AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY

1. SUBJECT CLASSIFICATION

A. PRIMARY
Development and economics DC00-0000-G148

B. SECONDARY
Development assistance--Tanzania

2. TITLE AND SUBTITLE
Program strategy considerations for USAID/Tanzania; a trip report

3. AUTHOR(S)
McDermott, J. K.

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1978	58p.	ARC TZ630.9678.M134

7. REFERENCE ORGANIZATION NAME AND ADDRESS
DS/AGR

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

9. ABSTRACT

10. CONTROL NUMBER
PN-AAG-653

11. PRICE OF DOCUMENT

12. DESCRIPTORS
Agriculture
Projects
Strategy
Technical assistance
Agricultural technology
Agribusiness
Development strategy
Tanzania

13. PROJECT NUMBER

14. CONTRACT NUMBER
DS/AGR

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

PROGRAM STRATEGY CONSIDERATIONS

FOR

USAID/TANZANIA

A Trip Report by J.K. McDermott,
DS/AGR, October 1978

TABLE OF CONTENTS

INTRODUCTION

This paper results from an assignment from the Africa Bureau to help develop a project for USAID/T that would provide additional funding to strengthen (or enrich) the total USAID program with a minimum of additional administrative requirements. Some specific concerns were expressed by Haven North, Hariadene Johnson, and John Koehring in making the assignment. These dealt with Tanzania's problems in balance of trade, generation of public revenue (both to recuperate public development investment and to fund operating costs), and undue dependence on one or a few commodities for foreign exchange earnings. They specifically requested a "(Mission" Program Analysis" addressing these concerns and suggesting adjustments in the USAID/T program as well as possible adjustments in Tanzanian policy that would help in some way to alleviate the impact of problems identified.

It was made clear that owing to the intensity of donor activity in Tanzania, simple pressure on the government to put more support to USAID projects was not at issue. Interest was much greater in Tanzania's general ability to generate public revenue than it was for specific support to USAID projects. It was also understood that Tanzania's development objectives are clear and firm and that the country was not inclined to deviate from its course for the sake of additional donor activity. However, even though it held firmly to objectives, it was thought that Tanzania did tend to pragmatism in the selection of means. Thus, there would be opportunity for the Mission to develop with the government alternative procedures and policies in the area of USAID activity if not in overall policies and objectives.

In preparation for the assignment, I became sensitized to certain characterizations of the USAID/T program and the AID/W image of it. Specifically, in the AID/W image, (1) the USAID/T program lacks focus, (2) there is little articulation among the projects that make up the program, and (3) the national institutions involved in the capacity-building efforts have developed virtually no linkages to the villages. There is considerable discussion of the alternative of abandoning the national institutional orientation and placing increased emphasis on projects of more immediate impact.

Finally, a concern was expressed about general Agency efficiency and efficacy in applying more development resources (if indeed it is called upon to do so) with roughly the current staffing level.

Norman Cohen of PPC and I were assigned the task. He has prepared a draft PID. This paper is to be attached to or associated with that PID.

This paper is presented with two qualifications. My observations lead me to a considerable optimism with the Tanzania experiment. This is

relative. Tanzania is a Least Developed Country. Achieving the status of a Less Developed Country would be real progress. Thus, the road to development will be long and hard, and measuring success by short run highly visible impact is apt to be seriously misleading.

The second qualification concerns the magnitude of my assignment in relation to the time that was spent on it. Although I have attempted to substantiate my impressions with evidence, much of that evidence came in bits and pieces, and its frailty is acknowledged.

FINDINGS

Findings are listed in this section in a concise fashion with a minimum of data and reasoning. Evidence and reasoning for the findings and recommendations are presented in the sections on Program Observations and Notes.

1. Tanzania presents A.I.D. with an unusual opportunity. In its rather clear definition of purpose and objective and its apparent firm resolve and commitment to achieving them, the country distinguishes itself from most A.I.D. clients. These are assets of considerable import to A.I.D. strategy and justify optimism with regard to the USAID program. Treating this country as a conventional case to be dealt with by conventional A.I.D. approaches could result in a default in front of great opportunities.

There is considerable evidence that USAID projects have resulted from one party making a suggestion and the other either accepting or rejecting. There is little evidence that appropriate A.I.D. and host government personnel have collaborated in facing a problem or problem complex and working out an approach to it. Such collaboration appears now to be possible where it may not have been in the past. Contractors reported in various contexts that to a large extent their work is in the collaborative style. One of the things they appreciate is the candor and openness with which they and their counterparts deal with each other. Some recent mission contact with Tanzanian officials also indicate that such collaboration is possible.

2. The Mission is faced with a clear cut strategical decision. The Prime Minister's Office (PMO), responsible for Regionalization, is putting considerable pressure on the Mission for area specific programs that tend to involve large investments in infrastructure. The pressure is such as to leave the impression that this is what "Tanzania wants." However, the Ministry of Agriculture urgently needs U.S. assistance and apparently "wants it" as much as does PMP. For some reason PMO is more articulate than MinAg, or perhaps it maintains contact at a more effective level in the Mission.

My findings clearly indicate that the Mission's greatest opportunity to contribute to Tanzania's development lies with MinAg, for these reasons.

a. The United States has a greater comparative advantage in agriculture in relation to other donors. No other donor can match the United States in the field, especially in agricultural technology. We are simply another donor in the PMO area of needs.

b. Agriculture is Tanzania's dominant industry and must serve as a prime mover for development. Tanzania policy does not reflect this condition adequately. This enhances USAID's potential to contribute.

c. The national scope of agricultural institutions makes it possible, by careful attention to project design, for USAID projects to have a relatively large impact for the resources invested.

d. A.I.D. has had considerable experience in working with agriculture and through agricultural institutions and has achieved a higher rate of successes in this field than in most others. Careful analysis (cited elsewhere) indicates that the rate of return one can expect from agricultural research is higher than for any other investment, and this is one of the greatest needs. On the other hand, the literature is replete with examples of failures or severely limited successes of area programs, especially those in integrated rural development.

3. The mission program can be viewed as two categories of major projects. One of these is of National Scope. It includes: Agricultural Marketing, Livestock Marketing, Seed Multiplication, Agricultural Credit, Agricultural Research, and Agricultural Manpower Development (including Farmer Training). Two new projects would fall in this area--Agricultural Education/Extension and Training for Rural Development.

The second category includes projects of specific area scope, Masai Range, Drouth Roads, and Regional Planning and Village Development. Two new projects of this type are under development--Zanzibar Rice and Zanzibar Tsetse Fly.

The program is heavily concentrated in agriculture and rural development. The single project falling outside that area, in health, would be classified as a project of national scope.

These categorizations are not appropriate for minor activities which relate in various ways to the major projects.

Although the classification is made by area, area is not the chief characteristic distinguishing the two cateogries. National projects tend (1) to aim at institution building or capacity development and

(s) to emphasize technical assistance. The area projects tend (1) to aim at the accomplishment of specific, discrete ends and (2) to emphasize capital assistance. The distinction, of course, are not sharp and clean. There is a heavy capital investment in both Seed Multiplication and Agricultural Credit. Their success, however, will depend on the technical input, not the capital input. The Masai Range project, on the other hand has a considerable technical input.

4. There is a reasonable focus in the set of national scope projects. It can be described as "Agricultural Productivity and Profitability." There are strong reasons for not narrowing it farther, although there is a considerable tendency to do so. The focus has been described as "Food Production." However, there is no need to restrict agricultural interest to food. There is currently a glut in food grain production, and opportunities are greater than food. The concept of "productivity-profitability" is much more useful strategically, than that of "production". There appear to be good opportunities to intensify the focus.

In the area specific projects, it is difficult to identify a focus. Two areas are involved. A decade-long attention to the Arusha area will be extended by a new project, but the focus is area, not substance. Two projects are being considered for Zanzibar, but it's doubtful that it would be considered a focus.

There is little relationship between the area programs and the national program.

5. The national institutions with which the Mission is working do (repeat do) reach the villages. The A.I.D. image in this regard is clearly inaccurate.

a. The National Milling Corporation (Agricultural Marketing Project) buys grain from the villages and last year reportedly put Sh560 million into farmers' hands through these purchases, plus Sh40 million to the villages for their services in assembling the product.

b. The Tanzania Rural Development Bank (Agricultural Credit Project) has loans outstanding to more than 800 villages, and in this year in new loans will provide Sh170 million to 500 villages. At year's end more than 1100 villages will have loans outstanding.

c. The Ministry of Agriculture Agricultural Training Institutes (Manpower Development Project) this year will produce some 400 certificate holders to districts and some 100 diploma graduates go to the regions, where they serve villages. In addition about 180 of both go to the Parastatals and Crop Aughorities. Net input is about 80% of that figure because certificate holders return to become diploma students.

d. The Tanzania Livestock Marketing Company (Livestock Marketing Project) maintains some 300 sales facilities, 27 holding grounds, and 4000 kilometers of cattle trek routes and provides services for the sale of some 500,000 head of livestock worth some Sh500 million to farmers.

e. The seed and genetic outputs are more difficult to trace through to the villages and measure. The Seed Multiplication Project was responsible for the production of some 2,000 to 3,000 tons of all seeds in 1977, both Foundation and Certified. The Agricultural Research Project has had specific, if not spectacular, success in improvement of maize, cowpea, and green gram. Tanzania Seed Company is responsible for production and distribution. Unfortunately, I did not see it. It does not enjoy a good reputation. Given the lack of reliability of reports on effectiveness and the performance of some other farm-service parastatals, especially in logistics if not in profitability, I am prepared to believe that seed is getting to the villages to a considerable degree.

6. USAID projects with national institutions have had a significant impact in all cases, with the possible exception of Agricultural Marketing, in which the one-man input is inadequate. Defects in design clearly limit the effectiveness of the Manpower Development Prfoject and to a lesser extend the Agricultural Research Projects. However, because of the basic Tanzanian structure and the Mission position and performance in agriculture, there are what seem to be excellent opportunities for improvement of the program.

The six national programs currently have 72 Tanzanians in long-term training and 13 in short-term all out of the country. A total of 153 in both categories had returned to Tanzania in October 1978. Almost all were working either in the projects or in activities closely related. The manager of Tanzania Seed Company, for example, was trained in the Seed Multiplication Project.

7. The area specific projects do not present such a clear cut picture. The Masai Range Project has trained about 30 people, almost all of whom are still working in the area. Otherwise the results are not encouraging. The project has no dependable institutional base. It works with one regional government, two district governments, and one national ministry, and perhaps others but has no firm home in either. It has been whipsawed by frequent changes of project managers and chiefs of party as well as by the institutional changes in the Tanzanian experiment, and the lack of an institutional home has prevented adequate defense. Many of its dams have washed out, some of its livestock dips are not working, and contract personnel still have to supervise such routine tasks as pond building, for which local competence could have been expected long ago. A training center is not yet complete, although one course for image purposes has been held. The project is

almost 10 years old.

The Drouth Roads Project is an unknown quantity. The 400 miles of roads open up large areas hitherto isolated. The contractor insists that it will take $1,000 a year per mile to maintain the roads (compared to $7,000 to build). As of October 1978, no maintenance organization was in sight. Nor was it easy to see where the $400,000 a year would come from or to evaluate the consequences if it did not come. Some of the road washed out last year and had to be rebuilt--by the contractor. There is also no way to estimate the increased economic activity that the road will generate. The cattle the Masai transport over it is not likely to pay for it. Nowher in Tanzania do livestock move by track, although that could change.

8. Linkages among USAID projects presents a mixed picture. There is evidence that the Agricultural Research Project and the Seed Multiplication Project are tied together about right. The Research Project apparently is linked fairly well with the Agricultural Credit Project working with the Tanzania Rural Development Bank. The Bank provides credit in king, chiefly inputs. Such program is heavily dependent on adequate technological information. Tanzania has made some costly technological errors in this area in the past, which have been elimiated, but my evidence on this point is not good.

The Livestock Marketing Project is fairly well linked with the Masai Range Project. One of the executives of the Livestock Marketing Company was trained in the Masai Project.

The greatest lack of linkages among USAID projects is between Manpower Development and Agricultural Research, and this reflects exactly the situation in the Tanzanian government. It has led to some significant errors in project selection and design. The Manpower Development project is attempting to assume responsibilities, for example, such as training of extension workers, which could be handled much more effectively through the research axis of the Ministry of Agriculture. Other problems have resulted from this lack of linkage.

9. The farm service Parastatals have a good chance to become viable, they perform a vital role in agricultural development, and the mission is justified in having a significant line of work with them. That judgment flows from these observations. There are also Parastatals organized for large scale production, but my investigation did not include them.

a. The mission experience with Parastatals has in general been good, especially with the Livestock Authority and the Rural Development Bank.

b. Without exception, contract personnel say that their Tanzanian counterparts are capable and want to do the right thing.

c. The Tanzanian budget squeeze is such that the country desperately needs efficient performance in the Parastatal sector. This fact is acknowledged and dealth with specifically on such occasions as the Finance Minister's Budget Address to the Parliament.

d. The Parastatals have pre-empted areas of action essential to agricultural development. They must perform adequately for success in other areas.

10. My findings showed serious problems in the agricultural technology system--research, training, and extension. Paradoxically, this is the area of one of Tanzania's greatest needs at the same time that it is the area in which the United States has one of the strongest capabilities and some of its best development assistance performance.

The problem stems from defects in the institutional structure of the system. These defects were reflected in the design of Mission projects. The Manpower Project has suffered most. It is based on the faulty assumption that a formal training organization could provide adequate training for field extension agents, even though that organization is insulated from the technology generation entity.

