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Charting the CGIAR's Future – Change Design and Management

**CGIAR 2002 Research Agenda
and Initial Proposals for 2004**

At MTM97, the Group endorsed Center Medium-Term Plans (MTPs) for 1998-2000 based on priorities recommended by TAC. These are rolling three-year plans and the research agenda is reviewed and approved each year in light of new developments.

The attached report provides TAC's views on the programmatic implications of Center MTPs for 2002 in the context of 2002-2004 Center plans. It also includes the criteria used by TAC in its analysis, highlights of Center proposals, and an overview of the implications for CGIAR priorities.

The report will be introduced by the TAC Chair. It should be read in conjunction with that of the CGIAR Secretariat on the 2002-2004 Research Agenda and Funding Requirements (MTM Document No. 01/06).

Category: This item is for Information... Discussion.... Decision...x

Proposed Action: The Group is requested to review and approve the proposed 2002 research agenda as well as the extension of the 2001-2003 medium term plans, approved at MTM00, to 2002-2004.

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH
TECHNICAL ADVISORY COMMITTEE

**CGIAR 2002 Research Agenda
and Initial Proposals for 2004**

TAC SECRETARIAT

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

May 2001

Consultative Group on International Agricultural Research (CGIAR)

TECHNICAL ADVISORY COMMITTEE

Emil Q. Javier, Chairman

7 May 2001

Dear Mr. Johnson,

It is my pleasure to submit to you for discussion by the Group at MTM'01 TAC's report on the *CGIAR 2002 Research Agenda and Initial Proposals for 2004*, based on Centre proposals. At MTM'97 the Group endorsed Centres' medium-term plans and medium-term resource allocations along with TAC's recommendations on CGIAR priorities and strategies. Centre medium term plans are established as rolling three-year plans with each year's extension discussed at MTM for programmatic issues and at ICW for financial implications. The annual extensions are reviewed in the light of criteria important to the CGIAR. TAC's task is to certify the congruence of Centre plans with programmes already endorsed by the Group.

At its March 2001 meeting, the Committee considered Centre MTPs for 2002 and plans for 2004. The attached report focuses on programmatic issues identified by the Committee. It presents the criteria used in the analysis, summarizes Centre proposals, and offers TAC's views on them and the implications for CGIAR priorities. This year TAC made a special effort to assess MTPs in the light of the CGIAR's new Vision and Strategy.

Overall, Centres' 2002 Plans are broadly consistent with their Group-endorsed MTPs. TAC notes that the project portfolios of nearly all Centres have been maintained except in the cases of CIP, IRRI, ISNAR, and IWMI which have significantly restructured them. TAC finds that these changes permit the four Centres concerned to respond more effectively to the directions of the new CGIAR strategy. Examples include servicing the technical and policy needs of intergovernmental bodies dealing with the sustainability issues, creating a functional genomics platform to facilitate germplasm improvement relevant to the needs of the poor, and exploiting the potentials of the new information and communications technologies to promote institutional innovation at regional and national levels.

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Indeed, TAC found that most Centers had taken steps within their respective mandates to implement the System's strategic emphasis on poverty reduction within a stronger regional focus, particularly vis-à-vis sub-Saharan Africa. Generally, evidence of more efficient access to advanced biological science, of a concerted inter-centre effort on integrated natural resources management, and of complementary cross-sectoral work in the areas of institution innovation, policy advice and impact assessment reflect well on the responsiveness of Centres both to the demands of CGIAR investors and the needs of our NARS partners.

TAC certifies that Centres' proposals are congruent with CGIAR priorities and strategies and is pleased to recommend the 2002 Research Agenda to the Members for approval, as well as the extension of the 2001-2003 medium-term plans, approved at MTM'00, to 2002-2004.

I wish take this opportunity to thank the Centres for their co-operation in meeting tight deadlines and precisely specified requirements for information. I also thank the staff of the CGIAR and TAC Secretariats for their assistance in the preparation of this document.

We look forward to our discussion at MTM'01.

Sincerely yours,

Emil Q. Javier

Emil Q. Javier
TAC Chair

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CGIAR 2002 Research Agenda and Initial Proposals for 2004

1. Introduction

At the 1997 Mid-Term Meeting (Cairo), the Group endorsed Centres' Medium-Term Plans (MTPs) for 1998-2000. MTPs are based on longer term strategic plans, cover three years, and are updated annually. This year Centres submitted their MTPs for 2002, along with their intentions for 2004. At its 80th Session held toward the end of March, TAC analyzed the programmatic implications of the plans of the 16 Centres with a view to reporting to the Group at MTM'01 on the CGIAR's 2002 Research Agenda.¹

This document reflects the results of TAC's deliberations. It is divided into five sections. The first is this Introduction and the second deals with the criteria used in TAC's analysis. The third section features a note on each Centre highlighting the programmatic implications, if any, of their respective 2002-2004 MTPs, together with TAC's commentary. Section four provides a brief overview of the most significant programmatic developments in the 2002 Research Agenda at Centre and System levels. TAC's recommendation to the Group is provided in Section 5.

All Centres now present their projects in logframe format, with a detailed listing of goals, objectives, outputs, milestones, verifiable indicators, and assumptions. The fact that the Centres are now using this approach makes the research planning process considerably more transparent and facilitates monitoring of implementation. These factors, in turn, enhance Centres' accountability for the timely delivery of outputs, a necessary condition for achieving impact.

