

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH

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MEMORANDUM FROM THE SECRETARIAT

SUBJECT: ASSESSING AND MONITORING THE COST-EFFECTIVENESS OF INTERNATIONAL AGRICULTURAL RESEARCH

1. The total funds provided by donors for the support of the core expenditures of the international agricultural research centers in the CGIAR system (the Centers) is expected to be nearly \$80 million in 1977, and may soon approach some \$100 million a year. Such funds, being grants, are scarce, and face many competing demands: already, the Centers absorb a significant part of the total grant funds at the disposal of some donors. The nature of research is such that it has to be planned long term, implying a commitment for donors to maintain their support well into the future.

2. Allocation of funds to the CGIAR can therefore be expected to come under increasing scrutiny since international agricultural research is only one of many worthwhile activities. It is not yet within the state of the art to provide a completely objective basis for assuring that the CG system as a whole, and individual programs within it, represent an investment whose returns are at least as high as any alternative use of the funds. The problem of allocation of resources to scientific research has received much attention, in government, industry, academic institutions, international organizations, and in the context of international and national agricultural research. Much of the work done may be relevant to the research conducted within the CGIAR system. A number of members of the CG seem to favor the idea of reviewing the state of the art and considering what, if anything, the Group should be doing to evaluate more explicitly the costs and benefits of the research it supports. A first step concentrating on better identification of costs, and on possible methodologies for evaluating benefits, is outlined in the following proposal. This may contribute to improved methods of reviewing research priorities and of monitoring and evaluating individual research programs. It could also be relevant to national research programs in which some CGIAR donors are involved.

3. At their meeting in July 1976, the CGIAR members reviewed this question. The practical and conceptual difficulties were widely recognized, but even the most sceptical felt that more could, and should, be done to evaluate research costs and benefits objectively. It was agreed that the CG Secretariat would prepare a proposal for consideration at the October meeting. Such a proposal, it was felt, should initially be very modest and limited in scope.

4. The main problems which prevent the application of traditional cost-benefit analysis to investments in international agricultural research can be summarized as follows:

- the impossibility of predicting the nature, timing, and impact of major scientific breakthroughs,
- the fact that negative research findings may have real, but obviously unquantifiable, value,
- the wide range of uncertainty governing the relationships between research results and increased food production,
- difficulties in identifying ultimate beneficiaries of the research, and, on the other hand, those who may be adversely affected,
- data deficiencies which may be unduly costly, or impossible, to overcome,
- difficulties in deriving objective criteria for assessing the efficacy and "quality" of research,
- problems in estimating the opportunity costs of all resources allocated to international agricultural research, and to the adaptation of international research output to farmers' needs.

5. Despite these problems, it should be possible to consider ways of improving the CG's ability to evaluate the cost of research and to begin considering ways of assessing the effectiveness of research related to its cost. It should also be possible to identify criteria for testing the relative value of certain types of research, and to determine whether the funds currently devoted to international research are being allocated appropriately. Toward this end, it is suggested that the CG commission a modest investigation into the prospects and problems of applying cost-effectiveness evaluation to the research and related activities supported by the CGIAR.

6. A draft Terms of Reference for a limited study is given in the Annex. It is based on the following considerations:

- any proposed system for improving the evaluation of research costs and benefits should be narrowly focused on the practical research management issues facing the Centers and the CG system. It should take into account the recommendations of the 1976 Review Committee.
- reliable evaluation of benefits in quantitative terms is, in general, beyond the current state of the art. The emphasis should therefore be on the cost-effectiveness of the Centers and the system in achieving identified goals.
- additional burdens on the Centers, for example in the collection of more data or expanded monitoring systems, can only be justified if they are in themselves a contribution to the efficiency of the Centers' management,
- any new guidelines for evaluating and monitoring research costs and benefits should be designed to fit within existing procedures involving Boards of Trustees and their committees, Center managements, TAC, and the Secretariat.

7. It is recognized that the complexities of the problem could lead to studies of indefinite duration and effort. A limited exercise is proposed at this time. Provided those involved in the study are already familiar with the work of the Centers and the CGIAR system as a whole, the work might be completed within three to four man-months.

8. The study could be financed from the balance of funds remaining in the CGIAR Review Fund, or from the CG Secretariat's budget. It would be completed in time for International Centers Week.

Distribution:

CG Members
Center Directors
CG Chairman
TAC Chairman
TAC Secretariat

Assessing and Monitoring the Cost-Effectiveness
of International Agricultural Research

Draft Terms of Reference for a Study

1. Objectives of the study would be:
 - (a) to review existing methods which might be suitable for assessing and monitoring the impact of agricultural research and its cost-effectiveness,
 - (b) to identify the methods and procedures which could most usefully be applied to CGIAR programs and activities,
 - (c) to determine the extent to which such methods and procedures are already in use within the CGIAR system, and
 - (d) to suggest what actions might be taken to provide the CGIAR with useful continuing information for evaluating the cost-effectiveness of individual programs and activities and the CGIAR system as a whole.

2. The study will review:
 - concepts and methods which have proved, or might prove, useful for measuring the costs, output, results, and benefits of agricultural research.
 - concepts and procedures found useful for allocating limited resources to claimant programs of research.
 - criteria for evaluating the "success" or "quality" of a research program in relation to objectives.

3. The study will propose for the CG's consideration:
 - possible definitions of units of research input, output and value of output in order to systematize evaluation.
 - the data requirements of a consistent system-wide means of evaluating costs in relation to defined outputs.
 - improvements in present CGIAR reporting and information procedures which would provide to Center Directors, Center Boards and others concerned better means of monitoring the cost-effectiveness of Centers' programs.
 - if warranted, an outline of more far-reaching changes in procedures of the Centers and the two Secretariats

which might be necessary to achieve useful results, and an estimate of the incremental cost of introducing and maintaining such improved procedures against the likely benefits.

4. The study will take account of Centers' existing practices for reviewing the priority and efficacy of their programs of research, the responsibilities of TAC in this area, and the objectives and requirements of donors.

CGIAR Secretariat
October 11, 1976