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EVALUATION REPORT

SEED MULTIPLICATION

Project 621-092

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The project purpose is to assist the Government of Tanzania (GOT) in directing a system for the production, multiplication, sale, distribution and utilization of "certified" seed. To date: (1) GOT has provided good participants and counterpart staff; (2) GOT seems willing to encourage Tanzania Seed Company (TSC) to expand; (3) TSC has some contract growers and is seriously searching for others; (4) TSC has sold sizeable quantities; (5) TSC is interested in seed promotion and expanding sales distribution; and (6) seed shortages and severe drought have created a strong demand for quality seeds. Recommendations include: (1) revise the program goal to include targets for food crop production consistent with GOT's National Maize Campaign; and (2) revise project design, which is generally validated by progress made, to reflect an expanded volume of contract seed growing directly on project seed farms and lower priority of a project seed farm site in the highlands. The evaluators made specific recommendations about the project, seed farm operations, sales and distribution, seed control and certification, project staff personnel, and training. The evaluation also details the status of seed farm operations, crop improvement and related research, seed control and certification, technical operations, extension and promotion activities and training.

SEED MULTIPLICATION PROJECT

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PART I. INTRODUCTION

This Evaluation Report was prepared by a three-man team furnished by the Agency for International Development in accordance with Project Agreement 75-2 of 9-10-74 and PROP Revision 2 of 6-11-73.

This evaluation study was conducted during the period January 27-February 21, 1975. Prior to departure from Washington the team attended a briefing on the project's history and status by staff members of the Office of East and South African Affairs (AFR/ESA) and the Office of Development Planning (AFR/DP) of AID's Bureau for Africa.

During its stay in Tanzania the team, accompanied by USAID representatives, the Experience, Incorporated Team Leader, and the Tanzanian Project Coordinator, made visits to the two project seed farms at Msimba and Arusha, the TANWAT installation at Njombe, and the offices of Tanzania Seed Company and Tanzania Farmers Association. Meetings were held with officials of the Crop Development Division of the Ministry of Agriculture in Dar es Salaam where the major findings and recommendations were discussed in detail. However, this final version of the Evaluation Report is the responsibility of the AID Evaluation Team only. A PAR 75-1 and a revised Logical Framework Matrix were included in this report as Annexes and also submitted separately to AID in conformance with current agency procedures.

The team expresses its sincere appreciation to Government of Tanzania officials, USAID/Dar es Salaam, Experience, Incorporated, and Seed Farm staff for the very warm hospitality and excellent cooperation extended in the conduct of this evaluation study.

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PART II. SUMMARY RECOMMENDATIONS

A. GENERAL

1. Program goal should be revised slightly to include specific targets for food crop production consistent with or tied to the Government's National Maize Campaign, particularly the figure of 900,000 tons of maize produced annually by 1980.

2. Project design, generally validated by progress already made, should reflect an expanded volume of contract seed growing directly on project seed farms and the lower priority of a project seed farm site in the highlands, i.e., at altitudes of 6,000 feet and above. Appropriate project documents should be amended accordingly to reflect these design changes.

3. When arrangements are completed and financing assured for the irrigation systems cited in Recommendation B.1. below, planning should be accelerated for the next, or third, project seed farm of about 1,000 acres in the low altitude coastal zone, possibly at Tanga. Initial steps should include site and land selection and preparation, location or construction of housing and farm buildings. Contract and Tanzanian staff recruitment and training should thereupon follow as the next step. We project preliminary targets for cultivation at Tanga of about 250 acres in 1976 and 450 acres in 1977. We believe one D-6 tractor from Msimba can be transferred to Tanga for land clearing, since the remaining D-6 tractor at Msimba should be sufficient for land clearing area included in present work plans.

4. The target for areas in production at project seed farms should be modified slightly to total project acreage of 7,000 in 1980, including 4,500 at Msimba, 1,250 at Arusha, 1,000 at Tanga, and perhaps 250 at Njombe in the highlands, in the event foundation seed growing or production is phased down at TANWAT. There would be no need for larger acreage at Njombe as TANWAT has sufficient acreage of contract production of "certified" seed.

5. End of project targets for seed production should also be modified with revised figures for 1980 of about 2,200 tons of foundation seed, and 42,000 tons of "certified" seed including both project and contract grower farms.

6. Project coordination should be further strengthened to provide closer links between project seed farms and research, breeding, TANWAT, and EAAFRO project operations. The SEED Selection Committee might be one alternative mechanism for formalizing more frequent contacts between these several programs.

B. SEED FARM OPERATIONS

1. High priority should be accorded the establishment of irrigated systems for about 200 acres each at Msimba and Arusha seed farms to assure consistent production from year to year and to avoid losses of elite varieties, single crosses, inbreds or composites in case of drought, crop failures, etc.

2. Revised equipment requirement lists, taking account of the shifts in priorities, should be prepared to meet 1976 crop year work plans. This is to include steps to improve maintenance, repair and spare parts handling.

3. Intensify efforts to construct the buildings planned and to install drying and processing equipment in order thus to assure quality seeds if a full crop is harvested in 1975.

4. An internal quality control program should be formulated, organized and implemented at Msimba and Arusha in advance of the 1975 seed harvest. One

person at each farm should be appointed as quality control officer with responsibility for the program, in addition to his other duties.

C. SALES AND DISTRIBUTION

1. TSC efforts should be continued and intensified in the search for contract growers if the full potential seed production is to be reached.

2. TSC and TFA participation in seed promotion and extension work should be invited and encouraged, possibly in joint undertakings with national or regional government extension services, the project extension specialist, and perhaps the research stations such as Ilonga or Ukiriguru.

D. SEED CONTROL AND CERTIFICATION

1. The proposed rules and regulations under the SEEDS ACT should be reformulated to encompass only (i.e., apply to) seed of major food crops: maize, wheat, rice, sorghum, millets, and soybeans. And, certification procedures should be established and implemented only for these six (6) seed kinds.

2. Every precaution should be taken in formulation of rules and regulations under the SEEDS ACT so as not to prevent, restrict, or impede importation of seed of reasonably good quality.

3. Rules and regulations and certification procedures established under the SEEDS ACT should be realistic and relevant to the needs and conditions in Tanzania.

E. PROJECT STAFF PERSONNEL

Since the four production agronomists originally programmed in the PROP have been eliminated, the team strongly recommends that:

1. One experienced, general agronomist be approved, recruited by contractor and attached to the project coordinator's office to advise and assist on agronomic and seed production problems at all seed multiplication farms.

2. One experienced agricultural promotion specialist be recruited by contractor for a two-year period to advise and assist the TanGov, Tanzania Seed Company, and Tanzania Farmers Association with development of an intensive promotional campaign to increase the utilization of improved seed; additionally, the promotion specialist should help establish close liaison with the promotional aspects of national and externally assisted programs involved in research, extension, and production improvement in Tanzania, especially those attempting to reach small farmers.

3. Priority be given to the recruitment of an experienced agro-mechanic, who would be assigned at Msimba until such time as his services are needed at the proposed Tanga farm.

4. At such time as the contract coordinator position becomes vacant, emphasis be placed in recruitment of a replacement with training and experience in seed production and processing as well as management to fit in with the anticipated progress and needs of the project.

F. TRAINING

Plans should be fully developed during 1975 for intensive, organized, "in-service" training of seed processing operators, seed analysis, seed control and certification supervisors and inspectors. Specific emphasis should be given to the effective and efficient "management" of the various technical operations and to their integration into a comprehensive quality control program. Implementation of the training plans should begin in late 1975 or early 1976 at the latest.

PART III. REVIEW OF CURRENT PROGRESS AND STATUS

A. PERFORMANCE INDICATORS

1. Inputs:

a. Key Inputs and Action Agents

The key inputs and action agents are reviewed in detail on Page 2 of PAR 75-1 included herein as Annex B. A summary follows below:

Contractor performance, which suffered in the early stages from poor selection and lack of technician adaptability, has improved with the recent arrival of new personnel. Home office is now providing more effective back-stopping and also assists, when required, in monitoring loan equipment procurement and providing liaison for participants in U.S.

Participant training is proceeding well. Nine have returned after completing their studies, five are now in U.S. and four remain to be selected.

Excessive delays in the delivery of loan equipment has caused difficulties and retarded progress. Much of this equipment has now arrived but problems still persist with respect to maintenance, repairs and spare parts supply.

TanGov has provided strong budget and counterpart staff support for the project. Lack of government truck transport and delays in vehicle rental further hampered effective equipment use but recent new additions have remedied this deficiency.

b. Changes in Contractor Staff and Assignments

Upon completion of input performance reviews, field inspection visits, and modifications in project design, the following changes in contractor staff personnel are proposed:

One experienced, General Agronomist should be approved, recruited by contractor and attached to the project coordinator's office to advise and assist on agronomic and seed production problems at all seed multiplication farms. As operations are expanded and larger acreages cultivated, production problems, particularly with respect soybeans, hybrid corn, etc., are expected to become increasingly complex and this specialist will be fully occupied at the various project sites.

One experienced Agricultural Promotion Specialist should be recruited by contractor for a two-year period to advise and assist the TanGov, Tanzania Seed Company, and Tanzania Farmers Association with development of an intensive promotional campaign to increase the utilization of improved seed; additionally, the Promotion Specialist should help establish close liaison with the promotional aspects of national and externally assisted programs involved in research, extension, and production improvement in Tanzania, especially those attempting to reach small farmers, e.g., [illegible] farm season.

Priority should be given [illegible] Mechanic, who would be assigned [illegible] needed at the proposed Tanga farm.

At such time as the contract Project Coordinator position becomes vacant, emphasis should be placed on recruitment of a replacement with training and experience in seed production and processing as well as management to fit in with the anticipated progress and needs of the project.