2. Criteria for Analysis

The point of departure for TAC's review of Centre proposals for 2002-2004 was each Centre's MTP as endorsed by the Group earlier. The focus was on changes from existing plans, particularly those responsive to the Vision and Strategy approved by the CGIAR at ICW'00. Within this broad frame of reference, TAC's analysis employed the following criteria: scientific priorities and focus of the overall research portfolio or of major projects within it; the research content of the portfolio as reflected by significant restructuring or the addition/phasing out of projects; evidence of planned outputs as indicated by the relevance, utility, and general robustness of milestones; linkages and partnerships with other institutions involved in research and development; responsiveness to major recommendations of external programme and management reviews.

¹In considering Centres' plans, TAC benefitted from a report prepared by the CGIAR Secretariat, *2002-2004 Research Agenda and Funding Requirements*, which provides a comprehensive overview of the Centres' financial plans and of resource allocations by CGIAR Activity and Logframe Output. See MTM Document 01/06.

TAC's review was dependent on the completeness of a Centre's response to the guidance provided by the CGIAR Secretariat in its call for MTPs. In some cases, additional inquiries were made by TAC to Centres' senior management. The analysis of MTPs was facilitated by the designated TAC Liaison Scientists for each of the 16 Centres.

3. Synthesis of Centre Proposals and TAC's Commentary

CIAT

CIAT's 2002-2004 MTP is a final update of *Doing Research Together: CIAT's Medium Term Plan, 1998-2000*. The MTP shows no major changes in project milestones which are now updated to the year 2004. During the current year CIAT will finalize a new Strategic Plan, 2001-2010, which will result in changes in the research agenda and resource allocation.

The Fifthth EPMR (2000) of CIAT had recommended that the Centre renew its commitment to its global and regional commodity research responsibilities - specifically, for beans, cassava and rice - as well as expand its tropical forages programme in Africa. TAC notes that, judging from project expenditures for 2001 and the expected extension to 2002, the Beans in Africa and The Tropical Grasses and Legumes projects are being strengthened. This is a result of CIAT's success in securing new restricted funding for these projects. There is also increased emphasis on cassava improvement. The EPMR had called for urgent attention to the upgrading of CIAT's genebank and its operations. TAC notes in this context that the MTP significantly increases the Centre's resource allocation to Germplasm Collection and that the milestones for its genetic resources conservation project reflect responsiveness to the Review recommendation. The Committee assumes this emphasis will be reflected in the Centre's new strategic plan. The greater integration of the Centre's NRM projects with germplasm improvement and global commodity research, recommended by the Review, also awaits definition by that plan. TAC notes that, in accordance with the regional thrust of the CGIAR's new strategy, CIAT has been actively involved in the regional research planning initiative in Central America and the Caribbean sub-region.

CIFOR

In its 2002-2004 MTP, CIFOR continues to respond to a key recommendation of its First EPMR (1998) which recommended that the Centre "evolve its current grouping of research activities into a framework that links more closely and clearly its research activities and their outputs to CIFOR's mission". The twofold mission is: (a) to prevent environmental degradation (through sustainable production systems), and (b) to end poverty among forest-dependent people. The thrusts of its eight projects are evolving more and more toward these two goals, as evidenced by its activities and the content of future milestones.

Early success in sustainable forest management has been CIFOR's pioneering development of a set of "criteria and indicators" of forest sustainability. These have been field-tested over a wide range of environments by many national collaborators. The sustainability criteria are used

throughout CIFOR's projects, some of which focus on biogeophysical factors, as well as in its project on Policies, Technologies and Global Changes which addresses the public policy issues which are key to sustainable forest management.

The Forest Products and People project targets both forest dwellers and those who derive at least a portion of their livelihood from forest products. Forest products are seen by CIFOR as stabilizing livelihoods especially of people in fragile environments whose agricultural enterprises include high risk and uncertainty. The research and milestones tend to focus on the products themselves within a broad range of societal and policy situations. TAC would encourage an increase in research on the people themselves to better understand both attitudes and family and societal norms leading to sustainable forest management and to look at impact on family livelihoods. As with sustainability, livelihoods of people are woven throughout each of the projects.

CIFOR sponsored and organized the Penang INRM meeting, maintains the INRM website and has strongly supported INRM evolution within the CGIAR. It has expressed interest in the area of ecosystem services provided by forests. TAC encourages the ongoing INRM thrust in its sustainable forestry work, and suggests that it begin research on forest ecosystem services. The commendable work on carbon sequestration should have parallel and linked research on water and on the hydrological services of forests. That research should be reflected in future milestones.

CIFOR is active in projecting the science base into numerous international fora. TAC applauds this activity, but cautions that it must be kept in balance so as not to inordinately divert scientists from their research mission.

CIMMYT

CIMMYT's 2002-2004 MTP refocuses the Centre's research agenda in response to the CGIAR's new strategy. The Plan emphasizes poverty reduction in the regions, defending and enhancing productivity gains to sustain the livelihoods of rural and urban poor, and reaching the "unreached" in stressed and marginal environments. The project portfolio is comprised of 9 global projects, 6 regional projects and 6 frontier projects. A strong emphasis on genetics and germplasm enhancement is evident in global and frontier projects, as is the Centre's strategy to utilize modern tools of genomics and biotechnology for traits relevant to the needs of the poor. Regional projects, linked to global projects, focus on key challenges to food security, poverty, and sustainability. It is not clear how CIMMYT plans to maintain the desired disciplinary balance between genetics and NRM sciences.

CIMMYT's research achievements with its partners in the regions are well exemplified by the economic benefits accruing to farmers in sub-Saharan Africa from maize varieties having relatively greater tolerance to biotic and abiotic stress. Similarly, in South Asia, a "greener revolution" is unfolding under the guidance of the Rice-Wheat Consortium. The emphasis on "new" bed-planting and minimum tillage systems offers significantly greater factor productivity and competitiveness, with economic benefits to both producers and consumers. CIMMYT's

research on quality protein maize and on micronutrient and vitamin-rich maize holds good promise for the poor in the short term, as does its research on apomixis in the longer run.

TAC commends CIMMYT for refocusing its research agenda and encourages it to see it through to implementation and beyond. The Committee applauds the Centre and its partners for the high quality of science being applied to address pressing regional and global food and nutritional security challenges of the poor. CIMMYT's GxExMxP (genotype x environment x management x people) research paradigm offers ample scope to the Centre to further advance the regional and livelihood relevance of its research for the poor. TAC considers that to improve the probability of success of its regional projects, the Centre needs to underpin its research paradigm with an effective mix of disciplinary sciences, giving adequate emphasis to ExMxP.

CIP

CIP's 2002-2004 MTP shows major changes in project structure and emphasis in response to the CGIAR's new strategy, the UN-designated International Year of Mountains, and Rio+10. The Plan reflects an increased poverty focus through regional activities and partnerships as well as an emphasis on mountain natural resources management. The MTP also reflects the substantial increases in demand expected for potato by 2020. CIP implemented a strategic downsizing in 1999 and 2000, which resulted in a reduction of 7 international and 27 nationally recruited staff.

The Centre reports several important achievements, particularly in the areas of molecular biology, improved diagnostics for bacterial diseases, and dissemination of potato and sweetpotato materials from CIP's decentralized breeding programmes. TAC notes that the recent review of Plant Breeding Methodologies in the CGIAR had called for strategies to overcome the problems associated with testing and dissemination of transgenic varieties. This is an issue very pertinent to CIP's crop improvement work. TAC commends CIP's enhanced activity in the collaborative inter-centre initiative for Urban and Peri-Urban Agriculture. CIP envisages further strengthening of this activity in 2003-2004, in response to its stronger poverty orientation.

The research agenda now consists of three global or regional partnership projects convened by CIP and 10 constraints-driven projects. Of the latter, four new projects are proposed which result from the merging of earlier ones. The new projects are clearly congruent with the poverty focus of the CGIAR. By restructuring along with the downsizing CIP has aimed at securing research capability in some research areas subject to cuts, while the cuts otherwise were targeted to selected areas of research not considered essential, such as physiology of true potato seed and drought resistance in potatoes. TAC agrees with targeted cuts based on the relative importance of different activities but cautions against falling below critical mass in areas of research where the capacity is maintained but seriously reduced. While TAC agrees in general with the consolidation of CIP's projects to larger thematic entities, TAC notes that the new project on the uptake and utilization of technologies in site-specific agroecologies consists of a large number of very different components and therefore will require good internal integration to guarantee effectiveness.

In the period under consideration, CIP is increasing its activities in Africa while reducing the resource allocation in Latin America. TAC agrees with this trend, which is congruent with the added emphasis given to Africa in the CGIAR's strategy.

ICARDA

ICARDA's 2002-2004 MTP is essentially an extension of the previous Plan. Priority areas of work include land and water resource management, small ruminant nutrition and management, agroecological characterization, pre-breeding and biotechnology, on-farm water management, resource economics, and rangeland rehabilitation and management. The Plan reflects stability in the Centre's research programme following the major structural changes of the 1998-2000 MTP. Continuity of planned projects is maintained; no new projects are proposed. Adjustments in line with recommendations of the Centre's Fifth EPMR are also apparent. Some of these have already been made while others, under consideration by management, will be discussed at the Centre's next Board meeting. Steps are also being taken by ICARDA to increase alignment of its priorities with those of the CGIAR's new strategy.

TAC's review of ICARDA's MTP was complemented by discussions with Centre management by the TAC liaison scientist. The Committee is satisfied that the recommendations of the EPMR are being implemented adequately. In particular, ICARDA is preparing, as recommended, a paper on its INRM vision and strategy. TAC is pleased to note in this context ICARDA's initiative in commissioning a CCER on its social science research and on its outreach programme. ICARDA's capacity for research in legume pathology and for research on malting barley has been strengthened through new staffing appointments and new partnerships.

TAC 80, which was hosted by ICARDA, provided opportunity for the Committee to familiarize itself more directly with the Centre's research programme. In general, TAC gained an appreciation of the high quality of the Centre's activities and their relevance for poor farmers in ICARDA's mandate area. The Committee remains concerned about the high share of restricted funding (approximately two-thirds) in ICARDA's portfolio.

ICLARM

ICLARM's 2002-2004 MTP is largely a continuation of its previous Plan. The dominant influence recently on the Centre's activities has been the relocation of its headquarters to Penang, Malaysia. Other major influences include the reduction of some of its work in the Pacific region due to the loss of the Coastal Aquaculture Centre in the Solomon Islands, and an increase in the resource allocation and number of projects for policy-related activities.

There are few specific changes from the 2001 Plan even as the number and focus of projects has been maintained. The current programme emphasizes productivity enhancement in natural and cultured systems and appropriate conservation and use of aquatic resource systems, particularly those providing direct benefits to the poor. Strong weight is given to NARS strengthening and to improving policies to enhance management of living aquatic resources.

In accordance with ICLARM's Strategic Plan, 2000-2020, its research thrusts have been expanded from ponds, coral reefs and coastal waters to freshwater systems. The strategy emphasizes development of aquaculture in ponds and small water bodies, sustainable exploitation of coral reefs within integrated coastal zone management, and generic contributions to tools and knowledge to augment the performance of developing country fisheries. The Centre continues its focus on Asia, with some enhancement of activities in Africa and the small island developing states of the Indo-Pacific and Caribbean. An analysis of resource allocation by region shows that ICLARM allocates approximately 58 percent of its resources to Asia, 30 to sub-Saharan Africa, 4 to the Caribbean and Latin America, and 8 to West Asia and North Africa.

