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Supplement-Component
Descriptions and Implementation

KENYA: Agricultural Systems Support
Project (615-0169)

PROJECT PAPER

KENYA: AGRICULTURAL SYSTEMS SUPPORT PROJECT

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B. Detailed Component Descriptions

1. Agricultural Manpower System Support

a. Summary

The GOK's development strategy, with its emphasis on increasing agricultural production, most particularly smallholder agriculture, is thoroughly discussed in Part II.A. Incremental smallholder production requires increasing the quantity and quality of the agricultural support services reaching the target beneficiary group. These include research, farmer training and information, credit, storage and marketing. The MOA's extension service is the central GOK structure directly or indirectly facilitating the delivery of many of these support services.

The ATAC Manpower Survey has analyzed different aspects of the manpower constraint as they currently inhibit the efficient and effective operation of these services, especially extension and particularly with regard to smallholder agriculture. Significantly, the ATAC research report ^{1/} found manpower to be the most serious problem for the research system. The manpower report recommended various steps which the GOK and/or donors might take to address these constraints and has detailed the agricultural manpower requirements necessary for implementing the recommended steps.^{2/} The identified problems include management and administration of the extension service, technical support, inadequate staff numbers in the service, insufficient in-service training, inappropriate pre-service training, and the lack of motivation due to the existing pay scales and schemes of service. At the core of the ATAC analysis is the question of the effective and efficient operation of the agricultural extension service and the direction of the extension service towards providing technologies and services based upon production modes which are in harmony with traditional agricultural production technologies and which contain a minimum dependence upon cash inputs.

^{1/}ATAC. Agriculture Research in Kenya. November 1977. AID/Afr-C-1142, W.O.52.

^{2/}ATAC. Professional and Subprofessional Agricultural Manpower in Kenya. March 1978. AID/Afr-C-1142, W.O.52.

The ASSP and the World Bank Fourth Educational Loan will provide a major input into increased training of agricultural manpower. Increasing the pool of trained agricultural manpower and redirecting such training towards the needs of smallholders and the operation of smallholder-orientated extension and research systems will make a significant direct contribution towards addressing extension service problems of management/administration, staff numbers, pre-service training, and technical support. It will also impact on research through in-service training of staff for Ministry of Agriculture research facilities. Also, improving the capabilities of trainers at Farmer Training Centers (FTC's) and curriculum review work at the institution where they are trained will improve the quality of in-service training offered to the lower echelons of the extension service. The GOK has recently increased funding available to FTC's, thereby removing the previously severe funding constraints.

The training grant fund contained in this project will also contribute toward a remedy for the in-service training problem. More importantly, the GOK is now studying a comprehensive revision of in-service training for MOA staff and it is expected that in the next twelve months the MOA may seek donor assistance for a comprehensive in-service training program.

Revised schemes of service are currently under discussion within the MOA and GOK, and high-level committees are to be established in order to evaluate various options, such as those presented in the ATAC report.

As AID's contribution to addressing these various constraints, it is proposed that AID fund:

1. An expansion of Egerton College from 686 to 1,632 students with AID financing construction, equipment, technical assistance, teaching staff, and curriculum revision as needed, and training for new and existing Kenyan staff. The Egerton graduate occupies the crucial middle-level technical and administrative field positions in the extension service, but they also may serve as research staff and faculty for certificate-level agriculture institutes.

2. A technical feasibility study, including preliminary construction plans, for a new agricultural institute in Coast Province. The new institute would complement World Bank efforts to expand the number of certificate graduates. Certificate holders are posted primarily as field extension agents and will gradually replace the current stock of untrained and aging Junior Agricultural Assistants.

3. A technical feasibility study and preliminary plans, complementing World Bank assistance to the University of Nairobi, for construction leading to an expansion of the Faculty of Agriculture from a student capacity of 300 to 805. AID would finance 200 of the 505 new places.

4. In-service training for MOA staff through a training fund which will finance U.S. and in-country academic and non-academic training. Administrative, technical, and field staff will be eligible for training under the fund in accordance with annual training plans.

b. Background

(1) Problem Identification and Resolution

Implementing the GOK's smallholder-oriented development strategy requires the effective delivery of an appropriate technology, production inputs, credit, and marketing services to the smallholder population. In order to effect this delivery the agricultural extension service must be oriented towards serving the needs of the smallholder farmer. Through a re-orientation of the national extension service towards the smallholder farmer and the development of objective-targeted extension activities (such as the GOK's Integrated Agricultural Development Program) the GOK is seeking to address the needs of the target smallholder farm population.

AID's assistance objective under the manpower component of this project is to support GOK efforts to serve the smallholder farmer. As detailed previously the major constraints to an effective extension service serving smallholder needs are:^{1/}

- 1) Ineffective management of the extension service staff,
- 2) Shortage of trained extension staff, including pre-service and in-service training,
- 3) Lack of motivation for the extension staff, due to poor career mobility and the salary structure,
- 4) Shortage of travel funds and transportation,
- 5) Slow diffusion of ideas from farmer to farmer.

^{1/}See ATAC, op. cit.

- D.M. Hunt. "Agricultural Extension and Farmers Training", I.D.S. Occasional Paper No. 12, 1975.
- S. Schonerherr and E. Mbugua. "New Extension Methods to Speed-Up Diffusion of Agricultural Innovations", I.D.S. Discussion Paper No. 200, May 1974.
- S. Schonerherr and E. Mbugua. "Managing Extension Staff", I.D.S. Discussion Paper No. 230, February 1976.

Increasing the quantity and quality of specific categories of agricultural manpower can make a significant contribution to the management of the extension staff, to the available pool of trained manpower, to the quality of in-service training offered by the MOA, and to the diffusion of ideas by modifying extension practices. Constraints, such as the quantity and quality of extension staff, can be, in a large part, overcome with incremental agricultural training, while increasing the number of qualified staff supervisors can bring about a change in field management but will not resolve all management problems. Finally modifying extension practices, such as increasing group contacts or making a conscious effort to work with the least progressive farmers, will contribute to a better diffusion of ideas from farmer to farmer.

The GOK has expressed its commitment to reorient the extension service towards serving the smallholder farmer. Senior officials have admitted that the present service may not be reaching even one-half the smallholders. The next Five Year Plan is expected to contain a significant increase in funding for agricultural support services and especially for the extension service although until the Plan is accepted by Parliament and published this cannot be confirmed. Incremental funding should make a significant contribution towards alleviating the travel funds and transportation constraint. Over the last two years the GOK has increased the funding available to Farmer Training Centers, thereby alleviating one major constraint to in-service training for the field extension staff as well as formal farmer education.

The MOA is reviewing the scheme of service and salary structure for the extension staff as well as the Ministry in general. It is expected that recommendations will be forwarded to the Directorate of Personnel Management, Office of the President. As a condition precedent to disbursement under this component, the GOK will submit evidence to AID outlining what actions will be taken with regard to the ATAC manpower utilization recommendations. It should be noted that issues re the scheme of service and salary levels cut across the entire civil service, and revisions are not quickly or easily made.

(2) Agricultural Education in Kenya

Formal agricultural education in Kenya, above the secondary level, is provided under a three-tier system: the degree, the diploma, and the certificate.

Degree Level

The Faculty of Agriculture, University of Nairobi, offers BSc and MSc degrees in a range of programs, including Agriculture,

Agricultural Extension, Agricultural Economics, Plant Breeding, Agronomy, and Animal Production. For the three-year BSc program, the Faculty accepts secondary school graduates with a high "A-level" pass.^{1/} All university students, with few exceptions, are sponsored by the Ministry of Education and upon graduation are free to compete for jobs in the open market.

Diploma Level

Egerton College awards a diploma after completion of a three-year program in any one of nine specialized fields: General Agriculture, Animal Husbandry, Agricultural Education, Horticulture, Home Economics, Agricultural Engineering, Range Management, Dairy Technology, and Farm Management. Applicants with "A-level" passes are accepted, and due to the shortage of places in the University "A-level" applicants with "high" passes are now applying for programs at Egerton. Egerton students are sponsored by the GOK or foreign donor agencies and graduates are "bonded" or required to work for their sponsoring GOK agency or the GOK agency nominated by the donor unless:

- 1) An employer pays the student's bond fee (currently \$3,800) or,
- 2) The sponsoring agency relinquishes its employment rights, as the Ministry of Agriculture has done to meet the needs of other GOK Ministries, such as Cooperative Development or Lands and Settlements.

Certificate Level

Embu and Bukura Agricultural Institutes and the Animal Health and Industry Training Institute (AHITI) at Kabete accept secondary-school graduates with "O-level" passes and upon completion of the two-year training program award certificates in agriculture. All students at these institutes are sponsored by the MOA and are bonded for a three-year period.

^{1/}A-level-Senior Secondary (grade 12); O-level-Junior Secondary (grade 10).

Table B-1

FORMAL AGRICULTURAL EDUCATION IN KENYA

Institution	Year Established	<u>Total Student Enrollment</u>			
		1964	1970	1974	1978
Faculty of Agriculture, University of Nairobi	1970	-	40	120	300
Egerton College	1939	207	500	620	.686
Embu Institute of Agriculture	1940	150	150	250	250
Bukura Institute of Agriculture	1974	-	-	70	250
AHITI (Kabete)	1966	-	250	250	250
		<u> </u>	<u> </u>	<u> </u>	<u> </u>
Enrollment		357	940	1310	1736
		<u> </u>	<u> </u>	<u> </u>	<u> </u>

(3) Employment of Graduates

The MOA is the primary sponsor and employer of agriculture graduates. Table B-2 indicates the distribution by current employers of the stock of trained agricultural manpower.

Table B-2
Distribution of Total Trained
Manpower in Post (1977)

	<u>Bachelors</u>		<u>Diplomates</u>		<u>Certificates</u>	
	No.	%	No.	%	No.	%
MOA	525	49.4	842	48.5	3,442	74.3
Other Public Sector ^{1/}	316	29.8	557	32.1	957	20.6
Commercial	<u>221</u>	<u>20.8</u>	<u>338</u>	<u>19.4</u>	<u>238</u>	<u>5.1</u>
TOTALS	1,062	100.0	1,737	100.0	4,637	100.0

Source: ATAC. Agricultural Manpower Study.

The portion of new graduates hired by the MOA exceeds the portion of the graduate stock within the MOA since there is a regular net outflow of trained manpower from the MOA to other portions of the public and private sectors. To illustrate, the MOA hires each year 82 percent of the new Egerton graduates although it only employs 49 percent of the stock of all Egerton graduates at any one time.

Both the other public sector agencies and the commercial subsector tend to satisfy their needs by hiring experienced personnel from MOA although recently the commercial subsector has gone directly to the University for bachelors. Both of these subsectors have an edge over the MOA in hiring particular individuals, and MOA personnel frequently complain that they lose too many people, particularly to the commercial sector. However, the unequal distribution of personnel in favor of the

^{1/}Defined as including other ministries (such as Cooperative Development, Education, Lands and Settlements, Natural Resources, Tourism and Wildlife, Finance and Planning), educational institutions, and regulatory boards and commissions (Maize and Produce Board, Agriculture Finance Corporation, Kenya Cooperative Creameries and others) per Annex C-5 of the ATAC manpower report.

Ministry of Agriculture indicates that MOA has not fared too badly.

Even with an adequate supply of trained personnel, the MOA will never be able to compete in salary levels with the commercial subsector for any individual whom the subsector feels will provide a marginal utility. However, there are a few ways in which the problem can be ameliorated besides accepting this as one of the public sector's contributions to the overall economy:

1. Protect Key Positions by salary and allowance differentials. This can be done for only a few slots in research and administration where the individual's loss would cause very serious program damage.
2. Shift Work Loads to other users. If other users are raiding MOA staff to do the same type of work which MOA is doing, investigate the possibility of shifting that type of work to the competitor.
3. Select Program Activities which are within the competence of the staff available to perform them. This may require limiting the possible scope of MOA activities to targeted geographic areas, commodities or populations.
4. Select Project Designs which are compatible with staff availability. Under current program methods MOA lists an unfilled need for 3,400 certificate holders. Since there is no reasonable means of filling this need in the next few years, consideration should be given to deployments which minimize staff needs.
5. Use Work Methods which maximize the productivity of less experienced or less competent staff members who remain available. This refers particularly to work planning, definition of tasks, establishment of performance norms, and providing good training and supervision.
6. Avoid Non-Monetary Disincentives by creating working conditions, perquisites, recognitions, administrative supports, challenges, etc., which will attract and bind personnel to the public sector

As indicated, the above steps will only ameliorate this problem. Further, the GOK considers itself responsible for training agriculture manpower for the economy as a whole.

Within the MOA the majority of new graduates enter the extension service and extension service support; 65 percent of the MOA's

personnel and recurrent budget are allocated to extension-type activities although there is no formal extension division as such within the Ministry. Extension efforts, thus, are provided as part of various departments' efforts. The allocation of working assignments closely follows the three-tiered educational system. (See the organizational chart on the following page.)

Degree Holders

Graduates generally serve as Agricultural Officers (AO's) and are placed either in District Agricultural Officer (DAO) posts or as support staff at the provincial level.^{1/}

Diploma Holders

Graduates serve as Assistant Agricultural Officers (AAO's) and Technical Officers (TO's), serving as either Divisional Agricultural Officers or TO's at the district level.

Certificate Holders

Graduates generally serve as Agricultural Assistants (AA's) and Animal Health Assistants (AHA's) working at the divisional level. These positions involve direct contact with farmers; AA's and AHA's may also be assigned to sub-divisions or locations.

Non-Graduates

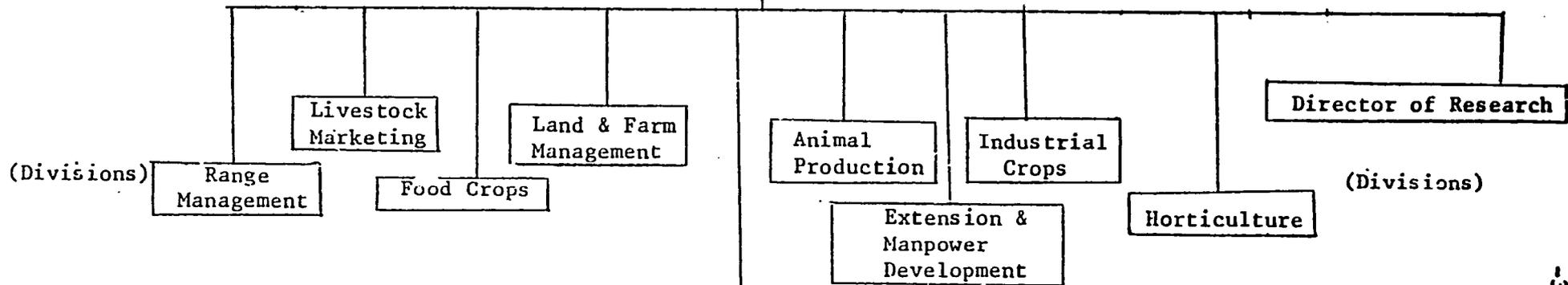
Junior Agricultural Assistants (JAA's) and Junior Animal Health Assistants (JAHA's) rarely have more than primary educations. They have no formal training in agriculture but do receive some on-the-job training. This personnel category works directly with the farmers at the sub-location level. There are approximately 6,800 individuals in this grouping and over the next 20 years the GOK plans to replace and re-train the existing cadre so that JAA's are phased out and upgraded through replacement with certificate holders (AA's).

^{1/}Kenya is divided into the following administrative units listed in descending order from the largest to the smallest local unit: provinces, districts, divisions, locations, and sub-locations.

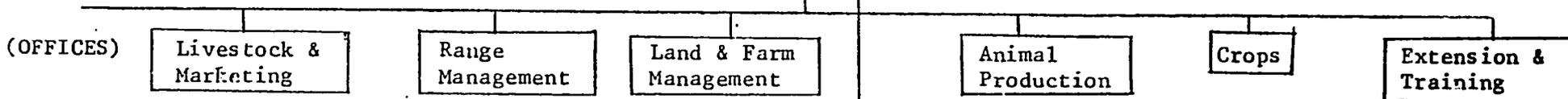
Ministry of Agriculture
 |
DEPARTMENT OF AGRICULTURE

Extension Service

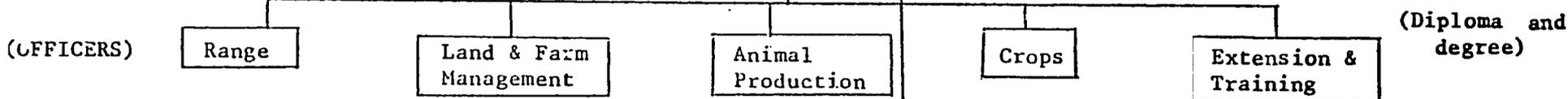
DIRECTOR



PROVINCIAL DIRECTORS



DISTRICT AGRICULTURAL OFFICERS (42 Districts)



DIVISIONAL AGRICULTURAL OFFICERS

(No staff) (approximately 200 divisions)

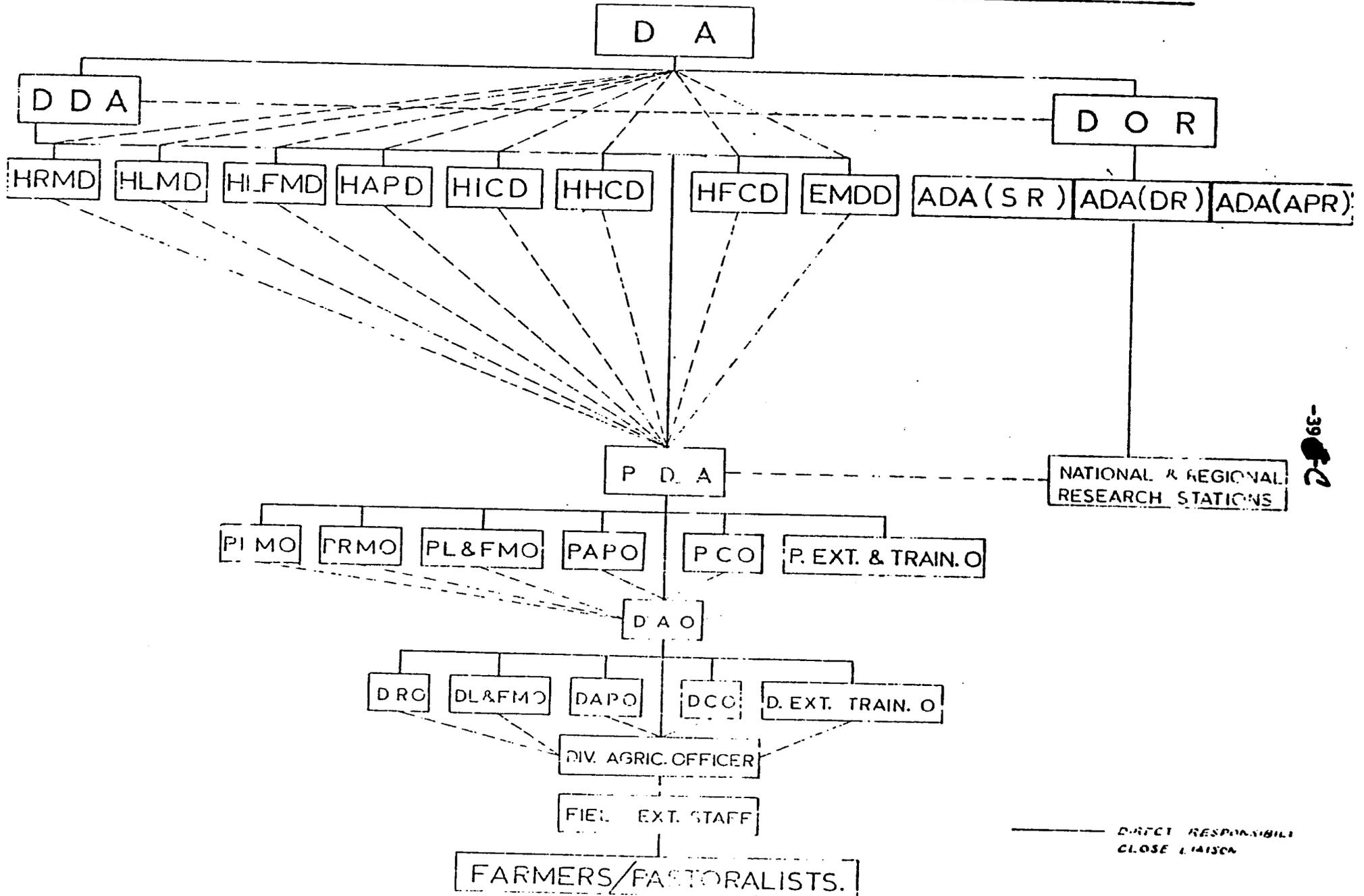
(Diploma level)

FIELD EXTENSION STAFF

-39-(a)

34-(b)

ORGANISATION OF THE DEPARTMENT OF AGRICULTURE



(4) Agricultural Manpower Analysis

In 1976 the GOK requested AID assistance in undertaking a manpower survey of the agricultural sector. In 1977 the American Technical Assistance Corporation (ATAC) fielded a team to conduct a manpower survey of the agricultural sector, to examine agricultural education and training facilities and programs currently in operation, to review the utilization of agricultural manpower in the Ministry of Agriculture, and to make recommendations for alleviating identified problems. Only a cursory summary of the ATAC work is presented in this Project Paper; reference must be made to Part III.C.1 and the ATAC report for a full explanation of methodology, findings, and recommendations.^{1/}

The agriculture manpower analysis is based on a comprehensive survey of sectoral manpower requirements within the MOA as well as a survey of other Ministries, public bodies, and the private sector. Manpower requirements were determined by education level for 1977 (current shortfall) and for 1983 and 1988. The survey sought to determine what manpower levels would be required in order to optimize production opportunities in the agricultural sector within the outlines of currently known programs.

From the survey "apparent" manpower demand was calculated and then constrained by estimates of future funding availability. The resulting "high effective" demand projection resulted from application of an 8.5 percent annual growth in the MOA's recurrent personnel budget while the "low effective" demand was the product of a 7 percent per annum budget growth.^{2/} In addition to applying a budget constraint manpower demand estimates were adjusted to reflect the gradual up-grading of extension agents from JAA's to certificate holders as well as the future needs for additional teachers in agricultural education facilities. Table B-3, then, summarizes projected shortfalls between the cumulative output, i.e. supply, of trained manpower at the existing institutions and at their

^{1/}ATAC. Professional and Subprofessional Agricultural Manpower in Kenya, March 1978. AID/Afr-C-1142, W.O. 52.

^{2/}Projected budget growth rates were discussed with the Ministry of Finance to insure that the rates were reasonable and consistent with the GOK's long-range budget projections.

Table B-3Shortfalls in Training Output^{1/}
(Cumulative From 1977)

	1983			1988		
	<u>BSc</u>	<u>Dipl</u>	<u>Cert</u>	<u>BSc</u>	<u>Dipl</u>	<u>Cert</u>
<u>Low Effective Demand</u>						
Output Required ^{2/}	1,136	1,782	6,390	2,350	3,876	14,052
Output at Current Rate	900	1,500	2,250	1,650	2,750	4,150
Shortfall	236	282	4,140	700	1,126	9,927
<u>High Effective Demand</u>						
Output Required	1,361	2,100	7,641	2,899	4,468	16,830
Output at Current Rate	900	1,500	2,250	1,650	2,750	4,150
Shortfall	461	600	5,391	1,249	1,718	12,705

Source: ATAC. op. cit. Tables 11 and 13, pp. 43 and 45

^{1/} Shortfalls are cumulative from 1977 through the referenced year.

^{2/} Trained personnel requirements are based on effective demand multiplied by training wastage rates.

NB: BSc: Includes BSc and MSc.

Dipl: Diploma graduates from Egerton.

Cert: Certificate graduates from Embu, Bukura, AHITI.

existing output levels and the high and low demand projections for new graduates constrained by budget considerations . While these figures are not intended to suggest that the MOA and USAID/Kenya claim to know precise training requirements in 1988, the figures do represent a reasonable and conservative estimate of future manpower needs.

The ATAC Manpower Survey indicates that there will be critical shortfalls in trained manpower over the next decade.^{1/} To overcome these shortfalls the ATAC report recommends:

1. Expansion of the Faculty of Agriculture, University of Nairobi, from a student capacity of 300 to a new level of 805 students, increasing the number of graduates from 100 to 250 per year.
2. Expansion of Egerton College from a student enrollment of 686 to an enrollment of 1,550, increasing graduates from 220 to 516 annually.
3. Expansion of the student capacity of Embu and Bukura Agricultural Institutes from 250 students each up to 660 students each, increasing graduates from 125 to 330 per year.
4. Establishment of a new Animal Husbandry Industry Training Institute (AHITI) at Ndomba and four other certificate institutes, one in Coast Province, one in the drylands, one in a range area, and a fourth in an undetermined location.
5. A set of education, facility-specific recommendations for improved training.
6. A series of changes in MOA personnel and administrative procedures.^{2/}

To illustrate the uses of additional trained personnel represented in the above projections, first, the MOA is embarking upon several new and significant development activities, including a major development effort for Kenya's vast areas of marginal and semi-arid lands and a significant expansion of the recently established Integrated Agricultural Development Program (IADP). The future staffing needs of these development

^{1/}See ATAC. op.cit. for a full listing and description of recommendations.

