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TRIP REPORT

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PERIOD OF TRAVEL (inclusive dates): 10/22/79 - 11/19/79

ITINERARY: Washington, D.C. - Dar es Salaam, Tanzania - Washington, D.C.

PURPOSE: (1) to carry out pre-design activities for Farming Systems Research Project (621-0156), and (2) to assist USAID/Tanzania to prepare FY 1982 CDSS.

ORGANIZATIONS AND PERSONS CONTACTED: See attachment.

RESULTS/ACCOMPLISHMENTS: See attachment.

FOLLOW-UP ACTION REQUIRED: See attachment.

OTHER REMARKS: See Attachment

ATTACHMENTS:

Appendix A - Draft Cable in response to State 256752. in which AID/W approved PID and outlined purpose of Jones-McDermott trip.

Appendix B - Draft Scope of Work

Appendix C - Draft Cable on Singida-Dodoma AIP for Rice Production

Appendix D - Draft Working Paper for CDSS

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Harold Jones, AFR/DR/ARD, and I made this trip together for the primary purpose of helping the mission to develop a scope of work for the Agricultural Research PP design team. We also worked on two other tasks--a revision of an Accelerated Impact Program on rice production in the Rift Valley located in the Singida and Dodoma Regions and in the preparation of a draft working paper for the 1980 CDSS.

Much of this report is in the form of appendices prepared for the mission around these three tasks. Harold and I collaborated on Appendices A, B, and C. We wrote separate pieces for the CDSS. We also had the collaboration of Mike Collinson of the CIMMYT East African Program on the scope of work for the Research PP design team.

Singida-Dodoma

We spent four full days in the Singida and Dodoma Regions in which the Mission has an interest, encouraged by the Prime Minister's office in Dodoma. Mission interest can be justified on several grounds.

1. The Singida-Dodoma area is part of the central semi-arid area of Tanzania. Two of the Arusha Regions in which USAID is active are in the same semi-arid region, so an interest in the region would maintain an integrity of mission area-specific interest. This would encourage efforts to solve important technical problems of the semi-arid areas.

2. Concentration of interest in this area would provide a rigorous but reasonable test of the national institutions and at the same time press on them to generate and deliver services to local sites. Most of the problems of the region will require a considerably improved performance of the national systems, but one within the bounds of reasonable expectations. The rice production AIP, for example, will require both a study of the soil and water resources of the Rift Valley as well as some improvement in the technology for exploiting them. The region's interest in sorghum, millet, sunflower, groundnuts, and other oil seeds will require the same types of actions. The Singida Region is pressing the national research service to open a Regional experiment station. The Region is also planning to rehabilitate a neglected irrigation district, and for this task, it will need the support of the national agricultural technology system.

One must assume a relatively high level of mission management if the national and area specific efforts are to be integrated and if the area specific efforts are to be used as significant tests of national efforts. (See Appendix C on Rice AID.)

3. The third justification of an area-specific concentration in the central semi-arid parts of the country is the intention of the Tanzanian Government to move its capital to Dodoma. Such a move would provide a tremendous stimulus to

agricultural activity in the region, and without adequate technology, such activity can be expected to waste lots of scarce resources.

Extension Revitalization

Possibilities

Although the Mission needs to take a comprehensive look at the agricultural technology system, it has an immediate opportunity to move in the agricultural extension area. The Ministry of Agriculture, after virtually boycotting the Regional-District structure since it was set up by decentraliation has decided to get back into extension. It has given up the idea of re-centralizing extension into the Ministry and has decided to develop a Research-Extension liaison function, which is essentially a linkage between the national research service and the Regional-District structure. For the moment, there is no shortage of personnel working in the agricultural and livestock offices of the Regions and Districts. Factors most severely limiting their performance today are a lack of logistic resources, a lack of technical support, and a minimum capability in extension organization, administration, and methods.

Constraints

It is essential that the Mission's new agricultural research project address the technical support problem to the extent it can without distortion of that project. However, that will not be adequate. Still lacking will be (a) generalized technical support in the form of training and teaching material, (b) assistance in extension organization, administration, and methods and (c) modest logistics commodity support.

parallel project

The Ministry of Agriculture has made a move which can be interpreted as a signal of its strong interest in establishing linkages with the Regional District structure. This move is the creation of the office of Research-Extension Liaison. I have had repeated contact with two incumbents of that position, and both seemed above average in experience, training, and general ability. The first officer, Joseph Mtenga, was wooed and won by FAO. Incumbent is Don Sungusia, who served in the old MinAg extension service and as Regional Agricultural Development Officer in both Iringa and Dodoma. He has just completed an M.S. degree in the U.K. in which he studied Farming Systems and Extension. We had two interviews with him individually and were with him in two meetings and find his thinking, questioning, and planning to be compatible with our own biases.

A second signal that MinAg is serious about revitalizing Extension is its determination, in the Arusha Conference, that the lack of contact with extension was one of the three major problems facing Tanzania's research.

My own analysis of the situation is that MinAg is serious in its identification of the problem and in its intentions to address it. However, it faces two serious problems. One is an extremely tight budget, which makes it difficult to open up new work fronts. The second is figuring out what to do

and how to do it. The situation is not conventional. It requires linking with other autonomous units. This is not at all a difficult problem, given the U.S. experience in these kinds of linkages, but it seems difficult in the absence of those experiences.

It is my judgment that the Mission could develop a program that would be especially helpful to MinAg in achieving what it wants, and a little commodity support may be very helpful in encouraging additional budget support.

Moving with an extension project should neither obscure the need for the Mission to take a comprehensive view of the technology system nor delay its getting on with the task.

(Incidentally, Sungusia is interested in the central semi-arid part of the country, and although an agricultural officer is particularly interested in the role livestock can play.)

University of Dar es Salaam, Faculty of Agriculture, Morogoro

A visit to the Faculty of Agriculture at Morogoro was a depressing experience for me, chiefly because it appears to be a potentially valuable facility (and certainly a costly one) but so little used for the development of Tanzanian agriclture. There is no evidence that the situation will change. The Faculty will admit a new class this year of only about one-third of its capacity, supposedly because quality of applicants is too low for its standards, yet students refused admission there are admitted to U.S. agricultural colleges. Nothing is being done about the low enrollment. There is no campaign to recruit superior students nor any effort to upgrade teaching of high school subjects.