Interactions with other CGIAR Centres are increasing through membership in systemwide initiatives such as the Systemwide Genetic Resources Programme, the Systemwide Initiative on Common Property and Community Management, participation in fora related to the Integrated Natural Resources Management Group, and the deliberations for the Systemwide Initiative on Water Management (SWIM II – building on ICLARM's and IWMI's collaboration on fisheries potential in the Mekong Delta). Interactions with the new host government and national institutes contributing to the aquatic resources sector are progressing very well. New collaborative research opportunities have been forged in genetic enhancement research, species characterization, the development of fisheries indicators, and information exchange.

TAC is pleased with ICLARM's rapid progress in setting up its new headquarters facilities. The Committee also notes the results of recent work by FAO which reiterates the crucial importance of fisheries for food security and aquatic resources management for the poor in developing countries. TAC is encouraged by ICLARM's progress in its research and its contributions particularly to integrated resource management, capacity building, and impact assessment.

ICRAF

While there are some changes between ICRAF's 2002-2004 MTP and the previous Plan, there appear to be no major departures. With only one or two exceptions, the proposed changes are mainly in emphases and these are reflected in re-naming and, in some cases, re-designing projects. For example, the Integrated Assessment of NRM Options project has now been re-named Quantifying the Values of Agroforestry, reflecting a broader scope for the project encompassing issues of assessment of the carbon, biodiversity and watershed benefits of agroforestry. TAC commends the Centre for seeking to more rigorously quantify some of the traditionally non-market valuations of agroforestry and believes the Centre is well placed to address this area.

TAC notes the relatively large increase in budget for 2002-2004 and the Centre's plans to expand or intensify its efforts on such initiatives as gender analysis, seed and germplasm supply, and institutional innovation as well as further development of the Farmers of the Future programme and the newly launched effort with CAB International on Agroforestry Knowledge Initiative. TAC agrees that these are important areas/initiative worthy of increased support, provided additional funding is forthcoming. Considering the regional perspective, TAC notes the Centre plans to implement closer research collaboration and development support in South Asia (to

which TAC concurs) and China (which TAC may question)—in recognition of the large numbers of poor in these regions, an aspect entirely consistent with the CGIAR's new strategy. TAC notes that in a subsequent communication to the Committee ICRAF indicates that the China work is being undertaken in a very cautious and carefully planned manner and that it is tightly linked to and builds upon on-going work in montane South East Asia.

One project in particular has undergone more significant changes. Formerly known as Productivity and Environmental Benefits of Complex Agroforests, this project has been re-named Local Ecological Knowledge and emphasizes the integration of farmers' knowledge with scientific knowledge in the development of tools for facilitating negotiations among different categories of land users. This in itself is laudable, capitalizing on indigenous farmer knowledge to more effectively develop and target technologies. In response to a TAC query on the implications of this change, ICRAF indicates that the new project structure involves no substantial change in research activities, only in the way they are grouped and presented with a view to increasing clarity.

The Committee is particularly pleased to note the progress made in developing a process for bringing about greater integration of CGIAR activities in Eastern and Southern Africa, and ICRAF's role in it. This bottom-up process has been endorsed by the 16 Centres for this region. This initiative is certainly in line with the CGIAR's new strategy. ICRAF expects this integration in programmatic areas to continue for this region.

ICRISAT

ICRISAT's 2002-2004 MTP is structured around 10 projects in line with its new vision and strategy "to improve the well-being of the poor of the semi-arid tropics through agricultural research for development". Special scrutiny will be given to the potential role and contribution of ICRISAT's mandate crops and NRM research to improving people's livelihoods and raising incomes to escape poverty. In this context, ways are being assessed to add value to ICRISAT crops through diversification, a potential new research thrust focusing on integrated systems involving other crops, livestock, and trees enhanced through improved watershed management and/or small-scale irrigation schemes and low-cost supplementary irrigation. ICRISAT's agenda has been formulated with input from partners and stakeholders, and the Centre has made an effort to facilitate an inter-centre integration process to optimize research efforts in South Asia. ICRISAT is playing a role in similar efforts with IITA and WARDA in West Africa.

A new Applied Genomics Laboratory has been established with significant priority investment to centralize and focus genomics research, establish a high throughput DNA marker facility, and enhance bioinformatics capacity. The MTP highlights the progress in watershed research in relation to biological aspects of water management and enhancement of water supply for production. Improved watershed management technologies are now undergoing on-farm evaluation in India, Thailand, and Vietnam with ADB support. Further work with NARS is focused on the development of a micro-watershed scale ecosystems model that will lead eventually to a decision support system for measuring the economic and environmental impacts of watershed development and management. ICRISAT is now spearheading a new opportunity

to develop plans for an Asian Desert Margins Programme with ICAR with possible support from ADB. ICRISAT work that promises to nearly double farmer production and profits from improved inter-cropping practices involving sorghum and pigeonpea will be continued.

TAC commends the Centre for a clear and innovative MTP and a revised vision and strategy in line with the CGIAR's. TAC considers that ICRISAT's new pro-poor focus and direction are well thought through and encourages the Centre to further develop its interests in integrated systems management that can offer greater economic benefits from land use diversification to rural livelihoods and at the same time strengthen the social capital base for improved NRM.

IFPRI

IFPRI's 2002-2004 MTP is consistent with its approved Plan and contains no significant programmatic changes. In line with its mandate nearly two-thirds of the Centre's research focuses on Enhancing Policy. IFPRI's research agenda is guided by a comprehensive consultative process reflected in its planning paper, *Food Policy Research for Developing Countries: Emerging Issues and Unfinished Business*. It identifies the key "driving forces" affecting food security – globalization, privatization, governance, institutional change, technology, urbanization, climate change, and health and nutrition – and provides the broad framework within which IFPRI identifies research issues on which it has comparative advantage.

