

* FOR INTERNAL DISCUSSION ONLY

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REVIEWING STRATEGIES FOR THE CIMMYT ECONOMICS PROGRAM
IN CENTRAL AMERICA AND THE CARIBBEAN

CIMMYT's regional programs are proving to be an efficient way of making available to national research institutions the Center's "intermediate goods,"^{1/} which include germplasm, research procedures, and training. The major thrust of the Economics Program within the framework of regional activities has been, and still is, to contribute to the development of on-farm research (OFR) procedures (including training), through which national programs can develop appropriate technologies for target groups of farmers. The regional strategy on this area is then established in the context of a broader goal of strengthening the capacity of national programs for efficient technology generation and transfer.

As is now well known, OFR methodologies involve the assessment of farmer circumstances and identification of promising research opportunities, which are then examined as experimental variables in trials conducted in representative farmers' fields.^{2/} Successful application of these methodologies requires the participation of agronomists and economists, a need that is generally fulfilled by joint participation of agronomists from the Maize Program and staff of the Economics Program in regional OFR activities. Where such an arrangement has not been possible, some combination of CIMMYT and national staff from both disciplines has sufficed.

^{1/} The term "intermediate" is used here because the products often need to be further refined by national programs before being released to target farmers.

^{2/} For more details see CIMMYT Economics Staff, "The Farming Systems Perspective and Farmer Participation in the Development of Appropriate Technology." In: Agricultural Development in the Third World, eds. Carl K. Eicher and John M. Staatz, PP. 362-377, Baltimore and London, The John Hopkins University Press, 1984.

The Economics Program views OFR methodologies, in their present stage of development, as a powerful tool that enables researchers to provide in the near term technologies that are appropriate to farmers' circumstances and at the same time to obtain information relevant to the medium and long term allocation of research resources. The primary clients of CIMMYT OFR activities are national research and extension programs and within those institutions field economists and field agronomists working with maize. However, CIMMYT OFR methods are not crop specific but can be applied to any crop or crop production system, as experiences in various countries have confirmed.

1. REGIONAL STRATEGY FOR INSTITUTIONALIZING OFR WITHIN NATIONAL PROGRAMS

Since OFR methodologies imply an innovation in the traditional approach to agricultural research, a strategy of sequential development of OFR methods in selected (priority) countries of the region was defined as early as 1978. The sequence begins with selection of a priority country, followed by design of an area-specific OFR program to be conducted in that country on a trial basis, and extends all the way to a full-fledged in-country training effort to develop the human resources required to implement the methodology on a national scale. The following sections describe this sequential development.

a. Selecting priority countries

CIMMYT initially concentrated its support of OFR work in El Salvador and Panama, and for the last four years has focused on Haiti, Honduras, and Panama. These countries were selected according to certain socioeconomic indicators (low per capita income, food deficit, importance of the maize crop, etc.) and opportunities arising from institutional development and effective political support of agricultural research. Haiti and Honduras were selected primarily on the basis of socioeconomic indicators and Panama because of the

favorable opportunities.

b. Defining an area-specific OFR program

An area-specific OFR program is defined by the national research program of the priority country, which coordinates, staffs, and finances the program and implements it with technical support from CIMMYT. The OFR program becomes the focal point of CIMMYT's technical support in OFR, provided in the form of methods and training.

c. Testing OFR methodologies at the national level

As these programs are implemented, OFR methodologies are tested, and experience with them is shared and discussed (through field days, seminars, and workshops) among the national staff as well as policy makers. Occasionally, selected administrative and technical staff from other countries within the region also participate in these discussions.

d. Evaluating OFR methodologies for use on a national scale

In due time national authorities may decide to extend the new style of work to other regions of the country and frequently to other crops as well. In some cases this decision has involved formal evaluations of the OFR methodologies. These evaluations are conducted directly by the national programs (as in the case of Haiti), and/or CIMMYT cooperation is requested to clarify specific issues under consideration (Panama).^{3/}

e. Institutionalizing OFR. Full-Fledged In-Country Training

At a subsequent stage, it becomes evident to policy makers that the major constraint to extension of the OFR program elsewhere in the

^{3/} The first rigorous evaluation of the cost-efficiency of OFR in the literature is one using the Caisan OFR Program in Panama as a case study (See Martínez and Arauz; and Martínez and Sain).

country is a lack of qualified human resources. Training of national staff in the use of OFR procedures then becomes a critical activity in the process of institutionalizing OFR within the national research structure. It appears that production courses offered at CIMMYT headquarters can only partially satisfy training needs, so in-country training is being expanded to respond to changing circumstances and demands in the national programs.^{4/}

Initially, the training formats used were seminars and workshops, in which technical and administrative staff discussed their programs' experiences with the OFR methodology, as well as short courses (generally lasting one week) on one component of the OFR methodology. More recently, in an attempt to cope with increasing national demand for in-country training,^{5/} a major innovation was introduced, which consisted of "call system courses" in OFR. The first was conducted in Honduras during 1982-83, the second is currently being held in Panama (1985-86), and a third to be started in the second half of 1986.

