: IBPGR's medium term program for 1989-93 was approved as presented. Funding requirements for 1989 will be reconsidered at ICW88 in the light of further analysis of the implications of changes in the FAO relationships.

108. Introducing the medium-term program, Mr. Peacock, chair of IBPGR's board of trustees, said that IBPGR deals with one of the principal resources for agriculture in all countries of the world: genetic variation. A genetic solution to an agronomic or to an environmental problem is likely to provide a precise, sensitive, long-serving contribution to the stability of the production system and to be minimally damaging to the environment. IBPGR was proud of its achievements in the first decade of its existence when it focussed on the quantity of genetic resources, the number of accessions to be collected and stored. It gave clear priorities to crops and regions for collecting, and stimulated many national programs. In its second decade the emphasis is on quality and conservation of genetic resources. IBPGR was poised to make significant new contributions to a number of areas of genetic resource work.

109. Mr. Williams, director of the IBPGR, opened his presentation by noting that the new direction of the IBPGR set over the past several years evolved out of the external reviews and the several strategy papers prepared by IBPGR since 1978. The most current version was available in draft form at this meeting and the printed copy would soon follow. IBPGR's medium term plans were based on several tenets. Not all eight scientific activities could proceed at the same speed. A balance was maintained between IBPGR's role in stimulating strategic research and its essential role in the global system of genetic resource activities. The five year plans were based on a minimal growth concept, because IBPGR's strategy is to remain a sharply focussed scientific center which plays a catalytic role. To keep abreast of a multitude of partners, IBPGR had built up staff expertise enabling the center to do in-house much of the work done through committees and working groups in the past.

110. IBPGR's program in the medium term was divided into three sections, providing for clearly defined field research and administration program elements. IBPGR was concerned with ensuring that the vital follow-up to its earlier work in collection, namely documentation and characterization, was undertaken despite the constraints on the capacity of national programs. A recent review indicated that most of the material, including some wild races, collected earlier was in fact in breeding programs. IBPGR's guiding principles required that there be a wide spectrum of gene pool diversity, that the materials must be available to those that can use them, that the materials be secure--and used.

111. Mr. Williams further outlined IBPGR's work in this area with several illustrations and examples. As regards strategic research, IBPGR was aware of TAC priorities in moving to upstream
research. However, as it was well recognized, fundamental advances in knowledge were essential in some areas of IBPGR's work. This led to IBPGR's focus on strategic research in the medium term before the move to upstream. An example was genetic diversity where newer biochemical and molecular techniques were widely applicable. However, very little funding was currently channeled to research on crop gene pools. IBPGR therefore took the initiative.

112. In opening the discussion, Mr. Hopper reminded the Group of the statement from the IBPGR working group. The question of additional financing emerging from that report, about $0.7 million, would need to be reviewed further and would be included in the annual funds request for IBPGR later in the year. Several speakers hoped that there would be no additional difficulties in working out the arrangements and congratulated the parties concerned for arriving at the suggested solution. Some speakers noted the transition in IBPGR's staff mix towards a larger reliance on in-house staff and asked for further clarification. Several speakers suggested that IBPGR work should play a more central role in the system and perhaps IBPGR should have a larger role in preserving IBPGR funded collections. Speakers also noted the important link between genetic diversity and environmental concerns and strongly endorsed IBPGR's continuing role in research on diversity. The idea of a systemwide "stripe" review of genetic resource activities was mentioned and supported. A speaker specially supported IBPGR's role in relevant aspects of plant quarantine. The chairman asked for more information on IBPGR's thoughts on germplasm security beyond the storage, as mentioned by Mr. Williams, in perma-frost.

113. In response, Mr. Williams said that the current solution of backup storage in Norwegian perma-frost appeared to the best under a disaster scenario for now. Operationally, IBPGR was also concerned about safety in normal times. IBPGR had a program of visits to the important collections and it continued to work on more cost-effective storage, particularly for the poor countries. He was hopeful that more donor support would be available to improve the storage. In any event, IBPGR was very interested in ensuring the viability of the collections and would remain so. The need for genetic diversity research was critical and since funding, other than by IBPGR, for this activity was minimal, IBPGR continued to discuss this question extensively with many agencies and organizations, to promote it. Inter-center co-operation within the CGIAR on genetic resources was a continuing topic of discussion among the center directors. IBPGR would be strongly supportive of efforts to conduct a "stripe" review within the system. Mr. Peacock responded to the question about in-house staff by reaffirming that this was not a radical shift. The staff would play the role of research decision makers and co-ordinators and continue to draw on many others who are involved in specific research areas. Mr. Hopper concluded the discussion by noting that the Group approved the five year plan with a proviso to review at ICW88 the funding requirements resulting from the IBPGR committee report.

Biotechnology and the CGIAR - Agenda Item 15

114. Mr. Peter Day of Rutgers University in New Jersey, USA, gave an introductory talk on biotechnology to the Group. Mr. Day pointed out several of the many applications of biotechnology
that could be used to help improve agricultural research. Among these examples were some showing how analysis at the molecular level could identify wild relatives of wheat with characteristics likely to be beneficial in cultivated wheat, and then to identify which crosses contain the potentially useful genetic material. A further example involved introducing genetic material which enabled the plant to produce chemicals toxic to difficult pests or antibiotics effective against diseases. He said that biotechnology provided new tools to plant breeders and could help to make the research process more efficient in some cases. He warned, however, that biotechnology might not in fact speed up the breeding process. One clear benefit was that it brought some new support to research.

115. Mr. McCalla pointed out that TAC had discussed biotechnology briefly at times over the past several years. Now TAC had begun to integrate from past commentaries what the proposed view on biotechnology for the CGIAR might be. That paper would be completed in June.

116. Mr. Michael Arnold said that TAC had not used the word biotechnology much in its written materials, but had it in mind when it recommended that centers move upstream in the research process. Now all centers to which biotechnology is relevant have established some capacity in these lines of research. Training in biotechnology was seen as one clear responsibility of the centers.

117. Had the centers responded responsibly to the new opportunities? TAC felt that the centers should become involved more in problem solving than just in acquiring new techniques. A special fund for biotechnology should not be established, because that approach would tend to emphasize techniques rather than problems and their resolution. TAC considered it important for the centers to evaluate new opportunities in biological science for their use in solving problems. TAC did not favor a special CGIAR biotechnology laboratory. Biotechnology lends itself very well to collaborative research with advanced laboratories.

118. The centers should be a bridge to biotechnology for developing countries. The centers could also collaborate effectively with the private sector where so much biotechnology research was being carried on. Private firms could complement the work of the centers. A TAC subcommittee on relations between the centers and the private sector would include this as part of their work. Patenting and other intellectual property questions could come into play here, and the matter of patenting and plant breeders' rights would be examined by an ad hoc TAC/directors general committee. A 1982 TAC Statement on plant breeders' rights would be examined again to see if it needed updating in the light of recent developments.

119. Mr. Arnold pointed out there were opportunity costs of biotechnology and that CGIAR resources devoted to this work would in all likelihood take funds away from other activities. He emphasized that it was very difficult to measure the relative costs and benefits of new techniques.

120. The relationship between biotechnology and science management was raised in the ensuing discussion. There had been a tremendously rapid rate of change in the field, so that both
gene addition and gene diagnosis were going to be more and more important. A key question was, how can scientists at the centers keep up with modern science, especially the new biology? The main concern must be to answer the questions, what were the main problems to be solved, and then, what were the most modern ways to tackle such problems? Genetic engineering extended the work that could be done, problems that previously had been seen to be unsolvable could now be faced. Biotechnologists and agricultural scientists needed to find ways to communicate and work together. The main concern for the CGIAR must be to keep the centers dynamic and up to date, and to let biotechnology be problem-driven in the centers.

121. Other themes examined were safety matters, legal questions, relations with the private sector, relevance to developing countries, the pros and cons of being involved in biotechnology research, and related training. There was satisfaction within the Group that the centers were becoming more involved in biotechnology, and that the developments so far seemed to be phased and incremental. Some concern was expressed, however, that biotechnology might widen the gap between research and the farmers, and that materials developed through biotechnology might not meet the needs of farmers. Thanks were expressed to TAC for keeping the Group informed about the progress of biotechnology in the system. It was recognized that ILRAD had long been on the leading edge of biotechnology in its work and that was considered appropriate.

122. The Chairman said there was a great deal of unanimity around the table on how biotechnology should be approached and used; the control mechanisms, the cautions, and so on. Biotechnology now had received enough separate attention from the Group and was not likely to be a separate item for discussion in the near future, aside from the proposals TAC and the centers might wish to make.

Chairman's Closing Remarks - Agenda Item 17

123. Bringing the business sessions to a close, Mr. Hopper said the Berlin meeting had been exciting. He reviewed the main themes discussed, and drew attention to some of the next steps that had to be taken by the Group.

124. Mr. Hopper pointed out that renewed priority was given to sustainability, thus reinforcing the CG's fundamental concern with ecology as mentioned in its basic documents. This background of interest should be kept in mind, as the various dimensions of sustainability are explored in the future.

125. The CG's examination of biotechnology had moved to the point where both the potential and the pitfalls were recognized. The centers were to move ahead, using modern methods of biological investigation, as these were required and as they seemed to hold promise for answering problems.

126. An examination of the expansion or potential for expansion of the CGIAR had been launched. No decisions were made, other than the decision to launch an examination, but that in itself would make the Berlin meeting a turning point, or a change of direction point, for the system. TAC would initiate some reviews of non-associated centers, and the CG secretariat
would prepare a paper on some long-term strategy suggestions. The administrative implications of an expansion of the Group could be looked at when the examination process launched at Berlin was complete.

127. There was wide acceptance that the CG needed to proceed with a program of vegetables research as soon as a fully feasible system could be developed. A steering group would be established to follow up on the discussions at Berlin. Mr. Hoestmark was suggested as chairman. Several groups--delegations, countries, donors--would like to be associated with this activity. Mr. Hopper would undertake a discussion with the appropriate authorities to ease the present restrictions at AVRDC, and give it a much more central role in working with the vegetable network.

128. On the search for a new Executive Secretary, a nominating committee would be set up with Mr. Schurig as chair. Co-sponsors and a few others, including the chairman, would form a search committee led by an independent person.

129. Mr. Hopper concluded by thanking all those responsible for the conduct of the meeting: the German hosts for an excellent program, and for really remarkable assistance by a very high quality and very pleasant and hard-working staff; the staff of the Reichstag whose collaboration made for a smooth and well run meeting; the centers, their directors general and their chairmen, for their participation and their guidance on many matters around the table and during corridor discussions; the chairman and secretariat of TAC, and TAC members, to whom a continued debt of gratitude is owed; the CG secretariat--an extraordinary group to work with, sensitive, concerned and dedicated to the affairs of the system; and the interpreters who have worked so hard in dealing with what must be an incredible array of jargon. Last, but not least, Mr. Hopper thanked members of the Group who had helped him immensely. Their patience and assistance really made the chairman's life very easy.
Consultative Group on International Agricultural Research

Consultative Group Meeting

Berlin, Federal Republic of Germany

May 16-20, 1988

Address by the Federal Minister for Economic Cooperation,
Hans Klein, MdB

Humanity is currently witnessing a historical race. Over the past 30 years hunger, environmental destruction and population growth have repeatedly outpaced the process of development in many countries of Asia, Africa and Latin America. Development will win this race if these three indissolubly interlinked problems can be solved.

Developing rural areas in order to safeguard food supplies, preserve or restore the environment and prevent rural populations from fleeing into the misery of urban anonymity calls for a joint effort on the part of both industrial countries and developing countries which extends beyond the conventional donor-recipient patterns.

This implies far-reaching changes in the industrial countries' stance as producers and agents on the marketplace. It implies structural adjustments and the generation of purchasing power in the developing countries, but it implies first and foremost--irrespective of the need for appropriate technologies which take due account of established structures and methods--scientific research and consistency in applying its findings.

Accordingly, it is not only an honor for me to address the Consultative Group on International Agricultural Research and thereby also renew contacts with its chairman, Dr. David Hopper, Vice-President of the World Bank. It is also a welcome opportunity to present the views of the German Federal Government on the hardships and needs of the Third World.

International experts estimate that between 600 and 800 million people are living below the poverty line. FAO anticipates that 590 million people will be suffering from undernourishment by the year 2000. Both figures include an unknown number of victims of starvation.

Hitherto only moderately restrained by political counter-measures, the affluent industrial states are producing food surpluses which each year attain previously unprecedented dimensions. Although part of these surpluses are stored over years at vast expense only to be disposed of at dumping prices or even simply destroyed, surplus production is being subsidized in the USA, Canada and, remarkably, also in Japan with taxpayers' money to the tune of some 100 to 120 billion US dollars. In the Federal Republic of Germany, government grants and allowances to agriculture amounted to approximately 23 billion DM in 1987.

The industrial countries allocate only a fraction of this figure to development cooperation with the Third World. In
the case of the Federal Republic of Germany, the 23 billion DM spent on subsidizing agriculture contrast with a figure of some eight billion DM for official development aid. Moreover, more than half of this ODA figure is made up of repayable loans which attract interest—albeit on concessionary terms. This money is inevitably used by the developing countries to purchase goods and services in the industrial countries.

The support conceded to agriculture in the highly developed industrial countries is based, today as in the past, on sound reasoning. The role of agriculture in preserving the landscape—an environmental necessity which can thus be relatively cheaply handled—is one of the most recent of such arguments. However, there can today be no denying that associating income growth with increasing production—a concept dating back to the days of war-induced food shortages and the post-war period of hunger in Europe—has meanwhile resulted in absurd situations. But because German farmers, like farmers across the globe, have a right to a secure future, there is a need to find and apply more intelligent solutions which take due account of the advances made both here and in the Third World. A growing number of those directly affected are beginning to realize that their long-term interests are not reconcilable with the often short-sighted demands voiced by some of their spokespersons.

The answer, therefore, lies in overcoming the apparent antinomy which derives from speculating on one's own advantage on the basis of an outdated, mercantilist philosophy by also taking account of the disadvantage thereby implied for others in this area of North-South relations. This process must commence with sound and sober reflection, a stocktaking of historical and contemporary considerations, and unerring extrapolation of all economic geographical and ethno-psychological factors—including research into areas which are not confined to the technical aspects of agriculture.

Even today's level of awareness, the information available even to the layman on the prospects and problems of international agricultural development, suggest that all that is now required is the corresponding scientific backing and orientation for arriving at the conclusion that the industrial countries will only be able to maintain their high production levels and social standards if the developing countries reach a similarly high standard. The industrial countries can be largely instrumental in bringing about this rapprochement—by restructuring their agricultural markets, by considerably increasing their transfers of material and technological resources, and by returning to the same principles of a social market economy that they, at every available opportunity, call upon the developing countries to espouse.

Nevertheless—and incidentally as has always been the case—the major part of the effort required must be forthcoming from the developing countries themselves. The green revolution, made possible by the high-yield crop varieties bred at scientific institutes, by regular irrigation and by more intensive use of commercial fertilizers, has resulted in a situation in which agricultural production has increased perceptibly faster in the developing countries than in the market-economy-based industrial countries: at a rate of three percent there as opposed to two
percent here. The lowest rate of increase is to be found in Africa. Its average growth rate of 1.2 percent between the early 1970s and the mid-1980s is only surpassed in modesty by the 0.7 percent achieved by the state-trading countries of eastern Europe.

The People's Republic of China, with a population exceeding one billion, has been able to feed that population since 1979—when it relativized and even jettisoned some of the Marxist aspects of its economic doctrine. India, a country with a population of 800 million, has become a net exporter of cereals in recent years—irrespective of the fact that at least 350 million Indians, a population mass almost equal to the total population of Africa, are still living below the poverty line. Most of the countries of Asia, the overwhelming majority of Latin American states and even a considerable fraction of African states are producing at least as much food as is required for feeding their own populations. The hunger problem in these countries is a problem of poverty, i.e. a lack of purchasing power in broad sections of the populations, difficulties of distribution and in many cases immutable social structures. This rough analytical overview suffices to show that no formula can claims universal relevance in the worldwide struggle against hunger. The methods applied must be tailored to suit the specific circumstances of each case.

Since, however, in the development cooperation effort descriptions of particularly tragic personal fates are often amenable to awakening public sympathies which in turn pressurize policy-makers into responding with generalized reactions, it seems important to me in this connection to make the following point clear: the issue at stake today is not primarily one of raising agricultural production in the Third World to a level which would notably exceed that required for safeguarding food supplies. This would awaken hopes of export prospects which in many cases would prove to be false. But to remain within the realms of realism I must point out that we will have to contribute our utmost if we are finally to put a stop to the exporting of subsidized agricultural produce from the industrialized countries to the Third World—with all its destructive effects on the agricultural sector there. There are no prospects of increasing the absorption capacity of the North American, European and Japanese markets for traditional agricultural produce, and the point of exhaustion has almost been reached as far as the tropical agricultural products which are hardly affected by protective tariffs are concerned.

In my view, therefore, developing agriculture in the Third World must always be synonymous with rural development. Land reform, the reform of agricultural structures, irrigation, the opening up of transportation routes, modern infrastructure facilities and the establishment of a small and medium industrial sector are all factors which must contribute towards persuading people to remain in their home areas and thereby spare them from the fate suffered by the slum-dwellers in the metropolitan areas. This is not only the safest method of combatting poverty and ensuring a soundly based, bottom-to-top type of development process, it is also a means of preserving and restoring the environment in a systematic manner. It is also the only effective means of controlling the unduly high population growth
in the medium term insofar as experience has shown that the birth rate is incontestably linked with the standard of living.

Agricultural research in the broadest sense of the term thus finds itself facing enormous challenges. This is especially true because much of what was correct and useful yesterday may prove to be erroneous and harmful today. Permit me to mention the example of the much more intensive use of artificial fertilizers. Permit me to recall that agricultural research would be pointless for many countries of the Third World if, in the light of the shrinking area accounted for by rain forests and the progress being made by tundra formation and decertification processes, it were to fail to also cover forestry research.

An important aspect in this connection is the issue of the worldwide losses incurred by pests and diseases; these are calculated at some 20 or 30 percent of total production. In addition there are the post-harvest losses, for which a figure of 10 to 20 percent has been quoted. Reducing these losses by half could make a major contribution towards safeguarding food supplies.

Locusts have recently again caused enormous production shortfalls. These insects, mankind's worst rival for food, have been spreading terror since biblical times; they visited the Egyptians as the "eighth plague" and are referred to by Arabs as "the scourge of Allah." Putting an end to this plague would be a great area of work for research.

The field of biotechnology is opening up new perspectives for improving food crops in the following respects:
- ensuring high, stable yields,
- reducing the water requirements,
- reducing the requirements for fertilizers and plant protection substances.

Safeguarding food crop production in the longer term—with a low level of ecological and economic risk and comparatively scant investment—is particularly important for Africa with its ecologically extremely fragile soils.

But the advice of scientists is also required in the matter of marketing—not only in producing—agricultural produce. A country's marketing and price policy can make a substantial contribution towards food security and development, but it can also do precisely the opposite.

When applying research findings to real-life situations, close cooperation with associated fields of research seems to me to be indispensable. Accordingly, I particularly welcome the Special Program on African Agricultural Research (SPAAR) which, set up at the Initiative of the World Bank, has the specific purpose of establishing and strengthening national research facilities, particularly in Africa.

Scientific research to provide an objective basis for orienting political and economic decision-making is also important in correcting polemically distorted views—which although often morally motivated are based on incomplete or erroneous information.
Permit me to furnish two examples. Firstly: the claim that because of their luxury-eating habits the industrial countries force the developing countries to produce feed crops for fattening livestock in the northern hemisphere instead of food crops for feeding their own populations. What is the truth in this? Over the past few years the European Community has imported protein and starch-bearing feedstuffs to a value of some 23 billion DM annually: half of these imports came from other industrial countries, mainly in the USA. Notable amounts of feedstuffs imported from Third World concern only a small number of countries, mainly Brazil, Argentina, Thailand, Indonesia, Malaysia and the Philippines. Imports from Africa are virtually insignificant. According to reliable sources, approximately five percent of the total area of 708 billion hectares of agricultural land in the developing countries is used for growing such fodder crops. The agricultural land in the Third World which is under cultivation to produce feedstuffs for export to the EC amounts to only 0.3 percent of that total.

Moreover, my colleague Reinhold Booklet, Member of the European parliament, presents the following case in his remarkable work on European agricultural policy and the Third World. I quote: "In a number of developing countries the production of export crops is necessary for safeguarding food supplies for these countries' populations. In Morocco, for example, the foreign exchange earned from exporting the tomato crop from one hectare of land suffices to purchase an amount of wheat which would claim 20 hectares if grown in that country. And in Brazil the value of soya production per hectare is over three times that of wheat."

Example two: Time and again one hears calls for a ban or boycott on imports of tropical timber with a view to counteracting the destruction of tropical rain forests. At the last meeting of the World Bank and the Asian Development Bank I spoke out very clearly in favor of effective countermeasures to prevent the annual loss of an estimated 11 million hectares of tropical rain forest. Both the multinational financing institutions and also many industrial and developing countries are displaying an increasing readiness to support large-scale, coordinated measures to counteract the destruction of the environment in the Third World which is threatening mankind's existential basis. But here again there is a need for objective and properly compiled data. Nor more than five percent of all timber felled in the Third World is destined for export. These exports generate desperately needed foreign exchange. Ten percent is used in the country of origin. The remainder is the victim of slash-and-burn operations, measures to create living space for a growing population, or is simply used to cover energy requirements. The formula, therefore, should not be a boycott; what is required is a diversified package of aid measures to accelerate a type of development which preserves the natural environment.

As far as agriculture in the Third World is concerned—and mine is not the optimism borne of vested interests—the general trend is rather encouraging. It is moving in the direction which the course of progress took in the industrial countries. Over the past 20 years the fraction of the gross domestic product accounted for by agriculture in the Third World—
In ad valorem terms—has declined from 30 to 20 percent; agriculture’s share in the developing countries’ total exports has declined from over 50 percent to ca. 20 percent. For purposes of comparison, the corresponding figures for the industrial countries are a decline from ca. 5 percent to ca. 3 percent of the gross domestic product and from 21 percent to 14 percent of total exports.

Scientific research can help the Third World to avoid the mistakes which have been made over the past 150 years in the northern hemisphere and which in many cases have served as the deep-seated motivations for atrocious wars—I am referring in particular to the social upheavals which took place in connection with the industrialization process and the unscrupulous and predatory exploitation of the environment.

All of you, by virtue of your research activities, have helped the Third World to manage its agricultural production so well over the past decades that in global terms the Third World is now in a position to feed its own population—a population which has increased by approximately one billion over the same period. Nevertheless, despite increases in food production in the second half of the 1980s, a still small but increasing number of developing countries, mainly in Africa, today have a lower level of food self-sufficiency than in the mid-1960s.

I wish you every success in your Mid-Term Meeting in Berlin and also in your work in your respective institutions. You are forging—I trust that you will see this image as being unduly laden with pathos—the intellectual weapons which are called upon to sever the Gordian knot of hunger, environmental destruction and population growth. Let progress in development continue to win the race.
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Mid-year Meeting May 1988 - Berlin

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Thank you for giving me the floor in order that I may say something on Agenda Item No. 11, Regional Representation to the CGIAR.

The fact that this item is on the agenda is an indication of the importance the CG attaches to the representation of developing countries in the work of the CG. By the same implication, it is reasonable to assume that all is not well with this representation.

Regional Representatives meeting in Rome discussed the Secretariat's paper on regional representation, and asked me to report on all those points upon which general agreement was reached.

Before I go to the paper, let me make a personal comment:

I feel that as a representative you would like me to bring to you what the people I represent want to tell you. By the same token, the people I represent would like me to bring to them not only what the CG system has done for them but also what the CG intends to do about their situation.

This means, therefore, that I, as a representative must have dialogue not only with you but also with my clients. For me those clients are in Africa; for the other regional representatives the clients are in Latin America, Asia, Near East and to a lesser extent some parts of Europe.

So far, dialogue with the CG has been good and this has been fully funded in accordance with the recommendations of the second CG Review. But interaction with those we are expected to represent has not been so good. This is mainly because no financial provision has been made for it, and also because no mechanism has been devised for meaningful interaction.

As a group, all of us would like to take this job of representing the regions seriously. We therefore wish to make suggestions as to how this representation may be improved.

We have looked at the paper before us and have concluded that: the present system of electing regional representatives should be continued. It is not the system of election that limits fuller and two way interaction.
The limiting factor is the lack of a definite mechanism for contacting concerned national agricultural research systems about the work of the CGIAR.

We now know that there is a fund that pays for the travel of regional representatives to CG meetings, to IARCs, and meets hotel bills in connection with such meeting. We feel that if the funding were extended to cater for correspondence with national systems, data collection and where the need arises, attendance at some meetings where many national institutions are gathered, more exchange of ideas would take place, and the CG would be in a better position to receive up to date and topical needs from developing countries.

Another way of effecting the dialogue is to invite observers from the research organizations of developing countries, when the nature of the topics is appropriate.

We also felt that the FAO regional representative in consultation with IFARD should brief the authorities of the elected countries about the activities of the CGIAR. This will enable the authorities to be aware of the need to interact with other countries on CGIAR matters. Further, it is recommended that FAO regional representative should brief member nations who are aspiring to field candidates for regional representation.

Once elected regional representatives should be enabled to contact existing regional research organizations such as the Association of Agricultural Research in the Near East and North Africa, the Southern Africa Coordinating Conference on Agricultural Research (SACCAR) etc. that deal with agricultural research in order to obtain assistance for analysis and proposals related to CG matters.

Regional Representatives should be granted the necessary assistance to meet with the members of national systems, in those regions that do not have regional agricultural research organizations.

The points mentioned above would simply put into effect the recommendations of the second CG Review.

With regard to the role of regional research organizations in bringing to the CGIAR the views of recipient countries and in supporting and interacting with regional representatives, the following steps are recommended:

* Regional research organizations could be invited as observers to some meetings of the CG when some related matters are on the agenda. I am informed that as at present IICA is being invited.
Ways to facilitate formal contacts in their respective regions between the regional representative and existing regional organizations should be found.

As a way of having a better perspective of the views of recipients, as well as supporting the work of the regional representative always within the basic philosophy of the CG which is, "Mutual Influence and No Control," serious consideration should be given to encouraging regional organizations to become members of the CGIAR.

Lastly, Mr. Chairman, the regional representatives endorse the secretariat paper's conclusions as modified by the recommendations I have already outlined.

We think the meetings of the regional representatives are a good thing and should be continued. We welcome the inclusion of fixed term representatives in the work of CGIAR working committees.

Finally, I wish to thank FAO for their commitment to the work of the regional representatives. It is hoped that this commitment will continue.
Consultative Group on International Agricultural Research

Consultative Group Meeting

Berlin, Federal Republic of Germany

May 16-20, 1988

Summary Conclusions

Sustainable Agricultural Production: implications for international agricultural research - Agenda item 6

Sustainability was re-emphasized as part of the CG system's mission and the broad sweep of the TAC paper approved. Responding to suggestions from several donors, the CG chairman said he would set up a small group headed by Mr. Swindale to examine research priorities and specific actions in future programs, from a sustainability perspective. A group from outside the system would be asked to collate the known work on sustainability as it applied to agriculture. TAC would keep in touch with these activities. Mr. Hopper would make a progress report at ICW88. Meanwhile, a popular version of TAC's paper on sustainability would be published.

TAC Proposal on Vegetables Research - Agenda item 7

The Group endorsed the need for a program of research on vegetables. There was a lack of consensus, however, on important aspects of the program proposed, including:

- the choice between a network with a strong central research hub, and one relying principally on collaborating among existing research institutions;
- whether the network's headquarters should be in Asia or Africa.

A number of donors raised the question of assigning a stronger role in the proposed program to the Asian Vegetable Research and Development Center (AVRDC).

The chairman will set up a steering committee to attempt to resolve some of these issues, and if possible proceed with implementation of the program. He will also explore possible means of removing the political obstacles to giving the AVRDC a more central role.

Relations with non-associated centers - Agenda item 9

The Group decided to launch an examination of the potential for expanding the system to include a number of non-associated centers. TAC would define the criteria to be used, and draw up a time table for reviewing 10 non-associated centers.
The CG secretariat, in association with others, would draft an overall corporate strategy suggesting how the Group might deal with expansion. TAC and the CG secretariat would assess the practical implications for their work.

Organization of Future Meetings - Agenda Item 10

The main points on which consensus was reached were:

International Centers Week: The meeting should not be lengthened; information sessions, including center presentations, could take place among smaller groups meeting in parallel; non-associated centers should not make presentation; substantive issues requiring CGIAR decisions should be dealt with in plenary session, although experiments with working groups and ad hoc committees to prepare topics for full Group discussion should be continued; simultaneous translation should be provided for formal meetings, including concurrent sessions; and for the time being, no provision should be made for video taping.

Mid-Term Meetings: These should be short, small, and have an emphasis on system topics. Host country/Group interaction should be limited to one day.

The Group requested the chairman to make a proposal on criteria for inviting observers to CGIAR meetings for circulation and approval by the Group at ICW88.

Regional Representation to the CGIAR - Agenda Item 11

The Group decided that the existing system of electing regional representatives to the CG should not be changed, but that the role of developing countries within the system should be enhanced. Actions taken towards this end would be reviewed in four years. Mr. Hopper said he would seek to increase the pool of resources available to regional representatives who particularly wanted to maintain closer and continuing contact with their "constituencies," the national systems of research in their regions.

Medium-Term Program for CIP and IBPGR - Agenda Item 13

CIP's medium term program for 1989-92 was approved as presented.

IBPGR's medium term program for 1989-93 was approved as presented. Funding requirements for 1989 will be reconsidered at ICW88 in the light of further analysis of the implications of changes in the FAO relationships.