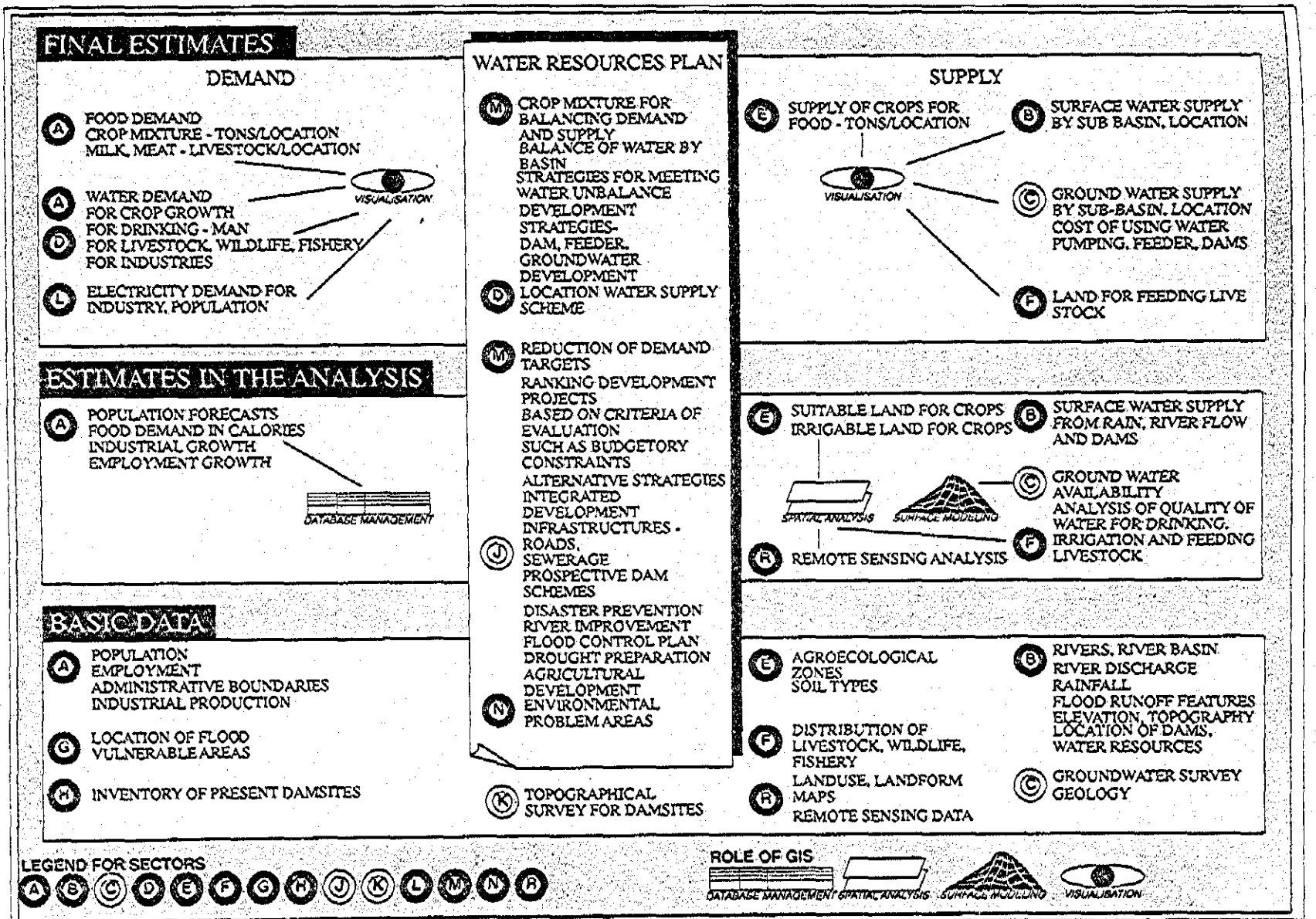

Figure S-5.1 Summary of Application of GIS in the Study

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APPENDIXES

APPENDIX S.1

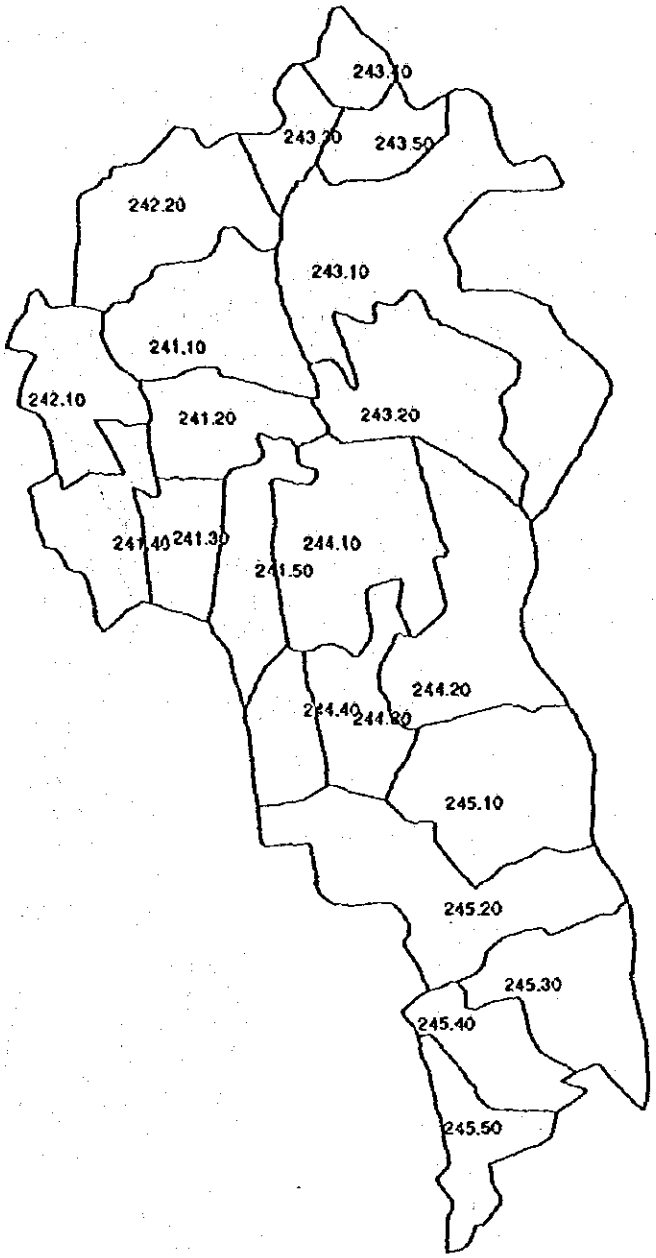
Examples of Data in GIS Data base

Appendix S.1

Examples of Data in GIS Data Base

Contents

Fig.



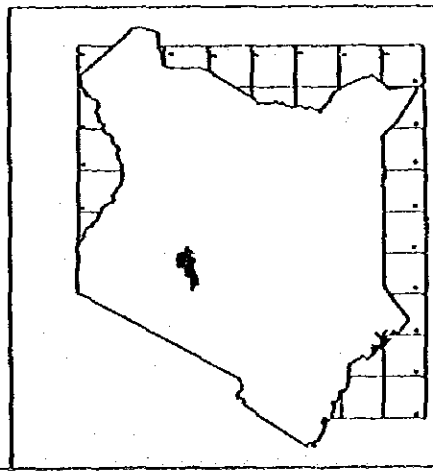


Figure S.1.1 Locations in District 24

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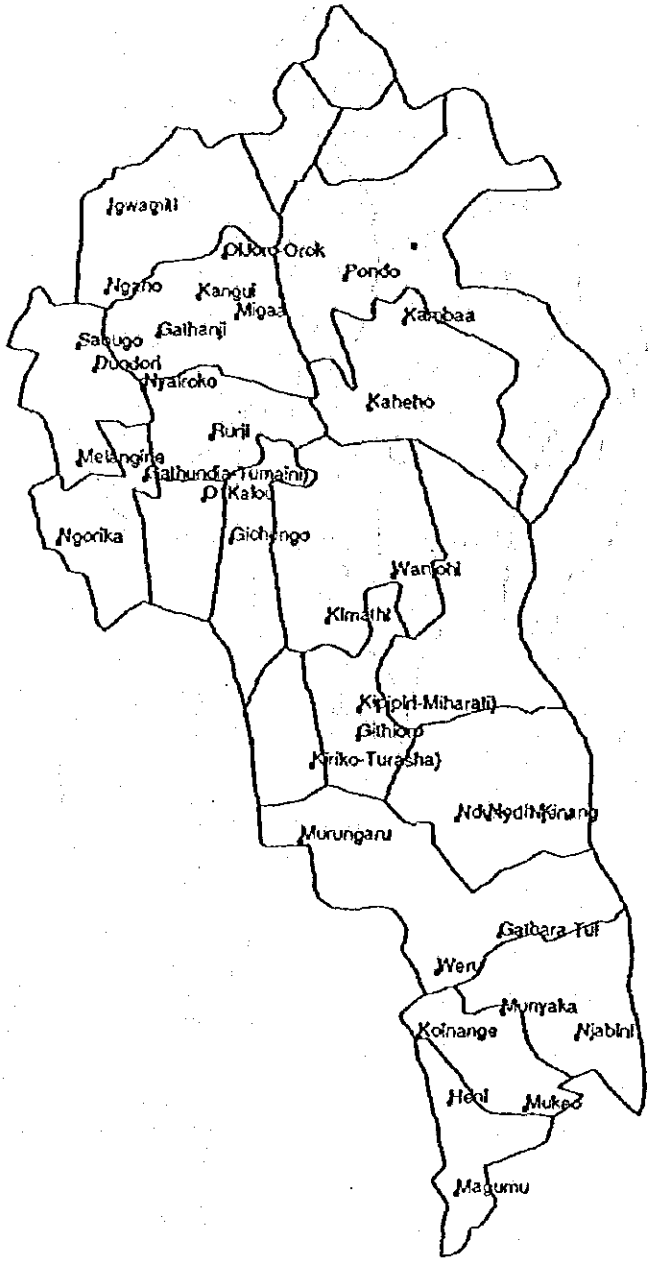

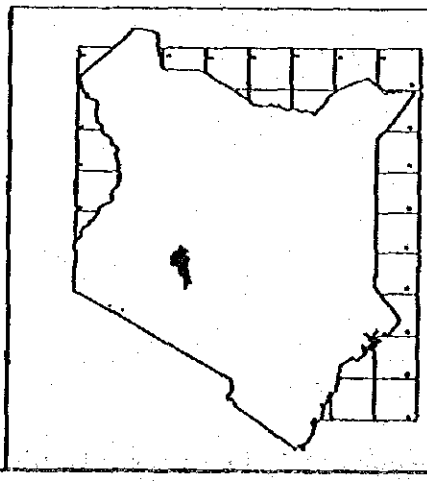

1: 674820

Figure S.1.2 Cities in District 24

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Figure S.1.3 Projected Urban Population by Town

Town Name	Location of Town Centre		Projected Urban Population (1000)				
	Code	Location Name	1990	1995	2000	2005	2010
Nairobi(*)(**)	110		1,481.8	1,882.2	2,370.4	2,949.7	3,633.9
Kiambu	210		130.8	188.2	277.8	382.8	517.9
Karuri	211.1	Kiambaa	2.2	2.9	3.8	4.9	6.1
Kiambu(*)	211.4	Kiambu Municipality	8.7	12.6	17.9	24.9	34.0
Gatundu+Ngenda	212.1	Ngenda	0.0	0.0	1.6	2.0	2.4
Mangu	212.2	Mangu	0.0	0.0	0.6	0.7	0.8
Kiganjo	212.3	Kiganjo	0.0	0.0	0.5	0.6	0.8
Limuru	213.1	Limuru	3.3	4.4	5.7	7.4	9.3
Tigoni	213.2	Tigoni	0.0	0.0	1.9	2.3	2.8
Ruiru	214.1	Ruiru	3.3	4.4	5.7	7.3	9.3
Ndarugu	214.3	Juja	0.0	0.0	2.1	2.5	3.1
Thika	214.4	Thika Municipality	97.9	141.8	201.8	280.7	382.8
Githunguri	215.1	Githunguri	6.0	8.6	12.3	17.1	23.3
Wangige	216.1	Kabete	0.0	0.0	0.9	1.1	1.4
Kikuyu	216.6	Kikuyu	9.4	13.6	19.3	26.9	36.7
Kimende	217.2	Kijabe	0.0	0.0	0.5	0.6	0.7
Kagwe	217.3	Gatamayu	0.0	0.0	3.1	3.8	4.5
Kirinyaga	220		16.6	22.8	32.6	42.6	54.8
Wanguru	221.1	Tebere	0.0	0.0	1.0	1.2	1.4
Sagana	222.2	Kiine	4.4	6.1	8.2	10.8	13.9
Kerugoya(*)	222.3	Inoi	7.5	10.3	13.9	18.3	23.6
Baricho	222.4	Mwerua	0.0	0.0	0.5	0.6	0.7
Kutus	223.2	Kabare	4.7	6.4	8.7	11.4	14.8
Kianyaga	223.3	Baragwi	0.0	0.0	0.3	0.3	0.4
Murang'a	230		45.6	64.3	93.3	126.0	167.2
Kabati	231.3	Gaichanjiru	0.0	0.0	0.9	1.1	1.3
Kandara	231.4	Muruka	1.6	2.0	2.6	3.3	4.2
Karwara(Gatanga)	231.5	Gatanga	0.0	0.0	0.8	1.0	1.1
Kigumo	232.2	Kigumo	0.0	0.0	0.8	0.9	1.1
Saba Saba	232.6	Kamahuha	0.0	0.0	0.5	0.6	0.7
Maragwa	232.7	Maragua Ridge	2.4	3.2	4.1	5.2	6.5
Kangema	233.4	Iyego	1.8	2.3	3.0	3.8	4.7
Kahuro(Murianjas)	234.1	Mugoiri	0.0	0.0	1.1	1.3	1.6
Murang'a(*)	234.3	Mbiri	35.0	49.8	69.8	95.5	128.1
Makuyu	235.1	Makuyu	4.9	6.9	9.7	13.3	17.8
Nyandarua	240		3.3	4.1	8.4	10.1	12.0
Ol Kalou(*)	241.3	Ol Kalou	3.3	4.1	5.2	6.3	7.6
Ol'Joro Orok	242.1	Ol'Joro Orok	0.0	0.0	0.9	1.1	1.2
Kipipiri	244.3	Kipipiri	0.0	0.0	0.5	0.6	0.7
North Kinangop	245.1	North Kinangop	0.0	0.0	0.9	1.0	1.2
Njabini	245.3	South Kinangop	0.0	0.0	0.9	1.1	1.3
Nyeri	250		86.6	119.0	162.3	214.1	277.0
Naro Moru	251.2	Kamburaini	0.0	0.0	0.6	0.8	0.9
Mweiga	252.1	Mweiga	0.0	0.0	0.4	0.5	0.6
Karatina	254.3	Kirimukuyu	6.3	8.7	11.7	15.5	20.0
Ihururu	255.4	Muhoya	0.0	0.0	0.3	0.4	0.4
Othaya	256.1	Karima	4.6	6.3	8.5	11.2	14.5
Nyeri(*)(**)	257.0	Nyeri Municipality	75.7	104.0	140.7	185.8	240.5

Remark : (*) means the administrative head-quarters of the District.
(**) means the administrative head-quarters of the Province.
Zero figures in 1990 and 1995 mean that towns (rural centres at present) are assumed to be raised to the status of urban centres by 2000.

