

PROJECT APPRAISAL REPORT (PAR)

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1. PROJECT NO. 621-0107	2. PAR FOR PERIOD: April 1976 TO April 1977	3. COUNTRY United Republic of Tanzania	4. PAR SERIAL NO. 77-2 12p.
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AGRICULTURAL RESEARCH

6. PROJECT DURATION: Began FY 71 Ends FY 82	7. DATE LATEST PROP March 29, 1971	8. DATE LATEST PIP	9. DATE PRIOR PAR June 8, 1976
10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$ 1,203,000	b. Current FY Estimated Budget: \$ 700,000	c. Estimated Budget to completion After Current FY: \$ 7,164,000 1/

11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PACA OR VOL. AG. NO.
International Institute of Tropical Agriculture (IITA)	ATD/500 621-001-T

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS		C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST	IITA		
X		X	X	1. Contractor team leader involved in overall planning in the research system including technical, financial and organizational aspects.	Continuing
X		X	X	2. Upgrade staff development plan, including both overseas and on-the-job training in anticipation inclusion of root crops program.	December 1977
X		X	X	3. Determine TanGov needs for extension staff training program, training role for research staff and what role a US Training Advisor would play.	December 1977
X		X	X	4. Follow up on "Report and Proposals for Development of Ilonga A.R.I." and determine AID and TanGov actions to be taken.	July 1977
X		X	X	5. Crop coordinators submit annual reports which compile and summarize data of each crop on a national basis.	Annually
X		X	X	6. Publish in 1977 a Maize Production Handbook.	December 1977
X		X	X	7. Continue monitoring of TanGov funding capacity for the project and assure that future plans particularly the 5-year plan include adequate funding.	Continuing
X		X	X	8. Submit 621-H-017 Loan reports on status of equipment procurement, assembly and transport to place of designation.	Quarterly
X		X	X	9. Determine if and when the project is to be expanded to include root crop research and where this element is to be headquartered.	December 1977
X	X			10. Expedite approval of PP Revision.	July 1977
X		X	X	11. When PP Revision approved follow through with IITA on contract amendment for sorghum/millet plant breeder, sorghum/millet agronomist and production economist.	September 1977

(Continued)

D. REPLANNING REQUIRES						E. DATE OF MISSION REVIEW	
REVISED OR NEW	<input checked="" type="checkbox"/> PROP	<input type="checkbox"/> PIP	<input type="checkbox"/> PRO AG	<input type="checkbox"/> PIO/T	<input type="checkbox"/> PIO/C	<input type="checkbox"/> PIO/P	June 1, 1977
PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE				MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE			
Wesley L. Pitts				Vernon C. Johnson			

PROJECT APPRAISAL REPORT (PAR)

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5. PROJECT TITLE

AGRICULTURAL RESEARCH

6. PROJECT DURATION: Began FY _____ Ends FY _____	7. DATE LATEST PROP	8. DATE LATEST PIP	9. DATE PRIOR PAR
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10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$	b. Current FY Estimated Budget: \$	c. Estimated Budget to completion After Current FY: \$
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PASA OR VOL. AG. NO.

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST		
			ITTA	
X		X	X 12. Complete annual update of research plan.	Feb-Annually

12. REPLANNING REQUIRES REVISED OR NEW: <input type="checkbox"/> PROP <input type="checkbox"/> PIP <input type="checkbox"/> PRO AG <input type="checkbox"/> PIO/T <input type="checkbox"/> PIO/C <input type="checkbox"/> PIO/P	13. DATE OF MISSION REVIEW
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PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE	MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE
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II. PERFORMANCE OF KEY INPUTS AND ACTION AGENTS

A. INPUT OR ACTION AGENT CONTRACTOR, PARTICIPATING AGENCY OR VOLUNTARY AGENCY	B. PERFORMANCE AGAINST PLAN							C. IMPORTANCE FOR ACHIEVING PROJECT PURPOSE (X)				
	UNSATISFACTORY		SATISFACTORY			OUTSTANDING		LOW		MEDIUM		HIGH
	1	2	3	4	5	6	7	1	2	3	4	5
1. IITA/Headquarters						X						X
2. IITA/Field Team						X						X
3.												