Faculty staff members serve on the commodity committees of the MinAg research institutes, but its own research projects are selected by an internal procedure that apparently has little relation to the programs of the institutes. There is no program for the MATI's and contact only with the MATI that is located in Morogoro. There is no evidence of a plan for developing the faculty, for establishing its role in agricultural development or for relating the Faculty's teaching and research activities with other teaching and research activities going on in the sector.

Possibility

There are two "farming systems" efforts underway at the Faculty--one in the agricultural economics department and the other in the plant sciences department. Currently, they operate independently of each other, and all of our evidence is that although students get on farms, their professors neither get on farms nor see the need to.

This all adds up to the fact that Tanzania is gaining relatively little from the resources it invests in Morogoro, and the prospects are that there is going to be little change.

Given the resources going into the Faculty of Agriculture and its potential value in agricultural development, there is no logical way that the Mission can ignore it. I do not have enough information to be able to form a reliable judgment of what is possible. My only thought is that since the Ministry of Agriculture has operations in both teaching and research, the Faculty needs to define a role for itself that supplements rather than parallels the MinAg efforts. My own judgment is that the best way to address the problem is through a Joint Commission of Tanzania and U.S. personnel designing and implementing a long-range program.

More on AIP for Rice

The long term value of the Mission's AIP in Rice Production will likely be a function of the response of MinAg Research to the problem and opportunity. Currently, the technology is simple and has not been evaluated in terms of its potential. Similarly we do not know the extent of the black soil area to which it applies. Finally, we know nothing of the feasible modifications that could improve it. Considerable work needs to be done, and most of it is appropriate for the MinAg Research Service. PMO has requested MinAg attention, and although MinAg is "obliged" to respond, its capacity is severely limited. In this case, the Mission has access to both the Demand side and the Supply side of the agricultural technology market. Both projects are still to be designed, and together they offer the mission quite a good opportunity to attack a specific problem from two directions and to build national capacity and linkages in the process. Finally, with considerable skill and a little luck they can achieve a visibility that will be useful in future project and program activities.

Tsetse Fly

We met with N. K. Maeda of the Ministry of Agriculture to find his views on the continuation of the Tsetse Fly project. Although there were three of his personnel on the latest evaluation, and the draft report had been discussed with him, he made a specific point of the fact that he had not officially received a copy of the report and that his government had not been able to take official action. He said that as soon as these two official actions had been taken it was his intention (a) to ask for a year's extension during which (b) a team would design the next phase of the project. After seeing that design the government would decide its support to the project.

We asked him how serious it would be if there were no follow on. He said it would be "sad" to carry it this far and drop it and that having gone this far,

he thought, the work should be completed. He gave no indication that the government ws waiting for the results in order to plan an action program, and he gave no indication that he thought the project could be complete in less than five years.

(My own recommendation is that this project be terminated with a thorough documentation of all that has been learned. My rationale is that new start-up costs will be less than maintenance costs. This recommendation applies only to this project and says nothing about a long-range Tsetse Fly program).

People Contacted:

USAID: Howard Steverson, Jerome French, Michael Fuchs-Carsch, John Ananias, Ron Harvey, Marion Kohashi, Philip Warren, Bert Behrens, Bob Gilson, Blaine Jensen, Bill Faulkner, Peter Shirk, Al Henn, Bob Fullmer, Tim Miller, Rose Marie Depp.

Ministry of Agriculture: John Liwenga, Donald Sungusia, N. K. Maeda

Australian Ground Water Project: E. F. Batt, D. C. Pollin, Dewey Hazel

Lutheran Church: Lois Swanson, Ove Nielson, Zefania Gunda, David Simonson, Martin Chari

Prime Minister's Office: P. O. Chikira

Singida Region: M. Jabir Kigoda, Henry Talimo, Mr. Hatibu, Mr. Masanja, Mr. Mellya

Manyoni District: Wilford Elea, Benjamin Maacobella, D. O. Izina

Arusha Region: J. N. Malewas, S.A.N. Muro

World Bank: D. E. Tribe, P.M. Tamboli, R. Ranasinghe, Ridley Nelson, A. B. Joshi

Faculty of Agriculture, Morogoro: Bruno Ndugura, R. K. Jana, Anselm Lwoga, Richard Foote

Contractors: J. D. Hampton, Tamu; Charles Barnhardt, Experience, Inc.; Paul Duffield, IITA; M.O. Pate, Tamu; Gail Pate, PSC; Ian Walton, DAI; Jim Deutsch, IITA/CIMMYT; Bob Rokos, El; Tom Galvan, WVA; M. Jodda,, IITA; Ron Gollehon, ACDI; Richard Koch, ACDI.

CIMMYT East Africa Economics: Mike Collinson
U.S. Embassy: David Morrison
REDSO: Herb Blank
AID/W: Rene Dougherty, Julie Defler, Gary Merritt

Draft cable, 11/15/79, in response to State 256752, September 79, in which AID/W approved PID and outlined purpose of Jones-McDermott trip.

A. Most clearly stated policies of TanGov research are contained in documents prepared following Feb-Mar Arusha Conference on Research. That document identifies three major research problems.

1. Research has been insufficiently directed at problem of farmer.

2. Implementation has been hindered by undertrained and under-utilized staff and low budget.

3. Link between research and extension has been too weak for rapid transfer of results.

Budget problem being addressed by reorganization of major research effort into two new parastatal organizations: Tanzania Agricultural Research Organization (TARO) and Tanzania Livestock Research Organization (TALIRO) Parastatal organization expected to improve budget flexibility,, increase budget and improve general effectiveness of adherence to policy stated above. World Bank opposes having two organizations. Mission would prefer a single organization but holds that creation of two organizations does not constitute serious problem. Currently, research is organized into two separate programs.

Mission project directly addresses/problems 1 and 3 and the staff training component of problem 2. Some address will be made to the problem of staff under-utilization. Mission finds that some TanGov people think it possible to improve utilization of personnel through this project, and that problem of counterpart personnel will not be serious. Problem overall shortage trained personnel not expected unduly affect project implementation.

Mission with TDY team has held two substantial meetings with TanGov personnel on new research project, one in company with the World Bank Appraisal Mission. In these meetings complete agreement was reached on the concepts involved in mission project, especially definition of farming systems research. Mission considers this evidence that TanGov is serious about addressing stated problems and that with help of this project it stands a reasonable chance of being successful.