Design-wise, the Manpower Development Project is not located in the system to have adequate impact. The Research Project was designed to developed commodity technology as ends rather than means to at least two other ends. Attention to problems of Extension is completely misplaced. Finally, there are few, weak, or no linkages among four entities which should comprise the agricultural technology systems-Research, Training, Extension, and the Agricultural Faculty of the University.

11. The evidence seems to me clear that two Tanzania systems present USAID with its greatest opportunity, and that opportunity is indeed great.

One of these systems is the Agricultural Technology System, Research, Training, and Extension. The other is the Farm Input Supply System. An alternative to input supply system, would be the Agribusiness system, including both marketing and supply. World Bank is negotiating a project with the National Milling Corporation, the sole food grain marketing entity. If that doesn't materialize, the broader system is appropriate. The current project in Livestock Marketing will probably have exploited most of it's potential termination. There is no evidence to suggest this project be terminated before that time.

The Farm Input Supply and Technology Systems are vital to agricultural development, which in turn is vital to Tanzania's general development. USAID has adequate resources to have a real impact on the two systems. There are numerous linkages between the two systems when they function correctly.

I could identify no other opportunity that came close to the opportunities presented by these two systems. They have problems enough to warrant attention, yet enough already done to build on rather rapidly. The United States has genuine and proven expertise in these areas. They present the rare opportunity in which both the probability for success is great and the payoff in case of success is great.

12. The situation with respect to balance of payments is not encouraging. Currently, Tanzania imports more than twice what it exports. However, given the high level of donor activity, the foreign exchange problem is greatly attenuated, and in a sense obscured. Agriculture's role in solving the foreign exchange problem is every bit as significant an issue as is the limitation on agricultural growth resulting from the trade deficit. This vital responsibility of the agricultural sector explains the need stated above to focus on agricultural productivity-profitability and not simply food production.

Tanzania's export mix is fairly well diversified, so the problem of heavy dependence on one or a few commodities is not an urgent one, and the need for diversification does not merit specific attention.

13. There is a severe shortage of public revenue for recurrent expenses. The national tax system seems to be adequately designed and implemented, but local and regional systems to generate public revenue are quite limited.

Most USAID projects aggravate the problem in the short run. Some of these could be expected to help solve the problem, especially in the long run. Parastatals can be used as revenue generators once they become efficient and if the government decides to use them. In the short run USAID programs are at lease helping cut Parastatal losses. The other national programs can help improve the ability to pay taxes, although they do nothing to provide the mechanism. USAID regional and area programs as currently designed have little or no impact on improving ability to generate revenue.

14. The lack of funds for recurrent expenses do constitute a serious inhibitor of agricultural growth. Most immediate is in the research budget. It is simply not in the cards to have adequate agricultural growth without an organization that can generate, text, and adapt technology innovation. All evidence is that Tanzania is underspending in this field. Almost all agencies have inadequate operating expenses.

Whether this can be described as a shortage of funds or as a misallocation of funds is difficult to say. Tanzania is spending rather large amounts of money in agricultural subsidies. Some of these are suspect, although no adequate analysis has been done.

15. Two policy issues have been identified that have implications for agricultural growth.

a. One is the highly visible tendency to subsidize an inefficient agriculture at the expense of actions to make it efficient. This policy is manifest by a steadily rising support price for products, earlier attempts at direct input subsidy (even before inputs were proved technologically) and current attempts at subsidy through the Parastatals. The 1979 support price will be up ten percent. Applied to the 1978 volume, that will constitute an expenditure of about Sh60 million, but 1978 was a bumper year. The government is pressing the bank to reduce interest one percentage point on the production loans. This would amount to about Sh1 million or Sh3 million depending on whether it applies only to new loans or to the total portfolio. The budget message to Parliament for the current year includes Sh142 million subsidy for fertilizer, but how it is to be applied is not clear. Those three items add up to about Sh200 million, and much of it needs to be questioned. At the same time, R and D expenditures for all agriculture were probably about Sh70 million, little more than a third of what appears necessary. R and D is an essential function in improving agriculture's efficiency. This issue needs to be carefully analyzed and thoroughly understood by the Mission and the Government.

My impressions are that the agricultural sector in Tanzania has more power than is commonly recognized, especially the power to form capital. This is to say that much more probably can be expected of the sector than is apparently expected, but to realize the greater expectation it will take some wise investments and action programs. A policy of subsidization, except as a stopgap measure, appears to me to be neither wise nor necessary.

b. The second policy issue does not appear to be as clear cut as the above issue. That is the competition for resources between the Prime Minister's Office, responsible for decentralization and the development of villages, districts, and regions, and the Ministry of Agriculture, responsible for the development of agriculture. Clearly, both ends are needed, so trade-offs are involved. Looking at agricultural growth alone, the competition is harmful. Budgets for agricultural research, for example, have not been raised for at least one year, and none of the new agriculturally trained personnel were assigned to the Ministry in 1978. There will likely be some relaxation in 1979, but the personnel demand backlog is not likely to be worked off soon.

16. Two significant problems in A.I.D. management were identified. One is the lack of logistics support in the Mission. During my visit, it had not a single vehicle in condition to leave the capital. This problem is serious given the intense interest of Tanzania to reach the villages and the Agency's own self-criticism that it was not doing enough to reach the villages. The second significant problem is the inadequate communication between the Mission and its backup group in AID/W. A third problem, the underuse of contract personnel as eyes, ears, and counsel for the Mission, appears to be on the way to being corrected. At least relations between contractors and the Mission are easy, even if the Mission is not yet using them fully and integrating them solidly into a single problem. Language training is now available.

RECOMMENDATION

1. That USAID/T not fear to think big in terms of the potential contribution it can make to Tanzania's development, irregardless of its status as a donor measured in dollars. The nature of Tanzania's most serious limiting factors and the quality of U.S. resources available to the mission offer a good chance that benefits will far exceed costs under adequate program and project design. The program must not be limited to food production but must face agriculture as the country's largest industry, must form realistic expectations of it, and must implement activities that will lead to the realization of those expectations.

2. That the Mission consider its focus as being on "Agricultural Productivity and Profitability." This focus allows all the attention needed on food grains in the short run and thus does not constitute a diffusion. At the same time it signals greater expectation on the part of both the Mission and Tanzania from agriculture, and permits a flexibility in project design that can contribute to the larger end with no significant adverse effect to more restricted ends. There needs to be a steady and sustained rise in productivity that will stabilize food prices and will form capital, some to be transferred out of agriculture. Development requires capital formation, and the leading industry must contribute. Self-sufficiency in food is simply not a worthy goal. It provides neither adequate orientation for Mission efforts, nor adequate Tanzanian expectation of the contribution USAID can make to its development.

3. That the Mission greatly intensify its focus on agricultural productivity and profitability. This will mean more attention to a set of national institutions identified below and virtual abandonment of the area specific projects that tend either to emphasize capital transfer or to emphasize technical assistance at retail where there is little scope left for the multiplier or leverage effect.

Rationale is that Tanzania needs this assistance just as much as or more than it needs area specific assistance. In the area of agricultural productivity the United States has a significant comparative advantage over both other donors and other type projects.

Such tight concentration would greatly simplify mission management and would not be an unreasonable limitation for a "minor" donor.

4. That USAID/T concentrate on two national systems involving various institutions and entities that are linked together in various manners.

One of these systems is the Technology System. It would involve the Manpower Division and the Research Service of the Minister of Agriculture (with a wholesale or center extension function integrated into the Research Service), and the Agricultural Faculty of the University of Dar es Salaam.

The second system is the Farm Input Supply System. An alternative to this system would be the Agribusiness System, which would include product marketing institutions as well as the input supply institutions, depending on World Bank interest in the larger system.

The systemic orientation is significant. The Mission will likely have a budget large enough over the next five to ten years to address these systems effectively as systems. The linkages are such that the performance of any single entity is affected by the performance of other entities, and not just other entities in the same system.

The Mission should expect that within the decade these two systems will be performing well. It is a feasible expectation, and if realized the consequences for Tanzania would be significant.

The total Agribusiness System would include National Milling Corporation; Tanzania Seed Company into which would be integrated the Seed Multiplication project from the Ministry of Agriculture; the Tanzania Rural Development Bank, and the Tanzania Livestock Marketing Company. This complex should have some modification.

One modification is to drop marketing. Work with TLMC can terminate, since TLMC will likely be in fairly good shape at project's end 1981 and most of the project potential will have been achieved. Other marketing work can be left to other donors. A second modification that needs serious consideration is the creation of at least one and perhaps two new farm input and service operations. The Rural Development Bank operates a sizeable farm supply business. All of its agricultural production loans are made in kind. A new Parastatal (Tanzania Farm Supply Company - TAFSCO) would meet a need that is likely to be far beyond that which the Bank can handle in its farm credit program.

The Bank had to go into the business because there was no farm supply entity. Under a Farm Supply type or organization this operation should be much more efficient than under a bank type of organization, and it would provide a mechanism for merchandising the inputs supplied by other farm supply Parastatals, such as Tan Seed and the Fertilizer Company. It would also provide an importing mechanism for the PID under consideration.

TAFSCO could be independent or a Bank subsidiary. Another Bank subsidiary should be considered, one that would facilitate mobilization of savings. This is an essential step in capital formation, i.e., the conversion of savings to an investment fund. Whether the mechanism would be a Savings Bank function or something like a credit union, I don't know. (See Section on Agricultural Credit).

Another consideration for Mission attention is the Fertilizer Company. The 1978-79 budget calls for fertilizer subsidy of SH142 million, whether to farmers or to the Company is not clear. In addition to U.S. expertise in business management, we also have expertise in fertilizer manufacturing technology. Dealing with both the Fertilizer Company and the Research system (in soils and crops technology), USIAD could almost certainly help reduce, if not eliminate this subsidy.

5. That the Mission initiate a dialogue with appropriate Tanzanian officials aimed at two ends.

a. One is to discuss the viability of a program that would concentrate on two systems with the objective of improving agricultural productivity and profitability. This discussion could well explore the possibility of an alternative program opportunity that would have a higher probability of success and a higher payoff if successful.

b. The second objective of the dialogue would be to organize a collaborative Tanzanian-U.S. effort to sharpen up the problem definition, identify points of intervention and develop and analyze alternatives for action.

It needs to be understood by the USAID and the Government that the United States has expertise in problem analysis and program design as well as in project implementation and in technology <u>per se</u>. This expertise can be most useful when mobilized and deployed through some form of two-country collaboration.

In the Technology System, some form of a Joint Tanzanian-U.S. Commission, patterned after the Joint Indo-American Teams used in India, would be an effecgive way to organize the collaboration. It could set up task forces and analytical groups as needed. An important characteristic of such a joint commission is that it have some degree of permanence so that it can monitor activities and help determine corrective action as needed.

U.S. talent in organizing and managing farm input supply comapanies is ample. It is not as readily mobilized as is the talent for the Technology System. Or perhaps we have had less experience with it.

6. That as soon as this joint problem solving process initiated, or agreed to, the Mission then initiate efforts to acquire additional funding for the "enrichment" of the total program. Such joint action is virtually certain to develop a program worthy of additional investment.

7. Here are listed some alternative ways to generate the enrichment funds.

a. Simply buy local currency with dollars. This is the simplest method and would be the one most favored by Tanzania. However, the Agency may have to "Buy American" even if on our domestic scene there are few restrictions on imported goods. Even with buying shillings, U.S. exporters would get some of the business.

Another set of alternatives consists of means to substitute other commodities for the PL 480 food commodities imported into Tanzania and used the last few years to generate enrichment funds.

b. Provide the component of the farm supplies imported by the Rural Development Bank that can be supplied from the United States. Funds would be generated as the Bank paid shillings for the imports. This component may not be large enough.

c. Follow the alternative "b" but allow the bank to import more than its credit needs and encourage it to sell on the market outside the credit program. Or allow the Tanzania Farmers Association to important with the dollars. TFA is one of the few private cooperatives still in exist once. However, it tends to serve larger farmers.

d. Create the Tanzania Farm Supply Company and import through it. Volume would be adequate. Some encouragement could be made to the formation of the company by allowing a lag in payment or fund generation. This is my favorite alternative, if it can be organized fairly quickly.

e. Import tractor equipment to supply what some observers claim is a need for this line of import. If this is done some long range planning and bidding should be contemplated, aiming at equipment standardization to facilitate spare part supply and maintenance.

f. Tanzania is getting to be quite a collector of inoperable farm machinery. Much of it could be rehabilitated at much lower cost than importation of new equipment. Spare parts would represent an import possibility, but it would take a special project to run it and owing to the difficulty of establishing ownership it may not be a good generator of national funds. This rehabilitation exercise may be a useful activity for the Tanzania Farm Supply Company or other entity under a separate Mission project.

g. Transportation is a major problem in the country. Importation of trucks to be sold to private truckers could generate currency. However, there are few U.S. trucks in the country now, and this would introduce a further complexity in the truck maintenance-spare part problem. However, this may offer a U.S. truck company the opportunity to develop an export market, if the demand seemed substantial. There should be some long range planning and bidding on this option also seeking standardization to facilitate maintenance and spare part supply.

Still a third set of alternatives needs to be considered. That is the importation of products that can be used directly for enrichment of the USAID program without going through the local currency generation process.

h. One is the importation of vehicles to be used by the Agencies with which USAID works. The USAID could organize regional transportation pools for general use, although that could easily be found to be unworkable. This alternative could be worked in such a way as to generate local funds. For example, the vehicles could be sold to appropriate Tanzania personnel with the understanding that they would pay for them from mileage charges paid by their agencies. Repayment, however, could easily become a problem.

This list of alternatives has little more value than to be suggestive. My analysis produces neither specific commodities nor very useful criteria for commodity selection, other than the obvious. The Mission is in better position to make commodity decisions in consultation with Tanzanians and to adjust decisions as needed than are outsiders. Nor are there any logical criteria that would indicate the quantity of funds to be generated that is superior to mission judgment.

