

E. Gojo

SECRETARY

Confirmed By:

[Signature]

for: KENYA TEAM

Eisaku Tsunemi

for: JAPANESE MAPPING TEAM

Date: *9 October 1982*

Date: *9 October, 1982*

MINUTES OF THE MEETING BETWEEN JAPANESE MAPPING TEAM (JMT),
KENYA SOIL SURVEY (KSS) AND SURVEY OF KENYA (SK), HELD ON 5TH. OCTOBER,
1982 AT SURVEY FIELD HEADQUARTERS, NAIROBI.

PRESENT:

Mr. D. Kamau	- Director of Surveys, SK - Chairman
Mr. F.N. Muchena	- Director, Kenya Soil Survey (KSS)
Mr. J.D. Obel	- Ag. Assistant Director of Surveys, SK
Mr. E. Tsurumi	- Technical Advisor, JMT
Mr. E. Gojo	- Leader, JMT
Mr. H. Murayama	- JICA, Tokyo
Mr. S. Nakajima	- Deputy Leader, JMT
Mr. T. Otsuki	- Physical Geographer, JMT
Mr. N. Yunohara	- Geologist, JMT
Mr. Y. Yokota	- Vegetation/Present Land Use (Geographer), JMT
Mr. T. Nishikawa	- Pedologist, JMT
Mr. P. Ndanda	- Chief Cartographer, SK
Mr. D.A. Chabeda	- Chief Lithographer, SK
Mr. D.M. Olulo	- Cartographer, Kenya Soil Survey
Mr. J.R. Sachilo	- Soil Surveyor, KSS
Mr. J.M. Kibe	- Soil Surveyor, KSS
Mr. E.O.T. Ondiek	- Cartographer, SK
Mr. J. Ogutu	- Senior Cartographer, SK - Secretary

Subjects for Discussion:-

1. Confirmation of the minutes of the meeting in July, 1982
2. Report on Field Identification (Modification of Legend Items)
3. Colour Design of Thematic Maps
4. Sheet Layout of Thematic Maps
5. Business Matters
6. Future Schedule
7. Others

The meeting was held in the Survey of Kenya Training Wing Hall at Survey Field Headquarters, Ruaraka and started at 9.30 a.m.

Opening the meeting, the Chairman welcomed all the participants and then asked the JMT to state whether they wanted the meeting to consider their (JMT's) Draft Agreement first. JMT suggested that the draft agreement be discussed later and asked that agenda No. 2 be discussed first. JMT's request was accepted and the meeting proceeded with the discussion.

Agenda No. 2 - Report on Field Identification (Modification of Legend Items)

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JMT told the meeting that the results of various surveys by JMT were ready and that the surveys were to be presented by them at the meeting. The reports were presented as follows:-

(i) Result of Vegetation and Land Use Survey

JMT presented two map legends one for vegetation and present land use in the Tana River Delta area showing Division, Symbol, Map Colour, Sub-division, Dominant Species and Land Use columns and the other for Vegetation/Present Land Use in Ranching Area showing both Division and symbol in a colour box, Dominant Species and Land Use columns. JMT presented the Legend of Vegetation and Present Land Use in Ranching Area together with a colour Model of the Schematic Map of Vegetation and Present Land Use in Ranching Area.

JMT said that the legend of 6 (six) classes was also attached. (See Appendix 1 (a) and Appendix 1 (b))

(ii) Result of Land form Survey

JMT presented one legend showing Macro-Meso Relief, Symbols and Land form Type and also one colour model of the Schematic Map of Land form in the Ranching Area. On the Model was included a Legend of Landform classifications showing Macro-Meso Relief, Symbol and colour and Landform Type. (See Appendix 2)

Kenya Soil Survey asked JMT to explain the criterion they had used to arrive at their classifications in the legend of Landforms. In reply, JMT said that it was rather difficult to explain the method used but they suggested that KSS should countercheck with the KSS classification book to find out how classification was done.

(iii) Result of Geological Survey

The report was presented in two ways, one by the Legend of Geology showing the columns of Geological Age, symbol and explanation and also by a colour model of the Geological Map of Ranching Area. Together with the Legend of Geology was also presented a comparison of Legend of Geology between Ranching Area and Tana River Area. (See Appendix 3)

(iv) Results of Soil Survey

The report had two legends, one for soil only showing columns for Symbol of Legend and Colour and the other Legend of Surface Geology and Soil. The report also contained a colour model of Fundisa - Kurava Area Soil Map incorporating a legend with colour scheme break-down. It was pointed out by KSS that the key to depth classes should be indicated as a footnote at the end of the legend of the soil map. The JMT accepted this. (See Appendix 4)

Agenda No. 3 Colour Design on Thematic Maps

JMT presented the report on Colour Design of Thematic Maps and told the meeting that the colour designs presented were provisional and that JMT will forward final colour designs to KSS and SK from Japan by the end of January, 1983. The colour designs so forwarded will be considered at the next meeting in February, 1983. The colour design of Vegetation and Present Land Use Map was prepared by KSS and that of Landform by SK.

JMT emphasized that the colour designs should be finalised before the end of the Japanese financial year which is March. As a result of this it was decided that the colour designs be finalised by February, 1983. The colour designs are presented as Appendices 5(a) and 5 (b).

SK asked JMT to consider the use of colours which were distinct from the others as opposed to those which were fairly close. SK gave examples of A (314) and PC (414) of Landform which appeared to be rather close. After discussion, JMT promised that they would review the colour design in the afternoon (amended as shown in Appendix 5 (b)).

Agenda No. 4 Sheet layout of Thematic Maps

JMT presented the report on Sheet Layout by first presenting that of Vegetation and Present Land Use Map - Garsen and secondly that of Landform. The dyeline prints produced by SK were distributed to the participants for ease of reference. Both sheets were designed taking into account the Printable size of (60cm x 87.5cm) of SK machines.

JMT further stated that the sheet Nos. for the 1:50,000 scale series Nos. had been decided but not that of 1/100,000 scale maps. They suggested that the 1/100,000 scale sheets be numbered as series Y633A and Y633B. This proposal was approved and will be adopted.

Sheet History

The Sheet History draft was presented to the meeting by

JMT for consideration. The draft, considered and amended appropriately, is attached to these minutes as Appendix 6.

The major amendment to the draft for both the Tana River Delta Area and Ranching Project Area is the substitution of the word "constructed" with the word "prepared". This change was proposed by the Kenyan Team because they believed and were convinced that the base maps used for these series of Land Use Mapping were already constructed. JMT have used the bases of the 1/50,000 topographical maps constructed by them for the previous topographical maps constructed by them for the previous topographical mapping project.

It was also agreed that the statements "Base Map JICA - 4, Y731" and Base Map reduced from JICA - 4, Y731" will vary from sheet to sheet because the bases used are of different editions. It was further suggested by the Kenyan Team that for Soil Maps, the wording in the Sheet History should reflect the useful contribution by KSS.

JMT said that they had noted all the comments by both KSS and SK and would consider the comments in Japan and then prepare a final draft to be forwarded to the Kenyan Team.

Sheet Layout:

JMT proposed that the sheet specimens for Vegetation and Present Land Use Map and Landform be adopted in principle and that provision be left for modification later. It was further agreed that the specimen for surface Geology and Soil Map be almost the same as the KSS's existing Soil Map. The KSS promised to supply JMT with a copy of their (KSS's) Soil Map as a sample.

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JMT said that they were proposing to amend the key of the Vegetation and Present Land Use Map - Garsen by reducing the Group Communities to three and removing the 1 (one) cm. square. After consideration, it was agreed that the Group of Communities may be adjusted by the JMT but that the 1 (one) cm. square should remain to aid in area calculation. However, the area covered by the said 1sq.cm. will be adjusted according to the scale of the map.

Topo Key: etc.

It was agreed that JMT be given a free hand to select the topo information to appear on the sub-died base. It was also agreed that in soil map "depth class" should be shown as a "foot note" of the legend.

General Comments:

JMT said that the Final Legend, Sheet Layout and Sheet History will be prepared by JMT in Japan and forwarded to both ISS and SK by the end of January, 1983 before JMT return to Kenya. JMT asked SK to show the trimming lines and Register Crosses on the Specimen Sheets. The open window marks will be viewed by JMT in the SK's Reproduction Section.

ISS drew the attention of the meeting to the minutes of 21st. July, 1982 page 2 (two) - SHEET LAYOUT 2nd para. and said that they found it was not practicable to meet the requirements for the information to be shown on the sub-died base because it would mean showing a very long list. It was agreed that the matter be left to the JMT for implementation.

Agenda No. 5 Business Matters

5a JMT promised that they would surrender various items supplied to them for the survey work i.e./keys, ID/cards, National Park Passes etc to SK for safe keeping.

Agenda No. 6 Future Schedule

JMT said that after returning to Japan, JMT would start compiling the various maps. They (JMT) would decide on the suitable rating by experimentation and the results used for deciding the method. At the February, 1983 meeting in Kenya, JMT will bring a sample of a compiled original map to be discussed for approval. Also to be brought for discussion will be the final draft of the Sheet Layout, legend items (soil map), and colour designs as mentioned before.

Agenda No. 7 A.O.B.

(1) SK proposed that JMT should supply SK with:- (i) Photomechanical proof (ii) Press Proof (iii) Colour progressives (iv) Metal Printing Plates used for printing the maps and (v) Colour strengths e.g. (1-0, 1-16) and if possible with colour pack. JMT should also liaise with SK by telling SK the size of printing machine to be used for printing the maps so that grip and lay measurements could be adjusted to suit SK machines during reprinting. JMT accepted the proposals.

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(2) JMT asked SK for permission to tour their (SK's) Map Reproduction Section. JMT's request was accepted and it was agreed that the JMT could visit the SK Map Reproduction Section on Wednesday, 6th. October, 1982, at 10.00 a.m.

(3) JMT presented the Report on Topographical Mapping Project in East Kenya (Seventh year) March 1982 to both KSS and SK participants.

Agenda No. 1: Confirmation of Minutes of the meeting in July, 1982

It was resolved that discussion on Agenda No. 1 be postponed until the next meeting. It was also agreed that the minutes of this meeting should if possible be ready for distribution on Thursday 7th. October, 1982 at 10.00 a.m.

It was resolved that the next meeting between JMT, KSS and SK should take place on Thursday, 7th. October, 1982, at 2.30. p.m.

There being no other business, the Chairman closed the meeting at 1.45 p.m.

(J. Ogutu)
SECRETARY

Confirmed by

Eisaku Tsurumi
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FOR JAPANESE MAPPING TEAM

Date *9 October 1982*
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FOR KENYAN TEAM

Date *9 October 1982*
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MINUTES OF THE MEETING BETWEEN JAPANESE MAPPING TEAM (JMT)
AND SURVEY OF KENYA (SK) HELD ON 1ST FEBRUARY, 1983 AT
SURVEY FIELD HEADQUARTERS, NAIROBI

PRESENT:

1. Mr. D. Kamau - Director of Surveys, SK - Chairman
2. Mr. J.D. Obel - Ag. Assistant Director of Surveys, SK
3. Mr. E. Tsurumi - Technical Advisor, JMT
4. Mr. E. Gojo - Leader, JMT
5. Mr. H. Murayama - JICA, Tokyo
6. Mr. S. Nakajima - Deputy Leader, JMT
7. Mr. T. Otsuki - Physical Geographer, JMT
8. Mr. Y. Yokota - Vegetation/Present Land Use (Geographer) JMT
9. Mr. T. Nishikawa - Pedologist, JMT
10. Mr. P. Ndunda - Chief Cartographer, SK
11. Mr. D.A. Chabeda - Chief Lithographer, SK
12. Mr. O.M. Wainaina - Superintending Surveyor, SK
13. Mr. G.O. Wayumba - Staff Surveyor/Remote Sensing Specialist
14. Mr. J.K. Katunga - Staff Surveyor, SK
15. Mr. C. Mwangi - Cartographer, SK
16. Mr. J. Ogutu - Senior Cartographer, SK - Secretary

Subjects for Discussion:-

1. Report of Works of 1982
2. Confirmation of Specification of thematic maps
 - 2-1 Legend
 - 2-2 Colour design
 - 2-3 Sheet layout
3. Confirmation of outline of land evaluation
4. Time Schedules of works of 1983
5. Others

The meeting was held in the Survey of Kenya Training Wing Hall at Survey Field Headquarters, Ruaraka and started at 9.35 a.m.

The Chairman opened the meeting by welcoming all the participants particularly the Japanese Mapping Team (JMT). He (the Chairman) then told the meeting that he had received information that the Kenya Soil Survey Team (KSS) would not attend this particular session because Mr. F.N. Muchena, the Head, Kenya Soil Survey (KSS) was on official duty outside Nairobi and would not be available until later in the week. The Chairman then invited JMT to present the subjects for discussion.

The JMT said that they had prepared items for discussion as listed above. Last year (1982) from July - October they had worked in the Galana ranching area and Fundisa area (only soil survey) they then processed the results of their field work for use in Japan. Later they were joined in Japan by Messrs Katunga and Mwangi who attended a course there and finally returned with copies of sheet layouts etc.

JMT said that the purpose of the meeting was to confirm the specification of the thematic mapping and exchange views from both sides. They (JMT) then proposed that the report of Works of 1982 be presented first. They then presented reports on the various topics mapped and presented the legends of the same for Scrutiny and approval. A report was also given on colour design with particular reference to the minutes of 5th October, 1982.

.....2.

SK representative then suggested some addition to the Soil Classification in line with the new internationally accepted system (i.e. to include USDA Soil Taxonomy alongside F.A.O.).

After considering the SK suggestion, the meeting resolved that the suggestion be noted for future implementation since the mapping project was in advanced stage.

On vegetation maps, SK suggested that a vegetation expert from Kenya Rangeland Ecological Monitoring Unit (KREMU) would be invited to check whether the vegetation maps were conforming to the Kenya System of classification.

Final Colour Design of Land Use Maps (See Appendix 1)

JMT said that during the meeting in October 1982 the draft colour designs of vegetation and present land use map, landform map and soil map had been agreed to in general by SK, KSS and JMT.

Based on the decisions made at the meeting of October, last year with slight modifications all information such as legend, scale, index, the adjoining sheets, sheet history and geographic keys etc had been designed, taking into account the sheet size (25 1/2" x 36") and printing area (24 1/2" x 35").

However, SK suggested an amendment. After discussion, it was resolved that Plantation P2 (442) be changed to Plantation (Other) instead of Plantations (not kept well) and that Farmland; Farm (511) be changed to Farm (cattle enclosure) instead of Farm (keep cattle enclosed area). The final colour design was agreed as JMT proposed. SK also suggested amendments on the wordings in brackets under letter symbols T and V. It was agreed that T should be (Town) and V (Village) without the many words which were in the brackets.

Final Colour Design of Landform Map

JMT said that Colour Code No. 004 had been changed to No. 005.

Final Colour Design of Soil Map

JMT said that Colour No. PtJqs 300, and PcJqs 226 had been overlapped (i.e. given same colour). The No. had been amended they confirmed. Also colour HObc 440 had been brought up as a new colour scheme after chemical Analysis in stead of HOfr.

2-3 Sheet Layout

JMT said that on the basis of sheet layout prepared by both SK and KSS, the JMT had prepared a final sheet layout for approval by the meeting.

Sheet History

SK suggested an amendment to the words "in co-operation of Survey of Kenya" to read "in Co-operation with Survey of Kenya". This was accepted and implemented.

SOIL MAP:

In the key to DEPTH CLASSES "OF" was added to "SOIL THICKNESS" i.e. "Thickness of soil....."

.....3.

Because the Kenya Soil Survey (KSS) Team was not present at the meeting and the fact that discussion on Item No. 3 of the agenda required their (KSS) Team's presence, the Chairman adjourned the meeting at 12 noon to 2nd February, 1983 at 2.30 p.m. when the KSS Team was expected to be present.

MINUTES OF THE 2ND MEETING BETWEEN JMT AND SK HELD ON 2ND FEBRUARY, 1983 AT SURVEY FIELD HEADQUARTERS, NAIROBI

PRESENT: Same as on 1st February, 1983

Subjects for Discussion:

3. Confirmation of outline of Land evaluation
4. Time schedules of works of 1983
5. Others

The Chairman opened the meeting at 2.35 p.m. and told the participants that the Kenya Soil Survey (KSS) Team would still not be available for the meeting but would be able to attend the next meeting. After hearing the Chairman's report, the meeting decided to proceed with discussion on item No. 3 of the agenda. It was also agreed that matters which required decision by the KSS would not be discussed until the next meeting in which the KSS would be present.

Land Evaluation:

JMT said that Land evaluation was based on last year's work and that the evaluation had been determined by treating various topics under Land quality. The various topics studied and mapped were Soil Fertility, Soil erosion, flood potential, possibility of mechanization and irrigation potential. One topic whose report was available but not mapped was Ranching potential (for Galana area); this was because computer data for this type of information was not available. The land characteristics and Land qualities were presented by JMT as Table-1 and is attached to these minutes as appendix 2.

JMT then gave a report on the basic policy of Land evaluation under sections A, B and C. Section A (Level of intensity and approach) was divided into two sub-sections 1 & 2. Sub-Section (1) (level of intensity). Here it was explained that the level of intensity is reconnaissance Survey which is concerned with development possibilities at the regional scale (=evaluation of some Land qualities or preparation of the relative Land capability maps). The following maps were presented: SOIL FERTILITY EVALUATION (Maps 1, 2 & 3) - Map 2 was selected; SOIL EROSION EVALUATED (Maps 1 & 2) - Map 2 selected; FLOOD POTENTIAL EVALUATION (MAPS 1, 2 & 3) - Map 3 Selected; MECHANIZATION EVALUATED (MAPS 1 & 2) - Map 2 selected; IRRIGATION SUITABILITY EVALUATION MAP - only one map was presented; RANCHING POTENTIAL (for GALANA area) - only a tabulated report was presented.

JMT told the meeting that there would be 6(Six) categories of maps in monochrome.

The Land Evaluation report presented by JMT is attached to these minutes as appendix 3.

TIME SCHEDULE

JMT presented their time schedule report for 1983-84. The time schedule report included drawing, printing, data input, analysis, evaluation, Final meeting (in Kenya) and preparing the final report in Japan (See appendix 4).

.....4.

JMT said that JICA ^{would} ~~were going to~~ invite 3(three) participants (Counterparts) to Japan immediately before the printing of the maps is started. The 3(three) participants would visit Japan in the months of September to October, 1983. 2 (Two) officials one Cartographer and one photolithographer would stay in Japan for 1(one) month and one ~~high~~^{senior} official for 2 (two) weeks. From middle of December, 1983, JMT would be preparing the final report in Japan.

JMT stressed that the application forms A2 and A3 for the three Counterparts should be completed and forwarded to the Japanese Embassy early enough to enable the Japanese Government to process the applications early.

JMT then asked when the date of the next meeting would be arranged. It was agreed that the next meeting (3rd meeting) should take place on 3rd February, 1983 at 2.30 p.m. at Survey Field Headquarters, Ruaraka.

TRAINING

SK asked whether it would be possible for JMT to put a request to JICA for Survey of Kenya to have a training place for photolithographers in Japan for a period of 6 (six) months under the group training programme. The training would be possible under Map Compilation and Reproduction Courses which were currently being attended by Cartographers only.

Alternatively would the Japanese Government arrange Special courses for Photolithographers under special (individual) training?

JMT said that training arrangements were the responsibility for JICA. They suggested SK should put their request through JICA.

There being no other business, the Chairman adjourned the meeting at 3.40 p.m.

MINUTES OF THE 3RD MEETING BETWEEN JMT, KSS & SK HELD ON 3RD FEBRUARY, 1983 AT SURVEY FIELD HEADQUARTERS, NAIROBI

PRESENT:

- | | |
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| 1. Mr. J.D. Obel | - Ag. Assistant Director of Surveys - Chairman |
| 2. Mr. F.N. Muchena | - Head, Kenya Soil Survey (KSS) |
| 3. Mr. E. Tsurumi | - Technical Advisor, JMT |
| 4. Mr. E. Gojo | - Leader, JMT |
| 5. Mr. H. Murayama | - JICA, Tokyo |
| 6. Mr. S. Nakajima | - Deputy Leader, JMT |
| 7. Mr. T. Otsuki | - Physical Geographer, JMT |
| 8. Mr. Y. Yokota | - Vegetation/Present Land Use (Geographer)-JMT |
| 9. Mr. T. Nishikawa | - Pedologist, JMT |
| 10. Mr. P. Ndunda | - Chief Cartographer, SK |
| 11. Mr. D.A. Chabeda | - Chief Lithographer, SK |
| 12. Mr. O.M. Wainaina | - Superintending Surveyor, SK |
| 13. Mr. G.O. Wayumba | - Staff Surveyor/Remote Sensing Specialist |
| 14. Mr. J.M. Kibe | - Soil Surveyor, KSS |
| 15. Mr. P.M. Maingi | - Cartographer, KSS |
| 16. Mr. J.K. Katunga | - Staff Surveyor, SK |
| 17. Mr. C. Mwangi | - Cartographer, SK |
| 18. Mr. J. Ogutu | - Senior Cartographer, SK - Secretary |

ABSENCE WITH APOLOGY: Mr. D. Kamau - Director of Surveys - SK

.....5.

Subject for Discussion:

3. Confirmation of outline of Land Evaluation

The meeting started at 2.30 p.m. and was chaired by Mr. J.D. Obel on behalf of the Director of Surveys who sent his apologies for being unable to attend the meeting. Mr. Obel told the participants that the meeting had been convened particularly to allow the representatives of KSS to air their views on the JMT report in General and the Land Evaluation in particular. He (the Chairman) then called upon Mr. Muchena on behalf of the KSS to give his views on the sample thematic maps presented by JMT.

THEMATIC MAPS

KSS said that they had noticed that JMT had omitted colour boxes in the legend and they (KSS) were wondering whether the omission was deliberate or not. JMT checked the legend and told the KSS that the boxes would be shown in the final map.

KSS also asked that geological information in the legend be shown in the same size of text but bold. In addition to the above amendments, KSS also proposed and marked other minor amendments ^{sample} on the maps for implementation by the JMT. These were accepted by ~~JMT~~ JMT.

It was agreed that JMT would proceed to cartographic processes of the Thematic Maps. It was agreed that in the final report JMT would show the Soil Taxonomy (USDA 1975) equivalent of FAO Soil Classification they (JMT) had used in the mapping.

Report of Land Evaluation

When presenting their land evaluation report to the meeting JMT said that three levels of land evaluation had influenced the result of Survey. The levels were:

1. Reconnaissance
2. Semi-detailed
3. Detailed

JMT then proceeded with the presentation of the report which is attached to these minutes as appendix 2. JMT also told the meeting that they were going to use ^{first} ~~two~~ stage approach instead of the ~~two~~ ^{two} stage approach. They (JMT) said they had not done enough detailed survey to warrant the use of ~~two~~ ^{second} stage approach.

Evaluation - Land Use

1. Major kinds of land use

The major kind of land use is a rural land use for general use.

For the amended Criteria of land evaluation see Appendix 3A

2. Land Characteristics and land qualities

NOTE: Land Characteristics and land qualities are given in Table - 1 (appendix 2).

KSS said they wanted specific types of land use because evaluation based on Rural Land Use alone was vague.

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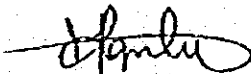
They (KSS) also complained that it would not be proper to use irrigation potential as a land quality.

Mr. Muchena for KSS then explained to the meeting the methods of land evaluation in Kenya. He (Mr. Muchena) gave a very good account of the Kenyan method which impressed the participants very much. It was thereafter agreed that JMT will analyze the various land qualities to determine the suitability of Tana River Delta area for irrigation potential, and Rainfed agriculture; and Galana area for Ranching potential. In addition, JMT was requested to provide a map of Soil Erosion Hazard for the Tana River Delta Area.

It was further agreed that there should be a meeting between the JMT and KSS at the KSS office on Friday 4th February, 1983 at 9.00 A.M. and that Mr. Wayumba would represent SK at the meeting. The meeting will discuss further details of land evaluation. (See Appendix 5).


It was also resolved that there should be another meeting for the final signing of all the minutes of the meetings on Monday 7th February, 1983 at 2.30 p.m. in the office of the Director of Surveys.

There being no other business, the Chairman closed the meeting at 4.45 p.m.


(J. Ogutu)
SECRETARY

Confirmed by


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FOR JAPANESE MAPPING TEAM


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FOR KENYAN TEAM

Date..... 7 February 1983

Date..... 7 February 1983

TABLE OF COLOUR (VEGETATION AND PRESENT LAND USE)

Symbol of New Legend		Colour Number	New Items	Tana Area (1981)	Garana Area (1982)
Division	Sub-Division				
Woodland Forest	F-1	405		0	
	F-2	404	0		0
	F-3	505		0	0
	F-4	504		0	
	F-5	605		0	
	F-6	615		0	
Woodland	Wbt-1	414	0		0
	Wbt-2	514		0	
	Wbt-3	503		0	
	WB-1	403	0		0
	WB-2	613		0	0
	WB-3	602		0	
Bushland	Bt	521		0	
	B-1	523	0		0
	B-2	512		0	0
	EG-1	411	0		0
	EG-2	213		0	0
	EG-3	312		0	0
Shrubland	S	212		0	
Grassland	G-1	601	0		0
	G-2	510		0	0
	G-3	321		0	
	G-4	310		0	
Cultivated land	Cr Co	640		0	0
	C	642		0	0
	Pm Pco Pb	440		0	0
	P	442		0	0
Farmland	Fa	511		0	0
Others	T	red		0	
	V	red		0	0
	Sf	244		0	
	Ab Am Ag	red 040 010		0	0
	Ra Rd	red 500		0	0
	P	005		0	0
	Bl	black		0	0
	D	/	0		0

LEGEND OF LANDFORM CLASSIFICATIONS APPENDIX B
TABLE OF COLOUR



Macro ~ Meso Relief	Symbol	K.S.S. Chart number	Landform Type		
Hills	H	043	Hills		
	Hr	041	Residual hills		
	Hs	346	Minor scarps		
Foothlopes	F	245	Foothlopes		
	C	445	Talus (Scree) slopes		
Plateaus	L	243	Plateaus		
Uplands	U	335	Uplands		
	UJ	333	Dissected peneplains		
Plains Sedimentary Plains	Erosional plains		Pn	384	Peneplains
			Pn	423	Sedimentary plains
	Terraces	Pt ₁	440	Higher terraces	
		Pt ₂	330	Middle terraces	
		Pt ₃	220	Lower terraces	
		Pf	411	Younger fans	
	River alluvial plains	Pl	400	Natural levees	
		A	403	Flood plains	
		V	205	Valley bottom lowlands	
		Or	326	Old river beds	
		Pc	314	Coastal plains	
	Coastal plains	PcL	211	Raised coral reefs	
		Il	225	Interlevee lowlands	
		Z	310	Coastal ridges	
		D	200	Dunes	
		Dz	200	Old dunes and old coastal ridges	
		Tm	023	Marsh, Mangrove flats	
	Tidal flats	Ts	234	Sand flats	
		B	216	Bottom lands	
	Bottom lands	B	216	Bottom lands	
Miscellaneous	S	BLACK	Swamps		
	OI	005	Oxbow lakes		
	O	005	Pans and ponds		
	W	RED	Bad lands		
		005	River		
		RED	Cliff		

TABLE OF COLOUR (SOIL)

APPENDIX 'I C'

Symbol of legend	Colour No.	Tana Area (1981)	Tana Area -Fundisa- (1982)	Symbol of legend	Colour No.	Tana Area (1981)	Tana Area -Fundisa- (1982)
HLSqf	<210>	○		PcLqf	<321>	○	
HLSbk	<511>		○	PcLe	<254>	○	
HOlc	<641>		○	PcLlc	<650>	○	○
HObk	<401>		○	PcSqf	<420>	○	
HObe	<440>		○	PcSa	<264>		○
PtJqf	<520>		○	PcIso	<455>	○	
PtJqa	<500>	○		PcJge	<226>		○
PtJqc	<510>	○		PcJC ₁	<324>	○	
PtIso	<355>	○	○	TA ₁ oe	<055>	○	○
PtJxk	<200>	○	○	TA ₁ ge	<206>	○	○
PtJlc	<651>		○	BAvp	<006>	○	
PtJbk	<410>	○		BAso	<356>		○
PtJC ₁	<501>	○		BAge	<215>		○
PtJlc	<640>	○		BAC ₁	<325>	○	
PrAvp	<005>	○		BAC ₂	<004>	○	
PrAvc	<025>	○	○	SAge	<216>	○	○
PrAj (e-v)	<605>	○	○				
PrAqa	<400>	○	○				
PrAso	<354>	○	○				
PrAC ₁	<315>	○					
PrA ₃ bk	<601>		○				
PcAge	<205>	○					
PcA ₁ qc	<610>	○	○				
PcA ₂ qf	<320>	○	○				
PcA ₂ qc	<611>	○	○				
PcA ₂ be	<421>	○					
PcA ₂ bk	<411>	○					
PcA ₂ C ₁	<204>	○					

APPENDIX 2

Table-1 Land characteristics and land qualities

land quality	land characteristics
Soil fertility	CEC or sum of cations available nutrients mineral reserve
Soil erosion	slope class climate vegetation "erodability"
Flood potential	landform slope vegetation soil
Possibility of mechanization	slope stoniness "workability" vegetation
Irrigation potential	slope landform availability of water "soil fertility"
Ranching potential (for Galana area)	vegetation soil landform hydrology

Memorandum read at the meeting of February 2, 1983

A. Level of intensity

Three levels of intensity may be distinguished in general; reconnaissance, semi-detailed and detailed. These are normally reflected in the scales of resulting maps.

Reconnaissance surveys are concerned with broad inventory of resources and development possibilities at regional and national scales. The results contribute to national plans, permitting the selection of development areas and priorities.

Semi-detailed surveys are concerned with more specific aims such as feasibility studies of development project; Economic analysis is considered more important. The result of this survey provides information for decision on the selection of projects or whether a particular development or other change is to go ahead.

The detailed surveys cover the level for actual planning and design or farm planning and advice, often carried out after the decision has been made..

B. Approach

In general, following two approaches to land evaluation are adopted: two stage approach and parallel approach(fig. 1).

The two stage approach is often used in resource inventories for broad purpose. The first stage of two stage approach is mainly concerned with qualitative land evaluation, later followed by a second stage consisting of economic and social analysis, although not necessary. On the other hand, analysis of the relationship between land and land use in the parallel approach, proceeds concurrently with economic and social analysis.

C. Land Use

Evaluation involves relating land mapping units to specified type of land use. The types of use considered are limited to those which appear to be relevant under general physical, economic and social conditions prevailing in an area. These kinds of land use serve as the subject of land evaluation. They may consist of major kinds of land use or land utilization types. A major kind of land use is a major sub-division of rural land use, such as rainfed agriculture, irrigated agriculture, grassland, and forestry, which are usually considered in land evaluation studies of reconnaissance nature. A land utilization type is a kind of land use described or defined in a degree of detail greater than that of a major kind of land use which are usually adopted in quantitative land evaluation studies. They are described with as much detail and precision as the purpose requires. Some examples of land utilization types are:-

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1. Small holder rainfed mixed farming, intermediate technology
2. Rainfed large scale mixed farming, advanced technology
3. Extensive range management

0. Land characteristics and land qualities

A land characteristic is an attribute of land that can be measured or estimated. Examples are slope angle, rainfall, soil texture, CEC of soil, etc.

A land quality is a complex attribute of land which acts in a distinct manner in its influence on the evaluation for specific kind of use. Examples are moisture availability, erosion resistance, flooding hazard, etc.

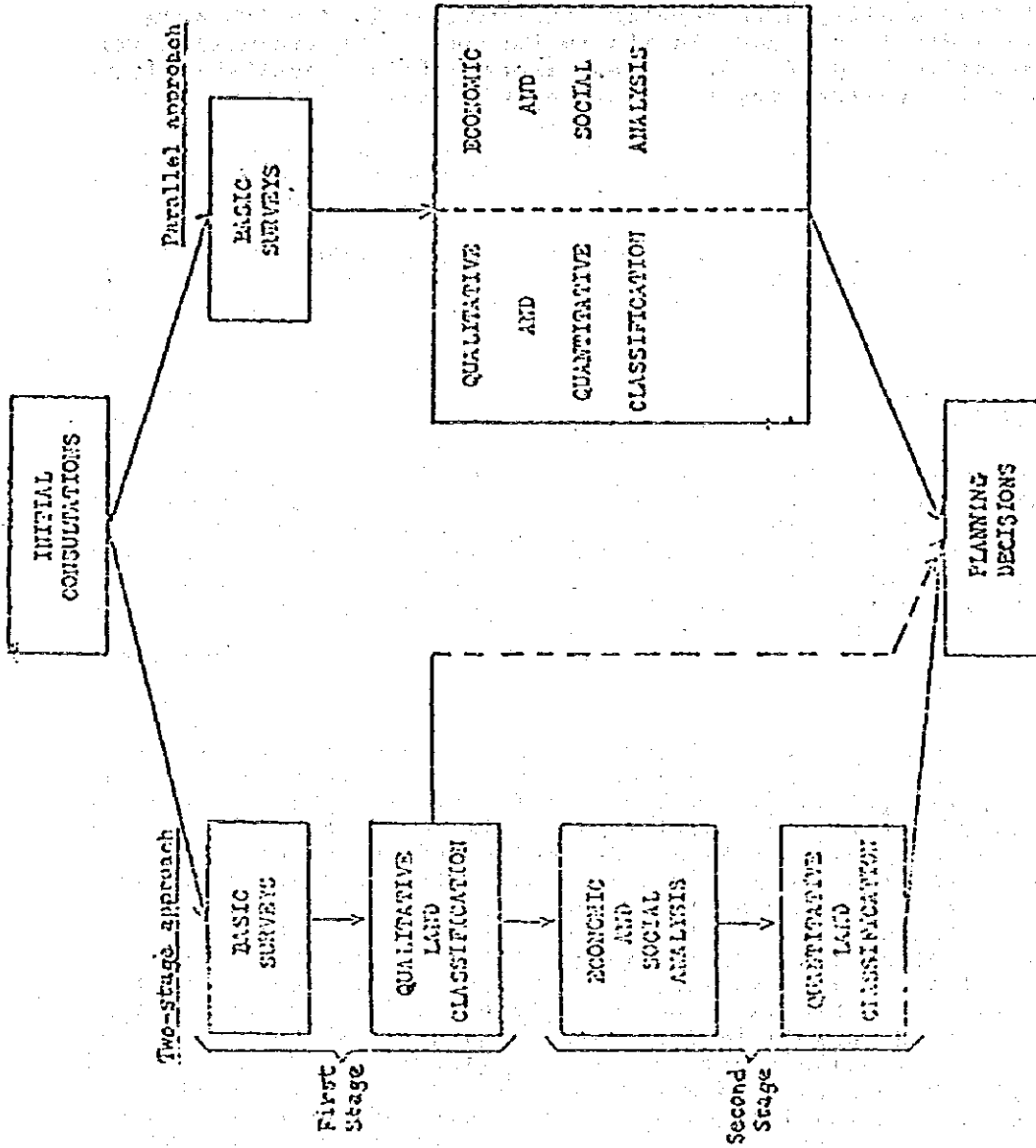


FIG. 1 TWO-STAGE AND PARALLEL APPROACHES TO LAND EVALUATION

APPENDIX 4

Time schedule

year		1983												1984			
		Month	4	5	6	7	8	9	10	11	12	1	2	3			
Thematic Map	Work																
	Drawing																
Evaluation map	Printing									Proof printing							
	Data input																
Evaluation map	Analysis																
	Evaluation																
Evaluation map	Final meeting (in Kenya)																
	Reporting																

*-2 (two) Regular Participants - Cartographer) Proof

-1 (one) Senior Officer - to authorize Printing (2 Weeks)

Final Draft Printing of Final report

MINUTES OF THE MEETING BETWEEN JAPANESE MAPPING TEAM (JMT)
AND KENYA SOIL SURVEY AT THE LATTER'S OFFICES - 4/2/83.

Present:

1. Mr. F.N. Muchena - Head, Kenya Soil Survey
2. Mr. E. Gojo - Leader, JMT
3. Mr. E. Tsurumi - Technical Adviser, JMT
4. Mr. H. Murayama - JICA, Tokyo
5. Mr. S. Nakajima - Deputy Leader, JMT
6. Mr. T. Otsuki - Physical Geographer, JMT
7. Mr. Y. Yokota - Vegetation/Present land use (Geographer) JMT
8. Mr. T. Nishikawa - Pedologist, JMT
9. Mr. P. Maingi - Cartographer, KSS
10. Mr. J.M. Kibe - Soil Surveyor, KSS
11. Mr. G. Wayumba - Survey of Kenya
12. Mr. J. Yego - Survey of Kenya.
13. Mr. M.M. Gatali - KSS (land evaluation officer)

The Head, Kenya Soil Survey opened the meeting by welcoming the members of the Japanese Mapping Team. The JMT wanted to know whether the KSS standard approach to land evaluation was "absolute" or "deductive". The KSS members intimated that its approach was deductive and added that one needs a lot of data in order to adopt the absolute approach.

Three land uses viz.: suitability for irrigated agriculture, ranching and rainfed agriculture were suggested and agreed upon by both parties. It was however, stressed that a distinction between current (existing resources) and potential suitability for ranching was necessary.

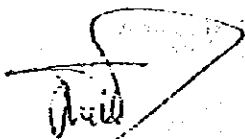
The hazard of soil erosion was considered later and the JMT agreed to carry out the evaluation for it. Various land qualities and land characteristics were outlined and discussed in detail. The Head, KSS, requested the JMT members to consider rice and cotton growing in the Tana delta since he felt such crops were very important.

A clarification was also made by the KSS that the KSS considers soil erosion hazard after clearing than considering the current erosion hazard. The JMT immediately did not get impressed by this though they later concurred with the proposal.

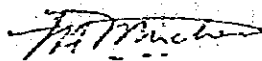
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The Head, KSS, finally explained to the meeting the use of the "Conversion" table.

There being no other business the Chairman closed the meeting at 12.45 p.m.



J. M. Kibe
SECRETARY



F.N. Muchena (Head, KSS)
CHAIRMAN

8/2/83

Eisaku Tsurumi
Japanese Mapping Team

8/2/83

MINUTES OF THE MEETING BETWEEN JAPANESE MAPPING TEAM (JMT)
AND KENYA RANGELAND ECOLOGICAL MONITORING UNIT (KREMU) ON
7TH FEBRUARY 1983, AT KREMU OFFICES, NAIROBI

PRESENT:

1. Dr. Helmutt Epp - KREMU - Chairman
2. Mr. G.O. Wayumba - Survey of Kenya - Secretary
3. Mr. J.L. Angatsiva - KREMU
4. Mr. Kill Mayer - KREMU
5. Mr. Sissaku Tsurumi - JMT
6. Mr. Eiiji Gojo - JMT
7. Mr. Yoshiaki Yokota - JMT
8. Mr. Ochung - KSS

Subjects of Discussion

1. The preliminary vegetation map of Tana River Delta and Galana Ranching areas.
2. The Legend to the map.
3. The methodologies, classification and botanical names.

The meeting was held at KREMU and started at 10.000 a.m.

Prior to the discussions on the above items the Project Manager of KREMU, Mr. David Andere, briefly introduced himself to the Japanese members. He observed that some aspects of the work the Japanese carried out in the study area, were very similar to what KREMU had done before. He therefore asked for a greater co-operation between KREMU and Survey of Kenya, particularly where thematic mapping is concerned. He promised to take up this matter with the Director of Surveys. After the short briefing, he excused himself and left Dr. Epp to chair the meeting.

The Chairman introduced the meeting by providing a short background history of KREMU. He said that as a result of the 1969-1971 drought which had devastated the Sahelian regions in Africa, the world bank requested Kenya Government to set up a unit that could gather data about the rangeland areas in the country. As a result of this, KREMU was set up in 1975 with the aid of Canadian Government Funds. He said that initially (1976-1977) KREMU was set up to count wildlife, livestock and to monitor the changing trends in rangeland ecology.

In 1978, KREMU expanded its operations to include Forestry Mapping, Land capability and land use mapping through the analysis of Satellite data and aerial photographs. He said that Agricultural boundary and Habitat Mapping also formed major Components of KREMU's operations.

The Chairman informed the meeting that most of the Forested areas of Kenya have been mapped, and Land capability map of the Southern end of the Kerio Valley has been completed. He also said that Habitat maps for Lamu and Narok districts, and eastern shores of Lake Turkana have been completed. The habitat map of Lake Bogoria region has just been completed.

.....2.

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The JMT noted that while their vegetation and Land use mapping (1:50,000 scale) was geared towards land capability analysis, KREMU maps (1:250,000) were for rangeland Ecology. The Chairman noted that although the two projects were geared towards different goals, they were very comparable. He said that KREMU was only interested in checking into the JMT Classification scheme with the aim of standardizing and improving where necessary.

JMT said that they carried out the land capability evaluation according to the FAO Specifications and Vegetation Classification according to East African System.

- They (JMT) also said they would not like to duplicate any work that might have been done by any other agency.
- KREMU referred JMT to several publications on Vegetation available locally.
- JMT promised to look into the publications here (in Kenya) and in their library in Japan.
- KREMU accepted to send to JMT any of the publications that they may not have in Japan and is locally available.

After general discussions on the functions of KREMU, the members looked into the several comments that KREMU had made on the JMT vegetation map, report and legend.

- JMT said that the several issues raised about the preliminary Report (No. 24, of March 1982) would be corrected and better presented in the final report to be published in March 1984.
- The several comments on the legend and spelling errors were ironed out.
- KREMU and KSS said they work closely with the East African Herbarium Laboratories and asked the JMT members to check correct botanical names with the Herbarium if in doubt.
- The major amendments made on the vegetation legend included:- Separating Forest Category from Woodland, making shrubland a major division instead of Dwarf shrubland, and re-organizing the 'other' category.

There being no other business, the Chairman closed the meeting at 11.00 a.m.

(G.O. Wayumba)
SECRETARY

JICA