Proj. No 6170023 (2)

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DEPARTMENT OF STATE

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INTRODUCTION

AID activities in Uganda have been concentrated for the most part in two key sectors of the country's economy--education and agriculture. In the latter, AID objectives have included first, help in increasing the quality and quantity of agricultural production per unit of land and second, an attempt to help Uganda in her efforts to stimulate diversification of agricultural exports.

An integral part of the agricultural development of Uganda, as in all less-developed, agricultural countries, is the training of a local staff of competent agricultural extension officers whose job is to teach local farmers and their families new and better farming techniques to replace traditional, less-efficient methods of production.

AID assists in the schooling of these extension workers under its Agricultural Education project (617-11-110-023) carried out by staff provided under contract by West Virginia University. The background scope, objectives, activities, accomplishments and problems of this project are described below:

BACKGROUND AND SETTING

Uganda is predominately an agricultural economy. Agriculture employs approximately 80% of its population and produces nearly 60% of its gross domestic product. Most of Uganda's foreign exchange earnings come from the export sales of coffee and cotton, while food grain crops supply only three to five percent of total export earnings.

Both coffee and cotton have been subject in recent years to a fluctuating but steadily downward trend in world market prices. World-wide production of both crops has generally increased at a faster rate than consumption. Uganda, as a result, has been confronted with a steady per-unit decrease in the value of her two most important exports.

The Government has recognized the problems associated with continued over-reliance on two-crop production and has undertaken the task of diversifying Uganda's agriculture. Efforts are being made to increase the production of livestock and dairy products, which must still be imported in large quantities. Other agricultural products such as rice and some oil crops must also be imported and increased domestic production of these crops is receiving considerable attention.

NEED FOR TRAINED MANPOWER

A prerequisite for increasing agricultural output and changing traditional production patterns is the development of a cadre of manpower trained in

modern agriculture. Technicians are needed for the extension service to introduce improved farm management practices in both crop and animal production, introduce farmers to the proper use of farm credit and encourage farm mechanization. Improved marketing is needed to provide incentives for larger total production.

Extension workers are provided by the Departments of Agriculture, Cooperatives, and Veterinary Services. The extension staffs for the Department of Agriculture in the Ministry of Agriculture and Cooperatives are trained at Bukalasa and Arapai Agricultural Colleges which are three-year post-secondary, diploma-granting institutions. The Department of Veterinary Services in the Ministry of Animal Industry, Game and Fisheries trains its extension workers at the Veterinary Training Institute, Entebbe. This institution trains people at both the certificate (2-year post secondary) and 3-year diploma levels.

The colleges are funded by the Departments within the Ministries, and are operated primarily to train extension workers. The curriculums consist of classroom instruction in theoretical material, heavily supplemented by practical training in crop production and management of livestock and in handling machines and tools. These are subjects which the students, upon graduation, will teach farmers.

Arapai Agricultural College has a training program which emphasizes farm mechanization techniques. Graduates from this school are usually posted to group farms where the major share of mechanized farming in Uganda exists. Training at Bukalasa Agricultural College is concentrated more heavily in the area of general agricultural which is designed to prepare its students to be effective extension workers.

The curriculum at the Veterinary Training Institute is heavily oriented toward developing graduates who are well acquainted with livestock disease and animal husbandry problems. Students are given experience in the handling of cattle and in the problems of livestock management.

Projection of the need for trained extension officers and assistants in the Ministries in 1972 is presented in Table 1.

Table 1. Extension Staff Establishment, Showing Personnel on Board in 1968 and Projected Needs for 1972

ORGANIZATION POSITION TITLES	YEAR 1968 On Board	YEAR 1972 Projected Need
Department of Agriculture		
Agriculture Assistants (A.As.) Certificate	610	1400
Assistant Agriculture Officer (AAOs.) Diploma	126	308
Department of Veterinary services		
Veterinary Assistants (V.As.) Certificate	260	350
Assistant Animal Husbandry Officers (A.A.H.Os.) Diploma	60	90
Livestock Improvement Officers	2	30

If the present establishment remains unchanged, there will be need for an additional 790 certificate graduates for the Department of Agriculture and 90 certificate graduates for the Department of Veterinary Services between 1968 and 1972. There will also be a need for 182 additional diplomates in the Department of Agriculture and 58 diplomates in the Department of Veterinary Service during the same period.