Comment on key factors determining rating

- SUMMARY:** The performance of the Field Staff and the IITA interest and support continue to result in improved project implementation and improved project administration.
- BACKSTOPPING:** During this appraisal period IITA administrative and technical personnel have made frequent visits to Tanzania and Mission and USAID (East Africa) personnel have visited IITA in Nigeria, resulting in smoother administrative and technical working relationships and an improvement in active contractor support. The contract has been extended for three more years (11/76-11/79) and the AID Contractor services have been transferred from REDSO/West Africa to REDSO/East Africa headquarters making a more effective linkage between the Mission and IITA in (CONTINUED)

4. PARTICIPANT TRAINING	1	2	3	4	5	6	7	1	2	3	4	5
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Comment on key factors determining rating

There are currently 23 returned participants working in this project with 11 in training and an additional 16 scheduled to depart in FY 1977 and 25 in FY 1978. All participant training is currently being funded under the IITA contract and includes both short-term (at IITA and CIBNYT) and long-term degree programs at U.S. universities. The recently revised training plan, increasing the number of individual participants (CONTINUED)

5. COMMODITIES	1	2	3	4	5	6	7	1	2	3	4	5
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Comment on key factors determining rating

There have been substantial amounts of both grant and loan funds made available for the purchase of commodities for this project. All the grant funds (\$141,000) have been spent and all funds in the \$173,000 Loan 621-H-017 were used for purchase of commodities and equipment for the project. Most loan commodities and equipment -- (CONTINUED)

6. COOPERATING COUNTRY	a. PERSONNEL	1	2	3	4	5	6	7	1	2	3	4	5
	b. OTHER			X									X

Comment on key factors determining rating

A. **PERSONNEL**--Assignment by the TanGov of professional staff to the project (maize, grain legume, sorghum/millet research) has been difficult but during this review period continues to improve as 23 participants have returned to counterpart positions within the project. The increase in number to 67 trained personnel with this project will more fully insure that there will be a competent nucleus of qualified technicians in the food crops research area in Tanzania when USG assistance is terminated in FY 1982. The evaluation team pointed out that the basic structure of the national agriculture research system is satisfactory and that the TanGov is supporting the research project relatively well. Progress has been made in clarifying the roles of the crop research coordinators and the research station directors (including the project contract team specialists).

(CONTINUED)

7. OTHER DONORS	1	2	3	4	5	6	7	1	2	3	4	5
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(See Next Page for Comments on Other Donors)

II. Performance of Key Inputs and Action Agents

II. A. 3. 2 (Backstopping Continued)

the form of clearer understanding of contract procedures and more frequent response to communications.

IITA conducts an annual in-house review in Nigeria thus not only keeping close contact through their Tanzania visits. IITA keeps field personnel informed of type and kinds of support they can and should receive from the IITA headquarters.

After 16 months of being vacant, the Maize Agronomist position has been filled. Although the contractor provided a TDY agronomist during planting and harvest season this vacancy created a burden on other members of the Field Staff. However, the contractor and USAID are anxiously awaiting AID/W action on Project Paper Revision as they have a nomination ready for the Production Economist position and have made arrangements and tentative informal agreements with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) for a sorghum/millet research program and personnel.

During this appraisal period IITA furnished a consulting team to review present research station facilities and to recommend necessary improvements for upgrading research functions.

3. FIELD TEAM: The Field Team is technically qualified and has performed exceedingly well. Their presentation of past years research results and the following year's coordinated national research programs at the National Research Council meeting has been adopted as a model for all other research programs to follow. In fact the Ministry of Agriculture has proposed and requested or is planning to request that the Agricultural Research Project be expanded to include sorghum/millet research, root crops research and rice research programs.