Finally, TanGov has taken action on research-extension linkage by appointing a person in MinAg to be responsible for effecting coordination. Appointee has served as RADO in both Iringa and Dodoma Regions and has recently completed M.S. in farm economics and extension in the U.K. He participated in both meetings and in two conferences with AID personnel.

Mission and PP pre-design team are convinced that Mission project is consistent with TanGov policy. The usual problems of implementing policy remains, and project will aim help implement it.

B. Major part of agricultural and livestock research is now done in MinAg in two divisions. A reorganization plan submitted by MinAg would create two new parastatals mentioned above, parallel to current structure. Parliament did not act on plan in October meeting and is expected to act in January.

Closely related to the above research organization is the Uyole Parastatal. Uyole is site of MinAg training institute and research institute, both of which are organized into one separate parastatal and are being managed with substantial assistance of Nordic Group. Region specific, Uyole work is related to USAID project. Future of Nordic participation is not clear. Once the Nordic project is terminated, Uyole is expected to be joined to TARO.

The Pest Management Research Institute, a spin-off of the East Africa community break-up will also remain outside of TARO, a situation that will have little impact on Mission project.

Finally, research is done at the agricultural faculty of the University of Dar es Salaam at Morogoro. Faculty members sit on MinAg research committees, but there is little collaborative research between two organizations. Faculty has its own internal process for selecting, designing, and approving research in which MinAg is not involved. Faculty is engaged in type-of-farming survey research in the agricultural economics department and in cropping patterns research in its crop science department. These are separate programs, independent of each other. This research is compatible with Mission project but is in no way duplicated.

Linkages are extremely weak between research institutions, between MinAg research and other national institutions, and between MinAg research and the Regional-District structure. Weakness is not due to administrative arrangement nearly to the extent that it is due to the fact that linkages have never been established. PMO has stated to mission personnel that direct technical liaison between RADO's and MinAg fits its decentralization criteria and RADO's have informed us they send technical reports to MinAg. Problem of linkage with Regional structure was important topic at Arusha conference, and appointment of research-liaison officer in MinAg convinces Mission that the single most important inhibition to linkages is the lack of techniques or know-how in linkages, and this lack seems to be pervasive.

While the MinAg research link to the Regional structure is the most important immediate linkage problem to be addressed, Mission considers there are other

linkage problems and opportunities that need to be addressed. The crop authority parastatals have their own extension services, and their clientele produce food crops as well as export crops. They represent another linkage opportunity and need, and one the Mission project can address.

The MATI's who train extension workers represent another linkage need.

Still other linkages needed badly are those between MinAg research and other national institutions. Linkage with TanSeed is good as far as transfer of genetic material is concerned. TanSeed agronomic needs, such as seed production and care of seed in distribution chain, are completely unattended by MinAg research. TRDB is having serious problems with productivity of inputs it finances, but apparently MinAg research is doing little.

Still another linkage possibility that has not been analyzed is that between MinAg research and the Ministries of Health and Education on the problems of agricultural production and training in public schools. The Mission Health Education program has a major component on food production.

Mission is under no delusion that its project can help solve all of these problems at once and at a rapid rate. It is optimistic that it can help develop the operational arrangements and procedure, within the structure, that make the linkages effective and economic and of such nature that over time the research service can develop adequate linkages.

C. Other Donors

The Arusha conference report lists the following bilateral aid programs "supporting agricultural research." Some of these have only a minor research component, and others are at best supporting research.

Norway ?

1. Nordic aid assistance to Uyole Agricultural Corporation. This has a major research component.

2. USAID food crop research.

3. England Oil Seeds Project at Naliendale, essentially reearch.

4. CIDA Agronomic Wheat Reearch at Saliani. This is a production project on large state farms with a research component to answer questions raised in the project.

5. UNICEF soybean research at Morogoro.

6. Danish Rodent Control Project

7. Italian Chashewnut Research

8. World Bank Tobacco Research, facilities only

9. West German Coconut Research and Development

10. FAO National Soil Science Project

11. England support of cotton research

Mission finds that IDRC of Canada is funding a cropping systems research project at Morogoro with faculty of agriculture and aims to fund some economics work in relation to the agronomic work. Ford Foundation is also funding agricultural economics work with the agricultural faculty.

Of all of this work the Uyole work is of most interest to the USAID project. It is a comprehensive project and is addressing on an area basis most of the problems the USAID project will address. It will be useful to the USAID project, but it will not be duplicative or at cross purposes.

Status of new World Bank project is not clear. If project goes ahead it will include a farming systems component in the Ukiriguru area, but that component may put more emphasis on cropping patterns and the development of new cropping systems that the USAID project will. If it develops, it will not be duplicative or at cross purposes with the USAID project.

World Bank may hold firm on the single research organization and may delay initiation or possibly cancel project.. World Bank activity may also be influenced somewhat by the current Tanzania-IMF problems.

C. The role of farming systems research for project purposes is specifically defined. It consists of studying the farming systems which currently exist for the major purpose of designing research that more specifically address their problems and develops technologies that are likely to fit within their resource constraints, one of the most important of which is labor. Any change or innovation in farming systems will come about gradually as improved technologies are worked into the current system. Farming systems research will also be done to monitor the progress or the performance of new technologies released to the farmer. Farming systems research could also be thought of as farm management research. It is important that this type of research be worked into the research service as an integral part of its total program in order to make the total research program more relevant to the farmer.

APPENDIX B

Draft Scope of Work

PP Design Team

Tanzania Agricultural Research Project - 621-0156
11/13/79

Introduction

The Government of Tanzania recognizing the critical role of agricultural research in development has requested A.I.D. to expand its assistance, together with a number of other donors, in creating the needed technology infrastructure and methodologies to serve more adequately the need of agriculture. The expansion of agricultural production in Tanzania is essential to meet its food needs, provide export earnings, create employment opportunities, and serve other development goals.

A.I.D.'s assistance will account for a substantial portion of the overall donor assistance, meshing particularly with the efforts of the World Bank which is planning a project aimed at helping reorganize and strengthen existing infrastructure.

