

P.D. - MAY 31 7
01 52106

REPORT ON AN EVALUATION OF ICTA

by: J.K. McDermott

February, 1977

GENERAL COMMENTS

Although there has not been much change in the positive direction since the October 1975 Review, the ICTA concept still seems to be correct, and the considerable USAID support still seems justified. However, there are some concerns.

1. The loss of people appears serious. Apparently ICTA lost 27 out of about 140 technical personnel in 1976. If that loss continues into 1977, it will be even more serious. Several reasons have been given for the loss. The problem of salaries is the most common, although ICTA was organized for administrative flexibility, including the permission to pay good salaries. Lack of simple human relations skills has also been given as a reason, i.e., people being reprimanded to a degree not justified by the offense.

ICTA is ^{now} ~~not~~ in a buyer's market for manpower, apparently, and other reason given for the exodus is that ICTA training and style of work gives a person training and experience that is in great demand, in other parts of the Sector. Some of the junior personnel seem to

be getting good salary increases if they move into easier and more prestigious positions in other sector entities.

Possible actions: Suggest to ICTA that it make an analysis of the personnel losses and an analysis of the costs to ICTA of the loss. Also, suggest that ICTA develop a positive personnel policy that accommodates the facts that (a) it's personnel have to be highly desirable to others if ICTA is to do its job, (b) it does put heavy demands on personnel, not only in terms of lots of work but also in terms of the areas in which it expects its people to work, and (c) that for these people it's a seller's market. Such a policy could include financial compensation for living in less desirable areas, assignment to convenient areas, improved human relations skills on the part of all supervisory personnel, and more participation in planning and decisions.

2. It is not evident that very much action has been taken by ICTA to follow up on the recommendations and suggestions of the 1975 Review. In some cases the situations may have even deteriorated. One hears many complaints about management, which are hard to verify. The 1975 Review Report is quite good (better than I thought it was), and it can be used by USAID and Rockefeller Foundation as almost a continuous evaluation.

Possible Action: Request a status report from ICTA of actions taken to comply with the recommendations of the 1975 report. This may require some sort of agreement on which of the recommendations really make sense from a Rockefeller Foundation/USAID/ICTA viewpoint.

The Report should not be the law but it could be a useful instrument. The report could be a one-time action, a quarterly action, a yearly action, a written report, a seminar report, or any other format that would be useful. It should take into consideration the convenience of ICTA. Reports carelessly laid on can be a costly thing. Many of the specific concerns below are included in the 1975 Review report.

3. Personnel Training

ICTA has taken actions on personnel training. It is very proud of the school it established in El Oriente. It is very difficult to know how to evaluate it. The students did work with the production team in an apprentice-like mode, so their contributions to the program did compensate in part for the time of the staff. For me, the real issue is impact. The school started with 15 students and ended with 14, just about half of the 1976 attrition, that occurred in ICTA. It will be expanded to 18 this year. Whether that figure will accommodate attrition and expansion is not known. It would seem to me that the pre-service training (and I think this was for those new to ICTA) should include all inductees. Further, it seems to me that there needs to be a follow-up in-service training of some kind, for ICTA personnel, throughout the career. The In-Service Training Program under Loan 026 should help here.

Finally, ICTA has to face the problem of training for others in the sector. I'm not sure what the training should be, but ICTA

should face it and decide.

4. The following issues were included in the 1975 report

(a) Maize Program

The maize program seems to be doing quite well, even though my credentials in that area are not strong. Coming here from CIMMYT, however, I was impressed by some of the ideas of Poey and Córdova. Their attitude toward Opaque for example introduced concepts I didn't hear at CIMMYT. Purdue is just about to give up on the Opaques. CIMMYT is converting its other good lines to Opaque. Poey says that conversion can only result in lower yields (agreeing with Purdue) but that there are many characteristics, such as earliness, dwarf stalks, and drought resistance that may be combined with Opaque to fit certain needs.

As good as the program potential appears to be, it is now a CIMMYT-USAID program. Poey and Córdova are conscious of the need to develop ICTA personnel and have taken certain steps such as participation in the training school, trying to give as much responsibility as possible to their colleagues, and attempting to explain the theory behind their actions. One of the corn teams is studying at Monterrey for the M.S., and his presence could make a difference.

(b) Replacement of Foreigners

There has been a net gain of one foreigner replaced in leadership posts, and now all three regions are in the hands of Guatemalans. If I have understood correctly, the regional coordinators will have somewhat more power in the program (in relation to the commodity programs), although I'm not able to clear up this relationship. Certainly, the regions are becoming bigger operations as ICTA expands, so even though the net gain is only one (two foreigners replaced as regional coordinators, but one Guatemalan commodity program director has been replaced by a foreigner) the amount of responsibility that Guatemalans are accepting has increased considerably more. The movement of Guatemalans into these positions may be as much a result of the Rockefeller Foundation's reducing its input by one man as it is of following a replacement schedule.

Two situations bear watching: The new technical director has no advanced degrees. Five subject matter programs will be headed by highly trained foreigners, while all of the regional coordinators are Guatemalans. Given a general tension likely between subject matter and area jurisdictions, the nationality situation could become more serious.

The replacement issue was raised in October 1975. One has to recognize two degrees of replacement. A foreigner can be replaced as director without being removed from the program. It seems to me that there is need for a certain haste in moving Guatemalans into

administrative positions. For me exactly the opposite for moving foreigners out of programs prevails. A high level technical input into institutions such as ICTA can be justified for a long time; in fact, I would even say is necessary for a long time. This criteria needs to be applied in "replacement of foreigners."

(c) Additional USAID Support

There are no coefficients for optimum support to an LDC institution by a donor agency. Reliance must be placed on judgments. It is my own judgment that any additional support should be undertaken with care in order to be sure that ICTA can absorb and utilize it well.

There is available some data on what countries spend on agricultural research. It is presented in: Boyce, James K. and Robert Evenson, National and International Agricultural Research and Extension Programs, published by the Agricultural Development Council, Inc., 630 Fifth Avenue, New York, NY 10020. I think copies are free when requested by an LDC or USAID Mission. Both ICTA and the Mission and perhaps the Planning Offices should have copies. From data presented by Boyce and Evenson, it seems reasonable to expect that Guatemala could afford to spend for agricultural research and development an amount about equal to two percent of the value of agricultural production a year. From this some judgments can be made about how much ICTA should spend.

Mission strategy needs to be realistic. There is no point in encouraging ICTA to grow bigger than the country can be expected to afford. On the other hand, the Mission needs to be careful in spending to free Guatemala from spending.

There are areas such as communications in which ICTA needs to give attention and in which technical assistance is needed. Some of these needs can possibly be met by providing short-term technical assistance on a recurrent basis. This would involve bringing the same expert in two to four times a year for a total of about two to three months. This would provide a technical support but would still rely on ICTA to assume responsibility and accomplish certain targets.

(d) Linkages with Diffusion Agencies

There is little marked improvement in ICTA linkages with DIGESA and other diffusion agencies. There may be some in the making, but it is not clear that they will materialize consistently. In the Mazatenango Region, there apparently has been some real accomplishments. There reportedly are good relations forming in the Quezaltenango Region also. There is a formal structure or format, national in scope, to achieve coordination among agencies at the regional level. This format involves a council or meetings

of the agencies chaired by DIGESA. In the Mazatenango area, meetings began in October of 1976 and have been held successfully to date. However, it is not clear that ICTA internally has devised a scheme or schemes for linking with the diffusion agencies. Now, perhaps something may be happening. Apparently ICTA has cleared up some of its own internal confusion about (1) the distinction between ensayos de la finca and pruebas del campo, sometimes called parcelas de prueba, and (2) whether a prueba del campo is a part of the technology development process or extension work. There seems to be a clear recognition of the fact that ICTA simply cannot diffuse the technology alone. It needs DIGESA and others. This recognition did not exist in October, 1975. How this recognition is going to be translated into effective action is not clear at present.

ICTA has developed an index of acceptability for new technology. It is now considering pruebas del campo as a test of its technology in farmers' hands. The pruebas will be made by the farmers, often with ICTA record keepers, and with a minimum of assistance and supervision by ICTA. The index of acceptability is a measure of the increase in acreage on which the prueba farmers apply the new technology in the second year. ICTA is now discussing the need to involve DIGESA and others in the pruebas, with the intent to let the extension people participate in such a manner that they become convinced just as the farmers do.

There is also discussion in ICTA that since ICTA has to rely on DIGESA and BANDESA, the ICTA clientele needs to be the same as that of the other two. In other words, ICTA is seeing DIGESA and BANDESA as a special clientele.

These are all signs that were not apparent in October, 1975, and they are to a large extent improvements. The actions of the agencies in the Mazatenango Region took an interesting turn recently. In addition to agreeing to follow ICTA on technology, the regional council made some recommendations regarding policy to the national level. One of these was to cease requiring the use of fertilizer by borrowers. Another concerned the style in which DIGESA and BANDESA collaborated in order to reduce the number of people that DIGESA supervised, thus giving DIGESA a chance to give a much better technical supervision. DIGESA would give the concentrated, intensive supervision for one year, and then BANDESA would handle the clients. How these recommendations will fare at the national level is not clear, but it is interesting that they come from agency personnel who through ICTA leadership have come much closer to the farmer.

(e) The ICTA Concept

There is no doubt that ICTA has a special and unusual concept. It really does aim to come to terms with the farmer, attempts to know and understand him, and respect him. It also emphasizes farm technology over science, which is the only logical stance ICTA can take. Its knowledge of the farmer

and of the performance of its technology on the farm is not only useful to ICTA but can very easily feed into other entities for their policy making. (Incidentally, the group in USPA needs to keep abreast of this also.) The ICTA concept is not reduced to a chart, which I find very good (see chart later in this report). However, the ICTA process which makes this concept operational has not been written down (as was suggested in the 1975 Review Report). There is now, however, a draft on the Prueba del Campo (Attachment I).

There can be very little doubt that ICTA in many ways is a highly innovative organization. We have virtually no objective guide as to how long it should take and what resources it should take to correct the problems. There is also great differences in judgment about which of the problems are more serious and should be resolved first. But it is important to be able to avoid putting too great an emphasis on problems and ignoring the promise, just as the reverse is true.

(f) Management

One hears a wide variety of reports about administrative and management difficulties. Officially ICTA itself recognizes some. A problem which is considered serious is communication, not only between ICTA and others but also within ICTA. Another problem is that of data handling. In part these two problems overlap. The problem, for example, of handling

experimental data rapidly and communicating it in time for the next planting season is serious. Communication also involves other aspects, and the data handling also involves financial data, such as providing each manager current data on the amount of his budget he has left. As an example, I did witness the buying of a tank of gasoline, and it is costly and cumbersome. It surely could be simplified.

A book of regulations has been published by ICTA which will facilitate administration and management. There are also plans to review the reglamentos. If I understand the processes, the order should have been reversed.

(g) The Horticulture Program

A visit to the horticulture program with its experiment station orientation provides a chance to understand the ICTA concept. This project is not intended to work with the small farmer but rather to increase exports, but the interesting contrast is the experiment station orientation.

One large exporter has adopted a variety of cantaloupe tested and proven on the station, not only for his own production but also for the production he contracts out. Contact with the small farmer is limited to his appearance on the ICTA station during field days, and then it is difficult to know who is the small

farmer and who isn't.

(h) Socio-Economic Program

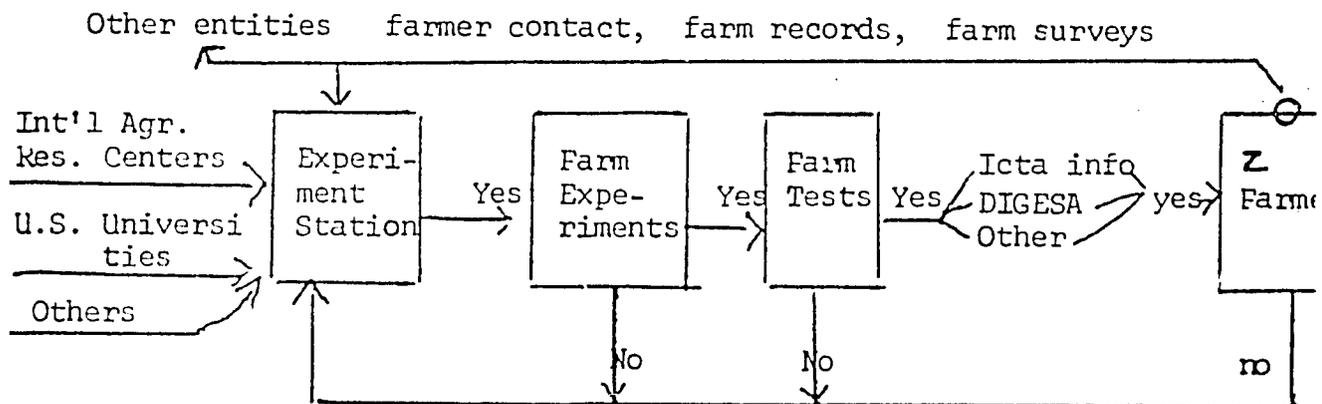
Although not an USAID supported program, the Socio-Economics program of ICTA is one of the most fascinating. It involves at least several activities: farm surveys, farm records, systems or patterns, assistance with data analysis, and ecological area identification. The program is apparently becoming of increasing value to ICTA, but some of the parts that to me seem to be the most interesting are not given high marks in other ICTA programs. The survey, for example, which aims to describe the farming going on, the technology being used, problems, and resources, does not enjoy the confidence of many ICTA personnel. They simply feel that the data gathered in this manner is not reliable. On the other hand, critics of the survey have great confidence in the farm accounts which farmers keep on a current basis. The farming systems work is considered theoretical and outside ICTA's method of operation. The idea of anthropologists planting crops hasn't been accepted. I don't know whether the systems technology has been or will be accepted by the farmers. Perhaps it is theoretical, but it is interesting. For example, the double row of corn will provide a 40% increase in yields of corn per manzana for only about 20 per cent increase in labor. Also, the double row provides the alternative of maintaining corn production and still putting about 40 percent of the land into wheat. Further, cabbage, in the wheat apparently has not adverse impact on either corn or wheat yields.

This seems to me to be significant.

The economists also claim that increasing corn yields in the Altiplano will likely not increase corn production. The rationale is that corn is of primary concern only until there is enough produced for home consumption needs. If there is to be surplus production for the market, the farmers would rather grow another crop, wheat or vegetables. Thus, a vegetable project and the corn project may be quite closely linked.

MORE ON THE ICTA CONCEPT

One of the very strong points of ICTA is its work on the process by which technology innovation is induced by a public entity in a deliberate manner for a specific audience or clientele. It can be expressed in a diagram.



The process starts with the farmer, point Y, and ends with the farmer at point Z. In an area new to ICTA, the farmer survey is the principal means of knowing what the farmer's problems are, as well as knowing the crops and animals he grows, the technologies he uses, and the resources he does have. There are varying degrees of confidence in the survey within ICTA. In general the production team members, who are responsible for the farm tests, lack confidence. For the commodity program teams survey information is useful, in part because of the scarcity of information on new areas. Nearly all have more confidence in the farm records (called registros) in which the farmer keeps a detailed account of his business on a current basis. Once activity has begun in an area, both commodity program and production team members are in contact with farmers on the farm, and much of the information is gathered by these contacts.

Gathering information is one thing. The use of the data and information in identifying problems and deciding on the most significant opportunity for technology development and application is another. Currently, there does not seem to be a standardized process. (In virtually all cases in Guatemala and out, problem identification is left to the individual and his own devices and intuition. The important element is the existence of the information and its availability to the individual or team.

ICTA borrows heavily from the world stock of agricultural science and technology which it should do, and has established

good relations with the three international agricultural research centers in Latin America. It also has good channels of technical information from Texas A&M in sorghum and from Mississippi State in seed technology. Relevant to the ICTA process the main input from the IARC's is genetic material of maize, wheat, rice potatoes, and beans. It is screened first at the experiment stations. In the case of maize and sorghum, there is a considerable breeding program, which is also done at the experiment station. A technology (variety of hybrid) that passes the experiment station tests then goes on to controlled experiments on farms. The only difference between experiment station work and on-farm experiments is location. The work is done by the same people and with the same care and control. There is some experimenting done on farms that is not done in experiment stations, mainly in the area of cultural practices--time and method of planting, weed control, and fertilization. ICTA feels that experiment station conditions are so different from farm conditions in these aspects that they would serve no useful screen. It is after the on-farm experiments that recommendations are made to the farmer. The recommendations are literally adapted or newly developed technologies that are passed on to the on-farm tests.

In the farm tests the farmer plays a vital role. The technology to be tested is put in such a form that it can be taught to the farmer. He implements it on his farm with a minimum of assistance and supervision by ICTA. ICTA watches his experience

with it (it will often be on the farm of a record keeper), but the real test is what happens the year after the farmer first tries it. ICTA has developed an index of acceptance, based on the increase in acreage on which the test farmers apply the practice in the second year. The index has just been developed, and it's not clear how well it will work out.

ICTA is clear, or appears to be, in its recognition of the fact that it is not in the extension business. At the time of the 1975 review, the team noted some confusion among ICTA personnel in the distinction between on-farm experiments and field tests. It also noted a certain tendency to regard the field tests or on-farm tests more as demonstrations in the extension mode than as the final test of the technology generation process. This confusion seems to have been cleared up within ICTA to a very great extent.

Noting this confusion and recognizing the value of the ICTA process, the team recommended standardizing procedures to the extent appropriate and putting them in writing so that they could be communicated evenly throughout ICTA and to other entities in the sector as well. A draft describing on-farm field tests has been written (Attach. I) in which the index is explained, but the total ICTA process has not been published as a manual.

The diagram is almost self-explanatory. If a technology passes the test (yes) it goes on to the next phase or step. If it doesn't pass (no), it goes back to a previous step or all the way back to the experiment station for an adaptation. The function in the process of knowing the farmer, and also how technology performs on the farm, can also be fed into other programs of the sector as a determinant of their operating policies.

LINKAGES

There are several linkages that are vital to ICTA and possibilities for others that could be of almost equal importance.

The two categories of vital linkages are those that enable ICTA to tap into the world stock of agricultural science and technology and those that enable ICTA to transfer its own work to the next link in the technology transfer chain to the farmer. In neither case is a single linkage adequate. Several linkages are needed in each category.

Linkages with the three international agricultural research centers in Latin America can be described as excellent, and many of them are of long standing. The Rockefeller Foundation has provided four man years per year of technical assistance input

into ICTA through CIAT, which facilitates linkage there.

In addition, ICTA has introduced rice varieties IR-22, CICA 4, and ICTA 6 from CIAT with a large input, of course from IRRI.

ICTA has also benefited greatly from the CIAT training program and has received considerable assistance from CIAT in developing its own in-service training program. Negotiations are in the final stages for ICTA to contract with CIAT for two persons to work in the bean program, using USAID funds. Earlier a CIAT farming systems team did a survey in La Máquina.

Currently, CIMMYT has a two-man team working in the ICTA corn program, provided with USAID funding. One of these is a long time member of the CIMMYT staff. They are making a very heavy use of CIMMYT materials and of CIAT materials that had been developed in collaboration with CIMMYT. A new variety called ICTA B-1 has been released. It is a strain of Tuxpeño which has been shortened and which matures in a shorter time than the conventional Tuxpeño. Much of the selection for this adaptation was done in CIMMYT. Collaboration between Guatemala and CIMMYT in wheat improvement predates the creation of ICTA.

CIP has no one stationed in Guatemala, but there is frequent contact between ICTA and CIP personnel, and ICTA has access to and makes use of the CIP genetic material.

The vegetable program has not been in contact with AVRDC, but it is interested in a tomato variety for the low hot lands. Contact is planned.

ICTA relies heavily on Texas A&M, a contractor which currently

provides two men to ICTA, for information on sorghum. Through and with Texas A&M, contacts are being made with ICRISAT. There has been initial discussion of a sorghum conference in Guatemala involving Texas and ICRISAT. However, not all of ICTA's experience with Texas A&M has been good.

TAMU had been providing a bean specialist under its contract. After his resignation, TAMU cost ICTA a great deal of time without finding a replacement. This is one of the reasons for going to CIAT for the bean people.

ICTA has had two years of the services of an irrigation technician from Utah State on the AID/TAB contract.

The vital linkages with Guatemalan diffusion agencies have not been developed. There have been some fruitful interactions in some cases, but they are not on long standing and at this time have to be considered ad hoc. There does seem to be a much sharper awareness of the need to establish these contacts than in October of 1975 when the review was made.