In PROP Revision 2, 6-4-73, a total of eleven contract personnel was projected. Since then, one Procurement/Inventory Specialist was added and with the departure of the Production Agronomist specializing in extension-type activities, a decision was reached to eliminate all four Production Agronomist positions. If the changes herein proposed are made, (see also Part II.E., Summary Recommendations), contract personnel staff would be as follows:

1	Project Coordinator
4	Farm Managers
3	Agro-Mechanics
1	Procurement/Inventory Specialist
1	Agronomist
1	Agricultural Promotion Specialist
11	Total

2. Outputs:

Several actions and targets are off-schedule in terms of Parts I and II of PAR 74-2: (a) approval of seed regulations; (b) training of seed inspectors; (c) implementation of SEEDS ACT and regulations; (d) installation of the Central Seed Laboratory; (e) tons of foundation seed produced; and (f) installation of seed drying and processing equipment. The evaluation team, however, recognizes good and valid reasons for these actual or anticipated shortfalls, e.g., procurement difficulties and delays, delays in TanGov construction and responses, serious droughts during 1973 and 1974, etc., and does not view them as very critical. Drying, processing, and testing equipment are on-hand and designs for buildings to house these activities have been prepared. Although these facilities cannot be completed in time for the 1975 crop, interim and temporary arrangements are possible, with full development by the 1976 harvest. If reasonably good climatic conditions prevail, the 1975 seed crop could reach the programmed output of 1,360 MT (foundation and "certified" seed).

The team also reviewed the indicators/magnitude of outputs specified in the PROP (pages 5-6) and finds that in several cases they are ambiguous, at varience with key output indicators and targets in PAR 74-2 and unrealistic.

a. Foundation Seed Farms: The PROP specifies four foundation seed farms in operation, one in each of four main ecological zones, with total of 10,500 acres under cultivation, and production of 10,500 tons of "selected" seed by end of project (PROP, page 5, 2.a.). This 10,500 tons of "selected" seed become 10,500 MT of "foundation" seed in the Project Design Summary (log frame). It should be pointed out that there are basic differences between "selected" and "foundation" seed, and that while 10,500 tons of "selected" seed--assuming that a certain portion of foundation seed is included--is a valid target, 10,500 tons of foundation seed is three to four times more than will be needed by the end of the project. The Project Design Summary should, therefore, be changed to an end-of-project target for the seed farms established by the project of 2,200 tons foundation seed, and 4,000 tons of selected seed produced under contract to the Tanzania Seed Company. Area under cultivation (seed production) on the seed farms should also be decreased from 9,700 to 7,000 acres (see Tables 1 and 2). The PAR 75-1 targets 3,800 tons of foundation seed by end of project.

b. Certified Seed Production and Needs: The PROP projects (page 5, 2.b.) a need for 107,000 tons of "certified" seed of cereal grains and food legumes by the end of the project, to be produced by the Tanzania Seed Company on approximately 150,000 acres under contract with farmers, cooperatives, government farms, etc. Furthermore, it is expected that the foundation and "certified" seed production targeted will be sufficient to plant the following acreages of crops:

TABLE 1. ESTIMATED AND PROJECTED ACREAGES OF MAJOR FOOD GRAIN CROPS IN TANZANIA 1971 AND 1980 1/

Crop	Acreages 1971	1980
Maize	2,537,500	4,000,000
Rice	382,500	1,000,000
Millets	322,500	2,000,000
Sorghum	215,000	2,000,000
Wheat	127,500	600,000
Soybeans	2,250	1,000,000
Totals	3,587,250	10,600,000

TABLE 2. PROJECTED MAXIMUM NEEDS FOR FOUNDATION AND "CERTIFIED" SEED IN TANZANIA BY END OF PROJECT (1980) FOR SIX MAJOR CROPS

Crop	1980 National Acreage 2/	Seed Renewal Rate(%)	Projected Seed Production 3/ Foundation Seed Acres	Foundation Seed Tons	"Certified" Seed Acres	"Certified" Seed Tons
Maize 4/						
Hybrid	1,000,000	100	400	200	20000	10000
Composite	3,000,000	33	180	130	13300	10000
Sorghum	2,000,000	25	120	60	7500	3750
Millets	2,000,000	25	20	10	2500	1250
Wheat	600,000	25	1500	750	15000	7500
Soybeans	500,000	25	450	225	7500	3750
Rice	500,000	25	315	315	6250	6250
Totals			2985	1690	72050	42500
Plus 25% needed "surplus" for foundation seed				423		
				2113		

1/ Estimates and projections from the University of Missouri Agricultural Sector Study.

2/ Projected acreages from Table 1, except that rice and soybeans are projected at more realistic 500,000 acres.

3/ Calculations based on seeding rates of 20, 15, 5, 100, 60 and 100 lbs/A. for maize, sorghum, millets, wheat, soybeans, and rice, respectively; and, clean seed yields of 0.50 T/A. for hybrid maize, sorghum, millets, wheat and soybeans, 0.75 T/A. for composite maize, and 1.0 T/A. for rice.

4/ For purposes of calculation, it is assumed that 25% of maize acreage projected in 1980 will be planted to hybrids (mostly in highlands), with remaining 75% planted to composites.

Maize	2,960,000 acres
Sorghum	657,000 acres
Edible legumes	950,000 acres
Wheat	650,000 acres
	5,217,000 acres

The 107,000 tons of "certified" seed targeted would amount to about 40 lbs/seed for each of the 5,217,000 acres expected to be planted with "certified" seed by the end of the project. In our view these targets are not only unrealistic but, frankly, unattainable by the end of the project.

Estimated (1971) and projected (1980) acreages of major cereal and legume grain crops in Tanzania taken from the University of Missouri Team Agricultural Sector Study, are shown in Table 1. Assuming that the 1971 acreages were reasonably accurate, the 1979 projects must be considered as extremely optimistic. Yet, even taking this highly optimistic projection as a base (with a few modifications), the maximum realistic annual target is about 42,000 tons of foundation and "certified" seed, and a satisfactory target would be only about half of this quantity, or about 25,000 tons (Table 2). Achievement of an annual production and use of 42,000 tons of improved seed by the end of the project would be more than sufficient to justify the project input of both USAID and the TanGov and to meet fully the anticipated need for "certified" seeds in Tanzania.

Although the rationale used in arriving at the PROP target of an annual production of 10,500 tons foundation and 107,000 tons of "certified" seed by the end of the project are not stated, it appears to us that they were derived on the basis of a near total re-supply of seed to Tanzanian farmers every planting season without any allowance for "saving" of seed by farmers.

We do not know of any country in which "certified" or commercial seed production even closely approaches quantities sufficient to plant all the acreages devoted to self-pollinated cereal and grain legume crops and even cross pollinated species, except in the case of hybrids. In the U.S., for example, not more than 25-30% of wheat seed planted is obtained from a commercial source--certified or non-certified--the remaining 70-75% is saved on the farm. Similar percentages prevail for soybeans, oats, barley, and cotton. Only in the case of hybrids, maize and sorghum, is 100% of the seed planted purchased from seed dealers, and only because hybrid seed does not retain its characteristics and yield potential when replanted.

In most countries--developed or less developed--replenishment of seed of self-pollinated crops by farmers every 3-4 years is considered to be adequate to maintain productivity. This means that only 25-33% of the total seed needs have to be produced and supplied each year. The remainder come from seed stocks saved on the farm. The estimated seed needs by 1980 in Table 2 are based on a 25% annual resupply of wheat, millets, sorghum, rice, and soybean seed, 33% for maize composites, and 100% for maize hybrids.

It has been suggested that Tanzania farmers should purchase new seed every year regardless of mode of pollination of crop and type of variety (i.e., composite, "pure-line", or hybrid) because they do not know how to save seed and that "seed saving" is too difficult under Tanzanian climatic conditions. The team does not agree with this conclusion. If it were valid, production of seed-propagated crops would be a negligible activity in the country.

B. REVISED STATEMENTS OF GOAL AND PURPOSE

1. Program or Sector Goal:

To assist TanGov to achieve self-sufficiency in food crops subsector consistent with the National Maize Production Campaign and its emphasis upon reaching by 1980 annual maize production of about 900,000 tons.

This is only a slight revision from the previous version and merely attempts to tie the sector goal more closely to TanGov targets and objectives.

2. Project Purpose:

To assist TanGov in directing a system for the production, multiplication, sale, distribution and utilization of "certified" seed of superior varieties.

This revised language has been employed in order to retain the institutional building character, i.e., up-grading TanGov's capacity to manage, direct and coordinate the program, while also focusing upon seed distribution and utilization rather than seed production only. This statement of purpose also appears to reflect accurately the basic project design as currently formulated. In both the PROP and its logical framework, the previous target figures for foundation seed and "certified" seeds were included among output indicators. Part III.A.2. of this report contains a detailed analysis of these output indicators and the basis for the revised 1980 output targets of 2,200 tons of foundation seed from project farms and 42,000 tons of "certified" seed from both project and contract grower farms.

In this connection, the treatment of food crop production as an indicator of progress should be noted. In the PROP, a 50% increase in grain and food production was included as a condition expected at the end of the project. We do not consider that was an appropriate indicator even for the purpose of the PROP. Therefore, in this report, maize or food production is an appropriate indicator only at the sector goal level because that goal is to be achieved not merely by the production, sale and utilization of "certified" seeds but also by various other factors, e.g., research, plant protection, extension services, credit, storage and transport, markets, price incentives, trained manpower, etc.

C. EVIDENCES OF PROGRESS TOWARD OBJECTIVES

Listed below, as shown in Part IV of PAR 75-1, included in this report as Annex B, are the current indicators of progress toward progress objectives:

1. Conditions which will exist when project purpose is achieved:

   a. TanGov has established and developed its technical and managerial skills and budgeting support sufficient in produce foundation and "certified" seeds and to encourage seed distribution.

   b. Tanzania Seed Company (TSC) succeeds in selling and distributing the volume of "certified" seed required annually by farmers.

   c. Large acreages are planted, mainly by small farmers, using "certified" seed and other combined inputs, etc., credit, fertilizer and improved cultural practices.