8. My recommendation is that the Mission have the responsibility to decide the use of the locally generated funds. Below, in discussing one alternative for addressing the Input Supply System, one opportunity will be identified. However, discretion in the use of these funds would be a h ighly useful Mission management device. My analysis shows no guidelines superior to mission judgment, although in its wisdom the Mission may call for analytical help. Responsibility, however, should rest with the Mission.

9. Another recommendation is that the Mission consider its efforts toward improvement of the Parastatals to be an investment, and on this rationale justify the paying of salaries of certain managers as a means to stabilize management during a period in which the Parastatals were getting firmly established as viable enter rises. Such strategy would involve the creation of an elite management cadre consisting of selected individuals who would be given adequate management training (perhaps through seminars and other activities in country) and complete technical support. This cadre would consist of three to five (or some logical number) of persons per entity in the USAID program.

In general they would likely be executives, but there may be some management technicians, such as financial control specialists or accountants, who would also be necessary. Such a cadre would be in such high demand that stabilizing them in the companies USAID is interested in would be a problem. Perhaps an offer by USAID to provide funds for their salaries in addition to their training would encourage the government to leave them in place for the "investment" period of institutional development. This does not imply a level of remuneration outside the Tanzanian scale, however that may be developed. At the end of a specific period, perhaps five years, other managers could replace the elite in a company that was running well, and members of the cadre could be used by Tanzania to attack other serious management problems.

The United States has ample expertise in this area. Much of it is the large cooperatives who deal in all phases of agribusiness. Whether ACDI is the proper agent to mobilize this talent, I do not know. But such can be determined.

This talent can be mobilized to help determine what sort of program is needed and how to plan it. Short term consultation could be particularly useful in this endeavor, and many retired executives, who can be useful in this format, can be mobilized through the Executive Service Corps.

10. The program concentration recommended here emphasizes technical assistance over capital assistance. This usually implies a heavy input of U.S. manpower. The mission is not enthusiastic about increasing the manpower input, and some country officials are not. However, some country officials would like more.

My recommendation is that the Mission look at ways to make more efficient use of manpower. Opportunities will increase as more and more Tanzanians are trained. One means is the use of what could be called <u>recurrent TDY</u>. In this style, a relatively small, carefully selected force in residence has call on a rather large body of short-time talent. Some of the short-time talent is on an arrangement in which a person commits himself for a period of several years to serve two to four months in country in two or more separate trips. This can economize on manpower. For some types of expertise, effectiveness of this type service would be equal to resident services. In research it would work less well in the early stages but could be used increasingly as Tanzania experience developed.

11. The Mission should take advantage of concentration on the two "systems" to improve its efficiency in the use of manpower. Work in each system could be performed as a single project by one contractor or possibly consortium on contractors. Other economies need to be sought.

12. My recommendation is that the Mission be extremely cautious in area specific high investment agricultural development projects. My judgment is that the Zanzibar Rice Project should be abandoned. A greater contribution to rice production can be made through the technology system with the same amount of resources and with more assurance of success. Success in the technology system will make area specific investment type programs unnecessary. Stated another way, extending the technology system to Zanzibar will yield more for Zanzibar with less risk than will direct investment. The Zanzibar Tsetse Fly projected appears justified on the rationale of a one-time investment and very low maintenance cost.

13. The Mission needs to take one immediate action on the technology system. World Bank is sponsoring a conference in January 1979 on research. The Mission should attempt to join that leadership effort as equal partner with World Bank and to the extend feasible signal its interest in the technology system and work with the Bank and Tanzania so that the "research" conference does not impede a strategy of addressing the total technology system.

14. My recommendation is that the Mission and AID/W spend no effort on the issue of Diversification.

15. In all its activities, the Mission should recognize that the most promising contribution it can make to both public revenue generation and export earning is to help increase agricultural productivity and profitability, i.e., the ability to pay taxes and to export. It can help channel that contribution specifically to the revenue-export ends by its work with Parastatals. The chances for contribution over time are significant, and should begin even in the short run.

16. A.I.D. needs to take specific steps to tighten up the A.I.D. system itself. AID/W backup staff needs to be much more familiar with the Tanzania situation and program. Real effort needs to be expended so that AID/W and USAID/T work together as a single system. In the other direction USAID/T needs to persist in its initiative in building its contractors more effectively into the system. By the nature of their work and its location contractors can serve as eyes and ears of the Mission. Because of their program experience, their technical background, and often their length of service in the country, contractors can provide insight, judgment, and technical counsel useful to the Mission in a variety of ways. The Mission needs to utilize this resource.

Finally, in strengthening the A.I.D. system, AID/W needs to support the Mission in its efforts to improve its logistics capability, especially transportation.

PROGRAM ANALYSIS

(Observation and Comment)

Categorization

The Mission currently has 19 projects in agriculture and rural development, counting both active and contemplated. They can be placed in two categories. The Mission has made one categorization. My observations lead me to suggest an alternative. This section explains these two different classifications. In later sections, each project is discussed.

Here are the projects, both active and contemplated. Contractors are indicated for active projects. For some of the others, the project paper has been approved, and for some the project identification document is just being prepared.

1. Agricultural Manpower:	University of West Virginia and North Carolina A&T University and the Manpower Development Division, Ministry of Agriculture
2. Farmer Training:	University of West Virginia and the Manpower Development Division, Ministry of Agriculture
3. Agricultural Credit:	Agricultural Cooperative Development International and the Tanzania Rural Development Bank
4. Agricultural Research:	International Institute of Tropical Agriculture and the Crop Development Division, Ministry of Agriculture
5. Foundation Seed Farms:	Experience Incorporated and the Crops Development Division, Ministry of Agriculture
6. Agricultural Education and Extension:	Contractor to be selected, and the Faculty of Agriculture, University of Dar es Salaam
7. Rural Development Training:	Contractor to be selected, and the Ministry of Manpower Development
8. Arusha Planning and Village Development:	Contractor to be selected, and the Arusha Regional Government and the Prime Minister's Office

9. Agricultural Marketing and Distribution:	Agricultural Cooperative Development International and the National Milling Corporation
10. Livestock Marketing:	Texas A&M University and the Tanzania Livestock Marketing Corporation of the Livestock Development Authority
11. Masai Range:	Near East Foundation and various entities in Arusha Region
12. Drouth Roads:	Near East Foundation and the Prime Minister's Officer and Ministry of Public Works
13. Tsetse Fly, Zanzibar:	Contractor to be selected and the Ministries of Agriculture, Tanzania and Zanzibar
14. Zanzibar Rice:	Contractor to be selected and the Zanzibar Ministry of Agriculture
15. Dairy Production:	Heifer International and the Ministry of Agriculture
16. Dairy Training:	Winrock and the Ministry of of Agriculture
17. Stable Fly, Zanzibar:	U.S. Department of Agriculture and Zanzibar Ministry of Agriculture
18. Village Energy:	Contractor uncertain and Ministry of Finance and the National Science Research Council
19. Bootstrap:	Contractor uncertain and Ministry of Education

The Mission has divided its agricultural-rural development projects into "Food and Nutrition" Core and "Plus" Program Components. This reflects its orientation to food production. My study indicates that the "food" orientation does not provide ample scope for the USAID/T program, either in terms of what Tanzania needs or in terms of what the USAID can reasonably be expected to provide. My preference is for an orientation that could be called "Agricultural Productivity and Profitability." The projects in that category are also national in scope and aim at increasing the capability of national institutions. They are interrelated and are having a substantial impact all the way

to the village level. They could very well be used strategically as a program focus, since they aim at problems and functions essential for Tanzania's development. Relevant as the projects are, however, there is need and opportunity for a considerable improvement in this focus.

Here are the two categorizations:

Mission: Food and Nutrition

1. Agricultural Manpower
2. Farmer Training
3. Agricultural Credit
4. Agricultural Research
5. Foundation Seed Farms
6. Agricultural Education and Extension
7. Rural Development Training
8. Arusha Planning and Village Development

Alternative: National Agricultural Productivity and Profitability

1. Agricultural Manpower
2. Farmer Training
3. Agricultural Credit
4. Agricultural Research
5. Foundation Seed Farms
6. Agricultural Education and Extension
7. Rural Development Training
8. Agricultural Marketing and Distribution
9. Livestock Marketing

Mission: "Plus" Program Components

1. Agricultural Marketing and Distribution
2. Livestock Marketing
3. Masai Range
4. Drouth Roads
5. Tsetse Fly, Zanzibar
6. Zanzibar Rice
7. Dairy Production
8. Dairy Training
9. Stable Fly, Zanzibar
10. Village Energy
11. Bootstrap

Alternative: Regional and Limited Scope

1. Arusha Planning and Village Development
2. Masai Range
3. Drouth Roads
4. Tsetse Fly, Zanzibar
5. Zanzibar Rice
6. Dairy Production
7. Dairy Training
8. Stable Fly, Zanzibar
9. Village Energy
10. Bootstrap

The projects in "Regional and Limited Scope" category are limited either to a geographic area or are to specific subject matter. There is a heavier emphasis in this category on capital transfer and a lesser interest in institution building than in the "Agricultural Productivity and Profitability" category. In general the potential impact of these projects is reduced by their being located either at a relatively great distance from the center of the system or in a relatively small system. This character tends to be inherent in the nature of the project and can be corrected only with difficulty by design if at all. Being close to the action, they sometimes seem to have greater impact than national programs, but the appearance can be misleading.

Inter-project linkage in the program varies widely. One fact is significant, however. I was not able to uncover evidence that the area specific projects significantly facilitated efforts of the national institutions in reaching the villages.

The Mission also considers it has a Health Core set of projects. Center piece of this core is a project in Maternal and Child Health with Loma Linda University and the Ministry of Health. It is helping develop a system of training centers that provide the workers for the Ministry's Rural Health Centers. The project contributes to the physical development of the training facilities and trains the teaching personnel for the centers. More than 1,000 have been trained. Since my assignment was specific to agriculture and rural development, little more attention will be given to this line of work.

Two major area-specific projects are now active, both in Arusha Region--the Masai Livestock Project and the Drouth Roads Project. Both are implemented by the Near East Foundation and work in the Masai area which makes up the districts of Monduli and Kiteto. A third project, approved but not contracted, will work in the other three districts of Arusha Region--Hanang, Mbule, and Arumera, all agricultural areas. The first two are scheduled to terminate in 1979. The new project may do some work in the Masai are, which is predominately livestock but it is not likely to be extensive.

Drouth Roads Project

The drouth roads project will terminate in June of 1979 when the contractor will have completed about 400 miles of roads, 200 miles southeast and 200 northwest of Arusha, crossing almost the entire Masai area. Cost of the road including six inches of aggregate will be about $7,000 per mile, not counting certain structures Tanzania is supposed to build. The contractor maintains that it will cost about $1,000 per mile, including two inches of aggregate, per year to maintain the roads. Given the torrential nature of much of the scant rain that falls, there will be a maintenance problem. The contractor figure sounds high. If it is accurate, this means that every dollar USAID spends on these kinds of roads imposes a 14 cent levy per year. Even if the figure is discounted 50%, the drouth road is going to cost Tanzania $200,000 a year. One's first thought is to establish a toll system, but judging from traffic volume on similar roads, it would likely require a hefty toll to produce $1,000 a mile, or even half that. Contractor Chief, Alex Powers, says there is no visible organization for the maintenance. He thinks there will be a surplus in his budget that could set up maintenance camps and provide some training. This was an emergency project and contains no funds for training or provisions for capacity building.

Maintenance may not be the problem I fear. Two of USAID's contractors report that the dirt portion of routes to their sites are now in the best shape they've been since the reporters have been in Tanzania. In both cases, little more than grading seemed to be required. Also, Tanzania has some sort of policy that limits its input of operational and maintenance funds before a project is complete.

Masai Range-Livestock

The Masai Project, almost ten years old and due to terminate soon, has been a disappointment. It has been shipsawed by a number of factors against which the project design provided little defense. Some of these factors have been turnovers in both USAID managers and chiefs of party, vacancies in these posts, a multitude of entities to which it links, lack of counterparts, and institutional experimentation on the part of Tanzania. It works or has worked with the Ministry of Water, the Ministry of Agriculture, the Regional Office, various subdividions of the governments of two districts, and possibly others. At times in its career, the Project has worked through three organizational forms in reaching its clientele-- the range commission, the ranching association, and now the village, a concept apparently less developed among the pastoral Masai than in other areas.

It has built dams; drilled wells; installed village water systems; established dipping stations (89), bull farms, and veterinary centers (21); worked on range management plant; and trained 30 people in the United States. A training center is still not complete, even though one symbolic course has been held. The project claims some role in the organization of a Livestock Development Division in the Ministry of Agriculture.

Major disappointment is that there is no organizational capacity to operate the facilities constructed or to continue its work. Some water structures have had to be redone because of faulty design and workmanship, and even routine processes still require personal supervision of expatriate personnel. So far no range management plan has been implemented. Most of the personnel trained are working in some capacity in the Masai area but apparently are not well integrated into a system. A further aspect of the problem is that no one Tanzania institution can identify with the project.

Arusha Regional Planning and Village Development

The new project, "Regional Planning and Village Development", will build some 400 miles of roads but half of that will be labor intensive, and it may be possible to maintain that half by community labor. What this project contemplates in regard to building a maintenance capacity, I don't know.

The regional project is aimed more heavily at capital transfer than the building of capacity. It will also construct village water systems and other facilities. It includes a single agriculturalist. Incidental

comments in the PP are made that he will lean on the national programs, but with this size input it is clear that the project is not aimed at pulling national progrtams into the region on any important scale. Further, indications are that none of the national project personnel had any involvement in design of the regional project. The project will provide relatively little training.

