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Kenya Soil Survey-Winand Staring Centre
Twinning Report 1: March/April 1989
E.M.A. Smaling

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Rapport nr. 91524

Kenya Soil Survey-Winand Staring Centre

Twinning Report 1: March/April 1989

E.M.A. Smaling

WINAND STARING CENTRE

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Footnote: By January 1, 1989, four Dutch agricultural research institutes (ICW, IOB, Dorschkamp/LB, STIBOKA) merged to form the "Winand Staring Centre for Integrated Land, Soil and Water Research"

Project nr. 8559

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<u>TABLE OF CONTENTS</u>		Page
1.	INTRODUCTION	7
2.	INTERNATIONAL WORKSHOP	7
3.	KENYA SOIL SURVEY	8
3.1	Netherlands Commitment 1988-1993 to KARI/KSS	10
3.2	Present constraints and priorities in KSS work programme	12
3.3	Proposals KSS/KARI on spending core funds	13
3.4	Training	14
3.5	T.o.R. forthcoming twinning mission and editing workshop	14
ACRONYMS		15
LIST OF FIGURES		
1	KARI - NAL - KSS organizational structure	9
LIST OF TABLES		
1	Five-year Netherlands commitment to KARI (September 1988)	10
2a	Five-year Netherlands commitment to KSS (September 1988)	10
2b	Tentative breakdown Netherlands commitment to KSS for financial year 1988/1989 (in Dfl. '000)	11
ITINERARY		
ANNEXES		
I	Workshop programme	
II	List of workshop participants	
III	Opening address Minister of Research, Science and Technology	
IV	Announcement of the formation of the African Soil Science Society	

1. INTRODUCTION

From 13-20 March, 1989, ir. E.M.A. Smaling of the Winand Staring Centre/STIBOKA paid a visit to Kenya. The purpose of this trip was twofold:

- 1) participation in the International Workshop on Multi-purpose Use of Soil Survey Information in Land Use Planning, and the presentation of a paper under the title of "Representativeness of fertilizer trials as a guide to area-specific fertilizer recommendations for rainfed arable cropping in Kenya";
- 2) discussions at the sister institute Kenya Soil Survey (KSS), and also the Kenya Agricultural Research Institute (KARI) and the Royal Netherlands Embassy (RNE) regarding the proposed "Twinning Arrangement"; previous visits of a similar nature were held in May 1988 (Smaling to Kenya; report available) and August/September 1988 (Wokabi, head KSS, to The Netherlands).

2. INTERNATIONAL WORKSHOP

From 13-16 March, 1989, the International Society of Soil Science (ISSS), in co-operation with the University of Nairobi and the Kenya Soil Survey, organized a scientific meeting in Nairobi, the International Workshop on Multi-purpose Use of Soil Survey Information in Land Use Planning. Ninety-three soil scientists from different countries participated, and approximately twenty-five held presentations on subjects related to the main workshop theme (programme and list of participants in Annexes 1 and 2).

The workshop was officially opened by the Minister of Research, Science and Technology, Mr. George Ndotto, who, in his address, acknowledged the continued support of the Government of the Netherlands to the Kenya Soil Survey (Annex 3).

STIBOKA was represented at the meeting by ir. E.M.A. Smaling and ir. A.J. van Kekem, the latter in his capacity as teamleader of the DGIS-supported National Soil Service Project, Tanga, Tanzania. The Kenya Soil Survey was represented by eight senior officers.

The workshop was held in one of the spacious conference rooms of Kenyatta International Conference Centre and the organizing committee succeeded well in having the programme run as scheduled.

The papers covered topics ranging from data collection at different scales and for different purposes and their cost/benefit analysis, to the application of geographical information systems and the role of modelling in soil survey and land evaluation. Ir. Smaling presented a paper on the participation of STIBOKA in the selection of trial sites in the EEC/GTZ-sponsored Fertilizer Use Recommendation Project: "Representativeness of fertilizer trials as a guide to area-specific fertilizer recommendations for rainfed arable cropping in Kenya". Moreover, the paper "Soil

survey information for crop simulation modelling" was presented, at the request of the author, prof. dr. J. Bouma, who had to apologize for the meeting.

The quality of both the contents and the presentations of the papers at this meeting varied greatly. Many contributors could have considerably improved their speech by just rehearsing once or twice in advance, in front of a critical colleague. Fortunately, Dr. H. Eswaran of the US Soil Management Support Services, in his closing speech, chose not to leave this shortcoming unmentioned. He even stressed the relevance of people being trained in writing and presenting scientific papers. Nonetheless, the meeting proved very useful, notably since the location, Nairobi, is accessible to many African soil scientists, who can often not afford to attend conferences and workshops held in Europe, North-America or the Far East. The result was a balanced mixture of agricultural scientists from all over the world, securing an intensive exchange of ideas and experience. A remarkably clear and honest closing speech was held by prof. dr. S.W. Buol of North Carolina State University, who pleaded to bring soil science to "the people", and not just hide in a veil of academic obscurity.

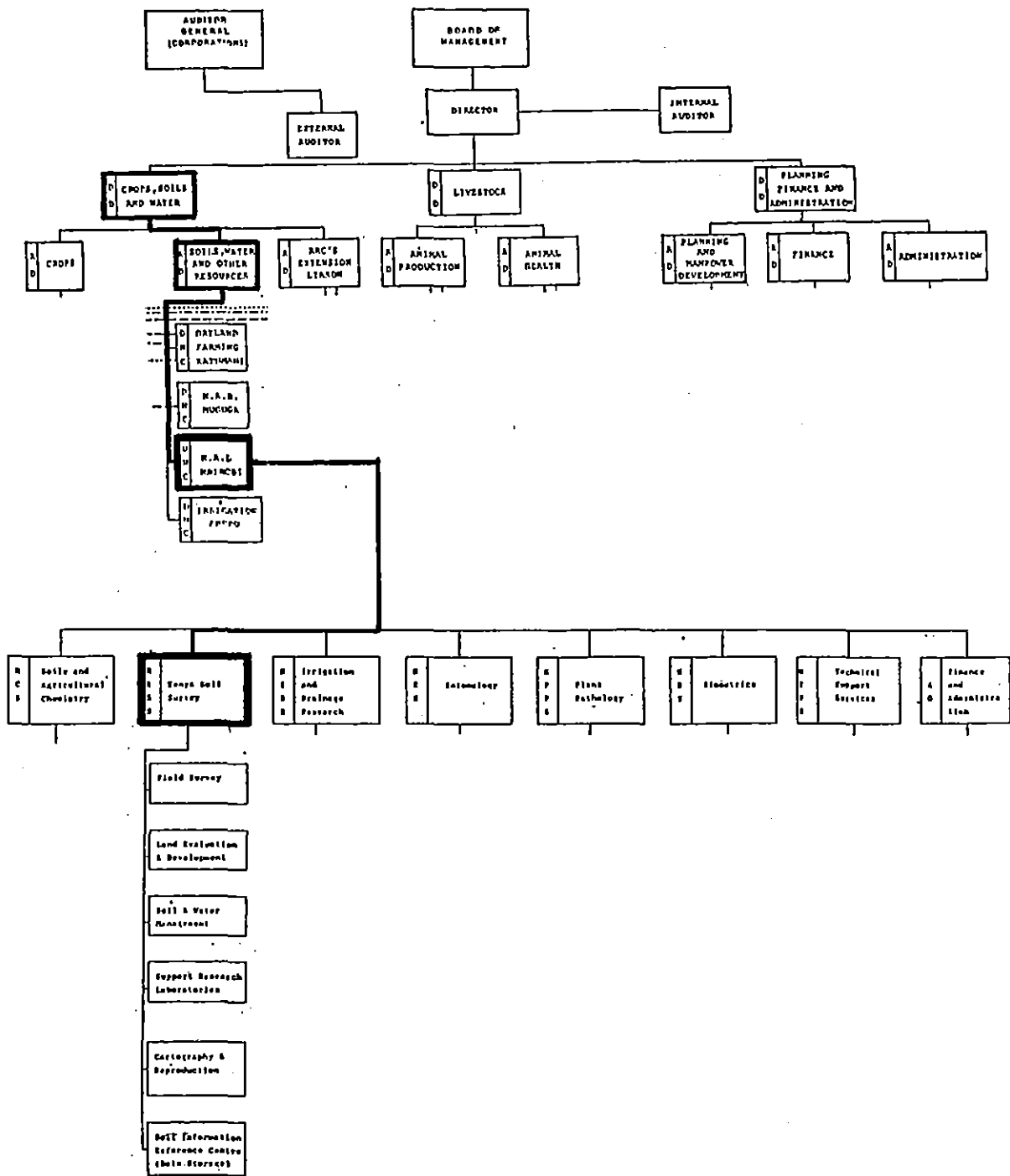
Most papers are available at STIBOKA (International Co-operation Section). Proceedings, to be sponsored by IDRC, will be issued in due course.

The STIBOKA representatives did not attend the post-conference tour to Kisumu and Eldoret, which was held from 17-20 March.

3. KENYA SOIL SURVEY

Kenya Soil Survey (KSS) is a department of the National Agricultural Laboratories (NAL). This institute will most likely be fully integrated into Kenya Agricultural Research Institute (KARI) by July 1, 1989. The organizational structure KARI - NAL - KSS is shown in Figure 1.

Figure 1: KENYA AGRICULTURAL RESEARCH INSTITUTE ORGANIZATIONAL STRUCTURE



In the course of the workshop discussed in the previous section, talks were held between E. Smaling and a number of persons involved in the Kenya Soil Survey in one or another way:

- Mr R. Rutto, dep. director Crops, Soil and Water (KARI);
- Mr G. Hinga, ass. director Soils, Water and other resources (KARI);
- Mr S.M. Wokabi, head Kenya Soil Survey;

- Mr L. Jacobs, Royal Netherlands Embassy;
- Mr R. Bos, consultant to the Royal Netherlands Embassy;
- Mr J. Grunblatt, advisor to KREMU;
- Dr G. Durr, co-ordinator to the Fertilizer Use Recommendation Project.

3.1 Netherlands commitment 1988-1993 to KARI/KSS

The proposed five-year commitment by the Netherlands Government (1988- 1993) to the National Agricultural Research Project (NARP) is spelled out in Table 1.

Table 2a shows the breakdown of funds available for KSS in this period. A breakdown for the financial year 1988/1989 is given in Table 2b. At present, three flows of funds are proposed:

- 1) through DGIS and STIBOKA (mainly twinning costs and consultancies, equipment and overseas training),
- 2) through the RNE (mainly equipment and local training),
- 3) through KARI (mainly operational costs).

This is a tentative breakdown, probably to be reduced to two flows (DGIS/STIBOKA and KARI only).

Table 1. Five-year Netherlands commitment to KARI
(September 1988)

in fl.1.000,-	88/89	89/90	90/91	91/92	92/92	totalen
KENYA SOIL SURVEY	525	705	705	705	705	3345
NAT.SEED QUALITY C.S.	333	368	315	315	345	1676
WILDLIFE DISEASE R.P.	548	473	349	244	329	1943
DAIRY RESEARCH	--	pm	pm	pm	pm	pm
POULTRY RESEARCH	--	pm	pm	pm	pm	pm
RESEARCH CENTERS	--	pm	pm	pm	pm	pm
sub-totals	1406	1546	1369	1264	1379	6964
Core-funding KARI 20%	280	309	280	250	279	1390
Planning expert KARI	--	pm	pm	pm	pm	pm
TOTALEN/jaar/FOS	1686	1855	1641	1514	1658	8354

Table 2a. Five-year Netherlands commitment to KSS
(September 1988)

in fl.1.000,-	88/89	89/90	90/91	91/92	92/93	totaal
(Kenya)						
personeel	400	425	470	514	568	
overig	200	200	200	200	200	
totalen Kenya	600	625	670	714	768	3377 (50,2%)
(Nederland)						
backstopping	60	120	120	120	120	
training	145	290	290	290	290	
operationele kosten	65	130	130	130	130	
aanschaffingen	230	115	115	115	115	
onvoorzien	25	50	50	50	50	
totaal Nederland	525	705	705	705	705	3345 (49,8%)

Table 2b. Tentative breakdown Netherlands commitment to KSS for financial year 1988/1989 (in Dfl. '000)

Budget code (Dutch)	Line item	DGIS/STIBOKA	RNE	RNE/KARI
<u>I Institutional support</u>				
9120	Backstopping STIBOKA	40		
9121.4	time spent in NL	19		
9121.5	time spent in Kenya	12		
9125	daily allowances	4		
9128	travel costs	4		
9129	other costs	1		
<u>II Personnel</u>				
9260	Local consultants			5
9270	Consultants fr.elsewhere	20		
<u>III Investment/Equipment</u>				
9420	Non-expendable equipment	75		
9421	soil survey equipment	5		
9423	cartography equipment	40		
9424	laboratory equipment	20		
9425	office equipment	5		
9426	maps, books, journals	5		
9430	Vehicles		150	
9490	Other equipment	5		
<u>IV Recurrent costs</u>				
9520	Service contracts equipment			5
9530	running cost and maintenance vehicles			50
9531	running costs (a.o. tyres)			10
9532	servicing			15
9532	repairs			25
9540	Stationary			10
<u>V Training</u>				
9610	Training in NL	80		
9620	Training in Kenya		30	
9620	Visits to regional seminars, workshops and conferences		30	
<u>VI Miscellaneous</u>				
9800	Contingencies		25	
		220	235	70
TOTAL	525			

By October 1988, the RNE transferred the first quarterly payment to KARI concerning the budget item "Operational costs" (Table 2b). KARI subsequently put the amount through to the NAL-account, rendering it available to the head of KSS.

Other expenditures foreseen in the on-going Kenyan financial year (July 1, 1988 - June 30, 1989) can only be made on formalizing a so-called "Twinning Agreement" between STIBOKA and KSS. The signing of this document was held up due to uncertainties on the status of NAL and thus KSS in the KARI. There was also no

clearcut decision as to which ministry the latter is answerable. Besides, the Dutch Ministry of Development Co-operation and the RNE had to reach consensus on some budgetary procedures. The 5-year commitment as shown in Tables 1 and 2a has been adapted from the "Beoordelingsmemorandum" of September 1988 of the Dutch Ministry of Development Co-operation and is adhered to in the "Twinning Agreement".

KSS was prepared to financially maintain a low profile for a number of months, due to changing institutional and financial procedures, but at present the need to replace defunct equipment at the cartography section and to release funds for staff training in Kenya and abroad is felt.

The STIBOKA representative feels that the manpower situation in KARI is improving and that within that organization there is a strong willingness to get the proposed structures to work. It is therefore recommended to have the "Twinning Agreement" signed by all parties at the earliest convenience.

The now obsolete budget January-June 1988 was drawn on up to the end of 1988. The 1988/1989 budget (Table 2a) is operational as from October 1, 1989, as by that date the RNE transferred the first quarterly installment to KARI. DGIS-AFO should attach different project codes to the individual activities in KARI, the overall project NARP being KE/88/08, but expenditures on KSS, NCQSC and WDRP having different codes.

It is suggested to start drawing on the allocated Dfl. 525,000/= as from 1-1-1989. Since RNE started disbursements by 1-10-1988, expenditures on "Operational costs" could be registered as from that date.

3.2 Present constraints and priorities in KSS work programme

So far in 1989, KSS spent a considerable amount of time on the preparation on the before-mentioned workshop (Section 2) and on the still existing report backlog. One senior officer who used to be in charge of editing (C.K.K. Gachene), left KSS and joined the University of Nairobi. Because of these reasons, very little fieldwork was carried out during the past six months.

It is therefore suggested to soon hold an in-house workshop on report writing and editing, including individual discussions with staff members involved in pending reconnaissance survey reports.

This holds for the quarter degree sheets of:

- Makueni (?)
- Galole (Kibe)
- Chuka (?)
- Malindi (Gatahi)
- Bondo (?)
- Busia (Rachilo)
- Transmara (?)
- Narok (Okoth).

The names in brackets refer to the officers, primarily responsible for the respective reports.

A programme should be made on finalizing and printing the maps and on drafting at least a concise explanatory note to these maps, including a land evaluation. This is the only way to do away with the backlog. The systematic mapping should be slowed down anyway, in order to provide more room for both ad hoc surveys on request, as well as automated data storage and retrieval. A small-sized "promotion campaign" is foreseen in the near future, when:

- there is clarity on the status of KSS in KARI,
- KSS has unimpeded access to allocated "operational" funds, both from the Kenyan and the Netherlands budget component,
- the scheme of service has been improved,
- KSS is allowed to benefit (in kind) from a revolving fund in the annual budget, generated out of surveys on request, paid for by the clients,
- the brochure on KSS has been printed and framed reconnaissance maps and district-ready list of publications have been prepared,
- ways are found to clear the reporting backlog.

It now looks definite that KARI will fall under the MoRST, but that strong functional links with the MoA will be maintained. The Director of Research, Science and Technology, Mr Moturi, used to be Director of Agriculture and is a soil scientist by discipline.