Generally, the proposed Plan places greater emphasis on poverty reduction. Notable in this respect are the Institute's managing role in the TAC/SPIA project to assess the impact of CGIAR research on poverty reduction and its decision to increase to 50 percent the share of its resources allocated to research on sub-Saharan Africa. While this regional emphasis is congruent with CGIAR strategy, by virtue of its mandate IFPRI's overall approach within SSA is driven by global trends and national policy issues. IFPRI's responsiveness to the CGIAR's new strategic directions is also apparent in its emerging research on the impact of information and communications technology on poverty reduction. The Institute's research portfolio provides a solid platform for the biennial address of its Director-General to the CGIAR on the world food situation, a report having significant implications for the System's priorities.

IITA

IITA's 2002-2004 MTP reflects the integration of the Centre's research agenda with those of the other CGIAR Centres operating in sub-Saharan Africa. IITA expects further modifications to its research agenda as a consequence of this integration and the evolving needs of the sub-regions (West and Central Africa and Eastern and Southern Africa) and their agro-ecologies. A greater focus on poverty alleviation and the anchoring of IITA's new strategic plan on regional strategy and priority setting exercises are congruent with the CGIAR's new people and poverty focus and the emphasis on a regional approach to research.

In the new project portfolio, IITA's research agenda has been re-compartmentalized. Incorporation of post-harvest activities and a market-driven approach in all relevant projects

reflect a new food systems approach, with better responsiveness to changing needs and better possibilities for poverty reduction through income generation. TAC supports the new emphasis in food and product quality, which is reflected in the relevant projects. While integration of research on cellular and molecular biotechnology into the relevant crop improvement projects is logical for demand-driven priority setting, TAC emphasizes that the critical mass, incentives for innovations, and linkages to other advanced institutes necessary in modern biotechnology research should be carefully guarded under the new project structure. There is clear deviation from the former mode of single commodity research to increased attention to INRM by addressing the totality of farming systems prevailing in different agro-ecoregions. This is apparent in the project restructure resulting in new projects on vulnerable cropping systems, high-intensity food and forage systems, and integrated annual and perennial cropping systems. TAC supports this trend. TAC is pleased to see the commitment IITA intends to make in policy research (from the previous MTP, a change from 6 to 10 percent) and the corresponding ambitious research plan in the Impact, Policy and Systems Analysis project, but cautions against shifting resources from vital areas of germplasm research.

ILRI

ILRI's 2002-2004 MTP is essentially a continuation of its previous Plan. It is based on the Institute's 2010 strategy, adopted by ILRI's Board in 2000, which is guided by the needs of the poor and hungry in the developing world particularly in sub-Saharan Africa and Asia. With demand for meat and milk in developing countries expected to double by 2020, the Plan seeks to "make the livestock revolution work for the poor". It continues to be comprised of the eight projects contained in the 2001 Plan, with updated milestones and outputs.

The primary emphasis will remain on ruminants but with increased attention to swine and poultry, mainly through research in epidemiology, systems analysis and policy. The intended primary beneficiaries are resource poor livestock keepers in mixed crop-livestock systems, with secondary beneficiaries being those in peri-urban and grassland systems and the rural and peri-urban poor who are livestock consumers.

ILRI has developed an innovative approach to setting priorities which directly links the Centre's work to poverty alleviation. TAC complements ILRI for its approach and considers it systematic and transparent. It encourages the Centre to continue its efforts to update and refine its databases. Given the wide diversity in animal production systems in eastern, southern and western SSA, TAC notes that it is not always clear how the results of ILRI's research programmes would spillover across the different zones. The Committee encourages the Centre to maintain its presence in the Sahelian zone where livestock is of particularly great importance for poor smallholder farmers, and which covers both humid and subhumid zones. TAC would also encourage the Institute to give attention to non-ruminants, not only in Asia but also in sub-Saharan Africa. Finally, TAC welcomes ILRI's initiative in commissioning a review of its Systemwide Livestock Programme, the results of which will be available by mid-2001.

IPGRI

IPGRI's 2002-2004 MTP reflects no programmatic changes. The Centre's activities are consistent with the directions set in its 1999 strategic plan. IPGRI continues to work through three programmes: the Plant Genetic Resources Programme, the International Network for the Improvement of Banana and Plantain (INIBAP), and the CGIAR Genetic Resources Support Programme. The MTP highlights the contribution of IPGRI's programmes to the seven planks of the CGIAR's new strategy. The high proportion of resources allocated to sub-Saharan Africa and South Asia reflects congruence with the new CGIAR priorities.

IPGRI requests funds from the Finance Committee for support of the Systemwide Genetic Resources Programme (SGRP). SGRP's financing situation has not improved over the last few years. In TAC's view, a serious discussion is required on the future functions and funding of SGRP. The MTP makes a renewed request for the upgrading of the genebanks of the CGIAR Centres. TAC supports this initiative to ensure that the in-trust germplasm collections are properly maintained and managed. IPGRI also requests funds from the Finance Committee for the campaign to move forward with the Future Harvest Global Conservation Trust. The Trust is a good initiative to tap non-traditional funding sources for the conservation of genetic resources and must be encouraged.

IRRI

IRRI's 2002-2004 MTP is organized around four programmes and 12 projects (reduced from 27) based on a new strategic plan formulated in 2000. The MTP places increased emphasis on the more fragile environments, where the resource poor rice farmers are located, with a focus on poverty elimination and improvements in farmer livelihood. The MTP aims at strengthening the links between IRRI's research and impact, and between modern science and conventional and applied research.