^{2/}See Annex IX.D. for a description of the current status of ATAC's recommendations.

activities imply the need for a significant increase in trained agricultural manpower as the GOK expands the outreach of the extension service as part of these activities. Secondly, upgrading the JAA's in the extension service and gradually replacing them with certificate holders will require approximately 400 additional certificate graduates each year over the next 20 years. Thirdly, the current ratio of farmers to contact agents is approximately 126:1. To expand extension coverage provided farmer contact agent ratios of 95:1 have been recommended by the MOA and ATAC. Achievement of such a target may require an additional 7,000 contact agents with the majority being certificate holders. Finally, the current ratio between contact agents and managerial/technical support officers is 7.5:1. Improved support services for the extension agents requires, among other inputs, more and better trained managers and technicians. A reduced agent-support ratio, to 5:1, as recommended by the Ministry and ATAC, would require an additional 1,000 degree and diploma holders by 1988.

The GOK has reviewed and approved the ATAC report and its basic recommendations for expanded agricultural education facilities and the improved management and personnel policies and procedure, required for greater utilization of existing agricultural manpower.

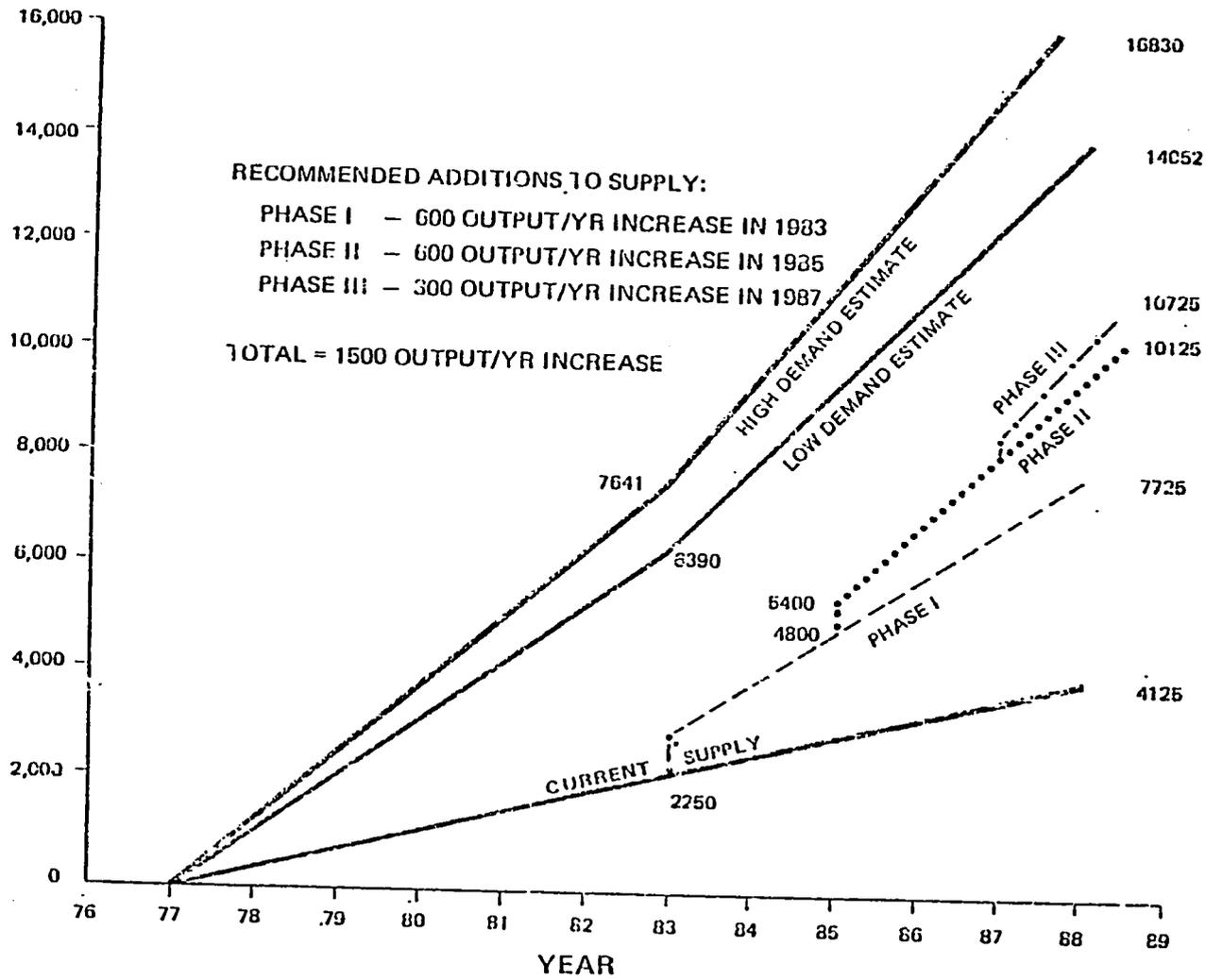
(5) World Bank and AID Assistance Activities
Directed to Meeting Manpower Requirements

Figures A, B, C and Table B-4 summarize the agriculture education training capacities which ATAC has recommended. the expansion of related facilities to be financed by the World Bank under its Fourth Education Loan to Kenya signed in March, and assistance proposed for AID financing under ASSP. Beginning with the incremental capacity requirements recommended by ATAC, Table B-4 illustrates the combined efforts of the World Bank and AID toward resolution of the identical manpower shortfalls.

At Egerton College ATAC has recommended an incremental capacity of approximately 905 students. Based on standardized class sizes the academic/architectural consultants hired by AID and the GOK have recommended an incremental capacity of 942 ¹/_{and this PP provides}

¹/H. James Miller, Professor of Architecture, University of Illinois, was hired by USAID to assist in the preliminary academic and engineering design leading to the proposed expansion of Egerton College. Mutiso Menezes, International, was hired by the GOK to lead a consultant team in the preparation of the academic and engineering design for this same proposed expansion.

Figure C. Certificate Holder Demand & Supply



44

22

Figure A. Bachelor Demand & Supply

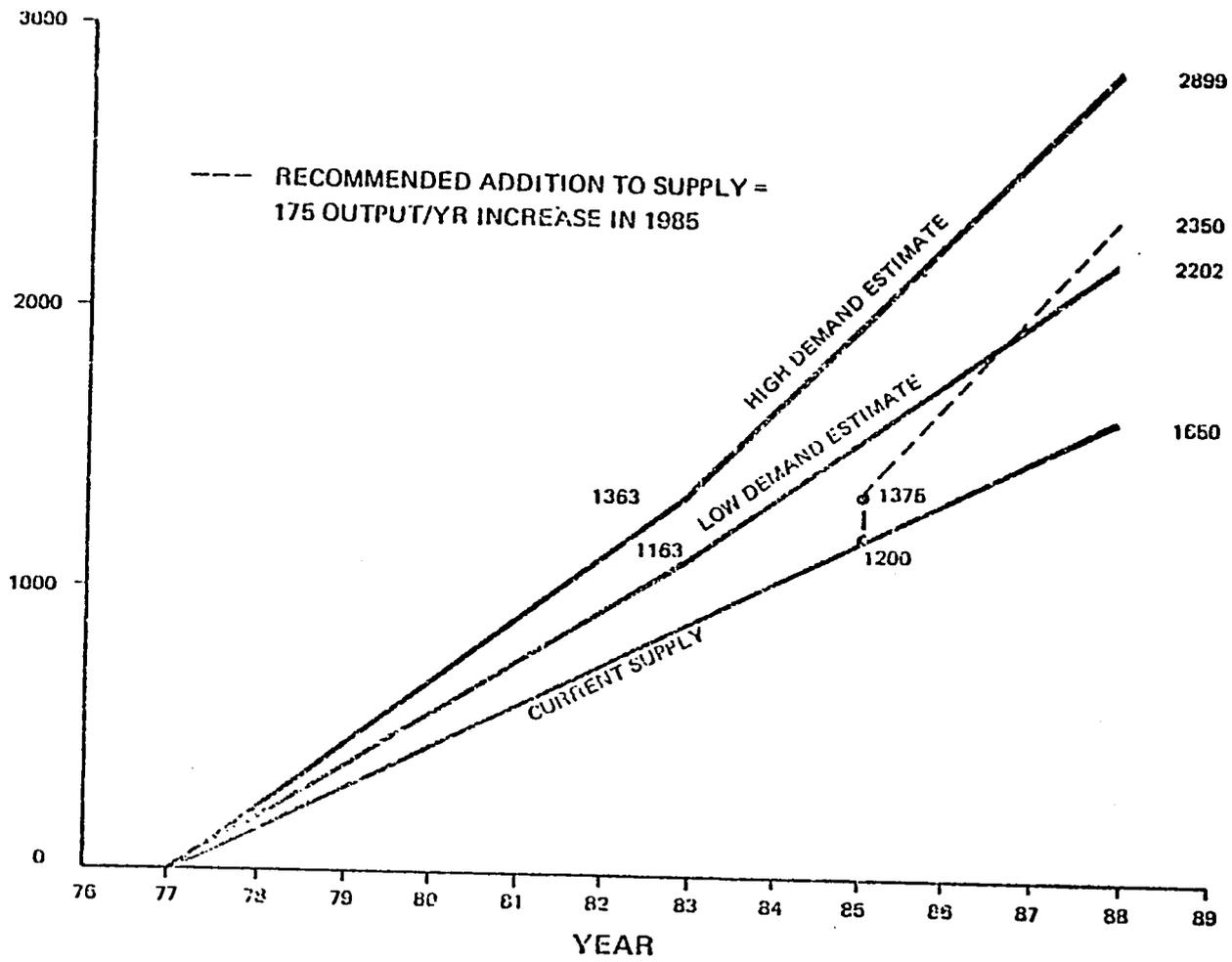


Figure B. Diplomat Demand & Supply

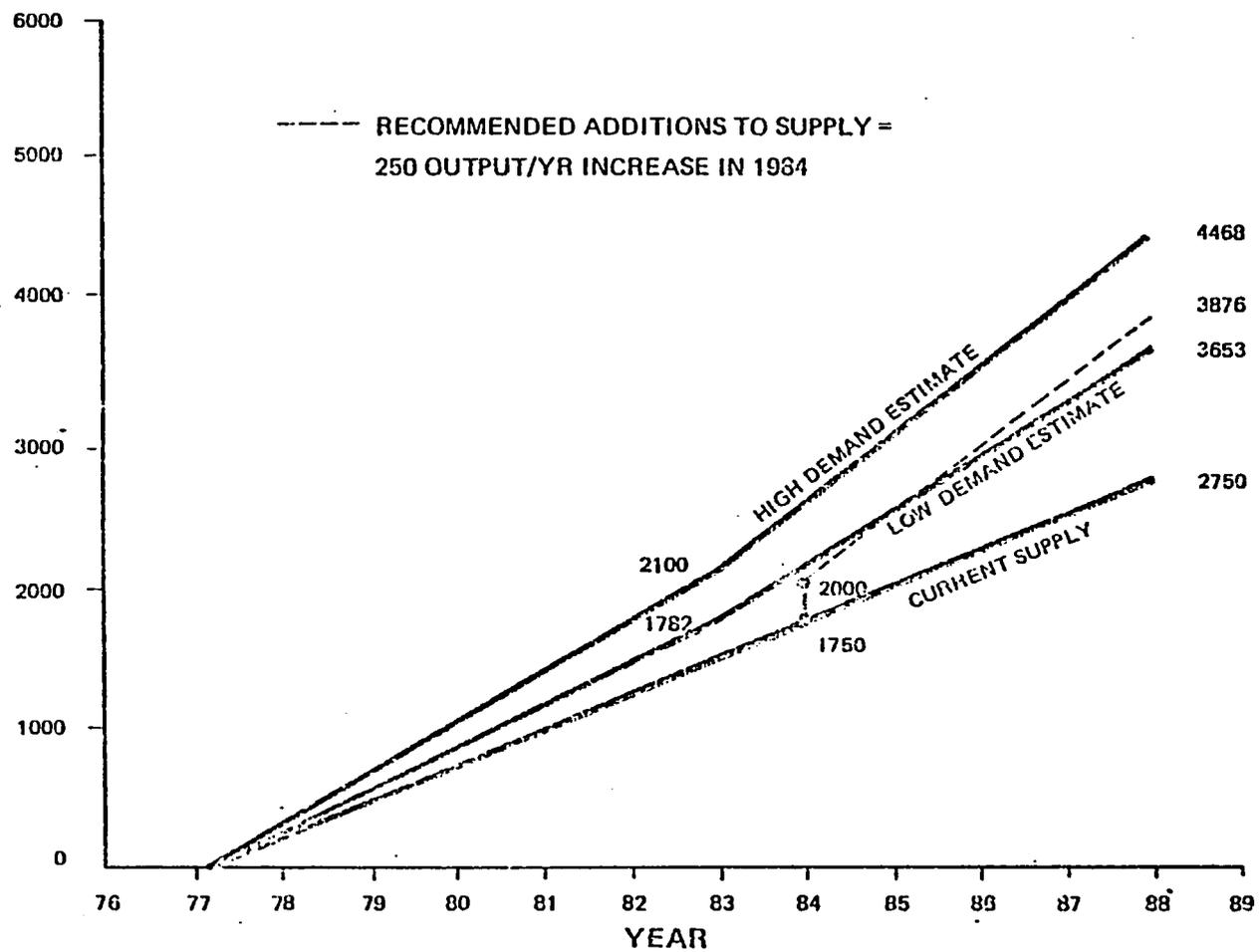


Table B-4

<u>EXPANDED TRAINING CAPACITY</u>						
	<u>Current Capacity</u>	<u>Incremental Capacity Required^{1/}</u>	<u>World Bank Input^{2/}</u>	<u>Incremental Shortfall</u>	<u>AID Input</u>	<u>Combined AID-IBRD Capacity^{6/}</u>
University - Faculty of Agriculture	300	496	305	191	200 ^{3/}	805
Egerton College	690 ^{4/}	905	-0-	905	946	1,632
<u>Institutes</u>						
Embu	250	410	150	260	-0-	400
Bukura	250	410	150	260	-0-	400
AHITI (Kabete)	250	-0-	-0-	-0-	-0-	250
AHITI (Ndonba)	-0-	330	360	(30)	-0-	360
Coast	-0-	660	-0-	660	660 ^{3/}	660
Gatundu	-0-	200	-0-	200	-0-	200 ^{5/}
Other ^{6/}	-0-	<u>1,290</u>	-0-	<u>1,290</u>	-0-	-0-
Institutes Subtotal	<u>750</u>	<u>3,300</u>	<u>660</u>	<u>2,640</u>	<u>660</u>	<u>2,270</u>

- ^{1/} ATAC. op. cit. Tables 12,14 and 15, pp.44,49 and 51 combined with recommendations on pp.69,79, and 135.
- ^{2/} Fourth Education Loan, Appraisal Report.
- ^{3/} Phase I, technical feasibility study to be financed in this PP, Phase II, Implementation, (construction, staffing, equipment and training) to be financed following a PP Revision.
- ^{4/} Figure rounded from 686 actual current capacity.
- ^{5/} Financed by Government of Japan
- ^{6/} Three additional institutes recommended by ATAC with a student capacity of 430 each.
- ^{7/} Current capacity plus World Bank input plus AID input plus Japanese input at Gatundu.

financing for this proposed capacity level.

ATAC recommended approximately 496 incremental student places at the Faculty of Agriculture, University of Nairobi. Under the Fourth Education Loan the World Bank will finance the construction, equipment, technical assistance and other inputs required for 305 incremental students, and under ASSP, AID will investigate and in a separate PP revision, (subject to feasibility, availability of funds and the decision then to proceed) may finance additional places for about 200 students.

ATAC has recommended the addition of approximately 3,300 student places at certificate institutes. Of this total the World Bank's Fourth Education Loan will finance approximately 660 places, with Embu and Bukuru Institutes being expanded from a capacity of 250 to 400 students and a new Animal Health and Industry Training Institute being constructed at Ndomba having a capacity of 360 students. Existing capacity plus currently planned expansions/new construction will not satisfy the total demand for certificate graduates.

The MOA believes that the existing certificate institutes should not be expanded much above the level being financed by the World Bank. At the same time there are a limited number of trained administrative and teaching staff available for establishing two or three more new institutes in addition to the new AHITI at Ndomba. Therefore, the Ministry has requested AID under ASSP to investigate the feasibility of creating a new Coast Institute only. The GOK recognizes that perhaps three new certificate institutes may eventually be required and is planning for their establishment in the mid-1980's when the current institute expansion/construction program will have been completed.

At the University and the Coast Institute it is proposed that AID proceed in two stages. The first stage involves financing technical feasibility studies which will focus on the academic and physical design of the expansion/construction with the second stage being the implementation of these studies. The PP requests funds for the first stage only. Looking ahead, this does not represent a commitment at this time by AID to finance expansion. Such financing will depend on the findings of the studies, submission of the PP Revision, the availability of funds, and a decision to proceed.

In addition to the expansion of Egerton and the feasibility studies for the University and Coast Institute, it is

proposed that AID assist the MOA's in-service training program through a training program with the MOA. In-service training, both academic and non-academic, in-country and US, allows the MOA to train existing staff (with proven capabilities and interests) in specific fields required by the MOA. No such fund is being provided by the IBRD although the Fourth Education Loan includes other agriculture-related or supportive training components to which AID is not contributing - nomadic primary schools and administrative courses at the Kenya Institute of Administration.

c. Egerton College - Expansion

(1) Background

(a) Basic Facts

Egerton College was founded in 1939, was raised to the status of an agricultural college in 1952, and became a diploma grant-college in 1955. The current (January 1978) student enrollment is 686, up from 200 in 1964 and 500 in 1970. The College currently offers three year courses in nine agriculture diploma programs. Each diploma program represents a specialization within the agriculture sector and is designed to produce middle-level personnel (Technical Officers) capable of handling extension, advisory, and management work at the District and Division level. The currently offered diploma programs include: General Agriculture, Home Economics, Agricultural Education, Agricultural Engineering, Animal Husbandry, Dairy Technology, Farm Management, Horticulture, and Range Management.^{1/}

The College Faculty numbers 42 senior teaching staff and 32 junior teaching staff with a support staff of 431.^{2/} College facilities include 14 teaching buildings a dining hall, three administrative and support buildings, six dormitories, 344 staff houses for senior, junior, and supportstaff, a library, a 400-hectare teaching farm and a 1,100-hectare commercial/training farm.^{3/}

^{1/} See Annex IX.A. for a detailed description of Egerton College and its current diploma program.

^{2/} Including administrators, accountants, artisans/drivers, cooks, secretaries, livestock handlers, laborers, security guards, cleaners, nurses.

^{3/} See Annex IX.B. for details of current facilities.

Located approximately 110 miles west of Nairobi, Egerton College blends into the rural setting of the Rift Valley. Buildings are predominantly single story; many are simple stone structures with wooden roofs, dating back to the 1940's and 1950's, others are of more recent construction, yet still simple structures, and the result of a major expansion undertaken in the 1960's. The buildings and small campus and equipment are all directed toward one objective: training the agriculture diploma holder.

During the 1960's a \$3.7 million multi-donor development activity provided technical assistance, scholarships, commodities and construction to assist the GOK transform Egerton from a two-year to a three-year college. Graduates increased from six in 1961 to 211 in 1970. Toward this expansion \$1.0 million was contributed by the other donors including FAO, UNICEF, the Rockefeller Foundation, the United Kingdom, and the Netherlands. The GOK contributed \$1.2 million. Under the Higher Education Project (615-11-110-102) AID provided \$1.5 million for 40 person-years of technical assistance under a contract with the University of West Virginia, training for 48 participants, and assorted commodities. AID inputs were concentrated in the Departments of Agricultural Engineering, Range Management and Education and Extension.

(b) Role of Egerton Graduates in the MOA

Eighty-two percent of the Egerton graduates are initially employed by the Ministry of Agriculture, and another 14 percent are employed by the Ministry of Education as secondary school teachers. While foreign students have represented over 30 percent of Egerton graduates (33 percent in 1969), in recent years the GOK has increased its demand for Egerton graduates and restricted the number of foreign students at the school. Only four percent of 1978 graduates were foreign students.

Egerton graduates enter the Ministry of Agriculture as Technical Officers (TO's) and are generally assigned to the middle ranks of the extension service, usually posted as direct-level support officers or Divisional Agriculture Officers. TO's and Divisional Agriculture Officers advise and supervise field extension farmer-contact agents, the Technical Assistants (TA's) trained at certificate institutes and the Junior Agriculture Assistants (JAA's). They also may serve as contact agents, organizing village-level training activities and teaching special farmer training courses at FTC's. Egerton graduates also conduct in-service training courses for JAA's and TA's at FTC's and are involved in district and division-level agriculture planning activities. Thus, these

graduates play a central role in the effective operation of the extension service.^{1/}

Table B-5 illustrates the distribution of Egerton's 1978 graduates within the Ministry of Agriculture. Eighty-one percent of the graduates assigned to the MOA (representing 66 percent of total Egerton graduates) will function within the extension service, almost 17 percent in the Research Division, and nearly three percent have been assigned to the teaching staffs of AHITI (Kabete) and Bukura Institutes where TA's are trained.

(c) Egerton College Curriculum

The nine Egerton diploma streams are geared to service within the agricultural extension system and particularly to the needs of the smallholder farmer. In 1976 Egerton College and the FAO sponsored a week-long curriculum workshop.^{2/} Participants included the entire College staff, graduates of the College, MOA staff, and other interested parties. The workshop began by identifying the needs of rural families, with particular emphasis on the smallholder and on increasing smallholder agricultural production. The second step was preparation of job descriptions for each of Egerton's nine specialized fields, linking Egerton graduates' activities in the extension service with the needs of rural families. Each job description included: Overall aims of the Officer's program and activities; all the activities the officer undertakes as part of achieving these overall aims together with a brief statement of what each specific activity contributed to achieving the overall aim; the social, political, economic, and technical groups with which the officer must work in undertaking each activity; the work situations/ environment the officer encounters when undertaking each activity and information the officer is expected to convey to each group.

Based on the job descriptions prepared, the workshop examined the knowledge, skills and attitudes required to undertake each

- ^{1/}a. S. Erozer. Extension Training for Rural Development. June 1977. Programmes for Better Family Living/FAO Report Series No. 31.
- b. J. Ascroft, N. Roling, J.Kariuki, F.Chege. Extension and the Forgotten Farmer. Institute for Development Studies, University of Nairobi. Bulletin No.37, 1973.
- c. S.Schönherr, E. Mbugua, "Managing Extension Staff in Kenya", Institute for Development Studies, University of Nairobi. Discussion Paper No. 230, February 1976.

^{2/}See "Egerton College Curriculum Workshop-September 6 to 9, 1976". Available at AFR/DR/EAP.

Table B-5

EGERTON COLLEGE

Placement of 1975 Class: MOA Sponsored Graduates

Research Division	AHITI/Bukura Institutes	E X T E N S I O N ^{1/}				Subtotal	Total
		Vet	LMD	An. Prod.	Other		
Agricultural Education	2				3	3	5
Agriculture (general)	1				17	17	28
Animal Science		20	5	6		31	38
Range Management	2		3		19	22	28
Home Economics					13	13	13
Farm Management	5				26	26	31
Horticulture	5				9	9	14
Agricultural Engineering					26	26	26
Dairy Technology		3				3	3
TOTALS	31	23	8	6	113	150	186
%	16.6%	12.3%	4.3%	3.2%	60.8%	80.7%	

MOA/Total Egerton Graduates: 82%

^{1/} LMD: Livestock Marketing Division.
 An. Prod.: Animal Production
 Other: Includes Training and Extension Division, Food Crops Division, Land & Farm Management Division, Range Management Division, Industrial Crops Division, Horticulture Division. Graduates are mainly posted as Division Agricultural Officers and District Level Staff (TO)

NB: The 1975 Class graduated in March 1978. (Class intake was in 1975).

specific job. The analysis included general knowledge, technical knowledge, administrative and managerial skills, and attitudes directed toward a willingness to work with rural populations to solve rural problems. As the final exercise the workshop examined each existing diploma program, course by course, to determine which relevant skills, attitudes and knowledge were being taught and which were not being taught.

Subsequent to the curriculum review workshop departments examined their course content and began undertaking modifications based on the workshop. This process is still continuing, and both college staff and the administration recognize the need for continual review and evolution of the curriculum. An examination of the workshop papers indicates the thoroughness of the above outlined exercise and highlights the College's concern that the Egerton curriculum be geared towards the needs of the rural poor and that course content and attitudes developed at Egerton be in harmony with the national development objectives.

