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Discussion Paper
on
Report of the TAC Quinquennial Review Mission

IITA
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TAC Quinquennial Review Mission to IITA

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TAC Quinquennial review mission to IITA headed by Prof. Guy Camus has spent different times between May-November 1977 in visiting the IITA cooperative programs in Tanzania, Zaire, Nigeria, Liberia and Sierra Leone; hearing the Institute's scientists on program goals accomplishments and plans for future; conferring with groups of scientists and the management staff on specific issues; and visiting the heavy rainfall sub-station in Onne. The panel has presented the highlights of the draft report to the senior IITA staff on 4 November 1977 and later has finalised the draft report in March 1978 for presentation at the 19th meeting of the TAC in Nairobi 6-13 June 1978. Some members of the panel have visited the Farming Systems section of the other IARCs in a stripe review of the farming systems and have prepared a separate report which comes up for discussion in Nairobi in May 1978 ahead of the TAC meeting.

The Institute considers this review as extremely profitable for an introspection of its mission; compliments the panel members for their understanding of the programs; and thank the panel members for the valuable suggestions they made.

The above stated reports deal with the challenge facing IITA in conducting the tropical food crop-production-promoting research and the complexities of program organization, and balance, sharpening the focus on the Institute's mandate and the need for inter-IARC collaboration. Within the restraints of time, the panel has done a commendable job in highlighting the issues, and made some invaluable recommendations to the continued success of IITA. The draft reports have been circulated to all IITA scientific staff whose comments have been taken into account by the panel in the preparation of the final report.

Copies of the draft TAC report were circulated to the Members of the Research Committee. A few copies are available at IITA for reference by the members of the Board. Final report will be circulated to the Board of Trustees later this year.

Major issues raised and recommendations made by the panel are summarised in this document for the information of the IITA Board of Trustees.

Inter-IARC-Cooperation:

Recognising the value of synergism in collaborative research among the various IARCs, IITA attaches greater value to joint implementation of specific programs rather than seeking formal memoranda of agreements between the IARCs. The Tanzania cooperative program which is jointly implemented by IITA/CIMMYT/ICRISAT and SAFGRAD program based in Upper Volta between IITA and ICRISAT and the research on maize streak resistance which is collaboratively done with CIMMYT, participation of IITA staff in WARDA monitoring tour of the coordinated rice trials and plans to do so with IRRI on IRTP trials, joint program planning and cooperation in the grain legume collection with ICRISAT are but a few examples of the current IITA thinking on this important issue of inter-Institute cooperation.

The Institute also is seeking the opportunity to reciprocate placement of staff among IARCs to promote a healthy spirit of cooperation, to ensure communication of ideas, techniques and materials and to present to the national programs a well considered and jointly committed strategy for strengthening of national research and production systems. IITA is in discussion with IRRI, CIMMYT, WARDA and ICRISAT in realization of such actions.

Sharpened focus on the IITA mandate:

The IITA mandate has been under constant review by the Board of Trustees which responded to the opportunities, gaps and constraints it saw from time to

time. The panel was in general agreement with the mandate but underlined particularly:

- (i) Minimising the research on plantains, vegetables and tree crops;
- (ii) Reducing the Institute responsibilities to Africa for sweet potatoes research;
- and (iii) Maintaining the current low level of research on the less important crops in GLIP (Lima Bean, wing bean) and TRIP (coco yam, taro).

The concern of the panel in avoidance of dissipation of research efforts on several crops is indisputable. The Institute, however, emphasises that the distinction between the exploratory and in-depth involvement of the programs in any particular crops is not entirely reflected in the man-years of time devoted to the crop. Also a small investment of program time (e.g. nodulation in asiatic soybean types by cowpea-type rhizobia) in some cases might justify a greater involvement in a particular research, as has already happened with a strong endorsement for a full time soybean breeder in GLIP. It is therefore wise that so called exploratory or low-level research does find adequate support in order to quickly decide whether to escalate or drop the particular research lead. With this reservation, the Institute supports the panel's view on sharpening the focus on the mandate.