Several new research areas have been initiated to meet the demands of emerging rice production systems, which are changing because of limited availability of arable land and fresh water for agriculture. These include: the development of high yielding aerobic rice that would grow like wheat and reduce water use by 70 percent or more; the improvement of irrigation technology through wet-and-dry irrigation that can save up to 50 percent of water; the identification of weed management technologies for direct seeded rice; the improvement of photosynthesis of rice by introducing the photosynthesis pathway of C₄ plants such as maize. IRRI has established an International Rice Functional Genomics Working Group aimed at being a platform for public and private institutions in both developing and developed countries to contribute and share benefits under an agreed common research agenda. IRRI's own functional genomics team has generated more than 16,000 mutant lines of the IRRI rice variety IR64 and a large number of near isogenic lines and mapping populations.

Scientists from IRRI and Yunnan Agricultural University are extending their experiments on inter-planting of high-priced glutinous rice with hybrid rice in the remote villages of Yunnan Province, China. This is an example of diversification of agrobiodiversity at the production level

to enhance food security. The work has been described by the *New York Times* as a "stunning success" and one of the "largest agricultural experiments ever".

IRRI continues to respond to the increasing population, declining resource base, and the intensification of the rice production systems in tropical developing countries through the development of rice varieties possessing higher yield potentials through increased yield ceilings, improved grain quality, and stress tolerance in new plant types and hybrid rice. An important emerging area of research at IRRI is that of nutritional genomics to enhance the ongoing efforts to improve the nutritional quality of rice by traditional plant breeding methods.

TAC commends IRRI for an innovative and forward-looking MTP in line with the CGIAR's new strategy. TAC encourages the Centre to continue to play a lead role in establishing a functional genomics platform that could enhance the benefit of the CGIAR's germplasm research to the poor. The increased programmatic emphasis on fragile rice lands as well as on strengthening strategic research to improve factor productivity of water and nutrients offer high potential pay-off. TAC applauds the work on the nutritional quality of rice but cautions IRRI not to oversell its importance and suggests that the Centre undertake a thorough *ex-ante* analysis of the adoptability potential of nutritionally fortified rice, taking into account cultural aspects.

ISNAR

ISNAR's 2002-2004 MTP reflects a second, significant consolidation and refocusing of the Centre's research agenda. The 2001 Plan had reduced the project portfolio from 18 to 12 projects, concentrating the Centre's work mainly on institutional constraints affecting the efficiency and effectiveness of NARS performance. TAC had endorsed the priorities contained in this adjusted Plan. The current proposal reduces the number of projects to 6 and changes the Centre's focus from traditional institution strengthening to one of helping developing countries put in place policies and mechanisms for cross-sectoral collaboration. The rationale for this programmatic shift is the need to assist NARS in promoting institutional innovation to increase the contribution of research to development. In this latest consolidation two-thirds of ISNAR's activities are a continuation or redefinition of on-going work while one-third is new work.

ISNAR's new portfolio is comprised of projects on developing policies for institutional innovation, strengthening the responsiveness of research organizations to stakeholders needs, developing learning mechanisms for institutional innovation, improving capacity to manage new technologies for agricultural research, building capacity to respond to cross-sectoral demands, and engaging in entrepreneurial partnerships to support agricultural research. New elements within the portfolio include work on redefining public and private roles in executing and financing agricultural research and innovation; improving the responsiveness of the policy-making process to the needs of poor stakeholders; developing multi-actor programmes, partnerships and networks at regional level; and managing new information technologies. TAC notes that these elements are highly responsive to the CGIAR's new strategy. In addressing issues of institutional innovation the Committee observes that it may also be appropriate to undertake research on the role of law and legal processes in ensuring that planned innovations

actually create an enabling institutional environment to achieve the CGIAR's strategic objectives.

Given the significant programmatic shift reflected in ISNAR's new MTP, following the consolidation effected by the 2001 Plan, TAC recommends that the Fourth EPMP of ISNAR, currently scheduled for 2002, be moved forward in 2002, to permit an early, in depth review of the implications of the proposed changes.

IWMI

IWMI's 2002-2004 MTP, developed in the context of the Institute's new Strategic Plan, 2000-2005, represents a significant departure from recent activities and plans. IWMI has formulated 7 new projects that integrate the 13 projects of the previous Plan under new thematic headings. These are centred on integrated water resources management, with additional objectives on water and health and on water and the environment. IWMI has recruited 5 former IBSRAM international staff to work in one of the new projects directed at improving land and water management of smallholders (see TAC Commentary on the IWMI-IBSRAM integration).

TAC believes that the new MTP scheme is well designed and a positive development that allows IWMI to focus on integrated water resources management (IWRM) and to move towards becoming a reference point for water-related research. TAC notes that the new projects have an adequate balance with respect to research on water management in agriculture, on water and health, and on institutional and policy aspects of water management. The continuation of opening new offices in Africa and South East Asia - capitalising on the recruitment of former IBSRAM staff - and the initial selection of benchmark research sites are all positive developments towards increasing water research in the CGIAR, which needs expansion in TAC's view.

The dialogue on water for food and environmental security is a desirable activity although it could be integrated into the IWRM in agriculture project as it does not demand research *per-se* but can draw on research results from the other projects. The Water Institutions and Policy project does not incorporate explicitly research on the role of farmers and farm associations, an area where IWMI research has excelled in the past and could, therefore, provide an important link between the current and the past programmes. TAC notes the proposed new systemwide initiative on Malaria and Agriculture with interest. While TAC can see the logic of expanding IWMI's interest in the area of water and health and building on its collaborative work on anti-malaria programmes, the Committee is unable to comment on the proposed systemwide initiative in the absence of a full proposal.