The new project aims to maintain the continuity of the conventional breeding and agronomic work already initiated, and perhaps even to strengthen it. The new project also aims to initiate some functions not currently operational in the research service. One of the most critical responsibilities of the PP design team is to devise the mechanism, both organizational and procedural, by which the additional functions can be initiated on a modest scale, but the mechanism must be such that when functions are operational they can be expanded at a reasonable rate and instituted throughout the research system.

The new functions are related directly to the linkage concept. Their purpose is to link the research service to the farmer both directly and through other entities such as the Regional-District-Village structure and the crop Parastatal structure and eventually through the MATI's and other relevant structures.

Objective: The mission intends to continue its efforts to help Tanzania build its agricultural research capability. It plans a new project to follow immediately upon one scheduled to end in September 1980. The new project will continue all that was started under the first project. In addition, the second project will pay specific attention to developing the capability of the national research system to link itself more effectively to the small farmer. This linkage will be direct in the sense of knowing and understanding the small farmer. This linkage to the small farmer will also be through other institutions who have direct contact with the small farm sector each of which has its own purpose.

Three specific functions are visualized:

1. A farming system identification and explanation function

Its purpose is to know and understand the farmer for the specific objective of enabling the research service to design research projects more relevant to the farmer, his interests, his problems and his ability to implement technology innovations. This increased relevance is expected to facilitate adoption of improved technology. Adoption will be monitored in the process.

2. An on-farm testing (research) function

Two purposes are to be accomplished. General technology developed by the research station is tested under the farm conditions before release in order to improve its site specific relevance. Simple problems discovered in the farming systems analysis can be solved locally without need for a complete research project. This may be especially true for site specific or localized problems. This activity is intended to be on-farm, not simply off-station.

3. An extension liaison function

This is to be considered a wholesale extension function, i.e., extension from research to the field extension worker who will handle the retail extension function. The first task to accomplish is to form a linkage between the research service, a national institution, and the region, which is a decentralized provincial institution.

Once the three functions are made operational, it should be possible to apply them in improving linkages between the research service and crop parastatals, such as the Tea, Cotton, Tobacco, and other Authorities, and between research and the training institutes and other entities dealing with farmers on production problems.

It is anticipated that this project will move forward under the so-called collaborative mode. This means that the contractor who is to implement the project will collaborate in the design. Also collaborating in the design will be AID and the Tanzania Research Service.

The project design activity should be expected to produce more than the Project Paper. It will provide an opportunity for the three parties to arrive at a consensus regarding the concepts underlying the project and to develop an understanding on the part of each party of his role and responsibility in the implementation. It will also provide information and a chance for understanding of the institutional complex within which the research service and the project must operate.

The scope of work has been written with these additional objectives in mind. More information and analysis is requested than is need for project design. Under this mode of operation, the contractor will be expected to provide personnel who will likely be involved in project implementation, both in the Tanzania based operations and in the project backstopping.

The contractor should expect to involve three people in working to put together the project paper, although he may want to involve more people in some of the analytical work. These three persons should expect to work with two persons each from AID and the research service.

The contractor will be expected to draw heavily from its own staff for both project design and implementation.

Scope of Work

1. The design team will study materials made available by USAID which explains the concepts on which USAID plans for the project are funded and will seminar

with USAID and GOT personnel for the purpose of achieving a common understanding of the concepts. These concepts will be explained in the Project Paper.

2. Study the total research service, including export crop research, sufficiently for a general understanding of facilities, organization, budgeting, geographic and crop coverage, deployment of personnel, linkage with other entities, operational style, and other relevant attributes, with somewhat more detailed information and understanding of these segments covered by the USAID project. This study should identify other donors working with the research service and describe their collaboration briefly in terms of subject matter, personnel, financial input and plans. A more thorough analysis should be done on those donor projects that have particular relevance to the USAID project. The team should also familiarize itself with the TARO-TALIRO structure and evaluate its impact on the project.

3. Prepare a description of a typical Regional-District agricultural organization. This is the most important institutional linkage, currently, for the research service. There is considerable agricultural expertise in this segment of the institutional network which will have implications for the added functions of the research service.

4. The team should identify institutional resources that have implications for the research service and provide a reasonable description of each. Such

resources are: MinAg Training Institutes, Agricultural Faculty of the University of Dar es Salaam at Morogoro, TanSeed Company, The Tanzania Rural Development Bank, the Livestock Research Service, The Tanzania Fertilizer Company, and one Regional Trading Corporation.

5. After an understanding of the research service and its companion institutions, prepare a short statement that summarizes the role that the research service should be expected to play in Tanzanian agricultural development.

6. Conceptualize the processes involved in the three functions and design the organizational and procedural mechanisms by which they can be made operational. These mechanisms will recognize the inherent stress (if not conflict) between an area orientation which guides the farming systems investigations) and the commodity orientation, and they will provide a tentative resolution. The tentative resolution will be of such a nature that (1) it will accommodate adjustments that are indicated by experience; (2) it will provide for adequate attention both to commodities and to areas; (3) it will protect the integrity of the national service; i.e., not permit further fragmentation of the research effort; and (4) will make efficient use of human resources.

These mechanisms should include enough detail on activities to constitute the first year plan of work, but provisions need be made to accommodate adjustments as needed.

7. Prepare job descriptions for personnel who will implement the three functions. Currently the job titles are thought of as follows:

Function	Job Title
Diagnostic Surveys	Farming Systems Economist
On-Farm-Testing	Production Agronomist
Extension Liaison	Research Extension Liaison Officer

Consideration needs to be given to the possibility of dividing one person's time between more than one responsibility. However, if any one individual is expected to work in more than one function, extreme care must be taken to see that all functions are adequately provided for.

It is important that provisions are made to adjust job descriptions as experience justifies. A procedure for adjustment may be necessary to insure discipline in job execution and prevent whimsical adjustments for simple convenience.

8. The team should project a likely expansion path for the incorporating of the linkage functions into the research service on a considerably broader scope. This will involve a horizontal expansion (i.e., to other geographic areas working with regional structures) as well as a vertical expansion (i.e., to responsibilities of the research service which cannot be attended through the regional structures, such as crops attended by crop authorities and general areas covered by MATI's).

A tentative schedule of expansion should be developed, recognizing that such a schedule will be tentative. The value of this schedule is to emphasize the need the research service has for linkage with other institutions and to provide some estimate of the magnitude of the task.

PP design needs to determine scale of the initial effort and accommodate a reasonable rate of expansion.

9. Since the conceptualization of the project has drawn heavily on the extensive experience of the CIMMYT East Africa Economic Program, particularly the work of Mike Collinson, the project design should provide a continuing collaboration with the CIMMYT program. Aim to take full advantage of CIMMYT (Collinson) experience in both design and implementation and to provide feedback into the CIMMYT program which can be used in other East Africa countries, in some of which the Agency has a similar interest.

10. Develop a realistic expectation of the interrelationships that will be encountered in the project between crops and livestock. Develop some alternatives for dealing with them, taking into account the research organization that is likely to prevail during most of the project.

11. Identify the important problems that are likely to exist or develop that will inhibit satisfactory performance of the research service in incorporating these linkage functions. Analyze each one according (1) to its cause, (2) what can be done to alleviate it or eliminate it, and (3) its likely impact on

project success assuming reasonable efforts and reasonable success in dealing with it. Finally, give some sort of expectation as to the chances for project success.

12. Prepare a statement on what will constitute success of the project, dealing with residual impact on the research institutions, with impact during life of project on Tanzanian agriculture and with longer run impact on Tanzanian agriculture. Such a statement should trace out the path by which impacts will be made on agriculture and should give some indications of time lag involved.

13. As is feasible during the work of the design team in Tanzania, the team is requested to identify linkage needs and possible mechanisms in addition to those specified in this scope of work. If feasible they can be built into the design.

(Example: TanSeed has production problems among its contract growers and has problems among its distributors of personnel not understanding seed care, and problems of seed viability. What is the appropriate role of the research in face of the technology problem?)

(Example: USAID has a Health Education project for rural schools that involves food production.)

14. While the scope of work emphasizes the linkage process, most project resources will be aimed at the extension of the ongoing commodity oriented conventional activities. The team will set forth the rationale for continuing the commodity research as well as the need for the farming systems component. Of particular interest is the need for technical expertise in the disciplines that support agronomic and breeding work-pathology, soils, entomology and the

like. The need for agriculture engineering may be particularly significant. The team should analyze these issues, reconcile them, and prepare a schedule of inputs of these specialties for the project and summarize them in usual Logical Framework of goals, purpose, outputs, and inputs.

15. The PP needs to include plans whereby the current project can be phased into the new project, including the possibility of personnel continuing with the new contractor, if there is a change in contractor.

16. The design team needs to deal specifically with the training of Tanzania personnel, with particular emphasis on economy of both time and financial resources and in-service refresher training including need for research library facilities.

APPENDIX C

Draft Cable on Singida-Dodoma AIP for Rice Production

After field trip to Singida, Manyoni, and Dodoma by Depp and Fuchs-Carsch with consultants Blank, Jones and McDermott, and conferences with Regional, District and National officials, Mission submits the following additional information regarding the rice project and Mission's plans for subject project.

1. The production potential of the area appears to be substantial. We have little detailed information on the extent of the area in which the soil and water resources are favorable for rice production. The soils are heavy black clays that have an excellent water holding capacity that show potential for the production of a crop following rice. Yields of from 1.2 to 2.5 metric tons of rice per acre were reported to us with use of zero fertilizer and folk technology which is not surprising from this type of virgin soil. However, as time goes on, technology to maintain or improve productive capacity of soil will include interventions of existing research and growing research capacity being supported by A.I.D. and other donors.

2. Production is largely based on indigenous technology which is quite simple. By hand construction of bunds approximately one meter high, farmers had been able to put about 400 acres under production of rice in Manyoni District of Singida Region since early fifties. With the help of Regional Government machinery, 200 acres have been added in one season. The same conditions exist in the Dodoma District which uses similar practices. Rice is traded extensively and is source of cash income. Development of Dodoma city will provide expanding local market for rice in addition to the good national market.

3. Farmers rely on annual flooding of at least three rivers which drain into the Bahi swamp, an internal drainage area. The rice production area is located generally along the northern fringe of this swamp where the rivers' channels are undefined.

Water enters the bunds through natural flooding of the area, not through diversion. To date farmers appear to have located bunded areas where adequate flood waters exist. We were informed the flood water generally commence in December, last for three and one-half to four months and start drying out in May. Seedbeds are planted with the arrival of the first floods and seedlings are transplanted when about six inches tall and when water levels permit. Under the present regime, bunded areas are not drained and minor deposits of salts were observed. Fields remain flooded until rice ripens. It is not known if water disappears by seepage or by evaporation. To extent water leaves by evaporation, salinization could be a problem. Black soils have a tremendous water holding capacity and much of soil moisture remains at time of rice harvest. With proper and reasonable cultural practices it is probably enough for a second suitable crop.

4. Mission sees some danger in expanding production area too rapidly, (a) because we don't understand the folk technology and hydrology, (b) because rapid expansion will require the participation of many more farmers many of whom are not familiar with rice production and, (c) because of the need for an overall agricultural and water management plan for the area. All cultivation is by labor intensive methods and neither Mission nor Government has any thoughts of changing that pattern.

The issue of Peoples Participation has been discussed with TanGov officials at several levels--PMO, Regional and District. There is a consensus that a high priority will be given to organizing village groups for total involvement at all stages from initial land preparation on through the crop production process. Only the heavy duty tasks connected with initial land development will be performed by mechanical means. Much of the plot leveling and finishing of bunds will be done by hand. This will be facilitated through the use of existing hand tools together with the introduction of improved locally made types and supplemented by a few imported pieces which show high potential for enhancing the productivity of manual labor. Not only is it expected to enhance the output of the project activity but it is expected to have a carry-over impact on the villages' attitude towards the need for change, so necessary to increased production.

5. Mission has developed the following ideas for use as criteria for developing the PP.

A. Initial efforts would be modest owing to the uncertainties with regard to the technological base and the rapidity with which new farmers would take up rice production. These efforts would involve some improvements in current practices such as surveying of terrain and bunds and land levelling, but would not involve substantial departure from the proven technology. We were unable to estimate additional acreage which could be bunded during LOP. PP team should establish acreage. Dodoma has maps of one two-village area.

B. The project would involve to the fullest the current organizational structure and would intend to build capacity within that structure. Regional

and district governments have units responsible for water development, agriculture, land use, machinery maintenance, and small scale industry. With small amounts of assistance, both technical and capital, these units can be expected to handle the development of the production aspects and also the milling of the rice as production expands. The project will also aim to involve national institutions in the project in ways consistent with their national role.

The PP team would more precisely define the management organization of the project; however, Mission is convinced of the availability of technical personnel at the regional and district levels who can plan, implement and manage the project with minimum technical support and equipment. We have also been assured by the PMO of regional cooperation in carrying out the project including budget support. We do feel, however, that a minimal technical assistance team consisting of an agricultural engineer, two PCVs having mechanic and surveyor skills and several short term personnel (agronomist, hydrologist) are necessary to supervise and provide impetus and on-the-job training to the project team.

C. The project will also coordinate with other donor projects. Most important is the Mission's own project in agriculture research and its intended new project that emphasizes farming systems. The opportunity presented in their region is virtually the ideal type situation for a farming systems effort. Such effort would involve a field study to understand current technology, the system in which it fits, and the farming systems and technologies on areas not bunded and used by farmers not growing rice. On the basis

of this understanding, research would be planned to develop improvements in technology most relevant to farmer-needs and most likely to be adapted. The Mission intends to exploit this opportunity to the utmost.

D. In the Singida Region an Australian team is working with the Regional Water Development to collect hydrologic data in the Singida region including rainfall stations in the drainage area of the project site and three stream gaging stations on rivers flowing into the site. This is essential information for the long run potential of the rice region, and the project would depend heavily on the Australian effort to build this measuring capacity of the Regional Government.

6. It seems reasonable to expect that rice production in this area would double within two years, this doubling being from a rather small base. Results from then on are difficult to predict. Over ten to 20 years truly remarkable changes are possible, depending on the technological progress. It is Mission strategy to help with a modest capital input to exploit current technology and at the same time to initiate the process of developing improved technology that would support a higher level of capital input.

Need to include:

I. Project Team:

Expatriate:

1	Ag Engineer	Full time
1	TDY Agronomist	
1	TDY Hydrologist	
1	TDY	
2	PCVs Mechanic Surveyor	

Tanzania:

1	Ag Engineer Project Manager	Full time
2	Surveyors	
2	Draftsmen	
6	Assistants and Drivers	
	Regional Ag Officer	Part time
	" Hydrologist	
	" Lands Officer	

II. Discussion of Equipment

III. Budget

IV. PP Team Requirements:

1	Design Officer	(Mission)
1	Ag Engineer	
1	Environmentalist	(REDSO)
1	Engineer	(REDSO)

APPENDIX D

Draft Working Paper for CDSS

AGRICULTURAL STRATEGY

11/13/79 - JKM

Summary

The goal of the Mission agricultural program is to assist in the improvement of the productivity and profitability of Tanzanian agriculture. This is neither as ambitious nor as diffuse or vague as it appears and will be explained later in this paper.

Strategy for accompishing this goal consists of two clearly defined components or thrusts.

The primary thrust is to help strengthen the capacity of national institutions dealing with agriculture including (even emphasizing) their ability to link effectively with other institutions directly serving the farmer.

An auxiliary thrust is to concentrate activities in two geographic areas. These area program concentrations serve two important purposes.

One purpose is to achieve as promptly as is feasible a significant impact over several regions, in agricultural production, in infrastructure, and life quality.

The second purpose is to provide the missions a field laboratory (1) that will facilitate the development of linkages between national institutions and the regional structure which has the responsibility to deliver services to the farmer, and (2) that will enable the mission to view performance of the national institutions from a site specific perspective.

The national institution thrust is active in three institutional areas:

1. The Technology System which includes manpower training and education, research and technology generation, and extension of technology to the farmer.

2. The Agribusiness System, which includes those commercial parastatal organizations which provide inputs to small-farm agriculture and which market the non-export production of the small scale farmers.

3. The Regional Implementation Management System, constituted by Regional and District entities that have project and program implementation responsibilities.

The area activities are concentrated in two areas covering parts of three Regions. One concentration is in the Arusha Region in which a variety of

activities are integrated into a single project. The other concentration is in the Singida-Dodoma Regions in which there is a collection of compatible activities under several projects.

Most of the geographicc area involved is semi-arid and includes a relatively poor sector of the population.

Rationale

A. Summary:

Because agriculture is the major economic sector in Tanzania and must play such a variety of roles, we have made a major emphasis in that sector.

Our choice of the frank and full address to institutions is based on a twin rationale. One rationale is that no country can hope for development with the extreme weakness that pervades the Tanzanian institutional structure. This conclusion is clear. There is virtually no evidence to the contrary. There is also virtually no evidence that the institutions will be significantly strengthened as a sort of incidental effect or by-product of conventional donor projects.

The second element of the rationale is that national institutions offer more potential leverage than any other sector available to foreign donors. A.I.D. is probably more nearly oriented to institutions than any other international donor and has accumulated enough experience that our chances of exploiting the leverage potential in institutions appear to us quite good.

The Mission fully realizes the ambition of this strategy and only embraces it on the assumption that we are dealing in terms of a decade time-wise and in terms of $400 - $500 million financial-wise and that we can mobilize and deploy to these ends the substantial human talent that exists in the United States.

longer-term
40-50 mill yearly

B. Assumptions and Other Considerations:

Certain assumptions play a key role in the strategy the Mission is attempting to evolve.

1. We assume that we will have a substantive development program in Tanzania over the next decade. U.S. contributions will be a small part of total donor input, but for the decade the absolute U.S. input will be substantial, approaching the $500 million dollar mark.

Our judgment is that in order to make our most useful contribution to Tanzania, we must think on a scale of ten years and half a billion dollars.

Who are larger donors?

2. Given the number of donors, their diversity of interests, and the size of their contributions, the Mission share of responsibility for Tanzania's total problem complex, including balance of payments and budget support, is relatively small. We are considered a minor donor.

This condition permits USAID a certain luxury - that of selecting projects that have a high long-run payoff potential and that A.I.D. can do relatively well, but projects which require a long-run perspective.

3. It is our observation that a relatively large proportion of donor activity is for projects heavily oriented to action in the relatively short run. This is putting tremendous pressure on Tanzania's inherently weak institutions, both those responsible for project implementation and those institutions responsible for generating or mobiliing revenues to meet recurrent costs. Meanwhile, donors are devoting relatively little attention to building the capacity of Tanzania's institutions to deal with development.

4. Agriculture is today, and will be for at least a decade, Tanzania's predominant industry. Tanzania must, then, look to agriculture to provide a principal economic force for development. Agriculture is the principal source of export earnings and must be expected to contribute substantially more than currently.

5. The agricultural sector, for our purposes, must be viewed in two echelons. The farmer himself and his family as one echelon is our ultimate target group. If we can help him to be productive and prosperous, much good will come to the country. However, this group is too large, too varied, and too complex for us to have any lasting impact on him directly.

The second echelon of the agricultural sector is that set of institutions Tanzania has set up to serve the farmer. This group is sizable, varied, somewhat complex, and beset with problems of efficiency and productivity as serious or more so than problems of the farmer. However, this group is of a size and accessibility that we can deal with it, and over a decade we can deal with it on a comprehensive scale. This group of institutions we consider our immediate target group. To the degree it performs well, conditions under which the farmer operates will be steadily improved so that the farmer can improve his own productivity and profitability.

Given the fact that these institutions provide the only meaningful channel to the farmer, we intend to face the institutional issue frankly in a time frame and with the magnitude of resource commensurate with the size of the task.

6. The institutions created to serve agriculture are inherently weak, suffering from inadequate human and financial resources. Many are young and in some cases are still in the experimental stage. They are attempting to reflect the new Tanzanian "tradition," but are confounded in some cases by

residual impacts of colonialism. In other cases they have not distinguished between the socialist ideology that emphasizes equity, on the one hand, and the requirements of efficiency and productivity on the other, that pay respect to no ideology. In still other cases they simply lack experience and know-how in management and the technology with which they deal.

At the same time we detect an attitude, remarkably widespread, that is realistic with respect to the situation, that seeks appropriate assistance, and that is willing to work hard.

C. Productivity and Profitability of Agriculture

The productivity-profitability focus stems from the fact that agriculture is the predominant sector in the Tanzanian economy. It provides employment for about 80 percent of the work force, about 50 percent of the total national product, and nearly 75 percent of exports. A sector that predominant in an economy must be expected to provide the leadership in development and certainly cannot expect substantial transfers of capital from other sectors either to solve its production problems or to improve the quality of life of its people. Indeed the sector, being this predominant, must be expected to generate surplus wealth that can be transferred to other sectors. Fortunately, Tanzanian agriculture is basically well positioned to perform the leadership role, making it realistic to focus on productivity and profitability.

Agriculture must be expected to accomplish three objectives.

1. It must lift the farming population to a level of living that is higher than subsistence, even a well-nourished subsistence. Simply feeding people well is not an adequate development aspiration. Livestock can be kept well fed.

2. Agriculture must provide food to the non-producer, who may be poor and who may live in rural as well as urban areas. Increased productivity makes it possible to produce cheaper food for the consumer without reducing income to the farmer.

3. Agriculture must be expected to generate funds to stimulate other economic activity - in the production and distribution of input factors for farmers such as seed, fertilizer, and implements; in the buying, transporting, processing, storage, and sale of farm commodities; in the production and distribution of consumer goods, including housing; and in the provision of other services, such as education, health, road construction and maintenance, and water systems.

The Tanzanian farmer must produce more agriculture products than he consumes. It is from this surplus that he can provide himself and his family education, health, better housing, a variety of food and other components in an improved quality of life. It is also from the farmer's surplus production that the country will gain most of its foreign exchange earnings.

In order for Tanzanian farm production to accomplish these ends, there must be an increase in agricultural productivity, and this productivity must be measured in physical terms. It is possible to make agriculture profitable by price manipulation. This is not enough although it may be happening.

For example, measured by constant (1966) prices, agricultural share of the monetized GDP was only about 40 percent in 1977. Adding subsistence product, agriculture's share of the total GDP was about 50 percent. However, using 1977 prices, agriculture's share of monetized GDP in 1977 was 50 percent, and adding the subsistence share brought the total to about 67 percent. There is no way to tell which if either year's price relationship reflects the situation accurately. This example only serves to illustrate the fact that prices, which are affected by scarcity, can actually increase profits even with lowered productivity.

Development requires that productivity increase in such a manner that prices to the consumer are stabilized or lowered without reducing incentives to the producer. And this requirement imposed by the tyrant "Development" has no relationsiuip to ideologies that may be reflected in such concepts as capitalism or socialism.

If the Tanzanian farm producer is going to increase both production and productivity he must use at least some inputs such as seed, fertilizers, other chemicals, and equipment that embody improved technology. He must also sell his product. Thus, the farmer must become a commercial farmer, even though small scale. One cannot enter commerce, i.e., buy and sell, unless commerce is profitable.

By a steadily improving productivity, and with reasonable profitability, Tanzania as a society can expect to produce its food needs with a steadily decreasing amount of its land and labor resource. It must be able at the same time to transfer these surplus rsources to the production of export crops or domestic non-food crop. Export markets will take all Tanzania can produce, given their size in relation to Tanzania production. However, prices vary widely, and Tanzania's only defense to low prices is productivity.

In two important ways Tanzania is well positioned to deal with productivity and profitability. Its soil and climate resources are reasonably good. Many areas are semi-arid in nature, but rainfall is relatively dependable. The other factor in Tanzania's favor is its export mix. It is not highly dependent on one commodity for export earnings but can enter a variety of export markets—coffee, tea, sugar, pyrethrum, cotton, tobacco, and sisal. This diversification provides some protection against wide price fluctuation.

Issues

Equity

At first glance it may appear that a strategy of working with an immediate target group in order to impact on the ultimate target group does not serve the cause of equity. Indeed the immediate target group does constitute an elite, and any work we do with that elite will have a tendency to increase the social distance between that elite and our ultimate target group. Two facts, however, stand out. One is that we can identify no way we can have any significant effect on the ultimate client group without the existence of a competent indigenous institutional structure. Any impact we would have would have small chance of being more than temporary. It is highly likely that any impact we would have would be far more in the nature of temporary relief than it would be developmental.

The second fact is that in the institution building two criteria of an institution are significant, and if we pay adequate attention to these criteria, the elite will serve its necessary function even though it be an elite. One attribute of a functional institution is that it forms the appropriate linkage to serve its intended purpose for its clientele. A second attribute is that the institution have a doctrine or institutional mentality that helps influence actions of institution personnel to serve the institutional purpose more effectively.

A second equity issue arises around the strategy focus on production and profit. This is a matter of simple arithmetic. Given Tanzania's annual national income, there is no way it can provide its people the basic human needs. Put another way, the single most serious social problem in Tanzania today is the lack of economic power. Tanzania does relatively well in serving its people as far as its resources go, including that considerable segment provided by donors.

Need for Export Earnings

Currently Mission strategy does not include a direct address to the export sector. Indirectly, we address it in two ways. To the extent the food producing sector becomes more efficient, resources of all types will be freed from food production for use in producing export crops. The second address is through the institutions we deal with which serve both sectors. The Rural Development Bank and the Research Service serve both.

We have become sensitized to the fact that we may be able to make a direct address to the export sector within the next few years within our basic strategy and that such an address may be productive.

As we help the research service develop linkages to the farmer through the Regional structure, we expect that the same techniques can be used to link

with the farmer through the export crop parastatal authorities. Paradoxically, this channel to the farmer could be as functional in food production as in export crop production. The crop parastatal authorities have their own extension agents who deal each in its own commodity. As our farming systems component is perfected for the food crops, it may be found to be as effective for the export crops. We intend to watch very closely to see if the technique offers an opportunity to mount a modest effort with one of the crop parastatal authorities. Our Arusha Regional effort will provide one point from which to evaluate the opportunity, and our research project will provide another.

We may face another issue with TanGov on the export question. Almost without exception the managers of the export crop parastatal authorities are becoming discouraged over the prospects of increased export crop production by the small farmer. Their first alternative is to look to the plantation for this production. Parastatal plantations in general have performed no better than the small farm sector. Currently, foreign management is being sought for some operations. We do not know the details nor what we may be asked to do in this regard.

We are interested in higher export earnings.

Revenue Generation

Tanzania faces a serious problem that is not attended by any of our program efforts or by any program efforts of any other donor. Yet its seriousness is pervasive, and the impacts of our efforts are almost certain to be attenuated because of it. This is the Government's inability to generate public revenue throughout the economy. Certain sectors of the work force are heavily taxed, and apparently efficiently so. But the sectors that are taxed make up such a small share of the total that revenues are inadequate. Apparently no institutional mechanism exists to recuperate any part of the benefits of developmental investments. The shortage of operational capital in turn severely reduces the productivity of any investment that we or any other donor is likely to make. Decentralization, which puts much administrative responsibility in Regional Government, so far has not faced the revenue generation on a decentralized basis. There is no system of Regional or local taxation. Although there is a system of fees and other almost haphazard fund raising mechanisms which are far from adequate.

Notes on Strategy Implementation

Implementation of a strategy that assumes a ten-year, $400 million effort requires an operating style somewhat different than the current style. The "project" will continue to be the obligating-action instrument, but cannot be the instrument for orienting planning to the extent it is currently being used. For planning purposes it is necessary to think in terms of "programs," each of which is constituted by several projects, related to each other by various criteria, including that of time and sequence.

Planning must be accomplished by a close collaboration between Tanzanian and U.S. personnel. Both groups need to be oriented by the same assumptions regarding resources and by the same general objectives. That there will be differences in philosophy and opinions regarding the efficiency of alternative means will have to be accepted and accommodated, at least in the beginning.

It is Mission intention to form official (or quasi-official) bi-lateral groups, perhaps joint commissions, who will be expected (1) to devise a ten-year program involving variou institutions in the three target systems, (2) to monitor the performance of the overall program as it is being implemented, and (3) to devise adjustments in the program as experience indicates.

One expectation is that collaboration in the joint commission will result in a long time commitment from both TanGov and A.I.D. on a course of action highly significant for development. Such commitment will guard against shifts in direction that tend to be whimsical depending on the ideas of relatively short-time incumbents of key positions both in A.I.D. and Tan Gov. In order to avoid the danger that stability in program direction turn into a dysfunctional rigidity, we propose the monitoring adjustment responsibility of the joint commission. Further safeguards may be necessary such as periodic reviews by evaluators independent of the program.

Leverage is an important aim of this operational style, but the leverage will be of a specific nature. Leverage will not result from sheer power, such as the threat of an actual withholding of funds. Leverage will derive from two sources. One source of leverage will be the selection of systems in which we intend to operate. Each of the systems do have the capacity to exert important influence on the greater economy.

The second source of leverage will be the information and analysis generated in and by the joint commission and the bilateral consensus that is likely to result from information and analysis. We are highly confident that a careful but feasible analytical-intellectual process will result in highly effective programs, with impact far beyond cost. The Mission intends to make this process as collegial and as collaborative as is feasible, indeed to

make it into a human rsource development-capacity building exercise in itself. To the extent this is an effective process, it will have some impact on selected policy issues.

The Mission is confident in the potential of this process and is determined to develop the skills to execute it.

In order to be able to move to joint-commission program planning, the mission will have to do considerable preparatory work. It will be necessary to change the nature of our dialogue with Tanzanians. Some of the changes needed are these:

1. We will have to talk to a larger number of persons in order to improve our knowledge of all the institutions that constitute each of the sytems in which we are interested.

2. We are going to need to make contact both with higher level personnel in order to be able to relate the organizations to each other and to get a systems perspective. At the same time we will need to talk to more operational personnel in order to deepen our understanding of the institutions.

3. The scope of our conversation will also need to be broadened to embrace some of the system concepts. It will need also to be more speculative and not be constrained to project alternatives, design, and implementation.

After considerable conversation it will be possible to make specific plans for action. Most critical in these plans will be the selection of persons who are capable of performing on a joint commission and of devising ways by which their time can be made available.

We anticipate that this will not be a simple task. Intentions are to initiate one joint commission a year for the next three years.

In general we would anticipate a joint commission studying and understanding the Tanzanian complex of institutions that constitute a system. We would also anticipate a trip to the United States to study similar institutions there. These two study tours we would consider as background or preparatory to the planning activities of the commission. Mission would be prepared to fund study trips to third countries if it seemed justified and to fund certain analyses and studies requested by the joint commission.

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