Zanzibar

A Tsetse Fly project is being designed for Zanzibar, based on the Central A.I.D.'s R&D on male sterility project sited in Tanga. Technical experts claim that the technology exists for eliminating Tsetse on Zanzibar. It appears that this project could cost up to $4.5 million. That seems high for the 20,000 cattle and 10,000 goats on the island. However, if the fly is eradicated that number may raise substantially, and if eradication is permanent, it could be worth the one-time cost. Pemba is free of the fly, and expectations are that the cost of maintaing Zanzibar fly-free would be low. The stable fly project is testing a new and simple technology for control of that insect.

The Mission is contemplating a rice production project on Zanaibar, involving a heavy capital input and perhaps sophisticated management. There is considerable hesitancy regarding the project, but analysis is continuing. The performance of this king of project in developmental experience has not been good. If the Mission program were to give adequate attention to the agricultural technology system, the need for this king of project would likely be greatly reduced. This king of investment decision almost always has to be made inadequate information, and the risk rises with the investment level. It will be difficult to make this project successful.

Livestock Marketing

A Livestock Marketing Project is in its fourth year of what is designed to be a seven-year effort. Implemented by Texas A&M, it is with the Parastatal Livestock Development Authority (LIDA). LIDA has several subsidiaries. The project works with three of them--the National Dairy Company, the National Ranching Company, and the Tanzania Livestock Marketing Company. Most significant work is with the TLMC. The project provides a financial management adviser to the company at the national level and has positions approved for marketing management personnel in three of the five zonal offices of TLMC. The Dodoma position is filled.

The TLMC does some buying of livestock on its own account. At one time it was intended that TLMC would be the monopoly buyer of livestock just as NMC is of grains. A considerable shift from that position to one of providing market facilities and services has taken place. In the Dodoma zone, however, TLVC takes ownership of about 20 percent of the cattle sold.

The TLMC has an important impact. It is estimated that some 500,000 head of livestock (slaughter cattle, feeder cattle, sheep and goats) are sold through its 300 sales facilities in a year. This generates about $H500 million income for farmers and about $H10 million for TLMC. In some facilities, sales are held each week, in some perhaps only three a year.

In addition to the sales and sales facilities, TLMC is responsible for trek routes and holding areas. Some 4,000 kilometers of trek routes and 27 holding grounds either exist or are programmed. Almost no livestock move by truck. It walks to market or to the railroad, even though the trek may be along a road. TAMU also provides a water development specialist and a range specialist, who services are also available to the Dairy and Ranching Companies.

The major contribution of the USAID project has been in providing information and analysis that will help the TLMC do a better job of management. TAMU personnel think there is a reasonable chance that TLMC can become a viable, self-sustaining institution, if not a highly profitable one.

Major problem is keeping track of costs. TLMC loses money in its buying and selling transactions, frequently only because it doesn't know its costs. In Dodoma, where these costs are now being calculated, the zonal manager has had considerable success negotiating more favorable selling prices simply by the fact that he knew his costs. Even after keeping account of costs, there come the problems of cost control. Some sales have far too little volume to cover costs from the $H20 fee charged per head. Whether some sales and even sales facilities can be eliminated is not clear.

TAMU has likely had an important input into the policy shift away from monopoly buying of cattle. It has also been involved in developing a series of quarterly meetings which apparently amount to almost a "management seminar." For example, the five zonal managers meet as a group to prepare budgets. This gave the Dodoma manager and his TAMU counterpart an opportunity to demonstrate the value of the management information and analysis and puts pressure on other managers to improve their performance.

Another significant contribution is in training. It is estimated that some 50 Tanzanians will have studies for the B.S. or M.S. by project and in addition to some 15 who will have received short-term training out of the country. Some 150 have attended in country seminars.

This project will likely have made a significant contribution upon its termination. However, the mission would be justified in not continuing work in this area, on the rationale that the potential for this line of work will largely have been achieved.

Agricultural Marketing

The Mission has a small project with the National Milling Corporation, the largest agricultural Parastatal. From all of reports it is a remarkable operation, both in what it does and what it does not do.

In its most visible activity, NMC purchased 448,000 tons of food commodities in 1977-78 at the village. It is in transportation, processing, sotrage, and in some cases distribution. It runs grain mills, a bakery, canneries, a winery, and a baby food factory. It is also the instrument that the government uses to implement its food policies which consist of fixed prices for both consumer and producer and food for everyone.

One has to admire the logistics task it reportedly organizes and manages. It buys in thousands of villages if not all. It pays cash for the produce, some $H560 million in 1977-78, plus $H40 million to villages for their services in assembling. Further, NMC is charged with distributing food to deficit areas, including PL 480 commodities, and reports are it does this job well. It has 24 regional branches of its own, 4 in Dar, and also distributes through the Regional Trading Companies, a type of enterprise of which I know nothing.

The mission effort into NMC has been variable. At present, under a contract with Agricultural Cooperative Development International, one technical assistance person is provided, to help establish a planning department. The project has not had significant impact, in part because the input was simply too meagre for the task.

The Mission now intends to terminate its effort. It is my judgment that this decision may need to be reconsidered for these reasons.

1. A planning director has been names, secunded to NMC by the government for the purpose of developing the planning office. Staff is slowly being assembled. He has stated his need for more technical assistance, but it's difficult to know whether such statement was more than courtesy.

2. Improving NMC's management, given its size, could represent a substantial savings for the government. In addition to the conventional means to improved management, there is one major need.

That need is to devise a way to separate the food policy accounting from the commercial or market accounts of NMC. Without arguing the merits of a specific food policy, it is clear that separate accounting is needed to provide an efficiency measure for the company and to provide the government improved information on the cost of its food policy.

3. As long a socialism is the mode of the country, NMC is virtually the agricultural market. Being associated with that enterprise, given its importance to agricultural development, would be worth a mission investment. Additionally, an involvement in food policy accounting could become an important component in the total agricultural program.

In October 1978, World Bank was discussing a project with NMC. If that develops the need for USAID assistance diminishes maybe even disappears, depending on the nature of the World Bank activity.

Agricultural Credit

The agricultural credit project is with the Tanzania Rural Development Bank and is implemented by a two-man team from Agricultural Cooperative Development International. It provides a $3 million grant to the bank's loan operations plus technical assistance. In my judgment, the technical assistance is far more significant than the capital input. So far all ACDI personnel have had experience in the U.S. Farm Credit Association system. They work in credit operations and financial management. The bank has weathered many storms since its creation in 1971 after three predecessor banks had failed. One of these storms was the sudden, government-decreed liquidation of the Cooperative Unions. The Bank had roughly $H120 million loans to the Unions which were its principle clientele. It has recuperated about $H45 million.

Succeeding the Cooperative Union as a major bank client for a couple of years were the District Development Corporations, another experimental institution in the drive for decentralization. The DDC's, however, did not work out and were also heavy losers for the bank.

Another tempest for the Bank was the National Maize Program stimulated by World Bank, which came in with a huge input program, very heavily subsidized, against which the Bank had to compete while holding to "sound banking principles." NMP in effect produced two storms. After its troubles as a national program it was terminated and much of its responsibilities were placed on the Bank.

Villages are emerging now as the Bank's major client. Estimates are that new 1978 loans will reach about 500 villages. Some loans are for more than one year, and the 78 activity will bring to over 1100 the number of villages with an outstanding loan. Projections are that the Bank will be serving half the 8500 villages by 1984.

The upshot is that not only has the Bank been battered, but it operates in a climate of failing banks which made little effort to collect loans. Borrowers have been conditioned to thing of loans as grants.

In face of the Bank's troubles an Act of Parliament has specified that the Bank is to be a viable operation. It is still afloat, thanks in large part to donor grants. It appears to be making a valiant effort to become viable. It has obstacles. One of them is a money market pinch. Although most of its funds come from donors either as soft loans (from IDA) or grants (much from the Nordic Group) the Treasury charges the Bank about three percent for its money. On the other hand, the government is reducing the interest the Bank can charge from 8 1/2 to 7 1/2%. That leaves a margin of 4 1/2 points, about what it would take to break even if collection was at 100 percent.

Collections are now below 80 percent. It is difficult to know. Experience with villages as major borrowers is too limited to provide an indication of their repayment performance. The Bank also makes loans to Parastatals and Crop Authorities. Some of them are slow in paying off the loans. Fortunately, the Bank has the authority to deny loans to borrowers with poor repayment records.

The ACDI project is working with the bank on financial management and basic banking systems dealing with loan appraisals, supervision, and collection. Bank management appears determined to improve its loan collection, a vital step in achieving viability.

One of the means taken to this end is a series of seminars with regional and party officials aimed at getting them to understand credit and banking. This was followed by a series of seminars with village leaders and secretaries aimed at the same purpose but also explaining recordskeeping and other procedures. Radio is also being used to help people understand the system. Not only is the Bank faced with the tremendous job of making a Bank work in the above circumstances, it also provides a farm supply service, since all of its loans are made in kind and at the village. A full ten-months ahead of the planting season, the Bank has to start taking input orders. Between then and the cropping season it has to assemble orders, procure inputs and deliver them to the village. It has funds tied up six months ahead of the time the farmer can be expected to start paying interest. Further, the Bank has a commitment to the village, in the form of inputs on hand, before the Bank knows how the village will persorm in the payment of the previous loan. So there is at lease a one-year lag before sanctions can be imposed on slow-paying borrowers/villages.

This input procurement and distribution function is the second major logistic operation that Tanzania is able to organize and manage reportedly quite well, and with which the Mission has some association.

While current production inputs are its main business the Bank is also in the business of maize mills and village-scale storage. Maize mills deserve special recognition. They save village women hours of hard work each week and demand for them far exceeds supply.

Villages must put up 25 percent of the cost of the mill as a down payment. In addition they must have a building that meets TDRB specifications, costing about SH5,000 plus labor. The mill costs about SH25,000, so for a SH19,000 loan, they put up about SH11,000 in cash. The mill is a money maker. Women line up, at the mill, put their grain on the scales, pay the weighmaster, and move on to the grinder. The mission should get some credit in WID for this operation. The mills are diesel powered, and in cases a 55-gallon drum can get them through the rainy season.

My judgment, which at best is tentative, is that the TRDB can become viable. There is evidence that current management with TA support from USAID is making progress. If the Bank can maintain its current authority to refuse loans to non-paying borrowers, half the battle would seem to be won. The other half of the battle would be the authority to raise interest rates. This, of course, is a government decision and it could be made at whatever instant the government wants. On a technical basis, interest rates should make little difference to the borrower up to ten percent or so. Thr rationale is simple. Unless the borrower can make 30 to 50 percent on borrowed money in a normal year, he should not borrow. If the productivity of capital is not in this range; then some other factor is limiting. If the borrower makes 30 percent on his loan, i.e., 22 points more than interest he pays, one point amounts to less than 5 percent of his margin. If the Bank is operating on a 5 point margin, that one percent is a 20 percent increase in its margin. The Bank needs to know the average return borrowers are making on loans. Information and analysis may provide it the argument it needs to get a change in interest rate policy.

The Mission needs to seriously consider additional activity in relation to its work with the TRDB.

One of the alternatives that should be considered in the creation of A farm Supply Parastatal, either as a subsidiary of TRDB or an indepe dent company.

Here are reasons for my coming to this possibility. The Bank, under a bank type of organization, has shown a remarkable capacity to procure, assemble, and distribute inputs on time and to remote places. It would seem to me that under a farm supply type of organization, it could do as well or better.

One reason the Bank went into the Farm Supply business was that there was no adequate system of farm supply. That clearly indicates a shortage of farm inputs in the country. However, under the present arrangement, only borrowers have access to these farm supply services. There is bound to be an effective demand for farm supply beyond the Bank's capacity to make loans. In the case of maize mills, for example, only Bank borrowers have a chance to buy one.

On the matter of Demand, one report I heard almost continuously was that one disincentive to improved production and even sale of excell livestock was that there was so little to buy in the villages. On the matter of buying power, Bob McCandliss reports that the manager of the Phillips plant in Arusha told him that the growing domestic demand for its products almost immediately took up the slack in Demand caused by loss of the Kenya market several years ago, and that in 1978 the income of the plant is more than double what it was with the Kenya market.

It should be of little import to the decision, but the existance of such a Farm Supply Parastatal would make it easy for the Mission to supply commodities to substitute for PL 480 commodities in generation of local currencies.

Mission assistance in this effort could be made in manner and on a scale that would be completely reasonable.

Another activity that merits consideration is the creation of an institutional mechanism that would facilitate savings in the villages and the subsequent accumulation of capital. Creation of a Savings Bank service in TRDB is one alternative. Another alternative is the organization of credit unions have had a significant success in Latin America, and CUNA of the United States has been successful in helping implant the idea in LDCs. It is a fact that the mobilization of savings is significant in providing capital for development. If a savings mechanism were available it would provide one alternative to the livestock herd as a place to keep capital.

Reports are that the Nordic Group is working in this area, but I know nothing of its efforts.

Seed Multiplication Project

The Mission has a good position in the Tanzania seed system and apparently a good opportunity to improve that position.

Implemented by Experience, Inc., the project is charged with developing four foundation seed farms. Foundation seed is that which is provided to those who produce seed on a scale large enough to satisfy farmer demand. Seed of new varieties come from plant breeders, and the foundation seed producer is a link in the seed chain.

Two farms are in operation, one close to Kilosa and the other near Arusha. They are equipped for both production and processing. Two other farms one at Iringa and the other near Dar, are being developed. The project provides an ex-patriate manager and mechanic at each farm in the early development and trains people to replace ex-patriates.

The foundation farms provide seed to the Tanzania Seed Company which is responsible for the next phase of multiplication, which it does by contract. The Company contracts with the Project to produce commercial seed. Foundation Seed Farms have more capacity than is needed for foundation seed.