2. Evidence to date of progress toward these conditions:

   a. TanGov has provided project good participants and counterpart staff and excellent budgeting for project farms and appears willing to encourage TSC to expand its seed promotion, sales distribution and contract growing operations.

b. TSC has some contract growers, mainly TANWAT and TanGov farms, and is seriously searching for others. Intends new branches at Arusha and Morogoro. Has sold sizeable quantities so far and confident it can sell through TFA large supplies of hybrids seeds and some composites. Is interested in seed promotion and expanding sales distribution.

c. Under severe drought and seed shortages, a strong demand for quality seeds has naturally emerged. Demand for hybrids will continue and should also be sustained and perhaps even expand for composites.

Because of unfavorable growing conditions and related difficulties, project farms have produced only negligible quantities of quality seed thus far and have not yet arranged for distribution through TSC and its agent TFA. However, there are prospects of a sizeable crop this year, if rainfall is adequate and timely, and TSC is willing to accept and distribute all of the expected output. As project farms increase their production of "certified" seed, relations will be closer with TSC which should then be in position to furnish more specific and detailed information on sales and distribution of "certified" seed for incorporation in subsequent PARs and other project reports.

An important source of data on farmer utilization of "certified" seeds and other agricultural inputs will be the TRDB small farmer loan program which is to start in 1975 in the Iringa, Arusha and Kilimanjaro Regions.

D. RE-VALIDATING PROJECT DESIGN

1. Linkage with Sector Goal:

The Seed Multiplication project is one of several key undertakings capable of making significant contributions to the success of the priority National Maize Campaign which TanGov is planning to launch under its Third Five Year Plan, 1975-79 and which represents a major shift in food production emphasis. Each of TanGov's Development Plans has placed priority on agriculture but until now investments were directed largely toward foreign exchange earning export crops. However, current food shortages leading to massive food grain imports and corresponding drain of foreign exchange have highlighted the critical importance of increasing domestic food production, substantiated also in several recent studies and reports viz. IBRD sector analysis, University of Missouri (AID supported) sub-sector study and the DAP sector analysis of USAID.

Since the mid-1960's growth in food production has lagged behind Tanzania's rather modest 2.7% annual population growth. While drought conditions in 1973-74 further reduced the country's ability to feed itself and this increased dependence on food imports, it seems clear that low growth in food production was already a problem earlier. With today's maize production averaging about 10 bushels per acre, a major objective of the new campaign is to increase total maize output by at least 250,000 tons a year above the 660,000 ton average between 1966-73, for a 1980 target of roughly 900,000 tons.

A major aim of the technical assistance proposed under the new TanGov campaign is to bring about a measurable increase in food production during the Third Five Year Plan 1975-59. During the first phase, there will be intensified actions to provide seed, fertilizer, pesticides, transport, storage and access to markets in the more accessible areas of the maize growing regions of Tanzania.

The Seed Multiplication project initiated in 1970 was based on the rationale that improved seeds is a particularly significant input. Experience in other areas has shown that hybrid seed for example, an important yield increase by itself, can be the "leading edge" or catalyst for the introduction of equally important production practices essential to increased yields. When improved seed is presented as an integral part of a production package program, farmers appear more willingly to adopt the improved cultural practices which are tied to the new seed.

Research in Tanzania, supported by research in neighboring countries, has shown that yields per acre of all cereals can be substantially increased through planting improved varieties with better farm management and increased labor inputs. Maize yields have been increased 250 percent on experimental plants merely by planting on time, using recommended planting rates and proper weeding. When improved seed, fertilizers, insecticides, etc., are included, yield increase of up to 400 percent have been obtained on experimental plots.

Having reviewed the documentation on the history and background of the project, visited field sites, discussed details with USAID, E.I. contract staff, Tanzanian project staff, TanGov officials, and representatives of TSC and TFA, prepared PAR 75-1 and tested the hypotheses, assumptions and rationale for the project, the evaluation team has concluded that, with the proposed revisions explained in Parts III.A.2 and III.D.2., the project design for Seed Multiplication is valid.

2. Revision in Project Design:

The PROP envisaged four foundation seed farms, with a total of about 9,700 acres at four sites producing about one ton-per-acre or about 10,500 tons of foundation seed in 1980 which could be multiplied in contract grower farms to about 107,000 tons of "selected" seed for farmers. Thus far, TSC has obtained few contract growers, except TANWAT, so that project farms have been willing to distribute some of the available output of quality seeds directly to Regional Development Organizations for farmer use, especially in view of the grave seed shortages in recent periods.

In part III.A.2. a detailed analysis was made of requirements and new output targets were established for 1980 of only 2,200 tons of foundation seed, and 42,000 tons of "certified" in order to meet realistic annual national demands. On planned project acreage, a target of 4,000 tons of "certified" was projected, with about 38,000 tons of additional "certified" to be supplied by contract growers on other than project sites.

Estimated acreages under cultivation at the four farm sites of the project was as follows:

Msimba	4,500 acres
Arusha	1,250 acres
Tanga	1,000 acres
Njombe	250 acres
Total	7,000 acres

No larger acreages were envisaged for "certified" seed production in the Njombe area because the contract grower arrangement with TANWAT is now working out quite satisfactorily.

These changes in output targets and the expanded role of project farms in contract growing operations represent significant revisions in project design which should be reflected in appropriate project documents.

The Ministry of Agriculture had earlier proposed to start in FY 1974 another farm, possibly at Njombe, as the third of the four proposed in the PROP. The recent budget for 1974/75 was approved at T.Shs. 5,800,000 ($813,000 equivalent) providing funds for construction of facilities and operation of the existing two farms plus approximately T.Shs. 1.1 million for initiation of the third farm. TanGov has now accorded the Njombe site a lower-priority because TSC is now serving that area with hybrid seeds well suited to the higher altitude and prevailing weather conditions there while quality seeds for the lowland and coastal altitudes are currently in short supply.

TanGov is now in process of site selection near Tanga. If it is not too late in the season and depending on the previous cultivation of the site, perhaps 200-250 acres of maize and wheat might be planted in 1976 with the loan of land preparation equipment from Msimba. One D-6 tractor could be transferred to Tanga as the remaining D-6 tractor should be sufficient to clear the additional acreage planned for 1976 under current work plans and production targets.

Planning for activating the third farm should be accelerated when arrangements are completed and financing assured for the proposed irrigation systems for Msimba and Arusha. Additional steps should include the location and construction of housing and farm buildings and the recruitment and training, as appropriate, of contract and Tanzanian staff. The contract Agro-Mechanic for Tanga should be recruited early but might be assigned first to Msimba to assist there with the large acreage and correspondingly heavier repair and maintenance workload, at least until major pieces of equipment are in operation at Tanga.

PART IV. DETAILS OF PROJECT ACTIVITIES

A. FOUNDATION SEED FARM OPERATIONS

Generally speaking the foundation seed farm operations have made real progress in the past few months. Farm management at both Msimba and Arusha is excellent considering the handicaps under which management has been operating. Counterparts at both farms for the farm manager seem to be appropriate. Both seem to have realized the responsibility involved and are willing to really work at being able to assume that responsibility in the future.

1. Land Clearing and Preparation:

This phase of the program is progressing on schedule. With the arrival of the two D6's, clearing and preparation for cultivation presents no problem. In fact, it seems that it may be possible to clear and prepare more land than can be properly handled with present farm equipment. Eventually all land available will be economically handled as farm equipment is improved and the labor force is used for backstopping.

We would like to suggest that every precaution be used to insure the use of these two D6's on the foundation seed farms. If management is to keep the machines operable, it will be necessary to have control of them at all times. Loans to other departments could mean the loss of a machine when it is critically required in this project.

We should also point to the reputable local dealerships in the Caterpillar line which should be a real asset in keeping these machines in operation.

2. Crop Production and Outlook:

a. Msimba

At present there are 1,250 acres of maize planted at Msimba. The condition of the crop would be considered good but critical with regard to moisture. The most advanced field has beautiful maize one meter tall and free of weeds with the final application of fertilizer and final cultivation completed. If anticipated rains develop soon, the yields will be excellent. If rain fails to occur within a week or ten-days, the entire planting of over 200 acres in this field could be lost. Later plantings of maize are in a better position as far as moisture is concerned and could withstand a longer dry period. Seeds are available for re-planting but it is probable that poor yields would result in that event.

Fields are now being prepared for planting 200 acres of soybeans later, at which date prospects for rain are better and the rains continue periodically to insure a good harvest. Remaining acreages will be planted mainly to sorghum and millet.

b. Arusha

Present conditions at the Arusha foundation seed farm with regard to moisture make it difficult for us to give a precise estimate of 1975 potential production. Plans call for 640 acres of maize, 600 wheat and a pilot production (6 acres) of three varieties of soybeans. Five hundred acres of the maize have been planted and have emerged. A severe shortage of moisture is threatening the crop but we feel that adequate rains within two weeks will save it. The 600 acres of wheat will be planted to six different varieties, the major percentage in two, and first increases of small acreages of four. The land is prepared and ready for planting at the beginning of the long rains in late March.

Management is again producing 40 acres of hybrid maize seed. After last year's experience with the pollen of the male parent being late for the silks of the female they have split the plantings this year. The male was planted a week ago and is just breaking through the soil. The female will be planted today. This is a three-way commercial hybrid, i.e., not foundation seed.

3. Construction and Equipment Installation, Repair and Maintenance:

Currently the construction and equipment status is distinctly the weak link in the chain for proper operation of the foundation seed farms. Granted, there has been real improvement in this phase of the project in the past three months. But, as examples of the problems involved, management reports that with present equipment at Msimba, only 200 acres of maize can be adequately cultivated with cultivators at hand, whereas the remainder must be cultivated by hand with local labor. One maize planter is operable by using parts from the second, two plows operate with parts from a third, one cultivator operates at the expense of parts from a second. The project received six row planters and rigid bar four row cultivators. The cultivators should be six row, flexible bar so that adequate cultivation can be accomplished. We recommend that four such cultivators be delivered to the two farms as soon as possible.

Repair and maintenance of equipment is of utmost urgency. With the experience attained this year, spare parts procurement should be vigorously pursued for the 1975-76 crop year. Every effort is being made to develop an adequate repair shop but progress is slow. Management is forced to use many makeshift repair methods to keep machinery operating even at minimum efficiency. The fact that operations are on recently cleared land, and on soil of an especially abrasive character at Msimba accentuates these problems.