(2) Proposed Activity

The ATAC report identified agriculture manpower shortages and recommended increases to Kenya's existing capacity for training such manpower in quantities sufficient to meet projected demand. Tables B-3 and B-4 above summarized these findings and the recommended increases, including a significant expansion of Egerton College above the current enrollment of 686 to 1,550.^{1/} The ATAC survey projected that by 1988 there would be a shortfall of between 1,126 and 1,718 diploma graduates given Egerton's existing capacity and an annual requirement of between 270 and 380 Egerton graduates. By 1995 the shortfall in diplomates is projected to range between 2,210 and 3,950 with the aggregate demand increasing at a rate of between 460 and 600 every year.

The above projections reflect ATAC's review of requirements for diploma graduates through the collection of demand requests in 22 specialty areas covering 13 agricultural and nine management specialties. The ATAC data is summarized in Table B-6. Adjusting the table for factors not captured by the detailed ATAC data (such as the Ministry of Education's needs for diplomates in agriculture education), projected

^{1/}Note that although current student enrollment is approximately 690, dormitory space is only designed for 631 students, and 59 double rooms have of necessity been converted to triples.

TABLE B-6

DEMAND FOR DIPLOMA HOLDERS BY SELECTED AREA OF SPECIALTY

Agricultural Sector Requests and Projected Graduates^{1/}

<u>Areas of Speciality</u>	<u>Additional Requests 1977-1988</u>	<u>Egerton Graduates 1977-1988</u>	<u>Excess (Shortfall)</u>
Crop and Livestock Production ^{2/}	940	691	(249)
Education ^{3/}	185	468	283
Farm Management	983	348	(635)
Agricultural Engineering ^{4/}	81	365	284
Animal Husbandry	732	437	(295)
Veterinary Medicine (Animal Health)	222	60	(162)

^{1/}Unadjusted staff requests from ATAC Survey Data. See ATAC Report, Section II-D, for further comments. Does not include management/administrative specialities.

^{2/}General Agriculture, Horticulture, Range Management.

^{3/}Agricultural Education and Home Economics. NB - survey data does not include Ministry of Education requirements and these are expected to be massive as agricultural education in secondary schools is to be greatly expanded assuming this recommendation of the National Commission on Educational Objectives and Policies is implemented.

^{4/}Additional requests considered to be unrealistically low. Other GOK estimates and extreme difficulties faced by employees seeking Egerton graduates suggests that demand is underestimated by a factor of ten.

student enrollment by diploma stream has subsequently been re-estimated by Egerton College and USAID as detailed in Table B-7. Based on these sets of projections AID is proposing to finance an expansion of Egerton College to a total student capacity of 1,632, graduating about 516 diplomates annually.

Drawing on the demand for graduates (Table B-6) and the projected enrollment per diploma stream (Table B-7), a joint AID and GOK-funded group consisting of an academic planner, architects, and engineers^{1/} undertook a feasibility study of the space requirements generated by the expanded number of students, faculty, and supporting staff. Existing facilities were examined to determine which could be converted to accommodate specific new space requirements. New facilities were proposed as deemed necessary. Alternative approaches to satisfying each space requirement were considered, the implications of each option examined, and the least-cost alternative selected. The details of this analysis are presented in Part III.C.2. and Annex IX.B. The staffing and training implications growing out of the proposed expansion were also reviewed, and the results are summarized in Table B-8.

AID inputs for the proposed expansion identified as part of the whole process will include construction, teaching staff and participant training. Construction, which is to be financed with loan funds, will be phased over a three-year period. Construction activities are divided into three parts: New works, renovations, and infrastructure. New works include construction of, and additions to, approximately 20 buildings and construction of 513 staff houses (the majority being simple two-room structures for the subordinate staff). Many of the existing

^{1/}AID financed the services of H. James Miller, Professor of Architecture, University of Illinois. The GOK financed the services of Mutiso Menezes, International, leading Kenyan architectural planning firm. Mutiso added to the team Technical Consultants International (space scheduling and equipment specialists), Kitololo and Partners (civil and structural engineers), Bikro Consultants (civil, mechanical and electrical engineers) Geosurvey International (surveyors) and Davidson and Ward (quantity surveyors). Also under the National Range-Ranch Development Project AID funded a curriculum review of the Egerton Agricultural Engineering and Range Management Departments. See G.Stringham. Agricultural Engineering Expansion Program at Egerton College, March 1978. AID/Afr-C-1140, W.O.24, and D. Dwyer, "Curriculum Review and Course Suggestions for Range Management Department, Egerton College", April 1978. (Draft) AID/Afr-C-1140, W.O. 24.

Table B-7
 Egerton College
 Projected Enrollment and Graduation
 (Month and Year)

Diploma Stream	Current		9 - 1981	7 - 1982	9 - 1982	7 - 1983	9 - 1983	7 - 1984	9 - 1984	7 - 1985	9 - 1985	7 - 1986
	Enrollment	Graduation	Enrollment	Graduation	Enrollment	Graduation	Enrollment	Graduation	Enrollment	Graduation	Enrollment	Graduation
Agriculture	72	28	76	22	88	22	96	30	96	30	96	30
Ag. Education	90	40	90	28	90	28	110	29	130	28	150	48
Ag. Engineering	80	25	102	26	123	26	192	46	240	46	288	91
Animal Husbandry	130	40	136	42	143	42	164	47	178	47	192	61
Animal Health	-0-	-0-	16	-0-	32	-0-	64	15	80	15	96	30
Dairy Technology	31	7	40	8	50	8	72	19	84	19	96	30
Food Technology	-0-	-0-	24	5	40	5	72	19	84	19	96	30
Farm Management	106	31	110	32	115	32	130	38	140	38	150	48
Home Economics	49	13	55	16	62	16	78	22	87	22	96	30
Horticulture	55	14	77	16	100	16	142	39	161	39	180	57
Range Management	81	8	86	25	91	25	128	31	160	31	192	61
Total	694	227	812	220	934	220	1,248	334	1,440	334	1,632	516

Table B-8
EGERTON COLLEGE
PROJECTED STAFFING: SUMMARY

	<u>Current</u>	9 - 79	9 - 80	9 - 81	9 - 82	9 - 83	9 - 84	<u>Total New Hires/ Temporary Staff</u>
1. <u>Lecturers</u>								
Lecturers in Residence ^{1/}	42	32	29	33	46	61	76	
Lecturers in Training		22	37	40	27	13	-0-	139 PY
U.S. Teaching Staff	-0-	16	22	22	18	8	-0-	86 PY
Total Lecturers in Residence ^{2/}	42	48	51	55	64	69	76	
Total Lecturers on Permanent Staff	42	54	66	73	73	74	76	
New Lecturers Hired	-0-	12	12	7	-0-	1	2	34
2. <u>Demonstrators</u>								
In Residence	19	25	28	37	45	55	57	
New Demonstrators Hired	-0-	6	3	9	8	10	2	38
3. <u>Administrative Staff</u>								
Senior Staff ^{3/}	11	12	13	15	17	17	19	8
Junior Staff ^{3/}	98	108	110	130	150	160	177	79
4. <u>Plant Staff</u>^{4/}								
	335	350	380	450	475	500	524	189

^{1/} Kenyan permanent staff.

^{2/} Kenyan permanent staff plus U.S. Teaching staff.

^{3/} Includes technicians, laboratory assistants, nurses, secretaries, typists, messengers.

^{4/} Includes cooks, drivers, foremen, laborers, sweepers, security.

buildings will undergo some renovation, including improvements to the plumbing, electrical system, fire protection equipment, and remodeling in those cases where building use is being altered. Infrastructural works include additions to the water system, waste water treatment, electrical system, telephone, and minor realignment of one campus service road. In addition to construction costs per se, loan financing will also finance equipment to be installed in the expanded facilities. For details see Parts III.C.2. and IV and Annex IX.B.

Technical assistance, including provision of U.S. teaching staff and participant training, is to be grant funded. The proposed Egerton College expansion will include an increase in the teaching staff from the current level of 42 to a projected level of 76. During the staff development period a significant number of U.S. teaching staff will be required in order (1) to fill the gaps created by Kenyan staff's being away in training, (2) to provide counterpart training for staff not in training, (3) to review and modify curricula as needed, and (4) to assist in other academic and campus life matters requiring attention to facilitate a smooth expansion of the College.

It is projected that approximately 86 person years of supplemental teaching staff assistance will be required under grant financing for 28 teaching positions. (See Annex IX.C. for detailed listing of staff requirements.) It is further proposed that in connection with provision of U.S. faculty 43 of Egerton's Kenyan teaching staff undergo U.S. academic training in order to provide the necessary Ph.D., MSc., and BSc. degree-level staff required for the expanded College. Therefore, it is proposed that AID grant finance the required 139 person years of training for the 43 Kenyans.

These TA components were determined by first examining the individual diploma streams in order to relate the proposed student enrollment (per stream) with teaching requirements. In addition to determining the total teaching staff required, new hires and academic training periods for the Kenyan staff have been projected in order to determine the magnitude and phasing of the required technical assistance. This exercise is summarized above in Tables B-7 and B-8.

In addition to teaching staff and related training AID will finance the services of a procurement/administrative officer to be responsible for processing the procurement requirements stemming from the expansion as well as to provide administrative support to the U.S. teaching staff. Five person years of technical assistance will be required.

USAID anticipates the above three TA components will be implemented by a single U.S. contractor. Given the magnitude of the above TA inputs, it is proposed that a consortium of U.S. universities be considered, rather than a single university, so as to maximize the prospects for recruitment of qualified individuals, to ensure all U.S. teaching positions are filled as scheduled, to enable the GOK/USAID to select from several, i.e. about three, candidates for each position rather than just one, and to enable participants and the College to have the benefit of training at a broader spectrum of institutions than is usually the case with a single university contractor.

The GOK as part of its contribution will hire the additional Kenyan teaching and support staff required to carry out the College expansion and to replace the U.S. TA personnel (see Table B-8). The GOK will also fund the resulting incremental operating expenses of the College. Until such time as new staff housing is completed, Government, further will provide housing for U.S. technical assistance staff, either within the current complement of Egerton staff houses or in nearby Nakuru. Finally, the GOK will finance architectural and engineering design fees and part of the planned construction and will purchase the required furnishings associated with the expansion. For further details see Part IV. and Annex XVII.

(3) Beneficiaries and Rationale

Obviously, the immediate and direct beneficiaries of the assistance described in the preceding sub-section will be Egerton College, its students and faculty. Numerically, the graduates of Egerton's training programs will predominate, estimated to reach 516 annually at the end of the five-year period in which the expansion will be implemented (construction will cover three years of this time frame).

As the PP demonstrates above, Egerton graduates are employed throughout the public and private agriculture sectors. They play within the Ministry of Agriculture a significant role in the extension service but also become staff for agriculture research facilities and for training the farmer contact agents--the JAA's and TA's -- at the agriculture institutes and FTC's. The multiplier effect to be achieved from improved and expanded training of diploma-level personnel upon providing smallholders with increased technical knowledge and improved agriculture technologies is significant.

The possibility of the above technological transfer to smallholders actually taking place is heightened by GOK decisions and actions described earlier in Part II.B.1. The major Egerton curriculum review undertaken in 1976 and subsequent curriculum revisions

are part of ASSP implementation and along with the findings of the ATAC manpower and education report (pages 81-82) support the conclusion that the College curricula is well suited to graduates' future employment situations and responsive to needs of smallholders.

During implementation of the Egerton expansion U.S. and Kenyan teaching staff will be encouraged to continue to have periodic curriculum reviews, similar to that of 1976, for each department and diploma stream to ensure that the training provided is appropriate to Kenya's agriculture needs, especially those of small farmers. Such reviews should involve directly, either through interviews or seminars, Egerton graduates, MOA extension and research officials filling positions both above and below those of diploma holders, and staff of agriculture institutes and FTC's. It is also strongly recommended that U.S. personnel financed under other components of this project also participate as well as those, for example, under IBRD financing and FAO sponsorship (drylands research).

The ATAC report cited above (pages 83-84) also commends the recently instituted Egerton College Research Bulletin. At that time 500 copies of the initial publication had been distributed to all research stations, senior provincial and district extension officials, the Faculty of Agriculture, and teachers of secondary schools and institutes. USAID believes that U.S. teaching personnel and U.S. trained participants should follow up on ATAC's recommendations re expanding and strengthening the role of applied research in the instructional program and strengthening ties to the extension service. Collaboration in this effort with other ASSP-financed experts is to be encouraged.

Project-wide evaluations will focus, among other things, on linkages between the various ASSP components and on how improved, expanded training, increased adaptive research, and revised curricula improve the quality and amount of available extension services and through such services, reach smallholders as a result of ASSP.

Assuming full utilization of Egerton's existing facilities (and even some over-crowding as is now the case), Egerton could not graduate many more than 220 diplomates each year, and at present Egerton is Kenya's only diploma-granting agriculture training institution. This project contemplates a student capacity as detailed in Tables B-7 and B-8 which is the direct outgrowth of projected national demand for diplomates, conservatively estimated. At full expanded capacity Egerton will graduate approximately 516 diploma holders annually (allowing for a ten percent drop-out rate in

conformity with the current rate)

The ATAC manpower projections for the Ministry of Agriculture were subjected to a budget constraint: a seven percent per annum growth rate in personnel expenditures at the "low" demand estimate and 8.5 percent per annum for the "high" demand estimate. These rates are considered to be conservative and are below the 10.2 percent average increase in the MOA's real recurrent budget which occurred between 1961/62 and 1975/76.

Taking the 1976 stock of Kenyan diplomates (1,282) and comparing the growth rate of diplomates with and without this project, in 1990 the stock would be growing at 8.8 percent per annum with the project and 5.3 percent without. By 1995 the growth rate of diplomates with the project would be approximately 6 percent, which is below the "low" budget growth of 7 percent per annum. As well as one can forecast some 20 years in the future, the growth rate of diplomates which will result from this project is in line with the projected increase in demand for diplomates.

Given the above, the planned expansion of Egerton does not create any real issue regarding potential over-capacity because the demand calculations do not fully reflect training demands arising from a number of new programs and activities likely to be introduced over the next 15 years. Such new programs include major activities, as yet undefined, in the semi-arid and marginal areas, a considerable proposed expansion, similarly undefined, of agricultural education in secondary and primary schools, possible introduction of some degree programs at Egerton in the 1990's, and in-service training of the more highly skilled extension service which is anticipated for the 1990's. The physical facilities which are proposed for construction under this program are not uniquely specialized and could serve an alternative training function 20 years from now if the GOK so desired.

It is proposed that the GOK undertake periodic evaluations of the demand for Egerton graduates by diploma stream so that adjustments in the student intake per stream can be made to reflect ever changing demands within the agricultural sector. In this sense, the Egerton expansion is, first, providing additional diplomates in specified fields and numbers, based on current projections of manpower shortfalls, and, second, is providing Kenya with educational facilities which can be adapted to Kenya's future training needs in the year 1995, 2005, or whenever, and for whatever those needs might be. Finally,

the AID Program Guidance for FY 1980 ^{1/} identifies assistance to higher education as one approach to achieving sector and national goals, particularly education which is directed toward creating additional administrative, managerial, research, and analytical capabilities. Implementation of Kenya's development programs requires manpower to administer the programs as well as manpower to transfer technology, provide credit, assist in the delivery of inputs, and improve rural marketing.

Bolstering the administrative and technical capacity of the extension service, through addressing the service's training and manpower constraints, represents a significant complementary output which supports other components detailed in this Project Paper. The farmer production response to the delivery of agricultural credit, for example, is directly related to the degree to which the MOA field staff can provide necessary technical support. The effective dissemination of range research findings from the station to the farmer/pastoralist is a direct function of the effectiveness of the MOA's extension staff. While the range research component of this project seeks to address the issue of distributing research results from the station to the extension staff, the capabilities of the extension staff are dependent, in part, on the outputs of the agricultural manpower component. While not all problems of each agricultural support system can be solved by increasing the nation's stock and improving the quality of agricultural manpower and improving the administrative and technical support provided to the extension service, these outputs do address central and common constraints facing each element of the agricultural support system. Egerton College and its graduates as demonstrated above play a central role in the above overall process.

d. Coast Certificate Institute - Establishment

(1) Background

Kenya currently operates three certificate training institutes: Embu, Bukura, and the Animal Health and Industry Training Institute (AHITI) at Kabete. These institutes provide two-year agricultural courses leading to a certificate in agriculture. At Bukura, for example, six programs are provided: crop production, animal production, agricultural engineering, farm management, home economics, and extension and administration. For more details see the ATAC manpower report, Chapter II.

1/State 92581 of April 11, 1978.

The ATAC manpower report reviewed the demand for certificate holders through 1988 and compared this demand with the current output levels. To meet the projected demand ATAC suggested the expansion of the existing institutes and the establishment of a new AHITI along with four new Bukura-type agricultural institutes. Under the World Bank's Fourth Education Loan funds will be provided for the expansion of Embu and Bukura and the construction of a new AHITI at Ndomba. The net shortfall after taking account for the World Bank activity is detailed in Table B-9.

Certificate holders enter the Ministry of Agriculture as Agricultural Assistants (AA's) working at the sub-division or location level.^{1/} They serve as contact agents, and provide guidance to the JAA's. Their duties and responsibilities include:

1. Supervise credit scheme loanees;
2. Organize meetings, groups, and courses;
3. Teach courses at Farmer Training Centers (FTC's), speak at field days, barazas (village meetings), village polytechnics, and other group meetings;
4. Demonstrate farming techniques through farm visits, office calls, informal contacts, and group instruction (formal and non-formal);
5. Arrange for loans, supplies, fertilizers and seeds under various MOA/MOCD programs;
6. Supervise field trials on behalf of research stations;
7. Prepare and distribute instructional materials;
8. Coordinate development efforts with chiefs, division and subdivision extension teams, voluntary agencies, FTC's, and through the TO's, with the District Development Committees.

The principal subjects of their extension work are crops, livestock, farm management, and home economics.

This description of duties and responsibilities provides an indication of the type of work carried out by the AA's and suggests their central role in the entire extension effort. Raising smallholder agricultural production will depend very much upon how well AA's are able to carry out their work. Through the increased output of Egerton and University graduates the technical and administrative supporting services provided to AA's should improve. Therefore, increasing the number of the AA's and improving their technical capabilities will increase the degree to which the extension service is able to introduce

^{1/}There are approximately 3,000 AA's and 6,800 JAA's on MOA rolls at present.

Table B-9Demand for Certificate Holders

(Cumulative from 1977)

1.	<u>Effective Demand</u>	<u>1983</u>	<u>1988</u>
	Low	6,390	14,052
	High	7,641	16,830
2.	<u>Current Output</u>	2,250	4,125
3.	<u>Current Shortfall</u>		
	Low	4,140	9,927
	High	5,391	12,705
4.	<u>Incremental World Bank Output</u>	686	2,235
5.	<u>Net Shortfall</u>		
	Low	3,454	7,962
	High	4,705	10,470

Source: ATAC. Manpower Report. Table II-10 and World Bank
Appraisal of Fourth Education Project. Paragraph 1.11.

behavioral changes in the smallholder farm population.^{1/}

(2) Proposed Activity

ATAC has recommended as part of expanded efforts to train new certificate holders that a certificate-level program be established which would specialize in coastal agriculture production and related agricultural activities in Coast Province. None of the existing institutes can by virtue of their locations and existing teaching responsibilities devote the needed attention to coastal agriculture. The Ministry of Agriculture reviewed this ATAC recommendation and, subsequently, requested that AID provide assistance leading to establishment of a 660-student new certificate institute in Coast Province.

Establishment of a new agricultural institute requires a two-stage process, with Stage I including the basic academic design work and technical feasibility study (including preliminary plans and cost estimates) while Stage II would include capital construction, provision of equipment, development of curricula, and training of teaching and administrative staff. The last item might entail provision of U.S. teaching staff and training of Kenyan faculty (both in the U.S. and on-the-job).

It is proposed that funds be provided in this PP for the Stage I design and feasibility studies. Upon completion of that work and the necessary reviews a PP Revision might be prepared seeking funds for final architectural and engineering design, capital construction, and related technical assistance. Had there been sufficient time between the presentation of the ATAC recommendations and the submission of this Project Paper, Stage I might have been completed in time to enable inclusion herein of funds for Stage II.

For Stage I, then, AID grant funds will finance an academic design team to review curriculum requirements of the new agricultural education institute. It is proposed that two academic planners form the basis of the academic design team. One planner should be experienced in space utilization studies. Over a three-month period the team will review the curriculum at existing institutes, review recommendations

^{1/}See Ascroft, Roling, Kariuki and Chege, op.cit., for a description of the possible impact the extension service could have on the smallholder farmer population if support and manpower constraints were addressed. J. Gehart, The Diffusion of Hybrid Maize in Western Kenya, CIMMYT, 1975, documents the importance which the extension service played in "putting across the message about hybrid maize."

made by ATAC regarding certificate-level training, discuss with the Ministry of Agriculture curriculum requirements which the Ministry feels are necessary at the new institute, and prepare a proposed curriculum for the new institute. It is suggested that a curriculum development workshop might be held, similar to one held for Bukura in 1974 prior to that institute's initiation of training.^{1/} The team will make recommendations pertaining to facilities required at the new institute, space utilization, and the approximate staffing patterns and levels required.

Additionally, an AID funded three-person technical feasibility design team, also grant funded, will, using space requirements proposed by the academic team, translate these into a basic site plan for the new institution. This team will prepare preliminary sketch plans and cost estimates. It is proposed that their scope of work closely follow the scope of work detailed in the Mutiso report.^{2/} Local contracting will be required in order to obtain the necessary architectural support services, including such talents as a quantity surveyor, draftsman, civil works engineer, and sites engineer. This design team will need to overlap with the academic team above.

As part of this effort the GOK will establish a counterpart team which will coordinate the design effort for the coastal institute. It is essential that this team have considerable experience with certificate-level institutes (Embu, Bukura, AHITI) and that several members of the team be actively involved in administration and instruction at existing institutes. The GOK team will require the authority to make curriculum and site plan decisions, including in coordination with their U.S. counterparts and other appropriate GOK officials, a decision regarding the site for the new Coast facility. Ranking members of the team must be available on a full-time basis to work with the AID-funded academic and physical design teams.

(3) Beneficiaries and Rationale

As indicated certificate holders now serve as the direct farmer-contact agents within Kenya's extension service. At present they represent the best trained core (some 3,342) of the total 11,000 farmer-contact agents, the remainder being the less well trained JAA's. The role of TA's in the extension service will be crucial as they replace

^{1/} The 1974 Bukura curriculum workshop was the model for the 1976 Egerton workshop. The workshop linked field duties and responsibilities to training required in order to develop an appropriate curriculum at Bukura. See Curriculum Development Workshop-Bukura, Programmes for Better Family Living, May 1974.

^{2/} Mutiso Menezes International, Master Plan Study Report: Expansion of Egerton College, Section 2.0, Brief

the JAA's, as their numbers increase to provide needed services to a larger number of smallholders under new and existing agriculture development programs, and as, increasingly, emphasis must be given to the transfer of technologies appropriate to intensifying production. Therefore, while certificate holders and staff of the institutes to be expanded or created as a result of IBRD and proposed AID assistance will directly benefit from these efforts, the assistance can also be expected to impact upon smallholder farmers, particularly as these are able to intensify their production and thereby earn more from their farm produce.

In order to assist in the expansion of certificate graduates the World Bank will expand the facilities at Embu and Bukura Institutes and finance construction of a new AHITI at Ndomba. As is clear from Table B-9 the IBRD input will not satisfy the projected demand for certificate holders. The GOK recognizes the very large shortfall in certificate holders which will still exist and the fact that further expansions or new institutes will still be required. (ATAC recommended creation of up to five new institutes.) The GOK is also faced with administrative and teaching staff constraints which limit the number of new facilities which can be opened at any one time. Within this context the GOK has requested AID assistance in developing plans for a new institute in Coast Province. By the mid-1980's when currently planned expansion and new institutes are functioning, the GOK anticipates undertaking a further round of expansions/new construction for certificate-level institutions, depending, of course, on revised demand projections which may be available at that time.

Per the above existing institutes in the MOA's view cannot give adequate attention to the particular problems of coastal agriculture. At present training may only include brief field visits to coastal areas. Most of Coast Province has basically range potential (like most of the rest of Kenya) and limited cropping potential, and the smallholder agriculture practiced there is predominantly subsistence due to rainfall and soil conditions. There are, however, some crops which are grown only at the Coast--coconuts, cashews--which are grown predominantly there--sisal--or which have considerable as yet unexploited potential--cotton. Ecologically, the coastal strip is unique in Kenya although the remainder of the Province is not, and this factor should be considered in establishing a new training facility. Other factors to be considered in curriculum design and technical feasibility are the low density of the coast's population and, thereby, potential users of extension staff trained there along with the suitability of such staff for assignment to other parts of Kenya, for example the range areas.

Clearly, there will need to be a close relationship between any new institute and the Mtwapa coastal research station, the Kiboko range research station, the drylands research undertaken by FAO experts, and research carried out as part of the Food Crops Research project, in marginal rainfall for example. Curriculum design, and later revision, are obvious opportunities for mutual exchanges of views or other forms of joint participation and interchange. Similarly, a new coast institute might be an appropriate site for carrying out field trials by the Kiboko and Muguga (Food Crops Research project) research staff while such trials and field trips to the respective stations should be part of the training opportunities provided by the institute. Given the reliance which AFC and cooperatives place on TA's for providing extension advice and other services to their small farmer loan recipients, AFC and the Ministry of Cooperative Development may also be able to make a meaningful input into the training program. Such inputs and/or exchanges as well as those by MOA officials, and other institutes cited above are to be encouraged, starting with and as a part of, the feasibility-curriculum design stage.

e. Faculty of Agriculture, University of Nairobi - Expansion

(1) Background

The Faculty of Agriculture was established in 1967 following the recommendations of the Weir Agricultural Education Commission and was designed for the graduation of 40 BSc's per year. Located 14 kilometers north of Nairobi, adjacent to a 500-acre field station, the Faculty began instruction in five departments: Crop Production, Soil Science, Agricultural Economics, Applied Plant Sciences, and Animal Production. Soon after the Faculty was established, it became obvious that the Weir Commission's manpower demand projections which had been used to set the internal output, were far too conservative; with funding from the World Bank's Second Education Project the Faculty's capacity was increased to 300 students in 1970.

BSc degrees, and in most, but not all cases, MSc degrees are currently offered in Agriculture, Food Science and Technology, Agricultural Engineering, Agricultural Extension, Plant Breeding, Plant Pathology, Agricultural Economics, Agricultural Marketing, Agronomy, Animal Production, and Soil Science. It is proposed by the MOA, ATAC, and the World Bank that programs in Agricultural Education and Range Management be added to the curriculum.

(2) Proposed Activity

Proposed AID assistance for the Faculty will follow the same procedure used for the preceding manpower systems component-- a two-stage process with Stage I consisting of the basic academic design work and technical feasibility studies, including preliminary plans and cost estimates. Stage II, then, might include capital construction and equipment, and technical assistance. Funding for Stage I only is part of this PP with any assistance which AID might provide for Stage II to be subject to future decisions re feasibility, funds availability, and to proceed. Given the limited space available now at the Kabete campus and the World Bank-financed expansion to be constructed there, proceeding to Stage II may involve construction of a satellite campus, similar to arrangements at Makerere University, Kampala, at a new, separate site.

This PP proposes to utilize grant funding for an academic design team and a technical feasibility design team. During a one-month period the former will review Faculty of Agriculture curricula, staffing, and training needs, geared toward an increase of 200 in student capacity and from that total, an increase in graduates of 67 per year. The team will jointly with the feasibility design group investigate the option of a satellite campus. Over a two-month period the technical feasibility team will develop a basic site plan and cost projections using academic space utilization estimates prepared by the academic design team. Local contracting may also be needed for necessary architectural support services, including a quantity surveyor, draftsman, civil works engineer, and sites engineer.

The GOK will establish an administrative team which will coordinate the feasibility studies efforts of the AID-funded experts with the relevant GOK ministries and agencies and the University. The GOK will also provide office space.

(3) Beneficiaries and Rationale

Management of the extension service has been identified as a crucial problem affecting the system's effective operation. The degree holder is often the senior administrative and technical officer in the field and as such plays a central role in overall management and direction of the extension service. As indicated earlier in Part II.B.1, ATAC has recommended a lowering of the ratio of extension-to-support personnel as well as significant increases in farmer-contact and immediate supervisory field staff. The projected shortfalls in Faculty graduates flow from that process, and IBRD efforts and AID assistance proposed in this PP are directed toward alleviating the overall manpower constraint.

Table B-10

Demand for Degree Holders
(Cumulative from 1977)

	<u>1983</u>	<u>1988</u>
1. <u>Effective Demand</u> ^{1/}		
Low	932	1,929
High	1,119	2,380
2. <u>Current Output</u>	630	1,080
3. <u>Shortfall</u>		
Low	302	849
High	489	1,300
4. <u>Incremental World Bank Output</u> ^{2/}	-0-	610
5. <u>Net Shortfall</u>		
Low	302	239
High	489	690

^{1/} Adjusted to omit Faculty of Veterinary Medicine and to omit demand for veterinarians.

Source: ATAC, op.cit.

^{2/} World Bank. Appraisal Report. Fourth Education Project, pg. 4.

Table B-10 above illustrates the demand for degree holders from the Faculty of Agriculture and makes adjustments for the expansion activity being financed by the IBRD. By 1990 the stock of Faculty of Agriculture graduates will be growing at about 9 percent per annum if the World Bank and AID expansions are undertaken. This growth rate is only slightly higher than the projected constrained budget growth rate of 8.5 percent for the Ministry of Agriculture. It is believed that any surplus which might thus be implied can easily be absorbed into Kenya's developing economy.

The impact upon the extension and other systems drawing on degree graduates in agriculture--research, cooperatives and credit, planning, etc.--will depend on the content of the training provided and its relationship to the actual working situation to be encountered by students following their graduation. Therefore, as part of any AID financing which may be provided for Stage II it is proposed that AID fund a major review of the Faculty's curriculum. This review would examine departmental curricula in light of skills needed for administration, research, planning, and for technical and other support of the extension system. Given the findings of the ATAC agriculture research study, and AID and other donors' problems in finding sufficient members of Kenyan counterparts for the Ministry of Agriculture planning "pool", the contribution of an expanded Faculty to the research and planning systems may be as great as for improving management of the extension system.

With regard to manpower needs for agriculture research the ATAC research report noted that in 1977 the MOA Division of Research had 133 senior staff (BSc or higher) serving at headquarters (5), the National Agricultural Laboratory (27), and at 21 research stations (101). Its professional staff are largely recruited from University of Nairobi graduates in agriculture and biology, and the graduate school provided most of the MSc training sponsored by the MOA for Division personnel. Relations between the University and the Division were found to be close with, in addition to the above mentioned training, field experimentation often done at Division field stations, Division officers' having taught at the University, and seminar's having been held for MOA staff in which personnel from both entities participated as leaders.

The ATAC manpower projections indicate that there is a considerable shortfall in degree graduates as detailed in Table B-10. The World Bank's Fourth Education Loan will be providing funds for an additional capacity of 305 students and the GOK has requested AID to provide funds for an additional student capacity of 200, bringing the Faculty's total student capacity up from the present 300 to a projected 805 students, or approximately 265 graduates per year.

University graduates enter the MOA extension service as Agricultural Officers supporting provincial level operations or as District Agricultural Officers with a staff of diploma-holding Technical Officers. Within the extension service degree holders occupy the technical level and more senior management positions, providing essential administrative and technical guidance to divisional staff and through them the contact agents. Within MOA Headquarters degree holders occupy staff positions in each of the operating divisions. As part of their duties they provide technical and administrative support to the division's respective field staff, located at the provincial and district level.

Impact of expanded Faculty capacity on smallholders will be much more difficult to evaluate than in the cases of Egerton and the Coast Institute; it will largely be gauged by non-quantifiable factors such as improved management and efficiency of extension performance, and by the more quantifiable, but possibly harder to judge in the short term, carrying out of research directly oriented to small farmer needs. With the reorientation of the extension service to serve these needs better and more directly, with the increases in extension personnel which must occur from that objective to be met, with the need for more trained research manpower and the need to expand research into areas not now being addressed, clearly expanded training for degree holders must occur for these objectives to be met without worsening existing management and staffing problems. Further, this expansion and the expected improvements in quality of training offered must occur as part of, and in phase with, the expansion in numbers of lower-level certificate and diploma holders.

f. Training Fund - Ministry of Agriculture

(1) Background

The GOK has expressed the desire to make a "breakthrough" in donor-funded participant training. Under existing donor-assisted training programs the MOA is able to place approximately 60 participants into overseas academic training each year. For these 60 positions there are about 130 applications each year from the MOA's various divisions. Although the numbers vary from year to year, depending upon the resources each donor is able to provide at any one time, the annual shortfall is approximately 70. In order to cover this shortfall the MOA has recently begun provision of stop-gap, in-service training at the Faculty of Agriculture, University of Nairobi, for some 60 individuals each year. This training is primarily of a short-term nature and in most cases is a poor substitute for a rigorous academic training program in areas not currently included in the Faculty's curriculum.

In addition to the financial constraints imposed by donor-assisted training, donor funds are often tied to specific training fields in support of a specific donor-assisted development activity. This restriction may mean both that training for which there is a particular immediacy is not funded and that training needed for support of a project, although not directly a part of it, is not funded. Therefore, the GOK seeks to obtain training assistance in agriculture which is:

- (1) Flexible with regard to fields of training rather than tied to one specific project, and
- (2) Available over a longer term with the donor making not a year-to-year commitment of funds but rather a long-term (say five-year) commitment.

(2) Proposed Activity

The actual training needs of the Ministry of Agriculture are wide and varied with requirements focusing on the extension system (being addressed in the case of pre-service training by the University, Egerton College, and Coast Institute activities and for some in-service training at the University), the research system, and the middle-level technical and management officers. The FY 1980 AID Program Guidance (State 92581) identifies the need to create programs which aid the creation of an adequate capacity for the administration and management of poverty-oriented activities and the analytical and research skills necessary to support those activities.

It is proposed that the Training Fund finance training of up to 25 academic participants each year for an average training period of two years per participant. Short-term as well as long-term academic training is envisaged, however, and it may be appropriate on some few occasions to include practical training as well. While training demands are well in excess of 25 participants per year, the MOA Training Division considers 25 the maximum number feasible. An excessively large training program would drain the MOA of manpower needed to undertake on-going activities. While not all participants will undergo a two-year training program, two years is considered to be a reasonable average. Specific training programs will result from an annual evaluation by the MOA of training needs, individuals available for training, and existing training programs. The MOA would then prepare an annual training plan which will be reviewed and approved by AID. (See Implementation Part V. for details.) Eligible training programs include in-country programs (where the proposed training is in addition to that currently being funded by the GOK), academic and non-academic US training, and eligible third-country programs.

Participants will be drawn from division staff at Headquarters, field research staff, and Provincial and District-level field staff, including TO's, TA's, and even selected JAA's who might qualify. Particular attention will be given to training of research personnel based on the findings of the ATAC research report.

(3) Beneficiaries and Rationale

Both the ATAC research and manpower-education reports discuss the need for, and importance of, in-service training. The research report, for example, indicates the constant need for training and upgrading of staff which requires academic as well as on-the-job training and in which external aid has assisted and can continue to

assist.^{1/} This project in the manpower component items described above gives predominant attention to pre-service training although citing instances where such training will affect in-service training. As Nairobi 477 indicates, USAID is also concerned with in-service training, which the MOA Training Fund addresses directly. As indicated earlier in Part II.B.1., the MOA has underway a review of in-service training which at its conclusion may result in further assistance for in-service training being requested from aid donors at some future date.

The ATAC report has identified manpower requirements for each of the three education tiers currently operating in Kenya. Within the degree level the ATAC demand figures include BSc and MSc training. Some of this training is not available in Kenya and requires attendance at foreign institutions.

In addition to demands identified by the ATAC report the MOA has an on-going training for in-service staff. In-service training also substitutes for new hires by allowing someone already on-board to obtain the MSc or Ph.D. which is required for a new position.

The magnitude of training requirements is considerable. The Scientific Research Division alone requires an additional 119 staff in such positions as pasture agronomy, plant pathology, and entomology. While new hires will be used to fill some of the positions, in-service training will be sought for many of the posts. Similar training requirements exist in the other divisions of the Ministry.

In-service training of current MOA staff is judged highly appropriate. Already employed individuals make good "training material" because they have had an opportunity to demonstrate their abilities, to work within the existing system, to establish their training-constrained limitations, and to formulate their own ideas on how existing operations could be improved. Training for in-service personnel opens up promotion possibilities, thereby fostering upward mobility which may be restricted by formal education requirements. (The ATAC Manpower Report found limited upward mobility to be a problem in utilization of manpower by the MOA.) The general philosophy of in-service training is already well established within the MOA and is viewed as a sound investment and a morale booster. This approach is rather universally accepted within the private and public sector, both in Kenya and in the U.S.

The MOA has long recognized the need for additional training of its staff and has, over the years, placed its staff into a wide range of training activities, stretching from in-service courses at

^{1/} ATAC. Agricultural Research in Kenya. November 1977, p. 16.

Farmer Training Centers to degree courses at local and overseas universities. While donors (including AID) have provided considerable scholarship assistance over the years, that assistance has generally either been:

- (1) Restricted to training which is directly related to a specific development activity, or
- (2) The training funds have only been available on an annual basis with considerable fluctuations occurring between annual funds any one donor is able to provide. Where funds are provided for general sector training requirements and where they are not tied to a specific development activity, the funds are generally only available on a year-to-year basis.

AID's general training funds are channeled through the African Manpower Development Project (AMDP 698-0384). These funds are available for a wide range of training fields, but unfortunately the funds are allocated to Missions only on an annual basis. The Africa Bureau requested \$4.3 million for AMDP in FY 1978 but only received \$3.8 million, of which only \$1.3 million was available for new starts in FY 1978 to be divided among 20 countries. USAID/Kenya had requested \$202,000 for new FY 1978 starts but only received 73 percent of the requested funds. Lastly, a significant portion of AMDP's academic training is to be provided through the AFGRAD II sub-project. AFGRAD II requires advertisement to solicit interested candidates in a broad range of development fields, not just agriculture. Its scope, therefore, and selection procedures make this mechanism unsuited to the situation which USAID seeks to address with the MOA Training Fund. This fact and AMDP's funding restrictions and annual funding variations do not allow the GOK or MOA to use AMDP as either a significant or dependable source of training assistance.

The selection process for in-country and U.S. training programs financed under this grant will be sensitive to providing skills which directly or in-directly can impact on smallholder production. The selection of participants will include a bias for women and individuals from pastoral areas. While it is not possible to demonstrate that training in public administration, for example, will result in a certain percentage increase in smallholder maize production, it has been shown that the effective delivery of services to the smallholder does require the proper administration of service programs.^{1/}

^{1/} Ascroft, et. al., op. cit.
J. Gerhald, op. cit.

2. Range Research

a. Background

(1) Importance of Kenya's Range Areas

Rangeland accounts for about 80 percent of Kenya's total area suitable and available for productive agriculture. These areas support a human population of about 2.5 million and a livestock population of about 10 million indigenous cattle, 12.5 million sheep and goats, plus considerable wildlife. The basic life support of the range is the range grass and forage for which domestic livestock and wildlife compete.

The rapidly rising (human) population living in the higher agriculture potential lands is spilling into areas traditionally used for livestock production with the resultant introduction of food cropping systems often unsuited to the fragile ecology of rangelands. At the same time Kenya needs to increase meat production significantly for export and domestic consumption, and this must come principally from the range areas. In part to meet this need and to provide greater income opportunities for range dwellers, new ranch management systems are emerging, such as group, cooperative and company ranches, in addition to the traditional nomadic pastoralist way of life and mixed livestock-crop farming systems. All of these imply greater strain being placed on the rangeland's ecology and resources.

Finally, as indicated earlier in this PP, Government intends to give concerted attention to alleviating poverty, developing marginal/semi-arid areas, and meeting the basic human needs of its populace as part of the 1979-83 Plan. As the Livestock Loan PP and the IBRD Appraisal Report for the Fourth Education Loan make clear, the nomadic pastoralists resident in the dry areas are among Kenya's poorest people and those with most limited access to the benefits of development. For these above problems to be overcome and national objectives to be met efforts must be directed to increasing knowledge among range area residents about proper range utilization, including halting of further range degradation caused by poor grazing and pasture management, improper land usage, and overstocking.

(2) Agriculture Research in Kenya

Agriculture research policies and programs in Kenya were strongly oriented toward export crops and large farm agriculture although research benefitting smallholders has been carried out successfully as the experience with research on hybrid maize described earlier in the PP demonstrates. A shift in priorities toward the problems of small farmers and livestock producers is now occurring,

accelerated by the need to give particular attention to marginal and semi-arid areas, including range research. Unquestionably, increasing emphasis on crop research (maize, edible legumes, and sorghum) and on research into range management practices suitable for these areas will benefit smallholders and pastoralists as long as research findings are communicated to extension personnel and to the ultimate "user" target group and are relevant to the users.

The 1974-78 GOK Development Plan states that high priority is to be given to agricultural research in order to develop varieties of crops and livestock and more efficient production techniques. In the 1977/78 budget \$9.4 million was allocated to the MOA Division of Scientific Research, representing about 7.8 percent of the total MOA budget. This contrasts with the \$2.6 million, or 4 percent of the budget, allocated for research in 1973/74. Research areas include animal husbandry, cereals (maize, sorghum, wheat), edible legumes (beans, cowpeas, pigeon peas), horticulture (vegetables and fruits), range management and ecology, and cash crops (pyrethrum, coffee, tea). Crop research has traditionally been the largest user of funds with animal husbandry following second.

Of all the Division's research areas range management is the newest, and its importance is growing with the increasing emphasis being placed on marginal/semi-arid lands development. An impressive beginning has been made in range research with establishment of Kiboko Range Research Station and its sub-stations, which are concerned with research on drylands, and range management and ecology, including the interaction between the natural wildlife of the area and domestic cattle. The MOA has previously proposed raising the development budget for range management from the 1977/78 level of five percent of the Division's budget to about 9 percent in 1980/81. Qualified staff are still very much in short supply, and until this constraint is addressed and a comprehensive research program developed, the budget allocation will in all probability remain small.

The research facilities at Kiboko as well as related facilities at Buchuma were established during the course of an FAO-assisted range management research project (KEN/66/511) carried out during 1966-73. This project initiated many research activities in the areas of bush control, grass production, livestock improvement and wildlife ecology. Some valuable results were obtained, but many problems remain unanswered. A final report of the project was written detailing areas requiring continued long and short-term research efforts. (These are covered in the Pratt report and are not repeated in the PP.) Some of these are now being undertaken by the Kenya Rangeland Ecological Monitoring Unit (KREMU), which with Canadian assistance monitors rangeland ecological trends as affected mainly by

wildlife, and by the International Livestock Center for Africa (ILCA), as part of Phase II of Government's Livestock Development Program, monitoring livestock trends and the economics of livestock production.

(3) The ATAC Research Study^{1/}

ATAC carried out a comprehensive review of agriculture research in Kenya in late CY 1977. The reader is referred to that report for the full details of its findings, conclusions and recommendations which are only briefly summarized here.

That report concluded that the primary problem facing Kenya's agriculture research was attraction and retention of competent technical staff resulting from a pay scale which is too low in comparison with other institutions and a scheme of service which offers inadequate prospects for promotion and too low a status to career-oriented individuals. The scheme of service had to be corrected in order to build up a staff of experienced and well-trained scientists. Provision of training and expatriate scientists would increase research output in the short-term but, it was felt, would not address this longer term problem.

The report then went on to identify broad research areas in which the Division already had good work in progress but for various reasons, mainly scarcity of personnel, was not advancing as rapidly or covering the ground as thoroughly as might be desired. These areas were judged to be ones where foreign assistance might be needed. The report recommended attention be given, in the ecological area, in order of priority, to drylands agriculture, tropical (coastal) agriculture and range management, and in the substantive area to nitrogen fixation in grasses, multiple cropping and mixed farming, high protein sorghum and rice research. Finally, the document identified fields of study where the Division lacked or was very thin in personnel--plant pathology, entomology, horticulture and economic botany, and weed science--and recommended the mounting of a training program to correct these deficiencies.

At the time of presentation of the report and follow-up discussions with the Ministry in December USAID was advised that steps were already being implemented to address problems identified in the document. Specifically, the MOA has submitted to the Directorate of Personnel Management, Office of the President, proposed revisions to both the salary structure and scheme of service for research

^{1/} ATAC, op.cit.

officers. These proposals seek to make the salary scale and scheme of service for MOA research officers comparable to that for similar personnel at the University of Nairobi. It is understood at the time of this writing that the MOA proposal will most likely be given a favorable ruling. Status of approval and implementation of this improvement will be subject to review as part of annual evaluations of project progress.

Regarding status of the other recommendations, that on training is embodied in the MOA Training Fund described in Part II.B.1.f. Particular attention will be given to the above-identified fields of specialization in training research participants and to building up overall skills and capabilities of research staff so as to enhance MOA research capabilities.^{1/}

The research areas identified in the report as well as the field of appropriate technology were all examined during development of this project in close collaboration with the MOA Scientific Research Division to determine where further AID assistance might contribute most effectively. It was agreed that in addition to the Training Fund, an appropriate area would be range research. The other ecological and substantive areas were systematically deleted from present consideration primarily because there was only limited scope for ASSP support at this time. Other donors were either working in these areas or planning to do so, and additional efforts would overburden the limited physical and human resources of the Division.

(4) Range Research Priorities

Range research priorities have been clearly stated in the report, "Range Research in Kenya: A Technical and Organizational Plan for Future Range Research in Kenya", by D. J. Pratt and the range research staff of the Kenya Ministry of Agriculture and prepared for Government by the British Ministry of Overseas Development in 1975 (commonly referred to as the Pratt Report). This report presents a thorough analysis of range management problems and past research and development efforts undertaken by the GOK. It is necessary reading for any serious rangeland professional working in Kenya.

The Pratt report classified range research priorities as being emergency, immediate, urgent or normal. Proposed research to be undertaken as part of ASSP in plant and ecology studies, animal studies and environmental studies are all taken from the last three of these priority categories. Even so, all are considered to be of equally high priority by Government, and all involve significant elements of applied research. For a description of range research priorities identified by the Pratt Report and for a description of range research proposed to be undertaken with AID assistance see Annex X.

^{1/}ATAC. op. cit. pp. 55-56

Several subsequent projects since the Pratt Report have addressed studies in the "Emergency" priority category. These include the KREMU and ILCA projects referenced earlier and the USAID Marginal/Semi-Arid Lands Pre-Investment Study which consists in part of a range pre-development survey. Research activities now in progress at Kiboko and Buchuma include bush control by goats, cattle and fire; bush control by chemicals; grazing management, and breeding of goats, sheep and cattle.

a. Proposed Activity

Drawing on the above background, the ATAC and Pratt reports, and review by AID/W TDY and USAID technical staff, the GOK has requested support from USAID for range research in the following three subject areas which either have not been addressed previously or need further study:

- Plant and ecology studies--priority areas 2.f, 3.e., and 4.c. as identified in the Pratt Report. (See Annex X.)
- Animal studies--priority areas 2.g., 3.f., and 4.e.
- Environmental studies--2.d., 3.d., and 4.b.

Some phasing in the undertaking of the studies will be necessary, both to minimize overlap and to generate data needed for other work. For example, it will be important to have an inventory of range conditions by vegetative types and sites before initiating environmental studies in earnest. Also, most of these activities will require establishment of various research sites in the range areas and probably in marginally dry land areas adjacent to the range. Cooperation of the following institutions will be essential: Kenya Agriculture Research Institute, Muguga; KREMU; Meteorological Department; University of Nairobi, and Kenya Soil Survey Unit.

AID proposes to provide grant technical assistance for a period of six and one-half years to carry out the requested range research, to develop at the National Range Research Station, Kiboko, the capacity for identifying problems, both sociological and economic, which limit range productivity and for carrying out research aimed at finding solutions to the problems as they relate to smallholder and pastoralists, and to augment capabilities for disseminating research findings to various users. This assistance shall include provision of 31 person years of long-term U.S. experts, 84 person months of short-term specialists, long-term academic training for 18 participants, short-term non-academic training for a like number of participants, commodities and research-related equipment, and in-country computer analysis services for the use of U.S. experts.

The Kiboko research station now has three research officers in residence out of an approved ceiling of eight. In addition 29 middle-level technical staff are in residence of 34 authorized, and 104 of an approved level of 118 subordinate staff are on board. Total staff at post, therefore, number 136 out of an authorized ceiling of 160. The physical facilities at Kiboko, except for electricity, are more than adequate for the present staff, and already planned construction by the GOK will definitely meet all the needs of this project. There are 13 3-bedroom houses for senior staff and 47 1-bedroom houses for the technical personnel with an additional 19 houses planned for construction in early 1979. There are four sources of water (1 borehole, 1 spring, and 2 rivers) for human and animal use. Additional water storage capacity will be constructed shortly to meet future needs. Although there are three generators at the station, two are being rebuilt and the third is being repaired. (Those being rebuilt will be replaced by two 65 KVA generators to be provided under this project by AID.) Office and laboratory space will be expanded by the addition of a wing to the present complex.

USAID personnel of the backgrounds listed below will supplement and assist station research staff to establish and carry out the above research activities.

(a) Environmental studies (10 person years)

- Range conservationist with training and experience in soil science.
- Hydrology engineer with training and experience in soil and range conservation.

(b) Plant and ecology studies (10 person years)

- Plant materials specialist with training and experience in agronomy and plant breeding.
- Range ecologist with training and experience in laboratory analysis of plant nutritive values.

(c) Animal studies (11 person years)

- Range management specialist and Team Leader with training and experience in integrating plant, soil and animal relationships in livestock production systems. This person will be directly responsible to the Officer-in-Charge of the Range Research Station, Kiboko.

- Animal scientist with training and experience in nutrition and breeding.

Short-term specialist requirements will be identified in technical, social and economic areas by the range research personnel and will be programmed at an average of 12 person months per year. Up to 24 person months may be contracted locally. Included in the 84 person months is 12 months for a laboratory technologist. This person will be contracted for at least six months during the first year to assist the research personnel in ordering the laboratory equipment, setting it up and providing on-the-job training to Kenyan technicians. During the second and third years the laboratory technician will return to provide further on-the-job training for three months each year. Other short-term consultant assistance will include supervisory visits by the U.S. contracting institution and a social anthropologist, preferably a Kenyan, to assist in the refinement of the Kiboko research plan.

The above illustrative listing of personnel will be recruited by a U.S. university contractor who will also be responsible for training. (AID will procure commodities.) One member of the contract team, most probably a range management specialist, shall be designated the Team Leader, i.e., Chief of Party. During a four-to-six week TDY in about January-February 1979 he/she should review the proposed research program and staffing with the MOA Scientific Research Division, the Officer-in-Charge of the Kiboko research station, and the Range Research Advisory Committee (see below), and prepare an inception report scheduling U.S. research officers, training and commodity procurement.

As part of the range research component of ASSP Government will establish a Range Research Advisory Committee (RRAC) which most appropriately may include representatives from the MOA Range Management Division, the Scientific Research Division and other Ministry entities having a special interest in, or concern with, range research as well as representatives of the University's Faculty of Agriculture, Egerton College and AHITI. This Committee, to be established prior to the Team Leader's TDY, will review research implementation plans prepared for the Kiboko research station and all other range research proposals. It may also provide advisory services to the station and its personnel.

Participant training will seek to develop a cadre of trained Kenyan range research staff for Kiboko and its sub-stations who will replace the U.S. experts and continue to carry out the research and training activities to be institutionalized as a result of this ASSP component. To cover the contingency of possible loss of Kenyan staff the project will train 18 long-term participants so as to ensure a minimum of 12 remain at the station at project conclusion. Each project

participant will be bonded to remain in GOK service for three years after the conclusion of training.

A major effort will be made to recruit the necessary number of graduates from Egerton and the University of Nairobi to meet range research staffing requirements. To initiate participant training as early as possible the first six participants can be MOA personnel with one or more years of relevant range experience. The remaining participants may probably be recent graduates and may be required to work for at least a year at Kiboko before being sent for training in the U.S. for an M.Sc. An average of three years is programmed for each training participant. Some participants may require one or more years to complete the B.Sc. before starting the M.Sc. training, which may take place in-country or in the U.S. depending on the field of study and available instruction. In addition to training in technical subjects participants will be strongly encouraged to take social and economic anthropology courses focusing on pastoralist cultural traditions, social institutions and decision-making in order to better understand the socio-economic aspects of range management research.

Summers between semesters will be devoted to on-the-job training on ranches in southwestern or southeastern states and working with range management extension, such as with the U.S. Soil Conservation Service. When returning to Kenya a one-to-two month study tour of smallholder and pastoralist range and ranch operations in various countries in Africa and other countries should, if possible, be organized so the participants receive a broad exposure to a variety of methods for dealing with range research and management problems.

Completion of thesis work in-country in conjunction with station research projects will also be strongly encouraged. Station research personnel and/or faculty from the University of Nairobi and Egerton should assist and advise student research.

Careful selection of participants is needed to assure interest in range research and related areas. Wherever possible participants from nomadic or pastoral areas should be recruited and selected for training since these individuals would have a better understanding of the problems in their areas and better access to the people.

Generally, participants selected should have worked one or more years at the research station or in related divisions of the MOA. All 18 participants will complete training to the M.Sc. level, and three of the most qualified will continue through the Ph.D. level in order to bring leadership and specific research qualifications back to the station.

In addition 36 person months of short-term training will be programmed for other range research staff to provide exposure to range research programs in other parts of Africa and on other continents. Illustrative of the type of short-term training would be study visits to international research centers, such as ILCA, International Laboratory for Research on Animal Diseases (ILRAD), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and others. It might also include study trips to the U.S., Australia, and West Africa to become familiar with livestock management systems, cooperative and group grazing systems, wildlife and domestic livestock cohabitation systems in national reserves and forests, university research stations specializing in grazing studies and livestock management experimentations, and other range related activities.

The U.S. university contractor will need to give considerable attention and priority to counterpart training provided on-the-job to Kenyan research officers by the U.S. experts. One criterion for recruitment of U.S. personnel should be demonstrated aptitude, interest, and capability in carrying out counterpart training. Also, participant selection procedures described above and annual training plans (see below) have been designed for the ASSP range research component so as to maximize the potential for counterpart training in recognition of the Ministry's past unfortunate experiences with foreign "counterparts" and in accordance with the findings and recommendations of the ATAC research report.^{1/}

As indicated above the Team Leader with his "counterpart", the Officer-in-Charge of the Kiboko research station, and, as appropriate in consultation with the MOA Director of Research, will prepare an annual training plan for both long and short-term training. These plans shall cover fields of study, trainee selection procedures, suggested training sites, relationship of training received to on-going and proposed research, proposed research subjects for thesis work, needed materials and equipment for thesis research, location (U.S. or Kenya) for doing thesis research, training and thesis research supervision, and other details. Training plans shall also describe the nature, objectives and relationship of counterpart training received and proposed to project-funded overseas training. The first such plan shall be developed during the Team Leader's TDY with the second to be completed by December 1979.

Commodities to be financed with grant funds include office and research-related equipment needed for research efforts, two 65 KVA

^{1/} ATAC. op.cit. pp. 57-58.

electric generators for the station, right-hand drive vehicles for U.S. research staff, and research publications for the station's reference library (during the first two years of project life only). In addition AID will finance local currency costs of computer services to analyze research data. Such services are readily available in Nairobi from locally-based firms and are expected to be needed given the heavy workload and limited time available on existing GOK and University computers.

The Government of Kenya contribution to the ASSP range research component will consist of recurrent costs for operating the Kiboko Range Research Station, housing and utilities at the station for U.S. personnel, office space and secretarial support as well as one-way international air travel, salaries and allowances while in training for participants. Beginning in the third year of the project Government will also be responsible for procurement of all research publications for the station.

b. Beneficiaries and Rationale

Reaching the ultimate target group--smallholders and nomadic pastoralists--with results of ASSP-sponsored range research poses more challenges than reaching the direct beneficiaries. The latter consist of MOA research personnel working at the Kiboko Range Research Station. There are various ways of disseminating research results--directly from U.S. and Kenyan personnel assigned to the station to smallholders who may raise some livestock along with food crops and to nomadic pastoralists through performance of extension type activities; less directly from the U.S. and Kenyan staff to "intermediate" users, i.e., extension agents, through inputs into their in-service and pre-service training, through circulation to them of printed research materials and reports, and through involving them in research activities by means of visits to research sites and monitoring of research field trials. A third dissemination channel is to other researchers and/or MOA headquarters staff. The above listing is assumed not to be exhaustive, and the Team Leader, U.S. contract staff and Kenyan experts are to be encouraged to seek innovative, new ways of delivering research results to smallholders and pastoralists in a readily understandable way. This will be particularly important for reaching pastoralists since their nomadic, transient life style poses a special challenge.

To address the dissemination problem range research station experts, both U.S. and Kenyan, will develop and implement a research utilization plan. Crucial to plan implementation will be working out close relationships with officials, agencies and institutions involved in range management, research, and extension and farmer training, including:

- MOA Division of Scientific Research and its other research stations.
- MOA Range Management Division and its Provincial and District Range Officers.
- Agricultural Information Center.^{1/}
- Farmer Training Centers and the Gariftu Pastoralist Training Center.
- Egerton College, AHITI, the proposed Ndomba AHITI, and the University of Nairobi.
- Kenya Agriculture Research Institute (KARI), Muguga.
- FAO drylands research project and USAID marginal/semi-arid lands efforts.
- Grazing use committees established for North Eastern Province grazing blocks and similar local participative groupings established in other range areas (possibly).
- Ministry of Water Development, Provincial Research Advisory Committees.

Effective research dissemination and utilization may be fostered through involvement of range research staff in such activities as:

- In-service and pre-service training programs, seminars (see Part III.A.3.), field demonstrations, etc., at Egerton College, agricultural institutes, FTC's and research stations held for MOA range management staff and other extension personnel.
- Demonstration programs, field days, group extension meetings, and the like for smallholders and pastoralists at FTC's, the Gariftu Pastoralist Training Center, range research stations, and other sites as may be found appropriate.

^{1/} The Center is based at the National Agricultural Laboratory in Nairobi. It receives technical research reports, edits and rewrites these in simple, every day language for use in radio broadcasts, farmers' meetings and for release in extension bulletins.

- Curriculum development and revision at Egerton College, agriculture institutes, the University of Nairobi's Faculty of Agriculture, FTC's and Gariftu for such subjects as range management, water conservation, field research techniques, packaging of research findings and communication techniques aimed at fostering adoption by ultimate users/beneficiaries, and addressing socio-economic factors affecting range research.
- Design and development of range grazing blocks and various forms of ranches.
- Field research trials carried out with participation of district-level and below extension staff, technical inputs from provincial level extension personnel, and, to the degree feasible, cooperation/participation of smallholders, pastoralists and grazing use committees.
- Informational activities of the NAL, Agriculture Information Center, and Egerton College.
- Information sharing with Provincial and District Development Committees.
- Research conducted by Egerton, AHITI, and Faculty of Agriculture staff and/or students, and students' field training.
- RRAC efforts to disseminate range research findings.
- Close cooperation and working relationships with KARI (Muguga), the FAO drylands research project, and other related donor efforts.

As part of efforts to maximize dissemination of research findings and their utilization by smallholders and pastoralists the U.S. and Kenyan research personnel should as a team describe and make recommendations for complete range management systems, such as pastoral systems, group ranches, cooperative ranches and company ranches. To do this analysis must move from partial systems to complete systems. Such analyses received an "immediate" priority in the Pratt Report cited earlier but will become a high priority for the development of a research tradition as this project progresses.

Systems analysis in the Pratt Report was used to define and analyze major pastoral systems and to determine the nature of, and interplay between, social, economic, environmental and biological factors affecting husbandry practices and livestock performance. It

involves determination of critical population densities for different categories of rangeland with reference to the effect of varying standards of living, and employing alternative strategies of resource utilization. Eventual stages may lead to the development of mathematical models, both in support of the above systems and, more specifically, for:

- relating cause and effect in ecological processes, and
- predicting the effects on the system of natural or induced changes.

Such efforts must include economic and social evaluations of integrated management systems.

Annual reports of research results presented to the RRAC should discuss how research results relate to management of such systems. By the end of the second year of the project the Team Leader and Officer-in-Charge of Kiboko should prepare a "systems plan" outlining ways of integrating the various research components into an integrated whole for use in alternative range/ranch management systems. This plan should be presented to the RRAC.

The ASSP range research component must have a particularly close relationship to drylands agriculture research, ATAC's highest priority research area. (Some possibilities for joint action were identified earlier in this sub-section.) USAID through the revised Food Crops Research Project at KARI (Muguga) and FAO through its Drylands Farming Research and Development (DFRD) project at the Katumani Drylands Research Station will address this area. The FAO project, now being initiated, ultimately may place four-to-five researchers at Katumani. This assistance is judged to be all that Katumani can absorb at present given the constraints posed by manpower and existing facilities and services. The project, which is still being refined, may encompass research, pre-extension studies to test alternative, complete farming systems aimed at smallholders, and a study of socio-economic constraints to adoption of improved farming systems. Research may include soil moisture conservation, crop research (maize, sorghum, millets, pigeon peas, cowpeas, tubers), plant protection, animal husbandry, and mechanization.

The AID Food Crops Research Project, formerly East African Food Crops Research and part of U.S. assistance to the defunct East African Community, was redesigned at the time this PP was being prepared. As agreed with the GOK the redesigned bilateral project will entail joint implementation with FAO of the dry lands research effort described above. Additionally, AID support will continue for the Plant Quarantine Station, in maize research, and meteorology of marginal rainfall areas. Project design personnel for this activity and ASSP have consulted and coordinated with FAO and the team leader to

eliminate duplication. That AID drylands research efforts will be based at KARI, Muguga, and will basically continue and expand on research previously initiated into the field of marginal rainfall problems reflects this coordination and Katumani's absorptive capacity. The Katumani Research Station will still be used by KARI-based staff for field tests and experimentation, thus offering further opportunities for collaboration and cross-fertilization. For USAID the assignment of one individual as Project Manager for the ASSP research component and the Food Crops Research Project will provide a means for reinforcing the desirability and necessity of coordination among and between these related AID and FAO activities.

Beyond the above considerations USAID involvement in livestock and marginal/semi-arid lands development makes range research an appropriate component for inclusion in ASSP. The Mission and project researchers are, thus, able to capitalize on the experience and expertise developed as a result of the National Range-Ranch Development, Livestock Loan, and Marginal/Semi-Arid Lands Pre-Investment Study projects. Support for range research will complement both these activities and follow-on marginal lands development programs in which livestock may well play an important role.^{1/}

The ASSP research component combined with the ASSP MOA Training Fund and Food Crops Research Project represents a broad-based approach to addressing the agriculture sector research constraint and problems affecting the research system. At the same time support for range and drylands research together with other marginal/semi-arid lands and livestock development activities constitutes broad-based support for a significant GOK development priority.

3. Agricultural Credit System Support

a. Background

(1) Agricultural Credit in Kenya

Kenya has evolved a relatively extensive agricultural finance system. The dominant institutions are the Agricultural Finance Corporation (AFC) and the Cooperative Bank of Kenya (CBK) which account for about one-third of all institutional agriculture financing. Numerous private banks provide in aggregate an additional 30 percent, and the remaining input is provided by Government agencies and parastatal

^{1/} See R. Ottley, "Livestock Development and Range Management", in Interim Resource Inventory Reports, prepared by CID, December 1977.

bodies and from monies generated within the cooperative system for relending to members.

Both the AFC and CBK evolved from organizations established during the colonial period to support exclusively commercial farming activities of European settlers in Kenya and, thus, they were patterned after, and operated much like, counterpart European institutions. Kenyans were not served by the predecessor organizations and, indeed, were excluded by law from growing the major commercial crops. Consequently, the original clientele was exclusively large farmers of European origin.

After Independence Kenyans began producing commercial crops (coffee, tea, etc.). The credit institutions followed this movement and began providing credit for large and small farmers, particularly those producing export crops or crops requiring processing before use (e.g., cotton).

By the beginning of the 1970's credit was readily available to farmers who could provide real estate, i.e., a land title, as collateral or who produced crops which could only be sold to marketing monopolies. By the end of 1976 about 985,400 smallholders had registered title to their farms, thereby qualifying for credit under the first of these two criteria. Small farmers who either do not have registered title or whose title is encumbered, do not, by and large, qualify for AFC lending.

The AFC currently provides production loans to about 30,000 smallholders while the CBK reaches about 40,000 through its loans to cooperative unions and societies. The combined efforts of these two institutions result in about 5 percent of Kenya's 1.5 million small farm families having access to agricultural credit from these sources. While the 5 percent figure may appear very low, it represents a major advance in a short period of time. In 1972, for instance, only 20,000 smallholders were being served. Thus, the increase during 1972-1977 in small farmer numbers has been about 350 percent, representing a very strong and positive trend. During the same time period the AFC's loan volume increased five-fold. The other major small farmer lender is the Kenya Planters Union (coffee) which financed approximately 100,000 small coffee producers, thus about 13 percent of the nation's small farmers are currently supplied with some form of institutional credit. AFC deals directly with farmers, and credit is available for farm inputs, farm development, farm acquisition, livestock and machinery purchase, etc. Over 70 percent of AFC borrowers are small farmers who have already entered into commercial agricultural production.

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The CBK does not deal directly with farmers but rather provides resources to cooperatives for on-lending to farmer members. Loans through farmer cooperatives are largely for production purposes, and the variety of loans offered by AFC are not currently available through the cooperative system. The cooperatives, however, offer farmers a wider range of services, including credit, input supply and marketing, and, in some cases, storage, processing and technical assistance, which AFC does not. Cooperatives also do not require land title as security for loans since the crops produced are the "security" and are to be marketed through the lending cooperative. Because the cooperatives, in conjunction with other Government agencies, provide more comprehensive services to their clientele, the cooperative system has been designated by Government as the primary instrument for reaching the "less progressive farmer" whom Government hopes to transform into a more productive, commercially oriented farmer. For the same reasons the cooperative system is handled separately in this PP.

The Government of Kenya recognizes that many farmers currently excluded from institutional credit sources could make effective use of capital. Investment in this neglected group of farmers is seen as an important element in national development. The limiting factor on further extension of small farmer credit is not that of financial resources nor of policy. Rather, expansion is limited by the institutional capabilities of AFC, the cooperative credit institutions, and the extension service. Specifically, the demands of program expansion have met the following constraints: (a) Manpower requirements exceed availabilities; (b) expansion of programs to "less progressive" farmers and farmers without clear real estate collateral requires higher level skills on the part of both loan and extension staffs given the higher level of risk entailed in such lending, and (c) the ability of existing financial and accounting systems to handle increased numbers of small loans and the need for new, automated systems and decentralized decision-making to keep operations running on an efficient, timely basis.

While it is important to outline relationships between CBK and AFC as background, the CBK and its operations are part of the larger cooperative system covered in cooperative system component of ASSP. The remainder of the credit component, therefore, deals exclusively with AFC.

(2) AFC and Previous USAID Assistance

The Agricultural Finance Corporation was established in 1963 as a statutory body. In 1969 Law of Kenya number 1, the Agricultural Finance Corporation Act, enabled AFC to take over the Land

and Agricultural Bank. As the primary agricultural credit institution in Kenya the purpose of AFC is to assist in the development of agriculture and agricultural industries by making loans to farmers, cooperative societies,^{1/} incorporated group representatives, private companies, public bodies, local authorities, and other persons engaging in agriculture or agricultural industries. Between 1970 and 1975 the AFC approved a total of over K.Shs. 465 million in loans (\$58 million),^{2/} having increased rapidly from an annual loan volume of less than K.Shs. 30 million (\$3.75 million) in 1970 to over K.Shs. 158 million (\$19.75 million) in 1975. This trend is expected to continue with 1978 loan fund balances estimated to be over K.Shs. 500 million (\$62.5 million).

USAID initiated technical assistance to the AFC in 1969, fielding a team to conduct an overall study of agricultural credit with particular emphasis placed upon the AFC and its programs (the "Tootell Report"). As a result of that report USAID financed the services of a General Manager beginning in March 1970 and, also under the Agricultural Credit Project (615-0148), eight additional advisors, three of whom are currently serving in the positions of Audit Advisor, Financial Manager and Credit Review Officer. Their tours under Project 0148 end in February 1979, December 1978, and April 1979, respectively. In addition AID financed short and long-term training for 32 AFC employees, a management study of the AFC, a study of agriculture credit in Kenya, and an outside evaluation of the project.

The AFC management study^{3/} found that significant progress had been made in the implementation of the Tootell Report and the overall development of AFC but concluded that further growth of AFC required "...an acceleration in the pace of delegation of authority, in organizational decentralization and in development of a more efficient and responsive accounting and management information system." (See Annex XI for a summary of the conclusions and recommendations of the study.)

1/ While cooperative lending is a stated AFC purpose, the CBK has largely taken over this responsibility.

2/ Exchange rate \$1 = K.Shs. 8

3/ Research Triangle Institute. Management Study of the Agricultural Finance Corporation. June 1977. AID/afr-C-1144 W.O. 7.

The Agricultural Credit Project, the previous vehicle for AFC assistance, was submitted to external evaluation in late 1977.^{1/} The evaluation seconded the management study's finding of significant progress in the development of AFC, citing AID inputs as having been a critical element in this evolution, and concluded, "The AFC should continue to receive a sustained level of support in technical services and participant training at least equal to the present level." (See also Annex XI for details.) The above two documents are the basis for further assistance as proposed below.

b. Proposed Activity

Proposed assistance under ASSP for the credit system represents both a continuation and an expansion of the on-going Agriculture Credit Project. (That activity will conclude in April 1979 at the end of the current tour of the Credit Review Officer with ASSP assistance being phased in gradually beginning as soon as possible after authorization.) The credit component will have the objective of strengthening and broadening AFC's financial and management systems and the capabilities of AFC personnel so as to support expansion of lending directed toward small farmers. New assistance will include: 14 years of advisory services, including six additional years of services in the three areas in which TA personnel are now working under Project O148 and eight years of services in training, loans appraisal, and data processing; about 62 person years of participant training, and financing for new in-country training programs.

Critical areas in which management improvements are needed in AFC per the evaluation and the management study, and as discussed and agreed between USAID and AFC are financial management, internal audit, credit review, loan appraisal, administration, data processing and training. Each is to be addressed under ASSP as follows:

(1) Financial Management

Inadequate systems of financial management have resulted in over-centralization of operations, delays in loan disbursement, delayed financial accounting, etc. A USAID-provided advisor began work at AFC in December 1976. He has developed and introduced a system for field loan disbursement which is now being introduced and implemented in AFC's 34 Branch Offices. Several other important financial systems are still in the design stage, including a "collections

1/ Dimpex Associates, Inc. Kenya: Agricultural Credit Evaluation.
December 1977. AID/afr-C-1269.

system", an "applications system", and a "property accounting system". The design work for these systems will have been completed by the scheduled departure date of the advisor, but, not all will have been field tested or made operational. For this reason two additional years of financial management advisory services are proposed under ASSP.

(2) Internal Audit

Auditing procedures in the AFC are outdated, stressing financial policing rather than problem identification and management improvement. The incumbent Audit Advisor has made progress since February 1977 in refocusing audit staff, has developed a comprehensive audit manual, and has begun training the staff in new auditing procedures. The internal audit section has, however, been very unstable during the past year with changes in leadership and an outflow of staff. Auditors are in demand in the private sector, which is willing to pay higher salaries than AFC can currently offer. While it would be desirable to continue the Audit Advisor's services, a condition for such continued assistance must be stabilization of employees in this section. Therefore, the job classification and salary review recommended by the management study as a first step toward rectifying the current manpower situation is judged critical. (See below under "Data Processing".)

(3) Credit Review

The first full scale, formal credit review of an AFC branch was undertaken in late 1977. Subsequently, reviews of several other branches have been completed. Only when all branches have been reviewed will management have its first real evaluation of the actual use of loan proceeds by AFC borrowers, the quality of AFC's loan portfolio, and its exposure to potential loss.

The review system has been established and good progress is being made in implementation with all AFC branches expected to have been reviewed by the scheduled departure date of the incumbent advisor in April 1979. AFC and USAID believe it is important that advisory services continue to be made available following the completion of the first cycle of reviews in order (a) to assure that the system is fully operational, (b) to integrate results of individual reviews into a comprehensive country-wide report with findings utilized to develop policy guidance, and (c) to institutionalize the review system. It is proposed, therefore, that this position be continued for two additional years.

(4) Loan Appraisal

Traditionally, the major determining factor in AFC loans has been the quality of real estate collateral offered. The AFC recognizes the shortcomings of this approach and wants to develop a capacity to appraise loans fully and to move beyond the limitations of current practice. To this end a senior credit specialist has been recruited under the IBRD's third smallholder credit loan made in 1977. This officer will, in the next few months, establish an integrated Credit Department and begin developing loan appraisal criteria to assist the shift in loan appraisal to an economic viability orientation. There will be a need for a Loans Appraisal Instructor to enable the Training Department to supplement this effort by developing training materials and providing extensive training to the Corporation's 120 loan officers. It is proposed that such assistance be provided under this project for a period of two years.

(5) Administration

Administrative responsibility in the AFC has been fragmented and uncoordinated. The AFC recognizes this problem and proposes to combine administrative functions into an Administrative Division (currently there are only two Divisions, Credit and Finance, with administrative functions scattered in unrelated offices). The Division will be headed by a Senior Administrative Officer. The Kenyan incumbent for this position is still being identified. AFC prefers to defer judgment as to whether advisory services in this area are needed until after an officer is named to this position and has had an opportunity to organize and operate the new Division. Accordingly, no advisory services are proposed herein for this area.

(6) Data Processing

A critical element in the institutionalization of systems developed by AID technical advisors is that of an adequate data processing support system. Such a system is required if goals of increased efficiency and decentralized business operations are to be achieved. Advisory services for developing computer systems have been provided by the Government of West Germany; however, this assistance is now scheduled to be terminated at the end of February 1979 before the computer systems have been fully developed, tested and made operational. Inadequate financial resources was the FRG's stated reason for terminating this assistance. Perhaps of equal importance, however, may have been lack of harmony among the technical advisors on the one hand, and the inability of AFC to maintain staff stability in the Data Processing Unit on the other. Staff turnover here, as in the internal audit section, results from the disparity in salary offerings

between AFC and the private sector. Because of the importance of continued advisory services in this area for the overall success of efforts to improve management and efficiency, it is proposed that under ASSP two data processing advisors be provided for two years each. This proposal will not, however, be activated until such time as AFC has completed the job classification and wage survey to be carried out by the Directorate of Personnel Management. The study, which is considered to be a first, necessary step in correcting the problem of staff instability, has taken longer than anticipated to initiate although a team has now been selected and should begin work soon.

A seventh advisor is proposed in the field of training and as part of a significant expansion and redirection of training efforts growing out of the Dimpex project evaluation. The report concluded that participant training under the Agriculture Credit Project had made an important contribution to attainment of project objectives, however, more emphasis needed to be given to training. Dimpex recommended (1) the training of a "critical mass" of AFC staff sufficient in number to impact fully on the institution and (2) a shift in the type of training provided toward more technical skills in such areas as credit, accounting, computer operations (program and systems specialists), financial management, and personnel management and training. The services of a training specialist were judged to be useful for designing AFC in-house training for intermediate staff in the various disciplines with more senior, returned participants serving as course leaders.

AFC is fully cognizant of the needs of the organization for further developing the skills of its personnel and seeks the institutionalization of an internal training capacity for development of AFC staff. Training assistance provided as part of the ASSP credit component seeks to address this internal training need through provision of the TA advisor and financing of an in-country training fund.

The training advisor to be assigned to AFC for two years shall with his AFC counterpart (a) survey AFC training needs; (b) formulate a training policy; (c) design, arrange and supervise in-service training programs in cooperation with other AFC officers and advisors; (d) assist in design of programming and selection of participants for overseas training, and (e) develop an ongoing AFC capacity for conducting in-house training after his departure. It is also proposed that a training fund of \$130,000 be established to enable the AFC training office to hire short-term experts, both from U.S. and Kenyan institutions, to assist in developing and conducting in-country training courses. The resource would also be utilized to cover costs of training materials. The following are two examples of how such training might operate:

- a. Several courses offered by USDA (e.g. Agricultural Capital Project Analysis Course and Small Farmer Credit Distribution Course) can be provided overseas. The U.S. and Kenyan training officers would identify needs and, utilizing the training fund, arrange for teaching of the courses in Kenya.
- b. As new financial and management systems are developed at AFC, particularly systems to be broadly applied in field operations, these must be transmitted through training courses and manuals. The process would be facilitated by U.S. short-term specialists who could design specialized training manuals and participate in the actual training program. Such expertise would be financed from the training fund.

Though primarily directed toward the needs of AFC, USDA courses brought to Kenya under this program might also be made available to officers of MOCD, CBK and other public organizations with related credit operations. Virtually all of AFC's top professional and sub-professional employees might receive a month or more of in-service training through the fund during the proposed four years of utilization.

With regard to formal participant training, under the Agriculture Credit project USAID sponsored nine long-term (two-year) participants for academic training (Egerton diploma graduates to the BSc. level, degree holders to the M.Sc. level) in agriculture finance. These participants were loan officers being trained to serve as AFC Branch Managers. This program has proven successful, and it is proposed that it be continued to enable 15 additional officers to receive such training. This will result in U.S.-trained Branch Managers operating the majority of AFC's 34 branches.

As suggested in the Dimpex Evaluation this project also proposes that long-term training be expanded and broadened to include specialized training in certain technical fields (see above). The criteria for selection of these trainees will be a review by the training advisor to determine areas where higher level skills are required by AFC which can not be met by the University of Nairobi. The program will be limited to 10 person years of training, or approximately five participants.

Provision has also been made in this PP component for a program for long-term training to develop a cadre of five officers in technical fields to serve in the AFC Credit Department as a resource for branch officers. Officers trained in agriculture would be given further specialized training in agri-business finance, produce marketing,

livestock finance and marketing, field crops finance, and farm infrastructure finance. The specialized expertise to result from this training will enable AFC to better evaluate loan proposals on a basis other than real estate collateral and to provide credit for agricultural activities in new substantive areas such as agribusiness.

Finally, continued short-term training (12 person years) is also proposed. This training would be specialized training for periods of up to six months. Its primary purpose will be a) to expose top and middle-level AFC officials, who cannot be spared for long-term training, to management methods employed by U.S. credit institutions and b) to send AFC training personnel to USDA courses as preparation for their assisting in the conduct of similar courses in Kenya.

GOK support for the credit systems component will include provision of adequate and appropriately furnished office space for each U.S. advisor and necessary secretarial and in-country travel support. AFC will also provide a housing allowance to each project technician at the highest amount which can be provided to other AFC offices of similar rank and status. Counterparts will be assigned to each of the four new U.S. advisors--they have previously been assigned to continuing TA advisory positions--or until such counterparts are assigned, AFC will pay to USAID's local currency account the salary equivalent for these Kenyan officers. With regard to participant training, AFC shall pay one-way international air fare and salaries and allowances to each trainee. Finally, AFC shall arrange for and provide the necessary resources for a training site for in-country training as well as secretarial and other services which may be required by course instructors. The AFC shall provide course materials, travel costs and per diem for AFC officers enrolled.

c. Beneficiaries and Rationale

The above assistance package is expected to result in the following:

- (1) Improved management of AFC due to implementation of more efficient systems of financial management, internal audit and loan review.
- (2) An institutionalized capacity for in-house training within AFC.

- (3) Expanded capacity for service on the part of AFC to enable it to develop new types of lending and to extend lending to smallholders hitherto excluded from existing programs, including the capacity to appraise loans on a basis other than real estate collateral, to provide technical assistance to branch offices for evaluating loan proposals, and to initiate agri-business lending in rural areas. (The development of the latter might enable AFC to make a direct contribution to improved on-farm storage, farm input supply, and marketing and processing services.)
- (4) Development of computerized financial and other records systems and the capacity of the AFC to maintain, operate and revise these systems as necessary.
- (5) Improved performance of AFC employees trained under the project.

The immediate beneficiaries of AFC assistance will be the AFC staff and the AFC organization, both of which will be strengthened through training and advisory services. This overall increase in capabilities will result, in turn, in more efficient and expanded services to borrowers. Previous USAID technical assistance to AFC contributed to increasing the number of small farmer loans granted by AFC from 10,000 to 30,000 and a reduction in processing time of small loans from six to less than three weeks. Small farmer numbers can be increased further, and time consumed in loan operations reduced even more through continued assistance. Small farmers will also benefit from more decentralized decision making and operations. Responsibility for small-scale loan approval has through previous assistance been moved from headquarters to 22 of 34 Branch Offices, and authority for loan disbursement is now being decentralized to field offices in order to reduce current delays in making credit funds available for loanees' purchases of agricultural inputs.

As is clear from the "Background" section, considerable potential exists for AFC to expand lending within the group of smallholders now having registered title to their farms. Use of new forms of collateral or non-collateral lending criterion will enable extension

of credit services still further to the vast majority of smallholders not yet having clear title and, thereby, access to credit. Such an expansion in small farm loanees will severely tax a system already strained by the rapid increase in smallholder lending achieved over the last five years--a development in which AID assistance played a very real part.

The GOK has decided that the cooperatives shall play the predominant role in increased "non-progressive" smallholder lending. Presumably, this decision was made in recognition of the need for more comprehensive agriculture support services which this target group has and which the cooperative system may be better able to supply. In both USAID's and Government's view, however, there is a role for both the cooperatives and AFC in smallholder lending. Existing programs directed at "non-progressive" small farmers envisage their "graduation" to other credit sources, including AFC, after about three years. Sizeable numbers of those defined as "non-progressive" now qualify for AFC lending by virtue of their having land titles. Given the predominance of poverty in the rural areas and the \$100 income criterion used in defining the "non-progressive" group, significant numbers of "progressive" smallholders can still be considered poor and thus remain a target group for assistance. Indeed, such farmers, the progressive poor, have already demonstrated a capacity for effectively utilizing credit, extension and other services as tools for expanded productivity and thus form the potential vanguard of an effective program for reducing rural poverty. Finally, given the magnitude of the overall access constraint, and of the credit access problem in particular, it would be imprudent and unrealistic to expect the cooperative system by itself to meet, in the foreseeable future, the needs of all smallholders now subject to problems of access. Effective development of the cooperatives system relies upon basic human and institutional development which cannot be rushed. The AFC serves to relieve the cooperative system of some of the pressure for rapid expansion of credit services and, thus, makes it more possible for that system to develop at a reasonable and prudent pace.

To continue this expansion will require additional assistance directed to management concerns so as to consolidate growth achieved to date in smallholder lending and to make further expansion possible. Availability of credit funds for increased lending is not now a constraint given past support from donors, provision of funds by the GOK, and Government requirements for agriculture lending placed on commercial credit sources. In part because of these funds availabilities, the AFC has experienced tremendous growth in the first 10 years of its existence,

and management and financial systems developed for, and sufficient to meet the needs of, the early years of operation are now proving inadequate. Program expansion has given urgency to AFC's efforts to decentralize operations, necessitating expanded and more highly trained personnel in the Branch Offices. As new programs have been introduced, new skills have had to be developed throughout the organization. What is needed, therefore, is training for AFC personnel and provision of special skills not currently available within AFC over the short-term while Kenyan staff capabilities in these areas are being created.

USAID in the past has been the primary donor of technical assistance to the AFC followed by assistance from the Federal Republic of Germany. The FRG is concluding its support of four TA experts who focus mainly on development of electronic data processing systems, thus complementing current USAID efforts to improve management. Sweden and the Netherlands have provided some short-term technical assistance but have no major on-going program. Several donors, including USAID, the United Kingdom, the IBRD, the Netherlands, West Germany and BADEA, have provided credit funds to AFC. Given this history and AID's demonstrated success so far, it is believed important that AID provide further assistance under ASSP.

4. Cooperative System Support

a. Background

(1) Role of Cooperatives

Annex XII provides a full description of the elements of the cooperative system--the Ministry of Cooperative Development (MOCD) and its sub-divisions, the Cooperative Bank of Kenya (CBK), the Cooperative College, and, of course, the cooperative unions and societies themselves. The Annex also provides historical background and a statement of GOK cooperatives policy. The reader is referred to the Annex.

Government has selected the cooperative system to play a significant role in its efforts to alleviate poverty and, particularly, in providing various services--credit, input delivery and marketing--to small "non-progressive," i.e. traditional, farmers. At present only about 40 percent of Kenya's small farmers are members of cooperatives. Most of these belong to unions and/or societies devoted to commercial crop production--coffee, tea, pyrethrum, dairy, etc.--although as the result of IADP and ASL I, Part C, some of these groupings are now beginning to provide similar supportive services for food crops (maize, beans).

Over the years the system has been the vehicle for assisting traditional farmers to move into the commercial sector. This role the GOK wishes to see expanded significantly, recognizing that new members coming from the "non-progressive" group may have limited new production potential due to small farm size or residence in lower potential agriculture areas, that they may have limited knowledge of new technologies and little capital with which to apply them, and that they may have little or no credit repayment history or (currently) acceptable collateral. Here, the transformation task will be much greater and involve higher risks, thus requiring more skills and more intensive efforts by cooperative personnel. Further, Government hopes to see the pace of the expansion speeded up and the numbers of farmers involved greatly increased, thus, in effect, reversing the previous conscious policy of keeping cooperative expansion to a relatively slow pace.

Implementing these changes will necessitate greater levels of training and support being provided to the target smallholders if they are to make more productive use of their current assets. The cooperatives, in turn, will not only require more and better trained staff

to provide the full range of agriculture support services required, but also close cooperation and support from the Ministry of Agriculture systems (extension, research and training) and strengthened, improved in-house management capabilities. For the expansion of the cooperative system to occur more rapidly but also at a prudent pace will mean all three types of improvements listed above will need to occur relatively simultaneously. Within the cooperative system of special importance in any such effort will be the performance of the MOCD Education and Training Division and Credit Finance Division, the Cooperative College, and the CBK.

(2) Donor Assistance to Cooperatives

The longest and most concerted assistance effort has been that over the last 10 years by a consortium of Scandinavian countries (The Nordic Cooperative Project) involving Sweden, Norway, Finland, Iceland and Denmark. This assistance has included numerous activities, ranging from the creation of the Cooperative College to the design and implementation of financial, training, marketing and educational programs. Nordic assistance included high levels of advisory services, over 100 foreign technicians participating in the peak years with the number reduced to 45 in 1977. The TA was of high quality and must be credited with contributing substantially to the development of one of the largest cooperative movements in Africa. Attention, however, was focused on the farmers in high potential areas and emphasized provision of services to small commercial farmers, particularly those involved in the production of export crops. Nordic assistance is now being phased down, and other donors are being encouraged by both Government and the Nordics to increase their involvement in this sector. Activities proposed below have been designed in close collaboration with the Nordic Team as well as Government.

The IBRD also sponsors a small farmer development program involving the cooperatives - the Integrated Agricultural Development Program. IADP has focused on provision of credit, storage and transport facilities for cooperatives but does not provide resources for expanded cooperative staffing or staff training.

There is also a Danish assistance program, the Farm Input Supply Scheme (FISS). While originally designed as a credit program, a reassessment was undertaken in light of the IBRD and USAID (see below) programs, and this activity was transformed into an effort to develop cooperative stores to provide farmer members with better access to farm tools, seeds, fertilizers and other supplies. The project, begun in 1977, is to end in 1980. DANIDA and West Germany have both provided credit funds to the CBK.

USAID support for the cooperatives system to date has been exclusively through the Smallholder Production Services Credit Program (Part C) of Agriculture Sector Loan I. This project focuses on providing agricultural credit and other support services to subsistence farmers through 12 cooperative unions. To reach this clientele dormant cooperatives were reactivated, and active cooperatives were transformed from single commodity (generally export crop) institutions into multi-crop cooperatives. The USAID loan provided resources for, among other things, training, member education and substantial increases in the size of the cooperative management staffs. Some technical assistance was arranged through the Peace Corps, which fielded 10 volunteers to introduce improved business and management systems in participating cooperatives. Through this experience a number of technical areas (e.g., member education, staff training, marketing capabilities, storage, etc.) were found to be relatively weak. For more details on Part C experiences see the SPSCP evaluation.^{1/}

The above three programs provide resources for cooperatives to enable them to expand their operations. They do nothing to improve the capacity of the MOCD to serve the movement nor do they investigate and seek solutions to the overriding cooperative constraint, i.e. sufficient, qualified manpower. It is these problems which ASSP would address.

Substantial opportunities for other donors present themselves as (a) membership in existing cooperatives continues to increase; (b) services offered by the cooperatives expand, including the conversion of single-purpose cooperatives into multi-purpose institutions, and (c) new cooperatives are being established, mainly to serve marginal farmers who hitherto did not have access to cooperative services. As outlined elsewhere, less than 40 percent of the nation's small farmers now belong to cooperatives. Of these, over 90 percent are "progressive" small farmers. While marketing facilities are available to all members, only a small proportion (13 percent) of small farmers have access to credit.

b. Proposed Activity

The Ministry of Cooperative Development and the CBK have requested AID assistance in strengthening the cooperative system so that it can expand its membership among, and, thereby, its services to, smallholders. Proposed assistance, all to be provided under grant financing,

1/ATAC. Evaluation of the Smallholder Production Services and Credit Program (SCSCP). October 1977. AID/Afr-C-1206.

has several components, but all involve manpower development and/or improved management. Each of these is discussed below.

(1) Cooperative Banking System

The Cooperative Bank stands as the apex credit institution of the co-operative movement. Its function, to date, has been basically to serve as a credit window for cooperative unions and societies, relying upon the MOCD, Department of Cooperatives, to perform a large share of the work in developing and overseeing these loans. The volume of business handled by the Bank has increased tremendously over the past 10 years. Starting with loan funds of less than KSh. 5 million in 1968, it had almost KSh. 97 million in outstanding loans as of June 30, 1977. The growth of Bank lending follows that of the cooperatives themselves, and both are expected to continue to expand substantially over the next decade.

The Cooperative Bank now seeks to move beyond its credit window role and to develop an internal capacity to analyze, monitor, and evaluate its loans. To this end it has organized a small field staff. Plans for the further development of the cooperative system require that there be a strong Cooperative Bank offering efficient financial services. To assure that this will be the case it is proposed that the Bank's role in cooperative development be examined and that a management study be undertaken to assess that institution's current capabilities and to determine what the management requirements will be under an expanded program.

In part the future role of the Cooperative Bank will depend upon the development of the cooperative union banking sections. Such sections have been established in 13 stable cooperative unions. Most are coffee unions, but banking sections have also been established in one dairy, one pyrethrum and one sugar union. Banking sections are a natural outgrowth of credit and savings operations of cooperative unions. Establishment of banking sections enables the cooperatives to move into broader banking operations, including rural savings. Banking sections handle both CBK funds and funds generated within the unions. The latter source is becoming very important, in some cases actually becoming the dominant funding source.

With the advent of the banking sections it has been possible for unions having these sections to provide medium-term loans to members for purposes other than crop production. In some Districts members also receive weekly mobile banking services at the society or factory level.

Some banking sections have established branch offices in locations where business volumes are high.

The development of banking sections is important. They represent small farmer-owned or controlled institutions which provide economic services to rural people previously having little or no direct access to such services. Some banking sections have become strong, viable organizations and seek to expand operations into small but full service banks, offering checking services and expanded loan operations, both in terms of loan types and clientele. Further, they provide a strong mechanism for channeling financial resources to rural areas and for recycling locally generated resources to the rural areas.

The MOCD believes that such expanded services would be desirable but feels that an independent study should be undertaken to evaluate the institutions, their current operations and their potential for expanded services. It also believes that the relationships between the banking sections and the CBK should be examined, especially if the sections are to evolve into full-service banks. Because of the inter-relationships between the Cooperative Bank and the union banking sections, the Ministry has proposed that they be examined jointly, rather than as separate studies.

USAID shall assist the CBK and the MOCD in these efforts by providing a management study team to undertake a comprehensive management review of both the CBK and the cooperative banking sections. This study will assist the Bank and MOCD in making future policy decisions, in formulating plans for the future of these institutions and in identifying areas in which external assistance would be desirable and would form a basis for future technical assistance. The study will be carried out by a three-person team--a Senior Evaluation officer, Cooperatives Financial System specialist, and Cooperatives Management specialist--beginning o/a March 1979.

(2) Cooperative College .

The Cooperative College offers a number of technical short courses in various business and management operations of cooperatives, and provides basic professional training to employees and officers of cooperatives. Equally important, the College provides pre-service certificate and diploma-level training for middle-level staff who have been recruited into the MOCD and who will serve as Cooperative Assistants and Assistant Cooperative Officers. These courses focus on accounting,

business management and business law with specific application to the needs of the cooperative movement. The subject matter is not available either at Egerton College or at the agricultural institutes. Thus, the Cooperative College serves as both a pre-service and as an in-service training institute; however, the demands of the cooperative system are reported to have surpassed the output of the College. For example, it is estimated that it will take 40 years for all current cooperative banking section personnel to undergo basic training in this institution at the current rate of training.

Future manpower requirements for the system have not been projected, nor has the quality of current training been evaluated. It is proposed, therefore, that a comprehensive manpower and training requirements study be initiated in April 1979 for the system, similar to that which was undertaken by ATAC for the Ministry of Agriculture. It is also proposed that prior to the above a companion study be undertaken, starting in about February, to evaluate the quality of on-going cooperative education programs. The results of these studies will constitute the framework for developing strategies for addressing problems identified with the College's programs and curricula as well as MOCD training programs.

Further, when these studies have been completed and the magnitude of manpower and training requirements established, it is proposed that a team be fielded for about 10 weeks, beginning o/a September 1979, to conduct academic and engineering feasibility studies leading to a proposal for expanding the College. Funds for construction costs and implementation of the Cooperative College expansion would be requested in a subsequent PP Revision.

In addition to the above three studies this ASSP component seeks to evaluate, expand and improve in-service cooperatives training. It is proposed that USAID provide a full-time (two years) cooperatives training officer who will a) participate in the cooperative education and training evaluation study and b) the manpower and training requirements study. Following these studies, the officer would work with the MOCD Education and Training Division to strengthen its capacity for providing in-service training (see below).

(3) Ministry of Cooperatives Development

Complementary to the work of the College is the educational work of the MOCD, focusing on in-service training for the Ministry, for cooperative officials and staff, and for cooperative members.^{1/} Specifically, the MOCD officers and cooperative staff are oriented to new

^{1/}MOCD in-service training focuses upon indoctrination and orientation of MOCD and cooperative officers and staff. The in-service training provided by the Cooperative College focuses upon substantive skill development of cooperative staff.

programs and to operational changes and developments, and are provided with training to enable them to handle more efficiently their current responsibilities or to undertake greater responsibility. Cooperative officials and members in-service training is also in the nature of orientation to new programs, changed procedures and regulations, as well as the constant process of orientation to the cooperative philosophy and methodology. While the MOCD has been very active in providing training for the system, it is dissatisfied with the quality of the training, particularly as the Ministry begins to work more with the "less progressive" farmers. Thus, as noted above the MOCD has asked that USAID conduct an evaluation of the quality of ongoing cooperative education programs and assist in identifying and initiating needed improvements.

Assistance to the MOCD Education and Training Division will entail provision of TA advisors. One, the cooperatives education expert specified above, will play a direct role in the project-financed evaluation of various MOCD and Cooperative College training programs. Additionally, working with his Kenyan counterparts, he will be expected to develop and conduct training courses a) for MOCD trainers of members of cooperatives, union and society managers, and union and society professional office personnel and b) for MOCD officials who supervise, advise and assist cooperatives' credit and banking staff as well as for such staff themselves.

To assist in carrying out these tasks the services of the Training Advisor will be supplemented by 18 months of services of a Cooperatives Business Management instructor and seven months' services of a Cooperative Credit specialist. In addition, six months' services of a Cooperative Training Materials specialist are proposed to assist in developing training manuals for the above and other courses. Finally, it is proposed that six months' services of a Cooperative Education Audio-Visual specialist be provided a) to assist in the reorganization of MOCD's audio-visual section to make it responsive to the needs of new clientele, many of whom are semi-literate or illiterate, and b) to determine the need for additional resources to develop audio-visual materials for an expanded cooperatives training program.

(4) Cooperatives Personnel Training

Assistance enabling the Cooperative College and MOCD to increase and improve their training capabilities will contribute substantially to the ability of the cooperative system to meet the increased manpower requirements of an expanded services program; however, there still will exist specialized in-service training needs which cannot be addressed through these institutions. While some specialized training

needs have been identified, others will only be known after the studies (most importantly, the Cooperatives Professional and Sub-professional Manpower and Training Study) proposed above have been completed.

It is important to the overall training program that a flexible external training mechanism be established to enable the system to build immediately upon the findings of these studies. It is proposed, therefore, that a training fund be established, similar to that which has been proposed for the Ministry of Agriculture earlier in this PP. Specifically, it is proposed that 120-person years of training be funded, in approximately equal increments over a period of five years, with 60 person years for long-term academic training abroad, 40 person-years of local academic training, and 20 person-years of short-term, non-academic training.

The MOCD shall submit an annual training plan to USAID and the Directorate of Personnel Management for their approval. For each trainee the MOCD should briefly provide the following information to insure that the training results in a positive contribution to Kenya's national development, that the training is in accord with GOK and AID development strategies, and that the potential impact on the poor majority and women has been considered:

- (1) The nominee's current position, location and function.
- (2) The training field and program proposed.
- (3) The constraint currently being experienced by the MOCD because a certain individual (or job category) is lacking specified skills. (This section must make clear why the MOCD considers the subject training to be important.)
- (4) The position, location, and function to be assumed by the officer upon completion of training.
- (5) The benefits to be derived by the cooperative system from the subject training. (This section should also indicate the degree to which the newly trained individual will be directly or indirectly involved in activities which impact upon the smallholder farmer or the marginal areas of Kenya.)

General training fields to which AID assigns a high priority in the cooperatives field include: Credit and finance; agricultural economics; produce marketing, storage and handling; cooperative education, educational technology and communications; agri-business finance and management; rural sociology; public administration and project management, and agricultural engineering.

Preference for nominees will be given to women and to MOCD, CBK and cooperatives' employees with two or more years of service.

Training programs may include in-country programs at such institutions as the Kenya Institute of Administration, Egerton College, and the University of Nairobi provided that such training is in addition to (not a substitute for) training already being financed by the GOK. US training may include short-term study tours, non-academic training, and academic training. Third-country programs, in code 941 countries, will be eligible for AID financing.

The CBK will be able to participate in the above MOCD training fund and in Kenya-based training programs operated by AFC per the preceding section of this PP. Additionally, however, a short-term observational study tour of a few U.S. (or other) cooperatives' banks shall be arranged for five members of CBK Board of Directors to enable them to develop a broader understanding of the potential role of such banks. One such bank to be visited is that serving Puerto Rico, whose operations are understood to be development-oriented and relevant to the Kenyan system.

GOK inputs are detailed elsewhere. Basically, they entail provision by the various cooperatives system recipient agencies specified above of office space and furnishings, secretarial support, in-country travel and counterparts for study teams and/or TA personnel. Each recipient agency shall also finance a share of participant costs. The MOCD shall, in addition, provide a site for in-country training, course materials, and in-country training costs for MOCD officers attending these courses. Where appropriate and agreed by USAID, costs of in-country training may be met from ASL I reflows.

c. Beneficiaries and Rationale

As with other systems described in this PP, manpower is a constraint inhibiting the cooperatives from adding to the services offered and extending them to greatly increased numbers of small farmers. Manpower problems affect the cooperative unions and societies as well as the supportive management structure which backstops them--the MOCD, CBK and Cooperative College. The cooperative system component of ASSP, therefore, seeks to increase the supply and improve the quality of trained manpower for the system and, also, to assist the system determine an appropriate growth strategy for the CBK and union banking sections.

Much of the assistance proposed is studies. The evaluation of MOCD and Cooperative College education programs can have a more immediate impact on the nature of training provided than the other studies due to the parallel provision of TA personnel who will be on the spot

immediately to implement, design and introduce improvements based upon evaluation findings as these are agreed with the GOK. At the same time such prompt implementation will bring to bear the multiplier effect of training on cooperative members and staff much sooner than if one had to await expansion of the Cooperative College before being able to do so.

The MOCD training fund should, also, in the short term be able to impact upon selected aspects of the system's manpower and management weaknesses. The MOCD has encountered similar problems of donor flexibility, funding adequacy and coverage as the MOA. In particular, the MOCD has found that various donors' assistance procedures preclude them from reacting rapidly to new training needs as these are identified and that donor contributions have not kept pace with the system's growing needs. For these reasons AMDP is judged to be ill-suited to the problem at hand even though provision was included in the FY 1978 Country Training Plan for short-term training for some MOCD participants.

The mix of studies, TA personnel and training proposed for the ASSP cooperative system component may be the precursor of much expanded AID support for this system. This expansion reflects Mission experience with ASL I, the Agriculture Credit Project evaluation, and technical advice of the PASA cooperatives expert who was part of the PP design team. It also follows from the role and significance of cooperatives for reaching small farmers not now being served and their potential role in mobilizing human and financial resources for rural development. That this potential stands a good chance of being realized is supported by GOK policy decisions taken on cooperatives and their service functions re smallholders and by the demonstrated success of the system in moving "non-progressive" small farmers into commercial production in the past.

In fulfilling this potential both AFC and the cooperatives will be central per the previous discussion on the credit system. Both the credit and cooperative systems now rely on the MOA to provide extension services to their clientele and on the MPB and other marketing boards for storage and, to differing degrees, produce buying. Efforts to increase and upgrade extension staff and to improve the technical package they transmit must be matched with more efficient and widespread credit delivery and with more readily accessible storage and marketing facilities. ASSP, through the cooperatives, credit and storage systems components, seeks to strengthen these support services and to extend their outreach.

5. Storage and Marketing System Support

a. Background

Storage problems are evident in both the input and output markets and interfere with the orderly marketing of many products. Of particular concern are the food grains, of which maize, wheat, paddy rice, sorghum, millet and various legume seeds are produced in greatest quantity. These are storable crops and crops which must be stored to meet both short and long-term consumer needs.

Although the two major grain harvesting periods each year do not occur simultaneously in every part of the country, most grain is harvested during the months of June through August following the "long rains" and again in December through February following the "short rains". Food crops, grain in particular, must be stored to meet consumer's needs during intervening months.

Storage is also needed to protect against poor crop years. Although long-term prospects are for increasing production of food grains, weather patterns are variable, and future drought years are likely to result in short crops, as have past drought years. The Government has established a strategic reserve of maize stocks which presently stands at two million bags (1 bag = 90 kilograms), equal to approximately three months domestic consumption. MPB storage space is first allocated to the reserve, which requires space year round. Second priority is given to variable short-term storage needs following each harvest season.

In 1977 and early 1978 bumper maize harvests have filled MPB stores to overflowing.^{1/} As a result the MPB has tightly enforced its moisture content and insect damage standards, thereby preventing farmers from selling to the MPB and forcing them to store their grain on their farms or to sell to traders at prices well below the official MPB buying price. Maize stocks held by the MPB were 2.4 million metric tons (M.T.) in July 1975, 2.6 million M.T. in July 1976, 3.9 million M.T. in July 1977 and are expected to reach 6.0 million M.T. by May 1978. In order to clear the overflowing stores for the new harvest the MPB has advocated the export of maize, but with world prices below domestic prices the GOK has prohibited any export. Having just completed three years of drought, when there was a serious question whether Kenya could feed its population, there is considerable reluctance within the GOK to export at a loss. Government has subsidized distribution of some of the supplies to orphanages, schools and similar institutions and for use as animal feed, but these efforts are not expected to eliminate the storage problem.

^{1/}"Maize Export Ban Causes Controversy", The Weekly Review, April 14, 1978.

The current maize storage problems highlight the difficulties faced when there is one main purchase and storage body responsible for national level storage while at the same time serving short-term storage needs of smallholders. Were there adequate cooperative storage facilities, for example, the bumper harvests would not have poured into the MPB stores, but rather a significant proportion might have been diverted into local storage facilities.

Smallholders accounted for more than 65 percent of all MPB purchases in 1975-76. The 11 million smallholders produced approximately 2,298,000 tons of maize in 1975-76, of which 319,000 (13.8 percent) was sold to the MPB. The absolute and relative importance of these smallholders in Kenya's maize production and marketing system has been increasing rapidly. Of the 959,000 ton increase in maize output between 1970-71 and 1975-76 almost all (955,000 tons) came from increases in smallholder production. An estimated 201,000 tons of the 955,000 tons increase were needed to feed the 21 percent larger population. Thus, total smallholder surplus may have increased by 754,000 tons.

Post-harvest losses may have reduced this surplus appreciably. Using the relatively low five-six percent losses estimated by the National Agricultural Research Laboratories would reduce the marketable surplus of 2,298,000 tons by at least 114,900 tons.^{1/}

The National Laboratories loss estimates are for insect damage only, and do not include losses caused by mold or rodents. Other authorities maintain total losses of 25-30 percent are common; actual losses may be somewhat between the two extremes.^{2/} Losses of 15 percent would cut marketable smallholder surplus by 344,700 tons, an annual loss of \$39 million at \$10.20 per 90 kilogram bag.

Additional losses are incurred in storing and handling other grain crops. Most authorities agree that the rate of loss for legume seeds is greater than that for maize, while losses to wheat, millet and sorghum are probably less.

^{1/}Unpublished research conducted by Mr. C. P. F. DeLima, Senior Entomologist, National Agricultural Research Laboratories, Kabete.

^{2/}Note that considerable professional controversy surrounds the on-farm loss rates with estimates ranging from 5 percent up to 30 percent. It needs to be pointed out, however, that there is no commonly accepted definition of storage losses with one professional measuring weight losses, another grain losses, another nutritional losses.

Although the Maize and Produce Board reportedly buys more than half of the maize marketed in Kenya, and although the MPB's official price is constant through each crop cycle and marketing period, considerable incentives exist for expanded farm and village (cooperative) storage of maize. An evaluation of the ASL I, Part C program examined cooperative level marketing and storage experiences and also concluded that the storage capacity at the cooperative society level is generally inadequate.^{1/} The government owns about 85 percent of the storage space and dominates the private sector in the marketing of grain. Cooperatives on the other hand, have only 1 or 2 percent of the storage capacity and play a very minor role in grain marketing.

b. Donor Assistance Activities

The Government of Kenya has a firm commitment to expanding and improving grain storage facilities. That commitment is reflected in research into stored grain insect problems undertaken by the National Agricultural Laboratories and assistance sought from various donors, in courses taught at Farmers' Training Centers, and in work underway at the University of Nairobi, at Egerton College and at other educational units.

USAID involvement in grain storage reaches back at least to 1966 when a study was made of grain storage conditions and needs in Kenya.^{2/} In recent years, the major thrust of USAID activity has been toward increasing the incomes and total output of smallholders and pastoralists in the agricultural sector.

Several donor countries and agencies have assisted or are now aiding in research, training, facility construction and stocks management. The FAO is currently financing a major marketing study, and preliminary recommendations include the construction of cooperative and farm-level storage facilities.

Kenyan farmers have responded to USAID and other donor and GOK agriculture programs by expanding their output to the point where marketing and storage systems are in many instances badly strained. The need for accommodating the resultant agricultural surpluses is apparent, and grain storage is a particularly critical concern. This concern is

1/ATAC. Evaluation of the Smallholder Production Services and Credit Program. October, 1977. AID/Arf-C-1026.

2/Randall Latta and Norton Ives, A Plan for Mechanization of Grain Storage in Kenya, East Africa, Report prepared for USAID (Washington Associated Senior Consultants. Inc.), 1966.

manifested in a GOK proposal for the use of reflow funds from AID and World Bank agricultural credit programs for improvements in farm inputs and produce marketing services.^{1/} Funds would be made available for construction of large-scale, full-service stores at strategic sites and for rental of small-scale, full-service stores at village (society) level. Funds would be provided to produce-buying unions to bridge the financial gap between the time union payments are made to farmers for grain or other produce received and when the MPB makes payment to the union for grain or produce delivered.

c. Proposed Activity

A Kansas State University study team visited Kenya in March 1978 for the purpose of examining Kenya's grain storage system, particularly as it related to smallholder farmers, and to recommend an assistance strategy.^{2/} This team recommended that AID fund:

- a) A comprehensive study of Kenya's smallholder food storage needs in order to develop project proposals for donor-financed assistance. The Kansas State University (KSU) team recommended that the comprehensive study focus on training requirements for extension manpower in the storage field (extension workers, engineers, researchers), design of demonstration smallholder and cooperative food storage facilities, provision of loans for on-farm and cooperative-level storage, and long-term storage research needs.
- b) Training in food storage principles, extension teaching techniques and seed sciences.

To implement the above recommendations a five-person team will evaluate on-farm and village-level storage needs in Kenya, taking into account local variations in climate, production and consumption

^{1/}ASL I, Part C and the multi-donor Integrated Agricultural Development Program (IADP).

^{2/}See D. Anderson and D. Pfof, "Smallholder Grain Storage Problems in Kenya" and "Some Parting Thoughts", Kansas State University Study Team, March 1978.

patterns, existing facilities, transportation networks, traditional storage practices and preferences, and available construction materials. The team will include a team leader, agricultural engineer, agricultural economist, an entomologist and a draftsman for a period of six months each, except for the draftsman who will be required for only one month. (See Annex XIII for the proposed scope of work.)

The team should evaluate alternative storage structures for ear and shelled maize, sorghum, millet and legume seeds. Paddy rice and wheat storage should be given a lesser priority. The team should also develop a project proposal or proposals suitable for donor assistance. At a minimum, the following assistance activities are to be evaluated:

1) Examination of storage related training needs, including in-country or foreign training, for specialist skills related to storage, such as engineering and entomology, as well as training for all levels of extension workers through and including JAA's.

2) Construction of demonstration food storage and drying facilities at FTC's. The team will determine the appropriate type, number and location of such facilities.

3) Construction loans to enable farmers to build improved food storage facilities. Using facility types identified under activity 2 above, the team will evaluate the need for such assistance and its construction, and recommend, if needed, procedures for extending and monitoring such assistance.

4) Evaluate the merits of a program for food storage facility construction and the management of these storage facilities at the cooperative society and union level. Consideration is to be given to size, location, number, and type of facilities (including storage units, driers, moisture testers, etc.).

5) Evaluate long-term storage research needs. The team will evaluate research issues such as appropriate storage facilities for the farm and cooperative level, pest control methods, and marketing problems (transportation, financial management at cooperative level, and pricing problems).

The KSU team also undertook an examination of the storage-oriented research and extension staff within the Ministry of Agriculture and, particularly, the National Agricultural Laboratories (NAL). The NAL, a sub-unit of the MOA's Research Division, is currently responsible

for coordination and implementation of storage-related research and extension work. NAL staff conducts storage-related courses at FTC's for agriculture extension workers as well as for farmers. With only a handful of staff members trained in storage and extension teaching techniques, the current education program is not effectively reaching all extension agents, let alone farmers. While the comprehensive study above will examine training needs in great detail, sufficient information is available at this stage to recommend a limited training program:

- 1) Six participants, 14 months each, for U.S. academic training in extension teaching techniques and grain storage principles.
- 2) One participant, 26 months, for MSc. training in seed sciences and grain storage.
- 3) Five participants, three months each, for U.S. non-academic training in pest management.

Participants will be selected from MOA extension and NAL staff with emphasis on those teaching at FTC's.

d. Beneficiaries and Rationale

While potential activities have been suggested by KSU and the FAO Marketing team, there is insufficient data and design work completed at present to permit AID to commit funds for capital construction or a storage loan scheme. It is proposed to proceed in two stages, with the first stage including a comprehensive study of food storage needs and the development of project proposals suitable for donor financing. This stage will also fund a limited amount of training in food storage, extension teaching techniques, seed science, and storage engineering. The second stage will provide funds for implementation of the projects developed in Stage I. Stage I activities will be funded under this PP while Stage II activities will be funded from a PP Revision, to be submitted when the Stage I studies are completed.

Storage problems in Kenya's agricultural sector have become increasingly critical over the last decade. Rapidly increasing population growth (3.5 percent per annum) and increasing urbanization have placed ever greater strains on storage and marketing systems for the timely delivery of agricultural produce. Expansion of cropped areas and increasing agricultural productivity have resulted in significant increases in agricultural production, in products being marketed, and in products being stored.

Two major problems in the storage area were identified by the KSU team. First, storage losses at the farm level are estimated to range from five to 30 percent. On-farm losses can be reduced by providing improved storage methods to farmers and also by shifting some of the storage responsibility from the farm level to higher levels, cooperatives, for example.

Second, farmers are not benefiting from the price support and stabilization activities of the Maize and Produce Board (MPB) to the extent which they might. Farmers receive prices in the unofficial private market which are well below the official MPB prices. Farmers are forced into selling on the unofficial private market because: 1) they lack access to the MPB or one of its licensed agents, or 2) the MPB will not accept the grain because MPB stores are already filled and/or the grain's moisture content does not meet MPB standards. Financial obligations at harvest time are often heavy, and the farmer cannot wait for MPB depots to resume purchases or for the sun to dry his grain.

The maize marketing system in Kenya and particularly the MPB, have been the subject of numerous studies over the last fifteen years. While this project does not attempt to address directly marketing issues related to the MPB, the areas to be studied and which will be the subject of a future funding request are in harmony with the de-emphasis of marketing controls and a reduced involvement of the MPB in local marketing and storage matters. The basic strategy is to provide a viable alternative to the MPB and to provide storage services which are appropriate to the smallholder's needs.

ASSP is focusing on agricultural support systems and most particularly those systems which impact on smallholder agricultural production. Storage and marketing systems play a central role in determining the real income which the smallholder ultimately derives from his agricultural production. The KSU team, among others, has identified some of the deficiencies in the existing storage and marketing system and has suggested assistance activities which might address those problems.

Pages 118-216
omitted

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Part V: Implementation Planning

A. Administrative Arrangements

1. Government of Kenya (Borrower)

a. Agricultural Manpower

The GOK agency responsible for implementation of the Egerton College, Coast Institute, and agriculture training fund is the Ministry of Agriculture. Direct responsibility for the Egerton College expansion has been assigned to Egerton College. To assist Egerton College prepare and process the lengthy list of materials and equipment to be procured under this component, AID will provide through the host-country technical assistance contract a full-time procurement and administrative officer to be based at Egerton College.

The GOK agency responsible for the implementation of the University of Nairobi expansion is the Ministry of Education. Direct responsibility for the university expansion has been assigned to the Faculty of Agriculture, University of Nairobi.

b. Range Research

The GOK agency responsible for this component is the Ministry of Agriculture.

c. Credit

The GOK agency responsible for the credit component is the Agricultural Finance Corporation.

d. Cooperatives

The GOK agency responsible for this component is the Ministry of Cooperative Development.

e. Storage and Marketing

The GOK agency responsible for implementation of the storage component is the Ministry of Agriculture.

2. Reports

There are a number of reports required under both loan and grant financing, responsibility for which shall be as specified below:

- a. Egerton College, acting for the GOK, shall submit the following reports required under the loan, the contents of which will be spelled out in PIL's:

- 1) Quarterly progress report.
 - 2) Quarterly shipping report.
 - 3) Final report on the Egerton College expansion.
 - 4) Other reports as required by AID, including annual work plans and maintenance plans and annual audits of College finances.
- b. The GOK entities indicated below shall provide the following reports for grant-financed activities:
- 1) MOA and MOCD - Annual training plans for the agriculture and cooperatives training funds to be prepared by the Ministries of Agriculture and Cooperative Development, respectively. USAID will assist as may be necessary.
 - 2) Range Research
 - a) A range research inception report to be prepared by the MOA Division of Scientific Research, Officer-in-Charge of the National Range Research Station (Kiboko), and U.S. contract team leader during the latter's four-to-six week TDY, beginning o/a January or February 1979.
 - b) An initial range research implementation plan to be refined during June-September 1979 by the U.S. team leader, the Officer-in-Charge at Kiboko, and a social anthropologist, preferably a Kenyan, covering a three-year period.
 - c) Annual research reports to be prepared by the U.S. team leader and Officer-in-Charge at Kiboko for submission to the MOA Scientific Research Division and RRAC, covering progress in implementing the range research implementation plan and proposed revisions, and extending the research plan to cover another year.
 - d) Annual training plan, including counterpart training, for range research participants.
 - e) Equipment procurement plan by December 1979.
 - f) Also by December 1979, an in-service training plan covering types and frequencies of seminars, field days, in-service courses, etc. for MOA range staff and pastoralists.
 - g) By the end of the second year of research project activity the same two individuals responsible for c) through f) above should prepare a "systems plan" outlining ways to integrate the various research components into a comprehensive whole for use in alternate range management systems.

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- 3) AFC - The training advisor working with AFC management, his/her counterpart (-s), and other U.S. staff should develop an in-country training plan within four months of arrival.
- 4) Other reports as may be required by AID and/or the GOK, including semi-annual contractor reports, final contractor reports, and reports of various studies financed with grant financing.

3. AID

USAID/Kenya has necessary delegations of authority to implement this project. For AID implementation purposes most ASSP components will be housed in the new Agricultural Development Section of USAID's Technical Services Staff. This section is also responsible for managing the Mission's ongoing Agricultural Sector Loan. The section is to be headed by an Agricultural Development Officer (ADO) who will supervise two assistant ADO's and an engineer. One assistant ADO will be engaged full time with ASSP, the second and the engineer at least half time. They will be assisted as required by the Mission's Capital Development and Training Officers and by REDSO legal, contracting and other specialized personnel. One ASSP component, namely Range Research, will be the responsibility, on a part-time basis, of another TSS Assistant Agricultural Development Officer who is also responsible for an ongoing Food Crops Research Project and for assisting in implementation of the Mission's Livestock and National Range and Ranch Development Project. Overall project integration and cohesion will therefore be the responsibility of one of these individuals (who will be considered "the" ASSP Project Manager), with participation of Mission senior staff as appropriate. REDSO/EA will provide contracting, legal and procurement services. Other USAID staff may also be utilized as needed.

B. Implementation Schedules

Detailed implementation schedules and supporting data for each ASSP component make up Annex XVIII.

C. Implementation Arrangements

1. Egerton College Expansion

a. Technical Assistance

In order to provide the large number and widely specialized technical assistance teaching staff required during the College's expansion phase, it is recommended that a competitively-bid host-country contract be let with a U.S. consortium of universities. A consortium is considered superior to a single university due to the large number (28) of positions to be filled. Furthermore, the selected consortium will be responsible for providing and supervising academic training for 43 of Egerton's staff.

All contracting will be undertaken at post, relying upon the services of the REDSO Contracting Officer. All prospective bidders will be required to make an on-site inspection of Egerton College before their bid will be placed in consideration. Proposals will be reviewed by AID and the GOK, and close collaboration is expected during the negotiation of the contract.

Immediately following execution of the contract the contractor will send one senior staff member (the anticipated team leader would be the optimal choice) to Egerton College in order to:

1) Review with the College the exact teaching requirements and translate these requirements into clearly defined specialities and degree levels. While a thorough review of staffing requirements has been prepared and is considered a reasonably firm estimate of required staff (see Annex IX.C.), the review has not provided sufficient detail to allow a contractor to begin recruiting. It is expected that the U.S. staff will include mostly individuals with Ph.D training. There are, however, certain positions which will require no more than an MA or which require more practical experience in lieu of theoretical training. A final staffing review will also determine exactly which specialities are required.

2) Review with the College the exact phasing of technical assistance. The provision of technical assistance and the training of Kenyan staff are closely interwoven, and it will, therefore, be necessary to review the College's training schedule, department by department, staff position by staff position, in order to insure that the U.S. technical assistance provided is both timely and appropriate.

3) Review the College's plant and equipment. Effective recruiting requires considerable knowledge of the job to be performed and the situation in which it is to be performed. The contractor must be familiar with both the academic requirements of the College as well as the anticipated physical amenities which the U.S. staff should expect to find at Egerton. Since the U.S. staff presence will be considerable during the height of the build-up, it is necessary that the staff recruited fits well into the Egerton educational environment and is fully aware of the work and living conditions.

The contractor will prepare an Inception Report which will be discussed with and approved by Egerton College and AID. This report will detail the teaching positions to be filled, the qualifications required, and the phasing of technicians' arrivals.

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b. Training

The contractor's Inception Report (see above) will also include a detailed schedule of academic training for the Kenyan staff. Training should be handled in a similar fashion to that for the Range Research component as described in Part V.C.7 below.

c. Construction

Architectural and Engineering Design

It is proposed that as part of the GOK's contribution to project costs the GOK enter into a contract with a team of Kenya-based consultants, headed by an architectural firm as is the normal practice in Kenya, for the preparation of all architectural and engineering design, construction bid documents, and site supervision during the construction phase, including a clerk of works (resident engineer).

AID will review the qualifications of the local consultants and the GOK will submit to AID the agreement between the GOK and the consultant team as a condition for loan disbursement. AID will review and approve the preliminary plans prepared by the consultant team. If deemed necessary to assist the Mission in reviewing work completed at this stage, TDY services of an educational architect will be required for 30 days. USAID believes sufficient funds have been budgeted for TA for Egerton to cover this contingency without making a separate line item provision.

When approximately 60 percent of the final drawings are completed (final complete drawings still lacking), estimated to be four months after final design work has begun, AID will review progress to date. AID will approve design work undertaken to date.

As a condition of loan disbursement AID will review the final plans and bid documents prepared by the consultant team.

At each stage of the review, AID will examine the preliminary, draft, and final plans to insure that the proposed constructor is appropriate to Egerton needs, that the basic plan and philosophy laid down in the Miller/Mutiso reports are being followed,^{1/} that construction designs are for modest structures, complying with AID's space utilization guidelines, and that estimated construction costs are modest and reasonable.

1/J. Miller. Egerton College Expansion Project. March 1978.
Mutiso Menezes International. Master Plan Study Report.
Expansion of Egerton College. April 1978.

Construction Materials and Fixed Equipment

Specifications and quantity determinations will be made by a Quantity Surveyor, working with the architectural design team. At the 60 percent design-completion point, the Quantity Surveyor (Q.S.) will begin preparing the required specifications for construction materials and built-in fixtures. The items which are locally available (Kenya source and origin) will be so designated. Certain items, such as reinforcing steel, is of Kenyan source manufactured from imported ingots or local scrap. An accurate determination of Kenyan value-added to such materials cannot be made; therefore, a waiver of the component rule has been requested and is provided in Annex XIV. C.

Building materials and equipment not of Kenyan source and origin (or not with at least a substantial Kenyan value added) will be listed by the Q.S. In order to facilitate the procurement of such materials and equipment, it is intended that the construction contractor be nominated as the consignee. The authorized procurement will be by AID Geographic Code 941 and will be carried out in accordance with the procedures set forth in AID Handbook 11. A procurement agent, such as the Afro-American Purchasing Center, will be used and purchases will be funded under the loan. In order to insure that purchased materials meet the architect's requirements the procurement agent will:

- 1) Request bids for the items identified by the Q.S.,
- 2) Review all bids and forward the eligible and reasonable bids to USAID/Kenya and the GOK-hired consultants to insure that items meet necessary specifications, and
- 3) Upon instructions from the GOK, the procurement agent will place orders with supplying agents.

d. Movable Equipment

To equip the classrooms, laboratories, and other facilities specifications will be prepared by Egerton College and the U.S. technical assistance staff for the precise equipment required. AID will review and approve all procurement lists. The lists presented in Annex IX. B. represent a firm estimate of the type and magnitude of equipment requirements. Procurement will be through a procurement agent, such as the Afro-American Purchasing Center, and will be financed by AID loan funds.

2. Coast Institute

It is suggested that AID contract for the academic and technical feasibility studies directly from among its IQC contractors, utilizing AID/W contracting services. However, USAID will contract locally

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for needed architectural support services. This will reduce the management burden which could fall on MOA and REDSO/EA if they must contract for all ASSP components and at about the same time. USAID and the MOA would coordinate closely on the PIO/T and would require AID/W's obtaining Mission and GOK concurrence, prior to contract signing, in any changes in the terms of the PIO/T which might be proposed during the contract negotiation. See also II.B.1.d.

It is recommended that there be approximately a one-month overlap between the academic team and the technical feasibility team in order to insure a close coordination between the academic requirements and the site design. The entire effort could, thus, be completed in approximately five months. The academic team will require approximately three months. The feasibility team should also be able to complete their work within three months.

If the academic design team is fielded in early CY 1979, a PP Revision may be submitted in early FY 1980.

3. Faculty of Agriculture

Contracting for the Stage I academic and technical feasibility studies shall be as for the Coast Institute with USAID and the Faculty acting as the responsible parties. Given the short duration of the Faculty studies, however, the two should be implemented concurrently. See also II.B.1.e.

4. MOA and MOCD Training Funds

The respective ministries will each submit an annual training plan to USAID and the Directorate of Personnel Management. For each training position the plans should briefly provide the information as specified in Part II.B.4.b.(4).

General training fields to which AID assigns a high priority under the MOA Training Fund include: Agriculture Research; Agriculture Economics and Farm Management; Animal Husbandry; Agriculture Education, Education Economics, Education Technology and Communications; Rural Sociology; Public Administration and Project Management, and Agriculture Engineering. Preference for nominees will be given to women, native Masai and Somali speakers, and employees of the MOA with two or more years of service. Training programs may include in-country programs, U.S. training or third country programs in Code 941 countries using the same guidelines specified for the MOCD grant in Part II.B.4.b.(4). The grant for the MOA, while computed in terms of U.S. academic training, can be allocated by the Ministry between any of the specified training programs or as agreed to by AID in the annual training plan.

All participant training will be on a direct-AID basis and handled by the USAID Training Officer in coordination with responsible TSS staff.

5. Cooperatives

a. Studies

Because some individuals, such as the Cooperative Education specialist, will be utilized on several studies and other project activities and because some study results will feed into other reviews, scheduling of study teams and services is critical. Assuming project funds are obligated in August and initial CP's satisfied o/a November, the Cooperative Education specialist should arrive o/a March and the Cooperatives Education and Training Evaluation should begin the same month, ending in May. The manpower survey should, then, begin in June with the Cooperative College academic and technical feasibility studies following in September. The tightness of this schedule suggests use of an IQC contractor for some, or all, of the studies, if possible, or a "Quick Response" contractor. It also suggests use of many of the same individuals for the various studies in those cases where the identical expertise is needed.

The CBK and union banking section management study most desirably should begin o/a March also. This study, however, should be conducted in three phases with the first, the CBK management study, taking about one month for the three-person team to complete. (At the end of that period a draft report should be completed.) The team's management specialist can, then, depart, and the team leader and Financial Systems specialist should initiate the planning of the banking section survey with their MOCD counterparts. When this planning exercise has been completed (two weeks), the team leader may depart. He/she should return five months later to participate in the last two weeks of the survey, in the preparation of the report, and in finalizing recommendations regarding the functional relationship between the CBK and the cooperative banking sections.

For each of the above studies at a minimum draft versions of the final reports must be ready in sufficient time before departure of study team personnel to enable 1) full discussion and review, first, with USAID and second with the GOK, and 2) revision of the draft as may be necessary prior to departure. Where possible, the USAID considers it preferable to have the final report in hand before the teams have all departed given the interrelationships of many of the studies, the tight scheduling, and the studies' importance to the GOK.

However, in the case of the cooperatives manpower survey the Mission would be inclined to have the team prepare the draft final report in the U.S. on the assumption that computer analyses will be required for making manpower projections. In this case, the team

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leader (at a minimum) should return to Kenya o/a two months after departure to review the draft report with the GOK and USAID and to revise it as may be deemed appropriate.

b. Technical Assistance

TA personnel and their proposed scheduling for the cooperatives component are as follows:

- 1) Cooperative Education specialist - two years beginning March 1979.
- 2) Cooperative Business Management instructor- 18 months beginning June 1979.
- 3) Cooperative Credit specialist - seven months beginning June 1979.
- 4) Cooperative Training Materials specialist - total six months over two visits of three months each, the first beginning October 1979, the second, June 1980.
- 5) Cooperative Education Audio-Visual specialist - six months beginning January 1980.

It is suggested that these be contracted from a single source. Given the desired timing for arrival of the above, a University contractor may not be the most appropriate, assuming recruitment is from on-campus sources.

c. Contracting

For the cooperatives component USAID believes direct AID contracting is most appropriate. Reasons for this choice are the MOCD's inexperience with U.S. and AID contracting to date, the workload which we anticipate will be placed on REDSO/EA and USAID staff for host country contracting under other ASSP components, and the need to proceed urgently with the studies and contracting related thereto. Here again, USAID and the MOCD expect their concurrence shall be obtained prior to contract signing for any changes in PIO/T terms proposed during contract negotiation. Logistic support will be provided by the GOK and USAID as indicated in Part II.B.4 and Annex XVII.

6. Credit-Agricultural Finance Corporation

Three advisors (Internal Audit, Credit Review and Financial Management) are currently on the job under a direct AID contract with ACDI. It seems administratively most feasible to extend that contract. The three existing positions should be extended per II.B.3 and III.D., but it is not known whether any or all of the incumbents will be willing to continue for second tours. Regardless of whether they are replaced or continue, it will be important to initiate necessary

documentation as soon as possible to assure continuity. (The Financial Manager's contract expires in December, the Internal Auditor's in February, and the Credit Review Advisor's in March.) It is also suggested that one of the ACDI contract personnel be designated as the Chief of Party, preferably one of those already on-board who might extend for another tour.

The proposed Training advisor should be recruited as soon as possible so that he can begin organizing the AFC training office and contribute to this project's participant training component. A February 1979 ETA will be sought. The Data Processing advisors should also be recruited as rapidly as possible to avoid a large gap between the departure of the German Team and their arrival. A February 1979 ETA will be sought for at least one of these advisors with the second arriving as soon as practical thereafter. The Loans Appraisal trainer should be scheduled for April 1979 to allow time for the overall Training advisor to settle in and establish the new training office through which this trainer will operate.

Participant training will not be handled under the contract but will continue under direct AID financing and procedures. See also Annex XVII. for logistic support provisions.

7. Range Research

Technical assistance experts and participant training are to be provided under a host-country contract with a U.S. university. Title XII provisions of the FAA seem well suited to this component, and possibly also to the Egerton College expansion. The contract should be competitively bid. Ideally, the university contractor should come from an area of the West or Southwest with range conditions similar to those in Kenya. As with the Egerton expansion all contracting shall be carried out in-country by the REDSO/EA Contracts Officer and USAID staff. These AID personnel shall also be responsible for any local contracting, such as for the Kenyan sociologist or computer services, which may be necessary.

While training will be contract-financed, the USAID Training Officer can provide pre-departure briefings for participants. The team leader should consult and coordinate with the Training Officer on training procedures, AID requirements, and short-term courses available under AID arrangements. USAID feels it would be appropriate for the contractor to place participants in several U.S. colleges and universities as was done by Colorado State University under contract AID/Afr-790.

Commodity procurement for the range research component will be done by the USAID for items to be procured locally while AAPC will undertake off-shore procurement (see below and Annex XVII). The contract team leader with the Officer-in-Charge of the Kiboko National Range Research Station and the USAID/TSS staffer managing this

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component will be responsible for preparation of commodity procurement lists by December 1979.

USAID is not specifying under the range research component that potential contractors visit Kenya for an on-site inspection of Kiboko prior to submitting their bids. However, the Mission does believe that familiarization may be useful. The USAID expects, however, that preparation of the contractor's inception report will offer an opportunity to review the proposed research to be undertaken with the GOK, to review proposed contractor staffing and its phasing, to discuss participant and counterpart training content and timing, to view the Kiboko facility, and to become familiar with the living conditions for contract staff and their families so as to facilitate recruitment and project implementation.

See also Part II.B.2. and Annex XVII re logistic support, housing, and administrative assistance being provided for the team leader.

8. Contractor Orientation

Mission experience with the other projects has demonstrated that when large numbers of TA personnel are recruited for a project and arrive together much can be gained from their orientation by GOK and USAID project and other staff at the time of arrival. This will be particularly true for ASSP given the linkages between components described earlier and the consequent need for close contacts among and between component contractor staffs. Therefore, USAID expects to hold such orientation sessions, involving GOK officials, which will focus on the nature of the ASSP project, ASSP component cross-relationships, GOK agriculture programs and emphases, the AID bilateral program in Kenya and the AID target group, contractor relations with GOK counterparts and USAID project management and training staff, divisions of responsibility between USAID and the GOK, reporting requirements, and other subjects judged important. When possible, orientations will be held simultaneously for staff of all contracts, but at a minimum the respective contract team leaders will be asked to participate in orientation of each other's staffs.

9. Logistic Support

The responsibilities of the GOK and USAID for such support are clearly indicated in Part II.B. in the "Proposed Activity" sub-sections of each component description and also in Annex XVII. The GOK has reviewed the PP in draft and also has copies of the final version as submitted to AID/W. Particular attention has been given by Government to the GOK contribution sections.

Beyond that, all U.S. contract personnel will have access to the U.S. Embassy health unit and to the diplomatic pouch for letter mail services (but not packages). There is no U.S. Commissary in Kenya, and food, tobacco items, and alcoholic beverages must be purchased by contractor personnel on the open market. As indicated earlier, range research personnel may need to do much, if not all, of their shopping in Nairobi.

There is an International School, covering grades one to twelve, in Nairobi, but it does not have boarding facilities. Other schools in or near Nairobi do have such facilities, but there are waiting lists for entrance. Contract team leaders for the range research and the Egerton College T.A. team should investigate these during their pre-implementation visits.

10. Disbursement Procedures

a. Loan

1) Foreign Exchange

The GOK will select a procurement agent, presumably the Afro-American Purchasing Center per the above, to implement the FX procurement for the Egerton College expansion. Accordingly, disbursement will be made under the Direct Letter of Commitment method now being used with AAPC. Otherwise, the Standard Letter of Commitment method will be used.

2) Local Costs

Local costs will be reimbursed to the GOK for eligible project expenditures based on actual costs.

b. Grant

AID grant funds will finance technical assistance for the various ASSP components through either host-country or direct-AID contracts as indicated above. It is assumed the university contractors will desire use of Federal Reserve Letter of Credit procedures as stated in Part IV. Full disbursement arrangements will be described in the Project Agreement.

Commodity procurement financed with grant funds will presumably be made either through AAPC, utilizing Direct L/Com procedures, or locally by the USAID per the above (see waivers in Annex XIV).

11. Procurement Plan

To facilitate procurement of equipment and spare parts from off-shore sources it is intended that a procurement agent be utilized, such as AAPC, for the Egerton College expansion and part of the range research component. Procurement will be carried out in accord with AID Handbook 11 - Country Contracting. Further details regarding commodity procurement are as follows:

a) Egerton Equipment and Furnishings

All such materials shall be procured from AID Geographic Code 941 with the exception that all vehicles must be of U.S. manufacture per waiver in Annex XIV.

b) Range Research

All procurement shall be from the U.S. and Kenya. Vehicles shall be of local fabrication. See also above and Annexes XIV and XVII.

c) Spare Parts

Provision for procurement of fast moving spare parts has been made under both the Egerton College and range research components (see Annex XVII). It is expected that the two GOK entities will build into their budgets provision for purchase of additional spare parts as may be needed. The addition of the mechanic to the staff at the Kiboko research station, thereby, facilitating creation of a maintenance capacity at the station, should support this effort.

d) Construction Materials

These shall be procured in Kenya by the MOA for the Egerton College expansion. A waiver of the Kenya source and origin requirement is attached in Annex XIV.C.

e) Excess Property

Use of excess property will be reviewed for applicability and for suitability. However, the GOK as a result of recent unfavorable experiences is very concerned about provision of second-hand equipment by donors and investors, and USAID has reason to believe Government would not accept excess property. Another factor to be considered is compatibility of project procured new equipment with existing equipment in Kenya and availability of servicing and spare parts. For example, Caterpillar, International Harvester, and John Deere Inc. have dealers and servicing available for the combine, disc plow, etc. proposed for procurement under the range research component. Purchase of other makes of these items from excess property could not be considered.

D. Evaluations

1. Background

Because this project is complex and involved primarily in institutional support, it is extremely difficult to predict social benefits. For this reason it is especially important that the evaluation system for this project go beyond simply determining whether or not the project goals and objectives are being achieved. To assure that project outputs reach the intended beneficiaries with minimal negative consequences it will be necessary to develop an evaluation or assessment system which is an integral part of project implementation.

Such a system might possess some of the following characteristics:

- a. The evaluation system should not be viewed as threatening by project staff. Instead, it should be a tool that the project staff uses to determine adjustments necessary in project implementation in order to assure project goals are always being addressed.
- b. The evaluation system can contain many of the "mechanisms" addressing issues described above, using them as vehicles for collecting data. It can also utilize the project staff working with the mechanisms for collecting baseline data and data throughout the duration of the project. This would help to integrate the evaluation and implementation processes closer together.
- c. The evaluation system should identify and focus on major project implementation constraints and data gaps right from project start-up in order to assure the collection of necessary baseline data for later comparisons. One particular data gap that will need to be addressed is the manner and degree to which farmers and livestock holders receive various benefits of the project.
- d. The evaluation system should contain a component that analyzes issues relating to the project as a whole, e.g., spread effect within and between components, and women. In this way the project would be assessed as a system of interrelated components supporting agricultural production. It should provide useful insights into how constraints affecting this system might be alleviated. Such analyzes, involving the project as a whole, would probably have to be done by consultants or a staff member with this as his sole assignment.

- e. The evaluation system should have a strong social science capability, both at the component and overall project level. In addition to determining whether or not project outputs are socially sound, social analyses can suggest ways to implement the project more effectively. As with other aspects of project implementation and evaluation, it is important that analysis continue throughout the life of the project. There are a few sources in Kenya that might assist in social science analyses. These include: The Department of Sociology and the Institute for Development Studies (IDS) at the University of Nairobi, and the National Integrated Sample Survey Program (NISSP). If however, these sources are unavailable for some reason, it is important that individual U.S. social scientists be on the evaluation teams.

2. Evaluation System

The evaluation system to be followed shall have three components-- annual USAID-GOK evaluations, individual component evaluations as these may be deemed necessary, and special in-depth evaluations.

The first annual USAID review will commence 12 months from the date on which initial conditions precedent to disbursement are met and will focus on the initial implementation phases, performance to date, whether any actions are required to head off problems which might arise at a later date, and the progress and results of the feasibility studies being conducted under the Agricultural Manpower, Cooperative System, and Storage and Marketing components. The USAID evaluations will be held annually, and involved GOK officials will be asked to participate. As implementation proceeds, focus of these reviews will shift toward evaluating progress in achieving project purpose and outputs, recognizing that achievement will not wholly be realized until project conclusion.

Individual component special studies or evaluations in greater depth than the annual Mission reviews will be held as and when a need is judged to exist. These will address special concerns which may arise for any one component, as opposed to the broader in-depth comprehensive evaluations discussed below. The Mission has included \$100,000 in the budget to finance special component reviews or studies. The USAID with GOK concurrence will prepare the scopes of work, and the reviews may be performed by AID/W personnel and/or outside consultants, including Kenyans, as circumstances may warrant. It is anticipated that evaluations of such a more limited nature may be needed; at the same time it is felt that scheduling two or three in-depth evaluations of each component plus annual USAID views and the comprehensive evaluations described below might be excessive and distractive of USAID, GOK and project personnel's time from project implementation. Therefore, scheduling is to be based on perceived need.

AID will fund three project-wide, in-depth evaluations in FY 1980, FY 1982, and FY 1984. The evaluations will focus on linkages between project components and the ability of components to impact on the rural poor. In the process of examining the impact on the rural poor the reviews will include an analysis of the extension service, constraints to its effective operation, and actions being taken, being planned, or required in order to overcome the constraints.

These in-depth evaluations will be preceded in late FY 1979 or the first quarter of FY 1980 by a baseline survey. It is suggested that the same contractor and, preferably, the same personnel carry out the baseline survey and each of the in-depth evaluations.

In-depth evaluations will cover the Egerton College expansion, range research and credit components, MOA and MOCD training funds, cooperatives TA, and storage-training only. Preparation of the PP Revision, based on the academic, technical feasibility and all other components' studies, will constitute in-depth evaluations of progress to date for these other activities. Under Stage II a full schedule of evaluations will be set forth for the Coast Institute, Faculty of Agriculture, Cooperative College and storage activities which may be included in the Revision.

In addition to reviewing the linkages between individual components, ASSP's contribution to strengthening Kenya's agriculture support services overall, and how well ASSP has reached smallholder's and pastoralists, the in-depth evaluations should review certain topics specific to each component. At a minimum USAID believes the following should be included:

a. Egerton College

In-depth evaluations should focus on progress to date of the technical assistance contract team, the participant training program, counterpart on-the-job training, and development and evaluation of the Egerton curriculum. A central concern will be whether the curriculum and the teaching being provided by AID technicians is appropriate to the needs of smallholder farmers and pastoralists and the effective operation of the extension service. The review should also examine some of the ATAC manpower demand projects in light of development activities and programs being undertaken and proposed at the time of the evaluation and in light of construction status. This exercise aims at monitoring any significant changes in demand for diplomates, either in aggregate number or by diploma stream, in a comprehensive effort to insure that the type of training and the numbers being trained are relevant to Kenya's needs. The FY 1980 and FY 1982 evaluations may also permit some revision in the technical assistance mix being provided to Egerton if deemed necessary.

The FY 1984 in-depth evaluation should be conducted about nine months after construction is completed. This evaluation will review the same items as the earlier in-depth evaluations (except that construction will already be completed) with special emphasis on the curriculum evaluation and the assessment of the current and future demand patterns for Egerton graduates. This evaluation will recommend actions to be undertaken in the final year of the project as well as future follow-on actions should they be deemed appropriate.

b. Range Research

Monitoring the implementation of this component's activities and assessing the achievement of its goals and objectives is an important part of these evaluations. However, their primary focus will be to ensure that implementation is proceeding such that research findings reach the pastoralist and small livestock holder in a meaningful way with minimal negative consequences. Therefore, these evaluations will continuously examine how project implementation can be modified and improved to assure this.

Although each evaluation will examine basically the same questions, the FY 1982 review should be designed to provide opportunities to ascertain how the range research component can be modified to better meet its goals during the remainder of the project life while the FY 1984 review should determine if the activities of this component need to be extended and, if so, how they might relate to other on-going activities.

Each in-depth evaluation in addition to reviewing implementation and administrative issues should include, but not be limited to, the following issues:

- 1) Applicability of research findings to small livestock holders and pastoralists.
- 2) Receptivity of smallholders to research findings and any blocks to receptivity.
- 3) Actual utilization of research findings by livestock holders, especially smallholders and pastoralists.
- 4) Effectiveness of the channels and methods the Range Research Station is using to disseminate their findings and their relative importance, e.g., extension system; Farmer Training Centers;

Gariftu Pastoralist Training Center; provincial, district, location and sub-location Development Committees; MOA Central Information Office; Range Research Advisory Committee (RRAC); other USAID and donor projects; field days; field trials; on-the-job training; training of pastoralists; in-service training; faculty and student use of the station's facilities for research training and research.

5) Effectiveness of on-the-job training by U.S. Research Officers and of participant training for Kenyan Research Officers in terms of providing a field orientation to doing range research and adapting research findings to the specific needs of various pastoral groups. Effectiveness in this case should be measured in terms of actual behaviour of Research Officers and not on their attitudes or the structure of training programs.

6) Establishment of a range research tradition whereby a cadre of Kenyan Research Officers are in a position to establish research priorities, systematically implement them, effectively disseminate the findings to livestock holders and in the end demonstrate that these producers, including small producers, have benefited.

7) Establishment of an ongoing technical and administrative system which assures continuous provision of personnel, physical facilities, equipment and research library materials to support range research activities.

8) Development of training materials for use in established in-service training programs and in training of livestock holders.

c. Agriculture Credit

In-depth evaluations of AFC activities should review the technical assistance and training provided in order to assess the impact of these activities on the AFC's provision of credit to increased numbers of smallholder farmers. The evaluation should recommend alterations in component inputs over the remainder of the project should such changes be deemed necessary.

d. Cooperative System

In-depth evaluations of technical assistance advisors and training provided in this component should cover the impact which AID inputs are expected to have on the MOCD's ability to provide improved services to the smallholder farmer; changes in content of cooperative training programs; impact on cooperatives employees, officers, and members; increased participation of members, and any alterations in component inputs over the remainder of the project's life should such changes be deemed necessary.

3. Evaluation Team Staffing

Personnel for the special, individual component evaluations will be determined by the nature of the problem giving rise to the particular review, and this is left flexible for the USAID and GOK to determine.

The in-depth evaluations will be more complex and should involve both USAID and GOK personnel in addition to outside expertise. Such expertise may be drawn from among the following: Social scientists, experts in agriculture and cooperatives education, management, credit or agriculture economics, research-extension and manpower projection. Such evaluations may require two-three months each. Similar personnel and a similar time period may also be needed for the initial baseline survey.

E. Conditions, Covenants and Negotiating Status

1. Conditions Precedent:

a. The Project Agreement will contain the standard conditions precedent, including legal opinion and specimen signatures.

b. The Project Agreement will provide that prior to any disbursements or the issuance of any commitment documents for the purpose of financing contracts for technical, construction or other services entered into by Borrower/Grantee, AID will approve such contracts in writing. This condition precedent may be satisfied separately for each contract action.

c. Prior to the disbursement of funds for the Egerton College component, the GOK will submit evidence satisfactory to AID that it will provide the requisite administrative, academic and maintenance staff on a timely basis. The GOK will submit on a periodic basis, to be determined in PIL's, but at least as part of the annual Egerton College Staff Training and Work Plan, updates of the documents submitted in satisfaction of this CP adequate to indicate staffing levels at that time and efforts taken and proposed to fill staffing requirements.

d. Prior to the disbursement of funds for the Egerton College expansion, the GOK will submit to AID, for its approval, final plans, specifications, bid documents, and a work plan indicating the steps Egerton College will take to monitor the construction.

e. Prior to the disbursement of funds for the Range Research component, the GOK will submit evidence satisfactory to AID that a functioning Range Research Advisory Committee has been established.

f. Prior to the disbursement of funds for assistance to the Agricultural Credit Finance Corporation (AFC):

- (i) AFC shall submit to AID, in writing, a comprehensive report on actions which it has undertaken or proposes to undertake in relationship to the findings and recommendations of the AID sponsored AFC Management Study.

If AFC either disagrees with a specific finding, or finds a recommendation not feasible for implementation, AFC shall so state, furnishing reasons. If AFC agrees with a particular finding, but disagrees with the recommended course of action, AFC shall outline the alternative course of action which it proposes to undertake to meet the identified problem. AFC shall covenant that, at times to be specified in PIL's, it will submit to AID reports indicating the implementation status of these recommendations.

- (ii) AFC shall submit evidence to AID that it will undertake a job classification, job appraisal, and salary revision study to be conducted by Government.
- (iii) AFC shall submit evidence that it has hired (or will hire) a qualified Senior Administrative Officer who will be responsible for consolidating AFC's various administrative functions into a single Administrative Division and provide the necessary administrative leadership for this Division.

2. Covenants

a. The Parties agree to establish, as part of this project, an evaluation program to examine the progress made towards the attainment of the project objective to increase the availability of services to the smallholder farmer. In this regard the Grantee will covenant to provide, on a timely basis, required administrative and technical assistance not financed by AID for evaluations of the project and its impact on the smallholder through the extension service.

b. The GOK will covenant that it will make available adequate housing, on a timely basis, to AID-financed technical assistance personnel in accordance with the provisions of the amplified project description of the Project Agreement dealing with GOK inputs. In the event such housing is not available on the arrival of this personnel the GOK will take such steps as may be agreed to by AID to provide adequate alternative accommodations until housing is found or constructed.

c. With regard to the Egerton College component, the GOK will covenant that it will provide, on a timely basis, (i) the requisite sponsorships for additional student positions above the present sponsorship level, and (ii) funding to meet the recurrent costs, including maintenance of buildings, of Egerton College, by means of a regularized adjustment of the economic fee, a government subvention, or by such other means as the GOK and AID may agree. The GOK will report periodically, at dates to be specified in PIL's but in any event at least annually as part of the Egerton College Staff Training and Work Plan, on the current status and proposed course of action to provide such funding.

d. With regard to the Range Research component, the GOK will covenant to provide, on a timely basis, all required research and administrative staff and financing to support the research at Kiboko.

e. The GOK will covenant to submit at dates to be specified in PIL's and in form and substance satisfactory to AID, annual training plans for:

- (1) The MOA Training Program
- (2) The MOCD Training Program

The GOK will also submit for AID approval, at dates to be specified in PIL's, an annual Egerton College Staff Training and Work Plan. The content of these plans will be addressed in the amplified project description as part of the Project Agreement, and in subsequently issued PILs.

3. Negotiating Status

This PP, and specifically the conditions and covenants outlined above, have been discussed with the Government of Kenya. The Government is in agreement as to the scope of the project and the requirements imposed on it by the above conditions and covenants.