USAID CONTRIBUTION TO UGANDA'S AGRICULTURAL EDUCATION

The United States Agency for International Development (USAID) has been assisting the Government of Uganda in expansion and development of the agricultural education institutions through a contract with West Virginia University. This project began in 1963 and is scheduled for completion in 1972. The purpose of U. S. assistance is to strengthen the curriculum in both the classroom and the practical training programs.

The aid has been in the form of providing instructor/advisors, four of whom were posted at the Bukalasa Agricultural College and four at Arapai Agricultural College under the Ministry of Agriculture, Forestry and Cooperatives. A three-man West Virginia team also has been teaching at the Veterinary Training Institute at Entebbe, working under the Ministry of Animal Industry, Game and Fisheries.

Together with the instructor/advisors, USAID has provided funds for teaching and demonstration materials, audio-visual equipment, and some construction of facilities.

A participant training program has been established to train Ugandans in the U. S. who, upon returning to Uganda, will replace the West Virginia University contract staff and other staff members supplied by the United Kingdom, a cooperating partner with USAID and GOU in this project.

The present total staffing of the three instructional facilities consists of 34 positions, ten of which are presently filled by Ugandans. By 1972, all positions are scheduled to be filled by Ugandans if the planned participant training program is fully successful. The GOU has encountered difficulty in supplying enough qualified participants in the past. As a result progress has been slowed in the "Ugandanization" of the college staffs. Now, however, more Ugandans are becoming available, with the prerequisite training, so that adequate numbers of participants should be forthcoming to complete the required staffing by 1972.

GOVERNMENT OF UGANDA CONTRIBUTION

The GOU provides funds for the operation and maintenance of the colleges. They also provide funds for capital inputs such as building the machine shop at Arapai, increasing the number of staff houses at all three schools, and paying all erection costs for the nine quonset huts granted by USAID. The total enrollment of the colleges will average approximately 500 students per year at a per student cost of $1,100 per annum. The annual recurrent costs will be $550,000 or $2.2 million for the period 1969 to 1972. Estimated total GOU inputs since the beginning of the project is $2.5 million.

The GOU supplies housing and office space for the USAID/WVU Contract Staff. They also provide some mileage allotments for the USAID/WVU Contract Staff for official college business.

OTHER DONORS

The U. K. will continue to provide instructors at the three colleges. Some are members of the Volunteer Overseas Service and others are in Uganda on an OPEX "Topped-Up" arrangement by the United Kingdom. The U. K. will supply 28 man-years of instructors through FY 1971, and one 20-bed girls' hostel at Bukalasa. The estimated cost of this service from FY 1967 through FY 1971 will be approximately $200,000 by which time U. K. assistance will terminate.

The F.A.O. will provide buildings and some staff for the hides and skins school on the V.T.I. campus. An agreement has been reached between the GOU and the Government of Denmark to supply a dairy training school and some instructors, on the V.T.I. campus.

GOALS AND TARGETS OF USAID PARTICIPATION IN UGANDA'S AGRICULTURAL EDUCATION

The primary objective of USAID activities under this project is to provide instructor/advisors for the three Diploma Level Colleges in order to help train more personnel for the Ministries' extension services, and at the same time to help upgrade the general academic level, including curriculum improvement and the use of practical training techniques.

The more specific goals of the USAID contribution to Uganda's agricultural education program are to assist the Department of Agriculture:

1. At Arapai to:

   a. Increase the number of students from 30 in 1963 to fill the school to its capacity of 220 in order to graduate 80 farm management and mechanization diplomates.

   b. Expand farm management and mechanization courses, so that students can receive intensified practical training.

   c. Introduce staff training courses and upgrade the curriculum through the use of audio-visual training techniques, practical work experience, better syllabus materials, improved lecture and discussion techniques, and training in farm mechanization.

   d. Expand the open shelf library system and provide a larger number of text and reference books keyed to daily assignments.

   e. Instill the students with a realistic attitude toward working in a competitive agricultural economy and a knowledge of the role of farm management and extension methods in developing a progressive agricultural economy.

   f. Continued revision and upgrading of curriculum to meet country's needs.