Construction of the maize dryer and seed processing plant at both Msimba and Arusha is lagging. We doubt that either will be completed for drying and processing the 1975 crop. Management will be forced to use temporary buildings with inefficient handling procedures. If the 1975 crop is successful, it could produce 75,000 bushels of maize on the two farms. If this does develop, we foresee real difficulties in insuring the seed quality desired under present arrangements. The equipment is at hand and management will use all its ingenuity to deliver good quality seed with the use of temporary buildings, field and temporary crib drying, and substitute elevator legs to get the seed to and from the cleaner.

Problems encountered in the delivery and maintenance of equipment and consequent forced use of hand labor for cultivating, harvesting and drying reinforce the position taken in the PROP that this project should be capital/machinery intensive, mechanized and not labor intensive. Forced delays in cultivating, harvesting and drying by the use of hand labor just do not make for quality seed or maximum production. We cannot conceive of adequate cultivation of about 1,000 acres of maize with hand labor. Management reports that hand labor involving over 100 persons is readily available. This amounts to ten acres per person and a successful operation cannot be predicated on that policy.

4. Storage Facilities, Prospects and Outlook:

Storage facilities at both Msimba and Arusha are completely inadequate. Plans have been made to correct this situation but we doubt their being completed in time for the 1975 crop. For this reason, if successful yields are experienced, temporary storage will be erected for the ear corn with, hopefully, natural drying. As the seed is processed, it will be necessary to use temporary storage facilities such as machine sheds, present storage buildings at Msimba, and loan of storage from TFA at Arusha.

The team was informed when visiting TFA that if Tanzania produces a normal maize crop this year, overall storage for the commercial crop will be critical. As an example, in the Arusha area there is storage for approximately 650,000 bags, but with a normal crop there could be 1,500,000 bags produced in the area. Continuance of the present drought will, of course, reduce somewhat the urgency of expanding storage facilities.

5. Irrigation:

The most important factor in a foundation seed program is consistent production from year to year. If this is impossible, small acreages of elite varieties, inbreds, single crosses or composites could be lost. The production and introduction of this elite material into the stream of seed multiplication is absolutely essential if goals of the project are to be accomplished.

We as a team feel that production of seed at both Msimba and Arusha is so erratic because of weather patterns that irrigation of perhaps 200 acres at each farm is of top priority. Production on this 200 acres could be concentrated in new and elite material. As the farms shift to the production of foundation single crosses and inbred increase of maize, a crop failure on fifty acres could automatically eliminate the following year's production of commercial seed of that particular hybrid. Adequate irrigation of 200 acres on each farm will alleviate these problems.

We strongly urge that top priority be given to these two irrigation components.

6. Sales, Distribution and Relations with Tanzania Seed Company (TSC), Tanzania Farmers Association (TFA), and Regional Development Organizations:

Generally speaking, the cooperation between the foundation seed farms and the TSC, TFA, and the Regional Development Agencies has been excellent. In our opinion, the TSC should be in position to merchandise all quality seed produced by the foundation seed farms. This phase of the seed distribution program has progressed to a further degree than we had anticipated.

The Tanzania Seed Company (TSC) has been organized with a capitalization of 800,000 T.Shs. Negotiations are underway to increase this capitalization in the amount of 1,000,000 T.Shs., bringing the total capitalization to 1,800,000 T.Shs. Capital was supplied and ownership granted--50% Tanzania Government and 50% Commonwealth Development Corporation.

TSC has acquired an office and warehouse at Njombe. Both are occupied and in operation. The company is preparing to establish branches at Arusha and Morogoro.

We are impressed with the TSC General Manager's competence and his willingness to cooperate with the foundation seed farms. He is confident that TSC will be able to merchandise all the quality seed produced by the farms.

The TFA has a most important role to play in the success of TSC. The TFA would be called the retail arm of the TSC. It has been in position to retail at the farmer level all quality seed delivered to it by TSC. TFA presently handles large quantities of seed and are anxious to improve the quality and increase the quantity, as it is generated by the foundation seed farms.

We see two main problems that face the Tanzania Seed Company (TSC). The primary one is the establishment of contract growers of certified seed. Presently, TSC supplies are limited to production at the Tanzania Wattle Company (TANWAT) and the two foundation seed farms. The Wattle Company is an excellent contract grower. We were extremely impressed by its operation. Its hybrid maize seed production was nearing the pollination stage, moisture was ample,

fields were isolated and rogued, and weeds were under control. TANWAT also carries on a testing program for all crops it produces but is not interested in either developmental research or merchandising. In our opinion, TANWAT is an ideal contract grower and close cooperation with it should continue.

In view of the fact that the foundation seed farms potentially could produce much more foundation seed than the country would require, the logical use for the additional acreage is the production of commercial certified seed and the distribution of that seed through TSC. To this degree, they become active contract growers for TSC and should eventually become an important segment of the seed program in this regard.

If the overall seed distribution program reaches its full potential, additional contract growers must be located by TSC. The company will, of necessity, have to work with the larger, more sophisticated farmers who are willing to take the necessary care for the production of quality seed. This phase of the program is lagging.

The second problem, as we see the situation, is the apparent lack of interest by TSC in promotion. We grant that to date promotion has not been necessary to move the seed that was available, but if superior seed is to reach the bulk of the small farmers in the country, someone will have to do promotion. TFA is not interested in promotion. This problem will be dwelt with in another section of this report in our discussion of extension and promotional activities. This problem could also be partially alleviated through the contemplated national maize production campaign which aims to concentrate intensive production efforts in the country's more accessible maize growing regions.

7. Pricing Policies and Credit:

a. Prices

TSC distributed 650 tons (26,000 bushels) hybrid maize seed and 100 tons (4,000 bushels) composite in its first year of operation. The price schedule is as follows:

	Hybrid	Composite
	Price in T.Shs. per kilo	
Retail price	3.0	2.0
Dealer price (to TFA)	2.6	1.7
Contract grower price (to TSC)	1.3	.75

In its first year of operation, TSC operated at a slight profit. This accomplishment is ahead of schedule. With anticipated increased volume, TSC should operate at a good profit in the future.

The PROP for this contract calls for the TSC to handle all seed produced by the two foundation seed farms whether it be foundation or certified. It has been reported to the team that a small amount of seed was delivered to farmers via Regional Development Organizations at 1.5 T.Shs. per kilo. We recognize and appreciate the fact this was an expedient during last year's drought situation when there was a severe shortage of seeds for planting. Nevertheless, since TSC is in position to handle all the quality seed of the project seed farms, we suggest that this practice be avoided in the future in order not to jeopardize the functioning of an orderly seed sales and distribution system for quality seeds.

b. Credit:

A small farmer food crop production loan program has now been launched through the Agricultural Credit Project 621-11-140-117 under which USAID made a grant of T.Shs. 14,280,000 or US$2,000,000 equivalent, to the

Tanzania Rural Development Bank (TRDB). This loan program is intended primarily for food crop production increases and is directed at the national policy objective of self-sufficiency of food crops. This loan program is another aid project activity, in addition to several described on page 27 of the PROP, which supports the Seed Multiplication project and contributes to the same priority national development goals and objectives.

An implementation and evaluation plan has now been approved for this project due to start in 1975. As an initial step, regions have been selected where soil types and rainfall are suitable for food crop production and possessing arable land on which crops will respond to the use of better quality seed, fertilizers, insecticides and improved agronomic practices (e.g., weeding, spacing, date of planting, etc.) by producing higher yields per hectare.

In 1975, this loan program will begin operations in Iringa, Arusha, and Kilimanjaro Regions where essential technologies necessary to increase the production of food crop per hectare and per man-day appear to be far more developed and much more widely adopted by farmers who are now engaged in production for market rather than merely in subsistence agriculture. In these Regions, the Bank's (TRDB) lending operations are firmly established and staffing and transport facilities are good. In 1976, the program will begin in Mara, Mbeya and Dodoma Regions and operations in Iringa, Arusha, and Kilimanjaro will continue. If implementation is successful in these six Regions, additional grant funds might be obtained and the program expanded accordingly.

Actual implementation activities in the various locations is the responsibility of the Regional Representative who shall make full use of technical agricultural and planning staff there and shall obtain help from the regional extension staff so that borrowers will have the technical agricultural information needed for successful farming. TRDB itself will offer technical assistance to borrowers in the form of project identification and preparation.

Under the implementation plan, TRDB is to maintain records and data and undertake studies in order to measure progress and make assessments of credit requirements. An important aim of this type of assessment or evaluation is to determine the extent to which increased productivity, better management and the use of improved techniques and practices might be achieved through the combined use of credit and extension advice.

The evaluation team anticipates that the project coordinator's staff for the Seed Multiplication project will wish to follow closely the progress of this small farmer loan program. It may also wish to consider requesting TRDB to study possibilities for commencing operations in the Morogoro Region, or perhaps even Tanga at the appropriate time.

Other related aspects of this topic are discussed further below in PART IV.E. Extension and Promotional Activities.

6. Staff Assignments and Development:

The evaluation team is much impressed with the quality of the staff assigned to the Seed Multiplication project by Experience, Incorporated. We are also very favorably impressed by the staff assigned to the project by the Tanzanian Ministry of Agriculture.

The project leader and his co .erpart are cooperating extremely well and diligently pursuing every angle to move the project ahead at a more rapid pace. They complement each other with knowledge of the Tanzanian Ministry goals and interests and practical knowledge of seed control, seed certification, the seed business and general farming.

Management at the foundation seed farms, both Msimba and Arusha, is remarkable. Considering the handicaps under which these two teams work, their

accomplishments have been great. Given reasonable weather conditions, this will be further demonstrated in 1975.

Machinery availability, repairs and maintenance has been and still is behind schedule. The Arusha team has experienced fewer difficulties in this regard and appears to have been more successful in resolving difficulties. The Msimba repair and maintenance component still leaves something to be desired.

The actual farm operations such as plowing, preparing seed beds, planting, and to a degree cultivating and harvesting seem to be in good hands with relatively competent Tanzanian operators.

Everyone connected with the project, is enthusiastic and confident even though they have experienced many frustrating problems with weather, machinery and equipment.