Here are production figures on the two farms in production. The Msimba Farm (near Kilosa) showed this production of unprocessed seed for 1977: Maize, 1450 tons; sorghum, 550 tons; soybeans, 17 tons; rice, 74 tons; finger millett, 3 tons; bulrush millett, 30 tons; and sesame, 1 ton.

The Arusher Farm reported these figures: Maize, 250 tons; wheat, 592 tons; beans, 61 tons; soybean, 1 ton; and other crops, 20 tons.

A.I.D. conventional wisdom has it that Tan Seed is not doing its job well. My inclination is to discount this bit of wisdom. Seed is not just piling up.

The company is a wholesaler, not a retailer. It contracts for production, cleans, bags, and stores. It sells through Regional and District agricultural offices and possibly through the input program of the Rural DEvelopment Bank.

The Project has considerable multiplier effect, due largely to the nature of seed as a carrier to technology. It has limited leverage on the system, however. Indeed its success or performance depends on the quality of germ plasm that feeds into it and, to the performance of the distribution system into which it feeds.

This seems to be a successful project. It is visible, well known, and apparently valued by the Ministry of Agriculture. It is attached to the Crop Development Division of the Ministry with the status of a "Project," a rather ill-defined status. The "Project" does represent a valuable resource to Tazanian agriculture.

However, it seems to me that it may be in an unreasonably vulnerable position, both from its own nature and from external factors.

A seed production enterprise is a sophisticated undertaking. It deals with biological processes that themselves set some rigid standards for operations. It also deals with sophisticated machinery and is exposed to risks of breakdown in the spare parts supply line as well as to human error. All of this requires a sustained and high level of management. To date, experience with personnel development has been encouraging, but any number of things can happen to cause the loss of management and other needed expertise.

External factors over which the Project has no control, such as inadequate performance of the Seed Company or the plant breeders, also threaten its position.

A promising course of action would be to seek an integration of the foundation seed farms with the seed production, processing, and distribution operation. This idea is being discussed, either by integrating the two entities inside the Ministry of Agriculture of by integrating the foundation seed project into the Parastatal Tanzania Seed Company. Mission experience with Parastatals seem to favor the Parastatal alternative over the Ministry alternative. The general manager of Tan Seed was trained in the U.S. by the USAID project.

This integration would make most sense to the mission if it followed up with a technical assistance project to the combined effort. Such an offer of assistance may encourage the integration. If it came about, the mission would then have a participation in the complete seed system. Such an action does not need to be justified on the basis of simply protecting a mission investment, although that would certainly be one output. Justification stems more, however, from the vital role that a good seed supply plays in a nation's agriculture, and from exploiting and opportunity that has resulted from a mission investment.

Seed is an excellent "extension agent." It embodies in itself improved technology. Often it is a technology that is very easy for the producer to apply, and for this reason good seed is frequently valued highly by the peasant farmer. There is specific evidence that this is the case in parts of Tanzania. In cases where it is not, the appreciation for good seed is relatively easy to build. This incidentally, is an important consideration in developing research strategy.

However, seed can embody technology other than that constituted by improved germ plasm. There are several ways in which seed can be cleaned up to improve yields enough to attract the farmer's attention, i.e., in the neighborhood of 25 percent. One clean up is to produce seed that is clean of certain seed-borne diseases. I don't know the importance of this problem in Tanzania.

Another clean up is the simple removal of cracked and defective kernels. Taking out the cracked and undersized kernels from farm-saved seed can reduce the amount he has to plant by 40 percent. The savings can be used for animal feed if not human food, and the good quality kernels will produce a better crop with the same germ plasm.

Training for Rural Development

Design of this project had just begun during my visit. It can support both the national project cluster and the area-specific project cluster. Interest originated in the Ministry of Agriculture which still wants, it is reported, the equivalent of 300 participant training scholarships. The number has been increased from pressure from other entities, and Min Ag seems to be worrying about protecting its expected 300. On the other hand the Rural Development people in the Prime Minister's office ask why a project with "Rural Development" in the title is being oriented to the Ministry of Agriculture. This widespread interest

indicates that Tanzania places a high value both on training and on U.S. training. Mission response seems to be appropriate.

The Mission has been liberal in its support of training, and that component alone is likely to have a significant impact. The table below reports the persons already returned from training under each national project and those in training. It does not report the considerable number the projects still intend to send for training, 39 in Agricultural Research, for example.

Project	Currently in Training			Returned
	Long Term	Short Term	Total	as of 10/1/78
Seed Multiplication	5	3	8	21
Agricultural Marketing	3	-	3	32
Agricultural Research	19	10	29	34
Agricultural Credit	6	-	6	14
Manpower Development	28	-	28	34
Livestock Marketing	10		10	28
Total	71	13	84	153

The Masai Livestock project has send more than 30.

This project needs to address the high cost in both money and time of the degree pattern of participant training. There is very much right with it, including the discipline imposed. However, there needs to be alternatives, both to the degree and in ways to achieve the degree.

The most urgent technical needs of teachers and researchers in the Tanzania system can be met by instruction short of the degree. There needs to be a means to provide technical upgrading quackly. Since the chance for a degree is a powerful incentive, these alternative means could be strcutured so that the degree is possible and even probable. It would be facilitated if the Morogoro faculty were a graduate faculty, a possibility suggested in this paper. Incidentally, although there is no inherent reason why a degree attained in phases is inferior, there will be complaints of a "watered down degree." The "watered down degree" concept is a straw man. Much of the U.S. agricultural progress was made by holders of degrees which today would be considered "watered down."

Another issue the project needs to address is that of the proliferation of training facilities of all kinds in Tanzania. There could be problems of quality, of oversaturation in some area, and of neglect of others. I can't suggest how to address this problem, but it may well represent a more useful survey than a manpower survey. It is hard

for me to have confidence in the methodology of a manpower survey in a relatively unstructured, dynamic situation such as Tanzania now represents. Further, training must aim at producing a versatile human resource that can adapt to needs as they arise rather than a specialized human resource that has only one or a very few deployment possibilities.

Research, Teaching, Extension--The Technology System

The Tanzania situation with regard to technology and manpower supply is a paradox.

It is "obvious" that Tanzania is not well served by its research, teaching, and extension entities, perhaps more obvious than real. Extension is said to be weak. It has few if any linkages with research and teaching. The wrong entity is being looked upon to correct its problems using a strategy that has little chance to work. Teaching and research, although located together physically, are almost perfectly insulated against influences of each other.

Yet, almost all of the components are in place, and for the most part they are viable, probably stronger than is realized. The pieces can be put together in a system similar to the U.S. Land-Grant College system that would offer promise of performance of similar quality. There are indications that the task of putting them together may be accomplished relatively easily and quickly.

The Mission is involved in research, one project, and in manpower development, two projects with another contemplated, but not in extension. The research project is implemented by the International Institute of Tropical Agriculture (IITA) with the Ministry of Agriculture Crops Development Division. The division is responsible for all crops. The USAID project works only with food crops. Manpower development, implemented by the University of West Virginia and North Carolina A&T, is with the Manpower Development Division of the Ministry. These contractors are also implementing the farmer training project. Contemplated is a project with the Faculty of Agriculture at Morogoro in extension and education. The research project works with 11 MinAg research institutes, (MARI) the manpower project works in two of the 12 MinAg training institutes (MATI), and the farmer training project works with four other MATI's.

In most cases MARI's and MATI's are located at the same sites, but a few MATI's are located at livestock research stations. There is little interaction between MATI's and MARI's, however, and various informants indicated that MATI graduates are not up to date on technology. There has been little interaction between USAID research and training projects, and they have had little or no impact in changing the situation.

Research

This research project calls for nine technicians, three working on maize, two on grain legumes and four in sorghum and millet. Prime contractor is IITA, but CIMMYT provides maize personnel, and ICRISAT sorghum and millet. The project has never been fully staffed, and some staff have been transferred from the project after a single two-year tour. An economist position has only recently been funded and is yet to be filled.

Accomplishments in maize have been reasonable. Tanzania had good germ plasm from earlier efforts, both hybrids and composites. The project released one improved composite that went well for a year and stimulated a lot of demand but fell victim to disease the next, along with other varieties. A Kenya hybrid was tested and found to outyield other popular hybrids. The project worked with the Tanganyika Cattle Company to solve some of the seed production problems. Cost of seed production, however, is higher than for other hybrids and Tan Seed will not distribute it.

Progess is reported on upgrading a Tanzania composite in its resistance to some diseases, but as with all varieties it is still susceptible to maize streak, the most serious disease.

The corn people have spent most of their time on breeding but have helped identify areas in which fertilizer use was justified. The lack of this identification led to some costly mistakes in the National Maize Program. The agronomic work has also resulted in a maize production handbook.

The legume component, late getting started, also works in agronomy and plant breeding. Breeding efforts are aimed largely at achieving disease resistance. It started with an emphasis on cowpeas but lately has added the common bean. This program had developed considerable data on planting dates, seeding rates, fertilizer and insecticide needs, and on benefits from different cropping systems. The data has not been analyzed and distributed and the agronomist has been transferred.

Considerable progress has been made on cowpeas especially in disease resistance, and prospects are that a superior variety can be released in 1979. On the way to this achievement, one selection proved to be outstanding in yield and adaptability, but was found susceptible to a disease which had never been described. Subsequent breeding has added considerable disease resistance. They have done some genetic studies in the inheritance of disease resistance in coepeas.

A green gram variety selected from material introduced into the country was released in 1978, but I don't know how important this crop is to Tanzania.

Soybeans have been tested, and one variety from the United States, Bossier, has shown wide adaptability, good yields, and early maturity. Soybeans here face their ever present problem, however, of seed viability. Soybeans are not an important crop in Tanzania, but the need for oil crops is great and when it does well soybean is one of the best.

Common bean work is just getting underway. Germ plasm from CIAT in Colombia has been assembled and is being tested.

There is some on-farm research, but it is not implemented in collaboration with district or regional agriculturists. It apparently has produced considerable data but has done little if anything to develop linkages with field extension personnel and the farmers.

Impact of this project on farmers has been through other national organizations Tan Seed and the Bank. Ironically, reports are that its impact on the nearly MATI's has not been great, and there is no center extension service to link the R and D work with the extensive field extension set up.

It appears that Tanzania is underinvesting in research by a considerable margin. An analysis in September 1978, by R.S.M. Nelson of the World Bank Regional Mission in Eastern Africa, "Background Paper for Tanzania Agricultural Research Workshop," contains this statement: "An extremely approximate estimate...is that the annual total budget (capital and recurrent) for...(crops and livestock) research in 1975-76 was about $H70 million. If it is correct then expenditure on research is about 0.7% of the value of agricultural production (assumed to be $H10,000 million). The average percentage for Africa is 1.2% and this compares to 2.7% for North America."

The $H70 million is made up of 40 for ARI's; 4 for Uyole; 9 for TPRI; 2 for Faculty; 10 for Livestock; 3 for Regions and others; and 1 for Headquarters. Figures supplied by Paul Duffield of the IITA contract are consistent. He reports the total food and export crops research budget of the Crop Development Division, exclusive of salaries, is about $H23 million. It is estimated that NMC buys only about 1.6 percent of total production of food crops. On the basis of that estimate, the value of food crops would be somewhat over $H3 billion. At that figure, if Tanzania were spending $H30 million on food crops research, which would include salaries, it would be about one percent of the value of agricultural product. It is safe to consider that up to 2 percent is reasonable and does not in any way risk over investment.

The two percent figure is based on an analysis by James K. Boyce and Robert Evenson, National and International Agricultural Research and Extension Programs, published by the Agricultural Development Council. The analysis further shows that many LDCs underspend the developed countries in research and overspend the developed countries in extension.

The conclusion implied in that "underspend-overspend" statement, is that relatively more money should be spent in research and relatively less in extension in most LDCs. Such a conclusion is supported by another line of analysis, reported thoroughly in Resource Allocation and Productivity in National and International Agricultural Research. This book, also published by ADC, is available in the Mission Program Office. It is the proceedings of a conference held in 1975 and is edited by Tom Arndt, Dana Dalrymple, and Vernon Ruttan. Tables on pages 4 and 5, summarizing results indicate annual internal rates of return on research expenditures often exceed 50 percent. Nelson in the same paper cited above, using the case of cotton in Tanzania indicates that an annual research expenditure of SH4 million could easily be having a SH60 million impact on the cotton industry. Nelson feels his calculation may be conservative.

The Research Service has had trouble the last year in recruiting new workers. Most graduates have been assigned to the Regions as the government attempts to make decentralization function. Budget allocation for research is also stable.

There are several issues in the research program.

1. One is the mix of breeding and agronomic practices. Both are important. It is likely that both the Ministry of Agriculture and cointractors will incline toward plant breeding. Ideally, both should be done. However, a heavy bias toward breeding would not be in error and may be better than attempts to do both. Seed is an excellent extension agent in that it can embody superior technology. Tanzania has good prospects for an acceptable seed delivery system, while the information delivery mechanism is dormant. Finally, the peasant either already values good seed highly or he can be easily convinced to.

2. A second issue involves divergence of interests between contractors and Tanzania. Tanzania is interested in hybrid maize as well as composite varieties. CIMMYT is anti-hybrid and its enthusiasm for composites is causing problems with the Ministry which is reducing CIMMYT's effectiveness. A similar problem has arisen with IITA, which is responsible for development of the cowpea. The common bean if of more interest to Tanzania. IITA is spending some effort on the bean, but its heart is in cowpea work.