Staff reallocations:

Panel recommended the location of IRRI rice breeder at IITA, creation of a full-time soybean breeder and creation of core-positions for research in Zaire and an additional statistician. With the exception of the last (which will be re-examined in future), the Institute supports all the recommendations.

The panel recommended a reduced emphasis on pedology, increased attention to agronomy within FSP and reduced emphasis on agricultural engineering.

Although Agricultural Engineering program now has three engineers (one engineer and two assistants), only one of them is a principal scientist and the remaining two as ESOs are filled by expatriates due to non-availability of local staff at Research Assistant level. The Institute has re-examined the need to bring together a critical mass of agronomy expertise within Farming Systems Program and actions are taken to transfer the agronomists from the crop improvement programs to Farming Systems Program. Pedology is under review for its future due to the resignation of Dr. Moormann which leaves the position vacant.

Interaction among Programs:

In the early years of the Institute, it was necessary to undertake research in specific disciplines in Farming Systems Program (e.g. soil fertility, microbiology, soil physics etc.) but within this program a holistic approach to research is emerging. Also the interaction with the crop improvement programs is being intensified, particularly between FSP and GLIP in microbial Nitrogen-fixation, between TRIP and virology unit in unravelling the virus problems in tuber crops, between CIP, GLIP, TRIP and FSP in evolving specific genotypes suitable for mixed cropping etc.

The report comments on the large size of the FSP and the attendant problem in research coordination by the Program Leader. While the Institute recognises this problem, it doubts whether the solution to this problem (as recommended by the panel) can be found in identifying a Deputy Program Leader. Research programs in FSP are now organized under five major headings - Regional Analysis, Crop Production, Land Management, Energy Management and Technology Evaluation, and the principal scientist in charge of each of these sub-programs can assume some coordinating role in order to relieve the Program Leader of his responsibility. Similarly, in the crop improvement programs,

the budget of 1978 has been drawn up on a crop-basis in order to ensure greater coordination.

Cooperative Programs:

The report cautions against proliferation of the cooperative programs, particularly those where the management responsibilities rest with the Institute. While this caution is justified, the realities of the situation in the light of local institution development do not leave many options to the Institute. The Institute is attempting to staff these programs with staff who have had association with the Institute so they can more effectively relate to the core activities and also deploy an Institute-wide support to the cooperative programs.

Training:

The panel shares the concern of the Institute that the numbers of African trainees particularly in the category of PDFs need to be increased. The Institute is considering several means viz., to reduce the duration of the fellowships, arranging with the Governments on safeguarding the fellows' service with the country, giving a wider publicity to the scope of the different training programs etc. The Board is aware that the PDFs at IITA enjoy the same privileges as the principal scientists save in housing which will also be soon remedied. They relate to the training officer only for logistic support. The suggestion of the panel that each program may have its own training officer is considered by the Institute as inadvisable.

APPENDIX

Conclusions and Recommendations of the TAC Quinquennial Review Mission

Conclusions:

IITA was originally given a broad and somewhat ambitious mandate to develop improved methods and technologies in the humid tropics which would replace or improve shifting cultivation practices. To this end, the Institute has progressively defined specific objectives, formulated a research strategy and program structures which the Panel considers as basically sound and rational. The research problems addressed by the Institute are probably the broadest, most complex and challenging among those encountered by the centres and institutes in the CGIAR system. Because of the difficulty of the problems faced in shifting cultivation, progress in this type of research is necessarily slow and uneven and, assuming success, its impact on land use in the tropics will take time. Moreover, it should be kept in mind that IITA was established at a time when the host country experienced severe difficulties which resulted in important delays in the building of its infrastructure.

The Panel is satisfied that the scientific work at IITA is conducted with vigor and enthusiasm, and that the standards of research are generally in accord with those expected of an international research institute. IITA, however, experiences difficulties in recruiting its senior and support staff and has a high rate of staff turnover. This has been sometimes disruptive to the continuity of the research.

In spite of these difficulties and problems, the Institute has made impressive advances in the improvement of some basic food crops in the tropics, particularly in cassava where lines with high yields and resistance to some of the major diseases have been produced. The Panel considers that the Institute is at the threshold of significant breakthroughs in cowpea and yam improvement, and that its present work on sweet potato (in which significant achievements have been attained) and on maize will provide in Africa an essential and

increasing complement to that of other IARCs and national agencies. Some of these materials are already being tested and in some cases disseminated through national research and production programmes. Another major achievement relates to the broad-based germplasm collections which were assembled at IITA from Africa and other regions and provide a valuable resource for further progress in all IITA crop improvement programs.

The Institute has assembled a strong body of knowledge and experience in the very complex field of farming systems research in the humid and subhumid tropics. The Panel commends the comprehensive, integrated and purposeful approaches followed by the Institute in this regard and its emphasis on the improvement of the conditions of the small farmer in Africa. Promising techniques of land management and cropping systems are being tested and demonstrated on the main site of the Institute. The farming systems team is now developing its research and testing methods and practices in other sites, while continuing to study the long-term effects of its proposed farming practices and technologies on the main site.

The Panel commends IITA for its excellent and extensive program of training and for the quality of its library, documentation, publication and information services which it provides to an increasing audience.

The Panel found that IITA has been provided with adequate physical facilities and services which, in general, are well managed and suited for its work. The Institute, however, would face major constraints in housing and service facilities at Headquarters if it were to further expand its staff at Ibadan. The Panel approves the policy of the Institute which tends to limit its growth at the main site.

IITA is increasingly recognized as a center of excellence in tropical agricultural research in Africa and has responded in a valid manner to increasing requests for cooperative programs with countries in Africa. The Panel visited several of these programs and is happy to report that IITA is making important

contributions in this regard while being mindful not to overextend its staff and management capacities.

The Panel is satisfied that an overall balance has been achieved, and is expected to be maintained in the years to come, among the main components of the Institute's program. It notes the close inter-relatedness and complementarity of the program activities of the Institute and approves the present policy of the Board in consolidating the present structure and maintaining close cooperation among the programs. It also supports the efforts made, and the overall balance achieved, to assist the main programs by adequate disciplinary research.

Recommendations:

The Panel has made a series of recommendations on each of the programs and activities of the Institute in the preceding chapters. It fully realizes that these individual recommendations have to be considered by the management of the Centre and its Board of Trustees in the broader context of the allocation of the resources which are expected to be made available to IITA in the years to come. The Panel is also conscious of the fact that several of the problems which the Institute is facing will not have immediate solutions on the basis of these recommendations, and that several issues require further assessment and consideration than was possible in the short time available to the Panel for this Review.

IITA has reached a stage in its development at which it must make some critical choices in its priorities for future progress and impact. It should ascertain, verify and consolidate the geographical validity of the experimental farming systems and tackle the second generation problems which have emerged from its work so far. It has been pointed out already, however, that many additional staff members for new activities cannot be accommodated at IITA headquarters without a very substantial additional capital expenditure, and thus

would require careful consideration of the likely cost/benefit ratio. The Panel firmly believes that priority should be given by IITA over the coming years to a range of actions aimed at consolidating and concentrating its activities. To this end, the Panel recommends that the Board continue its efforts to increase the precision of the mandate of the Institute and that the management reinforce the existing mechanisms whereby priorities can be set more clearly and utilized for formulation of plans addressed to specific goals which the Institute might expect to attain in the next five years.