(To be continued)

Appendix S.2

Suuplementary Information for Land Suitability Analysis

Appendix S.2

Supplementary Information for Land Suitability Analysis

Contents

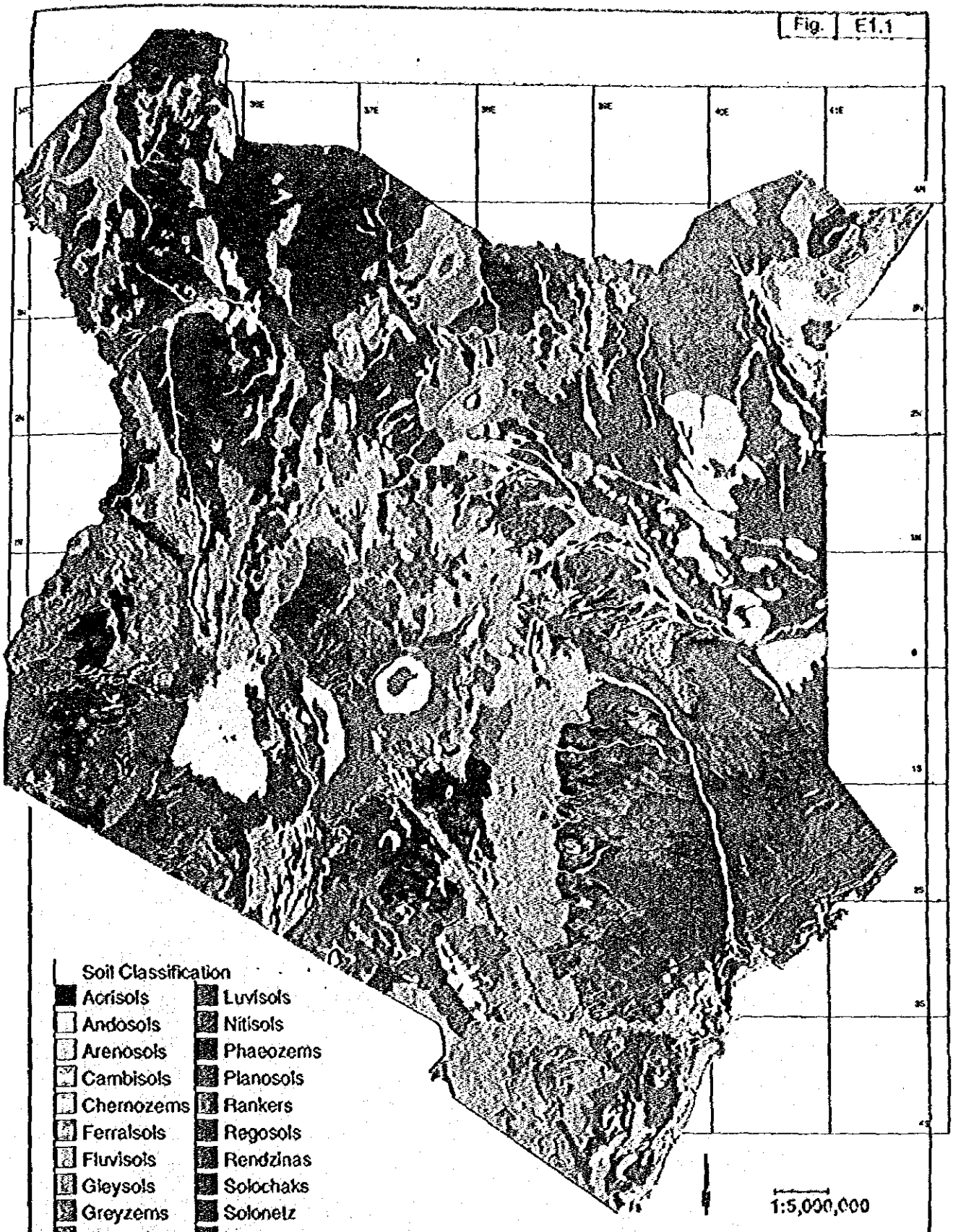

Figure S.2.1 Soil Map of Kenya

Figure S.2.2 Criteria for Rating Soil Properties

(1) Soil Fertility

Suitability Class	Fertility Class
1	High
2	Moderate
3	Low
4	Very Low

(see Table below of Criteria for soil fertility)

(2) Drainage

Suitability Class	Drainage Class
1	Excessively to well drained
2	Moderately well drained
3	Imperfectly drained
4	Poorly drained
5	Very poorly drained

(3) Salinity

Suitability Class	Salinity class	ECe (mmho/cm) 0 - 30 cm*	ECe (mmho/cm) 30 - 100 cm*
1	Non-Saline	0 - 4	0 - 8
2	Slightly Saline	8.4	15.8
3	Moderately Saline	15.8	15 - 30
4	Strongly Saline	> 15	> 30

* soil depth

(4) Sodicity

Suitability Class	Sodicity Class	ESP 0 - 30 cm*	ESP 30 - 100 cm*
1	Non-Sodic	0 - 6	0 - 15
2	Slightly Sodic	15.6	15 - 30
3	Moderately Sodic	15 - 30	30 - 50
4	Strongly Sodic	> 30	> 50

* soil depth

(5) Effective Soil Depth

Suitability Class	Effective Soil Depth Class	Depth (cm)
1	Extremely deep	180 <
2	Very deep	120 - 180
3	Deep	80 - 120
4	Moderately deep	50 - 80
5	Shallow	0 - 50

(6) Soil Texture, Stoniness and Rockiness

Code	Soil	Texture	Class
H	Heavy	Fine texture	C, SC and SiC
M	Medium	Moderately fine texture	CL, SCL and SiCL
		Medium textured	L, SiL and Si
		Moderately coarse textured	SL
L	Light	Coarse textured	S and LS

Table Criteria for Soil Fertility

Soil Unit	Sub-soil Unit	Fertility	Class
Ferralsols	rhodic or orthic	low	3
	nito-rhodic	low	3
	humic	low	3
	acric to rhodic	low	3
	acric to rhodic	low	3
	nito-humic	low	3
	orthic	low	3
	orthic and Xanthic	low	3
	orthic to rhodic	low	3
Luvisols	ferric	low	3
	gleyic	moderate	2
	chromic	moderate	2
	calcic	moderate	2
	nito-ferric	low	3
	ferralo-chromic/orthic	low	3
	vertic	moderate	2
	ferralo-ferric	low	3
	orthic	low	3
	ferralo-chromic/orthic/ferric	low	3
	ferralo-chromic	low	3
Rankers		moderate	2
Rendzinas	cambic	high	1
	orthic	moderate	2
Planosols	eutric	moderate	2
	solodic	low	3
	verto-eutric	moderate	2
	dystric	low	3
	humic	moderate	2
Greyzems	verto-orthic	moderate	2
	orthic	moderate	2
Gleysols	vertic	moderate	2
	calcaric	moderate	2
	humic	high	1
	mollic	high	1
Arenosols	calcaro-cambic	low	3
	cambic	low	3
	luvic	low	3
	ferralic	very low	4
	albic	very low	4
	ferralo-chromic	very low	4
	luvic/ferralic	very low	4
	calcaric	low	3
	calcaro-cambic	low	3
	ferralic-luvic	very low	4
Vertisols	pellic	moderate to high	1-2
	chromic	moderate to high	1-2
Lithosols		moderate	2
Kastanozem	haplic	moderate	2
Chernozems	haplic	moderate	2
Solonchaks	orthic	low	3
	takyric	low	3
	gleyic	low	3
Solonetz	gleyic	low	3
	mollic	low	3
	orthic	low	3
	luvo-orthic	low	3

Soil Unit	Sub-soil Unit	Fertility	Class
Regosols	endo-calcaric	moderate	2
	eutric	moderate	2
	dystric	low	3
	calcaric	moderate	2
Andosols	humic	high	1
	mollic	high	1
	vitric	high	1
Nitosols	eutric	high	1
	verto-eutric	high	1
	mollic	high	1
	endo-humic	high	1
	dystric	moderate	2
	verto-mollic	moderate	2
	humic	high	1
Cambisols	humic	high	1
	eutric	high	1
	nito-chromic	moderate	2
	endo-eutric	high	1
	chromic	moderate	2
	ferralic	moderate	2
	calcic	moderate	2
	endo-chromic	moderate	2
	dystric	moderate	2
	vertic	moderate	2
	gleyic	moderate	2
Phaeozems	gleyic	high	1
	endo-haplic	high	1
	haplic	high	1
	verto-luvic	high	1
	ortho-luvic	moderate	2
	chromo-luvic	high	1
	endo-luvic	high	1
	luvic	moderate	2
	nito-luvic	moderate	2
	endo-haplic	high	1
Histosols	dystric	moderate	2
Xerosols	calcic	moderate	2
	haplic	moderate	2
	gypsic	moderate	2
Acrisols	chromic	low	3
	endo-humic	low	3
	humic	low	3
	ferralo/chromic	low	3
	ferralo/chromic-orthic	low	3
	ferralo/orthic	low	3
	gleyic	low	3
	ferralo-chromic/orthic/ferric	low	3
	plinthic	low	3
Fluvisols	calcaric	moderate	2
	eutric	high	1
	thionic	moderate	2
Luvisols	nito chromic	low	3
	calcic to chromic	moderate	2
	gleyic to albic	low	3

Figure S.2.3 Suitability Class Table for Soil Mapping code (1/3)

Serial No.	Soil Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture
1.	M1	5	1	3	3	2	M S
2.	M2	2	1	1	1	1	M-H
3.	M3	2	1	1	1	1	H
4.	M4	4	1	1	1	1	M
5.	M5	5	1	1	1	1	M SR
6.	M6	4	1	1	1	2	M-H R
7.	M7	5	1	1	1	2	M SR
8.	M8	5	1	1	1	2	M SR
9.	M9	5	3	1	1	2	M
10.	M10	5	1	1	1	2	M
11.	M11	5	1	1	1	2	M SR
12.	M12	4	1	1	1	2	M
13.	H1	5	1	1	1	3	H
14.	H2	5	1	1	1	1	M SR
15.	H3	5	1	1	1	2	M SR
16.	H4	5	1	1	1	2	M SR
17.	H5	4	1	1	1	1	M
18.	H6	3	1	1	1	1	M SR
19.	H7	5	2	1	1	1	H S
20.	H8	5	1	1	1	1	H
21.	H9	5	1	1	3	2	M S
22.	H10	5	2	1	1	2	M-H S
23.	H11	5	1	1	1	2	V SR
24.	H12	4	1	1	1	3	M R
25.	H13	5	1	1	1	3	M SR
26.	H14	5	1	1	1	3	M-H SR
27.	H15	5	1	1	1	2	M-H SR
28.	H16	5	1	1	1	3	M R
29.	H17	5	1	1	1	2	M-H SR
30.	H18	5	1	1	1	2	H S
31.	H19	5	1	1	1	2	H S
32.	H20	5	1	1	1	2	H
33.	H21	5	1	1	1	2	M
34.	H22	5	1	1	1	2	M SR
35.	HS1	5	1	1	1	2	M SR
36.	L1	2	1	1	1	3	H
37.	L2	2	1	1	1	1	H
38.	L3	4	1	1	1	1	H
39.	L4	5	1	1	1	3	H R
40.	L5	5	1	1	1	1	M
41.	L6	5	1	2	2	2	M
42.	L7	5	1	1	1	2	H
43.	L8	3	2	1	1	1	H
44.	L9	2	2	1	1	2	H
45.	L10	2	3	1	1	2	H
46.	L11	2	3	1	2	2	H S
47.	L12	3	3	1	1	2	H
48.	L13	3	3	1	1	2	H
49.	L14	3	3	1	1	2	H
50.	L15	4	3	1	1	3	H
51.	L16	3	4	1	1	2	H
52.	L17	5	4	1	1	2	H
53.	L19	3	1	1	1	1	M
54.	L20	4	1	1	1	1	M-H
55.	L21	3	3	1	1	3	H
56.	L22	3	3	1	1	1	M-H
57.	L23	2	1	1	1	3	H
58.	L24	4	1	1	1	3	H
59.	L25	2	3	1	1	2	M
60.	L26	4	3	1	3	2	H
61.	L27	3	1	1	1	3	H
62.	L28	5	1	1	1	2	H
63.	L29	5	1	1	1	2	M
64.	L30	5	1	1	1	2	M
65.	L31	3	1	1	1	3	H
66.	LS1	4	1	1	1	2	M-H S
67.	LS2	4	1	1	1	2	M-H
68.	LC1	3	1	1	1	1	M
69.	LC2	1	1	1	1	3	M-H
70.	LC3	2	1	1	1	4	F-M
71.	R1	1	1	1	1	1	H
72.	Lu1	3	1	1	1	1	M-H
73.	Lu2	3	1	1	1	1	M
74.	R2	1	1	1	1	1	H
75.	R3	1	1	1	1	3	H
76.	R4	2	1	1	1	2	H
77.	R5	3	1	1	1	3	H
78.	R6	3	1	1	1	1	H
79.	R7	3	1	1	1	1	H
80.	R8	5	1	1	1	2	M-H
81.	R9	5	1	1	1	1	M-H
82.	R10	5	1	1	1	1	H
83.	R11	2	1	1	1	1	H
84.	R12	4	1	1	1	1	M
85.	R13	5	1	1	1	1	M
86.	R14	5	1	3	3	2	H SR
87.	F1	2	1	1	1	1	H
88.	F2	3	1	1	1	3	H
89.	F3	3	1	1	1	2	H
90.	F4	2	2	1	1	1	H
91.	F5	4	1	3	3	2	M
92.	F6	3	3	1	1	1	M
93.	F7	3	1	1	1	2	H
94.	F8	4	3	4	3	2	M
95.	F9	3	3	1	1	3	M-H
96.	F10	2	1	3	1	3	H
97.	F11	2	1	3	1	2	H
98.	F12	2	1	1	1	3	L-M
99.	F13	2	1	1	1	4	L-M
100.	F14	2	1	1	1	3	L-M
101.	F15	3	1	1	1	3	M-H
102.	F16	3	1	1	1	4	V
103.	F17	3	1	1	1	4	M-H
104.	F18	4	1	1	1	3	M-H
105.	F19	2	1	1	1	4	L
106.	FY1	4	1	1	1	3	M-H
107.	FY2	3	1	1	1	3	M
108.	FY3	2	1	1	1	2	M
109.	Y1	5	1	1	1	1	M-H
110.	Y2	3	1	3	1	3	H
111.	Y3	3	1	1	1	1	M
112.	Y4	4	1	2	2	2	M
113.	Y5	2	2	4	4	3	M-H
114.	Y6	3	2	1	1	3	M-H
115.	Y7	2	1	1	1	3	M-H
116.	Y8	2	1	1	1	4	M
117.	Y9	3	1	3	1	2	M
118.	Y10	2	2	2	1	3	L-M
119.	Y11	2	3	1	1	2	H
120.	Y12	2	4	3	1	3	H
121.	Y13	2	4	3	1	2	M-H
122.	Uu1	3	1	1	1	1	H
123.	Uu2	3	1	1	1	2	M
124.	Uu3	5	1	1	1	1	M
125.	Ub1	1	1	1	1	1	H
126.	Ub2	1	1	1	1	1	H
127.	Ub3	1	1	1	1	1	H
128.	Ub4	5	1	1	1	2	H
129.	Ub3+Ub4	5	1	1	1	2	H
130.	Ub5	1	1	1	1	1	H
131.	Ub6	2	1	1	1	3	M-H
132.	Ub7	2	1	1	1	3	M-H
133.	Ub8	2	1	1	1	3	M-H
134.	Ub9	3	1	1	1	2	M
135.	Ub10	1	1	1	1	1	H
136.	Ub11	1	1	1	1	1	H
137.	Ub12	4	1	1	1	3	M-H
138.	Ub13	3	1	1	1	3	M
139.	Ub14	3	1	1	1	3	M
140.	Ub15	4	1	1	1	3	M-H
141.	Ub16	2	1	1	1	1	M-H
142.	Ub17	2	1	1	1	2	M-H
143.	Ub18	2	1	1	1	3	M-H
144.	Ub19	4	2	1	1	1	M

Source : Ref.E.36

Figure S.2.3 Suitability Class Table for Soil Mapping code (2/3)

Serial No.	Soil Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture
145.	Um1	1	1	1	1	3	H
146.	Um2	2	1	1	1	3	H
147.	Um3	3	1	1	1	1	H
148.	Um4	3	1	1	1	1	M-H
149.	Um5	1	1	1	1	1	H
150.	Um6	2	1	1	1	3	H
151.	Um7	5	1	1	1	3	M-H
152.	Um8	3	1	1	1	1	H
153.	Um9	4	1	1	1	3	M--H
154.	Um10	3	1	1	1	3	M-H
155.	Um11	3	1	1	1	3	H
156.	Um12	3	3	1	1	3	M R
157.	Um13	2	1	1	1	3	H
158.	Um14	4	1	1	1	3	H R
159.	Um15	2	1	1	1	3	H
160.	Um16	3	1	1	1	3	H
161.	Um17	4	1	1	1	3	M-H
162.	Um18	4	1	1	1	3	M
163.	Um19	4	1	1	1	3	M-H
164.	Um20	4	1	1	1	3	M-H
165.	Um21	4	1	1	1	3	M-H
166.	Um22	5	1	1	1	3	M
167.	Um23	5	1	1	1	1	M
168.	Um24	5	1	1	1	3	M R
169.	Um25	5	1	1	1	3	M-H
170.	Um26	4	1	1	1	1	M-H
171.	Um27	5	1	1	1	4	L-M SR
172.	Um28	3	1	1	1	3	H
173.	Um29	4	3	1	1	3	M
174.	Ul1	1	1	1	1	1	H
175.	Ul2	4	1	1	1	2	H
176.	Ul3	5	3	1	1	1	H
177.	Ul4	4	1	1	1	2	H
178.	Ul5	5	1	1	1	1	M-H
179.	Ul6	5	1	1	1	3	M-H
180.	Ul7	4	1	1	1	3	H
181.	Ul8	4	2	1	1	1	H
182.	Ul9	5	2	1	1	3	H S
183.	Ul10	4	1	1	1	2	M-H
184.	Ul11	5	2	1	1	3	M-H
185.	Ul12	5	2	1	1	3	M
186.	Ul13	3	1	1	1	3	M
187.	Ul14	4	1	1	1	2	M-H
188.	Ul15	2	1	1	1	3	M-H
189.	Ul16	4	1	1	1	3	M-H
190.	Ul17	2	1	1	1	3	H
191.	Ul18	4	1	1	1	3	M-H
192.	Ul19	5	3	1	1	3	M-H SR
193.	Ul20	4	1	1	1	3	H
194.	Ul21	4	2	1	1	1	H
195.	Ux1	5	1	1	1	2	H
196.	Ux2	3	3	1	1	2	M-H
197.	Ux3	3	1	1	1	3	H
198.	Ux4	2	1	1	1	1	M
199.	Ux5	2	1	1	1	1	H
200.	Ux6	5	1	1	1	2	H
201.	Ux7	5	1	3	4	2	M-H
202.	Ux8	5	3	1	1	2	M-H
203.	Ux9	5	3	1	1	1	M-H
204.	Ux10	5	1	4	1	2	M
205.	Uc1	1	1	1	1	1	H
206.	Uc2	5	3	4	1	2	H
207.	Uc3	3	1	1	1	4	L
208.	Uc4	3	1	3	1		L-M
209.	Uc5	5	1	1	1	3	M-H
210.	Uc6	3	3	1	1	3	M
211.	Uc7	3	3	2	1	2	M-H
212.	Uc8	2	1	1	1	3	M
213.	Uc9	2	3	1	1	4	L-M
214.	Uc10	4	4	4	3	3	M-H
215.	Uc11	4	2	3	1	2	M
216.	Up1	4	3	1	1	2	M
217.	Up2	3	3	3	1	2	H
218.	Up3	4	4	1	1	2	M-H
219.	Up4	5	3	4	1	2	H
220.	Up5	4	3	3	1	2	M-H
221.	Up6	3	3	3	1	1	H
222.	Up7	3	3	1	1	2	M-H
223.	Up8	3	3	1	1	2	M-H
224.	Pa1	2	1	1	1	3	H
225.	Pa2	5	1	1	1	2	M-H S
226.	Pa3	3	3	4	1	2	H
227.	Pa4	3	3	3	3	2	H
228.	Pa5	3	3	1	1	2	M-H
229.	Pa6	3	3	1	1	2	M-H
230.	Pa7	4	3	2	1	2	H
231.	Pa8	3	1	1	1	3	M
232.	Pa9	4	1	1	1	2	M
233.	Pa10	3	3	3	1	2	H
234.	Pa11	3	3	1	1	2	H
235.	Pa12	3	1	1	1	3	M-H
236.	Pa13	4	1	1	1	3	M-H
237.	Pa14	4	3	3	2	3	M
238.	Pa15	3	2	3	1	2	H
239.	Pa16	4	1	1	1	2	M-H
240.	Pa17	3	3	1	1	2	H
241.	Pa18	3	2	3	2	1	H
242.	Pa19	4	3	3	2	3	M
243.	Pa20	2	2	3	2	2	H
244.	Pa21	2	3	3	2	1	H
245.	Pa22	2	3	3	1	3	H
246.	Pa23	3	4	3	1	2	H
247.	Pa24	5	4	1	1	2	M-H
248.	Pa25	4	1	1	1	2	H
249.	Pa26	5	3	1	1	2	M
250.	Pa27	5	3	1	1	2	M
251.	Pa28	2	3	3	3	2	H
252.	Pa29	4	3	3	1	1	M-H
253.	Pa30	5	1	1	1	1	M-H
254.	Pa31	2	1	1	1	3	M-H
255.	Pa32	3	1	1	1	2	M-H
256.	Pa33	3	1	1	1	3	M-H
257.	Pa34	3	1	1	1	4	L-M
258.	Pa35	5	1	1	1	3	M
259.	Pd1	5	1	1	1	1	M R
260.	Pd2	5	2	1	1	1	H
261.	Pd3	5	1	1	1	4	M-H
262.	Pd4	5	1	1	1	2	M
263.	Pd5	3	1	1	2	2	M
264.	Pd6	5	1	1	1	3	M
265.	Ps1	2	1	1	1	4	L-M
266.	Ps2	3	1	1	1	4	M
267.	Ps3	3	1	1	1	4	M
268.	Ps3+Ps35	4	3	3	1	4	M
269.	Ps4	3	1	1	1	3	L-M
270.	Ps5	2	3	3	3	3	M
271.	Ps6	2	1	1	1	3	M
272.	Ps7	2	1	1	1	2	M
273.	Ps8	3	1	1	1	3	M-H
274.	Ps9	2	1	3	3	2	M
275.	Ps10	2	3	4	2	3	M-H
276.	Ps11	3	4	4	2	3	M-H
277.	Ps12	3	4	1	3	3	H
278.	Ps11+D1	3	4	4	2	3	M-H
279.	Ps14	3	3	1	1	2	M-H
280.	Ps15	4	3	3	1	3	M
281.	Ps16	3	4	3	3	3	H
282.	Ps17	3	4	2	1	2	H
283.	Ps18	3	4	3	1	2	H
284.	Ps19	3	4	3	3	3	M-H
285.	Ps20	3	3	2	1	3	M
286.	Ps21	2	3	4	2	3	M
287.	Ps22	2	3	2	2	2	M-H
288.	Ps23	3	3	3	3	3	M

Source : Ref.E.36

Figure S.2.3 Suitability Class Table for Soil Mapping code (3/3)

Serial No.	Soil Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture
289.	Ps24	2	4	4	4	3	H
290.	Ps25	2	4	3	3	2	H
291.	Ps26	2	1	1	1	3	L-M
292.	Ps27	2	1	2	2	3	H
293.	Ps28	2	1	3	1	2	M
294.	Ps28+D1	2	1	3	1	3	M
295.	Ps29	2	3	1	2	2	M
296.	Pv1	1	1	1	1	1	H
297.	Pv2	2	1	1	1	2	H
298.	Pv3	3	1	3	1	2	M
299.	Pv4	3	3	3	3	3	H
300.	Pv5	3	4	3	3	2	H
301.	Pv6	2	1	1	1	3	L-M
302.	Pv7	2	1	2	1	1	M
303.	Pv8	3	1	1	1	1	M
304.	Pv9	4	1	2	1	1	M
305.	Pv10	2	3	2	2	3	M
306.	Pv11	4	3	2	1	2	M-H
307.	Pv12	3	4	1	1	2	H
308.	Pc1	2	1	1	1	1	L
309.	Pc2	2	3	3	1	2	M
310.	Pc3	3	3	3	3	3	M-H
311.	Pc4	2	2	3	1	3	M
312.	Pc5	2	4	4	4	3	H
313.	Pc6	2	4	2	1	3	V
314.	Pc7	2	1	1	1	3	H
315.	Pc8	3	1	1	1	3	M
316.	Pc9	5	1	1	1	3	M R
317.	Pc10	3	3	2	2	2	M
318.	Pl1	3	3	4	1	3	M
319.	Pl2	5	3	1	1	2	M
320.	Pl3	2	4	4	3	3	M
321.	Pl4	3	4	1	4	3	H
322.	Pl5	3	5	1	4	3	H
323.	Pl6	2	4	3	2	2	H
324.	Pl7	2	4	4	2	3	M-H
325.	Pl8	2	4	4	4	3	H
326.	Pl9	2	5	4	2	3	H
327.	Pl10	5	3	4	4	3	V
328.	Pl12	4	3	1	1	2	M-H
329.	Pl13	2	4	2	1	2	H
330.	Pl14	5	4	2	1	2	H
331.	Pl1	3	1	1	1	2	M
332.	Pl2	3	2	1	1	1	M-H
333.	Pl3	2	1	1	1	4	M
334.	Pl4	2	3	4	3	3	H
335.	Pf1	2	1	1	1	2	M-H
336.	Pf2	2	1	3	3	3	M-H
337.	Pf3	2	2	4	4	3	H
338.	pf4	2	2	4	4	3	M-H
339.	Pf5	2	3	4	4	2	H
340.	A1	2	3	4	4	2	M-H
341.	A2	2	2	3	3	1	M-H
342.	A3	2	1	3	2	2	M-H
343.	A4	2	4	4	4	3	M-H
344.	A5	2	3	3	3	1	M-H
345.	A6	2	3	4	4	3	M
346.	A7	2	3	3	3	2	H
347.	A8	2	3	1	1	2	M
348.	A9	2	3	1	3	2	M
349.	A10	5	2	1	1	2	M
350.	A11	2	3	4	3	2	H
351.	A12	2	4	3	3	2	H
352.	A13	2	4	3	2	2	H
353.	A14	3	4	1	1	2	H
354.	A15	3	4	1	1	1	H
355.	A16	3	4	1	4	3	H
356.	A17	2	3	3	3	2	M-H
357.	A18	2	3	1	1	1	V
358.	AB+A12	2	4	3	3	2	M-H
359.	B1	4	4	1	1	2	M
360.	B2	4	4	1	1	1	H
361.	B3	2	3	3	3	2	H
362.	B4	3	3	3	3	3	H
363.	B5	3	4	1	1	2	H
364.	B6	3	4	2	1	2	H
365.	B7	2	3	3	3	2	H
366.	B8	2	4	4	1	3	H
367.	B9	2	4	3	3	2	H
368.	B10	2	4	3	3	3	M-H
369.	B11	2	4	1	1	3	H
370.	B12	3	4	1	4	3	M
371.	B13	3	4	1	1	1	M-H
372.	B14	2	4	3	3	3	H
373.	B15	2	4	3	1	2	H
374.	B16	2	4	1	1	1	H
375.	D1	2	1	1	1	3	L-M
376.	D2	2	1	1	1	3	L
377.	D3	2	1	1	3	2	M
378.	D1+P13	2	4	1	1	3	L-M
379.	Lava	5	1	1	1	4	-
380.	S1	2	5	4	4	3	H
381.	S2	2	5	1	1	1	H
382.	S3	2	5	1	1	3	H
383.	T	2	5	4	4	3	M-H
384.	V1	5	4	1	1	2	M-H
385.	V2	5	3	1	1	2	H
386.	W1	5	1	4	1	3	M
387.	W2	5	1	4	3	3	M
388.	Z1	2	1	1	1	3	M
389.	Z2	2	2	3	1	3	M
390.	Z3	2	3	3	3	3	M

Source : Ref E.36

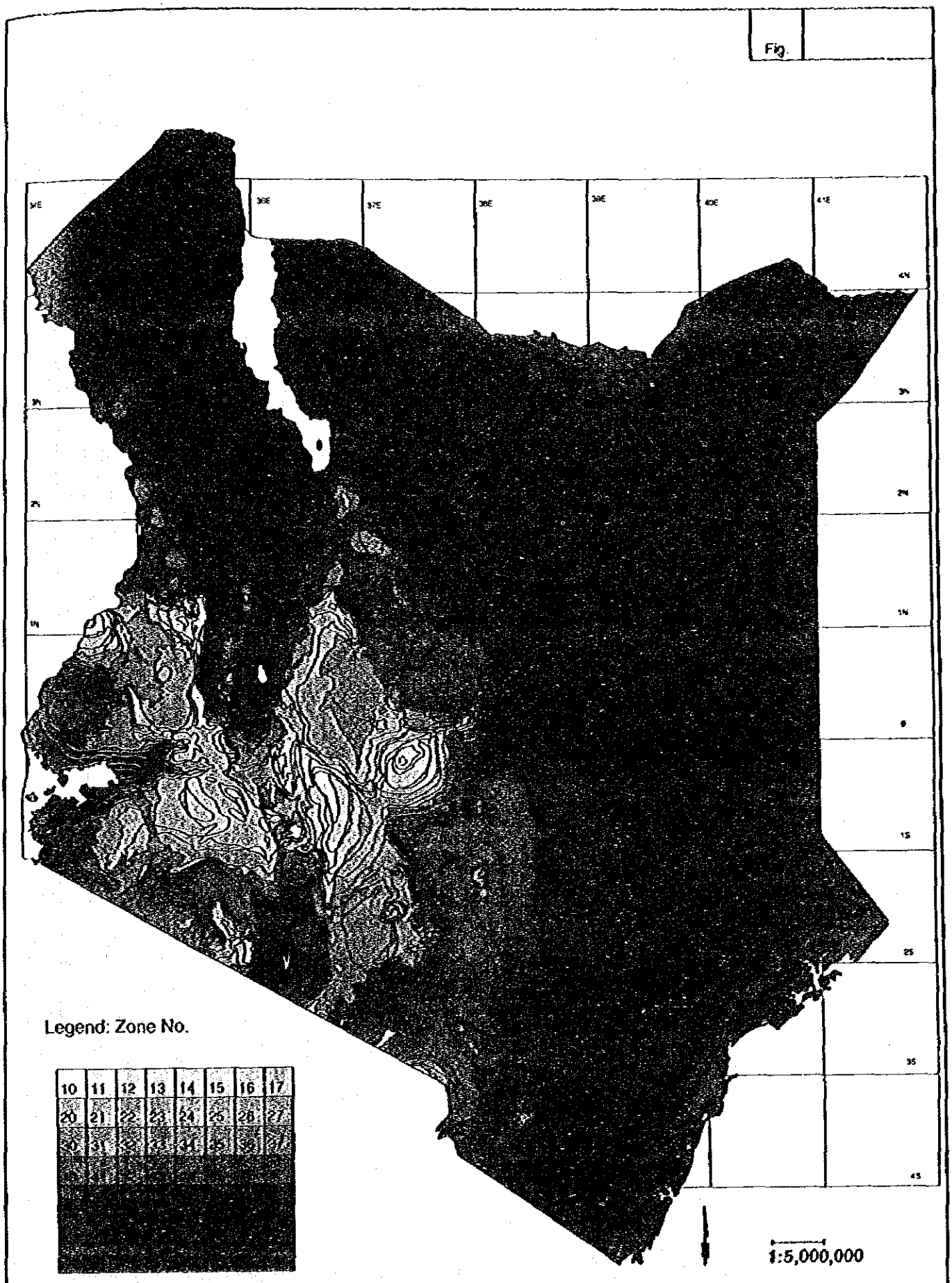

Figure S.2.4 Agro-ecological Zone Map

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Belts of Zone	Main Zone							
	0 (perhumid)	1 (humid)	2 (subhumid)	3 (subhumid)	4 (transitional)	5 (semi-arid)	6 (arid)	7 (perarid)
TA Tropical Alpine Zones Ann. mean 2-10C	Glacier	II. Sheep Zone					High altitudes deserts	
	Mountain Swamps	I. Cattle-Sheep Zone						
UH Upper Highland Zones Ann. mean 10-15C Seasonal night frosts	Forest Zones	Sheep-Dairy Zone	Pyrethrum-Wheat Zone	Wheat-Barley Zone	U Highland Ranching Zone	U. H. Nomadism Zone*		
LH Lower Highland Zone Ann. mean 15-18 C M. min. 8-11C Norm. no frost		Tea-Dairy Zone	Wheat/ Maize-Pyrethrum Zone	Wheat/Maize-Barley Zone	Calule-Sheep-Barley zone	L. Highland Ranching Zone	L. H. Nomadism Zone*	
UM Upper Midland Zones Ann. mean 18-21 C M. min. 11-14 C		Coffee-Tea Zone	Main Coffee Zone	Marginal Coffee Zone	Sunflower-Maize Zone	Livestock-Sorghum Zone	U. Midland Ranching Zone	U. Midland Nom. Zone
LM Lower Midland Zones Ann. mean 21-34 C M. min. > 14 C	*	L. Midl. Sugarcane Zone	Marginal Sugarcane Zone	L. Midland Cotton Zone	Marginal Cotton Zone	L. Midland Livestock-Millet Zone	L. Midland Ranching Zone	L. Midland Nom. Zone
L. Lowland Zones IL. Inner Lowland Z. Ann. mean > 24 C Mean max. >31 C	*	Rice-Taro Zone*	Lowland Sugarcane Zone*	Lowland Cotton Zone*	Groundnut Zone*	Lowland Livestock Millet Zone	Lowland Ranching Zone	U. Midland Nom. Zone
CL Coastal Lowl. Z. Ann. mean > 24 C Mean max. < 31 C	*	Cocoa-Oilpalm Zone*	Lowland Sugarcane Zone	Coconut-Cassava Zone	Cashewnut-Cass. Zone	Lowland Livestock Millet Zone	Lowland Ranching Zone	L. Midland Nom. Zone

Note: * Not in Kenya

Source : Ref. E.17

Figure S.2.5 Agro-ecological Zones for Keniya

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Fig. E1.7

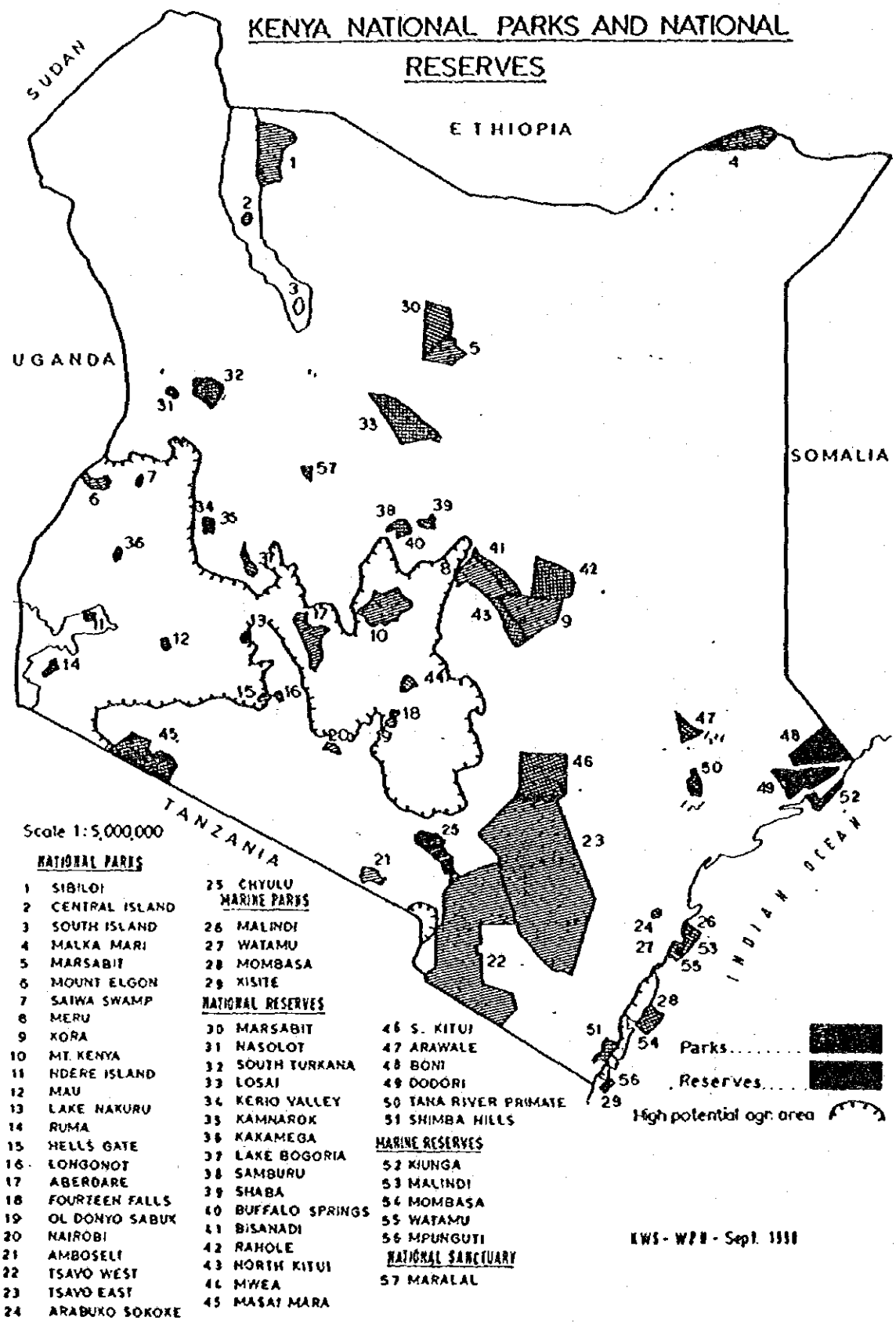

Figure S.2.6 Kenya National Parks and Reserves

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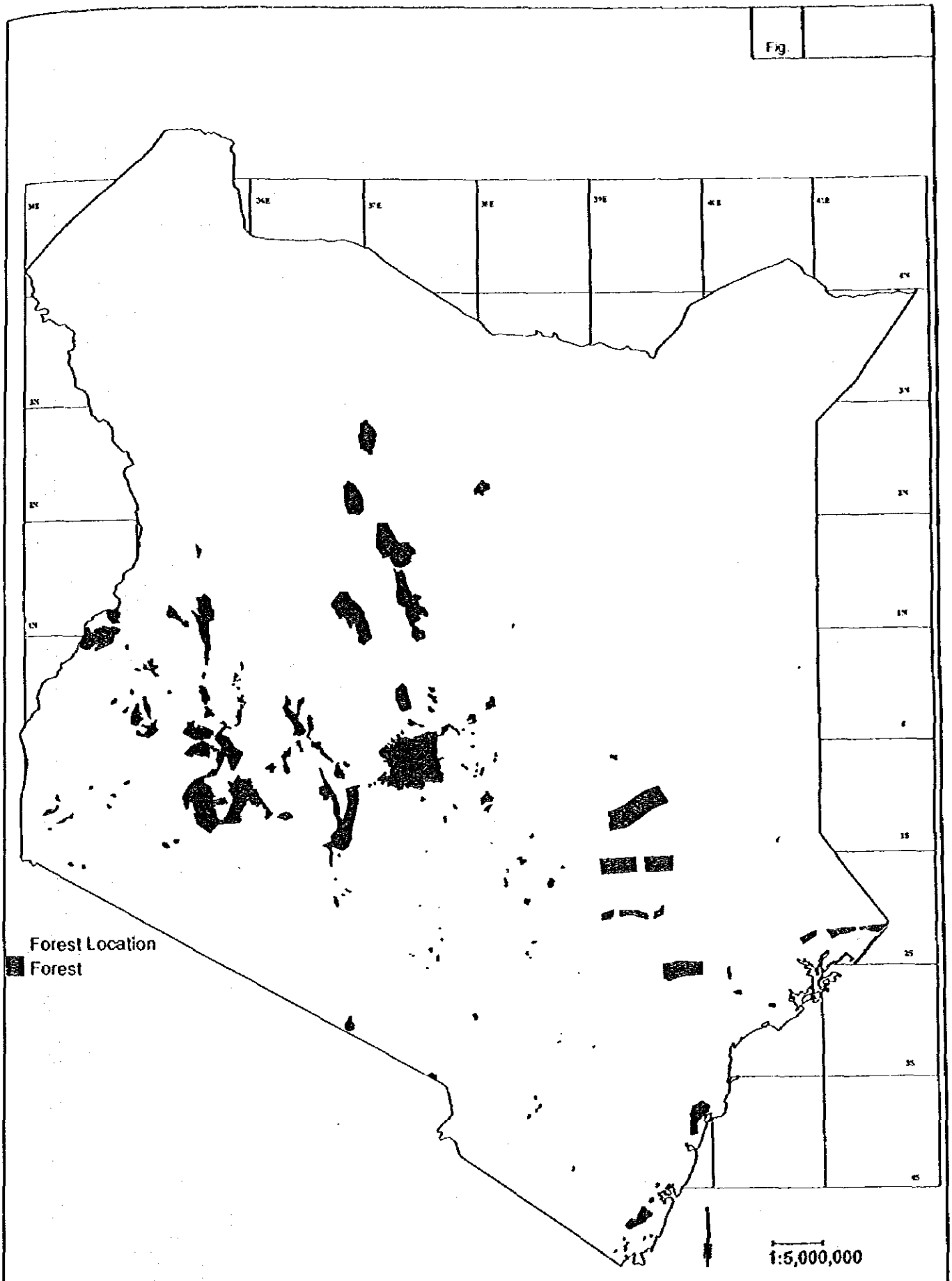

Figure S.2.7 Forest Administrative Boundaries

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Figure S.2.8 Land Suitability Class for Major Crops

Suitability Class	Agro-ecological Zone	Texture	Soil Fertility	Salinity	Sodicity	Drainage	Effective Soil Depth
Maize							
S1	UM2, LM2, CL2	M	2	1	1	1	3
S2	LH1-3, UM1,3,4, LM1,3, CL3	L	3	1	2	2	3
S3	LM4, CL4	H	3	1	3	2	4
NS		H	4	2	4	3	5
Wheat							
S1	UH3, LH3	L, M	2	1	3	2	2
S2	UH2, LH2	H	3	2	4	2	3
S3	LH4	H	3	2	4	3	4
NS		H	4	3	4	4	5
Rice (Rainfed)							
S1	CL1	H	2	1	2	5	3
S2	CL2, 3	M	3	1	3	5	4
S3	LM1-3	L	3	2	4	5	4
NS		L	4	3	4	5	5
Sorghm / Millet							
S1	UM4, LM4, IL3	M	2	1	2	2	2
S2	UM5, IL4, CL4	H, L	3	2	3	2	3
S3	UM1-3, LM1-3, LM5, IL5, CL2,3,5	H, L	3	2	3	3	4
NS		H, L	4	3	4	4	5
Potatoes							
S1	LH1	L, M	2	1	1	1	3
S2	UH1, LH2	L, M	2	1	1	1	4
S3	UH2,3, LH3	H	3	1	1	2	4
NS		H	4	2	3	3	5
Beans							
S1	LM2, UM2	M	3	1	1	1	3
S2	UM1,3,4, LM1,3	L	3	1	2	1	4
S3	LH1-3, LM4	H	4	1	3	2	4
NS		H	4	2	4	3	5
Coffee							
S1	UM2	M	2	1	1	1	2
S2	UM1	L	3	1	1	1	2
S3	UM3	H	3	1	1	1	3
NS		H	4	2	2	2	4

Suitability Class	Agro-ecological Zone	Texture	Soil Fertility	Salinity	Sodicity	Drainage	Effective Soil Depth
Tea							
S1	LH1	M	2	1	1	1	2
S2	UM1	L	2	1	1	1	2
S3	LM1	H	3	1	1	2	3
NS		H	4	2	2	3	4
Cotton							
S1	CL3	M, H	2	1	3	1	3
S2	LM3	M, H	3	2	4	1	3
S3	LM4, CL4, LM2	L	3	3	5	2	4
NS		L	4	4	5	3	5
Sugarcane							
S1	LM1	L, M	2	1	2	2	2
S2	CL2	L, M	2	1	2	3	2,
S3	LM2	H	3	2	3	3	3
NS		H	4	3	4	4	4
Pyrethrm							
S1	UH2	M	2	1	2	2	2
S2	LH2	L, H	3	2	3	3	2
S3	UH1, UH3, LH3	L, H	3	2	3	3	3
NS		L, H	4	3	4	4	4
Sisal							
S1	UM4, LM4, CL4	M	2	1	2	1	2
S2	CL3	L	3	2	3	2	2
S3	CL5, IL5, UM3,5, LM3,5	L, H	3	2	3	3	3
NS		L, H	4	3	4	4	4
Horticultural Crop							
S1	LH1, UM1, LM1	M	2	2	3	1	3
S2	LH2, UM2, LM2, UH1,2	L, H	3	2	4	1	4
S3	LH3, UM3,4, CL2,3,4, UH3, LM3,4	L, H	3	3	5	2	4
NS		L, H	4	4	5	3	5
Fodder Crop							
S1	UM2, LM2, CL2	M	3	1	3	2	2
S2	LH1,2, UM1,3,4, LM1,3, CL2	H, L	3	2	4	2	3
S3	LM4, CL4	H, L	4	2	4	3	4
NS		H, L	4	3	4	4	5

Note : S1 : Highly suitable for crops, S2 : Moderately suitable for crops, S3 : Marginally suitable for crops NS : Not suitable for crops

Source : Farm Management Handbook of Kenya (MOA, 1982), Fertilizer Recommendation Project (MOA, 1988)

Figure S.2.9 Suitable Area for Major Crops by District (1/3)

Unit:km2

	District	Maize				Wheat				Rice				Sorghum&Millet				Potato			
		S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total
110	Nairobi	0	82	202	284	0	2	0	2	0	0	0	0	0	28	276	304	0	0	2	2
210	Kiambu	252	574	250	1,076	27	260	44	331	0	0	0	0	0	10	828	838	0	60	241	301
220	Kirinyaga	159	592	150	901	0	0	0	0	0	0	153	153	139	87	554	780	123	0	0	123
230	Murang'a	345	640	244	1,229	0	43	0	43	0	0	61	61	49	283	907	1,239	0	0	43	43
240	Nyandarua	0	43	30	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	983	983
250	Nyeri	328	575	4	907	0	361	278	639	0	0	2	2	117	1	508	626	84	78	424	586
310	Kilifi	0	66	1,865	1,931	0	0	0	0	0	280	24	304	0	1,335	2,107	3,442	0	0	0	0
320	Kwale	0	625	741	1,366	0	0	0	0	0	873	64	937	0	194	2,277	2,471	0	0	0	0
330	Lamu	0	1	2,679	2,680	0	0	0	0	0	562	0	562	0	1,680	2,568	4,248	0	0	0	0
340	Mombasa	0	0	120	120	0	0	0	0	0	10	21	31	0	20	100	120	0	0	0	0
350	Taita Taveta	0	23	242	265	0	0	4	4	0	0	0	0	0	159	1,909	2,068	0	0	0	0
360	Tana River	0	0	440	440	0	0	0	0	0	237	0	237	0	95	811	906	0	0	0	0
410	Embu	94	449	239	782	0	0	0	0	0	0	187	187	10	150	1,041	1,201	44	0	0	44
420	Isiolo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	Kitui	0	0	0	0	0	0	0	0	0	0	0	0	0	436	11,122	11,558	0	0	0	0
440	Machakos	0	874	2,056	2,930	0	23	29	52	0	0	428	428	37	746	6,692	7,475	0	8	23	31
450	Marsabit	0	17	44	61	0	0	0	0	0	0	21	21	38	0	1,500	1,538	0	0	0	0
460	Meru	369	1,520	974	2,863	128	72	208	408	0	0	915	915	147	544	3,341	4,032	18	11	189	218
510	Garissa	0	0	51	51	0	0	0	0	0	0	0	0	0	51	668	719	0	0	0	0
520	Mandera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
530	Wajir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	101	0	0	0	0
610	Kisii	0	1,836	209	2,045	0	219	20	239	0	0	18	18	0	0	1,067	1,067	692	109	128	929
620	Kisumu	0	190	1,117	1,307	0	13	0	13	0	0	1,057	1,057	0	39	1,296	1,335	0	0	15	15
630	Siaya	0	229	1,805	2,034	0	0	0	0	0	0	1,967	1,967	0	0	2,041	2,041	0	0	0	0
640	South Nyanza	37	127	3,801	3,965	0	0	0	0	0	0	2,978	2,978	0	43	4,060	4,103	0	0	0	0
710	Kajiado	0	39	655	694	0	32	178	210	0	0	0	0	4	172	3,330	3,506	0	18	101	119
720	Kericho	1	980	2,171	3,152	77	267	215	559	0	0	137	137	1	1	902	904	1,411	228	375	2,014
730	Laikipia	0	239	6	245	0	334	691	1,025	0	0	0	0	0	35	870	905	0	0	334	334
740	Nakuru	0	540	699	1,239	0	1,063	786	1,849	0	0	0	0	0	237	571	808	0	171	1,262	1,433
750	Narok	0	1,039	2,994	4,033	223	620	2,891	3,734	0	0	10	10	109	306	2,636	3,051	320	645	2,440	3,405
760	Trans Nzoia	33	1,162	286	1,481	81	354	245	680	0	0	0	0	17	682	353	1,052	0	108	492	600
770	Uasin Gishu	34	620	1,679	2,333	272	287	1,600	2,159	0	0	0	0	0	266	118	384	11	503	1,819	2,333
810	Baringo	0	368	542	910	39	161	46	246	0	0	1	1	75	119	962	1,156	0	160	105	265
820	Elgeyo Marak	0	183	146	329	38	89	53	180	0	0	0	0	18	9	351	378	43	318	91	452
830	Nandi	4	1,707	291	2,002	339	156	158	653	0	0	10	10	95	335	441	871	277	105	673	1,055
840	Samburu	0	0	0	0	0	0	253	253	0	0	0	0	0	0	333	333	0	0	0	0
850	Turkana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30	0	0	0	0
860	West Pokot	0	3	92	95	0	0	132	132	0	0	0	0	0	0	803	803	0	53	126	179
910	Bungoma	34	1,261	869	2,164	0	81	0	81	0	0	730	730	0	279	1,634	1,913	164	75	0	239
920	Busia	0	155	777	932	0	0	0	0	0	0	960	960	0	0	932	932	0	0	0	0
930	Kakamega	11	2,483	540	3,034	0	0	17	17	0	0	1,339	1,339	1	413	2,521	2,935	24	0	72	96
	Total	1,701	19,242	29,010	49,953	1,224	4,437	7,848	13,509	0	1,962	11,083	13,045	857	8,755	62,561	72,173	3,211	2,650	9,938	15,799

Figure S.2.9 Suitable Area for Major Crops by District (2/3)

Unit:km2

	District	Beans				Coffee				Tea				Cotton				Sugarcane			
		S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total
110	Nairobi	0	80	2	82	0	0	53	53	0	0	0	0	0	0	0	0	0	0	0	0
210	Kiambu	336	309	237	882	252	84	265	601	0	0	0	0	0	0	9	9	0	0	0	0
220	Kirinyaga	159	469	273	901	159	145	83	387	123	145	0	268	0	153	150	303	0	0	0	0
230	Murang'a	375	705	206	1,286	345	30	284	659	0	0	0	0	0	37	156	193	0	0	0	0
240	Nyandarua	0	0	57	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250	Nyeri	328	299	280	907	328	46	131	505	84	46	0	130	0	2	0	2	0	0	0	0
310	Kilifi	0	0	0	0	0	0	0	0	0	0	0	0	0	151	2,681	2,832	0	0	0	0
320	Kwale	0	0	0	0	0	0	0	0	0	0	0	0	0	632	1,039	1,671	0	0	0	0
330	Lamu	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2,686	2,687	0	0	0	0
340	Mombasa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	171	0	0	0	0
350	Taita Taveta	0	265	0	265	0	0	0	0	0	0	4	4	0	0	198	198	0	0	0	0
360	Tana River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	513	513	0	0	0	0
410	Embu	94	457	245	796	94	98	86	278	44	98	0	142	0	147	227	374	0	0	0	0
420	Isiolo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	Kitui	0	250	1,822	2,072	0	0	0	0	0	0	0	0	0	0	1,815	1,815	0	0	0	0
440	Machakos	1	1,918	1,138	3,057	0	1	207	208	0	23	29	52	0	78	1,290	1,368	0	0	0	0
450	Marsabit	0	21	39	60	0	0	0	0	0	0	0	0	0	17	44	61	0	0	0	0
460	Meru	372	1,686	786	2,844	415	96	383	894	18	93	0	111	0	797	784	1,581	0	0	0	0
510	Garissa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	51	0	0	0	0
520	Mandera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
530	Wajir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
610	Kisii	17	1,027	874	1,918	0	156	828	984	263	105	1,092	1,460	0	0	18	18	0	0	18	18
620	Kisumu	62	175	0	237	4	33	9	46	0	0	71	71	0	4	1,075	1,079	0	22	671	693
630	Siaya	30	1,519	394	1,943	0	15	0	15	0	0	168	168	0	31	1,177	1,208	0	0	1,191	1,191
640	South Nyanza	43	1,461	1,183	2,687	7	7	109	123	0	2	85	87	0	58	3,119	3,177	0	0	1,519	1,519
710	Kajiado	0	301	296	597	0	0	1	1	0	0	0	0	0	0	180	180	0	0	0	0
720	Kericho	7	447	1,850	2,304	0	228	130	358	334	228	34	596	0	0	137	137	0	0	137	137
730	Laikipia	0	13	226	239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
740	Nakuru	0	427	625	1,052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
750	Narok	0	327	2,101	2,428	0	0	225	225	36	0	220	256	0	0	10	10	0	0	10	10
760	Trans Nzoia	48	374	514	936	33	15	35	83	0	0	0	0	0	0	0	0	0	0	0	0
770	Uasin Gishu	0	383	1,679	2,062	0	0	3	3	11	0	0	11	0	0	0	0	0	0	0	0
810	Baringo	0	421	320	741	0	0	153	153	0	0	1	1	0	1	316	317	0	0	0	0
820	Elgeyo Marakv	0	37	204	241	0	0	0	0	38	0	0	38	0	0	121	121	0	0	0	0
830	Nandi	9	860	1,092	1,961	0	44	370	414	221	44	470	735	0	0	10	10	0	0	79	79
840	Samburu	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
850	Turkana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
860	West Pokot	3	4	122	129	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0
910	Bungoma	304	1,085	669	2,058	32	347	293	672	164	122	67	353	0	60	735	795	0	0	544	544
920	Busia	47	324	508	879	0	0	0	0	0	0	0	0	0	108	595	703	0	0	666	666
930	Kakamega	293	2,299	452	3,044	0	801	231	1,032	0	120	1,640	1,760	0	0	386	386	3	0	1,336	1,339
	Total	2,528	17,944	18,196	38,668	1,669	2,149	3,880	7,698	1,336	1,026	3,881	6,243	0	2,277	19,693	21,970	3	22	6,171	6,196

Figure S.2.9 Suitable Area for Major Crops by District (3/3)

Unit:km2

	District	Pyrethrum				Sisal				Horticulture				Fodder Crop			
		S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total	S1	S2	S3	Total
110	Nairobi	0	0	2	2	0	27	54	81	0	0	82	82	0	80	231	311
210	Kiambu	35	121	145	301	0	10	265	275	0	507	448	955	336	360	451	1,147
220	Kirinyaga	0	0	0	0	139	87	238	464	269	159	473	901	159	592	152	903
230	Murang'a	43	0	0	43	49	283	321	653	0	417	836	1,253	375	611	371	1,357
240	Nyandarua	253	39	1,330	1,622	0	0	0	0	0	551	431	982	0	0	758	758
250	Nyeri	207	55	242	504	117	1	134	252	131	631	451	1,213	328	438	249	1,015
310	Kilifi	0	0	0	0	114	412	2,389	2,915	0	0	1,593	1,593	0	0	2,551	2,551
320	Kwale	0	0	0	0	12	509	1,577	2,098	0	0	849	849	0	0	2,259	2,259
330	Lamu	0	0	0	0	0	2,193	1,792	3,985	0	0	2,193	2,193	0	0	2,680	2,680
340	Mombasa	0	0	0	0	0	0	20	20	0	0	20	20	0	0	171	171
350	Taita Taveta	0	0	4	4	0	89	1,777	1,866	0	4	260	264	0	23	1,415	1,438
360	Tana River	0	0	0	0	0	248	469	717	0	0	248	248	0	0	440	440
410	Embu	0	0	0	0	10	150	374	534	142	94	546	782	94	449	834	1,377
420	Isiolo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
430	Kitui	0	0	0	0	0	261	7,118	7,379	0	0	2,010	2,010	0	0	12,073	12,073
440	Machakos	0	2	29	31	37	119	1,479	1,635	0	16	2,828	2,844	1	856	7,023	7,880
450	Marsabit	0	0	0	0	38	0	1,184	1,222	0	0	61	61	0	17	1,675	1,692
460	Meru	0	11	189	200	147	292	2,114	2,553	111	432	2,353	2,896	372	1,429	2,313	4,114
510	Garissa	0	0	0	0	0	51	646	697	0	0	51	51	0	0	51	51
520	Mandera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
530	Wajir	0	0	0	0	0	0	18	18	0	0	0	0	0	0	101	101
610	Kisii	0	70	0	70	0	0	143	143	1,363	342	192	1,897	14	1,769	313	2,096
620	Kisumu	0	0	13	13	0	0	106	106	0	208	177	385	51	139	1,496	1,686
630	Siaya	0	0	0	0	0	0	31	31	0	1,041	902	1,943	30	199	1,894	2,123
640	South Nyanza	0	0	0	0	0	8	428	436	84	822	1,763	2,669	5	217	3,899	4,121
710	Kajiado	0	0	148	148	4	5	1,494	1,503	0	18	532	550	0	6	3,598	3,604
720	Kericho	71	155	713	939	0	1	405	406	562	1,512	395	2,469	1	903	2,193	3,097
730	Laikipia	0	103	245	348	0	13	722	735	0	104	243	347	0	13	1,196	1,209
740	Nakuru	14	104	1,645	1,763	0	1	258	259	0	973	983	1,956	0	229	1,688	1,917
750	Narok	0	199	3,234	3,433	109	0	1,746	1,855	256	1,942	1,582	3,780	0	718	4,717	5,435
760	Trans Nzoia	14	131	445	590	17	641	77	735	0	346	1,030	1,376	48	856	454	1,358
770	Uasin Gishu	136	90	2,096	2,322	0	129	139	268	11	694	2,011	2,716	0	385	704	1,089
810	Baringo	35	114	116	265	75	0	637	712	0	217	628	845	0	329	1,102	1,431
820	Elgeyo Marak	0	89	321	410	18	0	321	339	38	374	85	497	0	145	780	925
830	Nandi	7	75	603	685	95	0	384	479	634	247	1,044	1,925	4	1,317	142	1,463
840	Samburu	0	0	0	0	0	0	40	40	0	0	1	1	0	0	531	531
850	Turkana	0	0	0	0	0	0	30	30	0	0	0	0	0	0	30	30
860	West Pokot	0	0	179	179	0	0	126	126	0	153	33	186	3	1	1,133	1,137
910	Bungoma	0	75	0	75	0	70	494	564	285	721	1,041	2,047	239	1,056	880	2,175
920	Busia	0	0	0	0	0	0	108	108	0	248	633	881	47	108	777	932
930	Kakamega	0	0	23	23	1	117	358	476	276	1,412	916	2,604	6	2,482	553	3,041
	Total	815	1,433	11,722	13,970	982	5,717	30,016	36,715	4,162	14,185	29,924	48,271	2,113	15,727	63,878	81,718

Appendix S.3

Supplmentary Information for Analysing Irrigation Potential with Groundwater

Appendix S.3

Supplmentary Information for Analysing Irrigation Potential with Groundwater

Contents

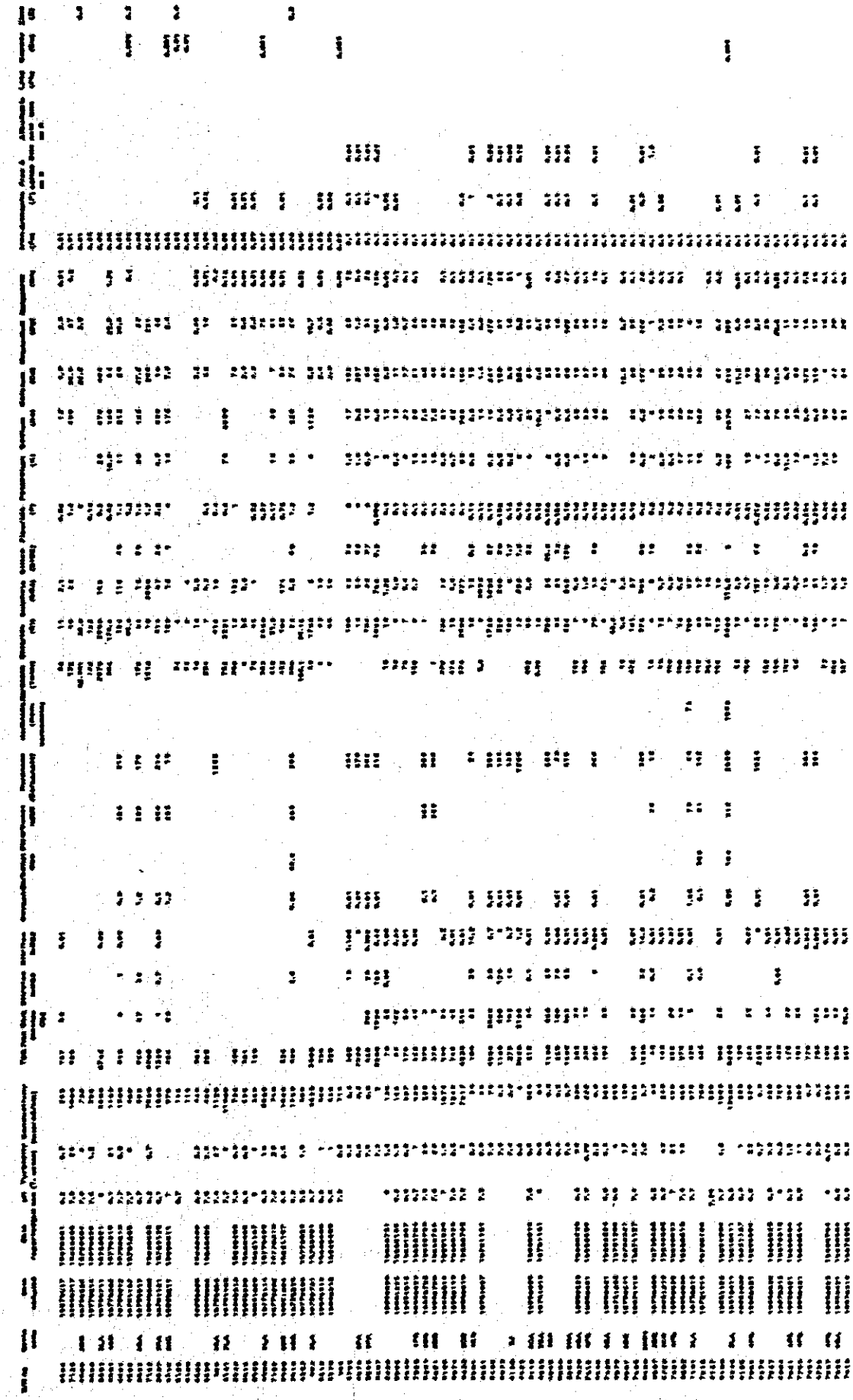

Figure S.3.1 Water Quality Data

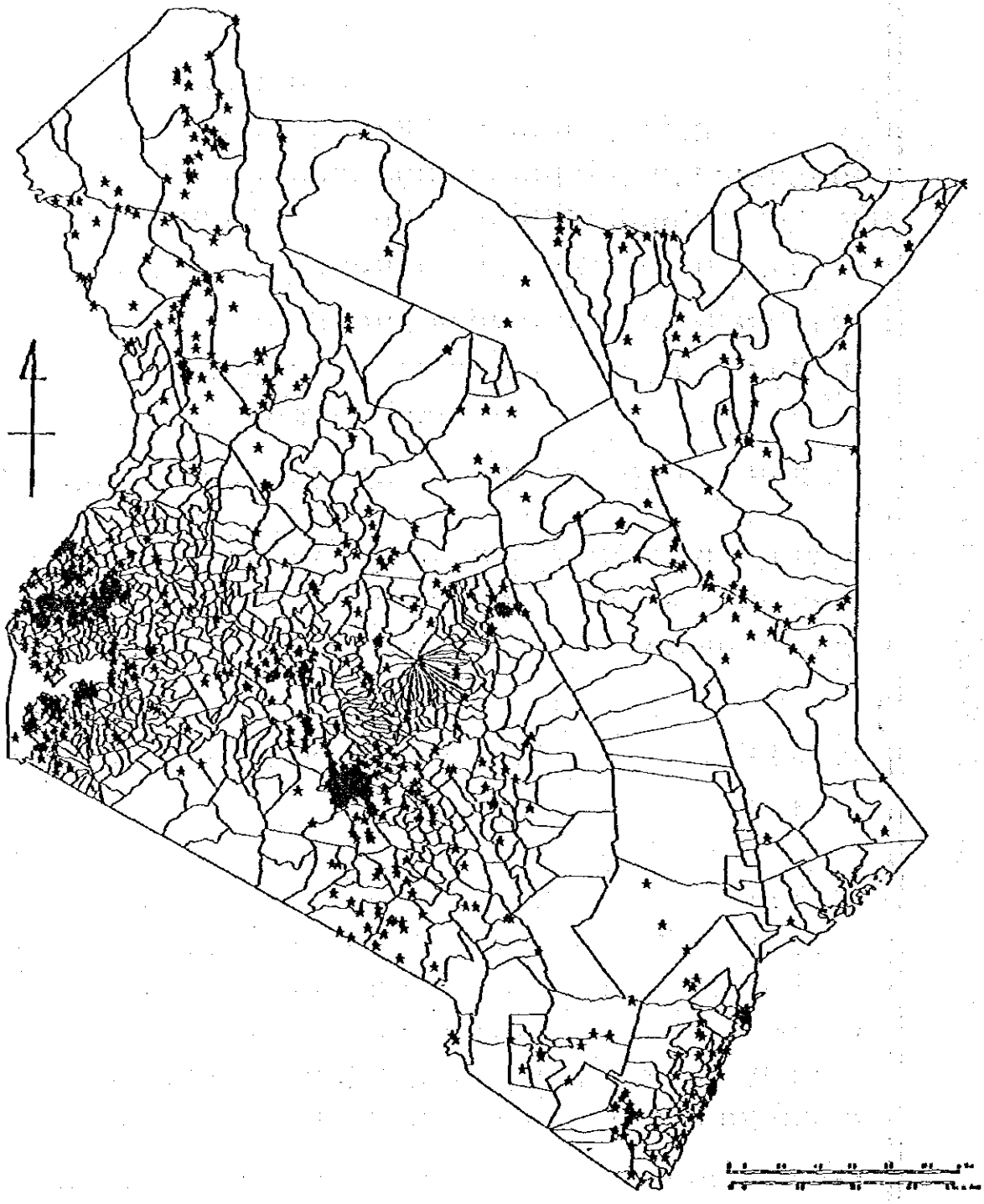

Figure S.3.2 Location Map of Boreholes with Electrical Conductivity Data

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Fig.

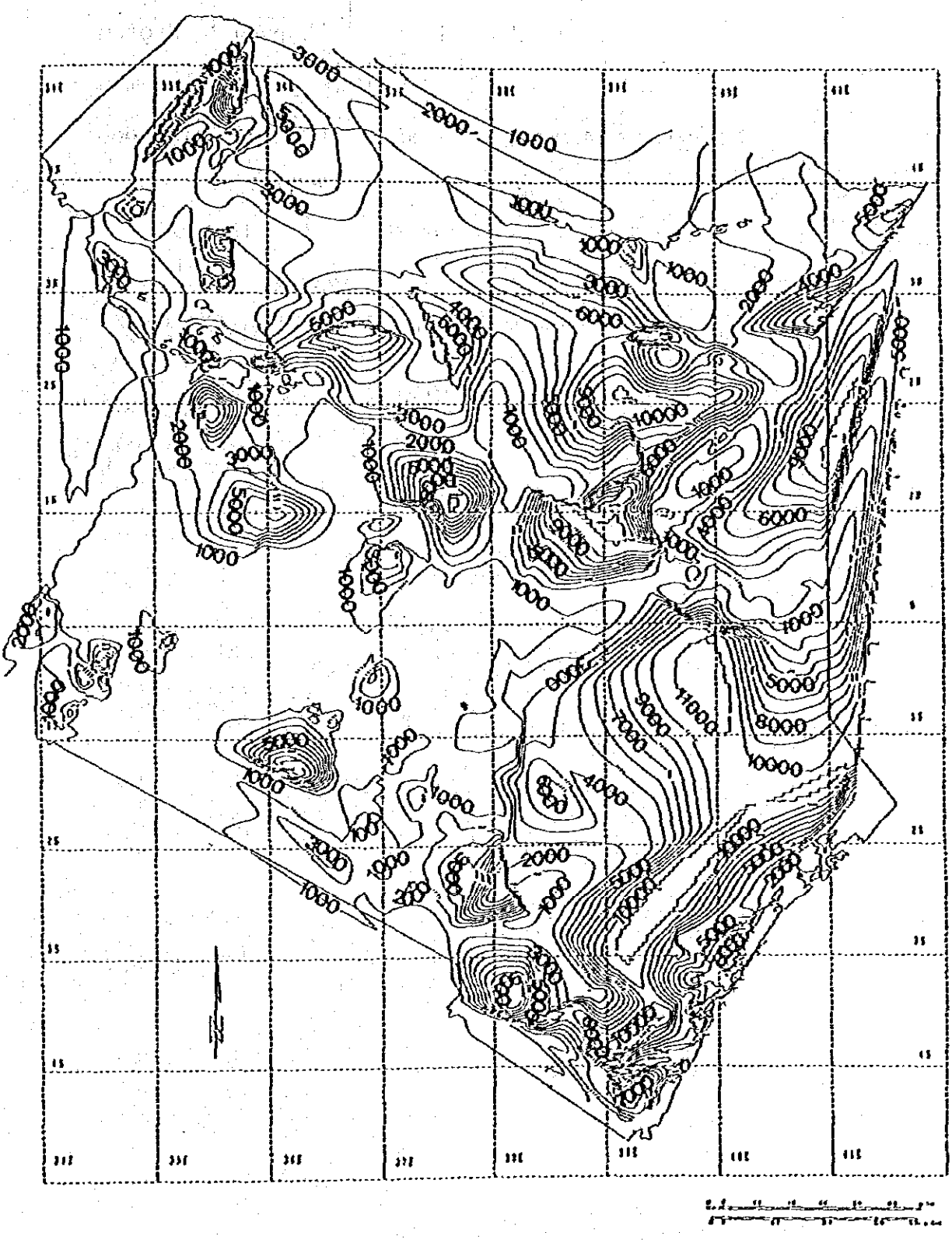

Figure S.3.3 Contour Map of Electrical Conductivity (micro S/cm)

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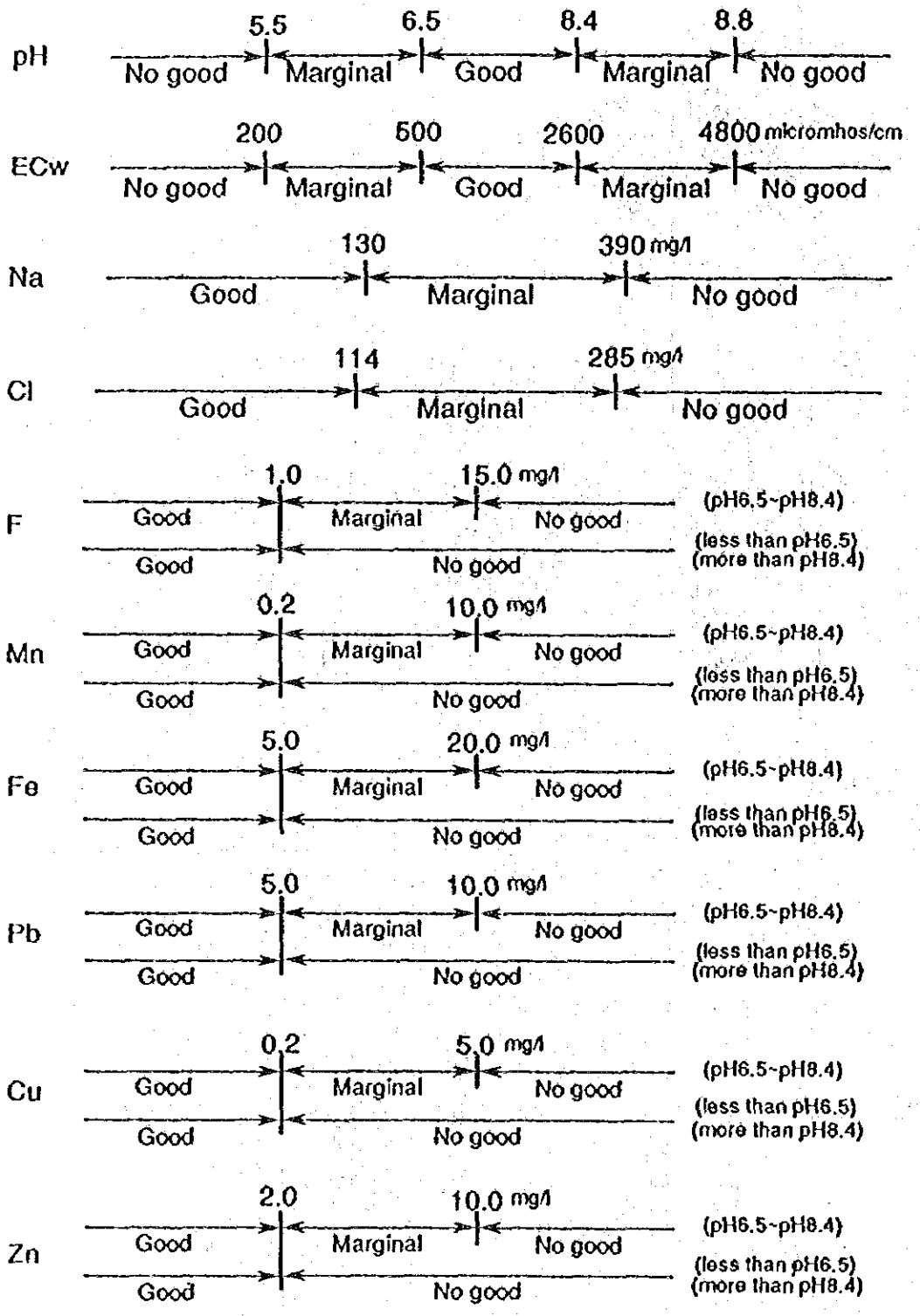

Figure S.3.4 Water Quality Evaluation Criteria for Irrigation

Source : Ref. E.46

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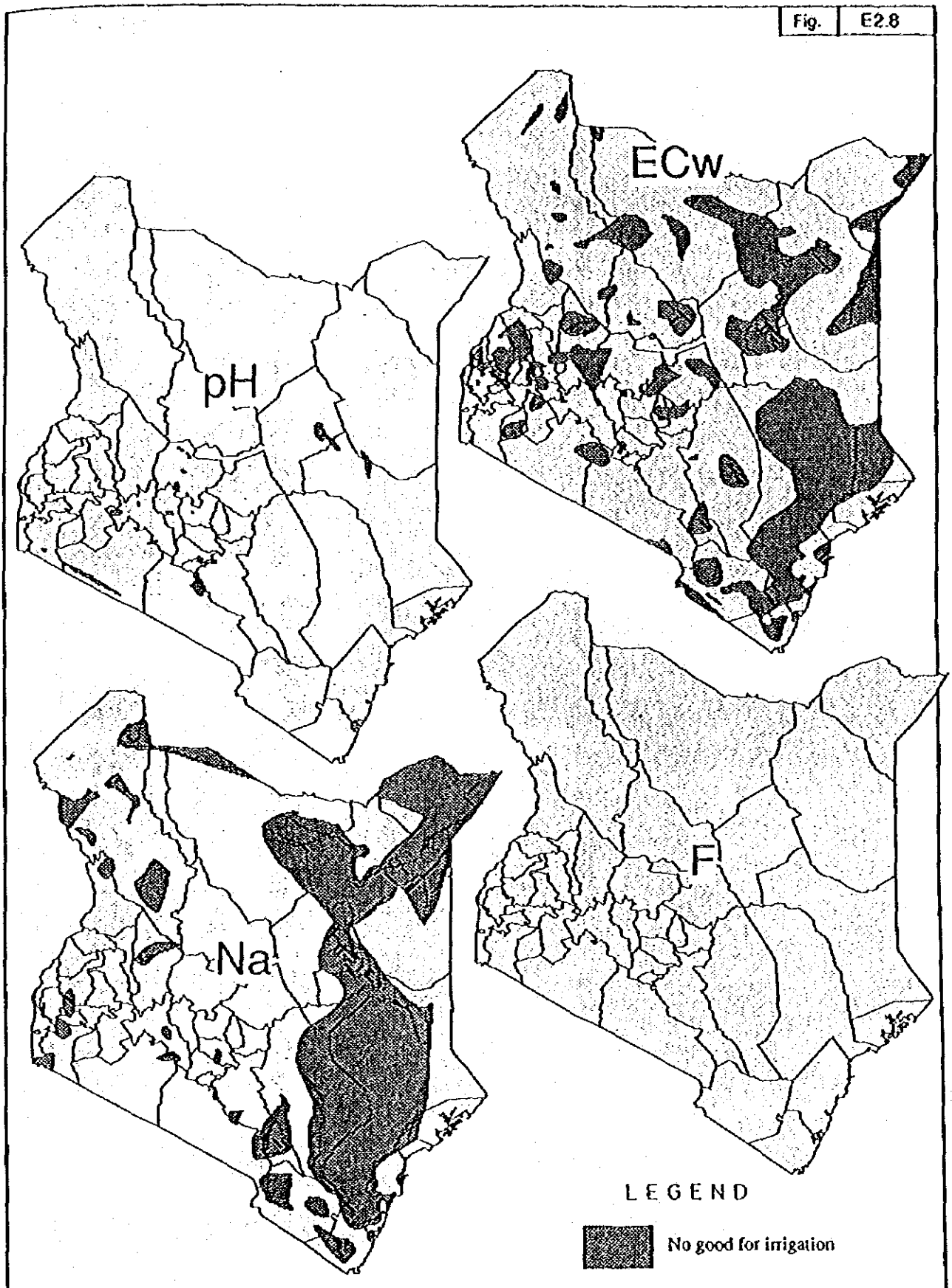

Figure S.3.5 Groundwater Quality Map (1/2)

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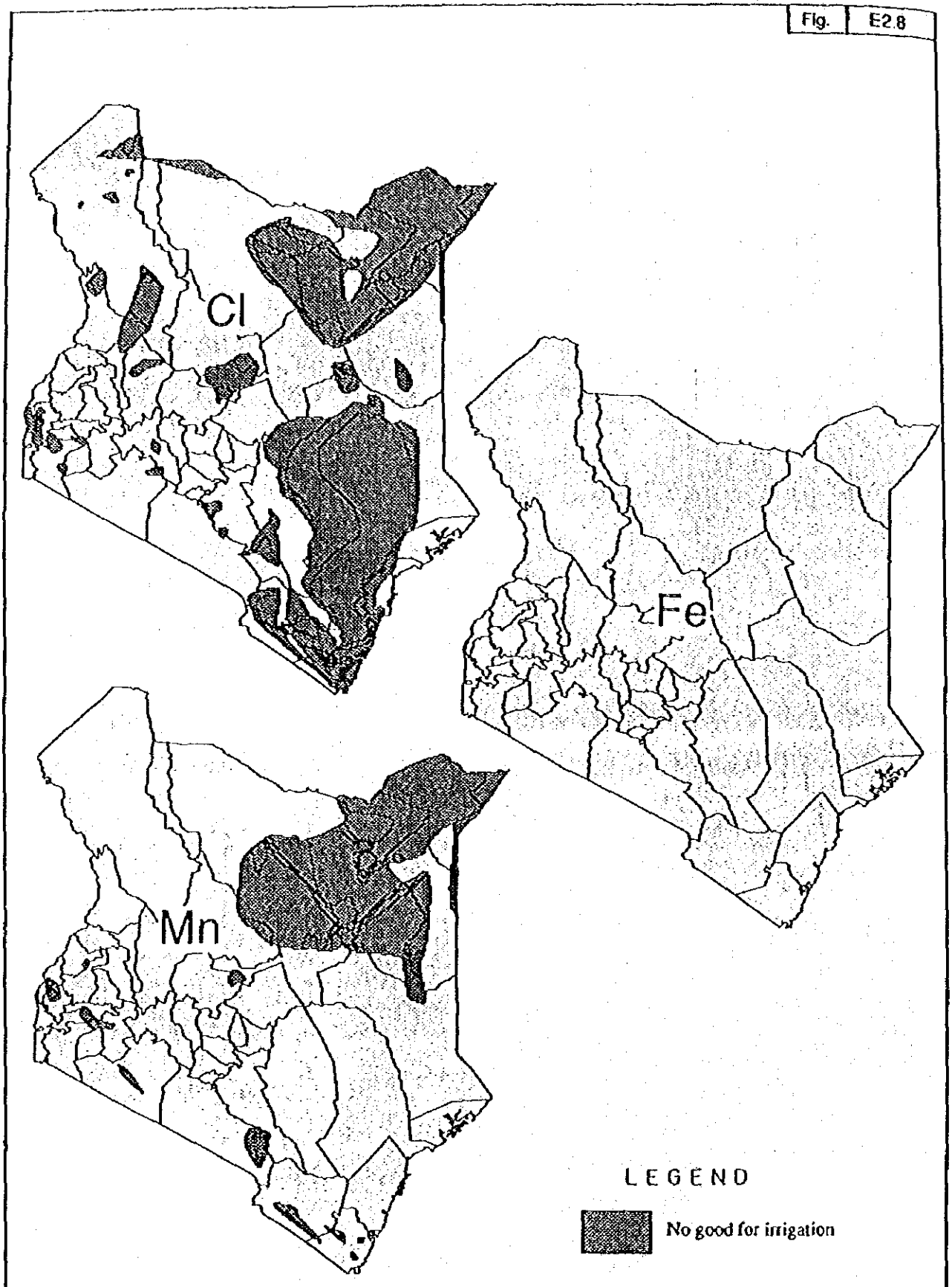

Figure S.3.5 Groundwater Quality Map (2/2)

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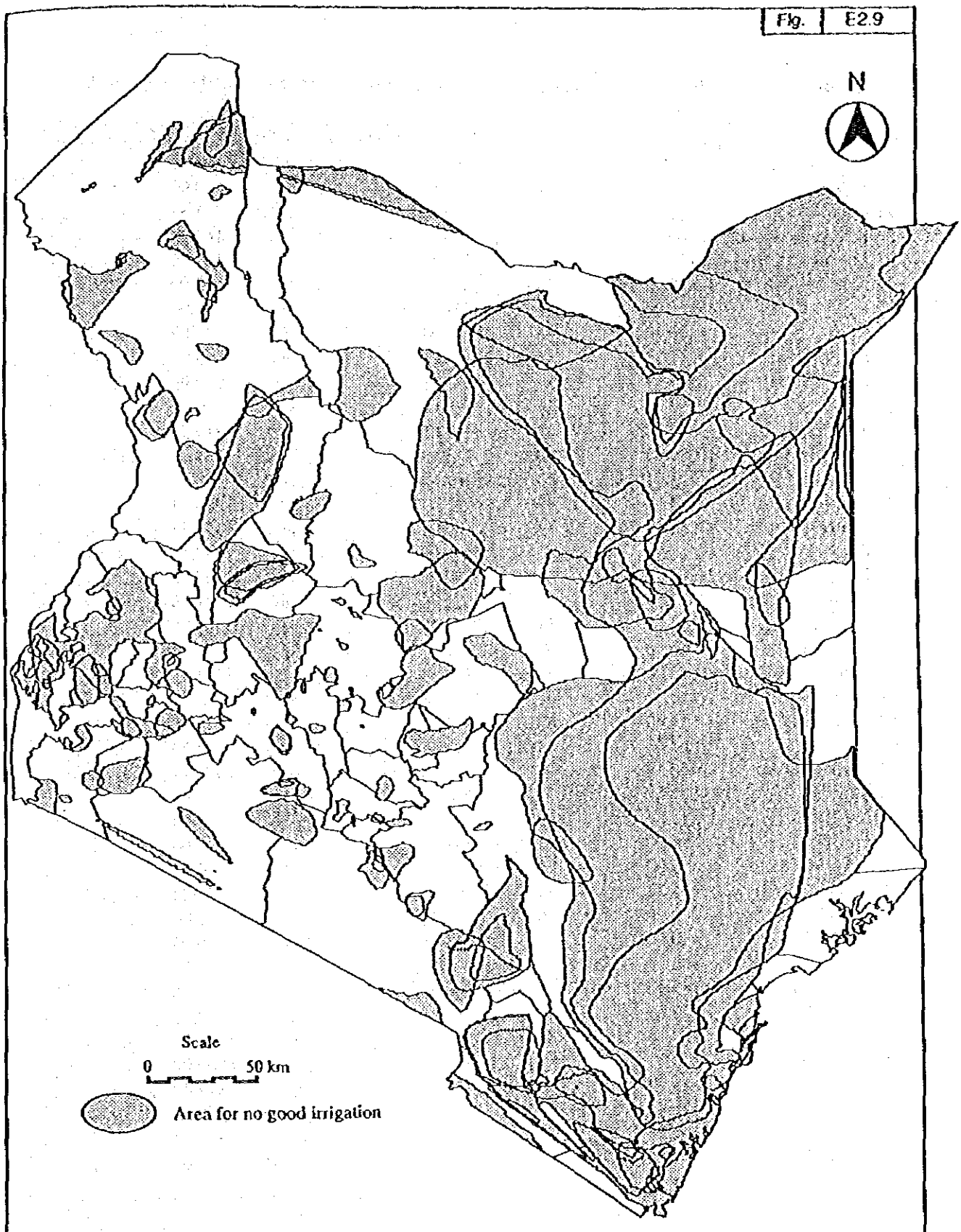

Figure S.3.6 Comprehensive Groundwater Quality Map

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Table S.3.7 Suitable Land for Irrigation with Groundwater (Lowland)

(km2)

District	Crop Suitability Suitable	District	Groundwater Suitability Suitable	District	Irrigation with Groundwater Irrigable
11 Nairobi	0.00	11	698.60	11	0.00
21 Kiambu	1.34	21	2240.04	21	1.34
22 Kirinyaga	200.94	22	986.81	22	163.48
23 Muranga	134.86	23	2265.46	23	134.86
24 Nyandarua	0.00	24	3019.89	24	0.00
25 Nyeri	0.00	25	2831.51	25	0.00
31 Kilifi	6470.10	31	593.61	31	118.83
32 Kwale	3841.37	32	1252.07	32	873.95
33 Lamu	3997.57	33	4587.28	33	2923.93
34 Monbasa	0.00	34	0.00	34	0.00
35 Taita Taveta	3539.26	35	4101.57	35	714.56
36 Tana River	10600.00	36	913.14	36	454.31
41 Embu	733.01	41	2161.62	41	598.56
42 Isiolo	9044.57	42	6412.55	42	1760.54
43 Kitui	13600.00	43	10800.00	43	4395.32
44 Machakos	4459.90	44	10100.00	44	2997.12
45 Marsabit	24900.00	45	32700.00	45	14600.00
46 Meru	1377.55	46	6525.90	46	1231.58
51 Garissa	16700.00	51	9666.32	51	3005.06
52 Mandera	12400.00	52	0.00	52	0.00
53 Wajir	29600.00	53	6204.60	53	5073.91
61 Kisii	0.47	61	1026.98	61	0.38
62 Kisumu	981.60	62	1144.83	62	585.55
63 Siaya	1563.56	63	911.83	63	580.70
64 South Nyanza	2668.19	64	4428.76	64	1976.49
71 Kajiado	4957.66	71	17700.00	71	3192.61
72 Kericho	17.84	72	4201.34	72	2.09
73 Laikipia	0.00	73	7551.16	73	0.00
74 Nakuru	0.00	74	6015.25	74	0.00
75 Narok	48.21	75	15100.00	75	41.82
76 Trans Nzoia	0.00	76	1996.70	76	0.00
77 Uasin Gishu	0.00	77	3074.43	77	0.00
81 Baringo	540.93	81	4965.11	81	394.04
82 Elg. Marakwet	343.98	82	2286.65	82	168.06
83 Nandi	3.85	83	1384.15	83	3.57
84 Samburu	2967.25	84	13100.00	84	1290.17
85 Turkana	21800.00	85	51400.00	85	18700.00
86 West Pokot	611.19	86	6881.18	86	317.40
91 Bungoma	544.55	91	1892.14	91	337.43
92 Busia	869.28	92	824.74	92	374.77
93 Kakamega	1019.56	93	1305.55	93	262.60

Table S.3.8 Suitable Land for Irrigation by Groundwater (Upland)

(km2)

District	Crop Suitability Suitable	District	Groundwater Suitability Suitable	District	Irrigation with Groundwater Irrigable
11 Nairobi	0.00	11	698.60	11	0.00
21 Kiambu	1170.33	21	2239.97	21	1034.66
22 Kirinyaga	823.14	22	986.80	22	394.88
23 Muranga	1522.21	23	2265.47	23	1287.43
24 Nyandarua	369.92	24	3019.89	24	329.43
25 Nyeri	1200.09	25	2831.52	25	1091.93
31 Kilifi	5783.42	31	593.61	31	65.21
32 Kwale	4160.02	32	1251.37	32	883.76
33 Lamu	3997.83	33	4586.42	33	2923.84
34 Monbasa	0.00	34	0.00	34	0.00
35 Taita Taveta	4864.18	35	4101.39	35	887.47
36 Tana River	10600.00	36	912.90	36	431.16
41 Embu	1121.95	41	2161.62	41	652.76
42 Isiolo	8490.73	42	6412.55	42	1987.52
43 Kitui	15400.00	43	10800.00	43	5446.73
44 Machakos	7430.55	44	10100.00	44	5232.02
45 Marsabit	12900.00	45	32700.00	45	6076.52
46 Meru	3774.22	46	6525.89	46	2855.54
51 Garissa	16000.00	51	9666.31	51	3005.07
52 Mandera	9175.64	52	0.00	52	0.00
53 Wajir	18100.00	53	6204.60	53	5073.91
61 Kisii	1561.81	61	1026.97	61	723.43
62 Kisumu	1162.33	62	1144.82	62	736.64
63 Siaya	1744.46	63	911.83	63	693.61
64 South Nyanza	3889.04	64	4428.71	64	2977.45
71 Kajiado	9591.36	71	17700.00	71	7337.43
72 Kericho	3010.67	72	4201.34	72	2471.73
73 Laikipia	5902.42	73	7551.15	73	5190.77
74 Nakuru	2134.23	74	6015.25	74	1790.65
75 Narok	9371.49	75	15100.00	75	7960.70
76 Trans Nzoia	1675.74	76	1996.67	76	1251.23
77 Uasin Gishu	2213.91	77	3074.43	77	1883.15
81 Baringo	946.77	81	4965.13	81	782.41
82 Elg. Marakwet	529.01	82	2286.63	82	339.59
83 Nandi	1783.40	83	1384.17	83	906.75
84 Samburu	4304.45	84	13100.00	84	2625.98
85 Turkana	13000.00	85	51400.00	85	11000.00
86 West Pokot	1370.13	86	6881.10	86	1032.49
91 Bungoma	1745.50	91	1892.16	91	905.34
92 Busia	975.13	92	824.56	92	524.95
93 Kakamega	2699.17	93	1305.57	93	993.60

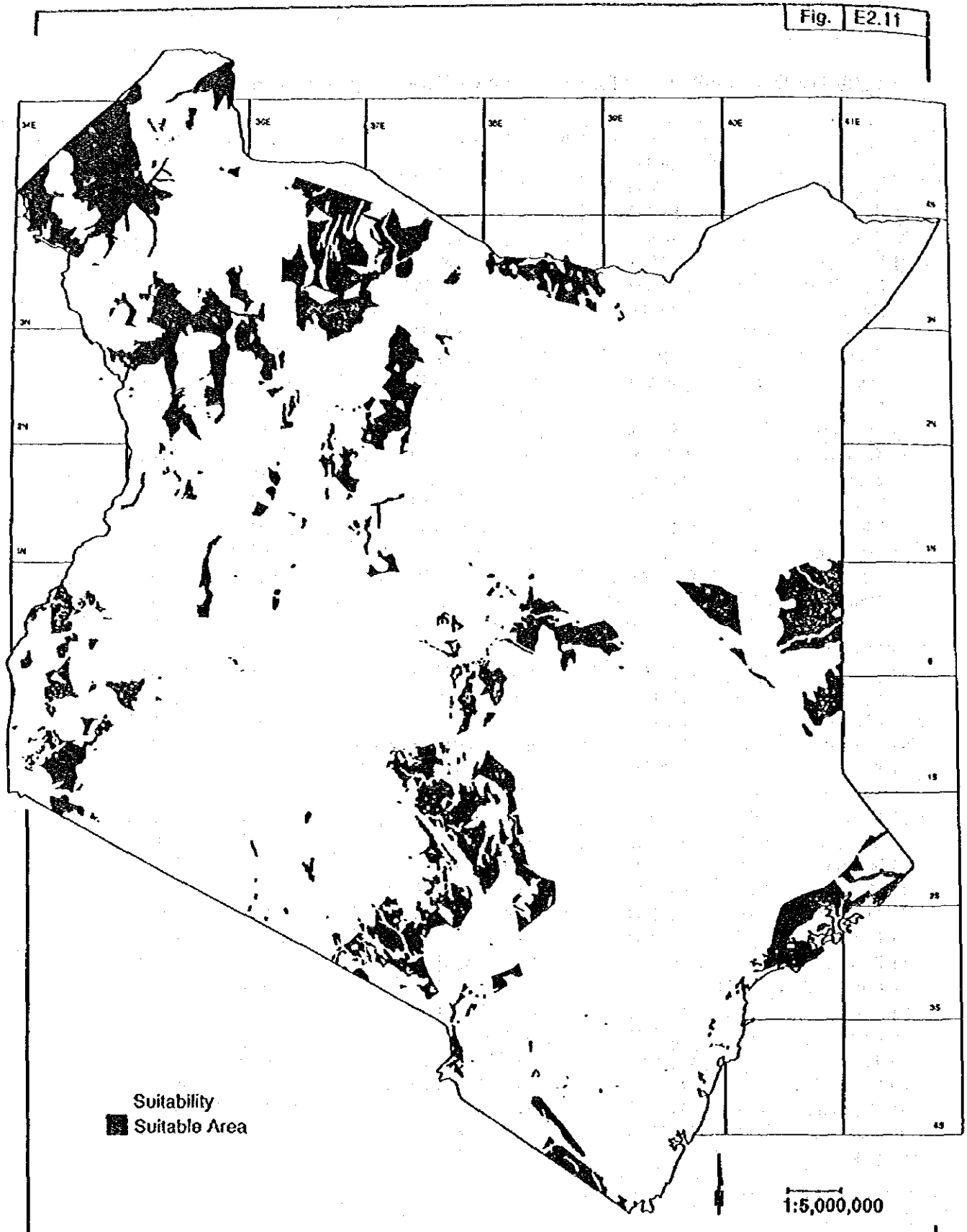

Figure S.3.9 Irrigation Potential by Groundwater for Lowland Crops

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY

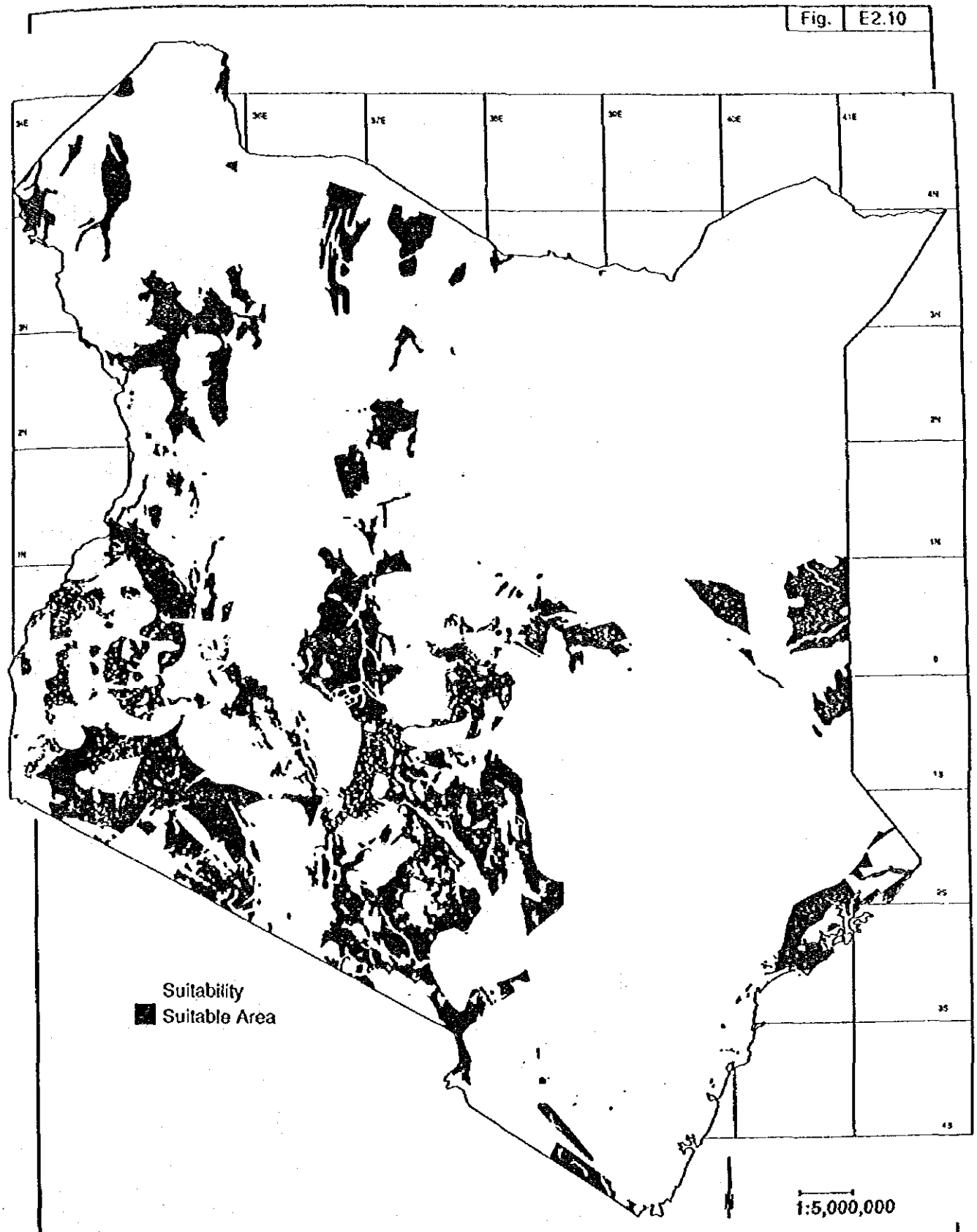

Figure S.3.10 Irrigation Potential by Groundwater for Upland Crops

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY