From: The Secretariat

Consultative Group Meeting
May 19-23, 1986
Ottawa, Canada

MAIN CONCLUSIONS REACHED AND DECISIONS TAKEN
(REVISED)

The paper dated August 20 contained several typographical errors. Please discard it and replace it with the attached version.

For reasons of economy, annexes have not been reprinted. Please retain those from the earlier version.

The secretariat regrets the inconvenience.

Attachment

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

Consultative Group Meeting

May 19-23, 1986
Ottawa, Canada

1. A mid-term meeting of the Consultative Group was held at the invitation of the Canadian Government in Ottawa from May 19 to 23, 1986. On May 19 the Government of Canada made a presentation to the Group at Agriculture Canada. On May 20 the Group was given a tour of the central experimental farm at Agriculture Canada. The business meeting of the Group was held at the Government Conference Centre in Ottawa and was opened by Madame Monique Vezina, minister for external relations, on May 20 at mid-morning. Madame Vezina's address to the Group is attached as Appendix 1. The Chairman of the Group, Mr. S. Shahid Husain, presided over the meetings, and a copy of his opening address to the Group is attached as Appendix II. A list of participants is included as Appendix III.

Report by TAC Chairman on 39th Meeting - Agenda Item 4

2. Professor Guy Camus, TAC chairman, reported briefly on the work of TAC since ICW 85. Because several of the items of importance (e.g., ILRAD EPR, WARDA Mid-term Review, Strategic Issues) were to be discussed during the mid-term meeting, Dr. Camus withheld specific comment in his report. He did, however, briefly discuss three ongoing concerns:

(i) The program and budget review continues to be a time-consuming process, and it results in marginal adjustments to center budgets. Therefore, the program and budget study conducted by the CGIAR secretariat is of special importance as a starting point for the development of a new program and budget procedure. At its 39th meeting, TAC proposed a list of indicators for budget evaluations and suggested a new plan for sequential review of center programs and budgets at intervals of several years. Discussions with center directors are being held with the expectation that an agreeable procedure can be introduced for the 1987 exercise.

(ii) Intercenter cooperation, reported Dr. Camus, is being facilitated by activities such as those at the seminar on farming systems research held at ICRISAT in February. Participants took steps to conform terminology and to increase cooperation in the field. TAC took part in the seminar but has yet to receive the formal report of the meeting.

(iii) Professor Vernon Ruttan, who was present, is conducting a study on behalf of TAC and the CGIAR secretariat of the program and management review system. There will be a report on the study at ICW 86. (Note: the Ruttan study will be discussed at the mid-term meeting in 1987 - Secretariat.)
3. Mr. Richard Clifford, study director, summarized the findings and recommendations of the finance and budget study. In general, there was no opposition to the recommendations, and the report was considered an important step forward.

(i) The Group agreed that uniform standards of accounting should be applied to all CGIAR centers and implemented in the near future. Uniform standards should result in financial reports that provide fuller disclosure of information in a comparable form.

(ii) The Group agreed to accept uniform formats for periodic reports on restricted core and special projects and to accept the externally audited financial statements in lieu of separate audited statements for individual grants. The secretariat will consult with donors to ensure that the proposed formats meet their requirements.

(iii) The Group approved the inclusion of overhead charges in all special projects carried out by the centers. Percentages will vary among centers; however, the basis for the calculation will be the same.

(iv) With regard to restricted core projects, it is desirable that donors pay overhead charges. This payment arrangement might not be possible for some donors; consequently, the CGIAR secretariat will consult with individual donors. The CGIAR secretariat will also examine the impact of this principle on 1985 restricted activities and report to the Group.

(v) There was agreement with the principle of approval of some part of center programs for several years. Recommendations on early pledging, informal indications of future pledges, and disbursement practices were endorsed. Donors will implement these recommendations to the extent feasible; many donors expressed an inability to pledge for more than one year at a time.

(vi) The limitation on the centers' working capital—at present, one month's expenditure—will be removed. This step will help centers make more efficient use of contributions, particularly those received late in the year.

(vii) The secretariat will examine the potential for alternative uses of the stabilization fund but will take into account the concern for transparency of funding practices raised by one donor. Specific proposals will be considered by the Group at future meetings.
A number of members expressed concern that the World Bank's policy of using its contribution to support approved budget levels masks overall donor priorities expressed in their allocation of funds among centers. Others suggested that without such support the TAC review and Group approval of budgets would be without purpose. The CG secretariat agreed to prepare a paper on World Bank funding to centers for ICW 86.

The Group did not disagree with the broad principles underlying the resource allocation process stated in the secretariat's commentary. However, members expressed concern regarding the definition of base and non-base activities proposed in the budget study.

The Group noted the progress being made between center directors and TAC in refining the budget process. It asked TAC to review the implementation of this process and report on the progress.

WARDA Mid-term Review - Agenda Item 6

4. Dr. E. T. York, TAC member and chairman of the WARDA Mid-term Review panel, led off the discussion with a brief summary of WARDA's history. When the CG chartered WARDA in 1971, the association's primary emphasis was to be on adapting rice technology rather than generating it. However, it gradually became clear that the available technology was not adaptable to West African conditions; new technologies needed to be developed for the harsh environments in the region. In 1983 the program review panel recommended that WARDA undertake an integrated rice research program. WARDA complied and initiated such a program in 1985. Regrettably, this research program is still in the early stages of development. Despite the panel's admiration for the concept of WARDA, members agree that the association is not a viable organization in its present form. Severe problems exist in governance and management, achievements, staff morale, financial support, operations, and facilities.

5. The panel recommended that the CGIAR support a strong rice research program in West Africa but suggested that the support be focused on a West Africa Rice Research Institute (WARRI), to be governed as an autonomous center like other CGIAR centers and include elements of both the WARDA and IITA rice research programs. The panel hoped WARDA would help in establishing WARRI.

6. The Honorable Famara Ibrahima Sagna, chairman of the WARDA governing council and minister of rural development of Senegal, argued that WARDA was working on solutions to rice problems, and he was confident of the association's future as a development and training institution. He assured the Group that most of the specific problems brought out in the report could be remedied. For instance, he was agreeable to eliminating the position of deputy executive secretary. As far as delegating more responsibilities to the Scientific and Technical Council (STC) was concerned, that could be done after consultations with member countries. He pointed out the association had already made progress in transferring authority: at present, the STC
approves WARDA's budget and program, controls its activities and examines progress in carrying out its mandate, hires accountants to maintain its books, administers hiring and salaries of staff, and nominates candidates for the position of executive secretary. (The final selection is still made by the board.) Mr. Sagna added that he was shocked that the mid-term review was presented to the full assembly and not discussed with the African authorities in advance. He said he found the panel's remarks patronizing and paternalistic, and he accused the panel of trying to decide what was good for Africa while ignoring the African governments.

7. Mr. Sagna argued that WARDA now received only 2 percent of the CG pie. If WARDA were given more, he assured the Group, the association would do everything possible to find acceptable solutions. The door was not closed, he emphasized, but the WARDA states needed to discuss matters further. WARDA was in a weaker position than the donor countries, he explained; it depended on them for survival. He said it was as if someone who had educated a child later took that child as his own, disregarding the one who brought it into the world.

8. The minister said he fully understood the donors' concerns over what was done with their funds. He offered to set up a research management committee to ensure accountability if donors felt the STC was not sufficient. The review panel could determine the terms of reference for the committee. (However, several similar committees had alternately been set up at some time to manage donors' contributions.) As far as research was concerned, Mr. Sagna explained it was difficult to separate research from development in Africa. He did not want Africa to be a laboratory used strictly for research; he encouraged scientists to consider their research with an eye toward the country's development. He added that the best way for the CG to help was to make sure that links exist between research and development. Otherwise, he warned, scientists might find the results of their research too impractical to implement.

9. Mr. Sagna asked the donors for six months to reorganize WARDA. He reminded the Group that he had just taken over WARDA in January 1986, and he was still learning about its problems. He said that WARDA had never in its 16 years been given the opportunity to discuss its difficulties with heads of state as other regional organizations were allowed to do. Another reason for an extension was the need to amend the bylaws of WARDA to reflect changes in its structure, which was not done after the December 1985 meeting.

10. When the discussion resumed on Thursday, Dr. York gave a brief statement clarifying some points raised by Mr. Sagna. Dr. York stressed that the panel was not recommending an additional center but was trying to deal with the question of rice research in West Africa. The panel had suggested coordinating the rice research programs at IITA and WARDA. Dr. York pointed out that there were about 56 rice scientists at WARDA and IITA, whereas an integrated program would require only about 30 scientists. If WARDA's program were to continue as it was, the CGIAR would also have to make a substantial investment in facilities, because those at WARDA were substandard. Therefore, a new rice program at WARRI might prove a better program for less money.
11. Dr. York emphasized that the Group must take definitive action on WARDA before donor support trimmed the program and caused key personnel to leave, or donor support eroded completely.

12. Mr. Husain reported that most of the WARDA donors had decided to continue funding through 1986. However, some donors thought that the discussions and the relationship between CGIAR and WARDA were becoming confused. The chairman did not want the CG to break with WARDA in a crisis atmosphere; if a break did occur, it would be difficult to operate in West Africa. He concluded the CG must make one last effort to have a dialogue with West African leaders on a rice research program. IDRC agreed to discuss the matter with West African governments on behalf of the CGIAR. A distinguished individual would help IDRC conduct the negotiations along with a small advisory group from CGIAR.

13. Mr. Alieu Jagne, acting executive secretary of WARDA, said a research organization free of political interference was needed. He then went on to discuss the implications of the Groups' decisions. He pointed out that operating on six-month intervals was very difficult and created quite a bit of uncertainty. Some donors had agreed to help through 1986, but USAID funding would be ending soon. The uncertain financial situation would result in terminating staff members and closing key locations. He asked if WARDA should begin now to terminate staff or try to keep programs going. Mr. Jagne said he would prefer to use funds to continue operations; the option, of course, was conditional upon the funding provisions for 1987. He asked for some commitment for transitional arrangements between 1986 and 1987, adding that WARDA had not set aside funds for termination costs and that available funds were insufficient to meet severance pay obligations. Mr. Husain responded by stating that the funds promised at Ottawa by donors were to be considered transitional, and that WARDA should keep its commitments to a minimum. Mr. Husain also asked Mr. Farrar to consult with Mr. Jagne and the donors about meeting termination costs. Mr. Husain closed the session by stating that a final decision on WARDA must be taken at ICW 86.

14. On Friday Mr. Farrar reported the position as follows:

The Group decided that WARDA operations should be financed through 1986 in order to permit negotiations to take place while maintaining ongoing research programs and training capability. A final decision on WARDA would be taken at Centers Week 1986.

In order to make this decision meaningful, the donors are requested to support WARDA and to permit their funds to be used flexibly over the coming six months except, of course, for paying member state obligations. We have positive reactions to this request from a number of donors.

Strategic issues - Priorities study - Agenda Item 7

15. The CGIAR discussed this item during one and a half days, on May 20 and 21, 1986. The discussion was based on:

- the TAC review of CGIAR Priorities and Future Strategies (AGR/TAC/IAR/85/18; CG/86/7/TAC);

- the paper entitled Elaboration of TAC's Views on Priorities and Strategies (AGR/TAC/IAR/85/18.1);

- a paper by the CG Secretariat: Strategic issues: Priorities Study - Summary of Contents (CG/86/7).

16. The chairman suggested and the group agreed to divide the discussion so that four issues would be discussed successively: (a) non-food crops; (b) sustainability, or the interaction between crops and environment; (c) Sub-Saharan Africa; and (d) priorities among commodities. A general discussion would follow on the next day.

17. The chairman then called the introductory presentations. Dr. Klaus Lampe from GTZ reviewed the outcome of the Bellagio meeting and gave information on the background against which these conclusions had been made. The chairman of TAC presented TAC's views elaborated after International Centers Week 1985, the Bellagio meeting, and TAC's 39th meeting in March 1986.

(a) Non-food crops

18. Dr. Alex McCalla of TAC presented this first issue. He said TAC agreed that increased food production alone could not eradicate malnutrition; on the other hand, increased food production was needed. Food crops could be sold domestically or abroad and thus generate income. TAC did not recommend adding any non-food crops to center responsibilities but did encourage attention to such crops in a farming systems context. In the discussion that followed, most speakers were in agreement with the conclusions of TAC. Comments included the problem of income generation as a factor enabling people to get access to existing food; income can be generated by food crops as well as by non-food crops; the need for the CGIAR to consider the changing environment within which agriculture is operating; and a recognition of the widening gap between the incomes of farmers and those of other (e.g., urban) operators. While human productivity is very low in agriculture in many developing countries, the volume of trade, including international trade, is expanding, and changes may be expected in comparative advantages among countries to produce agricultural products. At the same time the incentives for increasing production are often very weak or lacking.

19. The chairman drew the conclusion that there was a consensus and little difference of opinion on the issue that the CGIAR maintain its fundamental preoccupation with increasing food production in developing countries while recognizing that non-food crops are important as well. Other institutions held a comparative advantage over the CGIAR in addressing the genetic issues for these crops. There was also a broad consensus on the need to continue working on non-food crops as part of research programs on production and farming systems and to initiate this where it is not yet being done. Research throughout the CGIAR should emphasize income generation and increasing the productivity of farmers and pay more attention to the economic and marketing context in which the farmers operate.
(b) **Sustainability**

20. In introducing this topic for discussion, Dr. Ola Heide of TAC defined sustainability as intensification without resource degradation being the future measure of technical progress. He said that there should be no contradiction between increasing production and doing it in a sustainable way. The multidisciplinary approach to commodity research must be considered in a broad sense and include all the necessary disciplinary inputs related to scientific and technical knowledge on common factors of production. This approach implied collaboration of the CG centers with factor-oriented research institutions outside of the CG system. Trees and shrubs had to be addressed in the context of research programs on production systems.

21. While a small number of delegates were inclined to favor separate research on factors, many advocated this broader definition of the multidisciplinary approach to commodity research, described as a symphony, which allows for factors to be addressed as required by the specific problems of the crop and of its interaction with its physical and socio-economic environment. There is a need for aiming not only at conserving the productive base but also at rehabilitating lost capacity. Trees and shrubs research was favored by a number of speakers as an issue that needed to be addressed within the system.

22. The question was how to implement the recommendations relating to integrating the required factor research efficiently into the commodity programs of the centers, as well as collaborating with the factor-oriented institutions.

23. The chairman summarized the debate by observing that, obviously, no one wanted the CGIAR to initiate full-fledged factor research programs. However, merely saying that factors should be addressed through commodity-oriented multidisciplinary research programs was not sufficient. Taking notice of the new, broader description of this approach introduced by some speakers, he remarked that the Group felt there was a need for TAC to elaborate its views on this issue more explicitly and examine how this approach could be implemented. At the same time it noted that sustainability included rehabilitation of lost productivity, TAC’s elaboration should provide a much more detailed treatment of the link between the work of the centers and key interacting environmental factors, including trees and shrubs.

(c) **Sub-Saharan Africa**

24. Professor Guy Camus introduced the discussion on Sub-Saharan Africa. He praised the ideas that came out of the meeting in Bellagio on this issue and summarized the problems relating to Sub-Saharan Africa using the following list of key words: urgency; adaptive research; coordination and integration of efforts; and decentralization, networking and collaboration with national agricultural research systems. He described the tasks and the characteristics of the mechanisms by which the coordination advocated by the Bellagio group could be implemented.
25. In the discussion, the CGIAR was informed of a significant move taken by the center directors, with the support of the board chairpersons, to appoint a committee headed by Dr. Stifel of IITA with the task of producing the views of the centers on the problem of coordinating their approach of the national research systems by themselves. A majority of the speakers rallied to Professor Camus' use of the word "mechanism" instead of "entity" as a way of stressing the importance of avoiding the build-up of any bureaucratic, screen-forming intermediary layer barring the centers from the necessary direct contact with the national research systems. It was recognized, however, that the very weakness of many of these systems did require restraint in approaching them, in order not to overburden them. The complexity of the African environment, physical as well as socio-economic, called for more location-specific approaches. Some speakers suggested that a task force could address the problem of identifying the research needs for the various sub-regions or countries and could set priorities among these needs. These had to be viewed in the perspective of the opinions of the African research leaders themselves, of the necessary communication with the non-CG institutions and of the opportunities for efficient networking.

26. In summarizing the debate, the chairman found that there was recognition of the urgency and the uniqueness of the African challenge and of the diversity of the African condition with regard to environment and to production and farming systems. There was also recognition of the dangers and the costs of the overlapping that had occurred in the past and of the need for coordination. He noted, however, that no one wanted to impose rigid institutional mechanisms in the name of harmonization and coordination at the risk of creating an additional layer of bureaucracy. He stressed the meaning of the preference for the word mechanism instead of entity, as suggesting the necessary flexibility in coordination as well as the need for bringing the African research leaders into a discussion of the nature of coordination. He stated that beyond the general discussion of coordination and coordination mechanisms, the specifics of this issue had to be spelled out. He accepted suggestions that a task force be set up to address this issue and to identify research needs (initially those of a country or of a region on a pilot basis). The task force will be headed by the chairman of TAC, and include Dr. Sawadogo, Dr. McCalla, Dr. Kasembe, Mr. Caudron, Mr. Wilson, and Dr. App. The task force would have to work closely with the committee appointed by the center directors and headed by Dr. Stifel. It should present the CGIAR at centers week with a specific proposal for the coordinating mechanism(s), the basic issue being the coordination of the programs of the centers in their work with the African countries. The chairman also saw a substantial desire in the Group for an assessment of the research needs in Africa and hoped that TAC could take this into account in further work on priorities. Finally, he observed that there had been no support for immediate independence of the ICRISAT Sahelian Center. There was a preference for dominion status with considerable autonomy in setting up programs and in financial matters, while retaining the essential technological link between Hyderabad and Niamey. This did not mean that the issue was closed or that it would not be addressed again in the years to come.

27. Responding to a number of questions about SPAAR, the chairman gave a briefing on this new activity. The Special Project on African Agricultural Research stemmed initially from discussions among center directors but soon was given a separate identity from the CGIAR. SPAAR was based on recognition
that coordination among the donors was as urgently needed as among centers. Donors meetings in Tokyo, Washington, and Paris established mechanisms for:

- assembling information on donor supported programs and projects in Africa;
- assessing technology and research needs in selected African countries (begun in Senegal and Sudan);
- setting up guidelines for elaborating national research strategies in collaboration with the national research systems, with ISNAR providing staff support;
- exchanging information to bring about greater harmony in support to national systems;
- financing grants to individual African scientists;
- coordinating networks in African agricultural research.

(d) Priorities among commodities

28. In his introduction, Dr. Michael Arnold of TAC said that the shifts in priorities were to be understood in relative and not absolute terms. They had to be considered in the global perspective, in which the funding for agricultural research from the CGIAR represents only 2 percent. Thus the CG priorities do not necessarily coincide with what may be the global priorities. He came back to the symphony description of the multidisciplinary, commodity-oriented research approach to describe it as a factorial matrix approach, in which the perspectives given by the principal axes bring the diverse factors into play according to their importance for the specific problem at hand.

29. Following Dr. Arnold, a number of speakers insisted on the growing importance of the agriculture in rainfed areas where agricultural production is at higher risks and where rice constitutes the main crop. These conditions pose new and more difficult problems for research. With these nuances in mind, most speakers agreed with TAC's conclusions on shifts in priorities. A number of delegates called for more attention to be given to the problems of livestock production research in agreement with TAC's proposal because animal husbandry is a very important element of many production systems in Africa.

30. Planning would be helped by using quantitative models of the evolution of supply and demand for agricultural production and would have to be done in close collaboration with the center directors.

31. Many speakers emphasized the need for reflection on how the proposed transfer of responsibilities from centers to national systems was to be implemented. There was support for relying on national research systems for a number of tasks for which they are at a comparative advantage over centers, e.g., the fine adaptation of technologies to location-specific environmental requirements. The strength of national systems, however, is highly variable, and they may not all be in a position to take up these new tasks. It was the responsibility of the CG and of its centers to help prepare them to do so.
Care was needed in asking national systems to assume international functions. In any case the shift would have to be gradual and well planned. It would need to respond to the wishes of the national system and not be imposed by the CGIAR. A proposal was made of an exploratory meeting on the transfer of responsibility from the CG centers to the national programs. This meeting could involve a number of national programs and centers. It would explore the constraints that could limit the activity of a national program undertaking such responsibility and not be imposed by the CGIAR.

32. Among the new ventures, coconut raised concern from some delegates who questioned its overall importance and suspected it might be a rich man's crop. Others said it was important for numerous small holders in a significant acreage in Africa as well as in the Pacific, and these farmers are now in need of replanting their trees. There were specific proposals to support research on this commodity. For this commodity, as well as for the vegetables and for aquaculture, speakers called for a definition of the ways for implementing TAC's recommendations for CGIAR support and especially on how to establish links with the existing non-CG institutions in these areas.

33. The chairman concluded by observing that there was broad support of the relative priorities recommended by TAC. He stressed that no one supported the idea of freezing in nominal terms the allocation for any single commodity. As far as wheat and rice were concerned, these cereals had to be addressed in the much more difficult environment of the rural parts of the rainfed areas of Asia, where the bulk of the world's poor still live. This emphasized the need for maintaining the overall quality of research on these crops and stressing impact on production and income. But maintaining research had to be done through a changed distribution of work between the international centers and the national systems. This arrangement posed the problem of organizing the relations between the centers and the national systems on an equal footing for partnership, while taking into account the diversity of their capacity to take part in these relations. Modulation was needed, which would call for the centers engaging in a spectrum of diverse activities that would depend upon the strengths and weaknesses of the cooperating institutions. The input from the centers in the future would have to be in terms of more advanced technologies than it used to be.

Goal statement

34. The chairman suggested the Group discuss the goal statement for the CGIAR, as drafted by the TAC and by the Bellagio group. While recognizing the concerns of the Bellagio group, most speakers preferred the goal statement as issued by TAC. They wished only that TAC elaborate a little on it in order to incorporate some of the content of the Bellagio suggestion.

35. The chairman concluded that this issue had to be given back to TAC saying that there is a strong preference for its statement provided it has reference to the national research systems, and hopefully to income generation, and property.
Role of Women

36. There was a request for a discussion at a future meeting on women and agricultural research, i.e. how research can be directed to benefitting women farmers. The chairman asked the CG secretariat to arrange a discussion.

Publication papers

37. It was agreed that the TAC Review of CGIAR Priorities and Future Strategies would not be further revised, but would be published together with a supplementary paper and the conclusions of the Group which modified the paper in some respects. TAC would continue to refine many of the issues, in additional reports or documents.

Role of TAC

38. The chairman suggested that the evaluation of priorities should be a continuous process for TAC. There should be reflection on how this can be done regularly, in the context of the global environment as this has a bearing on the CGIAR priorities and the programs of the centers.

39. In answering a comment on the amount of work given to TAC, the chairman said he fully realized TAC was overloaded. The cosponsors were to prepare a paper for ICW 86 on the role and responsibility of TAC and of TAC's chairman.

ISNAR External Review - Agenda Item 8

40. Dr. Montague Yudelman, chairman of the external program review of ISNAR, presented a brief summary of the panel's findings. He said the principal recommendation was that the five-year sunset clause be removed and ISNAR accepted as a full-fledged member of the CGIAR. The increased flow of financial resources to national systems had made the need for ISNAR's activities greater now than when it was founded. ISNAR's performance had earned it the support, confidence, and respect of the national systems that use its services. The panel also suggested that ISNAR focus its activities more than it had in the past. It should remain small and confine itself to a limited range of activities. It should not get involved in extension nor should it become a service institution for other CGIAR centers or a fund raiser for national research systems. ISNAR's mandate should be modified to remove some unrealistic expectations along these lines.

41. The panel pointed out the need for a strategy that spelled out ISNAR's goals and objectives. A clearer strategy would help ISNAR make choices when demand for its resources exceeded supply. In determining criteria for national involvement, special consideration should continue to be given to Africa. ISNAR should also leave implementation activities to other agencies and limit its involvement in special projects. The panel recommended that ISNAR continue its emphasis on training and on strengthening its research, especially on priorities and resource allocation.

42. Dr. William Tossell, chairman of the external management review, reported that ISNAR was well managed, staff morale was good, and support services were effective. He added the center was well-sited and developing a
good reputation with its client countries. However, the review team thought that ISNAR needed better strategic planning and a clearer mandate. He pointed out that demands on ISNAR were more complex than those made on a commodity center; because ISNAR was service-oriented, it had to respond constantly to outside forces. The review team also concluded that the board should be decreased from 15 to 11 members, and the director general should be allowed more delegation of authority.

43. Dr. Robert Cunningham, chairman of the board of ISNAR, responded that the board of ISNAR was receptive to both reviews and was particularly pleased that client countries spoke so positively about ISNAR. The board accepted the need for better strategic planning and fewer members on its board; however, it had reservations about deleting the FAO representative from the board and about restricting special projects, especially in view of the limited core funding available to ISNAR for its operations.

44. Dr. Alexander von der Osten, the newly-appointed director general of ISNAR, agreed that the reviews were fair, useful, and timely, and ISNAR had benefitted from the process. He added that steps had already been taken to improve strategic planning. He had only one principal reservation: removing the FAO representative from the board. Dr. Yudelman and Dr. Tossell replied that the review team's suggestion to remove the FAO representative had received too much emphasis. However, Dr. Yudelman added, the team felt quite strongly on the issue of limiting special projects.

45. In the discussion that followed, several speakers complimented ISNAR on having achieved so much in a relatively short time and said they thought that the center should be accepted as a full-fledged member of the CGIAR system. A few people remarked on the clarity of both reports but said they thought the program review had not been done in sufficient depth. One speaker questioned whether enough time had been set aside for the review and whether enough study had been focused on the impact of ISNAR.

46. Mr. Husain concluded that there was general agreement on several issues concerning ISNAR: (1) it had performed creditably in its early years and should become a full member of the CGIAR system, (2) it should have a clearer strategic plan, (3) it needed a more complete staff but should remain small, (4) its main task should be to advise national research organizations and not get involved in research itself, (5) it should exercise caution in undertaking special projects, but there was a need for flexibility in applying this principle, (6) it should be involved in follow-up but not in project implementation or fund raising, and (7) both reviews had been of considerable service to the centers. As far as dropping the FAO representative from the board was concerned, Mr. Husain said that matter was for the board to decide.

Broadening Support for the CGIAR - Agenda Item 9

47. Mr. Farrar, executive secretary of the CGIAR, introduced the topic by summarizing the conclusions of the secretariat-produced paper "Broadening Support for International Agricultural Research." There was general agreement that the CGIAR system and the work of the centers should be better known throughout the world and an acknowledgement that this would require continuous, active publicity and promotion by the organizations in the system.
Some speakers felt that such promotional work should be the principal function, at least initially, of country support organizations. Several speakers echoed a point made by the chairman: wider recognition of and support for the system were necessary in both developing and developed countries.

48. Views were mixed on whether it was appropriate for country organizations to solicit support for the centers from private sources. The principal concern was whether the system's objectives might be distorted or its image impaired by accepting resources from private organizations, particularly corporations or businesses. Some speakers did not share the concern. They argued that broadening support opened up opportunities and that support could be obtained from a range of private groups without laying the system open to undesirable influences or pressures.

49. Mr. Husain concluded that there was general agreement on the need for more promotion and publicity. He added that support groups were justifiable in some situations. Centers should be prudent in accepting support from private organizations. The secretariat was authorized to proceed cautiously and asked to keep the Group informed on the subject.

ILRAD External Program and Management Reviews - Agenda Item 10

50. Dr. Jos Mortelmans, chairman of the ILRAD program review panel, praised ILRAD for its high scientific standards in carrying out its mandate for research on controlling two major livestock diseases: trypanosomiasis and theileriosis. He added that the program had been difficult to review because of the need to balance the research, the needs of African countries, and questions of the donors.

51. Dr. Mortelmans suggested that ILRAD continue to aim for an immunological solution to controlling trypanosomiasis, but it should also expand research on chemotherapy and trypanotolerance. This expansion could be funded with savings elsewhere in the trypanosomiasis program. Regarding theileriosis, or East Coast Fever, the panel concluded there is hope for an immunological solution, and recommended that high priority be given to sporozoite research. Again, any shifts in emphasis could be accommodated by redistributing funds already in the program. The panel also recommended that more emphasis be given to cowdriosis, or heartwater. Because cowdriosis is also a tick-borne disease, it might increase if a vaccine for theileriosis were found and livestock dipping were suspended. Therefore, ILRAD should focus at least in a preliminary way on cowdriosis diagnosis and immunology. The panel did not think it would be necessary to add new positions for the work. The review panel also recommended a stronger training role for ILRAD, particularly in Francophone Africa.

52. Dr. Frank Raymond presented the results of the management review, and he concluded that ILRAD was well-managed. He nevertheless recommended several areas for possible improvement, the main one being ILRAD's middle management. He suggested that ILRAD and perhaps the CC system needed to consider the longer-term career prospects of center-employed scientists for whom there might not be a full career structure within a single center. He also remarked on the substandard facilities being used by the 56 staff members from other centers posted at ILRAD.
53. Dr. William Pritchard, chairman of ILRAD's board, said ILRAD had already begun to implement many of the recommendations and agreed with the need to expand research on chemotherapy and trypanotolerance in the trypanosomiasis program. Both panels had recommended improving research program management, and ILRAD agreed to appoint program coordinators to this end. The panel and the board disagreed on only one point: the arrangements for appointing staff members at the director level. Because of ILRAD's history, the board prefers to appoint the directors, in collaboration with the director general. Dr. Pritchard added that about 70 people from other centers are stationed at ILRAD, and the board is aware that the facilities are unsatisfactory.

54. Dr. Ross Gray, director general of ILRAD, reviewed the implications of several points in the program review. He pointed out that although the program panel recommended more sporozoite research be done, the materials for experiments are difficult to obtain. The center favored work on cowdriosis but resources would be needed, which should not be taken from the existing program.

55. Professor Camus said that TAC, in line with the priority paper, did not recommend an increase in funding for livestock disease research. He thought that most resource needs in trypanosomiasis and theileriosis, however, could be taken care of by adjustments in the program. Although cowdriosis was important, TAC did not recommend taking it up at this time.

56. In the discussion that followed, speakers focused on: (1) whether cowdriosis research should be added, (2) whether the emphasis on trypanosomiasis research should be changed, and (3) whether ILRAD (or other centers) should provide long-term career opportunities. One speaker noted the overall message in the report was "good science at a well-managed center." Another spoke of the need for more concentration and continuity in the CGIAR, for these were considered the major strengths of the system; he expressed concern that ILRAD might be pushed into short-term research at the expense of any long-term efforts needed to combat these difficult diseases. One speaker suggested that any solution to accommodate the people at the ILRAD outpost should be studied in the context of a CGIAR strategy for Africa. Dr. Pino, former chairman of the ILRAD board, stated that he would not recommend a retreat from basic research on trypanosomiasis: animals do survive the disease, which indicates that a tolerance or resistance mechanism exists in nature. Therefore, he reasoned, man might find a way to enhance the natural tolerance of animals. Dr. Mortelmans explained that the panel did not want ILRAD to retreat from trypanosomiasis research, but to reach a balance in studies of natural immunity and acquired immunity to the disease.

57. Dr. Raymond stated that the management panel did not imply that a scientist would have a lifetime career at ILRAD, but that ILRAD has a responsibility in career development of its staff.

58. Dr. Gray mentioned that eight avenues of research are being conducted on trypanosomiasis, and only one—the variant antigen approach—may not hold promise. Dr. Gray pointed out that there are many other advances and new tools available for pursuing solutions to the disease.
59. Mr. Husain concluded that there is tremendous satisfaction with ILRAD, and generally, there is support for both panels' recommendations, modified by TAC. In trypanosomiasis, the key word is balance. Despite some skepticism on the potential for a vaccine, research needs to be pursued, especially on chemotherapy and trypanotolerance. There is also promise of a vaccine for theileriosis. However, many in the Group were concerned that research on cowdriosis might dilute ILRAD's efforts in trypanosomiasis and theileriosis.

Report of Chairman of the Board Chairpersons - Agenda Item 11

60. Dr. Lennart Kahre, chairman of the board chairpersons, reported on the March meeting of the board chairpersons committee in Rome. The board chairpersons discussed the cost effectiveness of the centers—an issue the donors had raised at the Group's Tokyo meeting. Center management has the operational responsibility to use funds as efficiently and effectively as possible for the programs approved by the board, and the board should not impinge on this responsibility. The board's role is to ensure that cost-effective procedures are in place and to create a cost-conscious environment in the center. Among the recent actions taken by the boards was the establishment of audit committees, which meet regularly with external auditors.

61. In March the chairpersons also met with Dr. Vernon Ruttan to discuss his study of external program reviews. Dr. Kahre commented on other topics discussed during the mid-term meeting, particularly on the priority study and the subsequent Bellagio discussions. Dr. Kahre also brought up the proposal—mentioned in the secretariat's document of February 1986 on the board of trustees—that the Group authorize the boards to reappoint board members to a second term without consulting the Group if the board members had performed well in their first term. The proposal had been endorsed by the chairpersons and the Group was requested to approve it.

62. One speaker mentioned he learned from the secretariat's document that some boards did not have audit and finance committees, and he thought that every board should have its own committee; he added that the board's committees should meet more than once a year. He also questioned the chairpersons' reappointment proposal, and asked whether any board member had ever been refused a second term. Another speaker answered affirmatively. The chairman of the Group indicated that automatic reappointment by the boards should not take place; instead, board members should turn to the CGIAR when the second term appointment came up for approval. One speaker suggested that the number of women board members be doubled within a year. The chairman replied that he recognized the need for more women board members but wasn't certain that the goal of doubling the number within a year was realistic. He asked the boards to send his office the names of both women and men suitable for board membership.

63. The chairman urged all boards to examine their internal procedures for controlling expenditures. The chairman stated that the secretariat would pursue its study on the performance and effectiveness of the boards. The study would be financed through the special activities account, and donors were requested to indicate support for this study. There would be a full discussion on the boards in a subsequent meeting of the Group.
Report of the Chairman of Center Directors - Agenda Item 12

64. Dr. Trevor Williams, vice chairman of the center directors, reported that the center directors had organized several activities, including a new management training course in conjunction with the CGIAR secretariat and three intercenter seminars. The seminars would cover variability in crop yields, farming systems research, and agro-ecological zoning. Center directors have also participated with TAC and the secretariat in discussions on the priorities paper and the budget study. Center directors concluded that they have a duty to make their views known to members of the Group and have decided to establish committees to examine some of the broader and more important issues facing the CGIAR system. The first issue to be examined is the centers' role in Africa.

65. Members welcomed these initiatives, particularly those to increase intercenter cooperation, and were pleased that center directors intended to establish committees specifically to address the principal issues facing the system.

IBPGR Status Report - Agenda Item 14

66. The chairman called attention to copies of the correspondence between the Director General of FAO and him and the CGR committee report, which the Group had received. He then called on Lucas Brader of FAO to open the discussion.

67. Mr. Brader said that the Director General of FAO wished to study the possibility of finding practical alternatives before moving toward settlement of some of the broader issues. He had therefore established a senior review committee within FAO headed by the deputy director general to examine specific problems. The committee will study the various issues submitted by the IBPGR and the CGIAR and try to develop practical solutions to facilitate joint work on plant genetic resources. The situation could be examined after two years and a decision made on a new structure.

68. It was hoped that the issue of office space could be solved by the Italian government's attempt to remedy the broader issue of space problems of the FAO and other international bodies in Rome. The director general reiterated that all staff members assigned to the IBPGR, whether paid by the trust fund or the FAO, were available full-time to the board.

69. These ideas would be submitted to the working group of the commission on plant genetic resources on June 2 and 3 in Rome. Mr. Brader was confident the plan would be endorsed. The chairman agreed with Mr. Brader that his proposals were in line with those of the CGIAR committee, which had proposed making new nominations to the board, extending contracts of FAO staff working with the IBPGR, and lifting the employment freeze. The committee suggested that scientific talent be provided, if necessary, by agencies in donor countries. If space was not available, it might be rented.

70. A number of speakers welcomed the progress and hoped that it would lead to a pragmatic adjustment of the management problems identified in the review process, which would enable the IBPGR to continue working within the context of the FAO. Several speakers said that there were clearly separate
areas of responsibility in the field of plant genetic resources, such as responsibilities of the FAO and those of the CGIAR. The chairman closed the discussion by stating that further progress would be reported at ICW 86.

Future Meetings - Agenda Item 15

71. The Group approved the following dates and locations for future meetings:

- **1986 ICW November 3-7, Washington, D.C.**
- **1987 mid-year May 18-22, Montpelier, France**
- **1987 ICW October 26-30, Washington, D.C.**
- **1988 mid-year May 16-20, Berlin, Federal Republic of Germany**
- **1988 ICW October 31-November 4, Washington, D.C.**
- **1989 mid-year May 29-June 2, Canberra, Australia**
- **1989 ICW October 30-November 3, Washington, D.C.**

72. The center directors proposed a new format for their presentations at international centers week. They will make brief, issue-focused presentations to the Group and allow time for discussion afterward. Half of the centers will give their presentations one year; the other half will be announced later. One speaker mentioned that he would like to see the centers pool their efforts on a particular presentation, e.g., a panel discussion on a specific subject.

Other Business - Agenda Item 16

73. The CGIAR secretariat presented two requests for use of the special activities account. The first request was for approval to use the account for a project to preserve and distribute CGIAR publications. The second request was to use funds for a management training program for center staff. IDRC expressed support in principle for both projects and indicated that modest funding for the management training program might be forthcoming. No other comments were made, and in the absence of objections, Group approval was assumed.

Chairman's Closing Remarks - Agenda Item 17

74. The chairman expressed his satisfaction with the discussions and noted that the long deliberations in Washington, D.C. and in Ottawa on the priorities paper had resulted in a well-articulated direction for the CGIAR. He noted that members sometimes tried to forge a plan quickly; but determining priorities was essentially an evolving process in which issues are posed, challenges arise, and are responded to not simply in a narrow, short-sighted fashion but in terms of strategies for the future. He added that strategies and programs must be considered within the overall limitations of institutions and resources. New undertakings would require additional resources; ultimately, human resources and organizational structures would pose severe
limitations on activities. As the centers took on new activities, they would have to drop others. Therefore, they should consider whether the national agricultural research centers could take over some of these activities. The centers should also think about how they can help, especially with networking and coordinating.

75. Mr. Husain expressed gratitude to Professor Camus and his colleagues at TAC. He reminded the Group that they would have to look ahead to 1987, when there would be a new TAC chairman. A paper was being prepared by the CG secretariat for discussion on the role of TAC, its procedures, and the role of the TAC chairman, which alone seemed to be a full-time function. He added that the center organizations are no less important than TAC, and questions about the relationships between the boards and the central organizations should be explored.

76. Mr. Husain concluded with special thanks to the government of Canada for making the meeting in Ottawa pleasant and for helping to create the ambiance that had led to constructive discussions.

September 11, 1986
SPEECH BY THE HON. MONIQUE VEZINA, MINISTER FOR EXTERNAL RELATIONS

TO THE MEMBERS OF THE CGIAR

TUESDAY, MAY 20, 1986, 11:00 A.M.

OTTAWA, CANADA

It is with great pleasure that I welcome you to Canada. I shall begin by congratulating you for your accomplishments within the Consultative Group on International Agricultural Research as well as within the various Research Centers which have joined the CG during the last 15 years.

In considering what I would say to you today, it seemed to me that the greatest contribution I could make to the advancement of your work would be to speak from my own perspective — the perspective, and I say it in all humility, of a layman in relation to the highly-specialized scientific knowledge you possess. It is also the perspective of a minister responsible for Canada's development aid programs. And finally, it is the perspective of a Canadian woman who in one week will be in New York leading the Canadian delegation to the Special Session of the United Nations on the Economic Crisis in Africa.

I will begin, then, to speak as a layman. An image comes to mind of the medieval princes who must have been continually tempted to torture their alchemists in order to speed up their work. If I make this somewhat unfriendly allusion, it is simply to impress on you the sense of urgency that I feel with regard to your research.

On a planet where every year the population increases by 17 million human beings, where every year the desert swallows 6 million hectares of land, we have only one recourse if we wish to feed the world: we must make maximum use of arable land, while respecting or restoring ecological equilibrium. There is only one solution: to define new techniques, new production systems.

The seriousness of this question is underlined by the fact that we Canadians live in a country where we know a privileged relationship with nature and its manifestations. A few kilometers from here, one finds forests large enough to get lost in. In my own home area, eastern Quebec, hundreds of lumbermen were brought to the edge of ruin by an insect, the spruce budworm. One only has to walk through our forests and look at our trees and our lakes to appreciate the ravages that acid rain can cause. And I know that some of the presentations which you heard yesterday made you aware of the significance for Canada of the 1886 Act Respecting Experimental Farm Stations and the extent to which agricultural research has contributed to the economic advancement of our own country.

Thus, we Canadians accord highest priority to agricultural, ecological, and forestry research.

Canada was present at the birth of your group, and although we are a country of fewer than 30 million people, I believe I am right in saying
that we have been and that we are still among the three or four most important financial supporters of the international agricultural research centers.

In fact, each of the 13 research centers that belong to your group is a partner in cooperation for us and we contribute financially. This year, we are spending $14.8 million Canadian to this end, which is an increase of about 10 percent over last year's contribution. It is worth noting that most of our domestic departments have seen their budget increases limited to 3 percent because of the tight budgetary situation in Canada.

And of course, I must make mention of the role of the Canadian International Research Centre (IDRC), which is actively engaged in agricultural research and has played an important role in the establishment of the International Center for Agricultural Research in the Dry Areas (ICARDA).

You have probably noticed, over the past couple of minutes, that I am beginning to sound more like the minister than a layman. What I wish to say, in the name of the Government of Canada, is that you can count on our support. Despite the sense of urgency and our strong desire to see your research advance as quickly as possible, we will avoid any comparison to the torturers to whom I alluded earlier. On the contrary, we know that our commitment must be within the long-term perspective that would relieve some of your administrative concerns and allow you the security necessary to carry out your work.

Since I have donned my ministerial hat, I would like to share with you a few comments which are the results of consultations I have had with my officials and with our partners in the developing countries.

You are about to begin your discussions, to identify plans of action, to develop strategies. The direction that you will take will have extremely important repercussions for the entire world and especially for Africa. Depending on the research paths you follow, in 25 years or even in 10 years, millions of people could either have enough to eat or die of hunger.

My first comment is related to the deterioration of the ecological environment, a subject that Canada considers a matter of gravest concern. During the past two years we have lived with the tragic consequences of soil erosion, desertification, and deforestation. I am pleased to see that you have identified this problem as one of your research priorities, and that agro-forestry will be an integral part of the strategies that you will discuss.

Second, as concerns food production, we consider that no solution should be adopted unless two questions can be answered in the affirmative. First of all: Will the proposed solution be conducive to lasting food production? Second: Will this solution improve the lot of the poorest, of the disinherited whom we wish to help?
The first question deals with systems of production. It is a critical question. High-yield crops that deplete the soil seriously compromise the future. Any new system of production must be viable in the long term; it must respect the ecological equilibrium, which is so fragile especially in Sub-Saharan Africa.

The second question is of a social nature. It is now generally recognized that agricultural advancement has not always benefitted the poorest. On occasion, it has even widened the gap between the poor and the more wealthy cultivators, especially in countries where social inequalities were more pronounced.

How can one avoid this situation?

- By concentrating our efforts on regions that are under-privileged, both ecologically and economically;
- by concentrating research on food cultivation for the poor on sorghum, on millet, on maize, on manioc, on roots and tubers;
- by developing techniques with a high manpower coefficient; and
- by being particularly aware of women.

It is high time to include in our planning this particular "silent majority" that has been crushed under the weight of poverty and work.

My third comment concerns the national research systems without which it would be very difficult to translate your efforts and your discoveries into concrete form.

The national systems and the multilateral systems should be complementary and interdependent. The regional or international organization should support national research; of course, some countries are unable to set up the kind of organizations capable of carrying out the advanced research that is so critical. On the other hand, other countries, like Brazil and India, enjoy highly advanced national systems. A recent study carried out by your group showed that the best results have been obtained in countries that have such systems and where effective coordination exists.

Allow me to make one final comment. The scientific breakthroughs that you might make are not, in themselves, sufficient to solve the food problem. Your discoveries will have no impact on production as long as they are restricted to experimental research stations. They cannot be "transplanted" into the farmer's field without the will of the governments of the countries themselves, without having adequate resources in place, without technicians and instructors, without appropriate policies, without incentives to production. In other words, without a sustained effort at the national level, there is no hope. On this basic point, I can assure you of our support. I have clearly indicated recently that our country-to-country cooperation programs will be directly proportional to the efforts our partners will make to ensure their own food security.
I referred earlier to the Special Session of the United Nations on the economic crisis in Africa that will take place in New York next week.

Canadians were deeply moved by the food crisis that afflicted Africa in 1984. Their response to help the people affected by the famine was remarkable. Individual Canadians contributed more than $60 million to voluntary organizations. A recent national poll indicates that more than half of my fellow citizens said that they were involved personally and contributed to this international relief effort.

The Canadian Government responded with the same vigor. First of all, in the emergency phase, we set up a special office whose role was to coordinate the overall Canadian effort for help and humanitarian aid. Following the termination of this emergency office, I announced in the House of Commons a plan of action we call Africa 2000.

Basically, we wish to focus on a long-term development philosophy that will continue to draw on the dynamism present in Canadian society and that will focus on agriculture as the absolute priority sector for our programs on that continent.

Africa is at the center of our concerns. I know it is of particular concern to you as well. Your president, Mr. Shahid Husain, will chair a special group set up to respond to the needs of Africa (SPAAR).

I do not have to tell you about the situation of agriculture in Africa. What makes it a particularly difficult case is the extreme diversity in climatic conditions and ecological conditions. It is the scarcity and the unevenness of rainfall. It is the number of cereals and leguminous foods that have only been researched in a limited way. It is a lack of financial resources for agricultural research. It is food pricing policies that penalize these countries.

Granted, the list of problems is very long, but there is another point: the African crisis could probably have been avoided if we had carried out massive research efforts on this continent over the last quarter century. The inhabitants, the land, and the harvests of Africa and semi-arid zones have been, in my opinion, neglected for too long.

The 1970s saw the dawning of an evolution. Every CGIAR center now consecrates one or several programs to some aspect of African agricultural production. I am aware, of course, of your excellent research program on manioc. The IITA has already created 100 varieties of the most important leguminous plant in Africa, nifebe. These are two examples among many others. But progress has been limited and has come too late. A decade is not very long in the field of research, certainly not long enough to prevent famine.

Last February, a World Bank report painted an uncomfortable picture of agricultural research in Africa. This report put the finger on what constitutes enormous obstacles to progress: confusion, duplication of efforts, frequent changes of direction, and a contradictory body of studies and proposals. This is perhaps an unpleasant picture for us to accept.
However, we must recognize the truth. Otherwise, we will accomplish nothing, and we will bear the responsibility for future famines.

Your group was created precisely to avoid this type of confusion and lack of coordination. I am convinced that, while respecting the necessary autonomy of each of your centers, you can ensure that the work of each one is integrated into a coherent whole that will respond to the needs of Africa in the next century.

In conclusion, then, the challenge I invite you to accept is the same one I offered my collaborators at the Canadian International Development Agency. Our objective is not to be the biggest, the best, or the first. Rather, it is important that, within our own scale and our own means, we be the most pertinent, the most aware, and - why not? - the best.

I wish you luck. It is important to each and every one of us that you succeed. I wish you very good deliberations. It was a pleasure to be here this morning.

Thank you very much.
SPEECH BY MR. S. SHAHID HUSAIN TO THE MEMBERS OF THE CGIAR

TUESDAY, MAY 20, 1986, 11:00 A.M.

OTTAWA, CANADA

Honorable Minister, Members of the CGIAR, TAC Chairman and Members, Board Chairmen, Center Directors, Ladies and Gentlemen.

I speak for all of us associated with the Consultative Group on International Agricultural Research in expressing our pleasure and gratitude at Canada’s invitation to us to share in the centenary celebration of her agricultural research system. Yesterday we were privileged to hear about the history of Canada’s agricultural research, particularly about the development of Canola and the contribution to arid and semi-arid agriculture. These are of direct relevance to agriculture in developing countries, and Canada’s contribution to increasing food production in the Third World is impressive indeed. In keeping with your country’s tradition, you, Madame Minister, have expressed your desire to share your expertise with institutions serving the less privileged, particularly in Africa. We are grateful that you have chosen this forum to renew your country’s commitment to help in eliminating hunger. We in the CGIAR expect to continue being your partners in this endeavor.

The CGIAR is a labor of love. It is a cooperative venture of scientists, governments, international institutions, and private foundations to broaden opportunities for people engaged in agriculture in developing countries and ultimately to alleviate hunger and poverty. It does not have a charter or constitution. But it works because there is a broad consensus over its objectives and the unrelenting commitment to these of everyone involved. There are hundreds of us concerned with research, management, and fund raising, but we know each other and the dialogue and discussion is free and professional. Your country is a major contributor, directly and through IDRC. You provide funds, and — no less important — scientists and managers. There are Canadians in the Technical Advisory Committee, in the centers, and two of the chairmen of the boards of trustees of the international centers are Canadians. Any history of our system will not be complete without the mention of the contributions of David Hopper and Joe Hulse, two of the eminent Canadians associated with it.

Agriculture Canada has had the main responsibility for the organization of our meeting. I want to thank them in particular for the excellent arrangements they have made for a meeting more complex than we normally expect.

The CGIAR has been in existence for about a decade and a half. Of course, some of the centers in the system existed before, and, in fact, the path-breaking work on wheat and rice had begun earlier. You will remember that until the mid-seventies there was a widespread expectation of recurring famine in Asia, particularly in South Asia. Until the late seventies few expected that Indonesia would be able to produce enough rice for its
population. But fortunately the current reality in Asia is much better than even the best expectations of wise and concerned people in the early seventies. Populous countries such as China, India, Indonesia, and Pakistan are no longer net importers of grains. Though much of their populations still live at low levels of nutrition and these populations are growing, there is still substantial untapped potential for increased food production. An issue in these countries may well be diversification away from basic food grains. Similarly in Latin America there has been a steady growth in food production, though the rate of growth in the 1970s was below the population growth rate for the continent as a whole. There were, of course, wide variations among countries.

Agricultural research cannot claim all the credit for this spectacular performance. In many parts of Asia and Latin America, government policies have stimulated agricultural investment and growth. There has been increased fertilizer production and use, and, most of all, in Asian countries there have been massive investments in irrigation and water management. But all of this could not have produced and sustained the "green revolution" had CIMMYT not developed the dwarf wheat varieties and had IRRI not developed the dwarf rice varieties. And subsequently there has been unrelenting work to breed disease resistance and tolerance to varying soil and climatic conditions.

Institutions supported by the CGIAR have played a key role in this revolution for humanity and peace. One of our scientists, Norman Borlaug, received the Nobel Prize for his work on wheat.

Any system needs periodic evaluations of its achievements and so do we. We recently commissioned a study by independent experts, supervised by scientists and economists who are not part of the CGIAR system, to examine and assess the impact of the CGIAR institutions on food production and management of agriculture in developing countries. The study — which came to be known as the Impact Study — found that most of the tangible economic benefits of the system could be traced to the modern wheat and rice varieties adapted by national research systems from genetic material provided by the international centers. These varieties cover half the total area under wheat and rice in developing countries. They yield about 50 million tons more than the traditional varieties would have yielded under similar conditions. The additional grain is sufficient to feed 500 million people. National systems have also used and propagated high yielding and disease resistant varieties of sorghum, potato, cassava, chickpeas, cowpea, millet, durum wheat, and forage grasses, which originated in the international centers.

Contrary to the belief in some circles, the poor and small farmers have been major beneficiaries of this green revolution. The increased yields made possible by the new varieties have transformed many marginal holdings to productive ones and many subsistence peasants to commercial farmers. Relative to all other prices, food prices have declined in developing countries and consumers have been important gainers.

Beyond the increase in food production, international centers have trained a large number of scientists who have taken advanced techniques of research to their national institutions. They have led to the acceptance of the view in developing countries that research with sharply focused
objectives can yield perceptible results in terms of production. By working with national institutions they have contributed to their capacity to adapt and ultimately to take over some of the breeding work done in international centers.

But institutions cannot — any more than individuals can — rest on their past achievements. The task of mobilizing science to alleviate poverty and hunger is unending. A recent study on food security conducted by the World Bank shows that, despite the green revolution, some 340 million people in the Third World have insufficient diets, so that their health is at serious risk and children may have stunted growth. And another 400 million people may not have adequate diets for a fully productive life. Two thirds of the undernourished live in Asia and another fifth in Sub-Saharan Africa. In absolute terms their numbers have increased in Asia and Africa during the past decade, although in Asia there has been a decline relative to the population. In the developing countries, the growth of population continues at a rapid pace. Despite some recent declines in fertility, the situation is particularly serious in Africa and parts of South Asia. The situation in Africa is well known. For more than a decade, per capita food production has been declining. There is hardly any African country where the rate of population growth is less than 3 percent, i.e., where the population would double in about 20 years. There are some where the rate of population growth is 4 percent. There are clear signs of the deterioration of environments as a result of population pressure.

So the challenge that our system faces is clear: how to maintain the momentum of improvement in production and incomes of the rural population in Asia, Latin America, and the Middle East and how to pull African agriculture out of stagnation and decline. There will be many aspects to this. Clearly developing countries will be the key actors. It is their policies, their investments and their management that will lay the foundation of growth and development. Foreign aid has a key role to play in transfer of technology and capital. But let us not underestimate the contribution that scientists organized in research institutions have to make.

And this is the challenge which has to be the basis of the priorities of our system for the rest of this century. We have been addressing these questions in the Technical Advisory Committee and lately at a meeting of an ad hoc committee that met in Bellagio. The entire Group will spend much of this week grappling with this issue. But here let me outline some of the questions that occupy us.

The world as a whole has ample food and the world as a whole is likely to have ample food in the foreseeable future. Hunger is associated not simply with the inadequate production of food by those who are likely to consume it but by the failure of incomes. No doubt, many poor are producers and consumers of food. But research systems have to focus increasingly on comparative advantages and on the generation of income in rural areas.

A second issue and one growing in importance is resource management. In many parts of the world and in most spheres of economic activity, rapid development of technology has enabled production to transcend the immediate
limitations of physical resources. But it is increasingly apparent that the postponed costs of development are taking a toll on production and development — water logging and salinity in the Indus Basin is a case in point. In parts of Africa, as the tree cover is destroyed in quest of fuel, wood, and cultivable land, there is a growing risk of decline in fertility and possibly of a decline in rainfall.

That brings me to Africa. After possibly two decades in which incentive systems have tended to be biased against agriculture, there are in many countries the beginnings of positive and supportive policies for agricultural development. Agricultural markets are being freed, so that the disincentives that were inherent in controlled prices and monopolistic procurement are being removed. Increasing proportions of government investments are being directed to rural areas, and research and extension systems are being strengthened. But simultaneously we in the CGIAR are asking whether our modes and organization are sufficiently responsive to the variability of African situations such as the weakness of national research organizations, ecological diversity, the large number of commodities in African agriculture, and the importance of production systems.

In Africa, as in Asia, the land frontier is not expanding, thereby reducing the land holdings of smallholders and/or forcing the incorporation into production systems of marginal lands. In the absence of a rapid improvement in agricultural technology, there is the prospect of increasing the number of landless and the migration to cities. The challenge for research is to find ways of improving incomes for progressively smaller holdings while finding ways to maintain the fertility of soils and improve the productivity of marginal lands. All this will not be done by research. Investments and policy will have to play their roles. While saying this, I do not want to appear to underestimate the tremendous effort, cost, and innovation that is entailed.

The CGIAR system is devoting more than 40 percent of its resources to Africa. The needs of Africa are great and more needs to be done. But considering the issues of poverty and agriculture in other parts of the developing world, we cannot afford to divert resources within a constant pool. There will be a need for additional resources if we are adequately to address the issues I have mentioned.

So as you can see, while we have a reasonable basis for pride in our past, our agenda for the future is crowded. The most difficult tasks are ahead of us: the diversification of Asian agriculture, reinvigoration of African agriculture, raising the capacity of national research organizations, increasing the productivity of arid and semi-arid lands, and continuously raising the threshold of technology. We shall need all the determination and organizational capacity we can mobilize. Our consensus may be frayed in the process, but we shall have to find ways to restore it. And as with all living and dynamic organizations, we should constantly question ourselves. With changing circumstances, our own organizations may have to evolve.

Let me conclude by saying to our Canadian hosts that your beautiful capital and your kind hospitality provide the perfect environment in which to begin tackling the daunting issues ahead of us.
CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH

Chairman

S. Shahid Husain
Vice President, Operations Policy
The World Bank
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