B. CROP IMPROVEMENT AND RELATED RESEARCH

The project does not have a research component. Yet, achievement of its purpose is dependent in large measure on the availability, timeliness, and quality of outputs from various research projects in Tanzania and the East African Region, especially those concerned with the identification, improvement and testing of improved crop varieties and production practices. Accordingly, the evaluation team looked into the activities of several research projects of special significance to the Seed Multiplication project.

The research project of greatest immediate and potential significance to the project under review is Agricultural Research (Project No. 621-11-110-107). This is a 10 year project designed to provide technical assistance to the Ministry of Agriculture in its research programs on:

(a) Maize breeding and agronomic research;
(b) Food legume (including soybeans) breeding and agronomic research.

Three research specialists are on board: a maize breeder, and maize agronomist for the past 18 months; and a food legume breeder for the past 1-2 months. A food legume agronomist is expected to join the project in the near future. Hopefully, the contractor will also be able to field a project leader during the current year.

Since only the maize specialists have been on board for any appreciable time, work has largely been confined to this crop. The maize improvement program outlined to the evaluation team, in general, appears to be rational, progressive, and closely attuned to the needs in Tanzania. Maize research has been re-organized and is closely coordinated. Major emphasis is being given to selection of superior composites for the middle to low altitudes. In this connection the evaluation team suggests that, in view of the success enjoyed in the movement of hybrid seed in the highlands, some emphasis should be placed upon the development of hybrids for the middle and lowland areas. This would certainly require eight to ten years, but with the use of good composites during the interim, the project goals would not be delayed. The Agricultural Research project is also heavily involved in the determination of agronomic practices for increased production. Research trials with selected varieties and levels of improved practices are being conducted in farmers' fields at numerous locations. Results obtained should, in time, permit development of appropriate recommendations for increased maize production for the different ecological zones and levels of production intensity. It should be pointed out that these farm level research trials can (and should) also serve to demonstrate improved maize varieties and production technology to the cooperating extension workers, cooperating farmers and their neighbors.

In our view the maize research component of the Agricultural Research project is making good progress, especially for purposes of the Seed Multiplication project. Its output of breeders seed of improved maize varieties is and will continue to be an increasingly important input to the Seed Multiplication project. Similarly, improvements in the production technology and efficiency of maize generated through research are essential for realization of the full production potential of the improved seed produced by the Seed Multiplication project.

In view of the substantial progress already made in maize breeding and agronomy and the quality of the contract personnel on board, the evaluation team has every expectation that the food legume and soybean components of the project will be taken care of in equally good fashion.

Other projects which will feed improved varieties into the Seed Multiplication scheme include the East African Food Crops Research Project (618-110-10-637), which has been very productive in terms of developing maize hybrids adapted to the higher altitude as well as sorghum and millet varieties, the Canadian assisted

wheat breeding program at Njoro, Kenya, and the Canada Wheat Production project in Tanzania, which have identified superior wheat varieties.

In the evaluation teams' judgement, the superior varieties of maize and wheat developed in the past and still not widely grown by Tanzanian farmers, and the even more improved varieties of maize, wheat, rice, sorghum and soybeans under development and/or testing in on-going projects are providing and will continue to provide genetically superior seed stocks for multiplication by the Seed Multiplication project. The lack of improved varieties for multiplication, therefore, is not and will not be a constraint to achievement of the purpose of the Seed Multiplication project.

C. SEED CONTROL AND CERTIFICATION

The enactment and implementation of seed legislation providing for and regulating, "the testing, certification, inspection and sale of seeds in the Republic of Tanzania," is one of the conditions established for realization of the purpose of this project.

1. Current Situation:

The SEEDS (REGULATION OF STANDARDS) ACT, formulated and drafted with the assistance of project contract staff, was enacted by Parliament on 22nd November, 1973, and signed into law by the President on 6th December, 1973. The SEEDS ACT is basically an enabling law. Essentially the ACT:

a. Establishes the intent and authority of the TanGov to regulate the testing, certification, quality, inspection and sale of seed in the country;

b. Restricts the sale, importation, and exportation of, "seed grown or produced in Tanganyika," to species and varieties and standards of quality prescribed (to be) in the rules and regulations adopted and promulgated under authority of the ACT;

c. Establishes five quality classes for seed grown and produced in Tanganyika, viz. breeders, foundation, registered, certified and common;

d. Requires that all seed sold in Tanganyika under a grade name or designation "resembling" those established in the ACT (see c. above) conform to the prescribed standards; and

e. Designates the Minister responsible for agriculture as the enforcement and implementing authority for the ACT and authorizes him (the Minister) to establish a certification agency and seed testing laboratory, prescribe inspection procedures and seed quality standards, appoint inspectors, and, in general, take all actions necessary for fulfillment of the intent of the ACT, including enforcement of penalty provisions thereof.

Since the SEEDS ACT is of the "enabling" type, it cannot be implemented unless and until reasonable rules, regulations, procedures, and standards are established by the authority designated by the ACT, i.e., the Minister responsible for agriculture. Regulations pursuant to the intent and provisions of the ACT have been drafted and are presently under review. They have not yet been promulgated.

The draft regulations are all-encompassing. Labelling of and standards for all conceivable kinds (species) of seed propagated agricultural and vegetable crops are prescribed in detail, e.g., cereals, grain legumes, forage grasses and legumes, oil seeds, lawn and turf grasses, root crops, vine crops, other vegetables, fiber crops, etc. Limited standards have also been formulated for tree and shrub seeds, and vegetative propagules (i.e., cassava cuttings, tubers, etc.).

The draft regulations also establish fees for inspection and testing services, and provide for tolerances in administration of the SEEDS ACT and the rules and regulations promulgated thereunder.

2. Observations:

In general, the SEEDS ACT is logically framed and adequate for the needs of seed control in Tanganyika for the foreseeable future. Certain provisions, however, are ambiguous and could be interpreted in a manner which would be overly-restrictive, especially as regards imported seed, and detrimental to agricultural development in the country. For example, overzealous enforcement of the provisions in Sections 3 and 4, and Section 6, subsection (a), of the ACT could severely

impede the importation of seeds of all sorts and their subsequent distribution and marketing in the country. The referenced sections of the ACT require that all seed produced in or imported into Tanganyika conform to rather rigorous proposed standards, and be of approved species and varieties. Restrictive varietal lists and carefully formulated quality standards have been used in many countries to effectively exclude seed imports. Considering the substantial contributions that imported seed (hybrid maize, wheat, vegetable seed, etc.) have and are making to agricultural production in Tanganyika, the possibilities--inherent in the SEEDS ACT--for overzealous restriction of these imports is somewhat unsettling.

The draft regulations proposed under the SEEDS ACT are far, far too ambitious. They greatly exceed the present and projected needs for seed control in Tanganyika during the period of the project and, perhaps, for a generation thereafter. They also exceed the capability of the TanGov, assisted as it might be by expatriate specialists, for full and effective implementation, until such time as roads, communications, manpower resources, marketing arrangements, agricultural mechanization and production are greatly expanded. An attempt to implement fully and enforce the regulations as now proposed would not only be futile but wasteful of the limited human, material and financial resources available in and to the country for development.

Progress to date on seed control and certification has been largely confined to formulation and enactment of the SEEDS ACT, drafting of proposed regulations, and U. S. training of participants for roles in these supporting service. Plans, however, are to establish the Tanzania Official Certification Agency, finalize the rules and regulations under the SEEDS ACT, begin construction of a headquarters, seed testing, and seed control building, and to organize a training program for staff on seed control, certification and testing during 1975-1976.

The SEEDS ACT and proposed rules and regulations thereunder are, in general, adopted too closely from very sophisticated seed legislation in the U. S. with insufficient regard for climatic conditions, cropping patterns, infrastructure and agricultural development in Tanzania. The recommendations below are advanced with the view of focussing attention, effort and resources on aspects of seed legislation relevant to present and projected conditions in Tanzania.

3. Recommendations:

a. The proposed rules and regulations under the SEEDS ACT should be reformulated to only encompass seed of major food crops, regulation of which would be of substantial benefit to TanGov agricultural objectives in the foreseeable future, and implementation of which could be within the capability of the implementing agency and assisting project contract staff. These seed kinds include maize, (high priority), wheat, rice, and sorghum (intermediate priority), and soybeans and millets (low priority). Regulation of vegetable seed, mostly imported, should be confined to establishment of reasonable minimum germination and phytosanitary standards.

b. Certification should be confined to the basic food crops indicated in a. above.

c. Every precaution should be taken to prevent promulgation of regulations and implementation thereof which would restrict or impede the import of seed of reasonably good quality.

d. Certification procedures and quality standards established for seed of the major food crops indicated in a. should be realistic and relevant to the needs and conditions in Tanzania.

e. Rules and regulations for seed kinds other than those listed in a. should be deferred until such time as the latter are under satisfactory control, and/or until it can be clearly demonstrated that the benefits of regulation of another seed kind(s) would substantially exceed the costs involved in terms of time, effort and resources.

D. TECHNICAL OPERATIONS

General operations involved in the production and processing of seed were considered in Section IV. The emphasis here is on technical operations essential for the production of varietally pure, good quality seed.

1. Isolation and Maintenance of Varietal Purity:

Physical isolation of different varieties within a species sufficient to prevent cross pollination of cross pollinated species (maize, and to a limited extent, sorghum), and mechanical mixtures of self-pollinated species (wheat, soybeans, rice, etc.) is an essential feature of seed production. In our judgement, the isolation requirements for the various seed crops produced on the Arusha and Msimba seed farms are well understood by contract staff and co-workers. It should be pointed out, however, that harvesting equipment, storage bins, dryers, elevators, cleaner, and even used bulk storage bags are important sources of contamination of varieties. Thus, standard operating procedures at each farm must be established to insure that all equipment is thoroughly cleaned between each variety and seed kind. This can be best implemented through an on-farm or in-project quality control program (see 3.).

2. Drying, Processing and Storage:

Plans have been developed for buildings to house the dryers, processing and packaging equipment and for bulk and packaged seed storage. Maize shellers, elevators, cleaning, treating and packaging equipment are on hand at both the Msimba and Arusha farms. Since it will not be possible to construct the buildings prior to the harvest, drying and processing season in 1975, the equipment mentioned will have to be "temporarily" installed under existing sheds. These temporary arrangements complicate the problem of maintaining varietal purity. Therefore, rigorous and close management of receiving, bulk storage, and processing operations will be especially important in 1975. Again, we strongly urge that the establishment of a quality control program at each farm.

3. Quality Control and Testing:

With the exception of isolation procedures, the evaluation team was disappointed with progress in the establishment and implementation of quality control procedures for the seed multiplication farms. It appeared to us that the project is relying almost entirely on the projected implementation of the seed control and certification components for quality control. Seed control and certification are aspects of the overall quality control program for seed produced and marketed in Tanzania, but they do not substitute for internal quality control at the farms. An internal quality control program must be established and integrated into the management at each farm.

The following situation is a specific example of problems and inefficiencies resulting from the lack of internal quality control in a seed production unit. The germination of the maize seed used to plant the first several hundred acres of maize at the Arusha farm was not known, thus, seeding rate was substantially increased to compensate for "suspected" low germination of the seed. Germination percentage of the seed was apparently much better than suspected because the emerged stand is too "thick", and will have to be "hand thinned" down to the desirable population. The situation described will add directly to the costs of production, increase the demand on critical moisture supply, and could result in depressed yields if the "thinning" is not accomplished in the early seedling stage.

On the basis of our discussions at both farms, it appears that germination tests are not being made, and that temperature, humidity, and seed moisture content data are not being accumulated. These basic quality control procedures are relatively simple and do not require elaborate equipment. They do not have to be deferred until the seed testing laboratory is established. The information derived and accumulated from these simple quality control techniques is vital for the development of operational procedures which will maintain seed quality.

4. Recommendations:

An internal quality control program should be formulated, organized, and implemented at the Msimba and Arusha seed multiplication farms in advance of the 1975 seed harvest. One person at each farm should be appointed as quality control officer, with responsibility for the program, in addition to his other duties.

E. EXTENSION AND PROMOTION ACTIVITIES

It was recognized even during the conception of the project that production of improved seed would not in itself increase productivity of major crops in Tanzania. Farmers would have to be persuaded to obtain and plant the improved seed and "educated" on agronomic practices which would extract at least a major part of the improved seeds inherent yield potential. Accordingly, an "extension" component was designed into the project from the beginning. In the most recent version of the PROP, four agricultural production agronomists were included, one for each of the areas served by the four seed multiplication farms programmed.

An extension-promotion effort got underway in May, 1973, with the appointment of an extension specialist to the contract staff. The extension specialist and co-extension specialists devoted a substantial amount of time to development of a extension-promotion program that would be supportive of the objectives of the project. The extension-promotion program developed had two aspects: (1) In-service training of staff on the seed farms to improve operational efficiency and effectiveness; and (2) a promotional campaign in coordination with the Tanzania Seed Company and the Extension Service to promote increased and better utilization of improved seed.

In mid-1974 the Ministry of Agriculture decided to eliminate the position of production agronomist (extension specialist) from the contract field staff and to handle this aspect with qualified Tanzanian nationals. Accordingly, the extension specialist on-board was relieved of his assignment and recalled to the U.S.

The evaluation team strongly feels that an intensive extension-promotional program is vital to the purpose of the project. Discussions about and limited review of the scope and effectiveness of the current extension program in Tanzania offers little assurance that the vital extension-promotion function will be effectively developed. Elimination of the "production agronomist" positions from the contract field staff essentially eliminated responsibility for promotion from the project. TSC has no plans for promotion of the utilization of improved seed, and neither does the TFA, which is heavily involved in distribution and marketing of improved seed acquired from TSC and through imports.

Presently, the demand for improved seed greatly exceeds the supply. In fact, USAID has made an emergency grant of US$1 million for purchase of seed from Kenya, Zambia, and other countries. Thus, while it might appear that utilization of improved seed by farmers is progressing satisfactory with little or no promotion, it should be recognized that the present situation derives from a number of transitory circumstances:

1. The drought in 1973-74 greatly reduced total food crop production with the result that many farmers had to consume grain traditionally saved for planting.

2. The seed multiplication farms at Msimba and Arusha are still in the developmental stage, and their production was also adversely affected by the drought.

3. The TanGov has mounted an extensive campaign to expand production of food crops, especially maize, and observations made during the evaluation team's travels indicates that an unusual high acreage of maize and other crops has been and is being planted. As an additional incentive to farmers to increase food crop production the TanGov has recently increased the prices for maize and other food grain.

These circumstances of short supply and heavy demand virtually eliminates any need to promote the acquisition of seed of any sort--improved or unimproved--by the farmers. We would repeat, however, that these circumstances are transitory. If climatic conditions are reasonably favorable for the 1975 crop, farmers should produce enough grain for their own consumption and planting the following season, as well as some surplus for marketing. The seed multiplication farms at Msimba and Arusha and contract growers for the Tanzania Seed Company could produce in

in excess of 2,500 tons of improved maize seed alone. This amounts to about 100,000 bushels of maize seed which is sufficient to plant over 250,000 acres or 10% of estimated area planted to maize in Tanzania at the present time.

Marketing 2,500 tons of maize seed produced in Tanzania with, perhaps an additional 500-1,000 tons of hybrid maize seed imported from Kenya, in the face of a good on-farm supply of seed will--in our view--be an entirely different situation than the present. A strong and resourceful extension-promotional program will be essential. And, the need for a strong and sustained promotional effort will increase enormously as the Seed Multiplication project and TSC approach the end-of-project programmed annual goals of foundation and certified seed.

Successful achievement of the project's purpose is totally dependent on the extent to which the seed produced are utilized effectively by farmers. Paradoxically, the present situation of short supply-long demand for seed next season because of a good on-farm supply (assuming favorable weather), also add to the urgency--in terms of the national interest in sustaining improvements in production--of increasing utilization of improved seed. The latter point derives from the fact that many farmers will plant seed of unknown and ill-adapted varieties in 1975 as a result of the seed supply emergency. Thus, there will be many mixtures of varieties and unadapted varieties in the traditional on-farm seed supply at the end of the 1975 harvest. If used for planting the 1976 crop, this farmer-saved seed could result in a substantial depression of yield.

The reluctance of the TSC and TFA to plan and mount a promotional campaign for increased usage of improved seed was mentioned earlier. In our view this is most unfortunate because both TSC and TFA have a responsibility for promoting good seed and associated improved practices and they are in a good position to do so. It is difficult for us to visualize a seed company or a supply association without a promotion function. Certainly the experiences in Kenya, India, and other countries with seed production and supply organized in a pattern similar to that in Tanzania, is that the promotion function is vital.

Our impression is that the reluctance of TSC and TFA to engage in promotional activities stem from their feeling that in doing so they will usurp extension functions of the Ministry of Agriculture. This does not necessarily have to be the case. TSC, TFA and the Extension Service could--and should--mount a cooperative and integrated promotional campaign.

Present shortcomings in extension-promotion might be partially relieved if the USAID Mission proposed Food Crops Production project is authorized and implemented. This project envisions an extensive, well staffed and financed food crop production effort in Tanzania at the village level involving training, increased input supply, and expert operational guidance. If and when this project is authorized an improved seed usage component should be integrated into its overall work plan.

Recommendations:

1. The TanGov should reconsider its decision to eliminate the production agronomist positions from the project field staff. At least one experienced production/extension agronomist should be reinstated on the contract staff to assist the TanGov, TSC, and TFA in planning and executing a "good seed" promotional campaign and to coordinate these activities with those of other relevant projects.

2. The TanGov, Extension Service, TSC, and TFA should--as a matter of high priority--jointly plan and execute a promotional campaign for increased usage of improved seed.

F. TRAINING

1. Participant Training:

The PROP provided for 18 participant training programs distributed as follows:

	No.	Goal
a. Agronomy (Crop Production)	4	B.S. Degree
b. Agronomy (Seeds)	4	M.S. Degree
	2	B.S. Degree
c. Farm Management	2	B.S. Degree
d. Agronomy (Extension)	1	B.S. Degree
	1	M.S. Degree
e. Agr. Engineering (Seeds)	1	B.S. Degree
f. Agr. Engineering (Soil Conservation)	1	B.S. Degree
g. Entomology	1	M.S. Degree
h. Plant Pathology (Agronomy)	1	B.S. Degree

Nine participants have returned after completion of their training programs and five are currently studying in the U.S.: 11 B.S. and 3 M.S.

The participant training program has progressed satisfactorily and has adhered rather closely to the specialties stipulated. With regard to specialties we should point out that there is relatively little opportunity for specialization within departmental disciplines, e.g., Agronomy, in the U.S. Land Grant Universities. This is true because of "standard" degree requirements which include a substantial number of "liberal art" and other supporting courses. It should also be recognized that in a B.S. degree program, there is much less opportunity for the level of personal contact and in-depth training in specialties than in graduate school.

During discussions with the co-project coordinator several issues concerning participant training--related in part to points considered above--were raised. The team feels that two of the issues must be addressed here.

First it was pointed out that Tanzanian participants in B.S. degree programs are required to take a substantial number of courses which are not "relevant" to their training objectives, e.g., American government and history, algebra, trigonometry, social science electives, english, etc. While courses of these sorts may be "irrelevant" to most specified training objectives, they are not irrelevant to the objectives of a B.S. degree. Degree requirements in American universities are specified for each discipline by the university's governing Board of Regents, and must be approved by the accreditation association to which the university belongs. At the B.S. degree level core and specialty courses do not vary much within disciplines from university to university. There is, however, much greater flexibility at the graduate level.

Inasmuch as a degree from an American university does and must reflect a minimum standard of academic training and achievement for all degree holders, basic degree requirements can be only slightly tailored to the backgrounds, sex, or national origins of individual students.

A second issue raised was the substantial variation in time required for completion of B.S. degree requirements among participants and American universities. Because of this variation there is apparently some possibility that the Ministry of Education will not "certify" the degrees of some participants because it feels that the number of courses taken, and especially the length of time spent studying in the U.S., were insufficient. There are a number of possible reasons why B.S. degree training programs for Tanzanians with essentially the same backgrounds might vary among participants and American universities. Participants will certainly vary in degree of english language facility and aptitude

for academic work, both of which affect rate of progress in a degree program. Even within the relatively rigid frame of degree requirements, American universities will also vary in their interpretation of Tanzanian diploma transcripts and permissible course substitutions: some universities will be more liberal in course substitution allowances than others in an attempt to make degree programs for international students as relevant as possible to their training objectives within the frame of "standard" degree requirements.

Regardless of the reasons for variations in participant training programs, the evaluation team is disturbed even by the possibility that earned academic degrees of participants from accredited departmental programs in American universities might not be recognized by the TanGov. And, we feel that this possibility should be equally disturbing to USAID and the Seed Multiplication project.

2. In-Country Training:

To the present time in-country training has quite properly been confined to on-the-job training of counterpart staff at headquarters and the Maimba and Arusha seed farms. This phase of training appears to be progressing quite satisfactorily. However, the rate of progress of project, the return of a major portion of participants, and the planned implementation of the seed control, certification, inspection, testing, drying and processing components of the project by the end of 1976 require the initiation and execution of specialized training on a more organized basis by at least the beginning of 1976. This training should be focussed on "operations" in which different levels of staff will be involved.

3. Recommendations:

Plans should be fully developed during 1975 for intensive, organized, in-service training of seed processing operators, seed analysts, seed control and certification supervisors, and inspectors. Specific emphasis should be given to the effective and efficient "management" of the various technical operations and to their integration into a comprehensive quality control program. The implementation of the training plans should begin in late 1975 or early 1976 at the latest.

ANNEX A

FRAME OF REFERENCE

1. GENERAL SCOPE OF WORK

a. Reassess the project goal to determine its continued validity in the light of present circumstances and any significant changes in the agricultural sector situation of the country since preparation of the PROP, Revision 2 of 6-4-73. Includes an examination of the relationship of this project and other USAID, other donor, or Tanzanian undertakings to determine the extent of which this project reinforces, duplicates or is coordinated with other efforts and is consistent with overall Tanzania sector objectives. This includes an examination of constraints to project development, interrelationships with other organizations necessary to successful comprehensive project development.

b. Pricing policy for the seed industry and seed production arrangements are to be evaluated.

c. Validate the design and structure of the project as formulated in the revised PROP Conditions of Approval of 6-4-73 (copied page 7), with respect to the internal consistency, adequacy of resources in relation to requirements, and effectiveness of project in reaching the objectives at the output, purpose and goal levels.

d. Evaluate performance individually of major project agents, e.g., contractor, TanGov, USAID, and key experts and analyze effectiveness of each in moving toward expected results for these project components.

2. SPECIFIC TASKS OF TEAM

a. Prepare an up-dated PAR report of FY 75 with particular attention to changes in the situation since the previous FY 75 PAR of 6-2-74.

b. Reflect any significant changes in project design via the preparation of a revised logical framework matrix which would support further PROP revisions if any are required.

c. Review, and revise as necessary, the quantifiable criteria against which periodic measurements of progress may be made; primarily the demand for improved seed, the efficiency of farm operations at Maimba and Arusha and the effectiveness of the Tanzania Seed Company's sales and distribution system.

d. Determine if seed farm plans and project work plans are prepared and up-dated on a regular basis in conjunction with all relevant parties.

e. Examine project operations and comment thereon in detail, with particular attention to the Seed Law covering seed certification, seed standards, inspection and enforcement procedures; regulations and trained personnel necessary for implementation and enforcement of seed laws; optimum utilization of equipment under AID loan; effective participant and on-the-job training for counterparts; and installation and operation of seed laboratory.

f. Evaluation team should make recommendations as to the timing and necessary conditions for initiating operations at the third and fourth foundation seed farms.

621-11-130-092	July 1974	Jan. 1975	United Rep. of Tanzania 75-1

SEED MULTIPLICATION

Begin FY 70 Ends FY 80	4-9-73 Rev.2	9-27-72	6-20-74

13. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: $ 1,164,000	b. Current FY Estimated Budget: $ 532,000	c. Estimated Budget to Completion After Current FY: $ 1,824,000

11. KEY ACTION AGENTS (Contractors, Participating Agencies, Host Country Agencies)

a. NAME	b. CONTRACT, P.I.O. OR VOL. AGT.
Experience, Incorporated	Contract AID/afr-752

A. ACTION DATE	B. LIST OF ACTIONS	C. INDICATE ACTION COMPLETION DATE
	1. This PAR evaluation is a portion of a comprehensive in-depth review and analysis of the subject project, conducted within the frame of reference shown in Annex A and submitted as Annex B of the complete Evaluation Report. This special evaluation was stipulated in the Project Agreement 75-2 of 9-10-74. 2. Summary recommendations are contained in Part II of the Evaluation Report and specific details on project activities in Part IV. 3. A similar in-depth evaluation in 1978 has been scheduled in the Implementation Plan of PROP, Rev. 2.	

[ ] PAR [X] PIP [X] [illegible] [X] [illegible] [X] [illegible] [ ] [illegible]

M. Hield, AFR Evaluation Officer 2/11/75

Best Available Document

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1. Experience, Incorporated-Home Office			x					x
Experience, Incorporated-Field Team			x					x

A.1. During the early stages, there were various problems the contractor, mainly the selection of technicians. Of the first ten specialists signed, two did not return for a second tour at the request of TanGov and three did complete their first tour. The primary difficulty appears to have been the adaptation to local living and working conditions and poor relations among team members and with TanGov officials. Also, individual skills and qualifications did not in all cases properly match position requirements. Selections during the past year were much better and recent performance of several new members is definitely encouraging. The contractor is well aware of these problems, and has tightened up the selection process. Nevertheless, personnel selection remains a critical factor, especially in.... (continued)

4. PARTICIPANT TRAINING								
			x					x

Training of 18 participants approved in PROP is on schedule. Nine have returned, five are in the U.S. & doing well. One is programmed with proper qualifications but is awaiting university acceptance, & three remain to be selected. Two of the returnees have been assigned by MinAg outside the project pending initiation of third seed farm at Tanga, perhaps in FY 76. Remaining returnees are doing well. Of the total 18 participants, three were M.S. candidates (all returned)..... (continued)

5. COMMODITIES	a.Grant							
	b.Loan		x					x

Excessive delays in arrival of loan equipment (Loan 015) have an adverse affect on meeting project objectives. Delays were caused mainly by inability of some suppliers to deliver purchased items quickly & lengthy periods for shipping. h of the equipment has now arrived & will be placed in operation. Problems still persist. Lack of proper cultivators at Msimba has held down acreage & required much hand labor. Future procurement planning particularly for the third farm will try to make adequate allowances for the lengthy procurement process.

6. GOVERNMENT SERVICES	a. PERSONNEL							
					x			x
	b. OTHER	1.Budget						
		2.Transport			x			

a. Personnel: TanGov continues to meet commitments on personnel in the Seed project, showing evidence of advance planning, familiarity with all of the project & a keen interest in improving their staff. It has suggested changes in staffing that indicate increasing ability & confidence in local personnel. TanGov overall has not been satisfactory in case of the f.1.procurement specialist. A counterpart has been assigned but was quickly transferred. No suitable candidates seem to be available & no training or staff development appears likely for this position of key importance to MinAg. b.1.budget: TanGov project budget support has been very good; officials have prepared vigorously for budget increases & usually have been successful. b.2.transport: TanGov support in transporting the loan procured machinery & equipment from Dar es Salaam to up-country locations has been very poor, due primarily to the lack of TanGov trucks & to prolonged negotiations within the government to permit renting vehicles. TanGov has now acquired trucks and this problem has been resolved.

7. OTHER	N/A							

Best Available Document

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N/A

			75	76	77	
A. Four Foundation Seed Farms started operation. 3/	3	3	3	4	4	4
	2	2				
			2	3	3	4
Acreage under cultivation.	1,800	3,200	3,200	5,700	7,200	8,500
	1,500	3,000				
C. Metric tons foundation seed produced (maize, wheat, soybean, sorghum, millet combined. 3/	800	1,360	1,360	2,550	3,200	3,800
	500 4/	4/				
			5/	5/	5/	12,200 5/
D. Metric tons "certified" seed produced on project farms. 3/						6,700
			5/	5/	5	,000 5/

Seed Company operating effectively.	Target: Company formed, agencies in appropriate areas and "certified" seed being grown and distributed. Status: Company formed, contract growers (TANWAT) in Njombe and also in Arusha areas. Seeds being sold through TTA, as agent.
Seeds Act being enforced.	Target: Field inspectors checking fields & seed; certification officers approving certification, issuing standards are met. Central Seed Laboratory established. Status: SEEDS ACT passed & signed. Regulations under ACT being finalized, lab site located & new bldg.plans come with temporary quarters arranged in nearby univ.at Mor.
. Seeds meet grade standards.	
4. Processing plants established at seed farms with consequent improvement in quality and some increase in quantity, due to timely processing.	Target: Each farm with plant for processing seed. Status: Lorn equipment has arrived. Hopefully two plant ready for June 1977 harvest but building construction is lagging. Efforts will be intensified to secure installation of necessary equipment in time.

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[illegible] 624-11-130-092 [illegible] United Rep. of Tanzania [illegible]

[illegible]		[illegible]	[illegible]	FY 75	FY 76	FY 77	[illegible]
E. Metric tons "certified" seed produced on non-project farms and distributed through TSC. 6/	[illegible]						107,00[illegible]
	[illegible]	1,500 6/	6/				
	[illegible]			6/	6/	6/	38,000
F. Tanzanians trained under the project in the U.S.	[illegible]	7	9	10	15	16	18
	[illegible]	7	9				
	[illegible]			10	12	14	18
	[illegible]						
	[illegible]						
	[illegible]						
	[illegible]						
	[illegible]						
	[illegible]						

4. [illegible]

To assist TanGov to direct a system for the production, multiplication, sale, distribution and utilization of "certified" seed of superior varieties.

a. TanGov has established and developed its technical and managerial skills and budgeting support sufficient to produce foundation and "certified" seeds and to encourage seed distribution.	a. TanGov has provided project good participants and counterpart staff and excellent budgeting for project farms and appears willing to encourage TSC to expand its seed promotion, sales distribution and contract growing operations.
b. Tanzania Seed Company (TSC) succeeds in selling and distributing the volume of "certified" seed required annually by farmers.	b. TSC has some contract growers, mainly TANWAT and TanGov farms, & is seriously searching for others. Intends new branches at Arusha & Morogoro. Has sold sizeable quantities so far & confident it can sell through TFA large supplies of hybrids seeds & some composites. Is interested in seed promotion & expanding sales distribution.
c. Large acreages are planted, mainly by small farmers, using "certified" seed and other combined inputs, etc., credit, fertilizer and improved cultural practices.	c. Under severe drought and seed shortages, a strong demand for quality seeds has naturally emerged. Demand for hybrids will continue and should also be sustained & perhaps expand even for composites.

Assist Tanzania to achieve self-sufficiency in food crops subsector consistent with the National Maize Production Campaign and its emphasis upon reaching by 1980 annual maize production of about 900,000 tons.

6. [illegible] tes.

1. Imports of food crop products should be reduced because of increased acreages planted and higher yields both from superior varieties and better quality seed as well as improved cultural practices such as weeding, spacing, time of planting; combined use of fertilizer, credit and other inputs. See also Part III.D.1. of Evaluation Report.
2. Domestically produced food crop products should be available in sufficient supply to permit marketing and distribution to meet national demand.

	621-11-130-049	July 1974-Jan. 1975	United Rep. of Tanzania 75-1

A. 1. [illegible]

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b. Tanzania Seed Company (TSC) succeeds in selling and distributing the volume of "certified" seed required annually by farmers.	b. TSC has some contract growers, mainly TANWAT and TanGov farms, & is seriously searching for others. Intends new branches at Arusha & Morogoro. Has sold sizeable quantities so far & confident it can sell through TFA large supplies of hybride seeds & some composites. Is interested in seed promotion & expanding sales distribution.
c. Large acreages are planted, mainly by small farmers, using "certified" seed and other combined inputs, etc., credit, fertilizer and improved cultural practices.	c. Under severe drought and seed shortages, a strong demand for quality seeds has naturally emerged. Demand for hybride will continue and should also be sustained & perhaps expand even for composites.

[illegible]

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[illegible] tes.

1. Imports of food crop products should be reduced because of increased acreages planted and higher yields both from superior varieties and better quality seed as well as improved cultural practices such as weeding, spacing, time of planting; combined use of fertilizer, credit and other inputs. See also Part III.D.1. of Evaluation Report.
2. Domestically produced food crop products should be available in sufficient supply to permit marketing and distribution to meet national demand.

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Indicate block numbers. Use this form to complete the information required in any block of a PID or PA/PR form.

II.A.1.

view of the prospective new seed farms, and USAID will continue to review proposed candidates with great care.

Although this is considered an "OPEX" project, it is closer to an institutional type activity which has definite objectives, requires a team approach and demands a certain amount of backstopping from the contractor. During the past two years, the contractor home office has been providing strong support for the field team's efforts by monitoring loan equipment and providing liaison for participants in U.S.

Contractor reporting was previously considered merely adequate. The annual, and quarterly reports submitted in 1974 were much improved and further improvement is expected beginning with annual report expected early in 1975. More specific and detailed contractor work plans, including time schedules for major tasks and key events, are also anticipated, especially in view of the proposed irrigation systems and new farm sites. These items will be discussed further during the next visit here of home office personnel.

II.A.2.

In earlier periods, the field team technicians' performance had been less than adequate but with new assignments in the past year, a satisfactory rating is continued in the PAR. The two farm managers are performing very creditably but the repair and maintenance phase at Msimba is lagging and constitutes a bar to more effective operation and acreage utilization. Other details are included in Part IV of the full evaluation report.

II.A.4.

and 15 B.S. [redacted] There is potential problem in the impatience of some returned participants at promotion in government offices and the desire for more rapid advance perhaps in parastatal organizations.

[redacted]

PAR	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT APPRAISAL REPORT	[ ] Validation [x] Initial	PAGE 5 OF 6 PAGES
		1. Cooperating Country United Rep. of Tanzania	2a. Code No. PAR 75-1
		2b. Effective Date July 1974-Jan.1975	2c. [ ] Original [ ] Amendment No.
		3. Project/Activity No. and Title 621-11-130-092 SEED MULTIPLICATION	

Indicate block number. Use this form to complete the information required in any block of a SPD or PA/PR form.

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[redacted]

ATION	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. Country Rep. of Tanzania	2. Code No. PAR 75-1
		3A. Effective Date July 197[illegible]-Jan.1975	3B. Amendment Change Ord. No.
PAR	PROJECT APPRAISAL REPORT	4. Project Activity No. and Title 621-11-130-092 SEED MULTIPLICATION	

Include block numbers.

Use this form to complete the information required in any block of a PID or PAAD form.

FOOTNOTES:

1/ Revision 2 was the substantive revision; Revision 3 dated 3-30-73 provided only for the position of Parts Procurement Specialist for four man-years, without changing the conditions in Revision 2.

2/ The Ministry of Agriculture had earlier proposed to start in FY 1974 another farm, possibly at Njombe, as the third of the four proposed in the PROP. The recent budget for 1974/1975 was approved at T.Shs. 5,800,000 ($813,000 equivalent) providing funds for construction facilities and operation of the existing two farms plus approximately T.Shs. 1.1 million for initiation of the third farm. TanGov has now accorded the Njombe site a lower-priority because TSC is now serving that area with hybrid seeds well suited to the higher altitude and prevailing weather conditions there while quality seeds for the lowland and coastal altitudes are currently in short supply.

TanGov is in process of site selection near Tanga. If it is not too late in the season and depending on the previous cultivation of the site, perhaps 200-250 acres of maize and wheat might be planted with the loan of land preparation equipment from Mairba. One D-6 tractor could be transferred to Tanga as the remaining D-6 tractor should be sufficient to clear the additional acreage planned for 1976 under current work plans and production targets. For further details see Part III of the Evaluation Report.

3/ With the increased responsibility of project seed farms for "certified" seed in addition to foundation seed this inter-relationship takes on added importance. See detailed analysis in Part III.B. of the Evaluation Report.

4/ Under the present production structure the relative proportion of foundation vs. "certified" seed is properly determined after the harvest. The amount of foundation seed, except hybrids, is determined by the estimated required for the next growing season. Figures will be furnished in contractor progress reports.

5/ The output targets for foundation and "certified" seed were revised as explained in detail in Part IV (A.2.). The individual figures for prior years and future annual projections will be worked out by the contractor and project manager.

6/ The revised 1980 target figure is 41,000 tons of "certified" seed from both project and non-project production. Annual figures to be derived from subsequent TSC data, contractor progress reports and project work plans.

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ANNEX C

1

LOGICAL FRAMEWORK MATRIX

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS
Sector Goal:	Measures of Goal Achievement.
To assist Tanzania to achieve self-sufficiency in the food-crops sub-sector consistent with the National Maize Production Campaign and its emphasis upon reaching by 1980 annual production of about 900,000 tons.	Imports of crops produced in Tanzania are reduced. Annual production of maize reaches 900,000 tons. Domestically produced food-crop products are available in sufficient supply and properly marketed and distributed to meet national demand.
Project Purpose:	Conditions that will indicate purpose has been achieved:
To assist TanGov to direct a system for the production, multiplication, sale, distribution and utilization of "certified" seed of superior varieties.	TanGov has established and developed its technical and managerial skills and budgeting support sufficient to produce foundation and "certified" seeds and to encourage seed distribution. Tanzania Seed Company (TSC) succeeds in selling and distributing the volume of "certified" seed required annually by farmers. Large acreages are planted, mainly by small farmers, using "certified" seed and other combined inputs, etc., credit, fertilizer and improved cultural practices.
Outputs:	
Four seed farms in operation.	Farms at four sites in four major ecological zones cultivating about 7,000 acres.
Foundation and certified seed production adequate for national needs.	2,200 tons foundation seed produced. 4,000 tons "certified" seed produced on project farms. 38,000 tons "certified" seed produced on non-project farms and sold to farmers by TSC.
TSC operating nationally with appropriate facilities and personnel.	Seed Company operating effectively.
Seeds Act and regulations being completely enforced.	Seed Law passed and seed certification supported by effective seed laboratory and regulatory actions.
Seed treating/certification laboratory established and operating effectively.	
Seed certification program completely implemented.	
Eighteen participants trained in the U.S. and assigned to appropriate positions in the program.	
Tanzanians trained to operate Seed Certification system.	

MEASURE OF VERIFICATION	IMPORTANT ASSUMPTIONS
Sector Goal: TanGov Statistics. Annual PARs. Special Evaluations.	TanGov continues to support the food crops subsector. Essential financial, manpower and policy issues will be resolved by TanGov so as to provide an environment for increased food production. Key factors, other than seeds, also make required contribution to increased production, e.g., research, extension, credit, storage and transport, markets, price incentives, trained manpower, etc. In particular, other USAID and donor projects have their combined and desired impact upon food production.
Project Purpose. TanGov, MOA and E-I reports. Records of TSC, TFA and TRDB.	Research program provides new and better varieties. Seed company establishes outlets in all areas. Seed Company undertakes promotion and extension efforts. TanGov establishes required conditions/ environment for widespread acceptance of seeds by farmers.

MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs PARs and Special Evaluations. TanGov, MOA and E-I reports. Records of TSC and TFA.	Weather is favorable. Equipment is delivered and installed in timely manner. Budget support is forthcoming. Problems of storage, transport and processing are solved. Repairs and maintenance are organized and sustained. Experience Incorporated contract objectives are met. TSC vigorously and successfully promotes the use of certified seed by farmers and provides enough sales outlets. TSC can arrange for sufficient contract growers.