3.3 Proposals KSS/KARI on spending core funds

Two proposals made by the head of KSS (S.M. Wokabi), in consultation with the consultant to the RNE (R. Bos), entail:

1. to forfeit one vehicle budgetted for 1988/1989 and purchase a lettering machine and a printing press for the cartography section instead; the deputy director for Planning, Finance and Administration in KARI (Mr Miyogo), suggested to pay the lettering machine out of the core funds;
2. to increase, in co-operation with the Kenya Rangeland Ecological Monitoring Unit (KREMU, Min. of Planning and National Development), the impact of the KSS-section "Data Storage" through training on data base management and geographical information systems; equipment of KREMU can be utilized, whereas in return, KREMU can utilize information on natural resources gathered by KSS; a proposal has been submitted to KARI to have this activity paid out of core funds.

The STIBOKA representative considers it a useful and timely proposal, as some KSS staff should have the opportunity to further familiarize with automated data storage and retrieval. Also, the proposed co-operation is between Kenyan institutes, and this implies a relatively high percentage of expenses to be incurred within the country.

3.4 Training

The head of KSS prepared a list of officers eligible for training in the 1989/1990 academic year. This programme is shown in Table 3.

Table 3. Training programme KSS 1989/1990

<u>Name</u>	<u>Designation</u>	<u>Course</u>	<u>Institution</u>	<u>Years</u>
C.R.K. Njoroge	T.O. II	B.Sc.	West-Virginia Univ., USA	89-91
P.N. Macharia	A.O. I	M.Sc.	Univ. Nairobi	89-91
S.N. Wanjogu	A.O. I	M.Sc.	Univ. Nairobi	89-91
H. Onyono	T.A.	Soil Ref. Collect.	ISRIC Wageningen	89
P.T. Kamoni	A.O. II	GIS/ Informatica	ITC Enschede	89
P.K. Kimotho	T.A.	GIS/ Informatica	ITC Enschede	89
P.K. Kimani	T.A.	Diploma soil survey	ITC Enschede	89-90

3.5 T.o.R. forthcoming twinning mission and editing workshop

The next STIBOKA-KSS twinning session will encompass a two-weeks visit to Kenya in the period June-July 1989. The main topics of discussion will be:

- client-oriented approach in the KARI-structure: revolving fund, flexibility, prices charged for surveys, advices, analysis, meeting deadlines;
- public relations;
- the position of systematic surveys (districts, mapsheets) in the near future;
- staff situation and scheme of service;
- training at all levels and attendance of regional workshops;
- equipment needs of sections Cartography and Support Research Laboratories;
- development of the section Data Storage and elaboration of proposal for co-operation with KREMU.

An in-house workshop on report writing and editing is foreseen in June/July 1989. The two-three weeks workshop will encompass the following terms of reference:

- 1.5 week study and critical review of "poorly written" reports, exercises on how to go about in report writing, what is essential, what is additional information, internal consistence of a report;
- 1.5 week individual assistance to officers confronted with pending reconnaissance reports.

The output of the mission should be that:

- all research officers are capable of writing and editing their own reports,
- each year an editorial committee of three officers is appointed who take a final critical look at reports submitted for printing,
- all officers presently under the burden of unfinished reports have clear guidelines how to finalize their backlog within a relatively short time.

The twinning mission is scheduled to overlap slightly with the editing workshop, in order to provide a smooth follow-up from the side of STIBOKA.

ACRONYMS

AO	Agricultural research officer
DGIS	Directorate General for International Development Co-operation, Ministry of Foreign Affairs (The Netherlands)
EEC	Delegation of the European Economic Communities
FAO	Food and Agriculture Organization of the United Nations
GTZ	German Society for Technical Co-operation
ICRAF	International Council for Research in Agro-Forestry
ISRIC	International Soil Reference and Information Centre
ITC	International Institute for Aerospace Survey and Earth Sciences
IWOMUSSI	International Workshop on the Multi-purpose Use of Soil Survey Information in Land-Use Planning
KARI	Kenya Agricultural Research Institute
KREMU	Kenya Rangeland Ecological Monitoring Unit, recently renamed into: Department of Resource Surveys and Remote Sensing
KSS	Kenya Soil Survey
MoA	Ministry of Agriculture
MoRST	Ministry of Research, Science and Technology
NARP	National Agricultural Research Programme
NSQCS	National Seed Quality Control Service
NSSP	National Soil Service Project, Tanga, Tanzania
RNE	Royal Netherlands Embassy
STIBOKA	Netherlands Soil Survey Institute
TA	Technical Assistant
TO	Technical Officer
UNEP	United Nations Environmental Programme
WDRP	Wildlife Disease Research Project

ITINERARY

- 13-3
 9.00 arrival in Nairobi
 10.00 workshop IWOMUSSI
 evening discussions with R. Bos (consultant to RNE) and KSS staff at the workshop's welcoming party
- 14-3 workshop (continued)
- 15-3 workshop (continued)
- 16-3 workshop (continued); presentation of a paper by J. Bouma and a paper by E.M.A. Smaling and R.F. van de Weg (titles in Annex 1)
 evening discussions with S.M. Wokabi, head KSS
- 17-3 visits to KARI (R. Rutto, G. Hinga), the RNE (L. Jacobs), and KREMU (J. Grunblatt);
 evening discussions with A.J. van Kekem (STIBOKA/NSSP Tanga, Tanzania)
- 18-3 discussions with G. Durr, co-ordinator of the Fertilizer Use Recommendation Project and other project staff
- 19-3 discussions with P. Kiepe (ICRAF), M. Schoomakers (UNEP) and J. Huesken (FAO, Zimbabwe)
- 20-3
 morning departure to Maputo (Mozambique)

THE INTERNATIONAL WORKSHOP ON MULTIPURPOSE USE OF SOIL SURVEY INFORMATION
FOR EFFICIENT LAND USE AND MANAGEMENT (I.O.M.U.S.S.I.)
MARCH 13 - 20 1989, NAIROBI KENYA

PROGRAMME

SUNDAY 12TH

16.00 - 20.00 Registration at Hotel 680.

MONDAY 13TH

08.00 - 09.30 Registration at Kenyatta International Conference Centre.

10.00 - 10.30 Opening Ceremony.

Prof. F. Mbithi, Vice Chancellor, University of Nairobi (Chairman of Session).

Dr. H. Eswaran, Leader, Soil Management Support Services (SSMS), U.S.A. representing sponsors.

Hon. G. M. Ndotto, Minister for Research, Science and Technology.

10.30 - 11.00 T E A B R E A K

SESSION I : Chairman, P. Bullock

11.00 Key note paper on Multipurpose use of soil survey information for efficient land use management by S.W. Buol.

11.30 The tragedy of land use management without soil survey information: A case study in Uganda by J.E. Tumuhairwe

11.50 Soils as an information system for land use management by W. Sideri us.

12.10 The development of soil specific conservation structures for the Hanang wheat by P. Silayo and T. Angen

12.30 L U N C H B R E A K.

SESSION 11 : Chairman, B. Hintzer

14.00 Key note paper on Cost effectiveness of Soil Survey information by T. Calhoun, H. Eswaran and R. Reybold.

14.30 Cost effectiveness of soil surveys: A Case Study in the Gwembe District of Zambia by N. Mkanda. (not presented)

14.50 Special variability studies and cost effective surveys in the Context of land evaluation by R. Ponce-Hernandez. (not presented)

15.10 Discussion

15.30 T E A B R E A K.

SESSION 111 : Chairman, F. J. Wang'ati

16.00 Key note paper on Soil database for transfer of farming system technology in Africa by A.A. Agboola

16.30 A pedological database for Zimbabwe by A. Hungwe

16.50 Discussion

18.30 Cocktail Reception at Hotel 680.

TUESDAY 14TH

SESSION IV : Chairman, J.Y.K. Zake

08.00 Key note paper on designing Soil Surveys for specific uses by R. Brinkman.

SESSION IV a : Chairman, J. Y. K. Zake

08.30 Keynote paper on designing soils surveys for rain-fed agriculture by R. Sant' Anna. (not presented)

09.00 Information content of soil survey for rainfed agriculture by D. J. Banda (Zambia)

09.20 Small Survey and land evaluation for rainfed agriculture by small holders on the vertisols of the Central highlands of Ethiopia by M. Haile.

09.40 Discussion

10.00 T E A B R E A K.

SESSION IVb : Chairman, D. Lambtey

10.30 Keynote paper on designing soil survey for irrigated agriculture by J. Sehgal.

11.00 Evaluation of representative soils of Wamumu area for irrigated maize production by S.M. Wokabi.

11.20 Evaluation of potential and actual cane yields on well drained Ferralsols in the sugar cane estate of Cameroon using climatic and soil survey data by J. Debaveye, E. Van Ranst and J. Bindzi - Tsala

11.40 Soil survey for upland rice: Soils and associated properties of Coastal sediments in Nigeria by T. A. Okusami.

12.00 Assessment of TM digital data for soil and land resources evaluation in Kipsigis (Kenya) by S. N. Kalyango and V. D'Costa

12.30 L U N C H B R E A K

SESSION IVc : Chairman, I. Babiker

14.00 Keynote paper on Soil Survey information for small scale farm by F. N. Muchena

14.30 Use of soil survey information for rural development by R. Rasio

14.50 Management and yield potential of Vertisols - A case study by K.S. Bhaskar, S.T. Gaikawad and V.V. Pattiwar

15.10 Discussion

15.30 T E A B R E A K

SESSION IVd : Chairman, R. Brinkman

16.00 Keynote paper on soil survey information range and wildlife management by S. Leonard.

- 16.30 Productivity of natural grassland in Swiss Alpine Region and influence of different types of utilization by K. Peyer and M. Krause.
- 16.50 Soil survey information for rangeland (an example from Spain) by E. A. Olowolafe and E. Nieuwenhuis.
- 17.10 Baseline soil information for rangeland management (The Kiboko case) by S. Mwachabe.

WEDNESDAY 15TH

SESSION V : Chairman, S. W. Buol

- 08.00 Keynote paper on soil survey information for Forestry and Agroforestry by A. Young.
- 08.30 Soil survey information for soil moisture management (A study on Abruptic soils) by P. F. Okoth and P. M. Mainga
- 08.50 Discussion
- 10.00 T E A B R E A K

SESSION VI : Chairman, V. R. Chinene

- 09.00 Keynote paper on soil survey information for non-agricultural uses by R. Grossman
- 09.10 The applications of soil survey information for non-agricultural uses in Kenya by J. R. Rachilo and S. N. Wanjogu.
- 10.00 T E A B R E A K
- 10.30 The use of soil survey information in the constructional and mineral development of land in Britain by M. J. Reeve.

- 10.50 Soil Survey data for fluvial erosion control by H.M. Mushala and S. Nkumbune
- 11.10 Discussion
- 12.00 L U N C H B R E A K.
- 13.30 Visit to small scale farm and the National Agricultural Laboratories (NAL).
- 15.30 Working Group meetings at NAL.
 - 1. Soil survey information for quantifying land evaluation: Chairman, J. Dumanski
Rappor., N. N. Nyandat
M. M. Gatahi
 - 2. Computerization of soil survey information: Chairman, P. Bullock
Rappor. J. Sehgal
Kamoni
 - 3. Effective Communication of soil survey information for users Chairman, S. W. Buol
Rappor. R. Sant'
Anna
V. R. Chinene
 - 4. Farming systems research and development: Chairman, A.A.
Agboola
Rappor. J. Z. Zake
E. Evan Ranst
- 19.00 Cultural evening at Bomas of Kenya.

THURSDAY 16TH

SESSION VII : Chairman, J. Sehgal

- 08.00 Keynote paper on Soil-weather-crop modelling by J. Bouma
- 08.30 Zambia soil and land evaluation data systems by O. Lungu
- 08.50 ALES: A microcomputer programme to assist in land evaluation by A. van Wambeke and D. Rossiter
- 09.10 Modelling effects of Agricultural practices on nitrate contamination of ground and surface water by A.K. Katyal, J.C. Parker and T.G. Johnson
- 09.30 T E A B R E A K
- 10.00 A land evaluation methodology and its validation in three agroecological zones in Zambia by V. R. Chinene.
- 10.20 Some factors responsible for the limited use of soil survey data in Uganda's land development planning by J. M. Tukahairwe.

SESSION VIII : Chairman, A. Bunyolo

- 11.00 Keynote paper on Geographic soil information system by M. Robb.
- 11.30 Use of digital geographic soil database in the U.S. by W. Reybold

12.00 Discussion

12.30 L U N C H B R E A K

SESSION IX : Chairman, A. Van Kekom

- 14.00 Keynote paper on soil survey information for IBSRAM's Soil Management Network by B. Bintze
- 14.30 Estimation of irrigated and rain-fed grain sorghum yields in Northern Cameroon using agrometeorological and soil survey data by D. Van Ranst, J. Beboveye, F. Mahop and J. M. Pauwels.
- 14.50 Some genetic aspects of the greyzems in S.W. Kenya by W. N. Wamicha and W. Mill.
- 15.10 Site Characterization for the proposed MOVUSAC project at Gategi, Embu District, Kenya by C.K.K. Gachene
- 15.30 T E A B R E A K
- 16.00 Representativeness of fertilizer trials as a guide to area specific fertilizer recommendation for rainfed annual cropping by E.M.A. Smaling and R.F. van de Weg.
- 16.20 The effect of water and nitrogen on wheat yield on a Zambian Soil: Influence of irrigation schedules and nitrogen placement by A. Munyinda, A. Bunyolo and R. E. Karamanos.
- 16.40 Reports of Working Groups and closing.

FRIDAY 17TH: FOUR DAYS OF POST CONFERENCE TOUR.

07.00 Field Trip I. Starting Nairobi to Nyeri and Nakuru (Night stop at Nakuru)

SATURDAY 18TH

07.30 Field Trip II: Continuing from Nakuru to Kericho and Kisumu. Those wishing may return to Nairobi from Kisumu. (Night stop at Kisumu)

SUNDAY 19TH

09.00 Field Trip III: Continuing from Kisumu to Kakamega and Eldoret.

Afternoon: Guided visit to Moi University.

Evening: 1. Dinner reception at Sirikwa Hotel, Eldoret.

MONDAY 20TH

07.30 Field Trip IV continuing from Eldoret to Marigat, Nakuru and back to Nairobi.

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ADDRESS BY THE MINISTER FOR RESEARCH, SCIENCE AND TECHNOLOGY,
HON. G. M. NDOTTO, M.P. ON THE OCCASSION OF THE OFFICIAL
OPENING OF THE INTERNATIONAL WORKSHOP ON THE MULTIPURPOSE
USE OF SOIL SURVEY INFORMATION FOR EFFICIENT LAND USE
MANAGEMENT - NAIROBI 13TH MARCH, 1989.

Mr. Chairman, distinguished guests, delegates, ladies and gentlemen. On behalf of the Government and the people of the Republic of Kenya, it gives me great pleasure to welcome especially visitors from outside Kenya to this country and to the city of Nairobi. We are happy that you have chosen Nairobi as the venue for this international workshop on utilization of soil survey information. During your stay in this country, you are most welcome to visit any places of your special interest.

The subject of this workshop is an important one particularly in developing countries where land use especially for agriculture is the main stay of the economy and the majority of the population depend on it for their livelihood. 10

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Soil survey information provide essential data required for planning and management of natural resources of a country. Land is the most important natural resource which supports agriculture, livestock production, forestry, wildlife, water resources and the environment. Systematic and comprehensive documentation of the soil resource is therefore of vital importance. Practically, every country in the world has some kind of soil survey program. Soil survey involves investigations of a piece of land, identifying the qualities of the soil and the land, putting that distribution and extend on a map, suggesting what uses the land is suitable for and specifying the level of management to sustain the particular use. The data acquired through soil survey involves not only routine physical, chemical and other analyses but also facilitates critical research investigations in application of these data for land use planning and development. Soil survey is therefore one of the Scientific activities requiring the inputs of many scientific disciplines. /2

Soil surveys are therefore expensive undertakings and would be a great waste of time and money if the information collected is not used effectively.

Reasons associated with lack of use or misuse of soil survey information include: lack of well defined objectives, insufficient information for user purposes and publication of information in a form which is not readily understood by the user. Furthermore, procedures and methods used in soil survey evaluation are often not sufficiently standardised. Improvement of this situation has proved difficult mainly due to lack of qualified personnel. Meetings of scientists as exemplified by this workshop are therefore valuable in bringing together soil scientists and those involved in the utilization of land resources to exchange knowledge regarding the application of soil survey information for efficient land resource use and management. I have noted that at this workshop, eminent

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scientists will deliver invited keynote lectures as well as other papers on utilization of soil survey information for agriculture, range management, forestry, wildlife, engineering and other non-agricultural uses including the adequacy of soil survey information for qualitative land use management. Discussions will also include topics on cost effectiveness of soil survey information and techniques in effective dissemination of soil survey information to serve user needs. The workshop should therefore be able to identify the needs and make recommendations particularly in strengthening of the packages of soils survey information to meet the user needs.

In Kenya, soil survey may be traced back to 1908. The first soil map of East Africa was published in 1930 at a scale of one to three million. Soil survey work including site investigations has continued especially in support of

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agricultural projects such as Ramisi, Miwani, Chemilil, Songhor Sugar Schemes and Mwea Tebere rice scheme. From 1963 facilities of the Kenya soil survey section under the National Agricultural Laboratories have been improved and the section challenged to play a greater role in providing the feasibility data required for the establishment of agricultural development projects as set out in the Kenya government development plans.

From 1972 the Kenya soil survey was further strengthened under bilateral aid agreement with the Netherlands government. As a result of these improvements the service has completed a number of projects including an exploratory soil map and agro-climatic map of the whole country at a scale of 1:1,000,000 which was completed in 1982. This forms a good basis for the selection by planners at national level of areas to be developed for special land use projects.

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Within the reorganized National Agricultural Research Programme of the Kenya Agricultural Research Institute, Kenya Soil Survey has been explicitly mandated among other functions, to carry out reconnaissance, semi-detailed, detailed and preliminary soil surveys and prepare maps and reports for agricultural purposes.

In order to facilitate the fulfilment of this mandate, Kenya Soil Survey through the financial support of the Kenya Government and any other bilateral assistance will intensify in service training for Kenya Soil Survey staff as need arises, develop an automatic data storage and retrieval system which will include the introduction of geographic information system and introduce an automatic land evaluation system which will enhance the process of development of land suitability assessment particularly for agricultural purposes.

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In order to keep abreast with new methodologies of gathering, interpretation and dissemination of soil survey information to users, Kenya Soil Survey will require collaboration with other local and international institutions particularly the Universities and Colleges for professional exchange and training of manpower.

It should however be noted that there are other institutions in Kenya which are also working on land resources evaluation. Some of these institutions include: Department of Resources Survey and Remote Sensing (originally KREMU), Permanent Presidential Commission on Soil Conservation and Afforestation, Regional Centre for Remote Sensing and Mapping and the United Nations Environmental Program. Kenya Soil Survey should continue to work closely with these institutions to avoid duplication of efforts.

It is important to note that in recent years there have been considerable technological advances in the field of data gathering and analysis in the field of natural resources, particularly in the developed world. There has been a tendency to export through technical assistance projects those high technologies to the developing world. In some cases, the developing countries do not have qualified manpower or the financial capability to handle such technologies after the termination of the projects. Developing countries should ensure that where such advanced technologies are imported adequate training is provided to enable the country to maintain and operate the equipment at the expiry of the projects. Local Universities should also develop programmes to facilitate this type of training.

In the case of Kenya there are a few areas where Kenya still requires external support. One of these areas is in training of high level manpower required for multidisciplinary teams which should include, soil scientists, soil management specialists, climatologists land evaluation specialists, soil chemists, vegetation specialist, agronomists agricultural economists and cartographies and laboratory technologists. Assistance is also required in the acquisition of appropriate computer equipment and related accessories to facilitate the development of effective data storage and retrieval systems.

Mr. Chairman, I am pleased to note that you have included in your programme a field excursion traversing the central parts of Kenya, Rift Valley, Lake Victoria basin and Kerio Valley to enable participants to see various environmental conditions existing in those areas and particularly the

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utilization of land resources by small scale farmers.

I also hope participants will find time to visit our game reserves and that all visitors will all enjoy their short stay in our country.

Mr. Chairman without taking too much of your time, I would like to wish participants success in this workshop. I look forward to your advice and recommendations as to how Kenya can benefit in strengthening soil survey activities. However, let me reiterate once again my pleasure at being invited to participate in this ceremony.

It is now my duty and pleasure to declare this workshop on utilization of soil survey information for efficient land use management officially open.

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A N N O U N C I N G

AFRICAN SOIL SCIENCE SOCIETY (ASSS)

THE FORMATION OF

AFRICAN SOIL SCIENCE SOCIETY

The AFRICAN SOIL SCIENCE SOCIETY (ASSS) was founded at the First General Meeting of ASSS held in Kampala on 8th December, 1988 during the First African Soil Society Congress, 5-10 December, 1988. The Constitution and the list of Office Bearers are attached.

You are welcome to join ASSS by filling in the membership application form (Form ASSS/01) and paying an Entrance Fee of US \$ 5.00 and an Annual Subscription fee of US \$ 10.00. The subscription fee can be paid for up to 1991.

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OFFICE BEARERS

A. Executive Committee

- President: Prof. A.M. Elgala (Egypt)
- Vice Presidents: Prof. J.V.K. Zake (Uganda)
 - Eastern and Southern Africa
 - Prof. A.A. Agbocla (Nigeria)
 - Western and Central Africa
 - Prof. A. Nahal (Egypt)
 - Northern Africa
- Secretary General: Prof. M.P. Salema (Tanzania)
- Assistant Secretary General:
 - Dr. B. Mutwewingabo (Rwanda)
- Treasurer: Dr. T.T. Tchemi (Togo)
- Ordinary Elected Members:
 - Prof. V.P. da Costa (Kenya)
 - Dr. V.R.N. Chinene (Zambia)
 - Mrs. M.C. Silver (Uganda)

B. Council

- All Members of the Executive Committee (A. above)
- Immediate Past President (Not applicable)
- One representative from each sub-regional and each national society (To be elected by respective societies)
- Electees of the General Meeting:
 - Dr. F.N. Muchera (Kenya)
 - Dr. N.N. Nyandat (Kenya)
 - Mr. A.T. Halm (Ghana)
 - Mr. V. Ngarambe (Burundi)
 - Mrs. M.J.N. Okwakol (Uganda)
 - Dr. O.A. Opara-Nadi (Nigeria)

AFRICAN SOIL SCIENCE SOCIETY (ASSS)

CONSTITUTION

PREAMBLE

IN PERSUANCE of the proclamation by the African Soil Scientists at the 13th International Congress of Soil Science Society (Hamburg, 13-20, August, 1986),

NOTING the importance of Soil and Land Resources for human and animal life,

CONSIDERING the state of increasing deterioration of Soil and Land Resources in Africa,

APPRECIATING the efforts so far made by the National and Regional Soil Science Societies, and the provisional steering committee established during the 12th ISSS Congress in India in 1982,

RECOGNISING the need to bring these efforts together,

WE the African Soil Scientist assembled at Kampala, hereby resolve to formally found the African Soil Science Society and to adopt a constitution:

1. NAME

The Association shall be called: African Soil Science Society (ASSS), hereafter referred to as "the Society".

2. STATUS

The Society is a scientific non-political and non-profit organisation.

3. AIMS AND OBJECTIVES

- a) To provide a forum for African Soil Scientists to exchange and share ideas and concepts on the development and management of African Soils.
- b) To publish and disseminate information on soil research and management.
- c) To promote cooperation on research in the field of soil science and related subjects.

- d) To encourage the African countries to formulate suitable policies for the protection and proper use of their soil resources.
- e) To promote education and training in soil science and related subjects in Africa.
- f) To promote, embrace and coordinate activities of the sub-regional and national Soil Science Societies within Africa.
- g) To encourage the formation of sub-regional and national Soil Science Societies.
- h) To foster affiliation and maintain liaison with ISSS and other international bodies and organizations interested in the development and proper use of soil resources.

4. MEMBERSHIP

There shall be the following classes of membership:

- Ordinary members.
- Associate members.
- Corporate members.
- Honorary members.
- Life members.

(i) Ordinary members:

All African Soil Scientists and other Scientists working on Soil Science and related disciplines.

(ii) Associated members:

Students in the field of Soil Science and related subjects in Africa.

(iii) Corporate members:

Any institution, organization, association, or a group whose purpose and activities are in consonance with the objectives of the Society.

(iv) Honorary members:

Individual who has made distinguished contribution to agricultural development in general, and soil science application in particular within Africa.

v) Life members:

Distinguished scientists in Soil Science and related disciplines on one time payment of a stipulated fee.

5. OFFICERS OF THE SOCIETY

A. COUNCIL

- (i) All members of the Executive Committee.
- (ii) Immediate Past President.
- (iii) One representative from each sub-regional and each national society.
- (iv) Five individual members elected at the General Meeting.

B. EXECUTIVE COMMITTEE

- (i) President.
- (ii) Vice-Presidents (not less than three or more than five).
- (iii) Secretary General
- (iv) Assistant Secretary General
- (v) Treasurer
- (vi) Three Ordinary elected members.

6. ELECTION OF OFFICERS

- (i) All officers of the Society shall be elected during the General Meeting by secret ballot with a simple majority.
- (ii) The President of the Society shall be from the country hosting the next conference of the Society. The President shall be the Chairman of the Local Organizing Committee.

7. ADMINISTRATION

- (i) The administration of the Society shall be entrusted to the Executive Committee.
- (ii) The President shall be the Chairman of the Executive Committee and the Council.

(iii) The Executive Committee shall be responsible for:

- (a) The general administration of the Society.
- (b) Preparing the budget of the society for the approval of the Council.
- (c) Taking such measures and actions deemed appropriate in the interest of the Society.
- (d) Recommending the agenda, date and place of next meeting of the Society.

(iv) The Executive Committee shall be responsible to the Council.

(v) The Council shall be responsible for policy and guidance.

(vi) The Council shall be responsible to the General Meeting.

8. GENERAL MEETINGS

- (i) The General Meeting shall be held at least once in four years.
- (ii) Quorum for the General Meeting shall be made up of one third of paid-up members representing one quarter of the African member countries.
- (iii) The venue of the General Meeting shall, as far as possible, rotate among the regions in Africa.

9. FUNDS

The resources of the Society shall be from:

- (i) Entrance fees.
- (ii) Annual membership subscriptions.
- (iii) Payment for services rendered.
- (iv) Proceeds from the sale of publications.
- (v) Donations and legacies.
- (vi) Subventions.
- (vii) Grants from organizations, governments, and individuals.

10. ENTRANCE FEES AND ANNUAL MEMBERSHIP SUBSCRIPTIONS

Entrance fees and annual membership subscriptions by members shall be determined by the General Meeting of the Society on the advice of the Council.

11. ACCOUNTS

- (i) Funds for the Society shall be held in any African country which allows easy transaction of convertible currency.
- (ii) The accounts of the Society shall be audited annually by the auditor appointed by the Council.

12. TERMINATION OF MEMBERSHIP

- (a) Any member of the Society may withdraw his membership by writing to the Secretary General upon the settlement of all dues and obligations.
- (b) Any member whose conduct proves incompatible with the objectives of the Society may have his or her membership suspended or revoked. Each suspension or revocation shall be decided by a vote of two-thirds majority of paid up members present and voting in a regular General Meeting.

13. RULES AND BY-LAWS

The Executive Committee in consultation with the Council shall lay down the Rules and By-laws for implementation of the Constitution. Such rules and by-laws shall be ratified by the General Meeting.

14. AMENDMENT TO THE CONSTITUTION

The present Constitution may be amended by the General Meeting upon the proposal of the Council or upon the request of not less than ten members of the Society submitted to the Executive Committee 3 months before the General Meeting. Amendments shall be adopted by a simple majority of the written votes of all the paid up members.

15. LANGUAGES

The official languages of the Society shall be English and French.

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Adopted at Kampala on the 8th day of December, 1988.