2. At Bukalasa:

   a. Same as above goals for Arapai with the addition of the introduction of home economics training for women. There is, however, somewhat less emphasis on farm mechanics.

3. Veterinary Training Institute: To assist the Department of Veterinary Services to:

   a. Increase enrollment to 135 students by 1972 and improve curriculum to produce students well versed in practical, as well as academic, training to work in animal husbandry and disease control with government and private organizations.

b. Introduce the students to practical training outside of scheduled lecture periods in early mornings, late afternoons and on weekends. Cooperate in the animal husbandry instruction with the neighboring government Artificial Insemination Center, Animal Health Research Institute and private farmers for practical application of course work.

c. Develop facilities for students to practice animal husbandry, farm management, and dairy science under staff supervision.

d. Undertake training in extension methods, supervision and animal management emphasizing the use of audio-visual equipment.

e. Expand the library with adequate numbers of text and reference books for student use.

ACCOMPLISHMENTS OF USAID/WVU CONTRACT IN UGANDA

The Agricultural Chemistry sections have been strengthened and now provide increased training, both classroom and practical, in soils science. Both Bukalasa and Arapai Agricultural Colleges provide student training in simple soil analysis and soil conservation. The soil laboratories have been equipped by USAID to provide better teaching facilities. The curricula are being strengthened and adapted to local needs.

Shop skills courses and farm machinery courses have been added in both colleges. The shops have been equipped with AID-supplied equipment. West Virginia contract staff have been employed to develop and teach the shop skills and farm mechanization courses. The curriculum at Arapai was designed with a particular emphasis on farm mechanization to provide manpower needed in that area of work.

In Animal Husbandry, USAID/WVU contract staff have helped bring about changes and improvement in curriculum, in both the practical and lecture components. USAID has supplied funds to construct an Animal Husbandry Unit at Bukalasa, including a modern dairy unit. Farm machinery was purchased by USAID to familiarize students with the use of farm machinery and how it can be applied in improving animal husbandry.

At V.T.I., USAID has provided funds to construct a small dairy unit, and purchase four exotic cows. This dairy unit was designed by West Virginia University staff members, who also supervised its construction by student labor. This provided students with practical experience in construction. This unit is to provide students with a means of practical training in the care of dairy cows. The unit is a replica of one which would be economically feasible for a small Ugandan dairy farmer.

Other facilities planned for construction at V.T.I. include a Poultry and Pig Husbandry Demonstration Unit. USAID is providing funds for the purchase of construction materials. The WVU staff has designed the structures and will supervise the students who will do the actual construction in their practical courses. These experiences should prove useful to students who, once they are in the field, will help farmers construct similar units for better animal husbandry.

The use of audio-visual equipment as a teaching aid was introduced in all the colleges by the West Virginia University staff in 1963. The use of AID-financed filmstrips, slides and other visual aids has been extremely successful and has become an integral part of the teaching methods now employed at the three schools.

LIBRARIES

A goal of the project has been to increase the number of text and reference books at the libraries. A great deal of progress has been made, and AID has supplied a large quantity of useful texts and reference materials. By 1967 Bukalasa Agricultural College had approximately 3,500 volumes, 60% of which had been purchased with USAID funds supplied since 1963. Arapai had only 143 books in its library in 1963. By 1968 it had over 2,000--80% supplied by AID. Similary, V.T.I.'s library increased 300% to 3,000 volumes in the five year period 1963-68. In all cases the libraries have also increased the number of periodicals in order to give the students the opportunity to learn about current agricultural developments in Africa and in other parts of the world.

CHANGEOVER FROM CERTIFICATE TO DIPLOMA LEVEL TRAINING

Prior to 1963 the three colleges trained students at the certificate level (2-year post secondary). In 1963 Arapai began to admit students for diploma training and graduated its first class in 1966. Bukalasa and V.T.I. graduated their first diplomates in 1964.

The schools, with the combined support of the GOU, USAID and the United Kingdom, have produced 383 graduates since U. S. participation was initiated in 1963. These graduates consist of 285 diplomates and 98 certificates. The graduating class increased fourfold--from 40 in 1963 to 157 in 1967.