3. A third issue may be only another manifestation of the above issue, but it is exacerbated by design of the project. There is a subtle but important maladjustment in the project. Tanzania needs help in building its general capacity in research. Current contractors are not in the capacity building business. Each is charged to work with a specific crop. Thus crop work for the contractors becomes an end in itself. The slight shift needed is to consider the substantive, technical work as a means to the end of capacity building. Such an orientation would reduce not at all the output of substantive, technical work, but it would increase project impact on the total research system, at no

extra cost. This added influence is much to USAID's interest.

Fortunately, there may be a relatively easy solution to the problems flagged in points 2 and 3 above. The International Agricultural Development Service (IADS), which has the same parentage as the international centers, is charged with building national research capacity using the competence of the International Centers as appropriate. It would be an alternative contractor, if there is a feasible opportunity to change contractors.

Teaching and Training

The Mission has two projects in this area and another one contemplated. The Manpower Development project places five professors at Ikiriguru, a MATI that offers the diploma in agriculture; three professors at Mpwapwa, where the diploma in livestock if offered; plus a chief of party in Dar es Salaam. The eight MATI-sited personnel are largely engaged in teaching. The party chief has some general responsibilities, largely concerned with curriculum, but his time is devoted mainly to administration.

The Farmer Training Project is an added responsibility. It has one person stationed at each of four widely scattered MATI's. His responsibility is to understand the farmers, to feed that understanding back into the MATI and to use these contacts in the teaching program. This project is just now getting started.

The Agricultural Extension and Education project is to be with the Faculty of Agriculture of the University of Dar es Salaam and aims to develop a new curriculum in the Faculty in Extension and Education.

My reaction to the teaching-training situation is mixed, both with respect to the Tanzania system and to the USAID participation in it. There is evidence that the system itself is doing better than is commonly recognized. Yet all is not right. The USAID collaboration seems to me to be based on the wrong diagnosis of a problem.

Teaching in the Tanzanian system is almost certain to be better than is commonly recognized. If it is not, certainly the potential is there and the expectation should be there. It is my hypothesis that it would not be a serious distortion of the system, or of academic standards, to regard the diploma as a B.S. Rationale for this assertion is simple. The diploma holder has spent 15 years in formal instruction, only one year short of the 16 years U.S. students spend for the B.S. Given the relative complexity of technology in Tanzania, compared to that U.S. students must dominate, this one year difference seems hardly significant. Further, the diploma holder has had several years of professional work which the U.S. student has not had. Today many U.S. agricultural students do not have a farm background.

One either has to accept this "upgrading" of the diploma holder, or he has to conclude that 15 years of instruction that still leaves the student three years short of a B.S. is inefficient. My contention is that this "upgrading" is feasible, and indeed is essential in the interests of Tanzania's agricultural development.

Psychologically, this move could be important. If a person is regarded as a professional (i.e. B.S.) rather than a sub-professional and is expected to perform at the professional level, it could very well make a difference.

If this "upgrading" could be accomplished, then the role of the Morogoro faculty could also be "upgraded." It could become a graduate school and would be a facility useful in correcting deficiencies elsewhere in the technology and manpower system.

Incidentally, in "upgrading" the Diploma to a B.S. it is not necessary to expect every MATI-MARI to teach at that level. Diplomas are awareded at only six of the MATI's. In an upgrading exercise it may be feasible to reduce this number.

There are problems. The high ratio of teachers to students in the system is a cause for concern. At Mpwapwa there are 30 teachers for about 164 students. In the entire system, some 360 teachers, counting expatriates, teach fewer than 1800 students. Ratios in this range could indicate a curriculum too filled with classes--that is it uses a teacher as a substitute for a textbook. If so, this is a double loss--inefficient use of manpower, plus inferior education, since students should learn to learn, not simply receive knowledge from an instructor. However, the ratio could indicate diseconomies of scale of operations, in that the same number of teachers could handle two or three times the students currently enrolled. Under either hypothesis the problem needs attention.

Another situation needing attention is the role of the contractor team in the MATI system. Team members are overwhelmingly occupied with teaching, simply the supply of manpower in substituting for a Tanzanian professor. The team has little chance to make a significant contribution to the entire system.

My third concern is that all projects in this area seem to be based largely on the need to do something about extension, on the apparent assumptions (1) that improving the quality of the formalized in-residence training the graduates receive is the best way to improve estension's performance and (2) that one problem with extension is its lack of skill in methods. My analysis is that the formalized training of agents is adequate or better, but that the real problem lies in the lack of in-service training which must be provided by the technology generating entity, i.e. research, not by the teaching entity.

My fourth concern is that research does not feed adequately into teaching. More than once I heard the complaint that MATI graduates are not up-to-date on technology even upon graduation. I could discover very little sharing of personnel and not much sharing of facilities, in spite of the two services being located next to each other.

Extension

Finally, my hypothesis is that extension is not in as bad shape as the conventional wisdom has it. I personally have talked to B.S. holders in district and regional offices. Educated Tanzanians do accept assignments in remote non-electrified posts. The MATI system is putting some 500 graduates into the system each year, an average of five per district. And with people organized into villages it is reasonable to expect that extension work can be more efficient than without them. In addition some 180 of the MATI graduates went to work for the Crop Authorities, which have some sort of organization that facilitates extension.

Here are some figures given to me by the Deputy Regional Agricultural Development Officer of the Arusha Region, Steve Neema. There are 457 registered villages in the Region, 90 wards, and five districts. Currently there are 57 certificate holders working under his supervision in agriculture, 12 of whom have diplomas and 2 with a B.S., not counting livestock personnel. Before the government decided in 1977 to appoint professional village managers, the Regional Agricultural staff had about 260 personnel. Of these about 140 have ended up as village managers. The others were called to national posts, returned to school for the diploma and otherwise lost. It is interesting to contemplate the impact on extension when a trained agriculturist is names as manager of an agricultural village which is looked upon as the retail outlet for a variety of agricultural services, including extension. My own hypothesis is that the basic field structure of the delivery system is probably in relatively good shape.

Here again is a case of a remarkable resemblance to the U.S. System, if one looks to function and not to form. Tanzania Regions relate to the nation roughly as U.S. states, and districts resemble counties. In that view, one can hypothesize that the "county" or "field" extension staff is fairly well in place.

Technical support from the experiment stations to the field staff is lacking. While the lack is almost fatal, corection is not difficult. Currently, there is talk in the Ministry of Agriculture about pulling extension back out of the regions and nationalizing it. In my judgment that would be a mistake. There is evidence that the regions are beginning to function. What is needed on the national level is a "center" extension function that provides full technical support to the "field" extension system. This should not be a separate entity, but should be integral to the research service. This Center Extension

Service would have three functions.

1. One is to develop technical literature in the form needed by Field extension workers and to develop a program of continuous in-service training for Field personnel. In no case, can a field worker be expected to perform adequately for very long from his in-school training. In virtually every case, low performance of the field worker is explained by this lack of support from the system not his inadequate training or personal deficiency. In Iowa, in spite of all the literature available and the communications media at his disposal, the field extension worker receives almost one month of in-service training a year. The Tanzania goal could be half that, perhaps one week to start.

2. The second function of the Center Extension is the identification of problems and help with the specification of research activities. One of the most serious problems that extension faces in all LDCs is that it is charged with extending technology that is not relevant to the farmer. Main explanation for lack of relevance is that researchers simply do not know and understand the farmer. Nelson, in the paper cited above, has the following to say on this problem. "The author submits, therefore, first that the view that there is little useful information that we can offer the farmer to improve his welfare is broadly speaking true, second that perhaps as much as 50% of the cro recommendations currently being offered to the farmer by the extension service in Tanzania would be detrimental to his welfare and to the economy of Tanzania were he foolish enough to accept them."

I cannot comment on the validity of that statement for Tanzania, but is accurately represents the situation in LDCs I do know. It needs to be clear, however, that the responsibility of faulty recommendations is not to be borne by the field extension. Nor is it often explained by incompetent researchers. It is explained by defects in the system that do not provide for adequate decision on problems to address.

Science is not the business of the research service. Its business is technology and the generation of improved technology for its clients. The research service must be the R and D entity of the farm firm. Thus, it first has to learn how to determine the farm firm's needs. So-called Center Extension can help greatly in performing that function and thus must literally be an integral component of the research service, not something separate. This key element is missing in Tanzania.

3. The third function of Center Extension, perhaps more specific to Tanzania, would be to work with Regional personnel in helping thrm design and carry out simple experimentation relevant to localized problems. There is no reason that Regional personnel cannot be expected to some experimentation. These experiments do not need to meet high standards of precision in control and measuremencs. Farmers all over the world "experiment". Much agronomic work can be done by the Center Extension personnel working with Field Extension personnel. This activity

helps greatly in tying the research system into the field extension system, both in extending technology, training field workers and in identifying problems.

Currently this linkage is virtually lacking. A regional agricultural man told me that two things happen now in field experimenting. One is that experiment stations send instructions for on-farm testing to regional offices but there is no personal contact, and field personnel can neither understand the instructions nor see their relevance. The other thing is that research workers, under pressure to do on-farm research, come into an area do their thing and leave with almost no contact with the regional personnel. Research workers report the same lack of collaboration.

Extension agents are expected to perform as technicians, and most of the criticisms of their performance is based on technical criteria. However, they are not now in a technical system, but rather in an administrative system. The linkages described above would effectively link them into the technology system.

Discussion

The agricultural technology and manpower establishment in Tanzania is unusual. It is not a system, yet most of the pieces for a system exist, remaining only to be put together. The teaching system is turning out sub-professionals perhaps nearing professional quality. Adequate manpower is devoted to teaching, and probably enough other resources. Probably enough manpower is devoted to extension, especially since there is so little to extend, although it's not easy to determine the impact of assigning agricultural and livestock personnel as village managers.

All signs point to research as the problem area. Research is inherently weak, and it has virtually no effective linkage with either teaching or extension. It's only channel to the farmer is through the seed system. Yet it is the function of research, as the technology generating entity, to dynamize the system. There is no role for extension if agricultural technology is static. Fathers can teach sons. If technology is dynamic, then extension must be geared in to the source of the dynamics. The same is true of teaching, although teachers have more ways to protect themselves against stagnation than extension does. Research can either import technology, test it and select for Tanzania; or it can go a step further and make some adaptations; or it can go to the point of developing its own innovations. Technology must meet criteria established by its own clients, however, not external criteria. One of the most useful is that the technology will enable clients to use more of a relatively abundant and cheap resource to substitute for a relatively scarce and expensive one. That can only be done from a thorough knowledge of the client, his production system, and his technology. The research entity must have linkages all the way to the farmer.

Best way to link teaching and research is to merge the two entities. This will serve not only the linkage purpose (i.e. dynamize the teaching), it will also allow more efficient use of personnel and other resources and facilitate the upgrading of Diploma graduates.

Merging is feasible. Merging does not imply that every person does both teaching and research. There will be some personnel who do not have aptitude for both. However, many do have to be involved in both, or neither the linkage nor the efficiency will be accomplished.

Until a few years ago research and teaching were in the same organization. My evidence suggests, however, the two may not have been integrated.

The best way to link research to Field extension is by adding the Center extension function to the Research Service, as explained in the Extension discussion above. This is the most urgent need of the system, and can be justified to receive first attention. This need is vital.

Next most urgent is the merging of research and teaching. If an organizational merger is not feasible, then some sort of collaboration can be worked out so that these two entities can provide mutual support and can share persons, laboratories, libraries, and technology. This need is critical.

Another vital need is to increase support to research. Additional allocations to the sector should go first to research (if it establishes the Center Extension function) until the current imbalance in funding is corrected.

The nearness of the diploma to a B.S., the existence of a respectable field extension force, and the relatively simple ways to link both teaching and extension to research as a dynamizing element lead me to see the Tanzania system as similar to the U.S. system

The MATIS, MARI's, and Field Extension can be put together to form a complete technology manpower system, highly functional to the country's agricultural development. However, Tanzania has another important resource that can fit into the system with major benefits. That is the Faculty of Agriculture of Morogoro, which I did not study. It's likely role is that of a graduate study-research entity. It doesn't seem reasonable that it should be assigned tasks parallel to those assigned to MATI's and MARI's, but perhaps supporting roles, such as graduate study, high level in-service training for researchers and teachers, library and laboratory services, and more sophisticated research that MARI's need but cannot accomplish with their resources.

Although in the Tanzanian system livestock and crops are managed separately, my intent in this section is to consider livestock as a part of agriculture. To the extent this is not workable, the two should receive similar handling.

World Bank and Research

The World Bank is taking the lead on holding a research conference in early 1979. The paper by Nelson, cited several times above, was prepared as background for that conference. There are many things good about the plans for that conference among the material I have seen. There are two problems, however.

1. One problem is that it tends to treat research along, and does not view adequately the total technology generation and manpower system. The extension function is acknowledged, but more in the conventional "field" extension sense than in the "Center" extension sense which I maintain is integral to research. Working to integrate these three closely related functions would do no violence to the concept of the conference. Indeed, Nelson himself calls attention to the inadequate recommendations of Extension. That could be largely corrected by the Center Extension function.

2. The second problem I find with the conference plan is the expectation, in a sense a Bank requirement, that research priorities and strategies be set by the researchers, perhaps at the conference. This is a task that researchers cannot do alone. As pointed out above in my discussion and implied in the Nelson conclusion of the wrong recommendations, establishing research priorities needs to involve users--both the farmer and the extension personnel close to the farmer. Further, priorities and needs change or knowledge of needs change in a dynamic situation. Thus a Research Service must have the inherent, internal capacility to continually assess needs and adjust priorities useful to the farming industry. It cannot function effectively from given priorities. It should be clear that if the research situation is static, then no progress is being made in agriculture.

Course of Action for the Mission

The Research-Training-Extension function is so important to agricultural development that the Mission needs to give it careful but prompt attention. An analysis such as I have been able to do should be considered at this stage as no more than a set of hypotheses.

Fortunately, we have some precedents for accomplishing this analysis and currently a good mechanism for a more thorough study.

The precedent was set in India, more than 20 years ago, when A.I.D. and the government decided to try to re-organize that country's Research, Teaching and Extension system. This was the Joint Indo-American Team. It was formed by an equal number of Indians and Americans. They made a thorough study of both the indian system and the U.S. system, and then designed a course of action for India. The Team was reconstituted from time to time for the purpose of monitoring progress of the system and helping design corrective action when experience showed that previous decisions had been faulty. If the "joint team"

were modified, perhaps called a "joint commission", and continued in existence indefinitely to monitor and correct, it could serve Tanzania well. This Joint Commission concept could help deploy the Agency's Title XII resource. Here is one way it could happen.

The Commission could be made up of eight people, four from each country. The U.S. representatives should include one from IADS (to represent the International Agricultural Research Center System); one from the University of West Virginia (because of its stake and experience in Tanzania) and two other representing appropriate groups in the United States. My own judgment is that one should be from the Consortium for International Development, a group of Universities in the semi-arid area of the U.S. This group has had extensive experience in international development. In addition, they face domestically adverse conditions similar to those of Tanzania. I simply have no idea of who from Tanzania should be included on the Commission. Care should be exercised in the selection.

The Commission could work in this way.

1. It would meet first in Tanzania and as a commission (not the U.S. delegation alone) visit MATI's, MARI's, and regions and districts. This would give the U.S. people a chance to start learning the Tanzanian system. In this phase, the commission should test the hypotheses presented in this report as well as ideas of others and of its own.

2. Next the team would study the U.S., for the specific purpose of testing elements of the U.S. system and experience against Tanzania conditions and needs. It is essential that the Commission work as a commission and not simply provide a study tour for the Tanzania delegation. The task is to develop a Tanzanian system, using the U.S. experience only to the extent it can be adapted and made relevant to Tanzania.

3. The Commission would reconvene in Tanzania and draw up plans for the development of the Tanzania system, having a reasonable expectation of the resources likely to be available.

4. Finally, the Commission would meet once a year in Tanzania to monitor the development of the system and design (not simply suggest) appropriate actions. The Commission should aim to stay in existence for about a decade, and an attempt should be made to maintain stability in the membership. Earlier, I tried to make the case that the Tanzania system is similar to the U.S. Land-Grant system, in function if not in form. The U.S. has successfully merged research and teaching and has developed an effective Center extension.

There could be some complementary activities.

1. If the U.S. system appears to be significantly relevant to the Tanzania condition, then all Tanzanians on participant study in the U.S. should have a three-week seminar on the specific operation of the U.S. system. The commission should be involved in planning this seminar. (It is surprising how often participants do not understand the working of the total system in which they are educated.)

2. If the U.S. experience is relevant, then tours of one to three months should be arranged for 30 to 50 executives of the Tanzanian system who will not be involved in participant training. This exercise should be organized into small groups, each accompanied by one or two Americans who understand the entire system. (Not all do.)

3. Any participant training the Mission contemplates can very well continue. There is no reason to interrupt this process. It could even be expanded. Needs are such that this would be a safe investment.

4. The mission can also safely expand its efforts in research, especially plant breeding. There is almost no chance that the commission will make a finding that such would not be necessary. Investments in plant breeding is a relatively safe investments. It is always needed. So far plant breeding achievements have been a major source of growth in agriculture productivity. The Green Revolution was seed-based. (IR-8 rice and the Mex-Pak wheats.)

5. No new initiatives should be taken in the teaching-training area until the Commission completes its design.

6. The Mission could initiate the process of getting a project approved for developing the Center Extension function. If the Commission finds that my enthusiasm for such a function is misplaced, the project can be aborted. On the other hand, if it is found to be needed, important time would have been saved.

In the short run, the Mission needs to have some communication with the Government on its interest in the Technology System, for whatever help it will be to them in dealing with the World Bank in the research conference.

NOTES

Public Revenue Generation

The problem of public revenue generation is a serious one in Tanzania. Recurrent expenditures in 1977-78, at $H5.6 billion was just a bit over twice the 1973-74 level. These figures are reported in a speech to Parliament by the Minister of Finance and Planning in which he presented the budget. He reported that "recurrent revenue" for the

1976-77 year was $H5.3 billion.

The Minister warned Parliament that it was impossible to impose additional taxation, implying that taxation is about at its limit, at the national level. Other data support this, including the government's own efforts to improve collection. The Minister further stated that every method must be explored to try to reduce recurrent expenditures, especially those caused by misappropriation, easte, and carelessness. Statements such as this, including an item on piece rates to incentivate higher worker productivity, persuade me that Mission attention to improved management of the Parastatals has a reasonable chance of success.

Another budget message item supports the impression that the government is serious. The government is often behind on spending its investment budget--largely because of recurrent budget problems. Further, many completed investment projects have been delayed getting into operation because of recurrent budget problems. Of this the Minister states, "We may lose credibility with donor institutions...this will be a dangerous impression to create for it may be difficult to convince them later when we have the capacity for implementation."

In the same message the Minister announced a government decision that every registered village would have a village manager, and indicated that this would be another claim on the budget. He did not state a level. Public employees have been transferred to these jobs in certain cases with no additional drain on the budget. How extensive that has been, I do not know.

In the same message, the Minister also stated "...in response to the Party's directive that village governments should have their own source of revenue, an investigation to that effect is being carried out and it is envisaged that a solution will be found soon." This statement along with the naming of village managers is worthy of attention of the Mission. The Mission may be able to address the revenue problem to some extent through its Arusha Village Development Project and the Training for Rural Development Project. The government has given many indications that it will press on the villages to help pay costs, such as it did in school construction. The villages have some capacity to pay and could do more. It is very common to hear that the peasant is not strongly motivated by money because there is "so little to buy." Perhaps schools, water, roads, and health facilities would be something to buy.

Faced with the need for additional revenue, the government still is relaxing some taxes when they (1) either seem to be causing real equity problems as were some income tax provisions or (2) when they seem to be impeding economic activity. He proposed, for example, a reduction in the import tax on 4-wheel drive vehicles citing their utility.

Currently there is little doubt that the Mission program is pressing on the recurrent budget, and the pressure is steadily increasing.

The health project is financed almost completely by USAID in the beginning with a phased turnover to the Ministry of Health budget. The Ministry has problems of maintenance and of assuming its obligations on schedule.

Road building imposes a seven cent per year levy on some entity for every one dollar USAID spends, not counting amortization. How this compares with the productivity of the road, we do not know. No special source of that funding has been identified.

The Regional Planning Village Development project will generate pressure on the recurrent budget. However, it may be in position to help generate revenue to offset the pressure. It would seem entirely reasonable that public revenue generation be a component of a project with that title.

Shortage of public revenue has its greatest impact on limiting agricultural growth through its limitation of funds for research. Other public agencies are being handicapped by lack of operating expenses, but not to the extent research is. However, it is difficult to say that this is a problem of lack of public revenue. At the same time that research has been underfunded, resources have been used for what are likely to be less productive purposes, such as subsidization of agriculture, perhaps even extension and research, and of subsidization of inefficiency in the Parastatals. To some extent, a shortage of public revenue could be compensated by a better allocation of resources.

Of the six projects of national scope, two have no funding source other than public revenue. Their impact has to be through increasing agricultural productivity. This will (1) enable farmers to pay more local tax and (2) provide price stability and incentive to agriculture at lower costs. This capacity could also be important in exports. A tax on export commodities has been used effectively in other countries to raise funds. Tanzania itself generates some part of the Commodity Authority budgets in this manner. However, it is a dangerous tax. Collection is so easy that it can be overdone, with the tax becoming an important disincentive. The Mission program should be expected to make some contribution to export, if not directly, then through the freeing of resources from food production which can be converted to expoet production.

The Parastatals offer interesting revenue generating possibilities. If the government is serious, they can be made efficient. The government may not allow them to become highly profitable..although it has pressed on the peasant in other contexts. However, if they can breakdown, i.e. attain real non-profit status, at least the drain on the Treasure will

be cut down. Services rendered would further increase the producer's capacity to pay taxes.

The Parastatals perhaps can be used in another manner to generate revenue. That is through services performed by the villages. NMC now pays the villages $H40 million for product assembly. The government has instructed the Development Bank to reduce its interest rates one percent. The Bank has countered with a proposal to leave thr rates the same, but that the Bank would pay the villages one percent for collecting loans. In this way the government can almost have its cake and eat it too. In a sense the Bank loses one percent of revenue, it would be receiving a real service. The government's profit policy with regard to parastatals will determine revenue generating power. By manipulating profit policy the government can use the Parastatals as a defacto taxing instrument.

The Government of Tanzania may have a greater capacity to raise local revenue in the future than is now evident. In part this hypotheses is suggested from the colonial experience which left villagers somewhat conditioned to pay taxes. Some observers of the Tanzanian experiment suggest that government strategy takes this conditioning into account, both with respect to what it can do and with what it must do to gain villager attention and even respect. While the government has put pressure on villagers to contribute rather heavily to building schools, there are signs that it respects the power of the peasant and currently is avoiding putting too much pressure too quickly on him.

Any important determinant of local revenue generation is ability to pay. The mission has a good chance to help develop a steadily improving ability to pay taxes. It may have an opportunity to help develop taxing mechanisms and improve tax administration at the local level.

Foreign Exchange, Diversification, and Mission Role

These two topics are treated together, because diversification arises essentially in the foreign trade context, being of little import in the domestic sector.

Our assignment was to examine the foreign exchange limit on agricultural growth. There is little total foreign exchange problem, largely because of Tanzania's favored nation status among donors. However a foreign exchange shortage could well be limiting agricultural growth. Measuring the limitation is beyond this analysis, but two limitations could well be significant. There is a shortage of transportation, both to move commodities and to facilitate mobility of officials and technicians. There is almost sure to be a need for further inputs, including tractors and equipment, but this picture is clouded by the heavy donor activity. Certainly, if Tanzania had to depend only on trade, there would be severe limitation. Imports are almost twice export.

On the other hand, the agricultural sector has a great impact on the trade balance, providing more than half the country's exports. Some put the figure as high as 80 percent. A 1972 USDA analysis put it at 75 percent. Agricultural growth is limiting export growth.

There does not seem to be an unreasonable concentration of exports in any one commodity. The 76 percent of total exports USDA reported from agriculture in 1972 included 18 percent from coffee and 16 percent from cotton, about half of agriculture's share. Cloves (from Pemba) accounted for 11 percent. Sisal, (7) chashews, (8) tea, (2.5) pyrethrum, (1) tobacco, (3) and other (9.8) made up the rest.

From this export distribution and the pattern of food crop production, it is my conclusion that diversification does not warrant consideration.

Of considerably more significance is the impact the Mission program could have on export earnings. With some highly feasible adjustments in the program pointed out elsewhere in this report this potential is great. There are two major ways to expand exports. One is export promotion, i.e. improved merchandising of the country's commodities. The second is increased productivity so that there are commodities to sell. Little can be done about World Demand except to improve ability to compete in a buyer's market, a function of productivity.

The Mission is in a favorable position to make a significant contribution to productivity. The Mission program is concentrated in food commodity production, where it will likely stay, and currently there is a glut in food production. This raises several issues.

1. One is the possibility of exporting food commodities. Tanzania has not been in this position for some time. Its stocks are such that it will either export at whatever price it can get (which may be below costs) or it will incur the risk of substantial losses.

The memory of two drouths back to back while the country was disorganized in the villagization process is fresh enough that officials are not eager to sell food. It is "loaning" some to Mozambique, through the World Food Program. If the pressure continues, Tanzania will export.

2. This raises the issue of whether to try to export food or concentrate on export crops. Until costs in the food crop sector can be reduced, food export should be limited to the incidental surpluses.

3. Another issue could easily be of much more moment and could be serious. If the "overproduction" of food grains should continue, the government is almost certain to lose enthusiasm for development in the food sector. The current glut is probably largely due to weather of the last two years, although some non-AID people claim that technology and government policies have had some input. If the USAID programs are successful, however, food production will press on demand sometime in the future.

It is important that the Mission anticipate this pressure and be willing to adjust its strategy and help the government to set its strategy to deal with it. These conditions will be important.

A. For economic development it is essential that there be this press of food production on demand. An essential element of development is that fewer resources are needed for production of the essentials, mainly food, and more resources are available for other items that improve quality of life--housing, education, medical care, and such things: The government must persist in its food crop program, and so must the mission, in order to liberate these resources.

B. As food grain production increases, Tanzania can shift resources to the export crops unless food itself becomes a favorably export item, or to a certain extent it can shift to food commodities with a more elastic demand. Virtually all food grain production resources are easily transferrable--including research, extension, and training. From the country's viewpoint the export crop market demand is elastic. It's own food demand will become increasingly inelastic.

(Incidentally, it is a highly costly endeavor, worldwide for each country to build and maintain its own food reserves, and it is not necessary. However, it is doubtful if this issue could be widely raised at this time.)

Policy Constraints to Agricultural Growth

Probably the most serious policy constraint to agricultural growth is that of subsidizing agriculture instead of investing in agriculture, which is to say subsidizing an inefficient agriculture rather than working to make it efficient or more productive. Agriculture is the major industry and as such should be expected to provide leadership or motive power to general development. It is very difficult to justify a policy of subsidizing the major industry. Several figures will give an idea of size, The Finance Minister's budget statement called for a SH142 million subsid for fertilizer, about $20 million for one year. That sort of problem should yield to improved agronomic technology, improved manufacturing technology and management. That sort of subsidy would justify a considerable investment if the plant is inherently inefficient. If the fertilizer industry is a subsidy of national pride, it is another matter, and should not be charged to agriculture. Another subsidy item is the increase in price support announced for next year, which is on the order of ten percent. Applied against this year's volume, that will amount to SH60 million, about $8 million. A country needs to expect stable to decreasing costs of production and prices from its agriculture.