The Team Coordinator's role in working with the Ministry of Agriculture in the planning and administration of the national agriculture research system is becoming progressively more involved. At the recommendation of the 1976 Research Evaluation, Dr. Duffield arranged for IITA consultants to review and present recommendations for upgrading research stations, areas and facilities. He is presently making arrangements for the development of a national research staffing pattern which will also include recommendations for formal and informal on-the-job training that will satisfy the national research staffing demands. He has been requested to assist in reviewing present national research activities and make recommendations to expand or decrease research programs according to research personnel capabilities.

II. A. 4 Participant Training (Continued)

to 67 has received full cooperation from MinAg as they have recruited competent personnel on schedule and it is believed that future participant candidates will be selected as planned.

11. A. 4 Participant Training (Continued)

The Mission is very pleased with the quality of research being conducted by the returned participants and positive reports are being received from the participants currently in training. Eventually the Project will be staffed with well trained and well disciplined cadre of technicians who will be technically qualified to carry on with food crop research as phases of the project are terminated beginning in FY 1982.

Under the Project Coordinator's guidance, the MinAg has developed an overall food crop training program which includes training programs to be funded under the research project.

11. A. 5 Commodities (Continued)

vehicles, farm machinery, laboratory equipment and office equipment--have arrived and the remainder will be in Tanzania by September 30, 1977.

As was recommended by the research evaluation team, IITA sent two specialists to Tanzania to review the research program, organizational structure, buildings and facilities at the Ilonga Agricultural Research Institute (ARI) where the field personnel are assigned.

The MinAg reacted positively to recommendations submitted by the evaluation team on upgrading the Ilonga Station. Furthermore they have developed a proposed schedule of initial implementation and cost estimates. The MinAg FY 1978 budget request reflect shilling funding for the cost of first phase facility development. (The approved budget is not yet known.)

Anticipated improvements in the development plan include service facilities and laboratories which would help assure long functional life of commodities purchased under grant and loan funds.

11. A. 6 Cooperating Country (Continued)

B. FINANCIAL--TanGov financing during their FY 1977 was satisfactory in that it provided T.Shs. 411,400 for the maize and grain legume research programs. The FY 1978 budget request, which for the first time includes in this project sorghum/millet research, reflects a 100 percent increase (T. Shs. 800,000¹)

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II. 7. Continued: Comment on key factors determining rating of Other Donors

There are no other donors working directly in this research project. The national crop research programs are approved annually by the National Research Council. Several donors provide assistance on specific research stations by their assistance in conducting the approved national food crop research trials assigned to each station. Chief among these are Canada (wheat research) and Scandinavians and Germany (general research). These efforts are complimentary to the US work and excellent coordination and relationships are maintained among these groups.

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS		TARGETS (Percentage/Rate/Amount)					
		CUMULATIVE PRIOR FY	CURRENT FY		FY 78	FY 79	END OF PROJECT
			TO DATE	TO END			
1. Trained Tanzanians capable of managing and conducting food crop research which will continue to maximize production (Partic. Training): a) Maize Program	PLANNED	11	1	1	--	--	12
	ACTUAL PERFORMANCE	11	--				
	REPLANNED			5	5	--	21
b) Legume Program	PLANNED	6	4	4	2	--	12
	ACTUAL PERFORMANCE	7	4				
	REPLANNED			4	3	--	14
c) Sorghum Program	PLANNED	--	3	3	3	4	16
	ACTUAL PERFORMANCE	--	--				
	REPLANNED			--	--	--	--
d) National Level (MinAg Headquarters)	PLANNED	--	--	--	--	--	--
	ACTUAL PERFORMANCE	--	2				
	REPLANNED			2	--	--	2
B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS		COMMENT: The MinAg has repeatedly stated maize, food legume, sorghum/millet, cassava and rice top priority within its research program. Evidence is that some personnel are being shifted from other programs to adequately staff the food crops research efforts. They have also requested an outside consultant to help redesign research projects					
1. Improved planning, administration and coordination of food crop research within Tanzania.		to assure objectives relate to most pressing problems. The budgeting system is being reorganized to reflect project needs, along with stricter adherence to disbursement according to budget line items.					
2. Well developed research station and sub-stations including appropriate equipment, facilities to permit quality food crop research program to be carried out.		COMMENT: Work began in FY 1974. During November 1976, IITA furnished a team to make a survey of the facility and equipment requirements at the Ilonga Research Station. Their recommendations were received during March 1977. Funding for recommended improvements are now being negotiated.					

