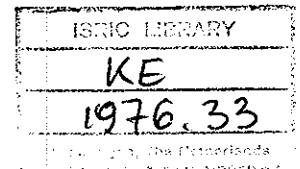


SCHEDULE OF OPERATIONS  
THE KENYA SOIL SURVEY PROJECT

(revised September 1976)

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Revised September 1976

SCHEDULE OF OPERATIONS

The Kenya Soil Survey Project

The Schedule of Operations has been drawn up in joint consultation between the Competent Authority of the Kingdom of the Netherlands and the Competent Authority of the Republic of Kenya under Article VIII of the Agreement concerning the Kenya Soil Survey Project signed at Nairobi on

1. Name of the project : The Kenya Soil Survey Project.
2. Aim of the project : To operate a soil survey programme with the Kenya Soil Survey in which Kenya staff will be trained in soil survey particularly aimed at rural land use planning. It will produce information on soil and land resources required for accelerated agricultural development.
3. Location : The project will be located in Nairobi.
4. Language : The official language will be English.
5. Netherlands contribution : experts  
visiting experts  
fellowships  
equipment  
research  
special air photography  
housing overseas staff (extension period)
6. Kenyan contribution : counterparts  
clerical staff and drivers  
land and buildings  
centre running costs including the running and maintenance of vehicles  
housing overseas staff (first period)  
routine soil analyses
7. Duration of the project : Five years, with an extension of three years
8. Competent Netherlands Authority : The Netherlands Minister for Development Cooperation.
9. Competent Kenyan Authority : The Minister for Agriculture of the Republic of Kenya.

10. The Netherlands Organization : The International Technical Assistance  
in charge of the project Department of the Netherlands Ministry of  
Foreign Affairs, hereinafter referred to as  
the Executive Authority, shall act on behalf  
of the Competent Netherlands Authority, and  
shall be assisted by the following Institution  
of the Ministry of Agriculture and Fisheries:  
The International Agricultural Centre (IAC)  
and the Netherlands Soil Survey Institute  
(STIBOKA).
11. The Kenyan Organization in : The Director of Research of the Ministry of  
charge of the project Agriculture shall act as the Executive Kenyan  
Authority on behalf of the Competent Kenyan  
Authority.  
The Kenya Soil Survey shall constitute a sepa-  
rate section within the Research Division of  
the Ministry of Agriculture. The leader of  
the Dutch team, to be known as Project Manager  
(after June 1st 1977 as Teamleader) coordinate  
his activities and responsibilities with the  
Head and the Technical Coordinator of Kenya  
Soil Survey.

## 1. THE PROJECT

### 1.1 Aim of the Project

The Competent Netherlands and Kenyan Authorities shall co-operate in providing training for and the conducting of soil surveys which will produce information about the soil and land resources of Kenya required for accelerated agricultural development and systematic rural land use planning. In order to staff the Kenya Soil Survey entirely by Kenyans by the end of the project period, the training of Kenyan citizens in soil science, soil survey and soil survey interpretation will have first priority.

### 1.2 Main features of the Project

A team of Netherlands experts shall participate in the operations of the Kenya Soil Survey. The activities of this project shall consist of:

- a. Training of Kenyan counterparts in all aspects of soil survey and thus build up a cadre of trained soil surveyors, soil survey interpretation specialists, draughtsmen and laboratory staff.
- b. Training of Kenyan officers from other Kenyan Institutions in soil survey and soil survey interpretation, if and when such can fit-in with the main purpose of the Project.
- c. Selecting, in consultation with the Director of Research, suitable candidates for counterparts and other trainees for on the job training within the Kenya Soil Survey.
- d. Cooperating with the Soil Survey Advisory Committee in determining priority study areas.
- e. Conducting soil surveys and indicating their practical applications in areas selected in co-operation with the competent authorities of the Kenya Government. For the practical application co-operation and advise will be sought from cropspecialists, soil fertility experts, agricultural economists, planning experts, etc. from other Kenyan institutions.
- f. Establishing and operating a chemical-physical laboratory to cater for the specific needs of soil survey in terms of special analysis, research and general interpretations of soil data.
- g. Co-operating with the Chemistry Section of the National Agricultural Laboratories (NAL) with respect to routine (service) analyses of soil samples.
- h. Co-operating with the University of Nairobi in particular its Department of Soils, other research bodies, Statutory Boards, Planning Authorities and other interested national organizations such as those concerned with soil conservation, irrigation and drainage as well as organizations of the East African Community, on matters of soil survey and its practical applications.

- i. Co-ordinating and correlating all soil surveys and their interpretations as an aid in the country-wide planning of land use and accelerated agricultural development.
- j. Making available to the Extension Services and other relevant Government Departments, the results of soil surveys for dissemination to farmers and other land users in a manner that can be readily understood and utilized.
- k. Making available to the University of Nairobi and Agricultural training institutions the results of soil surveys for the use in the teaching programmes.

### 1.3 Location of the Project

The headquarters of the Project will be located at Nairobi. Most of the staff, will however, be working outside Nairobi for prolonged periods, at various soil survey projects throughout Kenya.

### 1.4 Netherlands Experts

#### 1.4.1 Resident Experts

The Netherlands shall contribute towards the staffing of the Kenya Soil Survey by making available the service of the following experts;

- a. four soil surveyors, one of whom shall be the Project Manager and after June 1st 1977 the Teamleader
- b. one soil survey-land classification expert
- c. one ecologist (climate-vegetation-soil management)
- d. one soil chemist-physicist.

The experts shall be made available as set out in the Time Schedule (see Annex III) (revised).

To qualify for an appointment on this project the Netherlands experts should be university graduates (or equivalent) and have extensive practical experience.

The responsibility for appointing experts shall rest with the Competent Netherlands Authority, who shall submit the names and other particulars of experts to be sent by the Netherlands to the Government of Kenya for approval.

The responsibility of recalling the experts shall rest with the Competent Netherlands Authority in consultation with the Competent Kenyan Authority.

#### 1.4.2 Visiting Experts

Apart from the resident experts the Netherlands will provide for a number of experts, selected according to the type of special problems that may arise, who will, during short visits to the project, advise on their respective professional fields or give special courses. A total of 30 man-months will be made available. One of the visiting experts will be a cartographic draughtsman.

### 1.5 Counterparts and supporting staff

Kenya shall supply the following personnel who will act as counterparts to the Netherlands experts:

- a. 10 agricultural officers (University graduates) for the following posts:  
5 soil surveyors, one soil survey-land classification officer, one soil survey-soil management officer, one agronomist, one soil chemist/physicist and one information extension officer. One of these officers is the Head of Kenya Soil Survey and one officer shall be designated Technical Coordinator.
- b. 15 assistant agricultural officers (Egerton level) for the following posts:  
8 assistant soil surveyors, two assistant soil survey-landclassification officers, one assistant vegetation survey officer, one assistant soil management officer, one assistant soil chemist-physicist, one draughtsman and one assistant officer in charge of library and data storage.
- c. 16 technical assistants
- d. 4 assistant draughtsmen
- e. 8 laboratory technicians

In addition to these counterparts Kenya shall permanently assign one agro-economist from the Economic Planning and Market Research Division of the Ministry of Agriculture to the Kenya Soil Survey and shall supply clerical staff and drivers as follows:

- 1 Executive Officer
- 4 Clerical officers
- 1 Stenographer
- 2 Typists
- 1 Storeman
- 9 Drivers
- 12 Subordinate staff

All Kenyan staff shall be made available as set out in the Time Schedule (see Annex III, revised).

### 1.6 Fellowships

The Netherlands shall make available a number of fellowships amounting to 14 man-years for Kenyan counterpart staff to be especially trained in soil survey, soil survey interpretation, airphoto interpretation, cartography, etc. The decision of granting fellowships shall be taken by the Competent Netherlands Authority upon receiving a proposal from the Kenya Government after recommendation by the Project Manager/Teamleader.

## 1.7 Equipment and Running costs

### 1.7.1 Netherlands contribution

The Netherlands shall provide scientific and educational equipment and vehicles as indicated in Annex I (revised).

The items as indicated in Annex I must be considered as tentative and indicative and apt to revision. Variations in this list may be made by mutual consent of the Competent Authorities to suit the requirements of the project provided that the total costs mentioned in Annex I will not be exceeded.

The cost of transport, including insurance, of the equipment supplied by the Netherlands to Nairobi shall be borne by the Netherlands.

The equipment will remain the property of the Netherlands Government until the end of the extended Project period and as such fall under the responsibility of the Project Manager/Teamleader.

### 1.7.2 Kenyan contribution

All running costs of the Kenya Soil Survey shall be borne by the Government of Kenya as indicated in Annex II (revised).

The running costs include among others running and maintenance of vehicles, field allowance of the Kenyan staff, housing overseas staff (first period) full maintenance of office and laboratory.

These costs will be reviewed 12 months after the submission of the extension of the project (Jan. 1, 1978) and if necessary may be revised in mutual agreement between the Competent Authorities.

During the first period of the Project living accommodation shall be provided free of charge and shall contain basic furniture, boilers, electricity, running water and telephones. During the extension period house rents will be paid from Dutch Project funds, while the Kenya Government will continue to provide basic furniture, where required.

## 1.8 Land and Buildings

### 1.8.1 Kenyan contribution

The Kenya Government shall provide adequate office, laboratory and storage space for the Kenya Soil Survey.

The Competent Kenyan Authority shall provide in the respective regions where soil surveys are being carried out adequate parcels of land for soil management and other experiments necessary for the practical applications of the soil surveys.



## 1.9 Research and Soil analysis

### 1.9.1 Netherlands contribution

Where desirable, specific research and other special work which cannot be done in Kenya may be carried out in laboratories and institutes in the Netherlands. The work to be considered for this shall be decided upon by the Project Manager/ Teamleader in consultation with the Head of Kenya Soil Survey and the other officers. The costs of this research shall be met by the Netherlands Government from project funds earmarked for this purpose in the budget.

In addition, costs of data acquisition and processing, e.g. by computer analysis, will be met from Project funds.

### 1.9.2 Kenyan contribution

- a. Complete soil analyses for soil survey up to a maximum of 3000 samples per year will be carried out by the routine laboratory of the chemistry section of the National Agricultural Laboratories. For this purpose two laboratory technicians of the Kenya Soil Survey will be given on loan to the routine laboratory of the N.A.L.'s Chemistry Section.
- b. The Ministry of Agriculture shall assist in making available to the Project staff, the results of research carried out for the Government of Kenya, which can be of use for the soil survey and associated land classification.

### 1.10 Project budget

A detailed revised budget, indicating the Netherlands and the Kenyan contributions to this project is presented in Annexes I and II respectively.

## 2. ORGANIZATION AND DUTIES

### 2.1 General

The Kenya Soil Survey shall constitute a separate institution of the Scientific Research Division of the Ministry of Agriculture. The Project Manager/Teamleader shall be directly responsible to the Director of Research, Ministry of Agriculture, through the Head of Kenya Soil Survey for all technical activities of the Dutch staff, as mentioned under 1.2. The Kenya Soil Survey shall be free to publish results under the general responsibility of its Head, in consultation with the Project Manager/Teamleader.

The Project Manager/Teamleader shall be responsible to the Netherlands Executive Authority for all matters concerning the implementation of the Netherlands contribution as described in this Schedule of Operations. He shall be free to delegate one or more of his duties to a Deputy Project Manager/Teamleader appointed by the Competent Netherlands Authority.

The Head of the Kenya Soil Survey and the Teamleader shall submit jointly a progress report every three months, commencing 1st April 1977 to the Competent Authorities of each country, through the Chief Research Officer. A copy of each report shall be submitted to the Director National Agricultural Laboratories and the Royal Netherlands Embassy at Nairobi.

The Netherlands organization in charge of the project will be the International Technical Assistance Department of the Netherlands Ministry of Foreign Affairs. This organization will be assisted by the following Institutions of the Ministry of Agriculture and Fisheries: The International Agricultural Centre (IAC) and the Netherlands Soil Survey Institute (STIBOKA).

Advice and assistance will also be requested from the Agricultural University (M.Sc. - training soil science) at Wageningen and the International Institute for Aerial Survey and Earth Sciences (I.T.C.) at Enschede (airphoto interpretation).

### 2.2 Dutch Experts

There will be a maximum of seven Dutch experts as follows:

- a. Four soil surveyors, one of whom will be the Project Manager/Teamleader. The four will act as soil correlator - map co-ordinators, while training Kenyan counterparts in soil survey techniques.
- b. One soil survey-land classification expert who shall also be engaged in soil surveying, but in addition also in setting up land evaluation methods for various crops under different management systems in order to facilitate land use planning in Kenya, at different levels of intensity.
- c. One ecologist who shall be engaged in climatic studies, vegetation survey and soil management research as needed for a proper interpretation of the soil maps.

- d. One soil chemist-physicist who shall work in very close co-operation with the Chemistry Section of the National Agricultural Laboratories to assess the value of various physical and chemical laboratory methods, to carry out non-routine soil analyses and routine analyses where N.A.L. services cannot provide them, and to aid in the interpretation of the laboratory data in terms of practical management recommendations.

In order to help the routine laboratory to analyse the increased number of soil samples which can be expected once the Project is established, two laboratory technicians of the Kenya Soil Survey will be given on loan to the routine laboratory of the N.A.L.'s Chemistry Section.

The Netherlands experts shall perform their duties under the direction of the Project Manager/Teamleader, who shall bear general responsibility for their contribution to the project. The experts shall report to the Project Manager/Teamleader at regular intervals in accordance with the instructions issued to them by the Netherlands Executive Authority. The Netherlands experts attached to the Project shall be entitled to periodical leave in accordance with the regulations applicable to Netherlands civil servants. The Project Manager/Teamleader shall recommend the dates of leave to be granted to the Netherlands experts.

### 2.3 Kenyan counterparts and supporting staff

There will be a total of 71 Kenyan professional, technical and administrative staff and 12 subordinate staff in the project. Detailed breakdown of this staff is given in 1.5 above. All Dutch experts will have a least one Kenyan counterpart of university education and one or more counterparts of assistant-agricultural officer level.

The Kenyan and Dutch Staff will be sharing responsibilities at different levels for various aspects of the Soil Survey Programme. With time, the responsibilities of Kenyan Staff will gradually grow so that on completion of the project all responsibilities will be in the hands of the Kenyan soil scientists.

The Kenyan counterparts shall work under the general direction of the Head of Kenya Soil Survey and report to him on technical matters through the Technical Coordinator.

All administrative matters regarding the counterpart and supporting staff and the Kenyan Government's contribution in general will be the responsibility of the Head of Kenya Soil Survey who will be of at least Superscale status. The Head of Kenya Soil Survey shall also liaise with the Ministry Head Office, Provincial Administration in the field and others, and will provide the link with other local agencies having connections with the Kenya Soil Survey.

The Executive Officer, assisted by the Storeman, shall keep an accurate accounting system so that all money and equipment from the Kenyan and Dutch Governments can be carefully accounted for.

### 3. EXECUTION

#### 3.1 Priorities

The aim of the project is to build up the Kenya Soil Survey so that it can be run effectively by well trained Kenyan soil scientists. The training of Kenyan counterparts will therefore have first priority.

This training will be done mainly on-the-job and will chiefly concern staff members of the Kenya Soil Survey. However, provided that this fits in with the main purpose of Kenya Soil Survey, Kenyan officers of other relevant organizations should be trained, who after their training return to their parent organizations to assist in solving soil problems that may arise.

During the training programme various areas will be surveyed. The areas concerned will be decided on by the proposed Soil Survey Advisory Committee to be created within the Ministry of Agriculture, of which the Head of KSS and the Project Manager/Teamleader will be members. In case requests for soil surveys are so many that they cannot be undertaken without adversely affecting the training programme, the training shall have first priority, and the Director of Research in mutual agreement with the Head of Kenya Soil Survey and the Project Manager/Teamleader may, in consultation with the Soil Survey Advisory Committee reject those projects that do not fit in the training programme. In such cases the Kenya Government may request the services of other competent organizations for some of the ad hoc soil surveys.

#### 3.2 Time Schedule

The stages of the operations and the steps to be taken by each Government are given in summary form in Annex III to this Schedule of Operations. The Competent Authorities of each country shall see that each stage of the operations, such as the delivery of equipment and the availability of counterparts, are accomplished at the proper times.

The duration of the project with extension shall be for eight years. The date of commencement of the project has been fixed as Jan. 1, 1972 (zero on time schedule) and the starting date of the extension will be Jan. 1, 1977.

This Schedule of Operations shall be reviewed and if necessary revised after two years from the start of the extension, especially with regard to the role of the Kenya Soil Survey in the over-all development of the country (review mission Jan. 1979).

In accordance with Article IX of the Agreement signed at Nairobi the date of termination of operations referred to in the Schedule shall be fixed, unless the Competent Authorities agree in writing to an earlier or later date of termination, it being understood that any such agreement shall be concluded six months prior to the new date of termination.

#### 4. FINAL CLAUSE

##### Final Report

On completion of the project, the Teamleader shall draw up a final report giving a description of all aspects of the work done in connection with the project and containing recommendations on future policy, covering such aspects as the role of the Kenya Soil Survey, liaison with the Donor Country and other international agencies. Copies of this report shall be submitted to the Competent Netherlands and Kenyan Authorities and to the Royal Netherlands Embassy in Nairobi.

## ANNEX I. Schedule of Operations (revised august 1976) - Kenya Soil Survey Project.

Estimated contribution of the Netherlands Government (in Dutch guilders).

	1/1'72-31/12'76	1977	1978	1979	Total
<u>Experts</u>					
3 soil surveyors (one till 1-1-'79)					
1 soil surveyor (- 15/7-1976)					
1 soil surveyor/landclassification expert		780.000	870.000	800.000	2.450.000
1 ecologist					
1 soil chemist/physicist					
<u>Visiting experts, short term consultancy</u>		60.000	60.000	60.000	180.000
<u>Fellowships (incl. local training)</u>		60.000	60.000	60.000	180.000
<u>Equipment</u>					
airphoto interpretation equipment		-	-	-	-
teaching equipment		2.000	2.000	2.000	
drawing and reproduction equipment		10.000	10.000	10.000	
soil survey field equipment		10.000	10.000	10.000	
camping equipment		40.000	30.000	30.000	
laboratory equipment		100.000	50.000	20.000	
office equipment		5.000	5.000	5.000	
books and periodicals		3.000	3.000	3.000	
9 long wheel base landrovers		120.000	70.000	105.000	
2 Peugeot stationwagons		-	23.000	23.000	
3 trailers for landrovers		4.000	4.000	4.000	
3 watertrailers for landrovers		4.000	4.000	4.000	
1 Bedford truck		-	-	-	
transport of equipment		10.000	7.500	7.500	
insurance of vehicles		15.000	15.000	15.000	
sub-total equipment		323.000	233.500	238.500	795.000
<u>Technical services and research in the Netherlands</u>		40.000	30.000	20.000	90.000
<u>Field allowance Dutch experts</u>		20.000	20.000	20.000	60.000
<u>Data acquisition and processing</u>		25.000	25.000	25.000	75.000
<u>Air travel in Kenya and Africa</u>		10.000	10.000	10.000	30.000
<u>Housing Dutch experts</u>		90.000	90.000	80.000	260.000
<u>Miscellaneous</u>		-	-	380.000	380.000
		1.408.000	1.398.500	1.693.500	4.500.000
Estimated contribution 1972/1976	5.750.000				
Expenditure up till 31/12/1976	4.350.000				
Available for extension 1977/1979	1.400.000				
					1.400.000
					To be added from allocation
					3.100.000

ANNEX II. Schedule of Operations - Kenya Soil Survey Project (revised 1976)  
 Estimated contribution of the Kenya Government (in Kenyan Pounds)

Item	Budgetary Year	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	Totaal
	<u>RECURRENT COSTS</u>									
110	Travelling & Subsistence expenses	4,200	5,250	7,100	8,000	8,600	9,500	10,500	11,500	64,650
100	Transport & Operating expenses									
	Running & Maintenance of vehicles	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	100,800
250	Upkeep of Centre									
	Stationery, office-, laboratory- and drawing supplies, maintenance and repair of equipment	3,100	3,800	3,800	3,800	3,800	4,200	4,600	5,100	32,200
	Casual labour	1,000	1,500	2,400	2,400	2,400	3,000	3,000	3,000	18,700
	Routine soil analysis	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	8,000
175	Aerial Photography - Mapping									
	Aerial photos, mosaics, maps	1,500	2,000	2,400	2,400	2,400	2,400	2,400	2,400	17,900
	Air reconnaissance flights	300	300	350	350	350	350	350	350	2,700
174	Printing of maps and reports	500	500	2,100	3,300	5,300	5,800	6,400	7,000	30,900
172	Uniforms and clothing	-	-	-	-	500	600	600	600	2,300
173	Library	-	-	-	-	100	250	250	250	850
190	Miscellaneous other charges									
	Electricity, water and conservancy	-	-	-	-	700	1,500	1,750	2,000	5,950
	Sub-total	24,200	26,950	31,750	33,850	37,750	41,200	43,450	45,800	284,950
	Personal emoluments (salaries) Kenyan personnel	nc	nc	nc	nc	nc	nc	nc	nc	
050	Housing expatriate staff	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	72,000
	Total	33,200	35,950	40,750	42,850	46,750	50,200	52,450	54,800	356,950
	<u>CAPITAL COSTS</u>									
400	Soil Survey building and store	24,658	-	-	-	-	3,000	-	-	27,658