The change that is needed is discussed fully in the section on the technology system. That involves a greater investment in research, some modification of the research system, and improvement of the linkages of research with teaching ane extension and eventually to the farmer.

The policy of not allowing the Bank to charge enough interest to make it a viable commercial institution and is also a constraint. Agriculture needs strong service entities--banks, supply systems, and marketing systems--much more than it needs this kind of weak subsidy. The subsidy agriculture can expect from weak enterprises is of little import. If the Bank is lending for agricultural inputs that don't return three to four times the rate of interest, it is making loans that simply are not very good deals. If it is dealing in these kinds of loans, then a few more points on the interest rate will help the Bank become a viable institution much more than it will hurt the borrower.

There are likely to be other defects in policy, but these are the ones that were most noticeable in the analysis I was able to do. It is also likely that some of these will have various manifestations that I did not see.

Prime Minister's Office vs. Ministry of Agriculture

There has been intense competition for resources recently between the Ministry of Agriculture and the PMO (Prime Minister's Office), and the Mission is caught up in it.

As the government strengthens the Regions, trying to make decentralization work, it is assigning most of the new graduates of the MATI's to the regions. Research, in MinAg, for example was assigned no new personnel from the last graduating class, and the outlook is not good for next year. Fund allocation for research is also stable, in spite of rising costs.

In the past, apparently MinAg had better communication with the Mission than the PMO, but evidence now is that the PMO is better connected. It makes its wants known at a higher echelon in Mission hierarchy. This tends to lead the Mission into thinking that what PMO wants is "what Tanzania wants." MinAg is also struggling for resources, and it wants assistance also. There may be no such one thing as "what Tanzania wants."

PMO is responsible for decentralization and is embarked on a program of regional development. ~~I find no ground for criticizing decentralization and is embarked on a program of regional development~~. I find no ground for criticizing decentralization, and to make it work there does need to be regional development. However, PMO's regional development strategy calls for a heavy investment in infrastructure. There is logic in this strategy, but the comparative advantage of USAID resources is more compatible with MinAg objectives than with PMO objectives. This stance does not compare the value of one objective against the other.

My reasoning is this. Agriculture, being Tanzania's primary industry, needs to receive major attention, not simply to produce food, but also to stimulate general development. No donor can match the United States in agricultural capability, and that capability is not limited to technology.

There are clear signs that MinAg recognizes this superiority. Further, the type of assistance most needed, technical assistance for capacity building, is an area in which AID and its U.S. collaborators have had considerable experience. None of the experiences have been outright failures, and many have been important successes--Philippines, Korea, Brazil, and India, only to mention a few of the major countries.

Working with MinAg, the Mission seems to be faced with project opportunity with both a high probability of success and a high payoff if successful.

The situation with respect to area development plans is just the opposite. We have no comparative advantage. These projects are heavily biased to capital transfer, and one donor's capital is the same as another's. Further, there have been some dramatic failures in these kinds of programs and few successes.

Tanzania has been the site of many of these failures. Perhaps the classic is the famous British Groundnut scheme. More recently vitual failures of an array of local integrated development and investment schemes have stimulated World Bank interest in the 1979 research conference.

Books have been written on failures of this kind of project. See Uma Lele, The Design of Rural Development: Lessons from Africa, John Hopkins Press, 1975. In contrast, books on research and technology are more likely to report analyses indicating returns to investment in research of about 50% per year. See Tom Arndt, Dana Dalrymple, and Vernon Ruttan, Resource Allocation and Productivity in National and International Research, University of Minnesota Press, 1977.

Livestock and the Food Grain Trap

Food grains occupy a dominant position in the Mission core program focus, and one alternative is to tighten the focus to give even greater emphasis to food grains.

While this would be sound strategy for 1979 and 80, it must be recognized that it has some fundamental limitations that literally constitute a trap. Curiously, the peril increases as the program succeeds. Limitation of a food grain emphasis is a function of the fact that these commodities are basic to human survival. Thus, a population needs a certain supply simply to survive. On the other hand it cannot consume more than a certain amount. These two levels (survival and satiation) are surprisingly close together, in contrast to the situation with respect to automobiles. This results in a highly inelastic demand that causes a relatively high price variation with a relatively low supply variation. Tanzania is not likely to tolerate any significant shortage of food. It will import, as it did in the drouth. This limits the profitability possibility of food grain production which is serious for small scale production. The current glut of food commodities so close on the heels of the two-year drouth may be a caution signal that food supply will soon press continuously on demand.

It is not reasonable to expect food grains to be a profitable export item. Most are highly adaptable to large-scale mechanized production. It is likely to be true for a long time that U.S. grain can be sold for less than Tanzania grain in most markets of the world even Dar es Salaam. Tanzania may well export no more than incidental surpluses out of its small farm food grain sector.

It is imperative that Tanzania and USAID strategy not get scared off by a food grain glut but that they learn how to deal with. An ample supply of basic food commodities almost has to be assured in order to be able to move on to other developmental problems.

There are many ways to insure the Mission program against the food grain peril. Livestock can be a safety valve for excess grains, and the demand for livestock products is much more elastic than for grains. How to address the livestock situation is not clear. Some probes are being made in dairy production through the Winrock Training Project, the Heifer Project, and the livestock marketing project, also working on beef production.

These probes are with Parastatals that aim at large-scale production. Beef and milk can be produced largely on grass and will not compete with humans for grain. At the same time they won't be effective in the use of excess grain. Pigs and chickens are grain consumers, and there is no mission activity in these commodities.

Small farmer livestock production presents other problems. Addressing the 1001 problems of the traditional livestock sector may be a losing game. Some of these "problems" could well be more symptoms of problems than problems. On every hand the comment is heard that there is nothing to buy in the country. A study commissioned by the Mission and carried out by Alan Jacobs in the Masai area does report less to buy than 20 years ago. Another comment is also heard, that the livestock herd serves as a bank—not only for pastoralists but also for farmers.

It could well be that until the economy provides (a) something to buy and/or (b) an alternative bank or place for money either to safeguard savings or serve as a good investment, the traditional livestock sector may remain intransigient. What this says is that some problems of this sector may tend to disappear as a function of development and may not yield to direct attack. The Garry Thomas study of the Mbule District in Arusha, commissioned by the mission, reports data to substantiate this hypothesis. The Iraq have converted from pastoralists to wheat farmers and herds have been reduced. Farmers were presented with a good investment opportunity as an alternative to the livestock bank. There is no evidence to suggest that the low valuation rural Tanzanians put on money is an uneconomic behavior. The evidence suggests that the utility of money is low.

The shortage of things to buy in the country may be the result of government strategy that is basically wise. Development demands savings, i.e. that you consume less than you produce. However, the strategy could be frustrated by the lack of a mechanism to mobilize and invest savings, which in turn

does not provide any production incentive. The Mission can address both the problems. It can through its technology focus help to create new investment opportunities, or better ones, and through its agribusiness focus it can encourag mechanisms for converting savings into investment.

To sum up, the Mission strategy can safely stay with a food grain crop emphasis for the time being. However, it must anticipate problems to the extent it is successful and keep itself in a position to provide assistance to Tanzania in facilitating the transfer of resources to livestock, and other commodities, to export crops, and eventually out of agriculture. This succession of resource transfers are the milestones of development and can only occur as food grain production becomes steadily more efficient and continually presses on demand.

Villagization and the Tanzania Experiment

There are no ujaama villages in Tanzania.

"Ujaama" is a goal, an aspiration. There are three types of villages--natural villages; developmental villages, organized as a result of government policy; and ujaama villages, those attaining standards set by the idealistic, almost selfless norms of the Tanzania philosophy.

If there has been an analysis of the villagization experience, I did not encounter it. The move was a massive one, and the fact that it was accomplished to the extent it has been is impressive. Some claim that without the Nyrere charisma, the structure would fall apart. Even with that charisma, some force was used to bring it about. How intensive it was, I don't know. We do know that villagization has not proceeded evenly. In some areas--Mt. Kilimanjaro and Mt. Meru, at least--where farms are small, villagization was not required, the rationale being that with the population density there would be no advantage in a village structure. Villagization has moved slowly in the Masai area, probably because it's more difficult to villagize a pastoral, semi-nomadic society than a permanent agriculture. In October 1978 the Prime Minister, who is a Masai, met with the Regional government in Arusha and pressed it to get on with villagization. Schemes have been worked out for it, but they have not been tested in practice. In the agricultural villages, the dominant organization of production is by individual plot, not group production.

The government has had other activities that involved displacement of people. One was in the creation of some large ranches organized as Parastatals. There is some evidence that the displaced people are still resisting this move. These ranches have more fires than normal. Fire is a range management instrument and has to be used in a precise manner. Indiscriminate burning is harmful. There is suspicion that the fires are being set by the displaced persons.

There is evidence that the government will press on the peasant for certain things. There is also evidence that the government will only press so far, indicating either or both a respect for basic human rights or a fear of resistance, political or otherwise.

USAID personnel that I talked to accept the new Tanzania social structure as given and are attempting to work within it. My own impression is that they find more good to it than bad. The villages do seem to be serving their essential purpose which was to facilitate the providing of services. Mission contracts have witnessed much of the experimentation. The Masai project worked in sequence with range commissions, then ranching associations, and now villages. I heard no nostalgia expressed for the defunct organizations. The contractor working with the Rural Development Bank feels the village is going to be more effective as a borrower entity that were the Cooperative Unions or the District Development Corporations, although it has not enough experience to know.

Incidentally, liquidation of the Cooperative Unions is interpreted by some as a sign that the Tanzania government is anti-cooperative. Others argue the opposite. My own inclination is that it has no significance, one way or the other. There are reports that the Cooperative Unions were not well managed and were cooperative more in name than in fact. No matter what the terminology, the villages would seem to be a type of general purpose cooperative.

There is some enterpreneurship in the villages, although I can't characterize it. There are reports of small storekeepers who are expanding into transportation and other services and who are earning well in addition to accumulating wealth. There are reports of rising land values, also, to the benefit of small holders, but I don't understand the tenure mechanism.

USAID contractors seem to have a high regard for their counterparts. They find them not only capable, especially those who have had adequate training, but also candid and open in their relationships and dedicated to doing a good job. This attitude was almost universal. Criticism of the Tanzanian system was almost always in the abstract in nature, and about equal in quantity to the criticism of the AID system. I found this on the part of both AID and contract personnel. Second hand reports are that productivity in the factories is also good. The Phillips Company, for example, reportedly has found labor productivity higher in its Arusha factory than in its plant in Campinas, Brazil.

There are detractors, both internal and external.

Some say that the President is losing contact with his people, that he is not spending the time in the country interacting with the peasant as he formerly did. They blame this on his aspirations to become an African international leader. There is pessimism regarding the small farmer's ability to produce a surplus for the non-farm population. The President is criticized for keeping too much power to himself and moving Ministers and other higher level personnel frequently, allegedly as a means of preventing their own power bases. Some other donor personnel have alleged that there is widespread and serious corruption in the Parastatals. None of my informants reported this problem, or even brought up the subject in connection with Mission-assisted Parastatals.

PERSONS CONTACTED

USAID/Mission: Howard Steverson, Director; Jerome French, Assistant Director; Robert Fulmer, Program Economist; William Faulkner, Robert Gilson, and Blaine Jensen, Program Office; Barry Hill, Bert Behrens, John Anania, Bill Jadwin, Paul Russell, and Gail Pate, Agricultural Development Office; and Juke Harschbarger and Al Henn, Health Office; Bob McCandliss, Arusha Office.

World Bank: Lyle Hanson and Ernie Sprague

TDY Personnel: Tom Ward, AID/DSB/IT; and Janet Poley, USDA

USAID Contractors: Experience, Inc. (Seed): Frank Fanberg, Charles Barnard

Texas A&M (Livestock Marketing): M. B. Inman, M.Q. Pate, Harry Carpenter, James Aldrich, and Don Morris

International Institute of Tropical Agriculture (Research): Paul Duffield, Frank Brockman, David Sperling, James Deutsch

Agricultural Cooperative Development International: Ag Marketing, Chuck Alexander; Ag Credit, Ernie Hodges, Ron Gollehon, and Richard Koch

University of West Virginia: Robert Maxwell, Tom Galvin and Dick Gray

U.S.D.A. (Tsetse Fly Project, AID/W): Leroy Williamson

Near East Foundation: Pershing Vance, Bob Vorhis, and Bob Booth, of Masai Project; Alex Powers

U.S. Embassy: David Morrison, Economist; Bernard Kimalando, Economics Assistant

Tanzanians: Michael Mashelle, Min Ag Seed Multiplication Project; John Liwenga, Min Ag Research Director; Leonard Kimati, Planning Director of National Milling Corporation; George Lulandala and John Mechechu, Min Ag Manpower Development; Edna Kayuza, Principal, Health Training Center, Kondoa; District Medical Officer, Kondoa; N.R. Siwingwa, Acting Coordinator for Sectoral Planning and Charles Matuschobya, U.S. Desk Officer, Min Finance; Mshiro A.A. Mtawa, and C.D. Thomas, Small Industries Development Organization; Charles Mmari, Arusha Seed Farm; Maseki and Alex Soka, District Liverstock Officer, Monduli; Steve Neema, Assistance Regional Ag Officer, Arusha; N.J. Semuiako, Commissioner of Planning and P.O. Chikira, Assistance Commissioner, Prime Minister's Office; Dodoma; David Musunjali and Harold Ndunguru, Min Ag, Kilosa; Mr. Maselli, Regional Planning Director, Arusha; Mr. Parkapieni, Director, Masai Project