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II. 7. Continued: Comment on key factors determining rating of Other Donors

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS (Continued)		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMULATIVE PRIOR FY	CURRENT FY		FY ____	FY ____	
			TO DATE	TO END			
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						
U. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS	COMMENT:						
3. Both Improved local and newly developed seed varieties.	<p>a. Maize -- Four local varieties being upgraded with breeder seed being furnished to Seed Multiplication Farms. Breeder seed of newly released variety furnished for increase on 200 acres at Seed Farm. Project cooperated with EAAFR0 in producing new high yielding hybrid variety. (CONTINUED)</p>						
3c	<p>COMMENT: b. Legumes--Work began in FY 1975. Work continued with cowpea soybean expanded to field bean and green gram. Cooperated with INTSOY soybean trials. One cowpea variety has been supplied for multiplication. c. Sorghum--With AID/W approval of revised PP,</p>						
3x	<p>COMMENT: sorghum work will begin in FY 1977.</p>						
4. Improved package of practices for the crops on which research is being conducted.	<p>With the CIMMYT approach to research, i.e., conducting widespread village trials, packages of practices are constantly being developed and improved. Each released variety in each ecological zone has its own package of practices which has been developed. Factual results of the village trials will be determined by the proposed (CONTINUED)</p>						

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II. 7. Continued: Comment on key factors determining rating of Other Donors

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMU- LATIVE PRIOR FY	CURRENT FY		FY ____	FY ____	
			TO DATE	TO END			
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						

B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS	COMMENT:
5. 2 Established/reinforced linkages to national, regional/international research institutes and universities.	With AID/W approval of revised PP ICRISAT will be deeply involved with the research program. IITA, the contractor, and CIMMYT are actually participating in the project. Through training programs, innerchange of germ plasm and research findings links have been established with USDA/Beltsville, CIAT, INTSOY/Univ. of Illinois, Kansas State and EAAFR0. The Morogoro Faculty of Agriculture (USDM) will be deeply involved in sorghum research. The IITA Director General stated that their research associations with Tanzania were planned to be continued after USAID phase-out date in FY 1983.
6. 2 Improved linkages to seed multiplication farms in Tanzania.	Close cooperation continues to exist with the Seed Multiplication Project as a planned flow of breeder seeds is being made available to the Seed Project.

II. 7. Continued: Comment on key factors determining rating of Other Donors

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS OF MAJOR OUTPUTS		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMU- LATIVE PRIOR FY	CURRENT FY		FY ____	FY ____	
			TO DATE	TO END			
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						
	PLANNED						
	ACTUAL PERFORM- ANCE						
	REPLANNED						

<p>B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS</p> <p>7. Feedback system from farmers and villages to research/extension personnel.</p>	<p>COMMENT: Village trials are established in all major ecological areas to test the most promising varieties, agronomic practices and packages of inputs. Such trials are needed to verify experiment station results at the village level, and to test farmer acceptability. The farmer participation in the trials helps to convince him these practices will work for him as well as for the technician. Although we have no quantitative measure of spread, spread is definitely visible within limited range of the trial areas. Farmer trials need to become the interface between research and extension from which overall extension of improved seed and practices are attained. Methods of establishing the extension link are now under study.</p>
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IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged.

2. Same as in PROP? YES NO

Develop an effective agriculture research system in Tanzania, with emphasis on crops grown by small farmers, such as maize, sorghum/millet and food legumes.