These courses provide on-farm research trainees with valuable hands-on experience: they participate in farmer surveys, plan actual experimental programs, plant and manage experiments, and analyze real experimental data.

For the purposes of these courses, an area is selected, and national staff are assigned as on-farm researchers to the area, as well as participants to the course. In addition, on-farm researchers from other priority regions within the country are assigned as trainees to follow the course and contribute to the development of the program, together with the area staff. Finally, the participation of one or two additional staff is sought from other countries within the

^{4/} As this expansion takes place, CIMMYT economics training is strongly reoriented towards in-country training, and the special economics course being offered is brought to a close.

^{5/} Particularly those coming from the priority countries and resulting from the process already described.

region where a similar course could eventually be developed.^{6/}

The course consists of six one- to two-week "calls," in which all participants get together in the area selected, discuss training materials related to the subject matter of the call and develop the corresponding field work. Out of this process the national program gains: i) some additional full-fledged area-specific OFR programs (in particular, the one corresponding to the training site) and ii) a sizeable number of on-farm researchers who have been trained under the conditions in which they will work and who will be able to implement OFR programs in different regions of the country.

2. LOOKING TO THE FUTURE: ADJUSTMENTS IN THE CURRENT STRATEGY

The activities of the Economics Program in the region have consistently been carried out according to the regional strategy described above. The results and experiences gained by national programs involved have increased our confidence in the procedures promoted and tested, as well as in the management of CIMMYT-related regional operations. The "demonstration effect" of national experiences in OFR, together with the persistence of political and economic problems related to basic grains/food issues in the region, have raised national demand for CIMMYT support in OFR to a point that is already beyond the capacity of the regional staff. Given this increased demand and the greater confidence in the OFR procedures, a key issue in considering our future strategy is whether or not we can find ways of increasing the "multiplier effect" of present regional capabilities in OFR.

In addition, our experiences with OFR have raised another interesting point regarding future activities. In seeking research opportunities, OFR teams have often been confronted with policy-induced constraints on the productivity and income of representative

^{6/} For example, in the Honduras course, an on-farm researcher from IDIAP Panama was included. Similarly, the on-going course in Panama involves agronomists and economists (six in total) from Costa Rica and El Salvador.

farmers. As a consequence, concern about farm-level policy issues has grown and so has the perception that policy-related activities are indeed a promising new area to be explored by the regional economics program.

A third concern has come out of the process of institutionalizing OFR in some countries of the region. That concern, refers to the capacity of OFR teams to process efficiently the increased amount of information generated by on-going OFR operations (surveys and experiments). In Honduras an attempt was made to explore ways in which CIMMYT could help national programs to cope with that task.

There are thus three basic areas in which the Economics Program might seek to adjust its on-going regional strategy: a) exploring ways of increasing the "multiplier effect" of CIMMYT regional work related to OFR, b) helping OFR teams obtain portable computer technology and c) considering the potential and requirements of some policy activities as they relate to agricultural research in general and OFR in particular.

a. Increasing the "multiplier effect" of CIMMYT regional work in OFR

The regional economics program is currently searching for ways to increase the "multiplier effect" of its current staff (two men/year). Three ways of attaining that objective (they are not mutually exclusive) might be considered. The first would be to capitalize on increasing interest in OFR among international institutions working in the region by supplying them training and advice. To do so should take only a limited amount of regional staff time and, in any case, would only be possible if the international institutions were willing to make a medium-term commitment to work on OFR with national programs. If such arrangements could be worked out, CIMMYT's Economics clientele (which so far has been restricted to national programs) would be expanded to include, to a certain extent, international institutions supporting national OFR efforts within the region. Even though it is

premature, we can assume that COSUDE and IICA might be among the institutions involved.

A second alternative that we might explore here is the possibility of providing more specialized training (economics in agricultural research) to a small number of carefully selected economists who by virtue of their experience, professional background, and/or responsibility within their own institutions have the potential to perform the role that so far has been performed in their countries by CIMMYT economics staff. This training might take the form of a "permanent workshop", meeting in different locations every two to four months, in which perhaps 50 percent of the program deals with subject matter areas related to economics in OFR, while the rest is dedicated to joint discussions and eventually definite action on special issues raised by the field experiences of the participants. It appears that only a few individuals within the region would meet the requirements for involvement in this workshop, so the participants could be selected and the workshop organized very informally.

Another possibility, one that is closely related to the second alternative described above, would be for CIMMYT staff to give increasing attention to networking in OFR. The workshop discussed above is a particular case of networking that is limited in scope and in the number of staff members involved. A more systematic networking scheme could evolve from the increasing contacts of on-farm researchers across national borders and might be formally organized and supported by CIMMYT and other centers. However, given that such activities can be very time-consuming, the potential role of CIMMYT (if any) in this process should be carefully assessed before any firm commitment is made.

b. Helping OFR teams obtain portable computer technology

With the support of CIMMYT, the Honduran Department of Agricultural Research (DIA) decided to give increasing attention to the potential use of portable computer technology in support of

on-going OFR operations. One of the senior agricultural economists was asked to take responsibility for this task, and CIMMYT pledged its support on an exploratory basis. The progress made by this researcher in managing and assessing appropriate software for OFR has gone beyond initial expectations. This experience should be valuable to Honduras, and through CIMMYT, to the whole region. Following the exploratory work in Honduras, CIMMYT plans to extend the experience to other countries within the region.

Applying this experience elsewhere will require the support of Honduras and increased familiarity on the part of CIMMYT staff with appropriate software for OFR (and eventually for policy-related activities). The purpose of this activity would be to help OFR teams obtain better access to appropriate portable computer technology, including some technical support and training in the selection and management of hardware and software.

- c. Exploring the potential and requirements of policy activities as they relate to agricultural research in general and to OFR in particular

Policy analysis related to agricultural research in general and to OFR in particular will receive increased attention from CIMMYT economics staff. This work will focus on policy-induced constraints identified within on-going OFR programs (micro-level policy research). Two cases, Mexico and Haiti, have been identified recently and are currently being developed. In Haiti, data from on-farm surveys and experiments (Yates-Martínez) is used to assess benefit and cost of making available to area farmers non subsidized urea as a source of nitrogen, as an alternative to the current availability of subsidized complete formula (10-30-10). In the case of Mexico researchers found that credit and fertilizer distribution policy have contributed to a problem of acidification/aluminum toxicity. Using on-farm research data (Hibon), alternative scenarios on fertilizer distribution and credit policy are assessed to confront the problems identified and quantified by the OFR team. Additional cases related to credit, seed

production, input distribution and others are contemplated worldwide. Within the Region we are hoping to develop a minimum of two cases of this nature in the next three years; this will permit training of national economists on the use of these techniques.

In addition, a conceptual framework for the Economics Program's overall strategy in the area of micro-level policy research is currently being discussed.^{7/} This effort is being coordinated by the Central American Regional Economics Program.

Other policy-related activities may include studies in comparative advantage for the allocation of research resources^{8/} and/or sectorial basic grains studies where such work is required to frame commodity research and extension programs.

3. MAJOR IMPLICATIONS: MINIMUM STAFFING AND BUDGET REQUIREMENTS, LOCATION OF THE TEAM, AND INSTITUTIONAL RELATIONSHIPS

The strategy proposed above for the economics portion of the regional program could be implemented with the present staff (two men/year, currently Juan Carlos Martínez and Gustavo Saín). The time horizon for what we consider a completely new stage in the regional economics program could be as long as ten years. However, an initial period of three years would be required to refine and move forward with the proposed strategy. In particular, it would take some time to find a desirable balance between the different components and options of the strategy.

Even though the present proposal is based solidly on past experience as well as on preliminary consultations with some key national staff, our approach would have to remain very flexible

^{7/} See CIMMYT Economics Program. "Basic Ideas and Strategies for CIMMYT Micro-Level Policy Research. Second Draft for Internal Discussion. Mexico, March 1985.

^{8/} For details see Longmire and Winkelmann.

initially, and adjustments would have to be made as the regional program moves toward the new stage envisioned. We therefore propose an initial period of three years, after which SDS and CIMMYT should jointly discuss their experiences and results with the main activities described in the previous section and decide together what, if anything, should follow in the years ahead.

The new set of activities as well as the new institutional relations involved call for a review of the present location of the team in Mexico. Preliminary contacts with the new director general of IICA, among other things, suggest that the CIMMYT team may be allowed to use the technical and administrative network of IICA within the region. It appears that both CIMMYT and IICA may profit from closer interaction. If so, we might discuss the eventual location of the CIMMYT economics team at IICA headquarters in San Jose. The Maize Program is also thinking of moving part or all of its regional team, and San José is one of the alternatives being considered.

The budget requirements for the economics portion of the regional program will be requested from SDC as a unique integrated project to be financed by a combination of core restricted and special project funding. Following a request from CIMMYT D.G.'s office, Gustavo Sain's salary and basic associated operational costs would be taken out from core restricted and presented as special project. In addition SDC has requested CIMMYT Economics to train a SDC agricultural economist in OFR and policy related activities. The request has been granted and SDC will provide the required funding. This portion of the required budget will be requested as special project, separated or jointly with the part corresponding to GS. The rest of the budget (including JCM salary) will remain in the core restricted project. Financial and narrative reporting for the different components should be the same as the core restricted project in order to avoid an excessive administrative burden on the regional economist.

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