The 1967 graduating class had 140 diplomas and 17 certificates. (See table 2 for details.)

Table 2. Graduates of Three Diploma Agricultural Education Colleges in Uganda 1963 to 1967

Year		College: Arapai	Bukalasa	V.T.I.	Total
		Number of Graduates			
1963	Certificate	6	12	22	40
	Diploma	-	-	-	-
1964	Certificate	-	6	6	14
	Diploma	-	15	8	23
1965	Certificate	-	-	12	12
	Diploma	-	13	14	27
1966	Certificate	-	-	15	15
	Diploma	27*	52**	16	95
1967	Certificate	-	-	17	17
	Diploma	81	48	11	140
Total for Five Years					
	Certificate	6	20	72	98
	Diploma	108	128	49	285

The Veterinary Training Institute has awarded a large number of certificates because it has a system of retaining only the highest achievement second year students for the third year as candidates for the diploma. Those who have lower academic performance are awarded a certificate at the end of two years and go into the field as Veterinary Assistants. The students who are awarded the diploma are posted in the field as Animal Husbandry Officers.

AID has encouraged the Department of Agriculture to adopt at Arapai and Bukalasa the program used at V.T.I., which provides diploma training for only the highest performing second year graduates. The Department has not yet accepted this suggestion. The Ministry of Agriculture decided to change Arapai to a two-year certificate granting school in July 1967, but reversed its decision in March 1968 and retained its three-year program. If a system similar to the V.T.I. program were introduced at Arapai and Bukalasa, the certificate vacancies in the present extension service establishment could be filled at the same time the diploma vacancies are filled.

* 2 graduates were from Zanzibar
** 24 graduates were from Tanzania

ENROLLMENT CHANGES 1963-1968

A goal of U. S. participation in the agricultural education program in Uganda has been to increase enrollment at the diploma colleges. This has been achieved, with a fourfold increase in the past five years in the student body (see table 3).

Table 3. Total Enrollment at Three Diploma Level Agricultural Colleges in Uganda, 1963 to 1968.

Year	Arapai	Bukalasa	V.T.I.	Total
	(Number of Students Enrolled)			
1963	20	53	36	109
1964	35	59	40	134
1965	127	134	63	324
1966	216	208	73	497
1967	220	190	82	492
1968	213	167	87	467

The majority of the graduates have been posted in the extension service, but many have been posted in other areas of agriculture.

Table 4. Placement of 1967 Graduates From Arapai and Bukalasa Agricultural Colleges

Extension	49
Cooperative Credit	10
Special Development Section (Group Farms and Mechanization)	23
Research	11
Tea Growers Corporation	8
Education	7
Miscellaneous	7
Animal Husbandry	6

A few have gone into semi-private industry such as the Uganda Tea Growers Organization.

The program has already provided a body of trained men who will contribute greatly to Uganda's future agricultural development. More personnel will be needed in the future for expanding private agricultural sector, but present enrollments will provide sufficient personnel to fill established posts

in the many services of the agriculture, cooperative and veterinary departments by 1972.

PARTICIPANT TRAINING

There are 34 teaching posts established at the three diploma colleges. At the present time ten of these are filled by Ugandans, six of whom were trained in the U. S. under USAID ~~fiscal~~ financing.

There are six participant trainees studying in the U. S. at the present time and funds are available to send seven in FY 1968. If participant trainees and funds are available in FY 1969 and 1970, the full complement of Ugandans should be available to staff the colleges by 1972.

PROPOSED PROGRAM FOR THE REMAINDER OF THE PROJECT

The teaching program and curriculum development will be continued in the same general manner as it was from 1963 to 1968 but, if the Regional Project for Diploma/Certificate Agricultural Education is initiated, the entire project will need to be studied to determine what role AID will play. Uganda may develop new or expanded areas of specialization; e.g. horticulture, ranch management, farm management, which denote new activity targets and readjusted inputs of commodities, technicians and possibly school facilities. Also to be added is the in-service extension training program which will be discussed later in this paper. The teaching of farm management is to be more concentrated at both agricultural colleges to increase the graduates' knowledge of these subjects when they will be working in the Extension Service on such activities as the Saturation Projects.