Among the actions which may contribute to such concentration and consolidation, the Panel recommends for the next five years the consideration of the following measures which have been synthesized from the Panel's recommendations on various activities reviewed in the preceding chapters:

(1) FSP:

- a) to give priority to the validation and off-site evaluation of systems presently being developed at IITA for the subhumid zone;
- b) to proceed with research in the humid zone where feasible in collaboration with national or regional institutes, and limit work at Onne, for the time being, to system components rather than full system synthesis and testing;
- c) not to undertake plant breeding within FSP and only consider work with vegetables, Musa spp. or tree crops if there is evidence that they are essential to the viability of the farming systems research of IITA in particular ecological zones;
- d) to avoid research on animals and to limit agro-forestry activities to the present project;
- e) to relocate one senior staff position made available from agricultural engineering;

- f) to ensure that the discipline of agronomy is strengthened within the Institute to facilitate cooperation of crop improvement programs with FSP;
- g) to strengthen the organizational structure within FSP by the selection of a Deputy Program Leader.

(2) TRIP

- a) to maintain top priority on all aspects of cassava improvement;
- b) to provide two core positions (one additional breeder and an entomologist) in the Zaire program to intensify work on the cassava mealybug and green spider mite;
- c) to ensure adequate facilities and support for the genetic improvement of white yams (if necessary by internal re-arrangements);
- d) to continue improvement work on sweet potato at its present level, but solely for African conditions.

(3) GLIP

- a) to concentrate on cowpea and soybean, while keeping work on lima bean, pigeon pea and winged bean at a low level^{1/} without further breeding work;
- b) to increase cooperation with FSP, particularly in soil microbiology and crop management.

(4) CIP

- a) to maintain top priority in CIP on research and in-country testing to solve the major constraints on African maize and rice production;

^{1/} Should the cooperation between IITA and INTSOY enable either the outposting of an INTSOY scientist or provide funds for the opening of a new position in IITA, the Panel would recommend that this position reinforce the agronomic aspect of soybean work.

- b) to breed for maximum pest, disease and stress tolerance, focussed on major African ecosystems, in close cooperation with FSP;
- c) to pursue integration of IITA cereal research and training activities with other national and international institutes, especially IRRI and CIMMYT;
- d) to expand IITA's competence in upland rice improvement, and to encourage the posting of an experienced rice breeder from IRRI to IITA.

(5) Research Support

- a) to concentrate further exploration by the germplasm unit on those African crops which are within IITA's mandate, and to complete storage and documentation facilities;
- b) to keep the virology unit at the proposed level of two staff positions, equipped with an electron microscope;
- c) to expand statistical services for the design and analysis of field experiments by adding one senior staff member and by improving computer facilities;
- d) to pursue all possible measures to alleviate present constraints on the exchange of germplasm due to quarantine regulations.

(6) Cooperative Programs

- a) to concentrate on and consolidate existing cooperative programs;
- b) to continue to be selective in responding to opportunities and pressures for expanded cooperative programs;
- c) to reinforce IITA's research and training linkages with institutions in Africa;
- d) to improve consultation, joint planning and cooperation among IARCs in the development of cooperative programs in Africa.

The Panel is aware of the problems which the above recommendations may create for the management of the Institute where they cannot be implemented immediately. The Panel therefore feels it may be helpful to give the management some indication of its priorities among the recommendations which may have budgetary implications:

- a) The appointment of at least one core staff position in Zaire together with that of a rice breeder as indicated above for the CIP program are given first priority, because of the potential threat that the mealybug and spider mite problems pose to cassava production in other countries in Central Africa and because of the importance of the rice program.
- b) The Panel gives second priority to the second core position in Zaire and to the new position of Statistician, and third priority to the support staff member for the Virology Unit.

The Panel is confident that the management of the Institute has sufficient flexibility and opportunities in the use of its core and non-core budgets to ensure that the above recommendations do not necessarily modify the development plans indicated in its forward projections. The existing and forthcoming vacancies, the use of PDFs and the new positions already earmarked in the budgets proposed for the next three years should permit desirable internal readjustments. These internal readjustments within the planned limits of the budget of IITA until 1980 should be facilitated by the policy of the Board to strengthen its commitment to cooperative and regional programs and to limit capital expenditure at Headquarters.

Finally, the Panel wishes to express to the management of the Institute and its staff its gratitude for their close collaboration in the conduct of this Review, and expresses the hope that its recommendations will help in ensuring the continuing support from CGIAR which this Institute fully merits.