B. 1. Conditions which will exist when above purpose is achieved.

2. Evidence to date of progress toward these conditions.

1. Trained Tanzanians conducting ongoing applied research aimed at improving the productivity of the small farmers.

1. There are currently 23 returned participants working in the project with 11 in training and an additional 16 scheduled to depart in FY 1977 and 25 in FY 78. As suggested in the inputs section of this PAR, the number of training will be increased including degree programs. The in-service training plan has not yet been formulated although informal training is being accomplished daily as the project technicians work with their Tanzanian colleagues

2. Regular feedback from villages to ensure an awareness of farmer problems.

2. See outputs section.

3. Donor expertise no longer required to sustain effective research in food crops.

3. Donor assistance will be required for several years. However, the project will provide Tanzania with a much improved capacity to carry on research without outside assistance.

4. Foundation seed farms in major altitude/economy zones regularly supplied with improved high yielding, quality varieties of maize,
(Continued)

4. See outputs section.

V. PROGRAMMING GOAL

A. Statement of Programming Goal

To assist the Government of Tanzania achieve its objective of self-sufficiency in the production of major food crops.

B. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.

With the development of an effective agriculture research system, one of the major constraints of production will have been eliminated. Research is now supplying breeder seed to seed multiplication farms for increased multiplication which currently is partially relieving the shortage of seed of high yielding varieties. With the development of such seed, the package of practices associated with each variety, and by incorporating farmer and village feedback into the research system, Tanzania will have made a giant step toward their goal of self-sufficiency in food production. The addition of sorghum and possibly root crops to the research program will more fully assure that the major food crops and areas of production will be covered.

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IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged.

2. Same as in PROP? YES NO

B. 1. Conditions which will exist when above purpose is achieved. Continued	2. Evidence to date of progress toward these conditions.
<p>legume, and sorghum/millet breeder seed for multiplication.</p> <p>5. Physical facilities and items of equipment on research stations capable of supporting research staff needs.</p> <p>6. Land on research stations properly graded and watered for conducting quality research programs.</p> <p>7. Research plans for maize, legumes, and sorghum/millet updated annually.</p> <p>8. Firm linkages established between research and national planning systems</p> <p>9. Annual research outputs adequate to fully support approved and annually updated production (Continued)</p>	<p>5. See outputs section.</p> <p>6. The upgrading of the Ilonga Agriculture Research Institute (laboratories, buildings, water, roads, land leveling, irrigation, etc.) is under review. See new actions proposed and requested as a result of this evaluation.</p> <p>7. Plans for maize and legumes are reviewed annually and updated according to previous year's experience. Sorghum/millet research plans to be handled in the same manner.</p> <p>8. The Project Coordinator oversees that this linkage is being reinforced and maintained as well as being incorporated in the five-year plan.</p> <p>9. Good progress continues in this regard. Through village trials research results are disseminated directly to farmers. Research results are also made (CONTINUED)</p>

V. PROGRAMMING GOAL

A. Statement of Programming Goal

U. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.

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IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged.

2. Same as in PROP? YES NO

<p>B. 1. Conditions which will exist when above purpose is achieved. Cont'd.</p>	<p>2. Evidence to date of progress toward these conditions.</p>
<p>goals with research results disseminated as appropriate.</p> <p>10. Research system adequately financed on yearly basis with sufficient funds included in the five-year plan.</p>	<p>available to the extension personnel and through agriculture training institutes. Crop coordinators submit annual reports which compile and summarize data for each crop on a national basis. A Maize Production Handbook has been prepared and is being printed at IITA.</p> <p>10. The Project Coordinator closely scrutinizes the financial inputs required to carry out research work and sees that funds are placed in the budget for the research program. New funds were added for the final quarter when it became evident that FY 1977 allocations were insufficient.</p>

V. PROGRAMMING GOAL

A. Statement of Programming Goal

B. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence.