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LIST OF AGRICULTURAL RESEARCH STATIONS
IN FOURTEEN COUNTRIES
OF THE EAST AND CENTRAL AFRICAN SUB-REGIONS

M69-2725

BURUNDI

Agronomic Research

I. WHEAT

Wheat is grown in the high altitude zone of Burundi (1,900 metres) corresponding to the natural region of Mugamba which extends partially to the "arrondissements" of Muramvya, Mwisale, Kayanza, Mwaro and Bururi. Yields oscillate between 800 and 1,200 kg per hectare in the rural milieu, but reach 3,000 kg per hectare on the research stations. Statistics are unreliable, but production is generally estimated at roughly 5,000 tons per year.

Research is undertaken with a view to yield improvement and quality together with improved cultural practices. Distribution of selected material in the rural milieu has been going on since 1963.

Varieties

The varieties chosen are Lignéés Bage - 130-1-77 (305); twenty-nine lines are under trial and study for their baking qualities.

Seed distribution

The programme is based on a diffusion of small quantities of seed and a recuperation by way of exchange against three times an amount of cassava flour in order to ensure complete coverage. The seeds distributed are recovered in triple quantity.

Actual distribution was as follows :

1963	1,960 kg
1964	2,528
1965	13,530
1966	3,720
1967	21,738
1968	85,368

The increase in yield as a result of distribution of improved varieties varies from 40 to 80 per cent when compared with the local varieties.

Imports of wheat flour

	<u>Tons</u>	<u>Value ('000 BF)</u>	<u>Price/kg</u>
1966	3,772	48.8	15.6
1967	2,899	43.1	14.9
1968	4,471	63.4	14.2

II. ISABU (Institut des Sciences Agronomiques du Burundi)

ISABU deals with agronomic research and with the diffusion of new knowledge and data derived from such research. There are nine qualified research workers, four foreign technicians and four national technicians. Laboratories occupy an area of \pm 1,000 square metres, and field experiments some 350 hectares. There are about 4,000 volumes in the main research library and out-stations and some 70 periodicals are received annually.

1. KISOZI station

Altitude : 2,000 metres.

- Selection and improvement of wheat, Irish potatoes, maize, beans, haricots and elusine
- Introduction and observation plots of sweet potatoes and soya beans
- Multiplication of industrial plants, e.g. sunflower, castor, barley, oats, rye
- Distribution of selected seed
- Development of marshes and savannah land
- Introduction of tea and quinine
- Livestock development
- Fodder grasses
- Maintenance of existing forests and introduction of exotic species
- Climatology.

2. Animal Husbandry Station, LUVYIRONZA

- Studies on pasture improvement and bovine selection. Ankole cattle and Ankole-Sahiwal crosses
- Improvement of small stock - pigs, sheep, poultry, leporides
- Fodder grasses and legumes
- Diffusion of result.

3. The middle altitude zone - MURONGWE Seed Centre

Altitude : 1,500 - 1,900 metres.

- Seed centre for coffee and fruits
- Multiplication and diffusion of food plants, groundnuts, maize, haricots and fodder and cover crops
- Pasture improvement (manure and introduction of grasses) and intensive rotations
- Fertilizer coffee mission (Ngozi) - studies on fertilizer norms.

4. Experimental Station of MOSSO (MUSASA)

- Average altitude : 1,200 metres
- Improvement of sweet potatoes, manioc, elusine, sorghum, maize, groundnuts, castor, coffee, tobacco, fruits, tea, cashew, rice, forest trees
- Pasture and fodder improvement.

5. Low Altitude

- Average altitude : 800 metres
- Cotton culture
- Rice culture
- Food crops and fruit culture
- Coffee culture
- Improvement, selection and cultural practices for cotton
- Pasture improvement by manures and introduction of grasses
- Studies of possible intensive culture systems in the rural milieu.

- a) TEZA : four foreign experts, two national technicians
- Tea culture in blocks and with outgrowers
- b) BWEGURA : three foreign experts, two national technicians
- Tea culture in blocks.

Each of the two stations (1 - 5 above) has a climatological centre (temperature of soil, humidity, rainfall, insolation, evaporation, wind velocity, hygrometry, evapotranspiration. In addition, the Institute has at its disposal a specialised group of experts attached to Headquarters for soil work, phytopathology and entomology, rural economy and sociology.

CENTRAL AFRICAN REPUBLIC

AGRONOMIC RESEARCH

I. AGRONOMIC RESEARCH CENTRE (CRA) OF BOUKOKO. IFCC/IRAT

This centre which is directed by a Director of IFCC, embraces a "cell" of IRAT.

IFCC - French Institute for Coffee, Cocoa and other "stimulant" plants

- Has 5 researchers, 2 "ingenieurs des travaux" and 2 technicians

- AGRONOMY

- Phytopathology and physiology of coffee, cocoa and cola. Clonal selection of coffee, cuttings and hybridisation of cola.

- PHYSIOCHEMISTRY

- Manures and balanced mixtures.

- ENTOMOLOGY

- Biology of insect predators and methods of control.

- PHYTOPATHOLOGY

- Inventory of coffee, cola and black pepper pests.

- Studies of control of anthracnose, rust and rot of coffee, black pod of cocoa, anthracnose and rotting of pepper (*Elsinoe piperis*).

IRAT - Institute for Tropical Agronomic Research and Food Crops

- One Researcher, one "Ingenieur des Travaux".

- Agronomy and cultural methods for Pepper.

- Fertilisation and evolution of soils in particular under maize and rice in liaison with GRIMARI STATION.

II. MAIN AGRICULTURAL STATION - GRIMARI - MDT/IRAT.

This Station which depends on the Ministry of Development and Tourism is directed by one Researcher assisted by one technician. It has at its disposal a "cell" of IRAT comprising one Researcher and one Technician. It is concerned with work on :

- Fertilisation and evolution of soils

- Plant improvement

- Cultural techniques
- General agronomy and rotations

Work is done chiefly on groundnuts, maize and cotton (in collaboration with IRCT). Studies on introduction and collection of Soya, Sesame, Cassava, Pepper, Legumes and Castor Bean.

III. EXPERIMENTAL CENTRE OF BOUAR - IRAT

This Centre constitutes a "cell" of research for IRAT for the culture of European and local legumes. It is directed by one Researcher. Work is oriented towards general agronomy and cultural techniques.

IV. BAMBARI STATION - IRCT

- IRCT - Institute for Research on cotton and exotic textiles
- Six Researchers, three Technicians

- | | |
|----------------|---|
| GENETICS | - Varietal trials, selection, hybrids, interspecific crosses, introductions, evaluation of their technological value. |
| AGRONOMY | - Cultural systems, soil conservation, fertilisation. |
| ENTOMOLOGY | - Biology of insect predators, parasite control, experiments with insecticides. |
| PHYTOPATHOLOGY | - Bacteria and fusarium disinfection and seed conservation, roselle disease and 'dah'. |
| PHYSIOLOGY | - Folian diagnosis, physiological mechanisms of defoliation. |

V. BANGUI STATION - KM 22-MDT/IFAC

This Centre which belongs to the Ministry of Development and Tourism, comprises a cell of IFAC - French Institute for Fruit Research Overseas.

GENERAL AGRONOMY - Varietal trials, fertilisation, cultural treatments and techniques, introductions. Pilot orchards on Bananas, Pineapple Plantains, Mango, Avocado, Granadilla, Papaw and Citrus.

VI. BOUAR RESEARCH CENTRE - IEMVT

IEMVT - Institute for Cattle and Veterinary Medicine for Tropical Countries. This Centre has a "cell" at Bambari and works in liaison with the Regional Centre of FARCHA in Tchad.

- There are four Veterinary Doctors, one Researcher (ingenieur) and three Technicians.

- TRYPANOSOMIASIS I

Immunology - Studies on trypanotolerance

Chemotherapy - Trials with new trypanocides

Entomology - The glossinas, biology, study and forecasting, sterilisation of males.

- PROTOZOOLOGY

Helminthology - Biology, research, treatment and prophylaxis

Animal Husbandry- Selection of fouble cattle (Boran)
Selection of Baoulé cattle

Agrostology - Pasture and 'bas pond' studies, food supply in dry season fodder studies, grain and fodder multiplication, studies on ranching in M'Bali and Bambari

VII. BANGUI RESEARCH STATION - ORSTOM

ORSTOM - Office of Scientific and Technical Research Overseas

PEDOLOGY - Three Researchers, two Technicians - General studies on tropical soils and cartography.

HYDROLOGY - One Researcher, two Technicians - general hydrology;
bioclimatological station of Bangui;
erosion studies on the steep slopes
practical studies with Public Works re navigable
waterways and overland routes

GEOFYSICAL OBSERVATORY - Two Researchers, two Technicians
magnetism; seismology

APPLIED GEOPHYSICS - One Researcher, three Technicians;
geophysical study of the Tchad Basin
and the loop of Central Africa

GEOLOGY - One Researcher, Sedimentology study of the Tchad Basin

VIII. LANDJIA STATION - UNDP/CAR

Regional Centre for Fisheries Research.

This project is financed by UNDP and several Central African States
and is

- concerned with training middle level personnel and
"moniteurs" charged with fisheries development
- carries out research on various aspects of fish culture
- it has one Director, one Co-Director, one Instructor.

Main and Sub - Research Stations

in Chad

- a) Ba- Illi- Bousseo district
- b) Behidjia - par Moundan Sud (cotton)
- c) Facha - Fort Lamy (veterinary)
- d) Tiken - par Pala North West
- e) Fort Lamy - ORSTOM (soil science, cotton and rice)

Information on Ba-Illi, Behidjia, Facha and Tiken stations is attached. No information is available on Fort Lamy station.

CHAD

1. STATION DE RECHERCHES AGRONOMIQUES
BA-ILLI

- a) Organization Controlled by the Service de l'Agriculture.
- d) Research Activities No data.

2. LABORATOIRE NATIONAL DE RECHERCHES VETERINAIRES
FACHA, FORT LAMY

- a) Organization Controlled by the IEMVT with further assistance from ORSTOM.
- d) Research Activities No data.

3. STATION CENTRAL DE L'IRCT
BEHIDJIA PAR MOUNDAN, B.P. 31, 10 SUD

- a) Organization The most important of IRCT's stations and the regional headquarters for Tchad and Cameroun. Regional Director, Station Director and seven research workers.
- d) Research Activities Cotton:
Crop husbandry. Cultural methods, fertilizer usage, soil conservation and fertility maintenance by rotation and fallow, other rotational crops, mixed farming systems.
Plant selection and breeding. Introduction of multiple intra-specific hybrids, studies on heterosis and male sterility.
Entomology. Seed disinfection, bionomics of Diparapis and Platyedra control methods, radio-active tracers.

CHAD (Cont'd)

Kenaf:

Plant selection. Improvement and adaptability.

Crop husbandry. Cultural methods, fertilizer usage.

Processing. Technology, fibre extraction studies.

4. STATION DE L'IRCT
TIKEM PAR PALA, NORD-OUEST

a) Organization

Sub-station of 3. above. Three research workers.

d) Research Activities

Cotton:

Crop husbandry. Cultural methods, fertilizer usage, soil conservation and fertility maintenance by rotation and fallow, other rotational crops, mixed farming systems.

Plant selection and breeding. Introduction of multiple intra-specific hybrids, studies on heterosis and male sterility.

Entomology. Seed disinfection, bionomics of Diparapis and Platyedra control methods, radio-active tracers.

Kenaf:

Plant selection. Improvement and adaptability.

Crop husbandry. Cultural methods, fertilizer usage.

Processing. Technology, fibre extraction studies.

CHAD (Cont'd)

5. CENTRE DE RECHERCHES TCHADIENNES
B.P. 65, FORT LAMY

a) Organization

Controlled by ORSTOM and responsible for work in many fields. The agriculturally orientated studies are of a fundamental nature. Six research workers in this field.

d) Research Activities

Soil sciences. Soil survey in conjunction with hydrological studies in potential rice and cotton growing areas. Soil stability studies. Soil evolution under cultivation.

Main and Sub-Research Stations in
Congo Brazzaville

- a) Brazzaville - IRSC/ORSTOM
- b) Loudima - Lyon-Caen
- c) Sibiti - IRHO
- d) Loudima - Valle du Niami IFAC
- e) Madingou - IRCT (cotton)

Information on Loudima, Brazzaville, Sibiti, and Loudima
(Valle du Niami) stations is attached.

No information is available on Madingou Research Station.

CONGO (BRAZZAVILLE)

1. INSTITUT DE RECHERCHES SCIENTIFIQUES AU CONGO (IRSC/ORSTOM)
B.P. 181, BRAZZAVILLE

- a) Organization Under the administrative control of ORSTOM.
- d) Research Activities
- Pedology. Small scale soil mapping, soil evolution, under-cultivation, soil surveys.
 - Botany. Preparation of flora, studies on pasture species.
 - Phytopathology. Disease and pest (including nematode) survey and identification.

2. STATION D'AGRICULTURE, LYON-CAEN
LOUDIMA, VALLEE DU NIANI

- a) Organization The station is controlled by the Agricultural Service (i) but has a section "Oléagineux", controlled by IRHO (ii).
- d) Research Activities
- (i) Plant selection. Improvement of food crops.
 - (ii) Plant selection and breeding. Groundnut selection and breeding; castor selection.
 - Crop husbandry. Cultural practices and environmental adaptability in groundnuts and castor.

CONGO (B) Cont'd

3. STATION EXPERIMENTALE DE L'IRHO
SIBITI

- d) Research Activities Plant selection and breeding. For disease resistance in oil palm.
Crop husbandry. Cultural practices for oil palm.

4. INSTITUT FRANCAIS DE RECHERCHES FRUITIERES OUTRE MER (IFAC)
STATION DE LOUDIMA, LOUDIMA (VALLEE DU NIANI)

- a) Organization Recently established, developing station. Director and two research agronomists.
- d) Research Activities Plant selection and breeding. Selection and improvement of banana, pineapple, citrus (including grafting trials), mango and avocado.
Crop husbandry. Cultural practices and adaptability of banana, pineapple, citrus, mango and avocado.
Phytopathology. Crop protection trials in banana, pineapple, mango and avocado.
Water resources. Irrigation trials with banana and citrus.

Main and Sub-Research Stations in
Democratic Republic of Congo

- a) Yangambi - (Central Congo)
- b) Nioka - (Ituri)
- c) Bambesa - (Central Congo)
- d) Muluagu - (Kivu)
- e) Gandajika - (Kassai)
- f) Mouazi - (Kinshasha)
- g) Keybeig - (Katanga)

Only information on Organization is available in respect of the above-mentioned stations. No information on Research Activities is available.

DEMOCRATIC REPUBLIC OF THE CONGO

AGRICULTURAL RESEARCH ACTIVITIES

At present, the Congolese National Institute for Agronomic Studies (INEAC), official Congolese organization, is in charge of studies, research and experiments in the field of agriculture. It should be noted that the Congolese universities (Lovanium and Lubumbashi) also possess laboratories and agronomic research stations, but on a relatively limited and academic scale, and therefore, INEAC conducts all agricultural research and experiments in all eco-climatic and edaphic zones of the country, and possesses for this purpose, more than 20 centres for research, experiment and trial. The largest research stations are the following :-

I. YANGAMBI AGRONOMIC RESEARCH CENTRE

All fields of agricultural research are provided for at Yangambi, including Divisions of:

1. Oil Palms
2. Hevea
3. Coffee and Cocoa
4. Food Crops
5. Botanical
6. Phytopathology and agricultural entomology
7. Agricultural Chemistry
8. Forestry
9. Agrology
10. Genetics
11. Climatology
12. Plant Physiology
13. Mechanical and Rural Engineering
14. Animal Husbandry
15. Hydrobiology
16. Biometrics
17. Agricultural Economics

In 1960 expatriate researchers who were working at the Centre left the Democratic Republic of the Congo. Their departure caused the closing of several research activities. To date, only the following divisions are functioning (1969).

1. Oil Palm Division

a) Organization

One Belgian Consultant, one Congolese researcher, five Congolese assistants and 350 local labourers.

b) Research Activities

The Division is attempting to select a new and more productive variety of palm, and to supply selected seeds to the planters.

It has at its disposal 700 hectares planted with palms, and at present is planting 600 new hectares. The division also has a laboratory for physical analyses.

2. Food Crops Division

a) Organization

One Congolese researcher, four Congolese assistants and sixty Congolese workers.

b) Research Activities

The Division undertakes the distribution of improved seeds and attempts to maintain their quality, while introducing new varieties for experiment. It possesses a laboratory for the analyses of rice varieties.

3. Coffee and Cocoa Division

a) Organization

One Belgian Consultant, one Congolese researcher, four Congolese assistants, and 120 workers.

b) Research Activities

The Division deals with the improvement of commercial quality of Coffee and Cocoa, and experiments with cultivation methods. It has more than 1,600 hectares of coffee and cocoa under cultivation.

4. Hevea Division

a) Organization

One Belgian Consultant, one Congolese researcher, three Congolese assistants and 350 labourers.

b) Research Activities

The Division is attempting to select better varieties of hevea and to improve methods of cultivation. Selected materials are delivered to the planters. The Division possesses 1,800 hectares of hevea planted in several fields for selection and experimentation.

5. Climatology Division

a) Organization

Two Congolese assistants, forty observers, employees and recorders.

b) Research Activities

The Division has virtually stopped all research because of lack of qualified personnel. However, it continues to record all data given by instruments and to coordinate the data furnished by all the other Congolese stations for eventual interpretation and publication.

ALL OTHER DIVISIONS ARE ON CALL

II. NIOKA (Kibali-Ituri) AGRONOMIC RESEARCH STATION

a) Organization

Three Congolese assistants, 300 labourers and cowherds. The team of German researchers which was scheduled for this station never arrived for various reasons.

b) Research Activities

The station maintains approximately 2,000 head of cattle, a veterinary medicine laboratory, and several hectares of high altitude cultivation. At present, the efforts of the station consist in maintaining the Institute's scientific acquisitions.

III. BAMBESA (Uélé) AGRONOMIC RESEARCH STATION

This Station is temporarily closed.

IV. MULUNGU-TSRIBINDA (Kivu) AGRONOMIC RESEARCH STATION

a) Organization

One Belgian assistant, one Congolese researcher, three Congolese assistants and 180 labourers.

b) Research Activities

The Station possesses plantations of tropical high altitude crops: Tea, quinine, pyrethrum, arabica coffee, and several medicinal plants. Sections dealing with high altitude food and fodder plants is also in operation. The station attempts to select the best varieties of these cultures and also conducts experiments. It delivers seeds, plants and cuttings to Congolese farmers and overseas.

V. GANDAJIKA (Kassai Occidental) AGRONOMIC RESEARCH STATION

a) Organization

Three Belgian researchers, one Belgian assistant, one Congolese researcher, three Congolese assistants and 150 labourers.

b) Research Activities

The Station presently selects and experiments with improved varieties of cotton and food crops (maize, groundnuts and beans). A large-scale programme of cattle "métayage" has just been initiated, in order to popularize bovine farming in the region. The station distributes seeds both inside and outside the province, and also assists the rural development team working in the region.

VI. M'VUAZI (Kongo Central) AGRONOMIC RESEARCH STATION

a) Organization

Five expatriate researchers (2 Belgians, 1 French, and 2 Italians). Five Congolese and 150 labourers.

b) Research Activities

The Station presently conducts selection and experimental research in the fields of food plants, zoology, and fruit plants. It also directs a programme of bovine métayage in the neighbouring villages.

VII. KEYBERG AND KIPOPO (Katanga) RESEARCH STATIONS

a) Organization Three expatriate researchers (1 Belgian, 2 Italians), five Congolese assistants and one Belgian assistant and 150 (approximately workers.

b) Research Activities The Keyberg Station studies fodder plants for dairy livestock, and engages in the selection of dairy livestock, as well as experimenting with food plants in the dry zones of Katanga.

The Kipopo Station specializes in the study of fresh water pond fish. Recently, experiments on tobacco, maize, groundnuts, beans and potatoes have been undertaken.

Other stations serve as points for trials, experiments and experimental plantations. They function at a reduced pace and scale because of lack of qualified personnel.

Main and Sub-Research Stations in
Ethiopia

- a) Holeta Genet - IAR
- b) Bako - Ethio-German
- c) Melka Werer - IAR
- d) Jimma - IAR
- e) Alemaya - HSIU
- f) Debre Zeit - HSIU

Information on all the above-mentioned stations is attached.

Agricultural Research in Ethiopia

Organized research in Ethiopia is carried out by the Ministry of Agriculture and the Division of Research of the College of Agriculture of the H.S. 1 University. There are other semi-governmental (such as Chilalo Agricultural Development Unit - CADU) and private organizations that conduct research in some selected fields; but the main agricultural research in the country is carried out by the above-mentioned two institutes which are described here under.

Institute of Agricultural Research

The Institute was created in early 1966 with the UNDP (SF) assistance as an autonomous body under the aegis of the Ministry of Agriculture, which superseded the Department of Research of the Ministry. The IAR has four research stations in different agro-ecological regions of the country and has the following number of research officers and other technical personnel in its staff establishment:

	<u>Ethiopians</u>	<u>Expatriates</u>	<u>Total</u>
Qualified Research Officers	10	8	18
Graduates	6	6	12
Diplomated Assistants	2	-	2
Technicians	26	-	26
Total	44	14	58

1. Holeta Guenet Research Station. (IAR)

Organization:

This station is located 44 kms. from Addis Ababa. It has an experimental area of 400 hectares. The station has one research officer in charge, two field

assistants and two peace corps volunteers. The station was selected as a site for experimental work on high land crops, livestock, and bee culture. Laboratory facilities will be available in October 1969.

Research Programme:

Animal Husbandry: The study of the productive potential of indigenous cattle, the effect of different systems of management and feeding on the performance of indigenous cattle. Improving within existing types (selection breeding). Data on characteristics such as milk yield, lactation length, calving interval, age at first calving.

Nutrition: (utilization of indigenous and improved fodders under different management systems for cattle, sheep and goats for meat and milk production. Work on sheep or goats will be carried out in cooperation with the department of animal husbandry of the Ministry of Agriculture, and the Livestock and Meat Board.

Pasture and forage crops: Assessment of the potential of indigenous and imported varieties under different environmental conditions with and without fertilizers. Investigation of agronomic factors: variety, seed rate, plant distribution, sowing date, etc. on yield and quality. Establishment

of collections of indigenous material. Investigation of agronomic practices such as cultivation, fertilization, reseeding, etc. on yield and quality of pastures.

2. Bako Ethio-German Experiment Station.

Organization:

Bako Research Station is situated in the lower Western plateau region at a distance of 260 kms. from Addis Ababa. The area of the experimental farm covers 800 hectares of which, so far, 350 hectares have been cleared. This station has one research-officer-in charge and an assistant technical manager, a technical farm manager, an assistant farm manager, an assistant technical officer and two laboratory technicians to take care of the existing laboratory facilities. Bako is in a different agro-ecological zone and deals mainly with the problems of rain-fed agriculture.

Research Programme:

Plant Selection cereal selection of locally adaptable, improved imported varieties of wheat maize, sorghum, millet, teff and dagussa.

Crop husbandry: Assessment of the potential of the indigenous and imported varieties under different environmental conditions, rotations and the introduction

of mixed farming with and without fertilizers on the above crops. Investigation of agronomic factors, variety, seed rate, spacing, sowing date, etc. on yields and quality.

Entomology: Control of pests; study of methods of prevention of spoilage of stored produce; study the occurrence and biology of insects of economic importance and evaluation of the losses caused by them; Development and economic evaluation of control systems based on modern concepts, prevention of the occurrence of disease not at present endemic in Ethiopia; studies on the biology, and control of armyworm in cooperation with international organizations working on the above mentioned cereals.

Plant selection: Varietal trials of rape, linseed, sunflower, peanuts and soy beans. Selection of indigenous, improved and imported varieties.

Agronomy: Agronomic studies under rainfall and irrigation of oil seeds and industrial crops. Establishment of collections of indigenous material.

Berberé: (Paprica) varietal trial, on berbere for selection, and distribution to farmers. Trials with and without fertilizers.

3. Melka Werer Research Station (IAR)

Organization:

This station is situated on the right bank of the Awash River and is about 280 kms. from Addis Ababa. The site covers a gross area of 1350 hectares centrally placed in an irrigable plain. The station is staffed by one officer-in-charge, one farm manager, two assistant research officers, three technical assistant mechanics, two agricultural machinery officers, one assistant administrative officer, and one dresser. A research laboratory is being set up at present.

Research Programme:

Plant selection and breeding: Selection and breeding of maize varieties, production and selection - of hybrid synthetic maize varieties, for yields from amongst varieties of satisfactory performance in the country of origin and to cover a range of maturation periods. Varietal selection of sorghum for relationship between straw and grain size and their tolerance to draught. Selection and improvement of varieties suitable for the range of conditions under which cotton is grown. Selection of groundnuts, beans and other crops varieties.

Agronomy: factors affecting yield and quality of irrigated and rain grow cotton.

Crop husbandry: Studies on sowing date, optimum spacing, rate of irrigation (light heavy).

Entomology: Assessment of the major diseases of economic importance and studies of their host/parasite relations, investigation of control measures for these diseases and economic evaluation of such measures. Study of methods to prevent spoilage of stored produce. Economics and control of cotton stainer and other variety of insects, such as, American (Heliothis) and Red (Diaparopsis) boll worm, jassid (Empoasca) etc.

4. Jimma Research Station (IRA)

Organization:

This station is located in Melko near Jimma and about 300 kms. from Addis Ababa. The station is staffed by one research-officer-in-charge, one technical officer, one research assistant, one field assistant, and three machinery assistants. Laboratory facilities are not yet available. The area of the station covers sixty hectares of which twenty has been cleared for cultivation of coffee and tea.

Research Programme:

Plant selection and Breeding: Establishment of a museum and foundation stock for breeding work. The selection will contain all agrotypes of arabica coffee cultivated in Ethiopia and in other coffee growing areas of the world. Observation will be made on their susceptibility and resistance of disease, growth, vigour, yield and quality.

Entomology: Bionomics and control of pests. Studies on the cause of Die-Back affecting coffee in Ethiopia, the coffee fruit-fly, (*C.rosa*) rust (*Hemileia vastatrix*) root rot (*Armillaria mellea*) research into control of stored products pests.

Plant Physiology: Physiological studies on the growth and nutrient uptake, fertilizing pruning, soil amendment of coffee and tea.

Processing: Studies of the application of well established sound procedures for the improvement of the quality of both wet and dry-processed coffee.

Research Branch of the HSIU

Agricultural experiment stations (AES): As was mentioned above, the college of agriculture conducts research in agriculture including animal husbandry. While the various departments of the college carry out research, mainly for teaching purposes, in their respective fields on the campus, the main research activities of the college are undertaken by the AES situated at Debre Zeit. A modest beginning is also underway to establish two experiment stations at Jijiga and Gede both in Harar Province.

1. Alemaya

Organization:

This research station is an integral part of the college of agriculture in Harar Province. Its staff consists of one director of research, four research

assistants in different fields and about twenty-two teaching and research officers. The station covers about 450 hectares and has a well equipped laboratory.

Research Programme:

Animal husbandry: Feeding trials on growing and laying chickens especially from locally produced oil meal Nigor seed (*Guisotia abyssinica*) as a protein source. Dry lot beef fattening, to find and implement efficient and economical methods of feeding beef cattle in dry lot conditions. To study locally available feedstuff for swine production.

Crop husbandry: The structure classification, culture and use, variety testing of the major field crops grown in Ethiopia - wheat, teff, barley and oil crops, improvement through selection and breeding of the important vegetable crops; tomato, pepper, potato, onion for quality and higher yields.

Sylviculture: Trial of species of timber trees in the Harar province.

Entomology: Study of wheat rusts in Afanjo area, study of the important diseases of sorghum, corn and chemical control of other vegetable diseases. Control of stored grain insects on small farms. Responses to fertilizer application to the above-mentioned crops and vegetables.

Soil Science: Empire-wide soil survey and classification. Effect of various levels of fertilizer types on different crops - varieties.

2. Debre Zeit Experimental Station

Organization:

The Debre Zeit station is controlled by a Director of Research, a farm manager and five resident research officers. This station is situated about 45 kms. from Addis Ababa and covers an area of approximately 120 hectares. The station has a well-equipped research laboratory.

Research Programme:

Plant selection and Breeding: Classification and evaluation of some indigenous barley and wheat in Ethiopia. Variety trials of chickpeas, oilseeds crops (Safflower, flax and Nug) pepper (capsicum). Introduction and adaptation study of Annatto (Bixa orellana) and other selected spice crops at different locations in Ethiopia. Productivity, selection of diverse teff genotypes over a broad range of environment and management systems. The selected seeds are being milled for the purpose of chemical analysis. Special emphasis being placed on protein quantity and quality.

Animal husbandry: Poultry selection and improvement, for efficiency and adaptability,

stock management, selection of breed, meat production, rates of fattening under different feeding trials.

Entomology: Chemical control of vegetable diseases, studies on root rot, enslet wilt, plant disease Herbarium, losses due to leaf blotch of wheat. Chemical control of weeds- Control of Weeds of potato shallot and carrot- Control of stored grain insects on small surrounding farms.

Sylviculture: Improvement of exotic tree species by selection and propagation by cutting and seed production.

Soil Science: Soil analysis fertilizer trials on different vegetables and crops on a well drained soil, soil fertility, maintenance and improvement.

Research In Wheat

Research in wheat at present is carried out by IAR, the research branch of the college of agriculture, Ministry of Community Development and CADU in six different locations throughout the country: (1) Assela, (2) Alemaya, (3) Admara, (4) Holeta, (5) Bako and (6) Awassa.

No breeding is undertaken, but fifty promising wheat varieties have been introduced into the country in the past, and were tried under different ecological zones. The varieties were brought mainly from Mexico, USDA and PAO wheat research centres in Africa and elsewhere.

Selection continued every year and the best from among the different varieties were tested each time. After the third year (referred to as micro-trials) and during the third and fifth year, national trials were made. Currently research work is being focussed on testing the selected varieties with the help of extension personnel.

The next stage will be to approach and convince farmers of the benefits that could be derived from using the improved wheat varieties by organizing demonstrations in their own farms. But simultaneously seed multiplication centres have to be organized which will be able to distribute improved seeds to interested farmers. This function is the responsibility of the department of plant production and protection of the Ministry of Agriculture which is at present under equipped, in terms of personnel and funds to carry-out this function. Thus, the dissemination of research findings pertaining to wheat and all other improved seeds will have no practical application unless seed multiplication centres are developed to make available improved seed to the cultivators. This concern is expressed by research officers as well as by some officials of the Ministry of Agriculture.

Crop Improvement a national crop improvement committee with four sub-committees for (1) oil seeds, (2) cereals - wheat, barley and (teff) (3) cereals - maize, sorghum and millet, (4) grain legumes has been created to co-ordinate all research activities in the country. Any crop for release has to pass through and receive approval by each of the respective sub-committees-mentioned above.

Main and Sub-Research Stations in Kenya

- a) Nairobi
- b) Kitale
- c) Kisii - Nyanza
- d) Kakemega - Western
- e) Nakuru - Rift Valley Region (Animal Husbandry)
- f) Eldoret - Rift Valley Region (Wheat)
- g) Marindas - Molo Rift Valley Region
- h) Nyadurus - Ol Joro Orok Central Region
- i) Embu - Eastern Region
- j) Katumani - Eastern Region
- k) Kikambala - Coast
- l) Thika - Horticulture
- m) Molo - Horticulture
- n) Njoro - Wheat Research
- o) Ruiru - Jacaranda
- p) Kibos - Cotton
- q) Molo - Pyrethrum
- r) Ol Joro Orok - ''
- s) Thika - Sisal
- t) Kisumu - Sugar Cane
- u) Kano-Ahero - Nyanza
- v) Nakuru - Engineering

Information on all the above-mentioned stations is attached, except the following on which no information is available:

- a) Mwea-Kebera
- b) Marigot
- c) Msabaha
- d) Busia
- e) Perkeira
- f) Kericho-Tea Research Institute

1. THE NATIONAL AGRICULTURAL RESEARCH LABORATORIES
P.O. BOX 30028, NAIROBI

a) Organization

Central laboratories of the Research Division. Provides technical services to field and research divisions and to the general public. Senior research officer in charge and 14 research officers.

d) Research Activities

Soil Sciences. Soil analysis, classification, survey and mapping. Fertilizer usage, methods of application, crop resistance on different soil types etc. Use of lime, soil nutrient studies in relation to soil moistures, soil fertility studies in the field and using pot culture and lysimeters.

Phytopathology. i. General pathology. Research into incidence and control of diseases of the principal economic crops. Specifically sugar cane smut; blight and bacterial wilt of potatoes; parallel streak (zebra disease) of sisal; Alternaria of onion etc. The use of seed dressings and soil fumigations.

ii. Bacteriology of legumes. Investigation of the importance of root nodule bacteria (*Thizobium* sp.) in nitrogen fixation. Production of innoculum of *Rhizobium* strains.

iii. Seed testing. Testing samples of seed of commercial crops for purity, percentage germination; presence of pathogens etc.; investigation of seed storage problems.

iv. Potato disease control. Investigation and control of blight and bacterial wilt, particularly by the development of resistant varieties.

Entomology. Bionomics and control of pests of economic importance of coffee, maize, (stem borer), barley, beans and other legumes, cotton and citrus. Investigations into biological control of coffee and citrus pests.

2. NATIONAL AGRICULTURAL RESEARCH STATION
P.O. BOX 450, KITALE

a) Organization

Principal groundnut research station of the Department of Agriculture, but also accommodates the Maize Improvement Unit and the general research work, formerly carried out on the Kitale Experimental Farm.

d) Research Activities

Agrostology. Introduction and breeding of pasture grass varieties, establishment of leys and permanent pastures, using grasses and grass/legume mixtures. Duration and composition of leys in rotation, the effect of stock on the balance of species in the lay, dry season leys; determination of macro and micro nutrient requirements of grass and forage species, fertilizer usage. Production of hay and silage. Trials on seed production of indigenous and introduced species.

Animal husbandry. Stocking-rate effect on milk yields and live weight gain, using twin technique; effect of stock on continuous grazing and pasture rotation, palatability trials on various pasture and ley mixtures. Digestibility investigations, total nutrient value and energy value of foods.

Crop husbandry. Rotation trials, selection and use of fertilizers on maize and sunflower.

Plant breeding and genetics. Production of hybrid and synthetic maize varieties, incorporating disease resistance, high yield and acceptability.

KENYA (Cont'd)

3. NYANZA AGRICULTURAL RESEARCH STATION
KISII

- a) Organization Regional general research station. One research officer in charge.
- d) Research Activities Crop husbandry. Research into all aspects of the agronomy of local important food and cash crops. Particularly general classification systems, rotations and the introduction of mixed farming. Agronomic trials on pyrethrum.

4. WESTERN AGRICULTURAL RESEARCH STATION
KAKEMEGA

- a) Organization Regional general research station. Two research officers.
- d) Research Activities Crop husbandry. Cultural practices in maize, cassava, beans and other legumes, including groundnuts; tea, coffee, bananas and sunflower.
- Plant breeding and selection. Breeding trials with maize and selection of cassava.
- Animal husbandry. Study of livestock management systems and grazing practices, suitable to the locality.

5. ANIMAL HUSBANDRY RESEARCH SECTION
NAKURU, RIFT VALLEY REGION

- a) Organization Section established to co-ordinate animal husbandry research, particularly milk production at the several research stations of the Rift Valley Region. One regional research officer in charge.

KENYA (Cont'd)

- d) Research Activities Animal husbandry (dairying). Study of milk production management systems.

6. ELDORET AGRICULTURAL RESEARCH STATION
RIFT VALLEY REGION

- a) Organization Regional general research station specialising in soil fertility improvement. One research officer in charge.

- d) Research Activities Soil Sciences. To study methods of improving the fertility of the local badly depleted soils, particularly through the use of green manure crops, cover crops, and the use of pasture leys in the rotation.

Crop husbandry. Selection of suitable varieties and cultural practices of wheat, maize, barley, potatoes and pasture grasses.

Animal husbandry. Studies on the management and pigs, poultry, sheep and cattle.

7. MARINDAS AGRICULTURAL RESEARCH STATION
MOLO, RIFT VALLEY REGION

- a) Organization High altitude research station. Two research officers.

- d) Research Activities Agrostology. Selection of suitable grass and legumes for permanent pasture and leys. Fertilizer trials on pastures and leys, seeding rates, soil fertility maintenance in different rotational systems, utilizing leys.

KENYA (Cont'd)

8. NYADURUA AGRICULTURAL RESEARCH STATION
OL-JORO-GROK, CENTRAL REGION

a) Organization

Animal husbandry research station. One research worker.

d) Research Activities

Animal husbandry. Pigs: Feeding trials using locally produced feeding stuffs. Sheep: Breeding trials to increase lambing production, particularly fat lambs. Heat stress studies. Shearing trials, nutrient trials, particularly rotational grazing. Cattle: Evaluation of management techniques in milk production, grazing trials and stocking-rates.

Crop husbandry. Investigations of drainage problems in vleis, under-sowing of cereal crops, seed multiplication, spraying trials for plant disease control, variety trials (the majority of these general trials are conducted on behalf of one or other of the major research stations).

9. EMBU AGRICULTURAL RESEARCH STATION
EMBU, EASTERN REGION

a) Organization

Research station for the medium elevation grassland zone.

d) Research Activities

Plant selection. Selection of locally adaptable varieties of coffee, maize, French bean, bananas, onions, sweet potatoes, and cassava.

Crop husbandry. Cultural practices and fertilizer trials on the crops mentioned above and on pastures. Soil fertility maintenance through farming systems incorporating grass ley in the rotation.

Animal husbandry. Pig management and nutrient, using local food stuffs.

KENYA (Cont'd)

10. KATUMANI AGRICULTURAL RESEARCH STATION
KATUMANI, EASTERN REGION

- a) Organization Research station of the semi-arid zone. Three research workers.
- d) Research Activities
- Crop husbandry. Studies on cultural practices, time of planting, spacing, inter-cropping, etc. Crop water relations and nutrient requirements.
- Plant breeding. Selection and breeding of maize varieties, adapted to local environment and giving consistent yields. Development of short-season wheat maize varieties, resistant to rust and blight.
- Agrostology. Management of permanent grassland and bush control selection and evaluation of suitable species for grass leys.

11. COAST AGRICULTURAL RESEARCH STATION
KIKAMBALA

- a) Organization General regional research station, some emphasis on perennial tree crops. One research officer in charge.
- d) Research Activities
- Plant selection. Evaluation of suitable tree crops for the coastal zone, both indigenous and exotic.
- Crop husbandry. Locally produced food crops and cotton, in particular increasing production through the use of fertilizers.
- Special research. Research on farming systems, particularly introduction of dairy herds.

KENYA (Cont'd)

12. HORTICULTURAL RESEARCH STATION
P.O. BOX 220, THIKA

a) Organization

Headquarters of the Horticultural Section of the Ministry of Agriculture. Principal emphasis on pineapples. Two research officers.

d) Research Activities

Plant selection. Varietal trials of pineapple, vegetable and fruit varieties and market garden crops.

Crop husbandry. Cultural practices in pineapple including planting rate, fertilizer usage and irrigation.

Phytopathology. Nematode control, by soil fumigation, pineapple, mealy bug control, pineapple disease control.

13. HORTICULTURAL RESEARCH STATION
MOLO

a) Organization

General horticultural research on tree fruits, soft fruits and vegetables. One research officer.

d) Research Activities

Plant selection. Varietal selection of plum, apple, pear, peach, strawberries and other soft fruits; asparagus, onion and other vegetables.

Crop husbandry. Cultural practices and fertilizer trials on plums, asparagus and other vegetables.

Phytopathology. Control measures for apple scab, "bitter pit" of apples, and the use of pea seed dressings.

KENYA (Cont'd)

14. PLANT BREEDING STATION
NJORO

a) Organization

Headquarters of the plant breeding section. Senior research officer in charge and six research workers.

d) Research Activities

Plant breeding and selection. High yielding rust-resistant wheat; production of improved synthetic and hybrid maize varieties, production of improved varieties of barley and oats.
N.B. The maize breeding field program is carried out mainly at the Kitani and Katumani research stations.

15. COFFEE RESEARCH STATION, JACARANDA,
P.O. BOX 4, RUIRU

a) Organization

Principal coffee research station. Senior research officer in charge and ten research workers.

d) Research Activities

Coffee:
Crop husbandry. Mulching trials, interaction of mulch and fertilizers. Effect of mulching on "stem pitting", investigation of the effect of various cultural practices and weed control on soil structure and yield.

Phytopathology. Leaf rust investigations and control, seedling disease and investigation, control of coffee borer disease, biology and control of nematodes.

Entomology. Study of the bionomics and control of leaf minors, scale insects, mealy bug, stem borers and mites.

KENYA (Cont'd)

Plant physiology. Study on plant water relations, physiological disorders ("hot and cold" and "crinkle leaf") carbohydrates, metabolism, growth recording.

16. COTTON RESEARCH STATION
KIBOS

a) Organization

Principal cotton research station of the territory, two research workers.

d) Research Activities

Plant selection and breeding. Testing and selection of improved varieties of cotton, adapted to the local environment. Breeding for resistance to bacterial blight.

Crop husbandry. Studies on sowing date, optimum spacing, ridging practices, use of fertilizers.

Entomology. Bionomics and control of cotton stainer, bollworm, jassids and other pests.

Phytopathology. Control of bacterial blight, using seed dressings. Investigation of Verticillium wilt and leaf diseases.

17. PYRETHRUM RESEARCH STATION
P.O. BOX 100, MOLO

a) Organization

Joint station of the Department of Agriculture and the Pyrethrum Board. Three research officers.

d) Research Activities

Plant selection and breeding. Production and multiplication of high yielding varieties adapted to various growing districts.

KENYA (Cont'd)

Crop husbandry. Rotation trials, cultural practices, (spacing and ridging), use of fertilizers and irrigation, use of herbicides for weed control.

Processing. Drying and storage trials.

Entomology. Investigation and control of thrips and red spider mite.

Phytopathology. Investigation and control of principal diseases including Ramularia disease.

18. PYRETHRUM RESEARCH STATION
OL-JORO-OROK

a) Organization

Sub-station of the above. One research assistant.

d) Research Activities

Plant selection and breeding. Production and multiplication of high yielding varieties adapted to various growing districts.

Crop husbandry. Rotation trials, cultural practices, (spacing and ridging), use of fertilizers and irrigation, use of herbicides for weed control.

Processing. Drying and storage trials.

Entomology. Investigation and control of thrips and red spider mite.

Phytopathology. Investigation and control of principal diseases including Ramularia disease.

19. SISAL RESEARCH STATION
THIKA

a) Organization

Joint station of the Department of Agriculture and the Sisal Board. One research officer.

KENYA (Cont'd)

- a) Research Activities Plant selection and breeding. Breeding of hybrids of high yield.
- Crop husbandry. Nursery management and irrigation, cultural practices (inter-planting, spacing and cutting), herbicide trials, use of inorganic fertilizers and mulches.

20. SUGAR CANE RESEARCH UNIT
KISUMU

- a) Organization One sugar cane research officer in charge of station.

- d) Research Activities Plant selection. Selection of locally adapted sugar cane varieties resistant to diseases, especially smut.
- Crop husbandry. Trials on spacing, planting depth, ridging, use of herbicides, use of fertilizers, irrigation practices.
- Phytopathology. Control of mosaic disease through the use of resistant varieties, control of ratoon stunting through heat treatment. Control of smut, through the use of resistant material and heat treatment.

21. KANO IRRIGATION RESEARCH STATION
AHERO, NIANZA REGION

- a) Organization Principal irrigation and meteorological station. One research officer in charge.

KENYA (Cont'd)

d) Research Activities

Water resources. Studies on the economics of irrigation of sugar cane and cotton. The effect of restricted irrigation on sugar cane. Water requirements of paddy rice.

Crop husbandry. Varietal response trials on irrigated sugar cane and cotton.

22. DEPARTMENT OF AGRICULTURE, AGRICULTURAL ENGINEERING RESEARCH STATION
P.O. BOX 470, NAKURU

a) Organization

Specialized research institute of the Department of Agriculture, concerned with research into mechanisation problems of production and processing. One research officer in charge.

d) Research Activities

Agricultural Engineering. Improvement and local adaptation of farm implements and machinery.

Main and Sub-Research Stations under East African Common
Services Organization

- a) Kikuyu - Kenya
- b) Muguga - Kenya
- c) Torero - Uganda
- d) Kampala - Uganda
- e) Kericho - Uganda
- f) Arusha - Tanzania

Information on all the above-mentioned
stations is attached.

EAST AFRICAN COMMON SERVICES ORGANIZATION
AND OTHER INTER-TERRITORIAL RESEARCH ORGANIZATIONS

1. THE EAST AFRICAN AGRICULTURE AND FORESTRY RESEARCH ORGANIZATION
P.O. BOX 21, KIKUYU, KENYA

a) Organization

The station is divided into eleven research divisions under the control of a Director and a Deputy-director. About 20 research workers are normally in the establishment.

d) Research Activities

Water resources. Conservation and utilization, soil permeability, effects of land use systems on water supply, effect of shade trees on plantation crops, crop water requirements.

Soil sciences. Release of nitrogen from organic matter - building up of organic matter.

Plant breeding. Mass selection and development of hybrids (tetraploids) in sorghum. Selection and breeding for resistance to Striga, leaf disease and midge.

Phytopathology. Selection and breeding of cassava varieties resistant to mosaic and maize varieties resistant to rust. Study of plant virus diseases in general. Study of plant parasitic nematodes.

Plant Quarantine. Charge of the East African Plant Quarantine Station.

Animal husbandry. Stock management, factors controlling weight of carcass, nutrition in general, effects of water stress, dry season fodders through rumen analysis.

Meat production research. Rates of fattening under various feeding regimes, carcass composition of indigenous, exotic and game animals.

EAST AFRICAN AGR. (Cont'd)

Sylviculture. Improvement of exotic tree species by selection, and propagation by cutting and seed.

Entomology and pathology. Borer beetles of forest trees, taxonomic reference collections.

Special wildlife research. Increasing natural fodder by improving permeability. Feeding habits of game and domestic animals, browsing and grazing species. Reduction of disease transmission from game to domestic animals by improved range management.

2. EAST AFRICAN VETERINARY RESEARCH ORGANIZATION
MUGUGA, P.O. BOX 32, KIKUYU, KENYA

a) Organization

Director and 10 research workers, organized on a research project basis.

d) Research Activities

Veterinary sciences. Protozoal and Arthropod borne diseases. East-Coast fever, calf mortality, susceptibility to ticks and tick infectivity, chemotherapy diseases. Tissue culture, virus culture, Rinderpest serology and attenuated strains. Bacterial diseases. Contagious bovine pleuropneumonia, urinology and serum diagnosis, haemorrhagic septicaemia.

Animal physiology. Biochemistry and metabolism.

Animal nutrition.

Animal genetics and breeding.

EAST AFRICAN AGR. (Cont'd)

4. FACULTY OF AGRICULTURE, MAKERERE COLLEGE
UNIVERSITY OF EAST AFRICA,
P.O. BOX 262, KAMPALA, UGANDA

a) Organization

Inter-territorial University. Faculty of Agriculture organized into departments of Agriculture, Agricultural Biology, Agricultural Chemistry. Professor and 12 faculty members.

d) Research Activities

i. Department of Agriculture:

Animal husbandry. Breeding of dairy cattle, genetics study of the development of crosses and back-crosses of Bos taurus and B. indicus for milk production. The effects of continuous selection for egg production on poultry with high and low levels of nutrition.

Animal nutrition. Nutritional requirements of calves in relation to local feeding stuffs and economics of calf rearing; survey of the production potential under local conditions of selected local and introduced grasses.

Agricultural engineering. Investigation of the use of small power implements in peasant agricultural the efficiency of operation and energy relations in the use of hand tools

Crop husbandry. Investigation and improvement of local cultural practices and the use of fertilizers and manures; particular emphasis on increase of yield by selection and improved cultural practices in sweet potatoes. Investigation of rotations, including planted fallows, for soil fertility maintenance.

Agricultural economics. Agricultural development policies; the economics of peasant agriculture; economics of cotton production; economic analysis of resettlement schemes; economics of land use.

ii. Department of Agricultural Biology:

Plant physiology. The effects of light on plant growth; the effects of environment and artificial treatments on the germination of weeds seeds; rooting of tomato cuttings.

Botanical sciences. Maintenance of economic plant collections; biology of savannah; anatomical identification of grasses. Detailed study of grass Setaria sphacelata in relation to its adaptability to accumulate acids and ammonium salts.

Phytopathology. The ecology of soil nematodes and pathogenic nematodes of sugar cane. Study of legume viruses.

Agricultural meteorology. The maintenance of meteorological data for the University farm.

Soil sciences. Nitrification in relation to base exchange capacity; mineralisation of soil organic phosphorus and uptake of inorganic phosphate; soil moisture in relation to rainfall.

iii. Department of Zoology:

The agricultural aspects of the program are as follows:

The effect of phosphate and fatty acids on soil nematodes; the influence of minerals on organic decomposition in soils; parasitology of wild animals in relation to that of domestic animals, genetics of the desert locust; electrophysiology of desert locust.

EAST AFRICAN AGR. (Cont'd)

4. TEA RESEARCH INSTITUTE OF EAST AFRICA
P.O. BOX 91, KERICHO

a) Organization

Station sponsored and maintained by the commodity interests on an inter-territorial basis. Director and two research officers.

d) Research Activities

Crop husbandry. Nursery practices, seedlings and vegetative propagation; use and control of shade; fertilizer usage; pruning practices; plucking (yields).

Soil sciences. Soil analysis and survey; mineral nutrition of the tea bush; soil fertility, maintenance and improvement.

Botanical sciences. Tea breeding and vegetative propagation in the production of high yielding, good recording teas.

Phytopathology. Bionomics and control of tea diseases and pests.

Processing. Tea technology. Studies on natural and artificial withering, fermentation, and fining.

5. EAST AFRICAN TRYPANOSOMIASIS RESEARCH ORGANIZATION
TORORO, UGANDA

a) Organization

Although administered by the Medical Research Council undertakes research on animal trypanosomiasis, at present, through lack of medical staff, the principal function of the Organization. Five research workers.

d) Research Activities

Veterinary sciences.

Protozoology: Studies on infectivity.

Immunology: Antibody studies.

Ecology: Studies of the ecology of Glossina spp. associated with human and animal trypanosomiasis.

Chemotherapy: Human and animal trypanosomiasis treatment.

Entomology: Field studies on feeding patterns, laboratory studies on life cycles of Glossina spp.

Biochemistry: Studies of blood and trypanosome proteins.

Microbiology: Maintenance of trypanosome "bank".

6. TROPICAL PESTICIDES RESEARCH INSTITUTE
P.O. BOX 3024, ARUSHA, TANZANIA

- a) Organization Station maintained jointly by the United Kingdom and East African Governments. Director and 15 research staff.

- d) Research Activities
 - Phytopathology and entomology.
 - Insecticides: Laboratory screening and field testing of insecticides for tsetse control, mosquito control, control of biting flies and crop pest control; use of chemo-sterilants.
 - Herbicides: Control of wood weeds (brush) herbaceous weed control; use of selected herbicides in specific crops.
 - Fungicides: Screening of fungicides for coffee rust, control and associate research of mechanisms of infection.
 - Molluscides: Control of the snail vectors of Bilharzia and liver fluke; control of snails as pests of rice.
 - Biological control: Studies on the biological control of economic pests by indigenous and introduced parasites.
 - Physics: Investigation of droplet size and dispersion of pesticides, leading to adoption and modification of applied machinery.

Main and Sub-Research Stations in Malawi

- a) Chitedze - Lilongwe
- b) Bvumbwe - Limbe
- c) Makanga - Chirono
- d) Mimosa Mlanye
- e) Makawa - Northern region
- f) Tuchila - Palambe
- g) Nyuli - Sub-station (tea research)
- h) Brumbwe Tung - (Agronomy)

Information on Chitedze, Brumbwe, Makanga and Mimosa station is attached. No information is available on the following Research Stations:-

- a) Makawa
- b) Tuchila
- c) Nyuli
- d) Brumbwe Tung

MALAWI

1. CHITEDZE AGRICULTURAL RESEARCH STATION
P.O. BOX 158, LILONGWE

a) Organization Principal agricultural research station. Officer in charge and six research workers, in addition to a five-man research unit of the ARC of Central Africa on grain legume pathology.

d) Research Activities

Plant selection and breeding. Breeding and selection of maize, groundnuts and other legumes, such as pigeon pea (ARC) and cassava. Tobacco selection.

Crop husbandry. Cultural practices, fertilizer trials, crop rotation trials, farming systems. Tobacco agronomy.

Phytopathology. Diseases of groundnuts and other legumes, particularly "rosette virus" of groundnuts (ARC), studies on resistance and vector studies.

Animal nutrition. Pasture composition and management.

Soil sciences. Studies on soil fertility maintenance and soil moisture relations.

2. BVUMBWE TUNG AND AGRICULTURAL EXPERIMENTAL STATION
P.O. BOX 748, LIMBE

a) Organization High elevation research station. Three research workers.

d) Research Activities

Agronomy. Cultural practices and fertilizer trials on coffee, deciduous fruits, tung, maize and pastures.

Soil sciences. Soil analyses for land use. Soil fertility maintenance, rotational trials.

Phytopathology. Studies of disease and pests of coffee and tung.

MALAWI (Cont'd)

3. MAKANGA EXPERIMENTAL STATION
P.O. CHIRONO

- a) Organization Dry zone research station, two research officers, one from ECOC forming a unit of the Cotton Pest Research Scheme of Rhodesia and Nyasaland.
- d) Research Activities Plant selection and breeding. Cotton breeding for resistance to bacterial blight, varietal selection.
Plant physiology. Plant water relationships, irrigation trials.
Crop husbandry. Trials conducted on behalf of Chitdze Agricultural Research Station.

5. TEA ASSOCIATION OF NYASALAND, RESEARCH STATION
NIMOSA, P.O. BOX 51, MLANJE

- a) Organization Autonomous station controlled by the Tea Association. Director and two research officers.
- d) Research Activities Crop husbandry. Planting, pruning, use of shade, water relations of tea. Studies on vegetative propagation.
Plant selection and breeding. Studies on pollination to devise practical methods of hybridization.
Phytopathology. Study and control of major diseases and pests of economic importance of tea.

N.B. There are in addition four further regional experimental stations which lack graduate research staff at present, situated at LUCHENZA, DAWO, SALIMA and MZIMBA.

RWANDA

1. Organizations responsible for the administration and financing of agricultural research.

Agricultural research in Rwanda is conducted by the Institut des Sciences Agronomiques du Rwanda (I.S.A.R.), an offshoot of I.N.E.A.C., of the former Belgian Congo. By an ordinance of 1962, all the stations and experimental centres of Rwanda were regrouped into the single organization of I.S.A.R., and by a convention between Rwanda and Belgium in 1965, the direction of the Institute was entrusted to the Belgians who support the totality of the operational costs and personnel charges of the Institute.

The Institute does not participate in the elaboration of the scientific policy of the Government, but it comes under the Ministry of Agriculture and Animal Husbandry, which exercises a supervisory role. The financing of the Institute however has been subsidised entirely by the Belgian Government since 1965 and the Budget has risen from 5.5 m. Belgian Francs in 1964 to 13.5 million francs in 1966.

A mixed Committee of ten members (8 Rwandese and 2 Belgians) who are nominated by the President of the Republic, is responsible for the administrative and financial overview of the Institute. This Committee controls the programmes and Budget of the Institute, but a permanent Bureau, emanating from the mixed Committee, meets more often, to approve the routine affairs of the Institute. The Institute is directed by a Belgian Director General assisted by a Rwandese Deputy.

2. National level planning and co-ordination of research

As indicated, the formulation of the research programme is undertaken by the Committee of ten nominated by the President, but the competent authorities can suggest and require the Institute to undertake research of national importance. In practice, the Institute's programme of research is directed towards raising the standard of agriculture in the country, which is one of the most densely peopled in Africa, and with severe limits on the area of cultivable land. A 'paysannats' section in the Research Division works in close collaboration with the 'paysannats' division of the Ministry of Agriculture and Economic Affairs.

3. Relation of research to education and extension

The research institute, especially the division of industrial crops, works closely with OCIRU (Office des Cafés Indigènes du Rwanda) on a vast programme of fertilizer trials on coffee, aimed at determining the economic response of coffee to fertilizers for the different ecological zones.

The second phase would be to lay down factorial trials in the zones which show a positive response. Selected plants from the Research Institute are distributed by agents of OCIRU. Agricultural education is give at the school at Butare where A2 agronomists are turned out. The Veterinary Section of the school also turns out A2 Veterinary Assistants, who receive the same kind of training as the agronomist.

PERSONNEL

There are 10 Belgian researchers and 28 Technicians of Belgian and Rwandese origin. The main research station is at RUEONA; there is an experimental station at KARAMA (for cotton, tobacco, fibres and livestock), two experimental centres at RWERERE and SONGA, concerned with problems of high altitude crops (wheat, barley, tea, pyrethrum), an arboretum at Butare and several laboratories - pedological, agrostology, sylviculture and cartography.

The Director General is a Belgian agronomist while his Deputy is a Rwandese.

The Budget for 1964	was	5.5	million	Belgian	francs
"	"	"	1965	"	11.0
"	"	"	1966	"	13.5

SOMALIA

1. Organizations responsible for the administration and financing of Agricultural Research.

At the national level, agricultural research is centrally organized under the auspices of the Ministry of Agriculture. A national research station, financed by USAID, and to which the Government of Somalia makes an annual contribution for operational costs, was started at Agfoi, about 25 km from Mogadiscio in 1965. USAID sub-contracted to the University of Wyoming, whose scientists are conducting experiments at the centre, in full collaboration with Somali technical counterparts of the Ministry of Agriculture. There are at present six United States Scientists in the fields of Soils, Entomology, Horticulture, Agronomy, Engineering, with a Director of Research who is a Plant Pathologist. The Somali counterparts include 1 soil Chemist, 3 Agronomists, 1 Entomologist, 1 Horticulturist, with another in training.

2. National level planning and co-ordination of research

The organizational phase of research is still in the initial stages, but the aim is to establish a co-ordinated department of research, extension and training under the auspices of the Ministry of Agriculture. As graduate staff become available, it is hoped to establish various sub-stations in the agro-ecological regions of the country. The Director of Research will work closely with the Director of Extension who will ensure the dissemination of the research results. There is as yet no formal Research Council, but research advisory type meetings are being developed. At present, the research programme is laid down by the University of Wyoming personnel, but the aim is to foster more programme type consultation and involvement of the Ministry, as the organizations crystallizes.

3. Relation of research to education and extension

There are no technical or applied schools of agriculture in Somalia at present, but plans are under way to build these to provide the middle level personnel required. A concerted effort is being made to tie education, research and training within the Ministry and this augurs well for the future of research in Somalia.

Main and Sub-Research Stations in Sudan

- a) Wad Medani
- b) Central Rainlands Research Station Totzi Abu Naama
- c) Yambic - Equatorial Province
- d) Hudeiba - Northern Province
- e) Shambat - Khartoum Province (Cotton)
- f) Shambat - Faculty of Agriculture
- g) Shambat - Faculty of Veterinary Science
- h) Khashm El Girba
- i) Gineid - (Sugar Cane)
- j) Mastoug - Managil extension of the Gezira Scheme
- k) Sennar
- l) Kadugli - Kordofan Province

Information on Wad Medani, Central Rainlands Research Stations (Abu Naama) Hudeiba, Shambat (Khartoum Province) Shambat (Khartoum Faculty of Agriculture) Shambat (Faculty of Veterinary Science) Research Stations is attached.

No information is available on the following stations:-

- a) Hambic
- b) Khashm El Girba
- c) Gineid
- d) Mastoug
- e) Sennar
- f) Kadugli

SUDAN

1. MINISTRY OF AGRICULTURE, REGIONAL RESEARCH STATION
GEZIRA RESEARCH STATION, WAD MEDANI

a) Organization

The principal research station of the Ministry Director and approximately thirty five research staff (three supplied by E.C.G.C.) in five sections. In addition to the H.Q. of the Agricultural Research Corporation for the whole country.

b) Research Activities

Crop husbandry. Cultural practices, rotational trials, usage and response to fertilizers, alternative crops, crop physiology and water relations.

Phytopathology. Herbarium; diseases of cotton and other rotational crops; special attention to cotton blackarm and leaf-curl virus and weed control.

Plant selection and breeding. Breeding of cotton for high yield, disease resistance and adaptation to different cultural practices. Emphasis given to factors such as lint retention and salt tolerance.

Entomology. Bionomics and control of cotton pests (boll worm, thrips, jassids, white fly etc.) and pests of associated crops.

Soil sciences. Methods of chemical and mechanical analysis, and classification of soils for agricultural use. Moisture retention characteristics of different soil. Variability in productivity due to physical, chemical and microbiological factors.

Others. Other units include work on vegetable crops, statistics, agricultural engineering and Forest research.

2. MINISTRY OF AGRICULTURE, KENANA RESEARCH STATION
ABU NAAMA RESEARCH STATION

a) Organization

Regional station of the Agricultural Research Corporation. Head and twelve research workers.

b) Research Activities

Crop husbandry. Cultural practices for sorghum, groundnuts, maize, sesame, cotton, rice and kenaf. Crop rotation studies. Establishment of pastures. Physiologic studies on water requirements of crops under rains, irrigation and supplementary irrigations.

Entomology. Bionomics and control of insect pests of the region.

Plant Breeding: Breeding and selection in crops other than cotton, mainly sorghum, sesame, groundnuts and kenaf.

Soil Science: Investigations on soil fertility pertaining to soil characteristics. Long and short term effects of fertilizers and crop rotations.

Plant Pathology: Disease survey. Seed dressing. Control of leaf spot diseases in sesame and groundnuts. Leaf curl transmission studies.

Botany: Weed control studies. Screening of herbicides and study of factors affecting their performance.

Agricultural Engineering: Studies on land preparation, planting, cultivation and mechanical picking and harvesting of cotton, sesame and groundnuts.

3. MINISTRY OF AGRICULTURE, REGIONAL RESEARCH STATION
YAMBIO

a) Organization

Regional station of the Agricultural Research Corporation in the Southern Provinces. Not functioning at present. Efforts are underway to start work shortly.

b) Research Activities

No research programme, conducted since 1964.

4. MINISTRY OF AGRICULTURE REGIONAL RESEARCH STATION
HUDEIBA

a) Organization

Regional station of the Agricultural Research Corporation in the Northern Province. Head and fifteen research workers. The H.Q. for the Seed Propagation Division of the Department of Agriculture is also located.

b) Research Activities

Crop husbandry: Irrigated agricultural crops of the Northern Province, mainly wheat, barley, maize, castor, safflower, guar and alfalfa.

Soil Chemistry: Salinity and alkalinity problems and methods of land reclamation. Fertility studies.

Botany and Plant Pathology: Seed dressing. Wilt disease of beans and cucurbits. Phylloidy in broad beans. Powdery mildew in beans, cucurbits, onions and okra.

Entomology: Insect survey of the Province. Control of stem borers in maize and sorghum. Control of castor webworm fruit flies in cucurbits, spider mites and scale insects on citrus and date palms.

Plant Breeding: Improvement of wheat and barley and screening for the whole country. Improvement of maize and assessment of hybrid maize.

Horticulture: Evaluation of indigenous and some introduced vegetable cultivators. Cultural practices and nutritional studies of vegetables and fruit trees. Summer dormancy of tomatoes. Vegetable seed production. Post harvest physiology of fruits and vegetables.

5. KADUGLI RESEARCH SUB-STATION, KADUGLI

a) Organization

Regional sub-station of the Agricultural Research Corporation in the Nuba Mountains in Kordofan Province. (Work is underway

for raising it to a full regional station to serve the western provinces in the near future). Head and two research workers.

b) Research Activities

Plant Breeding: Variety trials, bulking, testing of cotton introductions and selection of resistant cotton varieties sent from Medani and Shambat.

Testing and selection of stripper types of cotton for mechanical harvesting. Nitrogen and spacing trials on rain grown cotton.

Entomology: Bionics and control of bollworms and flea beetles.

6. SHAMBAT RESEARCH SUB-STATION, KHARTOUM NORTH

a) Organization

Sub-station of the Agricultural Research Corporation mainly for genetics, cytogenetics and breeding of cotton. Head and two research workers.

b) Research Activities

Plant Selection and Breeding. Particular reference to genetic analysis of blackarm resistance genes, hairiness of cotton and addition of sakel types. Work on cytogenetics of cotton. Classification and screening of wild species of cotton for desirable characters. Crosses and selection for earlier sakel, nectariless hairiness and boll size.

Horticulture. Production and physiology of vegetable crops.

7. SENNAR RESEARCH SUB-STATION, SENNAR

a) Organization

Sub-station of the Agricultural Research Corporation for investigations on crops other than cotton for diversification and intensification in the Gezira Scheme. One research worker.

b) Research Activities

Agronomy. Agronomic trials and plant selection on some oil crops and cereals mainly groundnuts, safflower and sorghum.

8. MAATUG RESEARCH SUB-STATION, MAATUG
- a) Organization Sub-station of the Agricultural Research Corporation serving the Managil Extension of the Gezira Scheme. One research worker.
- b) Research Activities Entomology. Bionics and control of boll-worms.
- Others. Some agronomic, rotations and soil studies conducted by Sections from Medani.
9. GENEID RESEARCH SUB-STATION, GENEID
- a) Organization Regional Sub-station of the Agricultural Research Corporation. Head and five research workers.
- b) Research Activities Agronomy. Cultural practices of sugar cane.
- Plant Breeding and Selection. Introduction and selection and testing of adapted sugar cane varieties for high yield and sugar content.
- Entomology. Bionics and Control of termites, short flies and stem borers in sugar cane.
- Soils. Fertility and water requirements of sugar cane.
- Phytopathology. Survey of sugar cane disease and control of rust.
10. KHASHM EL GIRBA RESEARCH SUB-STATION, KHASHM EL GIRBA
- a) Organization Regional Sub-station of the Agricultural Research Corporation. Head and three research workers.
- b) Research Activities Agronomy. Cultural practices, fertility trials and irrigation methods and water requirements of cotton, groundnuts, wheat, safflower and kenaf.
- Entomology. Insect survey of the area. Bionics and control of Eriasinsulana.

Main and Sub-Research Stations in Tanzania

- a) Nachingwea - Southern Region
- b) Mbizi - Southern Highland Province
- c) Ilonga - Kilosa
- d) Chambezi - Bagamoyo
- e) Ukiriguru - Mwanza
- f) Mwanhala - Nzega
- g) Maruku - Bukoba
- h) Urambo - Tabora
- i) Malya - Maswa
- j) Tangeru - Arusha
- k) Mpwapwa - (Animal Husbandry)
- l) Kongwa - Dodoma
- m) Tanga - (Animal Husbandry)
- n) Lyamungu - Moshi
- o) Ngomeni - Tanga
- p) Kizimbaani - Zanzibar
- q) Mwanza - Western Research Centre
- r) Mwanala - Shinyanga
- s) Lubaga - "
- t) Bwangot - Urikiguru
- u) Londres - E.C.G.C. (cotton)
- v) Mufindi - Tea Research Institute of East Africa

Information on most of the above-mentioned stations is attached, except the following stations on which no information is available -

- a) Mwanala - Shinyanga
- b) Lubaga - "
- c) Bwangot - Urikiguru
- d) Londres - E.C.G.C. (cotton)
- e) Mufindi - Tea Research Institute

TANZANIA

1. MINISTRY OF AGRICULTURE, DIVISION OF RESEARCH
P.O. BOX 9071, DAR-ES-SALAAM

- a) Organization Headquarters of the Research Division and Office of the Director of Agricultural Research, to whom all queries should be addressed.

2. SOUTHERN REGIONAL RESEARCH CENTRE
MACHINGWEA, SOUTHERN REGION

- d) Research Activities Plant selection and breeding. Production of high yielding, disease resistant strains of soyabean and sesame.
- Crop husbandry. Cultural practices, fertilizer usage and environmental adaptability studies on maize, rice soyabean, groundnuts and sesame.
- Soil sciences. Studies on soil fertility maintenance through rotational practices and mixed farming.

3. AGRICULTURAL RESEARCH SUB-STATION
MBOZI, SOUTHERN HIGHLANDS PROVINCE

- a) Organization Sub-station of 2. above. One research worker.
- d) Research Activities Plant selection. Selection of coffee, soyabean, legumes and sesame.
- Crop husbandry. Cultural practices for the above.

4. CENTRAL REGIONAL RESEARCH CENTRE
ILONGA, KILOSA, EASTERN PROVINCE

- a) Organization Officer in charge and five research workers.

TANZANIA (Cont'd)

d) Research Activities

Plant selection and breeding. Breeding of cotton for yield and disease resistance and selection of locally adapted varieties of cotton and kenaf.

Crop husbandry. Cultural practices and fertilizer trials on maize, soyabeans, groundnuts, local and introduced legumes. Crop rotation and soil fertility maintenance.

Entomology. Bionomics and control of pests of economic importance, particularly on cotton.

5. COAST AGRICULTURAL STATION
CHAMBEZI, BAGAMOYO, EASTERN PROVINCE

a) Organization

Sub-station of 4. above. No graduate staff.

d) Research Activities

Crop husbandry. Cultural practices in coconut, cashew, rice and cassava. Soil fertility maintenance, including effect of interplanting of coconuts with annual crops.

6. WESTERN REGIONAL RESEARCH CENTRE
UKIRICURU-MWANZA, LAKE PROVINCE

a) Organization

Officer in charge and eight research workers, four of whom from a cotton research unit supplied by E.C.G.C.

TANZANIA (Cont'd)

- d) Research Activities Crop husbandry. Cultural practices and varietal trials on local and introduced varieties of field food crops and cotton.
- Soil sciences. Maintenance and improvement of soil fertility through rotations, grass fallowing and mixed farming.
- Plant selection and breeding. Cotton breeding and selection for high yield and disease resistance.
- Phytopathology. Cotton disease investigation.
- Entomology. Biology and control of cotton pests.
7. MWANHALA RESEARCH SUB-STATION
 NZEQA, WESTERN PROVINCE
- a) Organization Sub-station of 6. above; one research officer in charge.
- d) Research Activities Crop husbandry. Cultural practices and fertilizer usage on maize, sorghum, groundnuts and sesame, rotations and mixed cropping.
- Farm management. Studies on farming systems.
8. MARUKU RESEARCH SUB-STATION
 BUKOBA, WESTERN LAKE PROVINCE
- a) Organization Sub-station of 6. above; one research officer in charge.
- d) Research Activities Crop husbandry. Cultural practices for coffee; cropping systems adapted to infertile local soils.
- Agroecology. Management and improvement of local grasslands.

- 11 -

TANZANIA (Cont'd)

9. URAMBO RESEARCH SUB-STATION
TABORA
- a) Organization Sub-station of 6 above; one research officer in charge.
- d) Research Activities No data.
10. MALYA RESEARCH SUB-STATION
MASWA
- a) Organization Sub-station of 6. above; one research officer in charge.
- d) Research Activities Agrostology. Pasture management, selection of pasture species; silage production.
Animal selection and breeding. Selection and production of improved strains of cattle.
11. NORTHERN REGIONAL RESEARCH CENTRE
TENGERU, ARUSHA
- a) Organization Officer in charge and 12 research workers.
- d) Research Activities Plant selection and breeding. Production of high yielding, disease resistant varieties of wheat, maize adapted to local environment. Plant introduction: Studies of imported and local varieties of crop plants, their establishment and management.

TANZANIA (Cont'd)

Phytopathology.* Studies on pest and disease control in beans and other legumes, ryrethrum and pawpaw (Mosaic virus).

Crop husbandry. Studies on cultural practices, crop rotation and soil fertility maintenance.

Agrostology. Maintenance and management of natural grasslands.

* Note: This Station conducts phytopathology research for the whole Republic.

12. ANIMAL HUSBANDRY RESEARCH STATION
MPWAPWA

a) Organization Administratively a sub-station of 11. above.

d) Research Activities Animal breeding. Long-term upgrading of local Zebu cattle.

Animal nutrition. Pasture management and control; stocking rates; production of local feeding stuffs (hay, silage, etc.).

13. PASTURE RESEARCH SUB-STATION
KONGWA, DODAMA

a) Organization Sub-station of 11. above; one research officer

d) Research Activities Agrostology. Management and improvement of natural grasslands.

TANZANIA (Cont'd)

14. ANIMAL HUSBANDRY EXPERIMENTAL STATION
TANGA

- a) Organization Sub-station of 11. above; one research officer.
- d) Research Activities Animal breeding. Long-term project to produce a Tanzanian breed of cattle.

15. COFFEE RESEARCH STATION
LYAMUNGU, P.O. MOSHI

- a) Organization Station financed by the Tanzanian Coffee Board; officer in charge and four research officers.
- d) Research Activities Plant breeding and selection. C. Arabica and C. Robusta.
Phytopathology. Control of coffee diseases.
Crop husbandry. Cultural practices in coffee.

16. SISAL RESEARCH STATION
NCOMINI, P.O. TANGA

- a) Organization An autonomous research station financed and staffed by the Tanzania Sisal Growers Association; senior research officer in charge and four research workers, one seconded from the Ministry of Agriculture.
- d) Research Activities Plant breeding and selection. Production of hybrids between A. Sisalina and other Agave species.
Crop husbandry. Cultural practices and harvesting.
Phytopathology. Disease and pest investigation and control, particularly of "zebra" disease (origin unknown).

TANZANIA (Cont'd)

18. DEPARTMENT OF AGRICULTURE EXPERIMENTAL STATION
KIZIMBANI, ZANZIBAR

a) Organization

Under the general control of the Director of Agriculture, each section of the Department of Agriculture is responsible for its own research; five scientific staff, including officers from the Tropical Pesticides Research Station and the Commonwealth Mycological Institute's overseas pool.

d) Research Activities

Plant selection. Varietal trials of food crops including rice, maize, sweet potatoes, cassava and yam.

Soil sciences. Soil classification, use of fertilizers.

Phytopathology. Investigation of clove diseases and wither-tip disease of limes, herbicide trials.

Entomology. Studies on pests of economic importance, principally Pseudotheraptus of coconuts.

Animal husbandry. Selection of upgrading of strains of local cattle.

Agrostology. Pasture trials with indigenous and exotic grasses.

Main and Sub-Research Stations in Uganda

- a) Kawanda - Near Kampala
- b) Serere - (Pastures, Sorghum, Millets)
- c) Entebbe - (Animal husbandry)
- d) Namulonge - Kampala
- e) Bugusige - M'wale
- f) Bukulasa - Bombo
- g) Kachwekano - Kabale
- h) Kyemboga - Fort Portal

Information on Kawanda, Serere, Entebbe and Namulonge Research Stations is attached.

No information is available on Bugusige, Bukulasa, Kachwekano and Kyemboga.

UGANDA

1. DEPARTMENT OF AGRICULTURE, RESEARCH DIVISION
P.O. BOX 2, ENTEBBE

- a) Organization

Headquarters of the Chief Research Officer, to whom all communications should be addressed.

2. AGRICULTURAL RESEARCH STATION
KAWANDA, NR. KAMPALA

- a) Organization

The principal station of the Department of Agriculture. Officer in charge and ten research workers.

- d) Research Activities

Plant breeding and selection. Breeding of maize for rust resistance and high yielding short season varieties. Disease resistant beans and groundnuts. Selection and varietal trials on beans and other legumes. Selection of coffee.

Crop husbandry. Cultural practices and fertilizer trials with maize, beans, coffee. Study of farming systems; swamp reclamation and irrigation trials; establishment and cultivation of cocoa.

Entomology. Bionomics and control of pests, coffee and food crops. Improvement of crop protection machinery; survey of nematodes of economic importance; research into control of stored products pests.

Phytopathology. Investigation and control of the disease complex of beans and other food crops. Control of rust, berry disease and red blister disease of coffee.

UGANDA (Cont'd)

Plant physiology. Physiological studies on the growth and nutrient uptake of coffee.

Soil sciences. Soil and plant analysis; soil and land use survey; soil fertility investigations, including long-term trials on rotations and the use of grass fallows.

3. AGRICULTURAL EXPERIMENTAL STATION
SERERE

a) Organization

Sub-station of 2. above devoted to research on dry zone crops. Officer in charge and five research staff.

d) Research Activities

Plant selection. Varietal trials on sorghum and millets.

Agrostology. Selection of grasses and legumes for pasture establishment.

Crop husbandry. Cultural methods and fertilizer trials with sorghum, millets and pastures.

Animal husbandry. Grazing versus cutting trials on pastures.

Animal nutrition. Palatability trials with grasses and grass legume mixtures.

Animal selection and breeding. Cattle breeding and management to develop improved beef cattle.

Note: This Station shares in the research program detailed under 2.d) above, particularly with respect to cotton research.

4. ANIMAL HEALTH RESEARCH CENTRE
P.O.B 24, ENTEBBE

a) Organization

Principal research station of the Department of Veterinary Services and Animal Industry. Director and nine research staff.

d) Research Activities

Veterinary sciences. (a) Rinderpest
(b) Foot and mouth disease
(c) Nairobi sheep disease, immunology
(d) Rabies immunology
(e) Brucellosis
(f) East Coast fever and trypanosomiasis
(g) Entomological studies of Stomoxys and tsetse
(h) Control of contagious bovine pleuro-pneumonia in conjunction with FAO.

Animal breeding. Jersey/Nganda cross-breeding experiments.

Animal nutrition. Studies on nutritional values of grasses and feeding stuffs. Studies on feeding problems with beef cattle.

Animal husbandry. Selective grazing of cattle.

Agrostology. Permanent pasture management and control of bush.

UGANDA (Cont'd)

5. E.C.G.C. COTTON RESEARCH STATION
NAMULONGE, P.O.B. 884, KAMPALA

a) Organization

Principal field station of the E.C.G.C.
Director and 11 research workers.

d) Research Activities

Plant breeding and selection. High yielding locally adaptable strains of cotton.

Crop husbandry. Cultural practices, fertilizer usage, crop rotations.

Plant physiology. Nutrient uptake, and water relations.

Bionomics. Experimental design and analysis.

Phytopathology. Investigation and control of principal cotton diseases, including blackarm.

Entomology. Bionomics and control of coffee pests, especially boll weevils and boll worm.

Soil sciences. Soil analysis and survey.

Main and Sub-Research Stations in Zambia

- a) Chilanga - Lusaka
- b) Mazabuka - (Pastures animal husbandry)
- c) Magoye - Southern Province
- d) Misamfu - Kasama
- e) Broken Hill - (Tobacco Research Station)
- f) Makulu - Nr. Lusaka
- g) Msekera - Eastern Province
- h) Mochipapa - Nr. Chona-Southern Province
- i) Copperbelt - Nr. Kitwe-Western Province

Information on Chilanga, Mazabuka, Magoye, Misamfu and Broken Hill Research Stations is attached.

No information is available on the following

stations:-

- a) Makulu
- b) Msekera
- c) Mochipapa
- d) Copperbelt

ZAMBIA

1. MOUNT MAKULU RESEARCH STATION
P.O. BOX 7, CHILANGA, LUSAKA

a) Organization

Principal general agricultural research station, including an Animal Production Research Team of the A.R.C. of Central Africa. Chief Research Officer in charge and ten research workers.

d) Research Activities

Plant breeding and selection. Breeding of wheat, maize, sorghum and cassava; selection of groundnuts and cotton.

Crop husbandry. Cultural practices and fertilizer requirements of principal economic and food crops; rotational trials for soil fertility maintenance, including leys.

Phytopathology. Diseases and pests of main economic and food crops.

Soil sciences. Soil analyses for soil-survey and land-use survey - use and effect of fertilizers.

Agrostology. Introduction and evaluation of grasses and legumes; their productivity, chemical composition; palatability, digestibility and feeding value in terms of annual production; pasture irrigation; seed production; silage production.

Animal physiology and nutrition. Investigation of rumen activity. Serum transferring typing of indigenous cattle. Physiology of reproduction.

ZAMBIA (Cont'd)

2. MZABUKA RESEARCH STATION
P.O. BOX 50, MAZABUKA

a) Organization

Station devoted to animal husbandry and veterinary research under joint control of the Research Divisions of the Ministries of Native Agriculture and Lands and Natural Resources. Officer in charge and three research workers.

d) Research Activities

Animal husbandry. Animal physiology and breeding. Animal nutrition, digestibility of pastures, veld grazing, stocking rates, supplementary feeding.

Veterinary sciences. Parasitology, trypanosomiasis.

3. MAGOYE REGIONAL RESEARCH STATION
P.O. BOX 11, MAGOYE

a) Organization

Sub-station of 1. above.

d) Research Activities

Crop husbandry. Included in program of 1. above.

4. MISAMFU REGIONAL EXPERIMENT STATION
P.O. BOX 18, KASAMA

a) Organization

Sub-station of 1. above.

ZAMBIA (Cont'd)

d) Research Activities

Plant selection. Sorghum selection for grain and sugar production. Millet selection for yield. Cassava selection for mosaic resistance. Groundnut selection for yield and disease resistance.

Crop husbandry. Spacing, sowing date and fertilizer trials on the above crops.

5. TOBACCO RESEARCH BOARD, TOBACCO RESEARCH STATION
P.O. BOX 908, BROKEN HILL

a) Organization

Headquarters in Salisbury, Southern Rhodesia. One research officer.

d) Research Activities

Crop husbandry
Tobacco management practices, the maintenance of soil fertility, rotational trials.