Funding expectations for water-related research might be high in an era of water scarcity. However, the expected funding for IWMI in 2001 does not yet provide firm foundations for the anticipated expansion of IWMI. TAC encourages donors to strengthen their support for IWMI in the context of this Plan to permit the Institute to pursue these important initiatives in the high priority area of water resource management.

Finally, the new MTP does not yet provide sufficient links to water-related research in the other CGIAR Centres. IWMI could play a stronger co-ordinating role in building partnerships in water resources-related research across the System, in much the same way IPGRI co-ordinates and builds partnerships in germplasm conservation and management. It is not evident that IWMI sees itself playing this role presently, perhaps because of numerous willing partners outside the System, but TAC believes this should be explored. (In subsequent discussion with IWMI there was indication that these linkages are, in fact, evolving and will be more fully addressed in the final draft of the MTP.)

WARDA

WARDA's 2002-2004 MTP is structured around a revised portfolio of 14 problem-solving projects organized under three programmes: rainfed rice with 7 projects, irrigated rice with 3 projects, and rice policy and development with 4 projects. A major change was the merger of former programmes 3 (Policy Support) and 4 (Systems Development and Technology Transfer) into one programme (Rice Policy and Development) including the integration of information, documentation and training activities. The outputs and project milestones of the 14 projects have been updated. WARDA has strengthened its capacity in impact assessment activities through the recruitment of an Impact Assessment Economist. In collaboration with AVDRRC, it is recruiting a vegetable production specialist, which will strengthen its research on intensification and diversification of lowlands through rice-based vegetable production. The above changes are in line with the recommendations of the Fourth EPMP to improve efficiency and effectiveness.

TAC emphasizes WARDA's role in responding to challenges facing sub-Saharan Africa, including growing population and poverty, rapidly increasing demand for food, risk of environmental degradation, and weak national research capacity. A major breakthrough in crossing African and Asian rice species in the pre-1998 plan period leading to the release of NERICA rice was recognized by the King Baudouin Award 2000. This breakthrough enabled WARDA to realize faster progress in the development of rice varieties uniquely suited to resource poor farmers in rainfed systems. TAC agrees with the steps taken to earmark additional resources to further accelerate that work and extend the benefits to rainfed as well as irrigated rice systems. The strengthening of the participatory approaches to technology dissemination should also facilitate the dissemination of NERICA rice and collaboration with national stakeholders.

TAC is pleased that WARDA has moved towards closer collaboration with IITA and ICRISAT to consolidate and integrate research activities and support services in the West and Central Africa subregion. WARDA continues to forge strong linkages with CORAF, a development likely to enhance the effectiveness of bottom-up regional research priority setting processes. TAC sees WARDA's efforts on strengthening partnership within and outside the West and Central Africa as complementary to the bottom-up priority setting consistent with the new vision and strategy.

4. Overview

TAC notes that the MTPs of nearly all Centres remain broadly consistent with their Group-endorsed Plans. Centres' project portfolios have been maintained except in the cases of CIP, IRRI, ISNAR, and IWMI which have significantly restructured them. TAC finds that these changes permit the four Centres concerned to respond more effectively to the directions of the new CGIAR strategy.

Specifically, the consolidation and refocusing of CIP's research agenda will permit that Centre to respond more effectively to the technical and policy needs of intergovernmental bodies dealing with the sustainability concerns of mountain agroecologies. This initiative is aligned with the System's new emphasis on closer linkages with such fora. The rationalization of IRRI's programme has allowed it to take the lead in creating a functional genomics platform to facilitate germplasm improvement with particular relevance to the poor, a major plank in the CGIAR's strategy. The restructuring of ISNAR's portfolio is consistent with the System's heightened emphasis on institutional development and on exploiting the potentials of the new information and communications technologies at regional and national levels. Finally, IWMI's new MTP scheme gives positive impetus to an integrated water resources management focus, while permitting integration of the land dimension of water management into the Centre's research agenda. TAC has noted in its separate Commentary on the proposed IWMI-IBSRAM integration that this can be accomplished without a change in the Institute's mandate (see TAC Commentary on the IWMI-IBSRAM integration).

TAC notes that several Centres are beginning modestly-scaled projects on the interactive effects of HIV/AIDS on agricultural systems, and on the potential for technological changes in those systems to ameliorate the severe impacts of the disease on family and community incomes and food security. TAC commends these initiatives but cautions that the goals and objectives of such research need to be clearly defined and implications for potential technological and/or policy changes in agricultural systems articulated. TAC encourages the Centres which are developing proposals in this area (CIP, ICRAF, IFPRI, IITA, IPGRI, ISNAR, WARDA) to communicate amongst themselves to share plans, effective approaches, and lessons learned as the CGIAR moves into this important but largely uncharted area of research.

Although at the System level the 2002 Medium Term Plans reflect continuity in the aggregate allocation of resources to the 5 Logframe Outputs comprising the CGIAR's Research Agenda, TAC observes a number of trends in specific activities that are of strategic significance. These may be noted briefly here:

Germplasm Improvement

Breeding for resistance and tolerance of different abiotic and biotic stresses is a major objective of Centres' breeding programmes. The overriding features in Centres' germplasm improvement research are enhanced use of biotechnology and increased integration of participatory plant breeding in the breeding programmes in different stages of selection and testing. Several Centres have recently invested in new marker-assisted selection (MAS) facilities. Identification of new markers and incorporation of MAS for high priority traits is accelerating and milestones for the

near future include important molecular markers for most CGIAR commodities. Some Centres are actively negotiating for outsourcing of marker-assisted screening in order to increase the volume of lines screened. MAS will greatly enhance combining important genes - e.g., pyramiding resistance genes - in elite lines. Breeding for complex traits is likely to benefit from genomics research, in which most Centres are now investing working closely with advanced institutions. TAC supports concerted efforts in functional genomics for advancing the breeding of crops and traits that are important for the poor. TAC notes that these trends in genomics research are congruent with the recommendations of the recent Systemwide Review of Plant Breeding Methodologies in the CGIAR (PBM).

Techniques have been developed for genetic transformation and, for several crops, transgenic lines are ready. Testing and dissemination of these materials is, however, hampered by lack of national legislation and regulations for biosafety and use of transgenics, as emphasized in the PBM report. TAC emphasizes the importance of work on biosafety and the related capacity strengthening of NARS.

Farmer participatory plant breeding research and varietal selection has continued to expand with Centres succeeding in producing adapted products of higher impact potential for marginal and less favourable areas such as the NERICA rice, barley, lentils and other food legumes.

The licensing of technologies and IPR is a major factor for all Centres working in germplasm improvement. Centres have carried out IPR audits and most of them have developed IPR guidelines.

Germplasm Collection

The initiative lead by IPGRI to generate endowment funding for the long-term security of CGIAR genebanks is a very positive development which addresses the need for stable capital investment in these facilities in order to upgrade storage and operations, as called for by the recent SGRP financing plan. TAC notes that while that plan recommends considerable additional investment by Centres in these facilities, a position consistent with TAC's previously expressed view on this issue, the 2002 MTPs generally reflect only modest increases in such investment. The Committee continues to strongly endorse the concept of a longer-term genebank financing strategy supported by the Members and other sources.

The SINGER programme is moving ahead across all Centres having germplasm banks. The standardization of accession descriptors and information and the careful geo-referencing of accession origins will greatly enhance access to the stored materials and improve their utility. Genetic resources increasingly include items such as DNA clones, probes, sequences and gene constructs. Recognizing the IPR issues associated with these new products and related information, TAC nonetheless believes that a systemwide database will enhance access to and use of genomic information accumulated by the Centres and their partners.

Sustainable Production

Integrated natural resources management (INRM) work in the System is under intensive scrutiny and assessment through the series of workshops convened by the CDC Sub-committee on NRM. INRM 2000 (Penang) focused on the conceptual framework. INRM 2001, scheduled for August, will focus on continued evolution of the framework and concepts, as well as on highlighting methods and approaches which have proven successful. TAC is working closely with this effort, and stresses the importance of moving ahead rapidly to identify effective approaches. TAC sees such advances as critical to enhancing the international public goods dimension of sustainable production systems research, especially its utility in regional programmes.

Considerable effort is being made to assess potential and developing technologies for marginal and fragile lands, including major NRM and poverty challenges in those areas while continuing to improve productivity and sustainability of systems in favoured areas such as the rice-wheat system in the Indo-Gangetic plains. Several Centres are carefully reassessing their balance of effort between areas of high potential and those considered marginal. There is greater emphasis on community-based participatory research to define technical and policy options for collective action necessary for improved management of common property natural resources. Peri-urban programmes are being assessed for potentially increasing impact on urban poverty. Water management is of growing concern and importance to most Centres as competing demands for water escalate. The health impacts of water management are also being assessed. Finally, an ecosystem approach is increasingly apparent in many Centres - for nutrient flow, carbon sequestration and management, and pest management. Most of this process-focused research is of international and global utility. It utilizes biotechnology-based methods and is extended through GIS-based scientific methods.

Policy

The CGIAR's strategy of giving highest priority to the research needs of regions where poverty is concentrated and growing requires that its priority setting be underpinned by reliable information on the *ex-post* impact of its activities on intended beneficiaries. TAC notes, in this context, the progress of the inter-centre effort being coordinated by IFPRI on behalf of SPIA to assess the impact on the livelihoods of the poor of recent and ongoing CGIAR research in the areas of germplasm improvement, NRM, and policy research. The development of best practice methods, including social and institutional analysis, to assess quantitatively the impact of CGIAR research on poverty reduction is an integral part of this work and aims at strengthening the capacity of both Centres and NARS to undertake poverty impact assessments in the longer run.

Within the policy arena, the System's new strategy also emphasizes the need to provide concerted support to intergovernmental bodies dealing with policy issues related to genetic resources for food and agriculture. The results of such negotiations will likely have significant effects on the conservation and sustainable use of such resources, which are central to the heartland of the CGIAR's research agenda. The increasingly prominent role of IPGRI in monitoring the relevant international fora - including the CBD, WTO/TRIPS, UPOV and the International Undertaking - and in providing policy input on behalf of the CGIAR is a

systemwide service with important implications for ensuring that future governance of genetic resources continues to serve the needs of the poor.

Enhancing NARS

The Centres are responding to the CGIAR's new strategy by increasing their cooperation with and assistance to regional organizations for the purpose of implementing a regional approach to research planning, priority setting, and implementation. Centres have participated in regional planning meetings and consultations with FORAGRO in Latin America, FARA in Africa, AARINENA in WANA and APAARI in Asia. With other such meetings envisaged, the regional planning process is expected to identify regional priorities that can be implemented through research partnerships between CGIAR Centres and NARS in the respective regions. A strong renewed effort is also being made by all Centres towards regional integration amongst themselves as well as with NARS and promises to yield long-term benefits in terms of institutional strengthening of regional organizations and NARS. Finally, institutional strengthening through collaborative research consortia and networks with NARS is extending into innovative coalitions with traditional and non-traditional partners as a basis for scaling up the dissemination of adapted technologies to farmers.

5. Recommendation

Based on its assessment, TAC certifies that Centres' proposals are congruent with CGIAR priorities and strategies. The Committee is pleased to recommend the 2002 Research Agenda to the Members for approval, as well as the extension of the 2001-2003 medium term plans, approved at MTM00, to 2002-2004.