

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH
TECHNICAL ADVISORY COMMITTEE



REPORT OF THE
SIXTY-SEVENTH MEETING OF THE TECHNICAL ADVISORY COMMITTEE

TAC SECRETARIAT
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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SIXTY-SEVENTH MEETING OF THE TECHNICAL ADVISORY COMMITTEE
TO THE
CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH
(FAO, Rome, Italy, 11-17 July 1995)

DRAFT
REPORT OF THE MEETING

SUMMARY

Opening Session

The TAC Chair, Dr. Donald Winkelmann, opened the meeting and welcomed the ten TAC Members present; the representative of FAO, Dr. Stein Bie; the Chair of the CGIAR's Finance Committee, Dr. Michel Petit; the Chair of the Centre Directors' Committee, Dr. Christian Bonte-Friedheim; the Chair of the Centre Board Chairs' Committee, Dr. Just Faaland; a number of Centre Directors, Board Chairs and Observers; and staff of the TAC and CGIAR Secretariats. Dr. Stein Bie welcomed the participants on behalf of the Director-General of FAO.

The report of TAC 66 was adopted without amendments. Under matters arising from TAC 66, it was noted that in providing commentaries on Systemwide Initiatives at TAC 66, TAC had not always specified a timing by which Centres were to respond. The Committee would deal with this issue under agenda item 7. The provisional agenda for TAC 67 was adopted without modifications. Under Other Business three agenda items were added: the CGIAR's involvement in Eastern European states; an informal proposal for CGIAR support to small island states; and an invitation to consider a CGIAR cotton research institute.

Dr. Michel Petit reported on the views of the Finance Committee with respect to the matrix framework proposed by TAC in the 1996 Research Agenda paper presented at the MTM in Nairobi. Among the major issues raised was the need to identify the role of the CGIAR in the global research system, to make the matrix more transparent, and to give the matrix a greater programme orientation.

Mr. Alexander von der Osten, Executive Secretary of the CGIAR, reported on major developments in the CGIAR System since TAC 66, particularly with respect to the outcome of the May 1995 Mid-Term Meeting of the CGIAR, the funding situation, and recent membership developments.

CGIAR Priorities and Strategies

At TAC 66, the Committee had recommended that in considering future priorities and strategies for the CGIAR, specific attention should be given to current projections on future food demand and supply, poverty issues, strengthening of national research systems, the role of advanced research institutes, natural resources management, and gender issues, with inputs from centres and outside experts. TAC discussed each of these issues following presentations on each theme by pre-selected experts who also served as resource persons throughout the discussion.

Dr. Nikos Alexandratos (FAO) and Dr. Mark Rosegrant (IFPRI) reported on their recent work in the context of 'FAO's Agriculture Towards 2010' and IFPRI's 2020 studies, respectively. Dr. Alexandratos and Dr. Per Pinstrup-Anderson (IFPRI) also discussed the implications of both of these studies for CGIAR priorities. In discussing issues pertaining to national research systems, introductory comments were provided by Dr. Cyrus Ndiritu (Kenya, Chair, NARS-CGIAR Partnership Initiative), Dr. Christian Bonte-Friedheim (ISNAR) and Dr. Stein Bie (FAO). On gender issues and institutional strengthening, the lead speakers were Dr. Hilary Feldstein (CGIAR Gender Programme) and Dr. Stein Bie (FAO). On poverty issues, Dr. Gaurav Datt (World Bank) and Dr. S.N. Saigal (IFAD) provided introductory comments. On CGIAR collaboration with advanced institutes, Dr. Jozef Schell (Max-Planck-Institut), Dr. Bernard Bachelier (France) and Dr. Rudy Rabbinge (Netherlands) provided overviews of possible mechanisms for more effective partnership with the CGIAR. Dr. Richard Harwood (USA) also contributed to that discussion. Finally, in leading the discussion on natural resources management research (land and water), the resource persons were Dr. Pierre Crosson (Resources for the Future, USA), Dr. Richard Harwood (Michigan State University, USA) and Dr. Rudy Rabbinge (Wageningen Agricultural University, Netherlands), while Drs. W. Sombroek and R. Brinkman of FAO also made valuable contributions to the debate.

The dominant theme throughout the sessions was how CGIAR discussion of priorities and strategies might be improved through more focused attention to each of the issues raised. TAC will prepare a follow-up to these discussions and a background paper on each topic for discussion by the Group at ICW'95. TAC also initiated development of a framework for setting CGIAR priorities which will also be discussed with the Group at ICW'95. A comprehensive report on CGIAR priorities and strategies will be completed at TAC 69 in March 1996 and submitted to the Group at MTM'96.

Study of Strategic Natural Resources Management Issues and Research Needs in the CGIAR

TAC discussed a progress report on this TAC-guided study which was presented by its convenors, Drs. Hans Gregersen and Ted Henzell. TAC prepared draft recommendations on priorities and strategies for natural resources management research in the CGIAR. These will be incorporated into a further draft which will be shared for comments with Centre Directors, prior to its finalization for discussion at ICW'95. In discussing this topic, TAC also carefully considered the reports of the CGIAR Task

Forces on Sustainable Agriculture and on Ecoregional Research. Comments on both these studies have been incorporated into the draft paper.

In this discussion TAC also reviewed a revised proposal submitted by CIAT and IBSRAM for a Soil, Water and Nutrient Management Initiative. TAC was favourably disposed towards the proposal, commended the leaders of this initiative for the improvements over an earlier proposal, and acknowledged their cooperation with TAC. Recommendations on funding were made under Item 9 (see below).

Strategic Study of Institution Strengthening Research and Service

TAC discussed a draft report of the review panel in the presence of the panel Chair, Dr. John Nickel. TAC found the draft report useful and expressed particular appreciation that so comprehensive a report had been put together in the limited time available. TAC asked the panel to revise the report in the light of discussions at the meeting; these related primarily to priority setting for institution strengthening activities, the anticipated strength of NARS and opportunities to achieve increased efficiency in the utilization of CGIAR resources devoted to institution strengthening research. TAC also hoped that a revised draft report could be shared for comments with representatives of NARS. TAC will discuss the final report of the panel at TAC 68 at ICRAF in Nairobi.

External Programme and Management Review of IITA

TAC discussed the report of the review panel in the presence of the panel Chair, Dr. Eduardo Venezian, and the Director General and the Chair of the Board of Trustees of IITA. The review report was positive about IITA. TAC commended IITA's Board, management and staff for their sustained delivery of research results and collaborative activities with NARS. TAC in general endorsed the recommendations of the review report. It was noted that IITA's past successes had largely resulted from commodity improvement and plant health management research. TAC expressed the hope that, in the future impact could also be obtained in sustainability-oriented research. The review panel had also commended the Centre's management, and had made a number of observations, particularly with respect to project-based research and human resources management. After discussion, TAC was satisfied that the Board and the Director General are giving these matters adequate attention. TAC prepared a commentary on the review report for consideration at ICW'95.

Inter-Centre Review of Roots and Tubers Research

TAC discussed the progress report of the review panel in the presence of the panel Chair, Dr. David MacKenzie. TAC commended the panel for the significant work it had accomplished in such a short time span. TAC provided a number of comments on the report and asked the panel to continue its dialogue with the centres and with NARS. The panel was requested to finalize their report in time for consideration by TAC at TAC 68 in December. TAC's comments on the report related primarily to priority setting in roots and tubers research and to the need for clearer terms of reference for the proposed Inter-Centre Consultative Committee on Roots and Tuber Crops Research.

1996 Programme and Budget Proposals

TAC endorsed a revised proposal, jointly submitted by IPGRI and CIFOR, to support work on forest genetic resources during 1996 for US\$ 350,000. TAC also endorsed a proposal from ICARDA for a transfer of its Iran research project to the Centre's core programme and the CGIAR agreed research agenda for a total of US\$ 1.8 million. TAC accepted ICARDA's argument that its work in Iran is similar to other work earlier considered as an international public good.

TAC also considered a revised proposal from ICLARM for a core budget increase of US\$ 1 million to support policy research, fisheries resource assessment and fish productivity research and, additionally, a request to transfer US\$ 2.5 million from its complementary to its core programme. TAC endorsed both requests, although it considered that the supporting documentation from ICLARM required more work. TAC expects ICLARM to submit revised proposals in due course and to submit a detailed progress report on its activities at TAC 69 in March 1996.

1997-2000 Resource Allocation Process

TAC considered possible approaches to the next round of medium-term plans. It is proposed that these would cover a three-year, rolling funding cycle starting 1998 to permit a closer link between CGIAR priorities and resource allocation. All centres would be asked to prepare a new medium-term plan (three years) in time for consideration by TAC in March 1997. The TAC and CGIAR Secretariats will prepare a paper on the approach proposed which will be discussed with Centre Directors in October 1995.

Proposals for Systemwide Initiatives and Programmes

TAC considered new and revised proposals from convening centres for a number of Systemwide initiatives and programmes for funding during 1996. It also received a progress report on the Systemwide Livestock Initiative.

The Soil, Water and Nutrient Management Initiative submitted by CIAT/IBSRAM was, in general, endorsed and an allocation of US\$ 900,000 was recommended to support its implementation. The proposal for an 'Ecoregional Programme for the Humid and Sub-Humid Tropics of Sub-Saharan Africa' was also endorsed and TAC recommended that US\$ 700,000 be allocated to this programme during 1996, of which US\$ 350,000 be assigned to IITA and US\$ 350,000 to WARDA. TAC also recommended an allocation of US\$ 600,000 to support the proposed initiative submitted by ICARDA 'On-Farm Water Husbandry in West Asia and North Africa' during 1996. TAC also responded favourably to the proposal submitted by CIAT for an 'Ecoregional Approach to Enhancing Agricultural Research in Tropical America' and recommended an allocation of US\$ 900,000 to begin implementing the programme in 1996.

TAC also considered the proposed CGIAR Systemwide Initiative on Integrated Pest Management. In view of recent consultations between representatives of this

proposed initiative with a wide range of non-CGIAR institutes working on IPM to ensure adequate coordination and complementarity, TAC considered that there was no need to proceed at this time with the consultation workshop as proposed at TAC 66. The Committee endorsed the proposal submitted by Dr. Brader to TAC 67 and recommended that a sum of US\$ 400,000 be allocated to support the initiative during 1996.

TAC also considered the timing by which Centres need to respond to the queries it had raised with respect to some of the Systemwide initiatives and programmes at TAC 66 and TAC 67. The Committee expects that centres will respond to these at TAC 69 in March 1996 when it is considering 1997 funding requests.

External Review Process

At MTM'95 the Group asked TAC to report at ICW'95 on the question of consistency across external reviews and to provide feedback on the guidelines for reviews. The TAC Secretariat subsequently wrote to Centre Directors to ask for their views on the question of consistency. TAC discussed the results of that survey and the TAC Chair will report to the Group at ICW'95 on the issues raised.

Future Reviews

TAC discussed a progress report of the Strategic Study of Public Policy and Public Management Research which had been prepared by the panel Chair, Dr. Alain de Janvry. The Committee also discussed future planning for external reviews, in particular those of ICRISAT, IPGRI, IFPRI and ISNAR which will be initiated during 1996. TAC and the CGIAR Secretariat also recommended delaying the full external review of IRRI which was scheduled for 1997 until 1999, and meanwhile conducting an interim external review of IRRI during 1996.

Finally, the Committee asked the Secretariat to commission studies on post-harvest technology and CGIAR investments in marginal areas in time for discussion at TAC 68. The implementation of studies on CGIAR cereals research and on CGIAR commitments in Latin America and the Caribbean would be delayed until after completion of the report of CGIAR Priorities and Strategies in May 1996.

Future Meetings

TAC confirmed dates and venues for the following meetings:

TAC 68, 4 - 8 December 1995, ICRAF, Nairobi, Kenya
 TAC 69, 25 - 29 March 1996, IRRI, Manila, Philippines
 TAC 70, 30 July - 6 August 1996, CIAT, Cali, Colombia
 TAC 71, 25 - 29 November 1996, venue to be decided.

Other Business

At the request of the Oversight Committee, TAC considered a future involvement, which implied a larger role for TAC than that agreed to earlier, in priority setting for research in Eastern Europe and the former USSR republics. TAC considered that its commitments were already so heavy that it could not take on this additional task for the time being, but expects to discuss the theme with the Oversight Committee in October. TAC was favourable to an informal proposal from ISNAR about organizing a meeting with small island states in the Caribbean to discuss how the CGIAR could support them. Finally, the Committee was informed about recent correspondence of the CGIAR Chair about the possibilities for setting up a CGIAR cotton research institute.

RECORD OF THE PROCEEDINGS

1. The 67th meeting of the Technical Advisory Committee (TAC) to the Consultative Group on International Agricultural Research (CGIAR) was held from 11 to 17 July 1995 at the Food and Agriculture Organization of the United Nations, Rome. Dr. Donald Winkelmann chaired the meeting. Among the participants were TAC Members, Cosponsors of the CGIAR, CGIAR Members, the Chair of the Committee of Board Chairs, the Chair of the Centre Directors' Committee, Centre Directors, staff of the international agricultural research centres, staff of the CGIAR and TAC Secretariats, and a number of observers, consultants, and resource persons (Annex 1).

Opening Session (Agenda Item 1)

2. Dr. Winkelmann declared TAC 67 formally open and welcomed TAC Members, observers, and members of the CGIAR and TAC Secretariats.

3. The report of TAC 66 was adopted without amendments. The Chair congratulated Dr. Guido Gryseels, Officer-in-Charge of the TAC Secretariat, for producing a summary of the report so early and giving it wide distribution. Many of those who received it had expressed their enthusiasm about its quality and had extended, through the TAC Chair, their thanks to the Secretariat.

4. Dr. Gryseels noted that in its commentaries on a number of the Centres' programme and budget proposals and initiatives (CIP, ICRAF, Rice-Wheat Initiative, IFPRI-ISNAR Initiative), TAC did not give deadlines by which Centres were to respond to its comments. The Committee would deal with this under Agenda Item 7, 1996 Programme and Budget Proposals.

5. The provisional agenda for TAC 67 was adopted without amendments.

6. The Chair then gave the floor to Dr. Stein Bie, Director, Research, Extension and Training Division, Sustainable Development Department, FAO, who welcomed the members of TAC and other participants on behalf of the Director General of FAO, Mr. Jacques Diouf. He indicated that FAO attached great importance to the work of TAC, not only by virtue of its being a cosponsor of the CGIAR, but also because it regarded agricultural research as critical to its own mission. In particular, the Director-General had emphasized the need to improve the food security of the poorest countries at the household and national levels. The Organization had been making a major effort in this respect and was utilizing the research of the CGIAR and other entities. One objective was to narrow the yield gap between results obtained in field tests and on farms and, in the longer term, to increase productivity toward 2010/2020 in both fertile and marginal lands, relying upon research by the CGIAR. Dr. Bie thanked the Committee for choosing FAO as its venue and he also welcomed Dr. Winkelmann to FAO as TAC Chair. Dr. Winkelmann, in turn, expressed on behalf of TAC his gratitude to the Director-General for the gracious hospitality that had been extended to the Committee and other meeting participants.

7. The Chair called upon Mr. Alexander von der Osten, Executive Secretary of the CGIAR, to report on developments in the CGIAR System since MTM'95. Mr. von der Osten reported on the Mid-Term Meeting itself, the funding situation, and recent membership developments.

8. The MTM was held 22-26 May, 1995 in Nairobi. The meeting reviewed progress of the CGIAR's reform programme which was on track and due to be completed by the end of the year. The research agenda for 1996 was adopted and the budget approved at the TAC recommended level of US\$ 299 million. Finally, the meeting heard reports from the Plant Genetic Resources Committee; the Task Force on Sustainable Agriculture, and the Task Force on Ecoregional Approaches to Research.

9. Mr. von der Osten then briefly reviewed CGIAR funding since 1994: the 1994 outcome was US\$ 267 million compared to the projected US\$ 215-220 million; the 1995 level which was approved at US\$ 271 million was projected to end at US\$ 275 million; and the 1996 target was likely to be fully funded. The specifics of the 1996 financing plan were being worked out and will be in place by ICW'95.

10. Progress was made on broadening partnerships with NARS. A working group was established comprising representatives of NARS and IARCs and the Chairman of the Oversight Committee. The Committee would make a progress report at ICW'95 and a final report at MTM'96. As a result of initiatives by the Chairman, Dr. Ismail Serageldin, two further committees would be established, one for liaison with NGOs and the other for liaison with private sector organizations. There were changes in the membership of the Finance and Oversight Committees. A decision was taken to move ahead with the creation of an evaluation function for the CGIAR based on the work of the task force for that initiative.

11. The Group had accepted the generous invitation of the Government of Indonesia to host MTM'96 and of Egypt to host MTM'97. Finally, there were impending changes in the membership of the CGIAR. Rumania had joined; Portugal, Greece and New Zealand had expressed interest in joining; and discussions were underway with 17 developing countries on possible membership.

12. In the ensuing discussion, a question was raised as to whether there was a general preference among donors to fund programmes rather than institutions. Mr. von der Osten indicated that there was not sufficient evidence to confirm this one way or the other. In response to another question, he also indicated that the CGIAR Secretariat, in addition to its efforts to bring in new donors, was making an effort to increase support from current donors.

13. The Chair then called upon Dr. Michel Petit, Chairman of the CGIAR Finance Committee, to report on that committee's recent deliberations and their implications for TAC's setting of priorities and strategies.