The USAID inputs of staff and commodities will be reduced as the West Virginia University staff is phased-down. The WVU staff will be reduced as Ugandans return from the participant training to fill staff positions. As WVU staff members are reduced, so will the commodity inputs be reduced by USAID.

The projected phase-out of the West Virginia University Contract staff is presented in table 5. Ugandans presently studying under the USAID participant training program and those who will be sent in 1968 and 1969 will staff the colleges upon completion and return. Generally two years are required for their program of study before they return to Uganda.

Table 5. Projected Program of Ugandanization of Three Diploma Level College Teaching Staffs, 1968-1972

College	Year 1968		1969		1970		1971		1972	
	Ug.	*Other	Ug.	*Other	Ug.	*Other	Ug.	*Other	Ug.	*Other
Bukalasa	3	10	5	8	6	7	10	3	13	0
Arapai	5	6	6	6	6	6	9	3	12	0
V.T.I.	2	5	2	5	3	4	4	3	7	0
	10	21	13	19	15	17	23	9	32	0

* American or Expatriates.

The final group of Ugandans will return from their training programs in early to mid-FY 1972 and will complete the staffing of the colleges by Ugandans. By the time the West Virginia University staff is completely phased-out, the development of an adequate amount of teaching material and teaching aids will be available for the Ugandans to continue the program.

IN-SERVICE EXTENSION TRAINING

Extension methods training has been developed at all the colleges and is presently being taught by West Virginia University staff members. The original agreement included in-service training for extension field staff. The Department of Agriculture has partially filled this need by a direct hire USAID extension specialist who assists in the organization of in-service training courses at the District Farm Institute. The Department of Veterinary Services is beginning in-service training programs for its field staff.

The first participant trainee will return to V.T.I. in July 1968. This will help alleviate the chronic shortage of Animal Husbandry Officers on the V.T.I. teaching staff. There will remain a need for someone to teach extension methods at the Institute because no Ugandan participant trainee has been programmed for that position. There will also be a need to fill a gap in field staff training.

It is proposed that one of the present positions on the USAID/WVU contract staff be changed to serve this dual training need. This staff member should teach only extension at V.T.I. for one term per year. He could provide training of more advanced level to each class as they progress through their course of study.

The remainder of the year he should spend developing a course for the field staff and teaching that course. Uganda is broken into 18 administrative extension districts. The staff in each district should attend an annual week-long course in extension methods. The West Virginia University extension specialist should develop this concentrated course for the extension field staff.

This proposed program would provide an opportunity to teach the field staff the latest materials in extension techniques. Many of the extension workers have had little or no formal training in extension techniques and procedures for presenting new methods to farmers.

The staff member would be fully employed in teaching at V.T.I. and in the in-service training course. He would need ample time to prepare his courses for the classes in the Institute and in the districts.

During the development of this program, a Ugandan would be trained in extension methods on the regular participant training program to return and continue the program of in-service training for extension workers and certificate and diploma students at V.T.I., after the WVU technician had been phased-out.

Table 1

NONCAPITAL PROJECT FUNDING (OBLIGATIONS IN $000)

PROP DATE Mo/day/yr
Original 7 24 68
Rev. No.
Proj.No.617-11-110-023

COUNTRY: UGANDA

Project Title: Agricultural Education

Fiscal Years	AP	L/G	Total	Cont.1/	Personnel Serv. AID	Personnel Serv. PASA	Personnel Serv. CONT	Participants U.S.Agencies	Participants CONT	Commod. Dir US Ag	Commod. CONT	Other Costs Dir. U.S. Agen.	Other Costs CONT
Prior through Act. FY 68	TC	G	1,817	1,348			1,308	215		122	40	132	
Oper. FY 69	TC	G	322	207			207	98		7		10	
Budg. FY 70	TC	G	368	226			226	86		31		25	
B. + 1 FY 71			0	0			0	0		0		0	
B. + 2 FY 72													
B. + 3 FY 73													
All Subs.													
Total Life			2,507	1,781			1,741	399		160	40	167	

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