14. Dr. Petit's comments focused primarily on the Finance Committee's views on the matrix framework established by TAC at its meeting in Lima in March 1995. In terms of the CGIAR's overarching objective of alleviating poverty, the Finance Committee

expressed its concern about the difficulty of differentiating the contribution of CGIAR research to this effort from that of other entities. While the Lucerne meeting confirmed that agricultural research was again high on the development research agenda, donors regarded the CGIAR System as only one component of the overall global effort. Multilateral organizations may continue to focus their support on the CGIAR, but other donors will be supporting other elements of the global agricultural research system. Some donors (e.g., the Commission of the European Union, United Kingdom, Australia, Canada) had clearly indicated their intention to shift their support from funding centres to funding programmes. It was, therefore, particularly important that the matrix framework permit transparency in the identification of research programmes both in terms of their objectives and costs. While the Finance Committee regarded the matrix as currently constructed as a move in the right direction, it expressed a desire to see refinements in it which would permit greater transparency as defined above. The Finance Committee specifically recommended that the matrix eventually be constructed with columns made up of programmes or aggregated sets of programmes which were themselves aggregated sets of projects. The current distinction between Centre and Systemwide Programmes and Initiatives was probably not appropriate. It reflected more a difference in the mode of implementation than in objectives, goals, and indicators of success, i.e., the key parameters defining programmes. The Finance Committee's views on these issues were elaborated in greater detail in Dr. Petit's memorandum to Dr. Winkelmann on this subject dated 1 June 1995, a copy of which was circulated to TAC. TAC's views on these issues would be welcomed by the Finance Committee.

15. In the discussion that followed, one TAC Member agreed that the columns of the matrix were more indicative of which Centre(s) were implementing an activity rather than the content of a particular program. It was anticipated that this problem would be resolved once the System's priorities and strategies have been clarified into programmes. However, another member felt it would be impossible to categorize all CGIAR activities into programmes. There were many common activities carried out by the Centres which could not be constituted into single programmes.

16. There was considerable discussion on the issue of core versus complementary funding in the context of the matrix framework. Dr. Petit argued that when a research consortium received CGIAR funding for a particular programme and then raised additional funds from other sources, questions might arise as to whether the CGIAR contribution was distinguishable from the resources contributed by other donors having specific interests complementary to the consortium's programme of research.

17. TAC Members sought clarification on whether there was a general feeling among donors to shift to programme funding and away from institutions, or whether this tendency was confined to a few specific members of the Group. In response, Dr. Petit noted that the European Union, in particular, was leaning in this direction, but had not yet sorted out the specifics of its intentions. He characterized its position as a preference rather than a policy. However, he emphasized the EU's intention to "coordinate" its support to the CGIAR, European institutions, and NARS. While similar trends were apparent among other donors, Dr. Petit did not have a numerical count.

18. CGIAR Centre representatives generally expressed the view that there was need to emphasize the importance of the Centres as institutions, and to recognize that donors were not yet certain in their own minds about the modalities of programme funding. They stressed the need for fungibility within the cells of the matrix as well as the need to maintain donor support for core programmes, which provided Centres with the capacity and stability needed to undertake Systemwide Programmes and Initiatives.

19. In bringing this discussion to a close, the Chair asked Dr. Petit to convey to the Finance Committee that TAC shared some of its anxieties about the matrix and had, in fact, been discussing these issues within the last few months and at the current meeting. TAC would convey its views to the Finance Committee in the near future, suggesting tentative solutions to the problems raised in Dr. Petit's report. In turn, TAC would welcome comments on its proposals from the development assistance community, the Centres, and the Finance Committee.

CGIAR Priorities and Strategies (Agenda Item 2)

Projections of Food Demand and Supply to 2010 and 2020

20. The Chair opened this item by noting that at TAC 66 the Committee had recommended that in considering future priorities and strategies for the CGIAR, specific attention should be given at the present meeting to current projections on future food demand and supply, poverty issues, strength of NARS, the role of advanced research institutions, resource management research, gender issues, and institution strengthening with inputs from Centres and outside participants.

21. The session began with a retrospective look at the framework used by TAC for the 1992 priority setting exercise. The intent was to examine the extent to which the parameters used in 1992 were relevant to the current exercise in light of past trends and projections of the global food situation toward 2010/2020 with a view to possibly incorporating new parameters. Dr. Gryseels began the discussion by presenting an overview of the 1992 framework. A formal analytical/quantitative model comprised of three dimensions was employed. These were: (1) *activities* (resource management, breeding and germplasm enhancement, policy and management, production systems, institution building); (2) *spatial* (regions and agroecological zones); and (3) *products* (four major production sectors - crop, livestock, fisheries, forestry and their corresponding commodities). An analysis was done for 45 commodities in developing countries spread over nine agroecological zones and four regions. The unit of analysis was the agroecological zone, regionally defined. The timeframe was 1991-2010 using FAO projections. The quantitative analysis started with a baseline composed of value of production, number of poor people, and land in use. The baseline was then weighted using a number of modifiers (yield gap, malnutrition, GDP *per capita*, need for production growth, deforestation, number of scientists, soil degradation, small countries, food imports). The calculation yielded a modified baseline giving greater weight to Africa and less to Asia. A prioritized list of commodities was also calculated based on value of production adjusted by value of the baseline and of the modifiers. The analysis yielded a ranked priority index, which was then compared with actual resource

allocations. This served as a basis for discussion of priorities and, in turn, yielded TAC recommendations on priorities for regions, commodities and activities as a framework for further recommendations on resource allocation.

22. Recently, the TAC Secretariat had recalculated the commodity priority index using alternative sets of developing countries, specifically, those with annual *per capita* incomes of less than US\$ 1,000 and those considered the 39 poorest countries by the United Nations. Calculations for these two sets of countries were then compared to the 1992 index and implications were drawn for changes in priorities of specific regions. By giving more weight to the poverty dimension, these more recent calculations resulted in substantial increases in the priority indexes of Africa and Asia and substantial decreases in those of Latin America and WANA. The purpose of this exercise was not to arrive at specific recommendations, but rather to show the possible implications for CGIAR priorities of introducing more explicitly the poverty alleviation dimension. Similarly, limiting the analysis to the poorest 39 countries significantly affected the priority rankings of specific commodities. Gainers included cassava, livestock, banana, bean, and sorghum; losers included potato, wheat, and maize. Dr. Gryseels stressed that these analyses related only to CGIAR commodities and regions, and not to activities such as policy and management research. He closed by saying that the Secretariat would welcome TAC's comments and guidance for the ongoing analyses which it was conducting in support of TAC's current priority setting exercise. The task before TAC was to decide upon a methodology for recommending priorities to the Group. This might involve such considerations as updating the projections from the last exercise, conceptualizing the linkage between productivity improvement and poverty alleviation, identifying alternative sources of research supply, factoring in research on natural resources management, and incorporating gender analysis into the overall research programme. Finally, it would be necessary to link the priorities to resource allocation in a transparent way based upon interaction with all concerned stakeholders.

23. The Chair brought this discussion to a close, remarking that introducing the poverty variable could have a dramatic effect on priorities with potentially large implications for the allocation of System resources. He also alluded to the extensive interaction with various groups which TAC undertook in the 1992 exercise with a view to improving the analysis, and expressed TAC's intention to consult similarly during the present exercise. He then called on Dr. Nikos Alexandratos, Chief of FAO's Global Perspectives Studies Unit, to present FAO's global food projections for 2010.

24. Dr. Alexandratos based his presentation on the recently published FAO study, 'World Agriculture: Towards 2010'. The study documented the recent and projected slowdown in the overall rate of growth of world agricultural production, as well as a continued decline in the *per capita* rate of growth of agricultural production. The latter trend has caused concern among some analysts as to whether major food shortages will be a global prospect within the next 15 years. Most of the recent and projected decline in the *per capita* rate of agricultural growth was attributable to slower growth in the developed countries which, in turn, was related to expected low rates of population growth and policy reforms to reduce large food stocks and gear agricultural production more closely to market demand. For developing countries, however, there had been no pronounced trend toward a decline in *per capita* production except in the cereals sector,

which in the last decade had experienced a sharp reduction in the *per capita* rate of growth which is now essentially zero. The decline in cereals has been compensated for by rapid *per capita* growth in the rate of livestock production. The question then was whether the declining trend for cereals should be taken as a sign of alarm or as a reflection of diversification of production out of cereals spurred by economic growth in certain developing countries. Dr. Alexandratos felt that this question should be an important dimension of TAC's deliberations over priorities.

25. Population growth rates have been declining since the 1950s and annual increments to world population, while at an all time high of 90 million, were about to begin to decline very slowly. In this context, economic growth rates over the next decade were expected to grow strongly in East Asia, with a slight improvement for South Asia and low rates of growth for all other developing countries, particularly sub-Saharan Africa and WANA. These trends in food production, population growth, and GDP *per capita* provided the backdrop for FAO's projections of food availability over the next decade and a half. Viewed in terms of calories *per capita* per day, individual levels of consumption in developed and developing countries were projected to vary by some 500 calories, a difference which Dr. Alexandratos characterized as enormous. His analysis also showed that sub-Saharan Africa will experience virtually no improvement in daily caloric intake *per capita*, which is to say that the region will not solve its food problem by the year 2010.

26. Cereals yields in developing countries (wheat, rice, and maize) were projected to continue to grow toward 2010, but more slowly than in the past. This production outcome for developing countries would be more or less sufficient to meet the growth of their own demand as determined by their rates of population and economic growth. However, their need for further net imports of cereals from developed countries will continue and was projected to rise from the current 90 million tons per year to approximately 160 million by 2010. Developed country cereals exporters were likely to continue to be able to meet projected developing country demand. However, financing these levels of imports was likely to pose a serious problem for sub-Saharan Africa.

27. IFPRI's global food projections to 2020 and their implications for investment were presented by IFPRI Research Fellow, Dr. Mark Rosegrant. The projections were essentially in agreement with those of FAO. The aggregate food supply/demand situation globally was favourable. Food production will grow fast enough to cause prices to fall but despite the world's productive capacity to meet effective demand, there will not be much improvement in food security in certain regions of the developing world, particularly sub-Saharan Africa and South Asia. Net imports of cereals by developing countries will increase to 185 million tons by 2020. Sub-Saharan Africa's share of these net imports will rise from nine million metric tons today to 27 million in 2020, a level considered unsustainable through domestic resources and requiring large increases in financing or food aid from developed countries. Small progress will be made in the developing world in reducing the absolute number of malnourished pre-school children from the present 184 million to 150 million. In sub-Saharan Africa there will actually be large increases in the number of malnourished children. Like the FAO study, IFPRI predicted that there was little scope for increases in agricultural production through expansion of areas under cultivation, except for certain sub-Saharan African countries.

Dr. Rosegrant acknowledged this was a controversial prediction because some analysts felt the predicted rates of expansion would cause rapid degradation of the land and therefore may not be sustainable.

28. On the demand side, there was a very rapid structural shift underway in demand for food in fast growing areas, especially East Asia, resulting from rapid urbanization, changing tastes and preferences, and rising incomes which were causing a shift to more diversified diets (from cereals to livestock products, fruits, and vegetables.) However, the most rapid growth in demand for food will be in areas that were not expected to grow economically, but which had very high population growth rates. These included sub-Saharan Africa, WANA, and South Asia. In absolute terms, between 1990 and 2020 effective global demand for food could only be met by increases of 62 percent more rice production, 58 percent more wheat, and 55 percent more maize. But even these increases would not lead to food security and adequate diets in all regions.

Implications of FAO's 2010 and IFPRI's 2020 Studies for CGIAR Priorities

29. In the ensuing discussion, TAC Members and other participants posed questions to the two presenters focusing primarily on the research and policy implications of supply/demand projections for various commodities, the interactions between agricultural production and natural resources degradation, the relationship between global and regional level projections, the feasibility of basing research resource allocations on highly aggregated food production/consumption data, and the potential effects of agricultural research in alleviating poverty by promoting economic growth.

30. A question of particular concern centred on the paradox of ample projected food availability at the global level in the context of rising demand for cereals in sub-Saharan Africa and South Asia. In addition to the issue of financing increased net imports, the problem of increasing domestic production in the context of an overall supply situation which appeared to be sufficient seemed problematic. Agricultural research breakthroughs might further lower world food prices for cereals. While this would help poor consumers, particularly in urban areas, it could have negative effects on poor farmers by decreasing their incomes. In a more general sense, however, it was argued that the growth linkage effects of increased agricultural productivity were generally associated with accelerating growth in the rural non-agricultural economy, particularly in countries where agriculture was the largest sector. But for purposes of priority setting, one would need country level studies to confirm the autonomous impact of research on food security compared to alternative investments in other sectors. Furthermore, it was argued that in considering the potential effects of research on increasing agricultural productivity growth, there would be gradual exhaustion of gains from conventional breeding early in the next century; further yield growth would be generated as conventional breeding was combined with wide-crossing, transgenic breeding, and other tools resulting from biotechnology research.

31. By way of trying to clarify the importance of this discussion for TAC's deliberations, one Committee member suggested that it might be helpful to think of the CGIAR's priorities for resource allocation in terms of three complementary dimensions: (1) increased food production, and hence consumption, through *commodity* research;

(2) increased agricultural production in *areas* where the rural poor were concentrated;
 (3) development of the agricultural *sector* and promotion of non-agricultural rural employment through so-called growth linkage effects. These three dimensions were said to be complementary rather than mutually exclusive, but each required that priorities for resource allocation be tailored to different objectives. This was a complicated issue that warranted TAC's attention.

32. There was considerable debate on the question of the potential for increased agricultural production through area expansion, particularly in marginal zones where lands may become quickly degraded and the costs of restoring or rehabilitating them may be too large a constraint to consider them a notable source of growth. This issue was felt to be particularly important in sub-Saharan Africa. It was acknowledged that data constraints made it virtually impossible to quantify the extent of land degradation and its impact on agricultural productivity at the global level. Given variations in natural resources endowment by country, the need for microlevel research on this question was emphasized.

33. A presentation complementing the IFPRI 2020 projections was delivered by IFPRI's Director General, Dr. Per Pinstrup-Andersen. He offered for TAC's consideration a six-point plan of recommended action which followed from the recent IFPRI conference, 'A 2020 Vision for Food, Agriculture, and the Environment'. The actions included strengthening the capacity of developing country governments to perform their appropriate functions; enhancing productivity, health, and nutrition of low-income people and increasing their access to employment and productive assets; strengthening agricultural research and extension systems in and for developing countries; promoting sustainable agricultural intensification and sound management of natural resources, with increased emphasis on areas with fragile soils, limited rainfall, and widespread poverty; developing effective, efficient, and low-cost agricultural input and output markets; and expanding international assistance and improving its efficiency.

34. The presentation prompted debate on two issues of particular relevance to TAC's priority setting: whether there was sufficient justification for the CGIAR System to begin investing further in research on postharvest technology, and whether it would be cost-effective to invest in agricultural development in marginal environments. Neither question was resolved, but it was observed that the effects of research on postharvest activities were problematic in light of poor marketing, transport, processing and storage infrastructure in many developing countries - all of which required large investments. While one TAC Member argued that the recommendation on investing in marginal environments should be heavily qualified, it was countered that if most of the developing world's poverty and environmental degradation were concentrated in these areas, the problem could not be ignored by the CGIAR. The only alternative to promoting agricultural growth in these areas was migration to high potential zones or urban areas.

National Research Systems

35. The first presentation on priority setting for National Agricultural Research Systems (NARS) was made by Dr. Cyrus N'diritu, Director, Kenya Agricultural Research Institute. Dr. N'diritu began by noting that national systems typically faced the dilemma

of setting priorities in a context of scarce resources and changing policy environments, factors which often diverted them from their mandates and weakened their capacity to implement the activities which a rational calculus would indicate were most important. Thus, in selecting priorities NARS had to take into account not only such variables as the value of production and the potential for research impact on increasing production and sustaining food security, but sectoral and/or macroeconomic policies that impinge on farmers' incentives to grow food. NARS generally did not have the human and financial resources to address all of these considerations. Dr. N'diritu illustrated the complexities involved in NARS priority setting by citing specific examples of the effects of structural adjustment programmes and the actions of parastatals that had vitiated the beneficial effects of national research activities by creating disincentives for farmers to adopt technologies that had been successfully developed by the national programmes. In the case of his own organization's priorities, he emphasized that food security was conceptualized in broader terms than increasing production through improved technology. It was also necessary to address the potential contribution agricultural research could make to generating rural employment, particularly through the development of agribusiness. He stressed, however, that this was not simply a technological problem for research, but involved as well understanding the trade policy environment within which agribusiness could become viable.

36. The second presentation for this item was made by Dr. Bie. His remarks focused primarily on the implications for TAC priority setting of the need to translate technological packages now available to narrow the yield gap into improved productivity for poor farmers. The role of NARS, with assistance from the international centres and others, was seen as key to this process. Dr. Bie began by emphasizing the need for continued public support by developing country governments for their NARS, in particular so that they would remain competitive with other sectors and possess the requisite scientific and management skills and infrastructure needed to perform effectively. Given their role in generating public goods for agriculture, the private sector was unlikely to assume their functions.

37. Dr. Bie identified three ways in which the CGIAR could help to strengthen NARS. First, it would be useful to treat them as part of the larger structure of institutions, including universities, that created intellectual outputs relevant to improving agricultural production. Neglect of these institutions by developing country governments in recent years meant that the multidisciplinary approaches needed to develop technologies and policies to help to close the yield gap remained to be developed. The CGIAR could contribute to strengthening these institutions, particularly in concert with Advanced Research Organizations (AROs) of the developed countries. The Centres could play a pivotal role in transmitting to NARS the latest science from the AROs and relaying back from NARS the research problems which warranted the attention of the advanced institutions. Secondly, the last few years have seen increased South-South collaboration among NARS, a development which FAO supported, as well as increased regional integration of NARS through various entities. The CGIAR had an opportunity to strengthen the national programmes by collaborating with these regional groupings through its ecoregional approaches. Finally, the Centres could become more involved in assisting NARS to engage in formal priority setting, with ISNAR playing a key role. Dr. Bie also identified a number of potential constraints to strengthening IARC-NARS

collaboration. Some developing country governments did not share the CGIAR's goal of alleviating poverty and, instead, would give priority to the production of cash or export crops. TAC and the Centres should help NARS to resist such pressures.

38. The third presentation for this session was delivered by ISNAR's Director-General, Dr. Christian Bonte-Friedheim. He emphasized that the CGIAR's priorities vis-à-vis the NARS needed to be adapted to the latter's growing strength and heterogeneity. Because NARS had substantial differences in resource endowments, political contexts, and internal and external relations, the Group and the Centres needed to be more closely attuned to their specific needs rather than taking a global approach. Perhaps the most important new dimension in the CGIAR's relationship with NARS was the latter's expression of a desire to be partners in priority setting and, in that sense, participate in ownership of the System's objectives. Another manifestation of this was the desire of stronger NARS to bid jointly with Centres for projects and to implement them as equal partners. They had also begun to relate directly to Advanced Research Organizations in both the public and private sectors. These developments should attract TAC's attention as it set System priorities and attempted to determine the most appropriate role for Centres in the newly emerging context. For example, the growth of regional cooperation among NARS was a healthy sign, but prerequisite to effective cooperation with the CGIAR at this level was the creation of national level fora in which the various elements of the national systems could be represented. The CGIAR had an important role to play in this regard.

39. Following these presentations the Chair invited comments from TAC Members and other participants. The ensuing discussion addressed such questions as the sources of change in NARS' needs and outlooks; the appropriate division of labour between the international centres, advanced institutions, and the national programmes; how best to relate to NARS in a regional context; how to involve NARS in the CGIAR's thrusts in the areas of poverty alleviation and natural resources management; and how to involve NARS in TAC's priority setting.

40. On the question of the antecedents of NARS' new orientation, it was noted that in the last five to ten years there had been a significant increase in the number of NARS researchers holding M.Sc. and Ph.D degrees (although this appeared to be less true for the social sciences and policy research). Thus, there were more scientists to work with, but at a time when reductions in public funding for agricultural research meant that NARS scientists lacked the appropriate equipment and infrastructure needed for effective collaboration. Concern was expressed that this large investment in NARS human resource development was being underutilized, yet there was substantially increased demand for national agricultural research compared to five years ago. A perhaps related development was the rapid privatization of some NARS activities, at least in Latin America.

41. There was considerable debate on the issue of devolution to NARS of research activities carried out by the Centres. In the days of traditional commodity research this was treated as a matter of comparative advantage. Today, it was complicated by the research implications of the CGIAR's priorities on natural resources management and poverty alleviation which were not necessarily shared by developing countries, and by

domestic political pressures for NARS to conduct research in support of agricultural commercialization. These political complexities were matched by technical problems involved in conducting natural resources management research across broad ecoregional zones lying beyond the scope of NARS national mandates. Another concern was that traditionally devolution implied a reallocation of financial resources from the Centres to NARS. But in the framework of the new CGIAR funding mechanism, devolved research might no longer be considered an *international* public good eligible for CGIAR resources, raising the question as to the future stability of the research. In the past, devolved research had sometimes resulted in losses in the stock of knowledge when changes had subsequently occurred in the strength of NARS. Finally, even assuming continued strength, there remained the issue of the international mobility of genetic resources' responsibility for a particular crop devolved to the national level.

42. These complexities clearly implied that there was need for greater consultation between the CGIAR and NARS on priority setting. Various views were expressed on this issue. From the standpoint of process, NARS apparently preferred to interact with TAC in the context of their various regional groupings. However, it was argued that until agricultural research strategies were in place at national levels, a regional framework for interaction would be problematic given the heterogeneity of individual NARS. Although TAC did not reach consensus on this issue, the Chair indicated that the Committee shared many of the concerns expressed by participants. He reminded the members that CGIAR guidelines on IARC-NARS interaction on research itself were premised on the principles of comparative advantage and the production of international public goods. He considered this framework a viable one for pursuing this issue in the current round of priority setting. He expressed the sentiment of TAC Members that there should be greater interaction with NARS on CGIAR priorities and strategies. While the modalities of this interaction were not identified, the Chair indicated that TAC would share its analyses with NARS as the process moved forward.

Gender Issues and Institution Strengthening

43. The Chair invited Dr. Hilary Feldstein, Programme Leader of the CGIAR's Gender Programme, to make the first of two presentations on the implications for the CGIAR's priorities and strategies of incorporating gender issues in its research agenda.

44. Dr. Feldstein presented the case for integrating gender analysis into CGIAR-sponsored research in terms of the increased knowledge it would generate of key aspects of agricultural production that were women-specific or of policies that limited women's productivity. Since gender-based research was often location-specific, the use of macrolevel indicators such as female illiteracy rates or distribution of female heads of households to identify gender-related production or policy constraints were problematic. Instead, Dr. Feldstein proposed a "user perspective" to research on such factors as the influence of women's preferences on choice or adoption of technology or women-specific constraints which could be addressed by policy research, such as property rights and access to credit, inputs, and infrastructure.

45. In conducting such research, she proposed a division of labour between IARCs and NARS, whereby the former would undertake strategic and applied research having an

international character and the latter applied and adaptive research. The most important task for the CGIAR was to give priority to the development of methodologies that would further strengthen use of a gender and user perspective for research below the national level, but which had international spillover effects. This was particularly important given the microlevel nature of such research. Among the topics which Dr. Feldstein identified as women-specific were postharvest storage and processing, seed storage and selection, germplasm collection and *in situ* conservation, and fuelwood and water for domestic use. Given the uneven exposure of IARCs and NARS to gender analysis, it was recommended that priority be given to a review of current CGIAR activities in this area, methodological development, training, and communication.

46. The second presentation on this item was given by Dr. Bie. He began by noting that while the member states of FAO, for cultural and religious reasons, had diverse views on gender as a development issue, the Organization had taken a proactive position and created a division for Women in Development. Its purpose was to ensure that the gender dimension would be incorporated into FAO projects. The kinds of indicators FAO used in this work included male/female child ratios at one year, female literacy, percentage of girls with more than six years of schooling, and tertiary education of women.

47. Dr. Bie endorsed the topics for research proposed by Dr. Feldstein and suggested, in addition, the following: aspects of mechanization in agriculture having a gender dimension; byproducts of plants having informal and not only commercial uses; the impact of the AIDS pandemic on family structures and women's roles in agricultural production and the transmission of agricultural knowledge to children; and the need to increase the number of female scientists in NARS.

48. In closing, Dr. Bie conveyed the sentiment of FAO's Director General on the importance which the Organization attached to the women's issue and its desire to work closely with the TAC and CGIAR on this issue.

49. The Chair then invited TAC's comments on the two presentations. These focused on the implications of some of the research methodologies and topics proposed by the speakers for TAC's priority setting.

50. In terms of research foci, it was suggested that research on small ruminants, milk production, agroforestry, and female illiteracy were particularly important for sub-Saharan Africa. While some of these topics were beyond the mandate of the CGIAR, it was suggested that the Centres might link up with other organizations whose work on these issues could be integrated with their own. Discussion of the relative utility of female-headed households and illiteracy rates as indicators of poverty highlighted the location-specificity of the gender issue. Caution was urged on the allocation of CGIAR resources to the study of such global indicators. The implications of potential demographic changes resulting from the AIDS pandemic were explored in terms of their potential effects on agricultural production from a reduction in the length of production years of populations and from erosion of the agricultural knowledge base due to disruption in the transmission of technical expertise from parents to children. The latter

had important implications for research, extension, and training to strengthen labour input.

51. The question was raised as to how the international dimension of gender-based agricultural research could be articulated for purposes of priority setting, given its location-specificity. This was said to be a difficult issue to deal with because of cultural, biological, and agroecological variations at study sites. Since the external validity of individual cases would be problematic, it may be necessary to undertake comparative analyses to identify trends and patterns across countries and extrapolate the implications for national and international policies. Given the uneven capacity of CGIAR Centres to undertake gender analysis, it was suggested that TAC might wish to recommend to the Group the analytical tools needed to do the job, e.g., the participatory methods used in Rapid Rural Appraisal. Finally, in response to a question as to whether the rate of return to agricultural research was higher when a gender dimension was included, it was stated that there were currently no findings across projects that would confirm such a hypothesis. However, anecdotal evidence on the beneficial effects of the user perspective on, e.g., technology adoption, was suggestive of the possibilities.

52. In closing this discussion, the Chair highlighted the recurrent theme of the need for research on postharvest technology which has emerged in other contexts of TAC's consideration of priorities.

Poverty Issues

53. The Chair called upon Dr. Gaurav Datt of the World Bank to open the discussion on poverty as an issue in TAC's priority setting.

54. Dr. Datt based his discussion on the World Bank's work in the area of global poverty monitoring, focusing on what was known about global poverty and the implications for alleviation targeting. He began with a methodological caveat that differences in the standards or indicators used to measure poverty made international comparisons problematic. Any priority setting exercise based on such measures should take this caveat into account, although greater confidence could be placed in regional estimates than international ones.

55. The incidence of poverty at the global level based on a US\$ 1 per person per day poverty line was estimated by the World Bank at 34 percent, but there was considerable diversity at the regional level: South Asia (59 percent), sub-Saharan Africa (55 percent), Latin America/Caribbean (28 percent), East Asia (15 percent), and Middle East/North Africa (5 percent). While alternative poverty measures resulted in slightly different distributions - notably, a rank-reversal between South Asia and sub-Saharan Africa - from a poverty alleviation perspective, the regional priorities implied in the above distribution were said to be fairly straightforward. By comparison, the CGIAR allocated its 1993 budget regionally per thousand population as follows: sub-Saharan Africa (US\$ 255), West Asia/North Africa (US\$ 139), Latin America/Caribbean (US\$ 112), and Asia (US\$ 42). Dr. Datt concluded that while the relatively high priority accorded to SSA was consonant with the World Bank's analysis, there appeared to be some scope for

reallocation of resources to Asia, particularly South Asia, which had the lowest *per capita* allocation.

56. The second presentation on this topic was given by Dr. Shiv Nath Saigal of the International Fund for Agricultural Development. He described IFAD's poverty alleviation programmes as being targeted to specific population groups - e.g., poor farmers, landless labourers, women, indigenous peoples - rather than to regions. To the extent that these programmes had an area focus, it was based on the criterion of resource endowment which was seen as major cause of poverty. Thus, emphasis was given to less endowed areas, particularly in South Asia and sub-Saharan Africa, although an attempt was made to maintain a balance between investment in high and low potential zones. IFAD's strategy was to promote labour-intensive forms of technology generation, including use of traditional practices, that increased yields of crops typically grown by poor farmers with a view to directly alleviating poverty at the farm and household levels. It had evolved techniques to identify and reach the poor directly and developed location-specific activities and institutions to achieve these objectives. The poor were identified through diagnostic methods that tap into the perceptions of the poor themselves, rather than through statistical surveys. A number of insights had been gained using these procedures: the poor were not homogeneous, but needed differentiated treatment; solutions to poverty were location-specific; vulnerability mapping was an essential tool to identify where the poor were located.

57. Drawing out the implications of IFAD's experience for TAC's priority setting and the research activities of the CGIAR Centres, Dr. Saigal suggested that it may not be possible for the Centres to engage in narrow targeting of the poor. A more feasible approach might be to target farming systems, particularly those located in low potential areas. He advocated a strategy of agricultural intensification for these areas and the development and extension of biotechnology research geared to the needs of small farmers.

58. The Chair opened the floor to comments by TAC Members. These centred primarily on the feasibility of using poverty - whether defined by regions, population groups, or zones - as a criterion for setting priorities and allocating resources. The essence of this debate was whether in strategic terms it would be better to concentrate CGIAR resources by regions or attempt to target them more precisely to the poor.

59. Dr. Winkelmann began the discussion by posing to TAC Members the question: Given the CGIAR's commitment to poverty alleviation, if, as some have argued, more poor people lived in low potential than high potential areas, was it not necessary for TAC to know with some level of precision the geographic distribution of poverty in order to establish where the System's resources should be allocated?

60. In the ensuing discussion, a number of members endorsed the idea of addressing more specifically the problems of marginal areas because of their degree of poverty and natural resources degradation. Much of the damage now being done may be irreversible and, as had been noted in prior discussion, these areas were a major source of migration either to high potential areas or to already crowded cities. However, there was disagreement among TAC Members and other participants on whether the best way to

treat these problems was through direct interventions in marginal areas, or by continuing to invest in high potential areas and promoting economic growth in the rural sector more broadly. Without such investments, the rates of migration to cities in some countries might have been even greater than they were. Diverting resources away from high potential zones might actually cause increased rural to urban migration and result in upheavals in both areas.

61. The various views expressed on this issue reflected variations in country experiences, again suggesting the location-specificity of the research problem. To some this seemed to imply the need for in-depth poverty profiles of low potential areas as a basis for resource allocation. Others felt that as a producer of research with the character of an international public good, the CGIAR required an allocation and programmatic framework that cut across national boundaries and different ecoregional zones.

62. While the issue of an allocative framework was not resolved, there was extended discussion of the methodological question of the feasibility and utility of measuring poverty. Some participants considered it risky to base allocative decisions on statistical estimates of the regional distribution of poverty, because the aggregate nature of the data tended to mask the actual incidence of poverty even at the regional level, and certainly below it. For example, existing data sets on the incidence of poverty in rural versus urban areas were available for only half of the developing countries and many of these used different poverty lines, preventing comparability of the data across countries. (This observation was questioned later.) The availability of statistics on poverty for Africa were actually declining with more available for urban than rural areas, making it difficult to fine tune resource allocation to degree of poverty. It was argued that even if a satisfactory method and reliable data were available, the concept of stratifying the developing world's poor by income or nutritional levels in order to allocate agricultural research resources would add little to our understanding of where to invest those resources with greatest effect, given the highly heterogeneous nature of the populations and geography involved. Such a calculus required informed judgement as much as quantitative indicators.

63. In summarizing this session, the Chair drew a number of conclusions and implications for the TAC's and the Group's consideration. Although the CGIAR was concerned with poverty everywhere in the developing world, the agricultural focus of its mission implied a logic to giving greater priority to rural than to urban poverty, although it was also clear that creating a vibrant rural sector could have beneficial effects for poor urban consumers. In operational terms, however, the targeting of resources accurately depended very much on how well poverty can be measured. The discussion gave TAC a better sense of the possibilities and constraints in this regard. Correlatively, giving more priority to marginal areas was premised on the assumption that the magnitude and depth of poverty in these environments was greater than that in high potential zones, that gains are possible through research, and, perhaps, that the latter, in any case, had available to them non-agricultural solutions to poverty that marginal ones did not (except migration). While something was known about the percentages of poor in these two zones, little was known about their absolute numbers. Thus, if the CGIAR's commitment to poverty alleviation were to be operationalized and its resources allocated cost-effectively, more precise guidance from the Group on the issue of targeting must be sought.

Advanced Institutions

64. The Chair introduced three speakers from advanced research organizations who were asked to share with TAC their views on the potential for the CGIAR to develop working relationships with such organizations. They were Dr. Jozef Schell of the Max-Planck Institut, Germany; Dr. B. Bachelier, Ministère de l'Enseignement Supérieur et de la Recherche, France; and Dr. Rudy Rabbinge, Scientific Council for Government Policy, The Netherlands.

65. Dr. Schell's presentation dealt with European institutions generally and stressed the potential for cooperation in biotechnology research, one of the major strengths of the advanced institutions. Since very little of such research in the advanced organizations in either the public or private sectors covered commodities important to the developing countries, involvement with the CGIAR could help to focus and apply biotechnology research to developing countries' needs. The principal contribution that biotechnology could make to the CGIAR's twin objectives of poverty alleviation and protecting the environment was to develop, through molecular biological research, plants which produced higher yields while requiring lower inputs. Dr. Schell provided three examples of leading institutions currently carrying out biotechnology research of relevance to the developing world. They were the International Laboratory for Tropical Agricultural Biotechnology (ILTAB); Advanced Molecular Initiative in Community Agriculture (AMICA); and International Service for the Acquisition of Agribiotech Applications (ISAAA). He stressed the importance of the role the CGIAR could play in ensuring that the worldwide effort in biotechnology research was brought to bear on the agricultural and environmental problems of developing countries.

66. Dr. Bachelier provided an overview of the French agricultural research and development system and its potential contribution to the CGIAR's work, touching upon research policy, topics for research, and modes of collaboration. Overall responsibility for the system at the political level was lodged in an interministerial National Coordination Committee (NCC). Relations with the CGIAR were handled by the Commission of International Agricultural Research (CIAR). France had increasingly established linkages with international, regional, and national research organizations. For example, it participated in CGIAR Task Forces and provided support to the regionalization of research in developing countries, particularly in Africa (e.g., CORAF, ASARECA, SACCAR). The primary disciplines embraced by the system were genetic improvement and plant pathology, water management and soil fertility, agricultural livestock systems, socioeconomics, and agroprocessing. Cash crops and forestry, *inter alia*, figured significantly in the system's research agenda. In discussing modalities of collaboration, Dr. Bachelier touched upon past and ongoing cooperation with IARCs and ecoregional programmes involving NARS, AROs, IARCs, and NGOs. He saw this approach as increasingly key to planning, implementing, and securing funding for future programmes in which France was involved.

67. Dr. Rabbinge briefly reviewed the evolution of the CGIAR from its early focus on crop improvement through genetic research, through its emphasis on agronomic and farming systems research, to the more recent thrusts on natural resources management and ecoregional approaches. The System, in Dr. Rabbinge's view, was now entering a new phase requiring integration of strategic, basic, applied, and participatory research and tailoring it to the specific needs of ecoregions to achieve sustainable agricultural

development. The need for advanced methodologies and specialized knowledge to address these new concerns will require an enormous investment and the lead time between research and development will, in some cases, be quite long. Participation of the CGIAR in tripartite collaboration with NARS and AROs would thus become increasingly important. Dr. Rabbinge stressed the urgent need to create more synergism between these three research systems in order to maintain the same level of impact which the CGIAR has had with its traditional research. Biotechnology and systems-research for sustainable development were seen as the most promising fields for collaboration. The suggested approach was felt to be not only the soundest way to proceed scientifically, but also the most cost-effective way of ensuring continued core support for the international centres. Dr. Rabbinge closed by emphasizing that in the future agricultural research would have to be increasingly demand- rather than supply-driven.

68. The Chair opened the floor for comments by TAC Members. The central focus of these comments and the ensuing discussion was on the appropriate division of labour between the advanced institutions, international centres, and national systems. Consideration was also given to mechanisms for collaboration and attendant issues such as intellectual property rights and funding arrangements.

69. One TAC Member saw the opportunity of tapping into the expertise of the advanced institutions as an excellent way for the CGIAR Centres to address the more complex research issues now facing them. This prompted an extended debate on the question of comparative advantage. Would the suggested tripartite mode of collaboration mean that the AROs would perform basic research, with the IARCs and NARS focusing on applied and adaptive research, respectively? What was the research niche of the Centres in an emerging situation of direct ARO-NARS collaboration and how would such bilateral arrangements impact the CGIAR's priorities? Consensus was not reached on these issues and they triggered a number of subsidiary questions which would warrant TAC's and the Group's attention as new CGIAR priorities and strategies were put in place. If research was to be demand-driven, would new priorities such as biotechnology and systems-research be added to the Centres' agenda, or would they substitute for traditional commodity research? Was there evidence that biotechnology could improve yields sufficiently to justify greater weight to this research in CGIAR priorities? When joint research was undertaken with private AROs, would issues of intellectual property rights impede transfer of the technology to NARS? Was such research best undertaken on-site in the developing countries or in ARO laboratories? If NARS were to absorb and apply the new science, did this not imply a need for their developing some in-house capacity for basic research? If so, what were the implications for training of NARS in the new technologies and who should undertake it?

70. While various views were expressed on these individual questions, the Chair expressed the Group's consensus that the shifting comparative advantage among research systems now underway at the global level could be most effectively exploited to the benefit of the world's poor if the actors involved achieve an appropriate division of labour. TAC must ensure that mechanisms were in place to make that process an expeditious one.

Natural Resources (Land and Water)

71. The Chair introduced the first of three speakers for this session, Dr. Pierre Crosson of Resources for the Future. Dr. Crosson presented what he considered to be the principal issues in resource management for agriculture in the developing countries. His analysis was premised on the assumption that the management of natural resources was not an end in itself, but a means to contributing to agricultural development at acceptable costs, including environmental costs. Further, natural resources should not be seen as something apart from knowledge, which was a resource embodied in people, technology, and institutions. Thus, knowledge and natural resources constituted a "unity of resources" employed in agriculture to be managed in the most cost-effective way. Environmental costs in this context were understood as externalities, i.e., on-farm and off-farm costs. In sum, meeting the demand challenge in agriculture involved mobilizing natural resources and knowledge in ways that provided socially acceptable outcomes in terms of production.

72. Dr. Crosson posed the question of how much increases in the supply of natural resources would leverage the supply of food and fibre given the present state of knowledge of how these resources should be managed. Drawing on the FAO 2010 Study, he pointed out that the projected amount of land currently in range and forest which could be converted cost-effectively to agricultural production by 2010, would contribute to only 12 percent of the production needed for global food security. In qualitative terms, the amount of currently degraded agricultural land which might be restored to production was so small that it cannot be considered a significant source of production increase to meet the global food needs projected in the FAO and IFPRI studies. Dr. Crosson, therefore, argued that it was only through the mobilization of knowledge, as previously defined, that the world's agricultural production needs could be met. This was not to say that the CGIAR should not be concerned with natural resources management, particularly in marginal lands in Africa and Latin America. There might very well be payoff to research in these areas through increased understanding of why improving these lands for agricultural production had yielded increases that fall far short of their potential productive capacity. On the other hand, payoffs to enhanced knowledge (i.e., technology) depended very much on improvements in soil and water management. Dr. Crosson concluded that achieving complementarity of knowledge and natural resources management was key to addressing the complex production and sustainability issues of the marginal areas.

73. The second presentation in this session was given by Dr. Richard Harwood of Michigan State University. He stated the case for expanding the CGIAR's portfolio to include work in marginal areas on the assumption that food security and the cost of food were projected to be reasonably under control for the next 10 to 20 years. However, he qualified this by saying that because the growth of cereals (rice and wheat) yields were expected to continue to decline, in the long run the CGIAR should maintain a reasonable part of its research portfolio in these commodities, with particular emphasis on the genetics and production systems needed to maintain high yields. The latter will require new thrusts in soil biology and biochemistry and the genetic shifts of pests.

74. Dr. Harwood then turned to the primary focus of his presentation, the targeting of poverty in marginal areas. In his view, such interventions can be justified only when these areas had deteriorated to the point that they were a drain on national development in terms of the severity of their poverty, environmental loading of downstream production facilities, and migration of the poor to urban areas. There would otherwise not be sufficient national political will to initiate and successfully sustain such interventions. There must also be potential for improved productivity at reasonable cost and lack of alternative development options for these areas.

75. The objective of targeting was first to satisfy local food needs, thereby creating the conditions for farmers to move out of traditional food and feedgrain production and into perennial crops, animal agriculture, and other value-added crops. The conditions for development success included a progressive community structure, start-up investment capital, a lengthening of farmer planning horizons, and either a power source for tillage of annual crops or a market for high value-added, non-food perennial crops. Given these conditions, several new technologies would be needed for success, including those for management of soil biology to ensure efficient nutrient utilization, for carbon husbandry, and for local water harvesting systems. The principal areas for carefully targeted (i.e., to productivity increases) research investment included soil ecology, production systems, management of biological processes, and policy and economic constraints.

76. The final presentation of this session was delivered by Dr. Rabbinge. It was based on the report of the CGIAR Task Force on Sustainable Agriculture which he chaired. His remarks focused on the concept of sustainability and the methodological and institutional changes which the CGIAR should undertake to consolidate and strengthen its activities in the area of sustainable agriculture.

77. In the Task Force's view, the meaning of sustainable agriculture varied according to socioeconomic and environmental conditions; thus, there was no single methodology that would be valid for all ecoregions. It suggested that the problem of sustainability be approached by continuing to focus on issues of productivity and efficiency, explicitly taking into account long- and short-term environmental and equity concerns. A number of methodological recommendations were made, including the need to collect better information on the geographic distribution of declining productivity; to adopt an integrated systems approach to analysing sustainability issues at the field, ecoregional, and perhaps even global levels; and to create integrated research programmes for soil/water/nutrient and pest/disease/weed management. The Task Force also recommended a number of institutional changes which would help to consolidate and strengthen CGIAR ecoregional and Systemwide initiatives and research consortia, socioeconomic and public policy research, and collaborative links with NARS, NGOs, and AROs. Dr. Rabbinge concluded his remarks by re-emphasizing that sustainability research should focus sharply on promoting productivity and efficiency. He disagreed with the notion that sustainable production necessarily excluded the use of external inputs.

78. The Chair invited TAC's comments on the three presentations. These centred on such issues as the relationship between land degradation and agricultural production losses, whether degradation was a linear or non-linear process and the implications for policy interventions, the feasibility of measuring degradation accurately over extended

periods of time, the degree of correlation between land degradation and the incidence and depth of poverty, the geographic location of degraded areas, and the relative priority to be given to researching various issues.

79. One TAC Member endorsed Dr. Crosson's analysis that it was difficult to find strong economic evidence on the costs of natural resources degradation in terms of decreased production. He also noted that while attention had been focused for many years on the downside effects of degradation, there was growing interest in measuring the upside opportunities, i.e., the possibilities for improving soil productivity. Finally, he acknowledged that while the logic of Dr. Crosson's argument was compelling, the perception in the donor community was influenced by concerns prompted by public opposition to various forms of environmental degradation. Priority setting for natural resources management needed to take various realities into account, particularly on issues as data-poor as the ones under discussion.

80. Another TAC Member inquired whether further weight should be given to investing in prevention of natural resource degradation relative to investing in rehabilitation. He also asked whether the knowledge resource central to Dr. Crosson's analysis was new or existing knowledge, and if the latter, whether the real question for priority setting was one of investing enough in extension to put the knowledge into use. Finally, he inquired whether the notion that movement toward a market system and rights in property ownership would help both to prevent resource degradation and alleviate poverty. Other TAC Members queried whether natural resource degradation was a linear or non-linear process and the long-term implications for research. A related concern was whether, in addition to focusing on the costs to production of on-site degradation, attention should also be given to the off-site, downstream effects which could be even more costly. Finally, it was observed that there may be differences of opinion between developed and developing countries on the relative significance of natural resource degradation owing to the substantially greater media coverage of this issue in developed countries. More public awareness needed to be generated in the developing countries; there was need for social science research in this area.

81. Dr. Crosson agreed that extension of existing knowledge or technology to farmers was a key institutional issue susceptible to research. He did not think that the trend toward privatization, particularly in sub-Saharan Africa, would necessarily lead to a reduction in poverty, but it could help to improve land management practices. On the linearity question, little empirical research had been done on this issue, but anecdotal evidence indicated that natural resource degradation was often reversible; the real question was whether restoration of degraded lands was a cost-effective way of improving productivity. On the issue of on-site versus off-site degradation, evidence from the United States suggested that off-farm costs were much the higher of the two. Whether this was true for other countries was, again, an important research issue.

82. Dr. Harwood, responding on the question of public awareness, argued that in many developing countries the externalities of degradation were readily apparent to the downstream recipients of pollution, since the damage was often obvious and economically costly; this was less a research issue than a matter of mobilizing public support at the national level for policies to deal with these effects at their source. He felt that private

ownership in land and privatization, or at least stable access to land, were crucial to providing economic incentives to farmers to improve on-site land management. In Asia and Africa, and indeed globally, population pressures and migration into tribal areas were breaking down traditional land management systems. This was occurring in some very high risk areas. In the absence of private property, community action could address these problems by encouraging growers to have a long-term investment strategy with respect to the land.

83. In the ensuing discussion, a number of the points raised above were pursued in greater detail. The notion that the global production cost of degradation was relatively small was qualified by acknowledging that in many locales it had a severe impact on large numbers of people. At present, the location and size of degraded areas could be gauged only through fairly crude indicators using highly aggregated data. Much more refined information covering the locational and temporal dimensions of degradation was needed before the CGIAR could begin to think in terms of targeting its resources to the most severely affected areas and/or populations. There was an urgent need to reduce uncertainty on this issue through research.

84. The association between degradation and poverty was said to be "lumpy" in the sense that it was not uniform across regions. This had strong implications for TAC's prioritization. The CGIAR's working assumption appeared to be that if research to increase agricultural productivity was targeted to areas where these conditions were highly correlated, poverty would be reduced. In some cases, however, environmental conditions may be so fragile that intensification or the application of new biological technologies may make an already delicate situation much worse, perhaps increasing poverty. The scientific evidence on the feasibility of such a strategy seemed very problematic and required more definitive answers than appeared to be currently available. On a related point, while it was claimed that much of the basic science relevant to problems of natural resources management for tropical agriculture was already known, adapting it to specific agroecological environments represented a large research gap which should be addressed in TAC's prioritization. This was said to be reflected in the lack of specificity in the discussion of the component technologies that needed to be researched, for example, in the areas of soil and water management.

85. In drawing this session to a close, the Chair shared with participants the perspective of Dr. Serageldin on investment in natural resources management which currently figures in the World Bank's approach to this issue. In his view, there were four classes of capital important to humans: natural resources, physical resources, human capital, and social capital. The last included the institutions available to manage natural resources. The question that emerged in managing these resources was whether it was necessary to preserve for future generations the total stock of inherited natural resources or a stock of total capital larger than that which was inherited. Historically, he observed, humans have traded natural resources for human capital. The key question confronting TAC and the CGIAR was what kinds of trade-offs among these classes of capital should inform its priority setting as it pursues the System's objectives?

86. TAC would prepare a follow-up to these discussions and an issues paper on each topic for discussion by the Group at ICW'95. TAC had also initiated development of a framework and criteria for setting CGIAR priorities which would also be discussed with the Group at ICW'95. A comprehensive report on CGIAR priorities and strategies would be completed at TAC 69 in March 1996 and submitted to the Group at MTM'96.

Study of Strategic Natural Resources Management Issues and Research Needs in the CGIAR (Agenda Item 3)

87. TAC heard a progress report on this TAC-guided study presented by the convenors, Dr. Hans Gregersen and Dr. Ted Henzell.

88. Dr. Gregersen reported briefly on the study process and outlined a number of ideas that will provide input to TAC's consideration of this issue in closed session. The basis of his remarks was a draft report on this subject dated June 1995, a copy of which had been provided to TAC Members. The report was being prepared with the help of a number of consultants who were drafting papers on natural resource topics across specific ecoregions. In addition, Drs. Gregersen and Henzell were drafting a paper for TAC's discussion which would eventually become a TAC document. The TAC Secretariat was preparing a background paper on soil/water/nutrient and natural resources management research in CGIAR Centres. The study would be presented at ICW'95 and consist of three parts: (1) a TAC document laying out the intellectual framework, an assessment of the status of CGIAR research, and a set of recommendations on future priorities; (2) a background review paper on the biophysical and social science/policy aspects of this topic from the perspective of the CGIAR System and other elements of the global agricultural research community; and (3) a synthesis paper describing ongoing research in the CGIAR System on this subject.

89. A draft of Part I of the study laying out an integrated watershed management framework for research was circulated to the Centres and others and comments were received. There was general feeling that the framework was too limited and it was revised as an integrated natural resources management framework. It consisted of five sets of linkages: (1) social science and natural science; (2) productivity enhancing research and natural resources management research; (3) spatial or landscape linkages; (4) temporal linkages; and (5) linkage between biophysical and adoption research.

90. Dr. Henzell's presentation dealt with criteria for assessing the relative importance of proposals to strengthen NRM research and the modalities for implementing such research. The proposed criteria were that the research be needs-based in the context of CGIAR priorities, outcome-oriented, utilize existing information, build on the CGIAR's international comparative advantage, and fill existing knowledge gaps. Particular priority should be given to research on soil/water management, non-technical factors such as socioeconomic and policy constraints, and biophysical research. The criteria for judging the modalities of NRM research included degree of effectiveness of collaboration with other suppliers of such research, the cost-effectiveness of the research in terms of relative transactions costs, the participation of stakeholders in planning and implementing the

research, ability to communicate the importance of the research to donors and other stakeholders, and the prospect for continued long-term funding.

91. In closing, Dr. Gregersen, while indicating that the study was not yet at the recommendation stage, envisaged that TAC would make recommendations in five areas: (1) criteria for assessing research options and modalities as specified above; (2) the linkage of NRM research with the System's soil/water/nutrient management initiative; (3) identification of other NRM research topics in the areas of water, institutions, common property and the like; (4) the adoption or adaptation of NRM research at the field level; and (5) the standards of planning, monitoring, and evaluation of NRM research addressing, in particular, the issue of use of quantitative measures.

92. The discussion following these presentations centred primarily on the scope of the study. It was observed that the framework had deliberately omitted forestry, fisheries, and the plant/animal genepool because some of these aspects were covered in other CGIAR studies. The study seemed to have more of a soil/water/nutrient management focus, treating these resources as inputs to the production system. This was seen as an appropriate focus, but it was suggested that the title be revised to reflect this narrower scope. It was also observed that there was a new wave of biological science which would come to fruition in the next four to five years which went beyond the chemistry and physics of traditional soil science and would have potential implications for NRM in the developing countries. Therefore, the notion that existing science was adequate and only needed to be extended to the field might need to be modified as these new breakthroughs occur.

93. The Chair then called upon Dr. Mark Latham, Director General of IBSRAM, and Dr. Robert Havener, Director General of CIAT, to make the next presentation in this session. This consisted of a progress report on the Soil, Water, Nutrient Management Initiative based on a consultation convened by DSE, IBSRAM, and CIAT at Feldafing, 12-15 June 1995, a copy of which was made available to TAC Members. The consultation represented a major effort of SWNM stakeholders to address earlier questions and comments of TAC, and involved representatives from 20 national programmes, seven CGIAR Centres and 29 other agricultural research and development agencies.

94. The consultation reached consensus on the need to narrow the number of research themes to those concerned with combatting nutrient depletion, managing acid soils, managing soil erosion, and soil/water/nutrient management; articulate the dynamic nature of the programme by emphasizing natural resources management with a systems perspective; harmonize the proposed set of consortia with the ecoregional approach pursued by the CGIAR; and create a minimum coordination unit to identify and analyse commonalities among prioritized research themes across ecoregions.

95. In the ensuing discussion, TAC Members suggested that in moving SWNM from the initiative to the programme stage, due attention should be given to identifying research themes addressing critical strategic issues within each consortium, designing modalities for integrating the initiative into ecoregionally based programmes, ensuring relevance to on-site problems and complementarity with other global initiatives, linking

with socioeconomic and policy research at the ecoregional level, and adapting governance of the consortia to the institutional circumstances of the ecoregions where they operate.

96. Donor representatives supporting this phase of the initiative expressed satisfaction with the progress made in terms of the diversity of participating organizations, the output-oriented nature of the chosen themes, and the potential impact of the initiative. They affirmed their support for the transactions costs involved in building the programme, and suggested strengthening the integration of SWNM into ecoregional mechanisms and socioeconomic research.

97. The Chair drew this discussion to a close, thanking all participants for their respective presentations.

98. After further consideration, TAC prepared draft recommendations on priorities and strategies for natural resources management research in the CGIAR. These would be incorporated into a further draft which will be shared for comments with Centre Directors, prior to preparation of a draft report for discussion at ICW'95. A final report would be prepared after these interactions with members of the Group. In discussing this topic, TAC also carefully considered the reports of the CGIAR Task Forces on Sustainable Agriculture and on Ecoregional Research. Comments on both these studies have been incorporated into the draft paper.

99. With respect to the revised proposal submitted by CIAT and IBSRAM for a Soil, Water and Nutrient Management Initiative, TAC was favourably disposed towards the proposal, commended the leaders of this initiative for the improvements over an earlier proposal, and acknowledged their cooperation with TAC. Recommendations on funding were made under Item 9 (see below).

Strategic Study of Institution Strengthening Research and Service (Agenda Item 4)

100. The Chair called upon Dr. John Nickel to present the draft report of the Panel which he chaired on the Stripe Study of Public Policy, Public Management, and Institution Strengthening Research/Service that was commissioned at TAC 66. A copy of the report, dated June 1995 was made available to TAC Members.

101. Dr. Nickel began by gratefully acknowledging the substantial input of his colleagues on the Panel and his thanks to TAC Members, Dr. Eugenia Muchnik de Rubinstein and Dr. Gregersen, as well as Dr. Gryseels, for the technical assistance they provided, and to the TAC Secretariat for excellent logistical support.

102. Dr. Nickel noted that the study being presented was one of two components of the stripe study being conducted by separate panels, one for public policy/management and the other for institution strengthening research/service. The latter report presented here examined the activities and modalities employed by the Centres to strengthen research and service of the National Agricultural Research Systems, with a view to identifying options for improved operations, gaps in the CGIAR portfolio, activities to be

deleted from that portfolio, and a set of sub-questions dealing with the appropriate division of labour between the CGIAR, the national systems, and other entities. The role of ISNAR figured significantly in the study. (The questions which the Panel addressed are contained on p. 2 of the report.)

103. The Panel concluded that the Centres have made and continue to make a major contribution to the strengthening of NARS. While there was room for improvement, the Panel did not perceive the need for radical changes. The Panel adopted an output approach to the study, i.e., to consider what should be the impact of the strengthening inputs of the Centres. It began by identifying the principal steps in the agricultural research process and the principal stakeholders that influenced this process. It then elucidated the characteristics that might be found in an effective, efficient, and sustainable research system and its components, along with the negative consequences that occurred when such factors were weak. This approach served to identify the chief factors that must be addressed and highlighted the fact that the term "strengthening" encompasses a large and complex set of issues. These could not and should not all be addressed by the CGIAR System. The Centres should focus on those areas in which they had special competence and could serve as catalysts to engage others in the global system to contribute to these efforts.

104. The Panel reached five principal conclusions: (1) There was need for "research on research" to identify what constituted a strong NARS over time and what kinds of external interventions were most effective in achieving this goal. Chief responsibility for such research should fall on ISNAR, but should involve other institutions with special competence in institutional development. (2) The development of generic methodological and training tools to improve management represented a valuable international public good. As these tools were adapted to local conditions, they would improve the process of institutional development. (3) Many Centres had provided NARS with assistance in research management beyond mandate-related capacity building. The establishment of ISNAR and its growing competence in research management brought continued emphasis by other Centres on this area into question. The Panel was concerned over the number of Centres that plan to continue or even expand these activities on their own, i.e., not in collaboration with ISNAR. (4) The emergence of regional groupings of NARS, while a positive development, could have negative consequences by diverting scientific manpower to administrative work and introducing another layer into the research bureaucracy. The CGIAR should explore how it can best help these regional groupings become truly effective and efficient. (5) The Panel did not adequately address the issue of what proportion of CGIAR resources should be allocated to strengthening NARS and what the balance should be of the components of this activity. TAC should probably reconsider these components. The proportion of resources currently allocated to it was probably overstated because the subcategory "information and communications" contained activities not directly related to NARS strengthening. If TAC wished, the Panel could attempt to recommend a revised classification scheme, but would not have the time, knowledge, or resources to recommend specific percentages of allocation.

105. Dr. Nickel closed by saying that the report was still considered a draft which needed considerable improvement. He would welcome the comments of TAC and also await input from the NARS and Centres to help the Panel complete its task.

106. In the ensuing discussion, TAC Members raised a number of questions and made suggestions for the Panel's consideration in preparing the final report. Advice was sought as to the level of involvement of the Centres in strengthening NARS and whether the current overall effort needed to be maintained, increased, or reduced. It was observed that the strength of NARS varied considerably by country and region. Sub-Saharan Africa was identified as a region possibly having less research impact, because NARS were weaker there than in Asia and Latin America owing to insufficient funding by national governments. The Panel's advice was sought as to the regional priorities which should govern the CGIAR's activities in this area. It was noted that the Panel's study showed there was scope for increased cost-efficiency within the System in terms of the need for Centres to collaborate more with each other and with ISNAR and other entities. It was also suggested there was need for balance within ISNAR between its service and research functions. The Panel's advice was sought on what indicators the TAC might employ to monitor trends in the NARS which would assist the Committee in weighting resource allocation to strengthening activities. The role of the CGIAR in assisting NARS with their own priority setting function and in helping them to rationalize government policies was also stressed. Consideration might also be given to treating universities as part of the National Agricultural Research Systems, thereby bringing them into the CGIAR's field of action. There was a specific suggestion that because NARS were often not equipped to deal with socioeconomic aspects of agricultural development, perhaps this could be a priority for the Centres. The question was raised as to whether there were specific NARS which had progressed to the point where the CGIAR could withdraw its resources for strengthening and reallocate them to weaker systems. The corollary to this question was whether there were advanced NARS which were prepared to take over IARC research in their own countries.

107. The Chair asked Dr. Nickel to respond selectively to these questions and comments.

108. Dr. Nickel responded that the 17 percent share of CGIAR resources now being spent on NARS strengthening seemed about right to the Panel since much of this work is need-driven. The major production-type training of the Centres had now been accomplished and could either be reduced or dropped; other more specialized forms of training could be carried out at less cost. (Annex F of the report contains survey data in support of this conclusion.) There was some evidence of Centres assisting NARS in developing priority setting methodologies and capacity for national level planning, and in setting up management information systems. Centres should, however, try to involve ISNAR in these activities. On the question of regional variation in strength of NARS, the TAC might wish to utilize the agricultural indicators series which IFPRI and ISNAR are developing; this could serve as input to prioritization. Dr. Nickel noted, however, that the question of strength was not necessarily related to size. Some of the larger systems had weaknesses precisely because they were large; thus it may still be necessary to work with them to help them to manage their more complex systems. Finally, he noted that there were NARS strong enough to no longer require assistance from the Centres, and which could take over certain of the Centres' commodity research and serve as the regional service for those commodities in neighbouring countries.

109. The general discussion which followed centred on ISNAR's role in institutional strengthening, the needs which NARS perceived to be their top priorities in this area, the larger issue of maintaining, and in some cases, increasing public financial support for NARS by developing country governments, and how best to tap into management science and public administration so as to enhance the strengthening efforts of the Centres.

110. Dr. Bonte-Friedheim observed that imparting strong science to the NARS did not necessarily create strong institutions; management science was an important tool which the CGIAR should try to integrate into its capacity building activities. ISNAR would prefer not to disengage from NARS that have achieved a strong capacity, but rather to work with them to help transfer their experience to other NARS that were not as advanced. With respect to the balance between research and service within the ISNAR programme, he did not agree that the service function should be reduced or dropped and would prefer, in any case, to have the views of NARS on this subject. ISNAR considered that it was providing research-based service to the national systems and was responding to demand, not only at the national level, but also increasingly from regional NARS.

111. Dr. N'Diritu indicated that NARS felt that development of their priority setting skills was a paramount issue. In this context, many had decided to strengthen their own capacity in this area by consulting at the regional level to be better able to contribute to TAC's priority setting agenda. He counselled that TAC should ensure that the newly created IARC-NARS Working Group and the study panel on institution strengthening coordinate their efforts. A number of participants stressed the need for the CGIAR to support efforts of NARS to maintain financial support of their governments. Examples were given of highly trained scientific staff lacking the facilities to undertake research and collaborate with the international centres. Finally, it was pointed out that special action on the part of the CGIAR would probably be needed to make contact with universities and other organizations having expertise in management science, public administration, and other fields in order to respond effectively to the Panel's recommendation that management science be incorporated into institution strengthening.

112. The Chair expressed on behalf of TAC his gratitude to Dr. Nickel and the entire Panel for a thorough report and stimulating interchange. He looked forward to further interaction with the Panel when the report was finalized.

113. After further consideration, TAC made the following comments on the Panel's interim report with a view to stimulating it to concentrate further or sharpen its views further with respect to certain issues which were of interest to TAC as it proceeded to finalize the report for consideration by the Committee at TAC 68. Therefore most of the comments were provided in the form of questions and in some cases in the form of suggestions.

114. (1) What are the current main instruments used by the CGIAR to strengthen NARS institutions? (2) How can the many demands for institution strengthening activities be prioritized? (3) What are the main NARS' strengths and weaknesses and the reasons for them? (4) What are the feasible options/strategic choices to filling the gaps both in terms of services and research and how can these be evaluated? (5) What is the

suggested strategy, both for ISNAR and other CGIAR Centres, for moving ahead in the task of filling these gaps? (6) The document might pull together several of the suggestions in the paper to achieve increased efficiency in the utilization of CGIAR resources allocated to Institution Strengthening research. (7) What is the Panel's view of the anticipated strengths of NARS in the medium- and long-term in the different regions and the implications for the types of and priorities for Institution Strengthening (IS) and public management research? (8) Are there any criteria by which the CGIAR might consider: (a) that a NARS is ready to "graduate" from the IS effort? (b) that the NARS of a country or a regional grouping of NARS could become a vehicle for IS of other NARS in the region? (9) Does the Panel have specific suggestions for IS of small countries with small NARS? Perhaps new ways or structures to help these NARS could be designed by the CGIAR. (10) What type of indicators might help distinguish a "strong" NARS from a "large" NARS? Is it the percentage of staff with Ph.Ds, the number of scientists, the amount of money available for operational research? Are funding and sustainability in the level of appropriate funding the most critical elements in determining strength? What are the trends in these indicators? (11) Is there a need for more social science capacity in NARS, and if so who should provide such IS? (12) The Panel needs to respond to question three of the terms of reference, namely: "Is there a reason to establish a more formal Systemwide initiative in this area, one that creates stronger linkages and lines of responsibility and decision making? What are the alternative organizational modalities that the System might try in this area?" (13) How should the strengthening of needed research management training vis-à-vis technical training be ensured as it is developed by the Centres? Consider that ISNAR is the main (or only) institution dealing with research management training at the moment. Where would its comparative advantage in public management research be? (14) What is the Panel's final recommendation: Should Centres keep their involvement in institution strengthening activities at the present and planned levels? Are there changes to be made? If so, in which direction? (15) Networking among those already trained to sustain the efficacy of previously trained scientists. (16) Explain how greater gender sensitivity can contribute to institution strengthening.

External Programme and Management Review of IITA (Agenda Item 5)

115. The report of the External Programme and Management Review of IITA was delivered by its Panel Chair, Dr. Eduardo Venezian, in the presence of the Chair of the IITA Board of Trustees, Dr. Pierre Dubreuil, and the Director General of IITA, Dr. Lukas Brader. TAC Members had been provided with a copy of the review report as well as the response to the report of IITA's Board and Management.

116. Dr. Venezian began by expressing his appreciation on behalf of the Panel for the support of IITA and the TAC Secretariat in the conduct of the review. The review process was characterized by excellent interaction with Centre management and staff at all levels, excellent and substantial documentation, and extensive interaction in the African region with NARS and public officials.

117. The Panel reviewed the following: the recent evolution of the Centre, programme priorities and strategies, effectiveness and efficiency of management, quality of work, achievements and impact, and expectations for the future. The Panel produced 34 recommendations in the areas it believed require attention. The main observations and recommendations of the Panel follow:

118. *Evolution of the Centre:* The Institute underwent substantial changes between 1990 and 1994, a period of financial restraint. It emerged with a leaner operating structure, more efficient operation, improved management, better staff relations, and improved overall work environment. Among the major changes were the geographic expansion and decentralization of the Institute's programme and internal reorganization achieved in a participatory manner. The Panel recommended that no further reorganization be undertaken and that the Institute refrain from further expansion and decentralization.

119. *Programme.* The Panel felt that the priorities and strategies of the Centre were well defined and justified. The Institute operated well within its mandate with an appropriate focus on poor farmers and was progressively incorporating ecoregional activities into its programme structure in cooperation with other international centres. Previous problems of lack of coordination with other IARCs had been corrected and there were generally strong relationships with NARS. With respect to IITA's four programme divisions, the Panel concluded the following: (1) There were no major issues for the Crop Improvement Division (CID) which was responsible for IITA's six mandated crops. (2) The Plant Health Management Division (PHMD) was also working very well and no major problems were perceived. (3) Major problems were encountered in the Resource Crop Management Division (RCMD), a key programme whose work and staff were disrupted by the turmoil of 1990 and the following years. The Panel made strong recommendations to reassess and strengthen this work urgently. (4) The International Cooperation Division (ICD) was felt to be too expansive in its activities, but this was driven by expansion of the research programme itself. The Panel recommended a reassessment of this division's priorities through an internal review and the incorporation of Information Services into its function.

120. *Management.* Overall, the Panel found management to be working very well and commended the Director General for having an accessible working style. IITA was managed in a cost-effective way. The Board of Trustees worked effectively in its governance of the Institute and had good relationships with management and staff. In the area of human resources management, however, the Panel found a number of difficult problems related primarily to the management of local staff and made strong recommendations to remedy them quickly by appointing an internationally recruited professional human resources officer. In terms of programme management, the Panel endorsed the new divisional structure and recommended no changes in order to give it time to consolidate. However, the Panel noted that because two division directors were outposted away from headquarters, special attention must be paid to ensuring that crucial interdisciplinary work goes forward despite this spatial separation. Finally, the Panel recommended that the Board and Management considered recruiting a Deputy Director General for Research to provide greater coordination and integration of the Centre's programmes.

121. *Achievements and Impact.* The Institute was found to be quite productive during the period reviewed, particularly in the area of plant health management. Crop improvement activities, by virtue of their more routine nature, reflected no specific breakthroughs, but good progress was being made (cowpeas, soybeans, cassava) and results were anticipated within the next few years. Training was also an area of very good progress, as was collaboration with NARS despite the large and complex geographic area within which the Centre works.

122. *Future.* The Panel, recognizing that Africa remained the major problem for agriculture in the world for the foreseeable future, felt that there was unquestionably a need for an institute like IITA for many years to come. The Centre had established itself in the region, was contributing, and was well poised to make a contribution to further development in sub-Saharan Africa. It deserved continued strong support.

123. The response of IITA to the Panel's report was delivered by its Board Chair, Dr. Pierre Dubreuil. He indicated that the Board had reviewed the Panel's report and agreed with nearly all of the recommendations (the Director General would comment more specifically on these). He noted that during the past year the Board had given attention to the quality of the research programme, especially the performance of the CID and PHMD programmes. The Board had noted difficulties in the RCMD programme and authorized in 1993 an internal review of its work. The Board, therefore, welcomed the recommendations of the Panel in this area. The Board was gratified that the Panel report had documented the favourable comments of NARS with respect to their relationships with IITA. The Centre had a decentralized mode of operation and the Board was pleased to see that it was working well. It, nevertheless, agreed with the Panel that the priorities and strategies of ICD should be reviewed. The Board agreed with all of the recommendations pertaining to the Board itself and had already taken steps to implement them. With respect to the recommendations on the structure of top management of the Institute - i.e., appointment of a Deputy Director General for Research and an internationally recruited human resources manager - these matters had often been discussed by the Board and there was awareness of the need for improvement. Because there had been a recent trend within IITA toward positive achievements in these areas, the Board counselled against further structural change or personnel changes. The Board had appointed a management consultant to study these issues. The consultant's recommendations would be covered in the Director General's comments on the review report.

124. Director General Brader thanked the Panel for a very good review and delivered the IITA management's response. He opened by saying that management was pleased with the conduct of the review and for interacting with staff at a variety of levels. The 34 recommendations and 21 suggestions contained in the Panel's report would be reviewed by IITA's Board at its next meeting. Dr. Brader then commented selectively on some of these recommendations. He expressed concern over the financial implications (eight new positions) of those recommendations related to new activities; their possible implementation needed to be prioritized and TAC's guidance would be helpful in this regard. The Board and management felt that two of the recommended positions - Deputy Director General/Research and Head of Human Resources - needed further consideration. Pursuant to the findings of a consultant's study of these issues, IITA had decided to

recruit a Deputy Director General at-large with responsibility for both research and other tasks. The human resources position was recently filled with a locally recruited professional who was doing well. Management would monitor this situation, mindful of the Panel's recommendation.

125. Management endorsed the four recommendations to strengthen the Institute's resource and crop management research through more rigorous priority setting, use of benchmark areas, and research alliances. This kind of research required a specific set of evaluation procedures and criteria yet to be developed. The Centre would continue to develop its resource and crop management activities in a pragmatic and farmer-oriented way. Ecoregional initiatives provided an excellent basis for such development. Finally, management would follow up on the Panel's recommendation to better integrate its networks and training activities, but felt there should be a continued division of labour between ICD on administrative matters and the research divisions on technical and scientific matters.

126. In closing, Dr. Brader expressed the gratitude of the Centre for the effectiveness of the Panel and acknowledged in particular the efforts of its Chairman and the support of the TAC Secretariat.

127. The Chair then turned to Dr. Richard Musangi, the TAC Liaison Scientist for IITA and Chair of the TAC working group for the review, to open the discussion.

128. Dr. Musangi noted that IITA had moved quickly to implement many of the Review recommendations. His comments dealt primarily with the issue of programme expansion, the extent of implementation of the recommendations of the 1990 review, and his endorsement of research on yams and soybeans as IITA priorities, since these had become important commodities in Africa. He limited his remarks because the Director General's presentation had satisfactorily answered most of his questions.

129. In the ensuing discussion, TAC Members raised questions on a range of issues, including the effects of policy constraints on the success or failure of natural resources management activities, the impact of the ecoregional approach on IITA's programmes, the feasibility of devolving yams and maize research to NARS to allow greater Centre priority to resource management research, the adequacy of IITA's staffing level for social science research, and how the Centre's NRM research might be most effectively organized to transmit knowledge currently available to the field.

130. On the question of policy constraints to natural resources management, Dr. Venezian observed that Africa was being asked to intensify agriculture while sustaining the environment, particularly in poor areas that were environmentally at risk. In his view, farmers were not receptive to new technologies to achieve these goals because of financial and labour costs. In the absence of macropolicy support from national governments or of international assistance, Centres like IITA would be unable to have much impact. On the question of social science staffing, the Panel felt RCMD should be strengthened as quickly as possible because it would, in turn, strengthen the Centre's ecoregional work by integrating socioeconomic and policy considerations into the development and extension of technology in a multidisciplinary way. On the devolution

question, Dr. Venezian felt that the private sector would not take over crops like soybeans and maize because of policy-driven economic disincentives. While such crops might be devolved to the NARS, the latter lack public financial support and might not be strong enough to absorb this work. With regard to IITA's international cooperation, the Panel was not always certain which networks worked and why. In particular, it perceived the need to follow up with trainees to gauge *post hoc* the impact of the results of training. On the question of organizing NRM research and the problem of extension of existing knowledge to the field level, Dr. Brader indicated that IITA had developed good knowledge of the biology of African soils and of cultivation practices that conserved natural resources. He saw the ecoregional approach as a good vehicle for involving NARS in the application of this knowledge. He did not anticipate that this approach would change IITA's research agenda. On the question of devolution, he felt it would be helpful to have guidelines from TAC with regard to the criteria to be used in determining whether a crop should be devolved and when. He agreed that social science research was important to the ecoregional work and noted that the three social science positions had been filled.

131. Dr. Winkelmann observed that IITA was one of the few international centres with long experience in the natural resource area. Yet only limited uptake of NRM technology had been achieved. He noted that some opined that farmers did not adopt resource-conserving strategies until their farming system was about to collapse, because of problems specific to these technologies. He requested Dr. Brader's views on this hypothesis. In response, it was observed that uptake of the technologies took time because it was expensive, required knowledge and labour, and lacked local political support. It could not be undertaken with annual crops alone in the humid forest zone, but only in combination with perennial industrial crops; otherwise the soil was rapidly depleted. In response to a query on the viability of postharvest technology as a poverty alleviation instrument, Dr. Brader indicated that such technology worked for cassava products and particularly alleviated the burden of women. However, he saw this more as a training and extension activity than research. Finally, the Chair asked Dr. Venezian to convey his views to TAC on any needed improvements in the review process. He similarly requested Dr. Brader to bring to TAC's attention any inconsistencies from one external review to the next. In this context, Dr. Havener, speaking on behalf of the Chair of Centre Directors, addressed the issue of inconsistencies in reviews. The Centre Directors believed that better briefing of review panels on the Centre by both Secretariats could help to alleviate possible inconsistencies. It might also be helpful to have the chair of the previous panel participate in such briefings.

132. The Chair drew this discussion to a close, thanking Dr. Venezian and the members of the Panel for their report. He further noted that the Board and management of IITA had already begun implementing some of the review recommendations. After further consideration, TAC offered the following commentary.

TAC COMMENTARY ON THE FOURTH EXTERNAL PROGRAMME AND MANAGEMENT REVIEW OF IITA

133. TAC expresses its thanks to the Panel for its Review Report covering, in a comprehensive manner, a large and complex Institute such as IITA. It wishes, in

particular, to place on record its appreciation of Dr. Eduardo Venezian, Panel Chair, for handling the Panel's work and interactions with IITA with objectivity and transparency. TAC offers the following commentary, prepared with inputs from the CGIAR Secretariat, to supplement the Panel's Report.

134. The Review Report is positive and optimistic about IITA. It is clear that IITA has been substantially strengthened over the past five years, and that the Institute is now well poised to proceed with its research. TAC commends IITA's Board, Management and staff for their sustained delivery of research results and collaborative activities with the NARS, achieved while the Centre was adjusting to new directions and organizational modes and at the same time strengthening its management and scientific staff.

135. The changes made by IITA include broadening of the geographic or regional scope of activities to include aspects of the mid-altitude humid and subhumid areas of East and Southern Africa; further decentralization of research; completion of transfer of rice research to WARDA; restructuring the Institute's management organization and procedures; and notable improvements in the internal work environment. In addition, IITA has reorganized its research programme into divisions, as recommended in the last EPMR, and has made changes in the programme planning, budgeting and management system. As noted by the Panel, these changes have been very beneficial, and demonstrate the leadership provided by IITA's Board and Management.

136. TAC notes that the review report has made recommendations in many areas, so as to improve IITA's effectiveness even further. In general, TAC endorses the recommendations of the Review Report. However, while it is not appropriate for TAC to comment on each of the Panel's recommendations and the follow-up actions planned by the Institute, TAC notes that while the quality of science in the plant health and management and commodity improvement divisions meets the standards of an international institute, the research undertaken by the resource and crop management division, based on its level of impact, needs to be strengthened.

137. In this context, TAC notes that although IITA's mandate emphasises an ecoregional orientation, its past successes have largely emerged from its commodity improvement and plant health management research. TAC trusts that in the future, the high standards achieved in IITA's more "traditional" commodity improvement research will also be achieved in sustainability-oriented research such as on resource management. TAC therefore urges IITA Management to strengthen its resource and crop management research, and its socioeconomic studies both of which, as pointed out by the Panel, are of vital interest both to IITA and the System as a whole, particularly in relation to Centres' ecoregional research initiatives.

138. The benefits of stronger relationships with other CGIAR Centres and the NARS are likely to increase in the future, as the System moves towards a more explicit "Programme" orientation, and begins to more forcefully implement its agreed Research Agenda. TAC notes IITA's strong relationships with CGIAR Centres such as CIAT, and expects that equally strong links will be developed in the near future with other Centres. TAC, in particular, points to the suggestion made in the Report on CGIAR Commitments in West Africa that IITA develop stronger relations with tree crop centres. In addition,

TAC recommends increased attention to the NARS partnerships that are so essential to the success of every Centre within the CGIAR System.

139. With regard to the Review Report's recommendations on Governance and Research Management, TAC notes with satisfaction that the Panel assessed IITA's governance, structure, management style and research leadership positively. It is pleased, in particular, that the Institute has developed a culture of collegiality, fostered by the consultative processes encouraged by the Board and Management, and the straightforward manner of the Director-General. It is encouraged by the Board's response to the Panel's recommendations to improve Board operations; and to the receptivity shown by the Institute to further examine such issues as the structure of research leadership, project-based research management, human resource management (HRM), and budgeting and financial reporting requirements.

140. TAC recognizes that both the research coordination function and the effective management of IITA's internationally and nationally recruited staff, are vital to the continued success of the Institute and is pleased that the review report has focused Management's attention to these issues. TAC notes that for the past few years the Director General has personally provided research leadership in IITA, and that his hands-on style of managing research has been much appreciated by the scientists at IITA. However, TAC also notes the Panel's view that the research management task at an institute such as IITA - which has a large and complex mandate, and undertakes research in several countries and various field locations - cannot easily be managed on a part-time basis, particularly since the research programmes are being further decentralized, and the divisional directors operate from different countries.

141. On other research management-related matters - such as project-based research management; processes for planning, priority setting and resource allocation; and procedures for budgeting and financial reporting, etc. - it is TAC's view that the Panel's recommendations are sound, and should be implemented over the next few years by IITA's Management team. It is expected that implementation of these various recommendations will make IITA an even more cost-effective institution than it is today, and will further improve the efficiency of resource utilization. TAC also concurs with the "incremental" approach adopted by Management in recent years, and is pleased that a similar approach has been recommended by the Panel for the future as well, particularly in relation to the "pilot testing" of project-based research management in selected areas before extending its coverage to the entire research programme and research-related areas.

142. Finally, TAC is pleased that the External Review Panel confirms the positive findings of the report on CGIAR commitments in West Africa regarding the management and impact of IITA's research there. The Committee encourages IITA to continue to explore opportunities for devolving some of its production systems research to national research systems in the region.

Inter-Centre Review of Roots and Tubers Research (Agenda Item 6)

143. A progress report of the standing panel to conduct an Inter-Centre Review of Root and Tuber Crops within the CGIAR was presented by its Chair, Dr. David MacKenzie. The purpose of the review was to assist TAC in formulating a Systemwide strategy for research on these crops to meet global and regional needs, taking into account current and projected demand. Among other things, the Panel was charged with outlining priorities for root and tuber crops research within the CGIAR, paying particular attention to Systemwide aspects of research efficiency and impact potential. The Panel addressed six issues: global planning and organization within the CGIAR, germplasm and vegetative propagation, biotechnology research, post-harvest and market research, partnerships, and policy research. Following are highlights of the Panel's conclusions and recommendations.

144. Some Centre scientists felt that the priority to root and tuber crops relative to grain crops in the CGIAR's research agenda was unjustifiably low. This concern should be taken into account in the next round of TAC's priority setting.

145. The Panel judged that there was need for modest reduction in emphasis for yam and sweet potato research to permit increased research on cassava and potato. This downsizing could be accomplished through devolution of research on sweet potato to China and yam to Nigeria.

146. To achieve greater efficiency and synergy in root and tuber crops research a number of research activities were identified that may be susceptible to inter-centre collaboration across specific crops; these included postharvest technology and market research, biotechnology, policy analysis, vegetative propagation and conservation technology, and international germplasm exchange with phytosanitation. Opportunities for inter-centre research collaboration for certain root and tuber crops having similar characteristics were also identified; other dissimilar crops would not benefit from such collaboration and continued research independence was suggested for them. Alternative mechanisms to reorganize or reassign responsibilities for root and tuber crops were considered, but it was felt that major changes in research structure were not justified at this time.

147. To facilitate and coordinate inter-centre activities an inter-centre consultative committee on root and tuber crops research should be created. The proposed committee would commission various task forces to perform the following functions: rationalize international phytosanitation regulations and institutional arrangements for shipments of root and tuber crops as vegetatively propagated materials; recommend inter-centre collaboration in biotechnology research; explore possible research partnerships on the characterization of starch and flour, food processing technology, and market research; and develop a vision for root and tuber research in the CGIAR.

148. Finally, opportunities for expanded interactions with Advanced Research Organizations and National Agricultural Research Systems were identified.

149. The Chair invited comments on the progress report by TAC Members. These centred primarily on the question of Centre scientists feeling that root and tuber crops had a low priority and the sources of this attitude; the need for a quantitative analysis of demand for root and tuber crops, particularly potato, broken down by developing and developed countries; the rationale for and functions of the proposed coordinating committee; and the need for incorporating a NARS perspective into the study.

150. TAC's discussion was initiated by Dr. Andre Berkaloff, chairman of the TAC working group for this review. He began by distinguishing between the relative priority to be given to root and tuber crops vis-à-vis other crops, and priorities within the root and tuber category. He expressed uncertainty that the Centre scientists' perception of roots and tubers having a lower priority in TAC's thinking was a correct one. With regard to priorities within this commodity group, the report was not explicit enough on either the supply or demand for research on specific commodities. He noted in particular that it would be important to know the supply/demand parameters for potatoes broken down by developed and developing countries. The report did not address the question of constraints to production of roots and tubers and would benefit from an analysis of global prospects, as well as prospects for individual commodities. The report placed special emphasis on biotechnology, but did not address the differences in susceptibility of individual root and tuber crops to this form of research. Its suggestion for mechanisms for improving the international transfer of genetic materials addressed a problem which might not be discrete to root and tuber crops, but should perhaps be seen as a Systemwide problem for vegetatively propagated crops that required attention. Finally, Dr. Berkaloff questioned the feasibility of achieving coordination between the Advanced Research Organizations and the CGIAR Centres because the AROs were competitive amongst themselves, which would seem to pose problems for coordinating exchange of information, data, and collaboration in general. He considered the report an interim one and sought the views of other members as to whether additional input was needed from the Panel on these or other issues.

151. A number of TAC Members commented on the perception of Centre scientists that root and tuber crops were given inadequate priority in TAC's thinking. One member argued that research should be demand- rather than supply-driven and endorsed Dr. Berkaloff's request that the report should include data on the importance of these crops to developed and developing countries in order to have a clearer indication of the locus of demand. Other members pointed out that the rate of spread of new genotypes for root and tuber crops was much lower than for grains, perhaps accounting for the perception that these crops warrant less intellectual investment. However, the agronomy of roots and tubers was much more complex than for grains; this should perhaps be emphasized by TAC to help improve the morale of scientists who worked on these crops. One member endorsed the Panel's suggestion with respect to the need for postharvest technology. Inasmuch as this recommendation had been made to TAC in a number of different contexts, consideration should be given to conducting a strategic study on postharvest technology, the purpose of which would be to develop a broader recommendation including but not limited to root and tuber crops. On organizational matters, members generally felt that the benefits of the proposed coordinating committee were not obvious compared to the normal forms of inter-centre collaboration and questions were raised with regard to the authority and need for the budget of such a

committee. Finally, TAC questioned the wisdom of omitting representation of NARS in the Panel's deliberations and asked how a NARS perspective would be incorporated into the final report.

152. Before asking Dr. MacKenzie to respond, the Chair recognized Dr. Gryseels who explained that when this review was commissioned by TAC the plan had been for the TAC Secretariat to prepare a desk study with quantitative analysis on supply/demand for root and tuber crops. Owing to the illness of the responsible staff member, the Secretariat had been unable to complete this work before the Panel issued its draft report. The desk study was now being finalized and the data would be appended to the final draft.

153. In response to TAC's questions and comments, Dr. MacKenzie made a number of points, highlights of which follow. He emphasized that there was need for opening up communication between TAC and Centre scientists working on root and tuber crops. The feeling that these commodities had been assigned a lower priority was very strong. On the related question of the rate of propagation of these crops he noted that Centre scientists believed there was a technology gap and not a yield gap. While the agronomy for these crops was satisfactory, the genetics were poorly understood compared to grains. Hence there was need for work in this area. The question of propagation was properly understood as one of technological transfer, and there was question whether the IARCs should undertake this or devolve it to NARS. In any case, there was scope for inter-centre collaboration on the propagation issue. The Panel's suggestion of devolving certain crops to NARS was based on the assumption that resources would be flat for the foreseeable future and that savings achieved could be reallocated to cassava research and postharvest technology research. In this sense, the Panel was suggesting a reprioritization to TAC so that limited resources could be used where needed most. Amplifying the Panel's recommendation on biotechnology research, priority should be given to developing biotechnology solutions to pest and pathogen problems related to root and tuber crops. Dr. MacKenzie reiterated the need for facilitating the international transportation of R&T genetic materials, particularly because of stringent phytosanitary regulations that were currently constraining their movement. However, this suggestion appeared to relate more to the physical mechanism needed rather than to the scientific aspects. He agreed that there was need for analysis of supply/demand projections for R&T in terms of developed/developing countries, but sought TAC's guidance on the modalities of producing it. He acknowledged that the postharvest technology issue was a broader one but re-emphasized the Panel's conclusion that it was particularly relevant to roots and tubers, adding that since women figure largely in the production and processing of these crops, the proposed research would efficiently incorporate the gender dimension. Finally, Dr. MacKenzie sought TAC's further guidance on next steps envisaged for the study before responding on the question of incorporating a NARS perspective.

154. The Chair brought this discussion to a close, indicating that Dr. Berkaloff and his working group would address the issues raised in this exchange and make recommendations on the next steps. He thanked Dr. MacKenzie and the members of the Panel for their efforts in conducting the review and looked forward to further interaction when the report was finalized.

155. After further consideration, TAC commended the Panel for the significant work it accomplished in such a short timespan. TAC also recognized the constraints faced by the Panel because of the need to adhere to an extremely tight time schedule, and the delay in the preparation of the TAC Secretariat desk study. The Committee requested the Panel to continue its dialogue with the Centres, and, if possible, to seek the views of NARS and other relevant sources of information on root and tuber crop research; it asked that the final report on the study be submitted for consideration by TAC at its next meeting, i.e. TAC 68. TAC suggested that the Panel should pay particular attention to the following issues.

156. (1) Further elaboration and discussion of past and current trends in the production and utilization (food, feed and industrial uses) of root and tuber crops, globally, across the developing countries and by region. (2) More thorough analysis of ongoing research programmes at the CGIAR Centres, including the estimated expenditure on each programme (by crop), together with an overview of what relevant research is being conducted by non-CGIAR research centres. In this context, the relevance and application of research results emanating from the industrial and developing countries should be addressed. (3) Based on the outcomes at (1) and (2) above, argue and articulate the priority status of root and tuber crops research within the CGIAR, together with the relative priorities that should be attached to each of the major crops; viz., potato, cassava, sweet potato, yam and aroids. (4) The suggested devolution to the NARS of research on sweet potato (China) and yam (Nigeria) should be more fully discussed and justified, and accompanied by tentative guidelines and criteria on which to judge the merits and demerits of the proposed devolution. (5) The niche and anticipated evolution of root and tuber crops within the farming systems should also be more fully addressed. (6) The importance and priority of postharvest research on roots and tubers was widely recognized, but further justification of CGIAR involvement in this area, vis-à-vis private sector interests, was needed; also more specific justification of the relevance and priority attached to the characterization of starch and flour, should be brought forward. (7) Terms of reference for the proposed inter-centre consultative committee on root and tuber crops research should be drafted together with clear justification as to how the committee can foster greater Systemwide efficiency in the conduct of research on root and tuber crops.

1996 Programme & Budget Proposals (Agenda Item 7)

157. The Chair opened this session by saying that TAC would give consideration to 1996 programme and budget proposals that were approved at TAC 66.

ICARDA

158. The Chair called upon Dr. Robert H. Booth, Assistant Director General of ICARDA, to make the first presentation. He reviewed for TAC Members the contents of a briefing document prepared by ICARDA entitled, 'Program of Work and Budget 1995 and 1996 - The Agreed Research Agenda' (undated), a copy of which was provided to TAC Members. He indicated that ICARDA was requesting that TAC reconsider its decision at TAC 66 to exclude an Iran-based project from the Centre's agreed research

agenda on the grounds that it was largely technical assistance and funded unilaterally by the government of Iran. ICARDA maintained that the project involved collaborative research of international relevance. Dr. Booth discussed the budgetary implications of TAC's decision for ICARDA's 1995 and 1996 CGIAR funding levels.

159. The Chair directed the discussion of this item to clarifying the facts presented and the financial implications of any TAC decision for both the Centre's budget and overall CGIAR resources. Comments from the CGIAR Secretariat were sought and received.

160. The Chair thanked Dr. Booth for his presentation and indicated that TAC would deliberate on this matter in closed session and respond to ICARDA's request in due course.

ICLARM

161. The Chair recognized Dr. Meryl Williams, Director General of ICLARM, who provided TAC with supplementary information on ICLARM's 1996 programme and budget for purposes of requesting additional 1996 core funding, and shifting ICLARM's complementary projects to its core budget. ICLARM's original 1996 programme and budget proposal had requested an overall increase in the Centre's core budget of US\$ 1 million. TAC had deferred a decision on this request pending further justification for the increase. ICLARM, subsequently, also requested that all of its complementary projects be redesignated as core and that the core funding level be raised accordingly. Dr. Williams provided ICLARM's justification for each of these programme and budget changes. These were outlined in a submission to TAC entitled, 'ICLARM's 1996 Programme and Budget', dated 11 July 1995.

162. The request for increased core funding was presented, according to TAC guidance, in terms of two options: Option 1 for US\$ 1 million in support of new research in policy, fisheries resource assessment, and fish productivity; and option 2 for US\$ 0.5 million to support the same set of research themes, but at reduced levels for policy and fisheries resource assessment. ICLARM's request to shift complementary projects valued at US\$ 2.5 million was justified on the basis that in thematic terms these projects fell within the approved plan of core research. Dr. Williams provided an extended commentary in support of these requests for TAC's consideration.

163. In the ensuing discussion, TAC Members raised a number of questions about the substance of the proposed research activities in relation to ICLARM's mandate and System priorities, the financial implications of the request in terms of future ICLARM claims on CGIAR resources, and the international value of bilaterally controlled projects. Two Members doubted the strength of the intellectual rationale offered in support of the contention that the projects in question belonged in the core programme. One indicated that it would have been preferable for ICLARM to make the case conceptually that more core funding for aquaculture research was necessary. The views of the CGIAR Secretariat were solicited by the Chair to clarify the financial implications of any TAC decisions on these requests.

164. The Chair indicated that TAC would consider this matter in closed session and respond to ICLARM's request in due course.

IPGRI-CIFOR

165. The Chair recognized Dr. Geoffrey Hawtin, Director General of IPGRI, who presented comments on TAC 66 recommendations concerning the forest genetic resources proposals contained in IPGRI's 1996 funding request. TAC had agreed to an increase of US\$ 350,000 in IPGRI's agreed research agenda to be used for additional activities on forest genetic resources, but had requested a clarification that these additional activities would not overlap with work planned by CIFOR or as part of the SGRI activities. Dr. Hawtin provided TAC with a paper jointly prepared with CIFOR which further explicated the work to be initiated with the funds in question taking account of the current programmes of the Centres. He indicated that the planned work had been developed through joint discussions of relevant staff at the two Centres and would be carried out collaboratively. The proposed programme would develop a global coordinated research programme on *in situ* conservation of tropical forests and agroforestry genetic resources in Africa, Asia, and Latin America. The funds requested would be used specifically to expand forest genetic resources work in Latin America in collaboration with CIFOR. The Asian and African components were already covered through collaboration with CIFOR and ICRAF.

166. Dr. Hawtin's proposal received favourable comments from a number of TAC Members who noted in particular the potential for linkages with environmental NGOs and for tapping into other funding sources.

167. There being no questions on the presentation, the Chair indicated that TAC would give the matter further consideration in closed session and respond to IPGRI and CIFOR in due course.

168. Dr. Hawtin then invited TAC 67 participants to visit IPGRI on Tuesday, 18 July. The Chair thanked him for his kind invitation.

TAC COMMENTARIES ON 1996 PROGRAMME AND BUDGET PROPOSALS

A. ICARDA

169. TAC endorsed the proposal from ICARDA for a transfer of its Iran research project to the Centre's core programme and the CGIAR agreed research agenda for a total of US\$ 1.8 million. TAC accepted ICARDA's argument that its work in Iran was similar to other work earlier considered as an international public good.

B. ICLARM

170. TAC endorsed ICLARM's request for a core budget increase of US\$ 1 million to support policy research, fisheries resource assessment and fish productivity research and, additionally, its request to transfer US\$ 2.5 million from its complementary to its core programme. However, it considered the supporting documentation from ICLARM to be

inadequate. TAC expects ICLARM to submit revised proposals in due course to the TAC Secretariat and to submit a detailed progress report on its activities at TAC 69 in March 1996.

C. IPGRI-CIFOR

171. TAC endorsed the revised proposal, jointly submitted by IPGRI and CIFOR, to support work on forest genetic resources during 1996 for US\$ 350,000.

1997-2000 Resource Allocation Process (Agenda Item 8)

172. The Chair invited Dr. Gordon MacNeil of the CGIAR Secretariat to present to TAC Members a proposed plan developed by the Secretariat to shift the resource allocation process of the CGIAR to a three-year funding cycle starting 1998.

173. Dr. MacNeil based his presentation on a paper on this subject, dated June 1995 which had been provided to TAC Members. He reviewed the CGIAR resource allocation experience over the last two medium-term plan periods, commented on the desirable characteristics of a resource allocation process for the future in the light of reforms now underway in the CGIAR, outlined a set of options for shifting to a new budgetary cycle, and then provided a detailed proposal for a three-year budget and resource allocation timeframe.

174. The specific proposal was that the CGIAR moved to a three-year cycle using a staggered system in which one-third of the Centres would present three-year plans in any given year. The multi-year aspect would preserve the advantage implicit in a longer timeframe for resource planning, while also adjusting for and taking advantage of actual resource availability. The annual workload for Centres would be significantly decreased and the depth and thoroughness of programme analysis by TAC and the Group per proposal would be greatly expanded. Finally, for programme financing, the three-year period might coincide well with a fundraising cycle and project development horizon. While donor approval of multi-year financing would enhance the certainty of annual resource flows, the Centres would still base their operations on a 12-month period, with the usual reporting and internal procedures as at present. Formal programme approvals would be less frequent; changes in Centres' CGIAR resources would be considered by TAC and the Group on an *ad hoc* basis. However, annual submissions would not be required or expected, except as circumstances clearly dictate.

175. The reactions of TAC Members to the proposal varied somewhat. While it was seen as desirable to reduce the gap between programme planning and fundraising, concern was expressed that reducing the planning period from five to three years and the staggered nature of the approval process would reduce the programmatic consolidation of the System as a whole. While it was acknowledged that the proposal responded to donor needs for predictability and transparency, TAC Members saw no scientific rationale for changing from the current five-year cycle. Concern was also expressed over the probable increase in TAC's workload resulting from the proposed change.

176. Comments from other participants touched upon the need to ensure that the proposed plan was reviewed by the Centre Directors and Board Chairs before a decision was taken by the Group. There was also discussion of the place of complementary funding and the balancing mechanism in the context of the proposed new cycle.

177. The Chair indicated that TAC would consider this matter further in closed session. Before closing discussion of this item, he recognized Dr. Gryseels who reported that the TAC and CGIAR Secretariats had agreed to prepare a joint paper to Centre Directors on the proposed new medium-term cycle which would take into account TAC's comments on the earlier draft.

178. TAC would review and comment on this paper and a second draft would be prepared for discussion at TAC 68 and at MTM'96. TAC also agreed that a revised paper would be circulated to the Group only after Centre Directors and Board Chairs had had an opportunity to review it.

Proposals for Systemwide Initiative and Programmes (Agenda Item 9)

Systemwide Livestock Initiatives (SLI)

179. The Chair called upon Dr. Hank Fitzhugh, Director General of ILRI, to introduce this item.

180. Dr. Fitzhugh provided TAC with a progress report on the development of the Systemwide Livestock Initiatives for which ILRI served as the convening Centre. His remarks touched upon the proposed thematic and ecoregional foci of the research, planning activities since TAC 66, the schedule of consultation activities in the study regions from May to December 1995, and the anticipated funding level and competitive bidding process envisaged.

181. SLI would conduct strategic and applied research with an ecoregional orientation. The initiative emphasized natural resources management and feed production in tropical agricultural systems with important livestock components. Where appropriate, it would be linked to other ecoregional initiatives. Multiple partners including other CGIAR Centres, NARS, and AROs would be involved in the Initiative. A funding level of US\$ 4 million would be required to support the Initiative. Proposal development would be completed by the end of 1995 and the entire package available for review at TAC 68.

182. Dr. Fitzhugh identified a number of issues growing out of this first experience with developing a Systemwide Initiative. These pertained to the respective roles and responsibilities of the convening Centre in terms of management and governance of the Initiative, of the lead Centres for the different ecoregions, and of the external review panel which will evaluate proposals. The criteria that would inform the competitive bidding process included merit of the research and value for money; hence, the use of a scoring model to provide *ex ante* estimates of the benefits of the proposed research.

limited. Finally, it was observed that a number of other Centres were working in the humid/subhumid zone and it was queried whether their activities might be somehow harnessed to the EPHTA initiative.

190. In response, Dr. Brader noted that the task force and the convening Centre were seen as having finite roles at the proposal stage, with the consortia assuming governance as programmes were established. The ASB Initiative was seen by the task force as being more focused on environmental sustainability than productivity issues and therefore not really amenable to integration with EPHTA. The time horizon of the Initiative was estimated to be approximately five years. Finally, Dr. Brader emphasized that the success and continuity of such initiatives depended on the political support of the study countries and the need for additional funding beyond core, especially in support of NARS. He agreed with the suggestion of one TAC Member that eventually ecoregional activities would warrant being placed in a separate column on the CGIAR's matrix.

CGIAR Systemwide IPM Programme

191. Dr. Brader continued to hold the floor, presenting for TAC's consideration the status of planning for a Systemwide programme on integrated pest management, for which IITA was the convening Centre. The rationale for the programme was the need to consolidate and enhance the wide array of IPM-related activities already conducted within the CGIAR System by articulating a CGIAR policy on these activities and establishing a mechanism to coordinate them. This concept was endorsed by the Centre Directors in 1994 and a planning process initiated to develop a Systemwide programme. TAC's endorsement was now sought to facilitate the allocation of System resources and the search by the convening Centre for additional financial support. Dr. Brader then detailed for Committee members the series of inter-centre planning activities that had taken place since mid-1994, the objectives of the proposed initiative, the initial information activities to be undertaken, proposed topics for research, and budgetary requirements for the first three years of this activity. Highlights of his remarks follow.

192. The proposed Systemwide policy would affirm that "IPM principles should guide all pest control efforts within the CGIAR System." A draft policy statement endorsed by Centre Directors amplifying this concept was distributed by Dr. Brader to TAC Members. The objectives of the programme were said to be, *inter alia*, to strengthen inter-centre collaboration, enhance communication between IARCs and partners, develop joint projects, support research and training, and promote public awareness. Research projects would be farmer-participatory and involve multidisciplinary study of ecological mechanisms, improved sustainability, and conservation of biodiversity. One of the proposed programme's first actions would be to establish a database of existing IPM-related projects and resource persons within the CGIAR System. An inter-centre working group on IPM would be formed to serve as the steering committee for the programme. Dr. Brader noted that in addition to the consultations that had taken place among the Centres, informal contacts have been made with the FAO/World Bank IPM Facility, the International IPM Working Group, and CABI to ensure coordination with other actors. Financial requirements for the first three years were US\$ 410,000, US\$ 215,000, and US\$ 215,000, respectively.

193. In the ensuing discussion, TAC Members raised a number of questions concerning the substantive focus, activities, organization, and financing of the proposed programme. It was observed that while the concept of having a CGIAR policy statement on IPM was a sound one, it should not convey the impression that integrated pest management was new to the System, particularly since this activity was now quite pervasive in the work of the Centres. Concern was expressed that creating another database would add to Centres' administrative burden and probably be of little value-added in the light of existing information resources in this area and the wide network of research and non-governmental organizations already working in this area. Question was raised as to whether the funds requested were considered seed money to be used for start-up costs and to leverage other resources, and whether the endorsement sought from TAC implied a reallocation of existing resources or constituted a request for additional funds.

194. In response, Dr. Brader indicated that the database was needed to promote awareness of what the CGIAR System was currently doing in the area of IPM. He also said that the resources identified were needed for workshops and coordinating activities to launch the programme and develop proposals for additional funding.

195. In view of the consultations between representatives of this proposed initiative with a wide range of non-CGIAR institutes working on IPM to ensure adequate coordination and complementarity, TAC considered that there was no need to proceed at this time with the consultation workshop as proposed at TAC 66. The Committee endorsed the proposal submitted by Dr. Brader to TAC 67 and recommended that a sum of US\$ 400,000 be allocated to support it during 1996.

On-Farm Water Husbandry in West Asia and North Africa

196. The Chair recognized Dr. Booth of ICARDA to introduce this item.

197. Responding to TAC 66's commentary that ICARDA's proposed ecoregional initiative for West Asia/North Africa lacked a strategic research component, Dr. Booth presented the rationale for a programme of research said to be of global relevance focusing on the optimization of dryland on-farm water husbandry. The proposed research was said to be strategic in the sense that husbanding water supplies for agriculture and ensuring their efficient and sustainable utilization were problems not limited to the dry areas of WANA, but were issues of global, systemwide significance. A systems-based methodology, adapted to national and local circumstances, would be employed and have broader applications in other dryland zones. Four research themes had been identified: (1) water in present land-use systems, including indigenous knowledge and end-user perceptions and participation; (2) water resources and capture potential; (3) options for water utilization; and (4) dissemination, development, and impact. The programme would be implemented collaboratively with nine national partners in WANA, regional organizations, other CGIAR Centres, and advanced institutions. (Programme details and an estimated three-year budget for US\$ 2.64 million are contained in a document distributed to TAC entitled, 'On-Farm Water Husbandry in West Asia and North Africa - Executive Summary', undated.)

198. In the ensuing discussion, there was consensus among TAC Members that the proposal was a substantial improvement over the previous version. Committee Members raised a number of questions concerning the scope of the research, its relationship to other Systemwide initiatives, the degree of collaboration with other IARCs, and related issues. Specifically, Dr. Booth was asked to clarify the distinction between and address the possible linkages with ICARDA's proposed programme and the SWNM initiative, as well as the scope for involving IIMI more explicitly in the programme. Members also queried the extent to which the programme incorporated research on socioeconomic constraints to technology transfer and the analysis of such policy issues as common property rights.

199. In response, Dr. Booth indicated that the programme envisaged linkages to IIMI in terms of research on the problem of on-farm water delivery and to SWNM on the issue of optimizing soil water retention. It was ICARDA's intention to invite IIMI to join the programme's steering committee. He foresaw no problem in linking more formally with SWNM, but emphasized the importance of doing so from a regionally-based research effort that would permit extrapolation of strategic methodological lessons to the global level. Dr. Booth indicated that ICARDA was aware of the importance of policy/socioeconomic variables in understanding water issues and that these were included in the research agenda. Given local political sensitivity on these issues in the WANA region, he thought ICARDA was particularly well-placed to assist NARS as an "honest broker."

200. In response to a question by the Chair on the degree of internationality of the proposed programme, one participant observed that while the methodological lessons of the research might be extrapolated to other regions, the research results themselves would generally be discrete to agroclimatic zones.

201. TAC recommended an allocation of US\$ 600,000 to support the proposal submitted by ICARDA, 'On-Farm Water Husbandry in West Asia and North Africa', during 1996.

Ecoregional Approach to Enhancing Agricultural Research in Tropical America

202. The Chair recognized Dr. Douglas Pachico, Associate Director of Natural Resources, CIAT, to introduce this item.

203. Responding to earlier TAC comments, Dr. Pachico presented a revised proposal for ecoregional research in Tropical America. His remarks addressed the consultative process by which the proposal had been developed, the goal and purpose of the proposed research, project outputs and activities, anticipated impacts, research management, 1995 workplan, and 1995-97 project budget. TAC Members were provided with a copy of the revised proposal, dated May 1995.

204. The programme goal was to improve management of natural resources devoted to agriculture in Tropical America in order to reduce poverty and hunger, maintain resource quality, and increase agricultural productivity. It would achieve this by improving capacity to understand the relationship between resource degradation and agricultural

productivity problems, developing solutions to these problems, and extrapolating results among agroecosystems through georeferenced information systems and analysis. Because national research resources were limited and the agroecosystems of the region so diverse, developing such solutions was largely beyond the individual capacity of national programmes and required regional research cooperation. The substantive focus of the proposed research was therefore developed by CIAT in consultation with NARS, regional institutions, and other IARCs, with a view to integrating CIAT's ecoregional programme with four research consortia already operating in Tropical America, achieving economies of scale and ensuring coordination. The outputs of the proposed research included enhanced capacity for cross country prioritization, targeting, and extrapolation of research results through development of environmental and agricultural land use databases and models; improved methods for research at the agroecosystem and watershed levels; and strengthened NARS' capacity to utilize the methods, models, information, and data systems generated by the research.

205. In the ensuing discussion, TAC Members sought clarification on the phasing of the proposed programme in terms of when planning would be completed, implementation started, and results achieved; the allocation of the proposed 1996 budget as between coordination and research activities; whether the methodologies to be generated by the research would differ from those of other initiatives; and, in more general terms, the relationship between ecoregional and systemwide initiatives, the transparency of the CGIAR's investments in such activities, and their "value for money" measured in terms of outputs and impacts.

206. In response, Dr. Pachico and Dr. Havener noted that planning and implementation of programmes as large and complex as the one under discussion were processes that necessarily occurred along a continuum, rather than in finite stages, in order to capture and extrapolate the externalities between the different agroecosystems. In terms of the 1996-97 workplan, the outputs identified above constituted implementation of the programme's research and training activities; coordination represented only five to six percent of the budget. Finally, it was noted that some of the methodologies that would emerge from the research would be widely applicable.

207. The Chair thanked Dr. Havener and Dr. Pachico for their remarks.

TAC COMMENTARIES ON SYSTEMWIDE INITIATIVES AND PROGRAMMES

Systemwide Livestock Initiative

208. No action was required on this progress report.

Ecoregional Programme for the Humid and Sub-Humid Tropics of Sub-Saharan Africa

209. TAC endorsed the proposal 'Ecoregional Programme for the Humid and Sub-Humid Tropics of sub-Saharan Africa' and recommended that US\$ 700,000 be allocated to this programme during 1996, of which US\$ 350,000 be assigned to IITA and

US\$ 350,000 to WARDA. TAC considered that the responses provided by the Centres involved to the questions it had raised at TAC 66 were satisfactory.

210. TAC was pleased to note that IITA is expanding its partnerships across the moist Savanna and humid tropics ecozones, and encourages IITA as the convening Centre to ensure that the project establishes close linkages not only with WARDA, but also with relevant activities in the Slash-and-Burn project, with the ILRI-led Systemwide Livestock Initiative and with relevant work being conducted by ICIPE.

CGIAR Systemwide IPM Initiative

211. TAC was pleased with the additional information presented by Dr. Brader during his interactions with the Committee, and in particular that about the consultations between representatives of the proposed Systemwide IPM initiative, with a wide range of non-CGIAR institutes working on IPM to ensure adequate coordination and complementarity.

212. The Committee also welcomed the linkages being established with the FAO/World Bank IPM Facility, the International IPM Working Group and CABI, and in particular, the proposed cross representation on the respective steering groups of the IPM facilities and the CGIAR IPM Initiative. In view of these recent consultations, TAC agreed that there was no need to proceed at this point in time with the Consultation Workshop as proposed at TAC 66, and endorsed the proposal as submitted by Dr. Brader to TAC 67.

213. TAC recommended that a sum of US\$ 400,000 should be allocated to support the CGIAR Systemwide Initiative on Integrated Pest Management during 1996; this includes the US\$ 200,000 already endorsed by TAC at TAC 66 in Lima in March 1995.

On-Farm Water Husbandry in West Asia and North Africa

214. TAC provisionally recommended an allocation of US\$ 600,000 to support the proposal 'On Farm Water Husbandry in West Asia and North Africa' during 1996. The Committee considered this to be a well prepared and articulate proposal. However, TAC would like to see a further redrafting of the proposal with more specific elaboration of the natural resources management research activities included, and greater focus on the ecoregional (rather than global) dimensions of the research proposal.

215. TAC would encourage ICARDA to engage in further dialogue on the proposal with relevant CGIAR Centres, and in particular with IIMI and ICRISAT. ICARDA, as the coordinating centre for this initiative, should also collaboratively develop and articulate the rationale, niche and *modus operandi* of the proposed project in direct reference to the Soil, Water, Nutrient Management Initiative, being developed by CIAT and IBSRAM, and make suggestions as to how linkages with this initiative might best evolve. TAC would like to discuss the redrafted proposal and a progress report on the implementation of the research when discussing the 1997 programme and budget proposals at TAC 69 in March 1996.

An Ecoregional Approach to Enhancing Agricultural Research in Tropical America

216. TAC responded favourably to the proposal submitted by CIAT for 'An Ecoregional Approach to Enhancing Agricultural Research in Tropical America'. The Committee reviewed the 1995 Workplan and reaffirmed its earlier recommendation to allocate US\$ 150,000 to fund the activities identified. TAC commends CIAT for the wide-ranging consultations it undertook, not only with collaborating CGIAR Centres, but also with the members of the four agroecosystems research consortia that will participate in the project. In particular, TAC welcomes the spirit and focus of the proposal, i.e., to support and foster externalities among a variety of ongoing research activities that have an ecoregional dimension in the subcontinent. TAC recommended allocation of US\$ 900,000 towards the costs of initiating the programme in 1996.

Soil, Water and Nutrient Management Initiative

217. TAC responded favourably to the joint CIAT/IBSRAM proposal 'Soil, Water and Nutrient Management Initiative' and recommended a 1996 allocation of US\$ 900,000 to support its implementation.

218. TAC discussed this proposal at some length in reference to the evolving discussion on the 'Study of Strategic Natural Resources Management Issues and Research Needs in the CGIAR', reflecting the Committee's concern for consistency both in the planning and conduct of natural resources management research.

219. TAC commends the co-convenors for the significant improvements in the proposal arising from the wider-ranging discussions at the June Feldafig Workshop, and is pleased about the constructive dialogue and spirit of cooperation between the Committee and the leaders of the Initiative.

220. In the further development of the proposal, TAC would like to see a more detailed elaboration of the four research themes, their inter-relationships comprehensively described, and in particular, a more in-depth articulation of Theme No. 4, i.e. Optimizing Soil Water Use. The Committee would also welcome specific suggestions as to how the activities arising from this proposal will interlink and synergize with those in other pertinent Systemwide initiatives/programmes currently underway and/or evolving within the CGIAR. The leaders of the Initiative may also want to consider TAC's recommendations on priorities for natural resources management research as proposed at TAC 67. Finally, TAC welcomes the recent dialogue with IFPRI to participate in the Initiative, and strongly advocates the importance of socioeconomic research within the framework of this work.

Other

221. TAC also considered the timing by which Centres need to respond to the queries it had raised with respect to some of the Systemwide initiatives and programmes at TAC 66 and TAC 67. The Committee expects that Centres will respond to these at TAC 69 in March 1996 when it is considering 1997 funding requests.

External Review Process (Agenda Item 10)

222. The Chair introduced this item by noting that at MTM'95, the Group had asked TAC to report at ICW'95 on the question of consistency across timing of external reviews and to provide feedback on the guidelines for reviews. TAC's report was also to address whether reviews were transparent enough in the sense of giving Centres frank criticism of their programmes and management. The Chair welcomed comments on this suggestion as input to TAC's preparation of its report.

223. Dr. Gregersen, Chair of TAC's Standing Committee on External Reviews, opened the discussion by observing that a detailed inter-Secretariat paper on reviews prepared for ICW'94 had significantly advanced the discussion of review processes in the CGIAR, but that it had not specifically addressed the issue of consistency. With a view to incorporating this dimension, the TAC Secretariat had now surveyed the Centres and received some nine responses. The interim results suggested that the Centres perceived no problems of consistency, but felt that the continuity of the review process could be improved by briefing review teams more thoroughly and perhaps having an overlap in the membership of panels. On the question of candour, one TAC Member noted that there had been a number of quite critical reviews in the past which should be brought to Dr. Serageldin's attention. Another member doubted that extreme candour would be productive for outside audiences. Two donor representatives argued that reviews could be more candid; particularly sensitive issues might be reported in a confidential annex to review reports. A number of Centre Directors pointed out that special project reviews often done at the request of donors were particularly troublesome because reviewers were often unfamiliar with the CGIAR System and Centre mandates, leading to inconsistencies in results.

224. In closing this discussion, the Chair observed that few enterprises were reviewed as frequently and as well as the CGIAR, but that the process could be improved. TAC would consider this matter in closed session and formulate the modality of its response to the Chairman's request.

225. The TAC Chair will consult with the CGIAR Chair and Executive Secretary and report to the Group at ICW'95 on the issues raised as a result of the Committee's consideration of this item.

Future Reviews (Agenda Item 11)

226. The Chair recognized Dr. Gregersen, Chair of the Standing Committee for External Reviews, to introduce this item.

227. Dr. Gregersen reported on the progress of planning for external reviews of ICRISAT, IPGRI, IFPRI, and ISNAR which will be initiated during 1996. He also reported on the status of planning for other reviews and studies, including CGIAR Commitments in Latin America, Cereals Research in the CGIAR, Postharvest Technology, and CGIAR Investments in Arid and Semi-Arid Areas.

228. Dr. Muchnik, co-convenor with Dr. Gregersen of the TAC Stripe Study on Strategic Perspectives on Public Policy and Public Management Research, then presented a progress report on the status of that study which was being conducted by a panel chaired by Dr. Alain de Janvry. The purpose of the study was to assess the potential for organizing a systemwide programme in public policy and management research with a view to improving coordination of such research in the CGIAR System. Dr. Muchnik briefly noted the some key issues which the study was addressing, i.e., the optimal division of labour within the System for policy/management research, with particular attention to the roles of IFPRI and ISNAR; the CGIAR's comparative advantage in this field in relation to other suppliers; and the rationale for a possible systemwide initiative. The Panel met in The Hague on 27-28 April 1995 and would meet again on 2-3 August 1995 in Santiago, Chile. A copy of the Panel's progress report was circulated to TAC Members. The report will be finalized and presented at TAC 68.

229. There was brief comment on Dr. Muchnik's report, focusing in particular on the specific role of the CGIAR vis-à-vis that of other organizations involved in policy research. The Chair then brought the discussion of this item to a close by observing that since many Centres were investing in policy research, it was important to ask whether such research should be conducted Systemwide, and how the specific role of the CGIAR related to that of other policy research institutes. TAC would welcome comments on this question from the Centres.

230. After further consideration, the Committee asked the Secretariat to initiate studies on postharvest technology and CGIAR investments in marginal areas. TAC also requested the Secretariat to organise, in consultation with ICRISAT, a review of the impact of ICRISAT's crop improvement programmes in the semi-arid areas of West Africa and of opportunities for transfer of research work on production systems and management to NARS of the region. Such a review had been recommended by the Panel which conducted a study of CGIAR Commitments in West Africa. The review should be conducted in preparation for the Fourth External Programme and Management Review of ICRISAT due in 1996. The implementation of studies on CGIAR cereals research and on CGIAR commitments in Latin America and the Caribbean would be delayed until after completion of the report of CGIAR Priorities and Strategies in May 1996.

Future Meetings (Agenda Item 12)

231. TAC confirmed the dates and venues for the following meetings:

TAC 68, 4-8 December 1995, ICRAF, Nairobi, Kenya;
TAC 69, 25-29 March 1996, IRRI, Manila, Philippines;
TAC 70, 30 July-6 August 1996, CIAT, Cali, Colombia;
TAC 71, 25-29 November 1996, venue to be decided.

Other Business (Agenda Item 13)

Small Countries Initiative

232. The Chair recognized Dr. Bonte-Friedheim who brought to the Committee's attention an informal ISNAR proposal for a systemwide initiative to explore how the CGIAR might be of service to small country NARS in building or improving their research capacity. He noted that 40 to 50, particularly island, countries were often bypassed by the System, yet their populations were frequently at risk in terms of poverty and environmental degradation. As a first step toward addressing this gap in the CGIAR'S coverage, ISNAR was prepared to convene a workshop in the Caribbean involving representatives of that region's NARS to identify their research needs and discuss possible CGIAR assistance. ISNAR's concept was to convene a scientific forum every three to four years with systemwide participation to take stock of the needs of different regions and identify how the Centres, individually or collectively, might respond. Because ISNAR viewed the problems of small country NARS as a systemwide concern, it sought the advice of TAC and the Centres on whether and how such an initiative might be undertaken. Dr. Bonte-Friedheim closed by saying that funding for the proposed Caribbean workshop had already been secured.

233. TAC's discussion of this proposal reflected concern for the needs of small country NARS, but also anxiety that the proposed initiative could generate unrealistic expectations which the CGIAR might then not be in a position to accommodate. Doubt was also expressed that the NARS in question were actually strong enough to benefit from interaction with the Centres, except perhaps to help them identify their needs and possible sources of support in the donor community.

234. After further consideration, TAC responded positively to ISNAR's informal proposal to organize a Workshop in the Caribbean to facilitate a CGIAR dialogue and a two-way exchange of information with the Small Country NARS in the region. TAC would welcome a formal proposal and would be happy to consider it at its next meeting, i.e., TAC 68, 4-8 December 1995.

235. The Committee had some reservations as to how best, or if at all, the CGIAR could assist these small nations, many of which had little or no research capacity at this point in time. On the other hand, TAC shared ISNAR's concern that these states needed technical support in the development of agriculture and the conservation of their natural resources.

Eastern Europe and Former Soviet Union

236. The Chair reported that at its 21-25 May 1995 meeting the CGIAR's Oversight Committee discussed options for implementing the recommendation of the Lucerne Declaration dealing with Eastern Europe and the former Soviet Union. It had encouraged the CGIAR to initiate research in this region "only when a clear program of work where the CGIAR has a distinctive comparative advantage has been established, and a minimum level of separate and additional funding has been secured". The Oversight Committee

had suggested that, under TAC's guidance, the Centres and interested donors should study the regions's research needs and priorities, and opportunities for collaboration with the CGIAR, and suggested priorities of a possible future programme of work, for discussion by the Group. Such a paper was also considered useful input to TAC's study of priorities and strategies.

237. The Chair welcomed comments on this suggestion from TAC Members and other participants.

238. In the ensuing discussion, several TAC Members expressed concern that the Oversight Committee's suggested course of action was more proactive than the Lucerne Declaration's intent, which had counselled that Centres simply respond to opportunities within their mandates on the basis of full cost recovery. It was noted that since the Centres' comparative advantage lay primarily in tropical agriculture and the countries in question were already receiving advice on priority setting from the European Union and the World Bank, perhaps the CGIAR's contribution could be to help identify the gaps in the research agenda for this region. It was urged that caution be exercised in this initiative lest the Centres spread themselves too thinly and place the stability of their ongoing programmes at risk.

239. After further consideration, TAC decided that its current commitments were already so heavy that it could not take on the additional task suggested by the Oversight Committee for the time being.

Other

240. The Committee briefly discussed recent correspondence with the CGIAR Chair about the setting up of a CGIAR cotton research institute. TAC would revisit the issue at TAC 68.

241. The Chair and Members of TAC bid farewell to Ms. Marioara Lantini, Programme Assistant at the TAC Secretariat, who was due to retire shortly, and expressed their deep appreciation of the contributions she had made to the work of the Committee. On behalf of the Centre Directors, Dr. Robert Havener, Director General a.i. of CIAT, also gratefully acknowledged Ms. Lantini's efforts in supporting the work of the CGIAR System during the 17 years she had served the TAC Secretariat.

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AGENDA

1. Opening Session
2. CGIAR Priorities and Strategies
 - (a) Projections of food demand and supply to 2010 and 2020
 - (b) Implications of FAO's 2010 & IFPRI's 2020 Studies for CGIAR Priorities
 - (c) National Research Systems
 - (d) Gender Issues and Institution Strengthening
 - (e) Poverty Issues
 - (f) Advanced Institutions
 - (g) Natural Resources (Land and Water)
3. Study of Strategic Natural Resources Management Issues and Research Needs in the CGIAR
4. Strategic Study of Institution Strengthening Research and Service
5. External Programme and Management Review of IITA
6. Inter-Centre Review of Roots and Tubers Research
7. 1996 Programme and Budget Proposals
 - ICARDA
 - ICLARM
 - IPGRI/CIFOR
8. 1997-2000 Resource Allocation Process
9. Proposals for Systemwide Initiatives and Programmes
10. External Review Process
11. Future Reviews
12. Future Meetings
13. Other Business

LIST OF DOCUMENTS

Item	Document	Number/Source
1	Draft Report of 66th TAC Meeting	SDR/TAC:IAR/95/8
2	Degradation of Resources as a Threat to Sustainable Agriculture	Pierre Crosson
	CIDA's Policy for Poverty Reduction	CIDA
	R. Rabbinge's letter to CGIAR Chair with attached Report of CGIAR Task Force on Sustainable Agriculture and comments from CGIAR Members	R. Rabbinge
4	The Future Role of the CGIAR in Development of National Agricultural Research Systems: A Strategic Study of Institution Strengthening Research and Services	SDR/TAC:IAR/95/12
5	Report of the 4th External Programme and Management Review of IITA	SDR/TAC:IAR/95/9
	IITA's Response to the Report of the 4th External Programme and Management Review	IITA
6	Progress Report on the Inter-Center Review of Root and Tuber Crops Research in the CGIAR	SDR/TAC:IAR/95/11
8	CGIAR Resource Allocation - Proposed Budget Processes	CGIAR Secretariat
9	Soil, Water and Nutrient Management Initiative	Memo from Havener
	Soil, Water and Nutrient Management Initiative: Report from the Feldafing Consultation	Memo from convenors
11	Strategic Perspectives on Public Policy and Public Management Research - A TAC Stripe study (Progress Report)	SDR/TAC:IAR/95/13