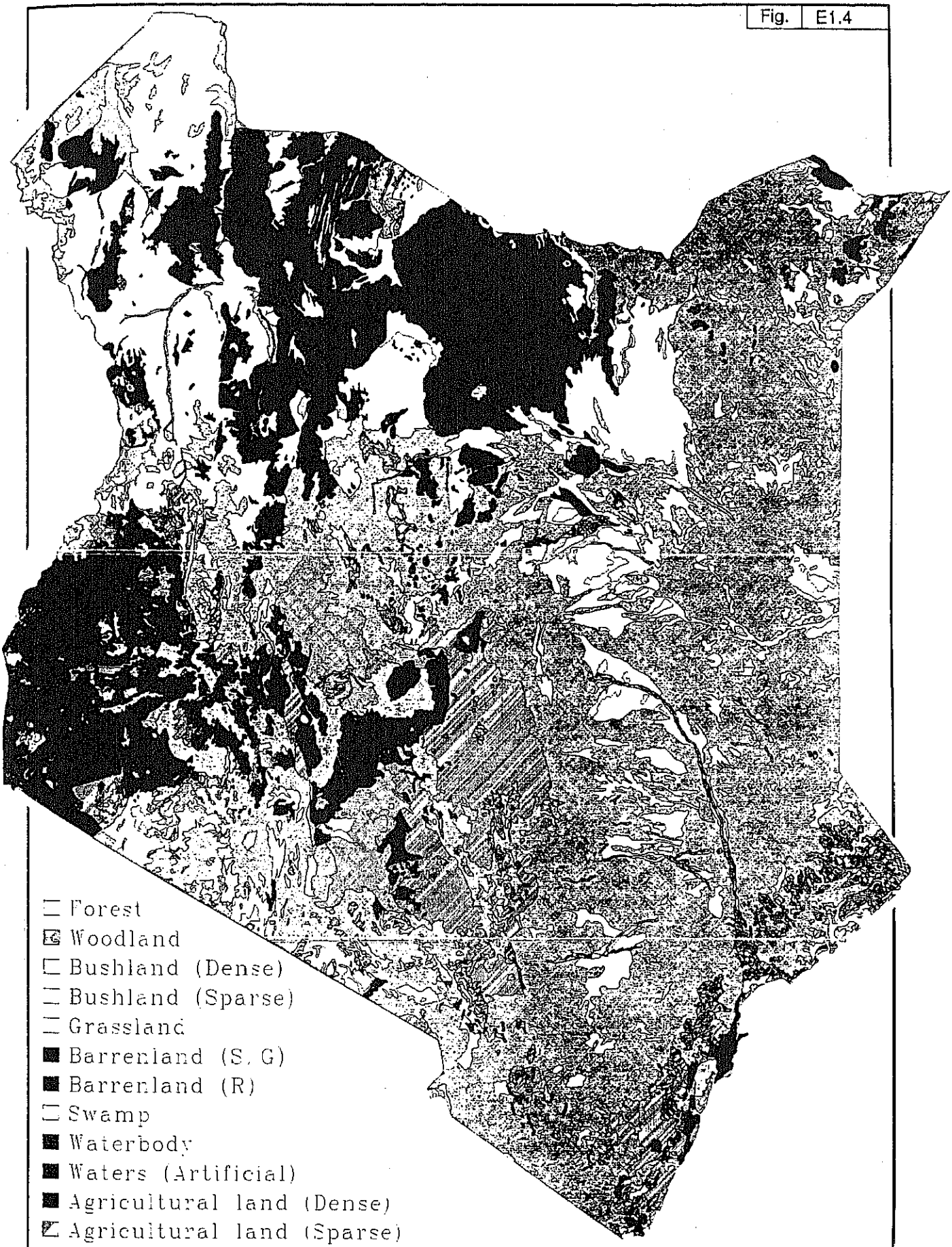

Figure E1.4 Land Use in Kenya

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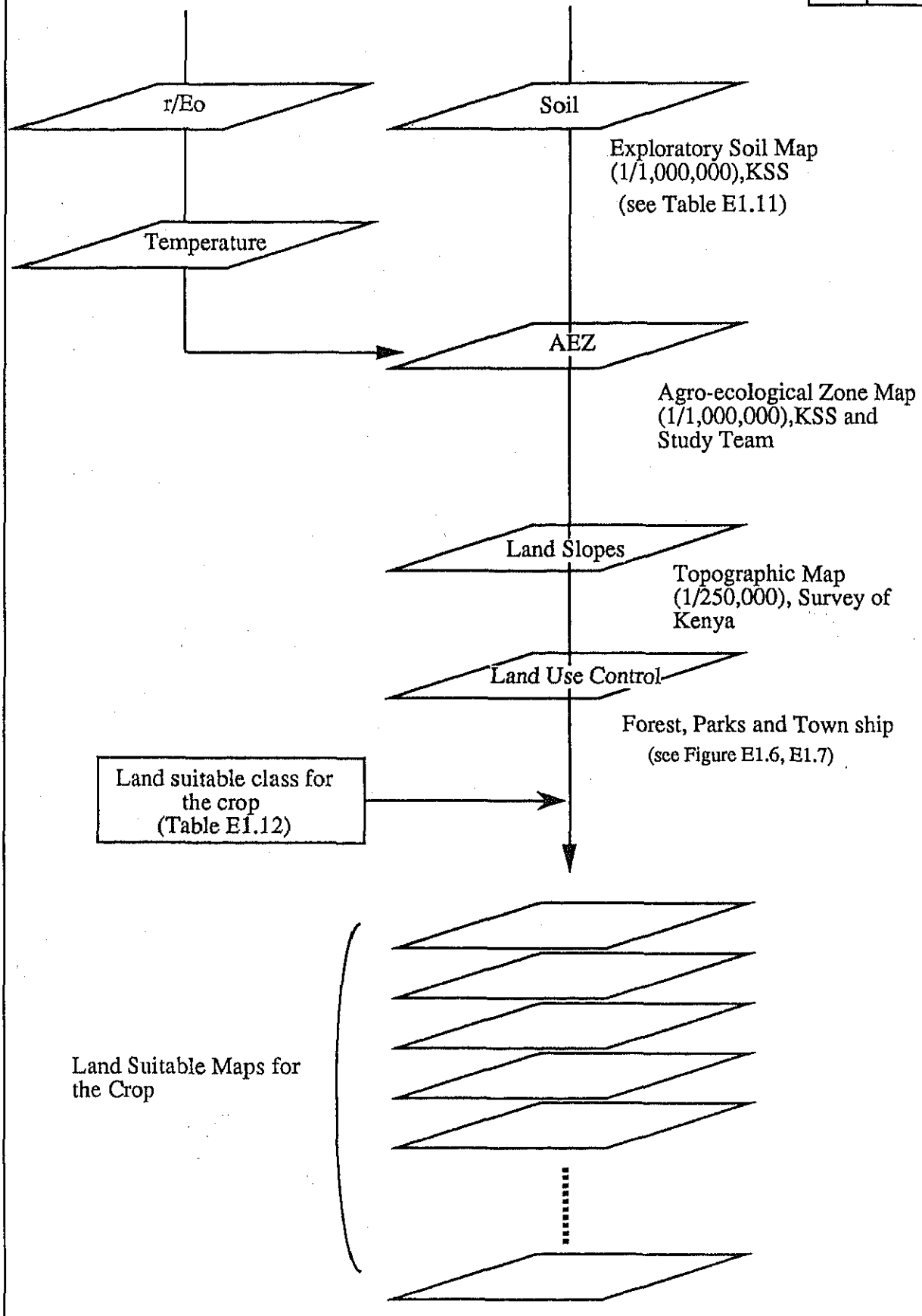

Figure E1.5 General Flow for Preparation of Land Suitable Maps

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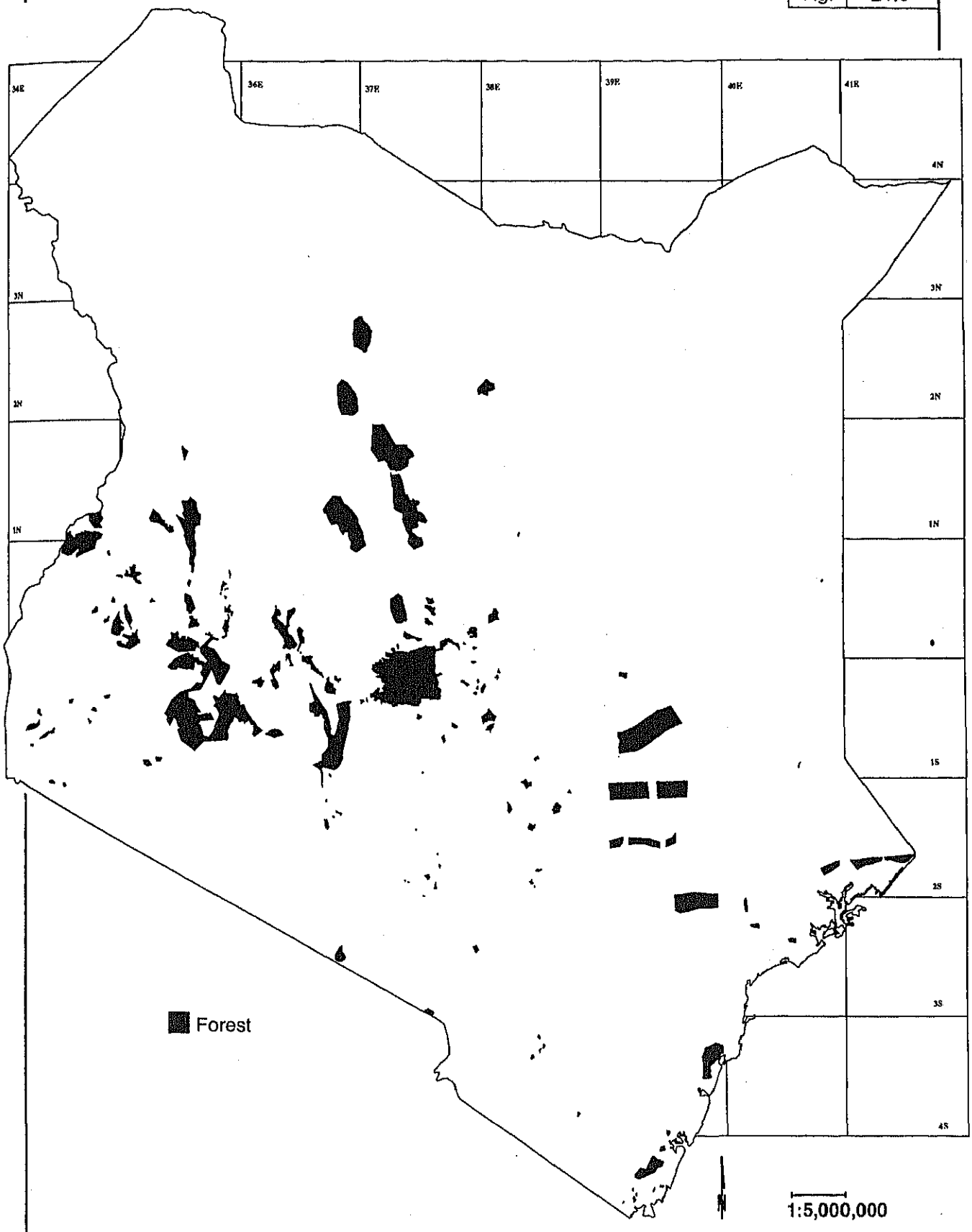

Figure E1.6 Forest Administrative Boundaries

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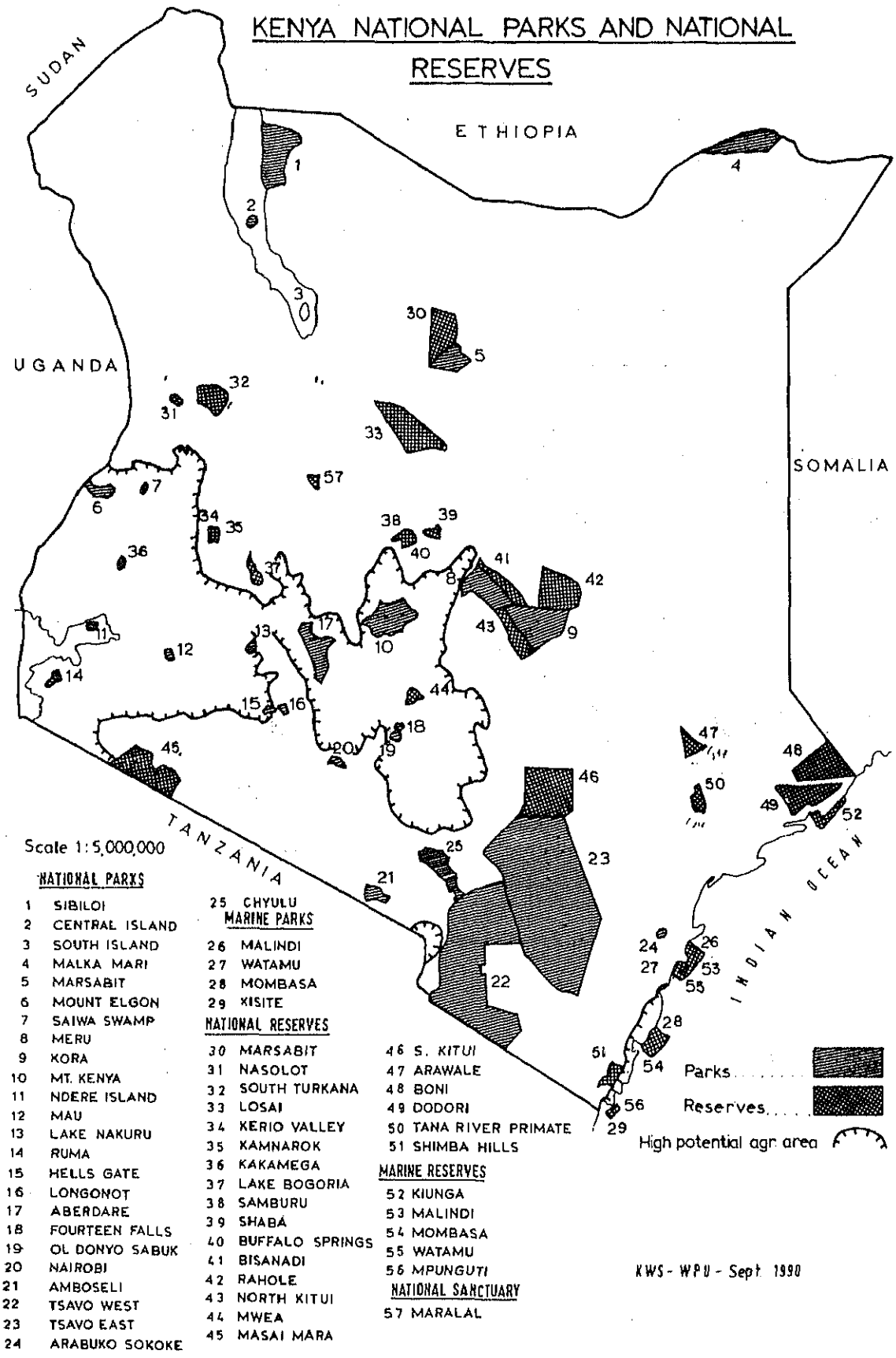

Figure E1.7 Kenya National Parks and Reserves

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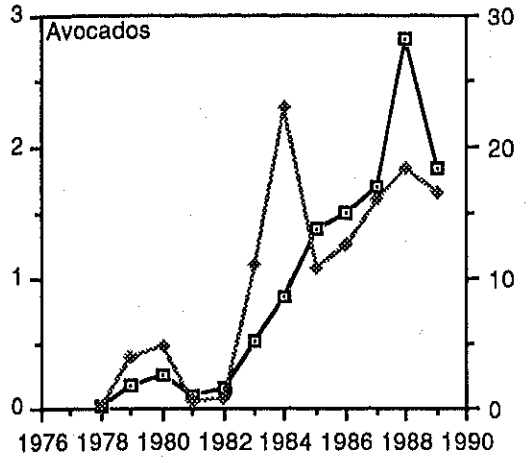

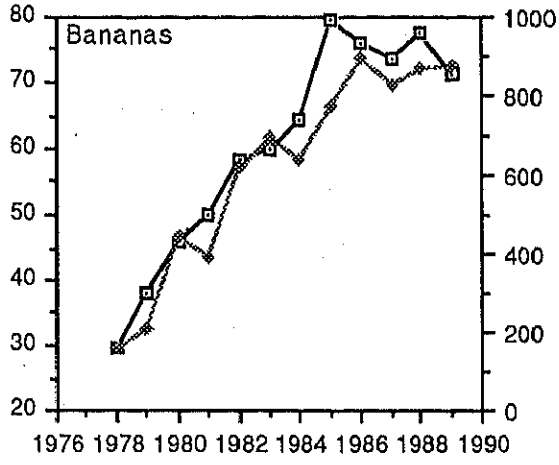

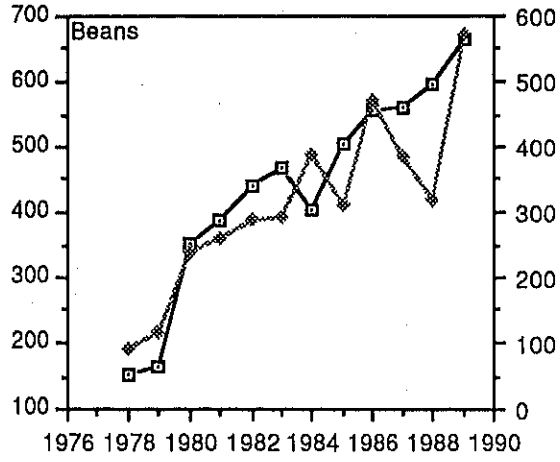

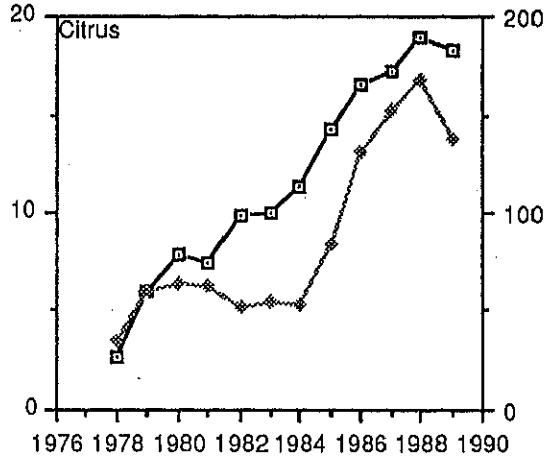

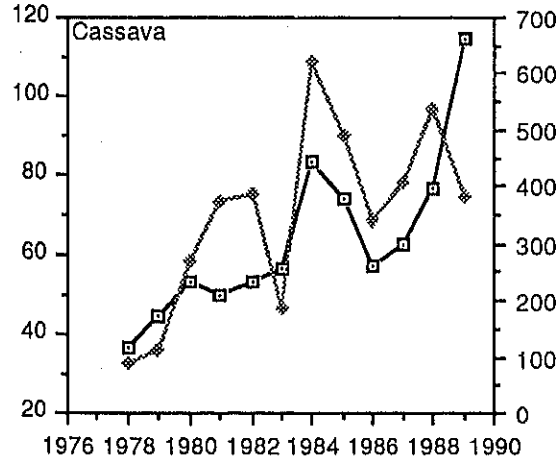

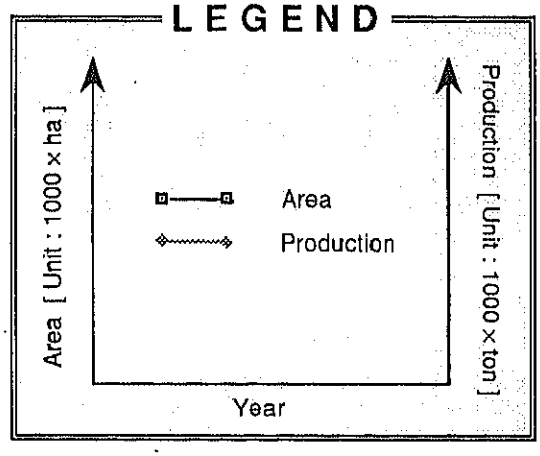

Figure E1.8 Trend of Crop Area and Production (1/6)

Source : Ref. E.45

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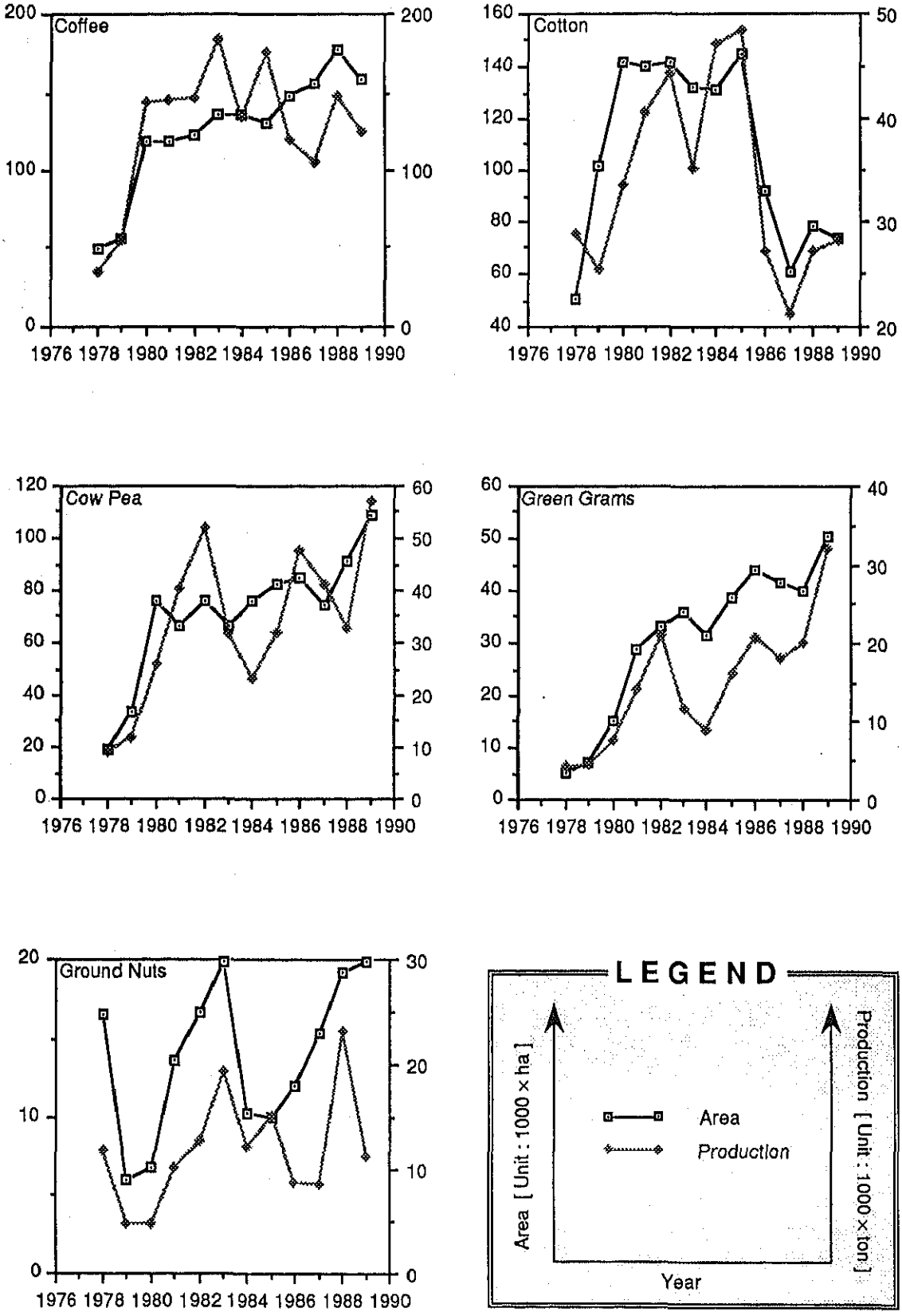

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Figure E1.8 Trend of Crop Area and Production (2/6)

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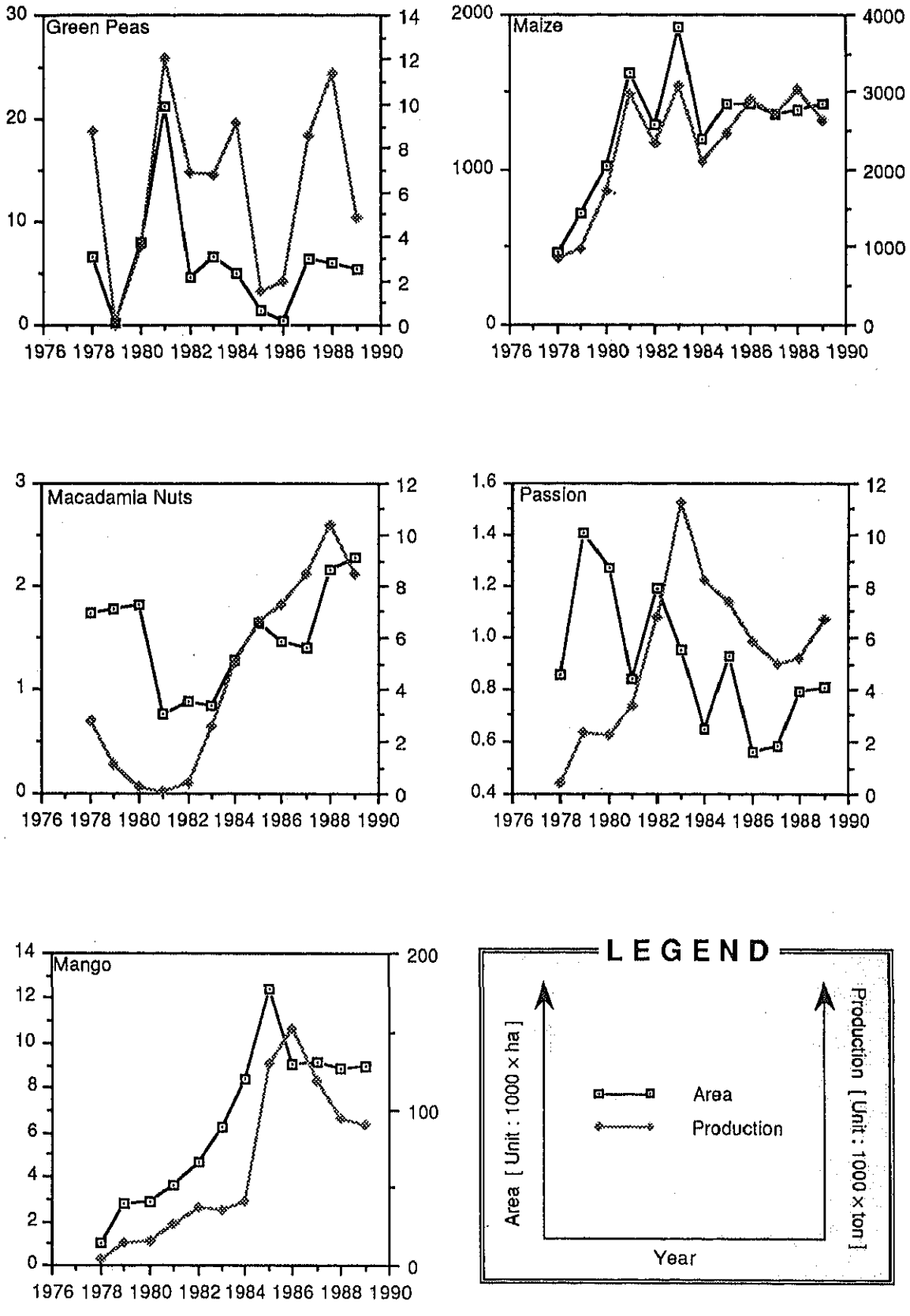

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Figure E1.8 Trend of Crop Area and Production (3/6)

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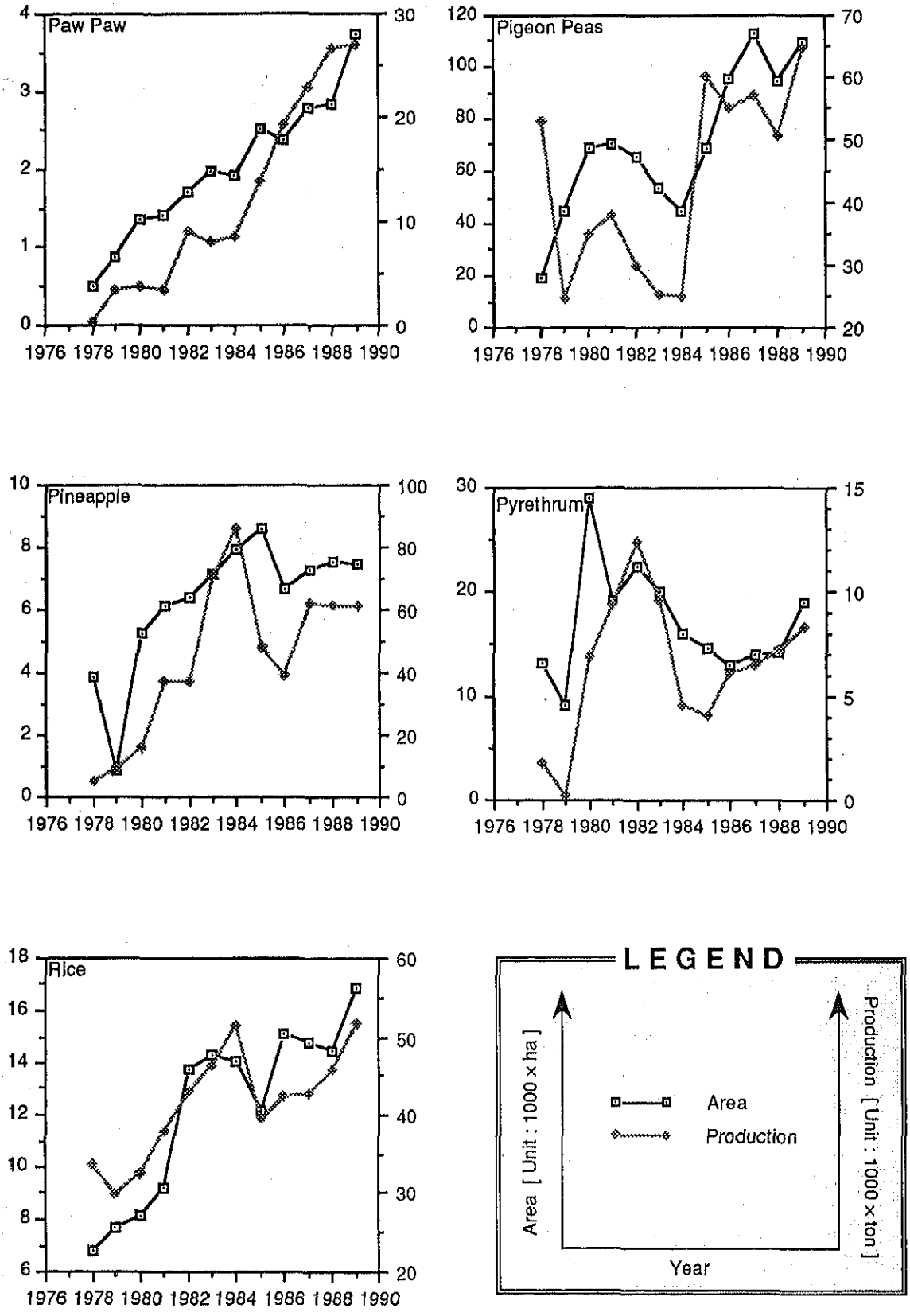

Figure E1.8 Trend of Crop Area and Production (4/6)

Source : Ref. E.45

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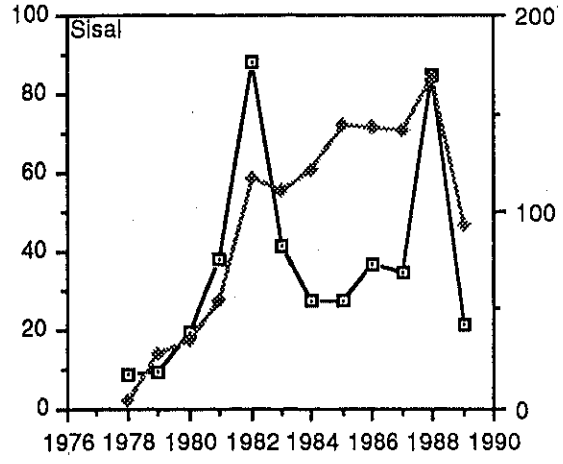

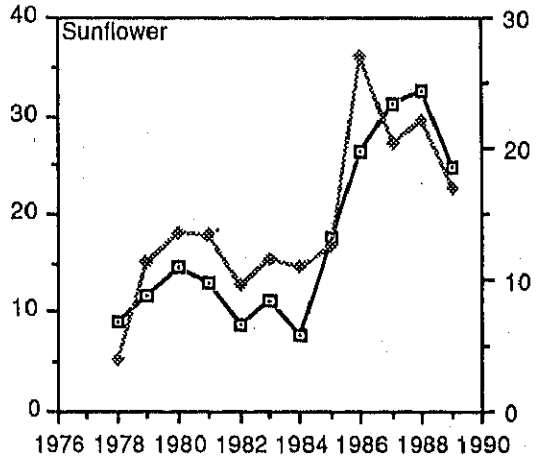

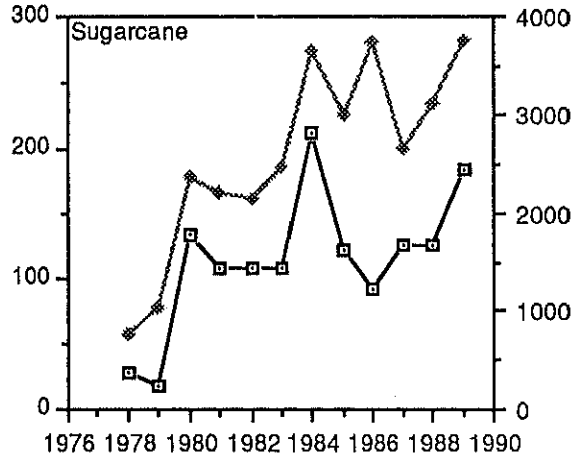

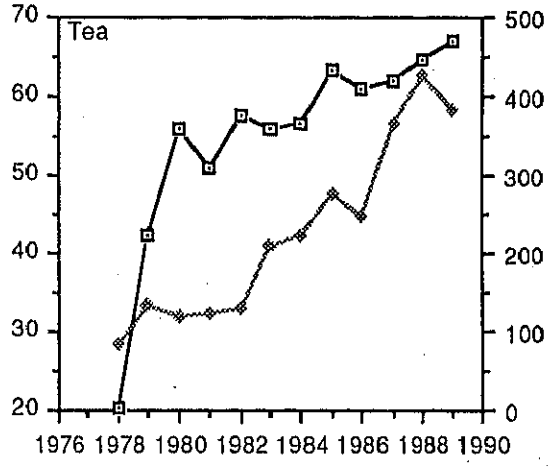

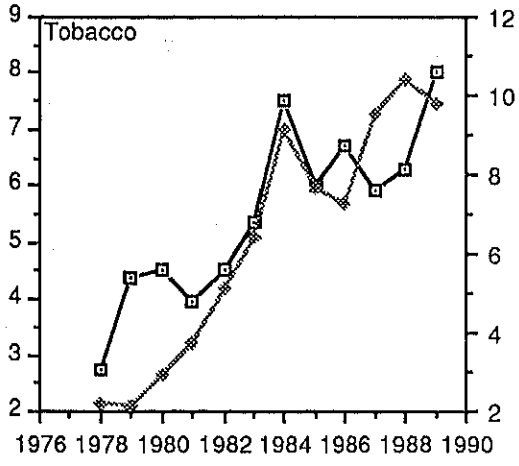

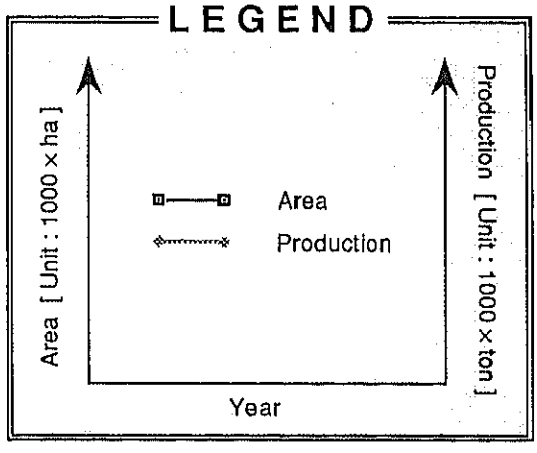

Figure E1.8 Trend of Crop Area and Production (5/6)

Source : Ref. E.45

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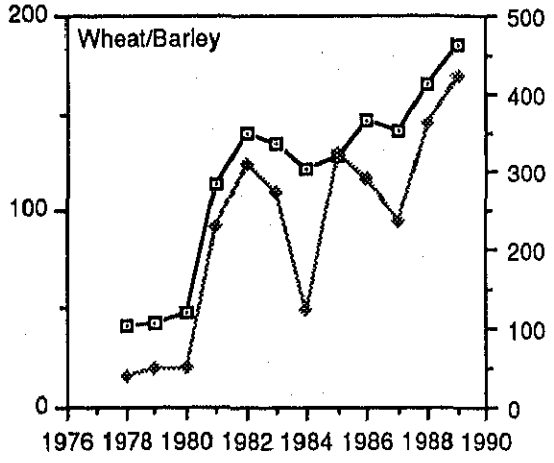

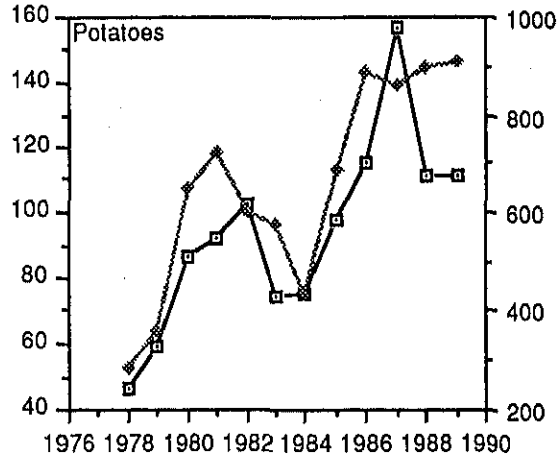

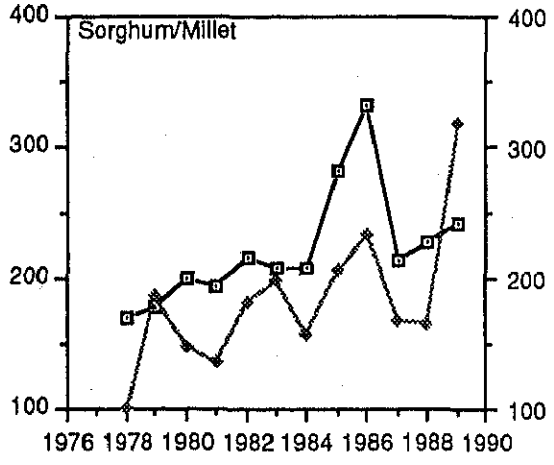

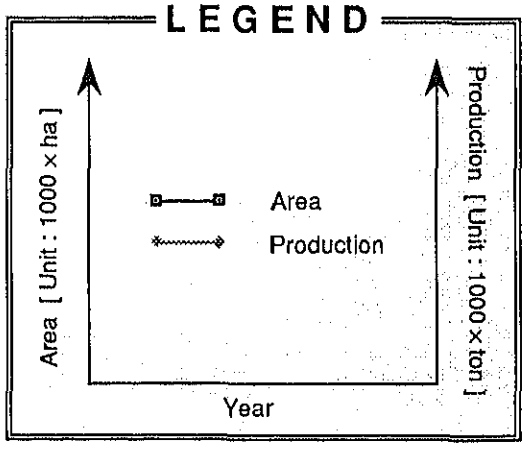

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Figure E1.8 Trend of Crop Area and Production (6/6)

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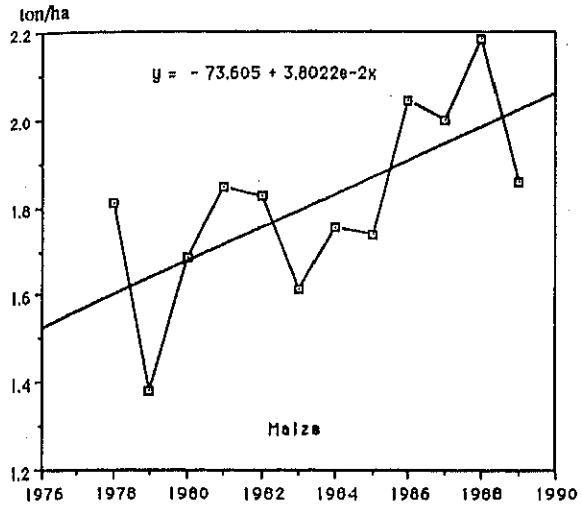

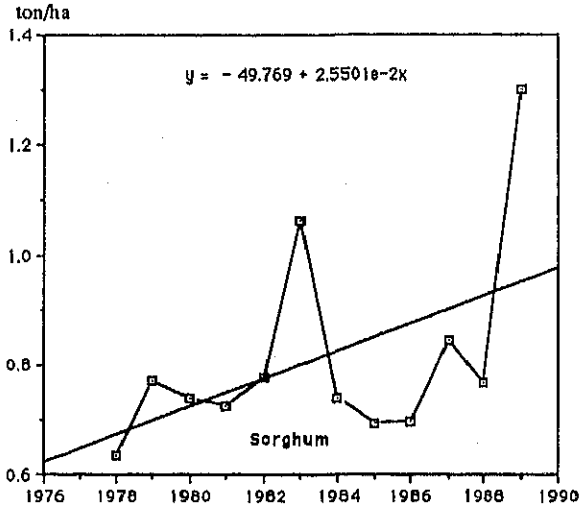

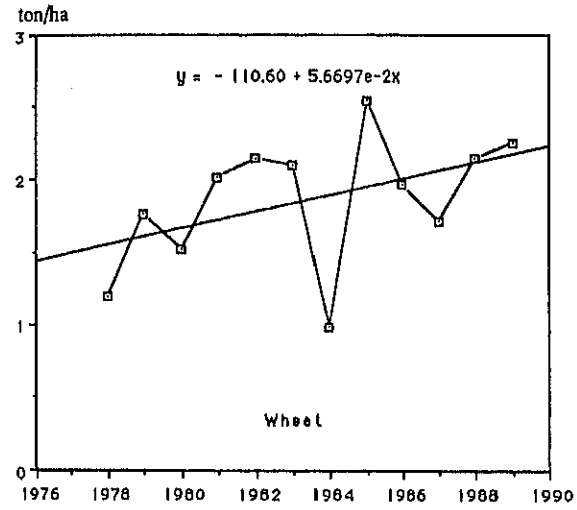

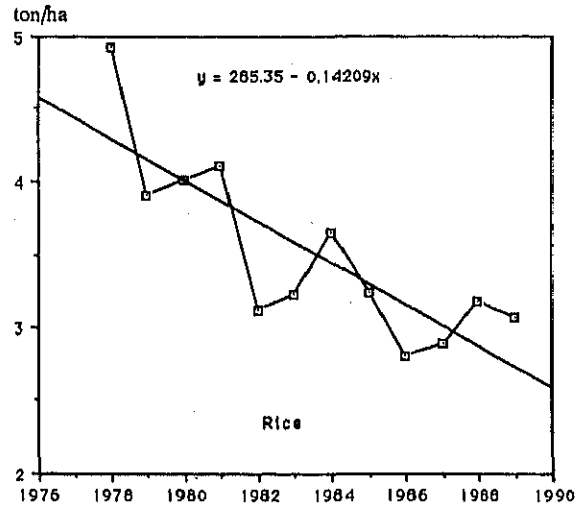

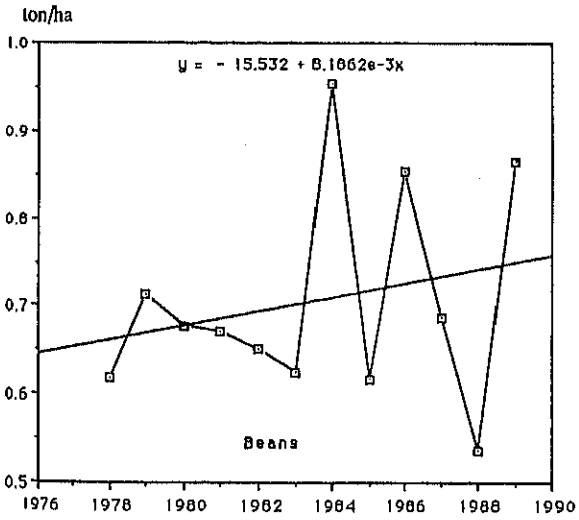

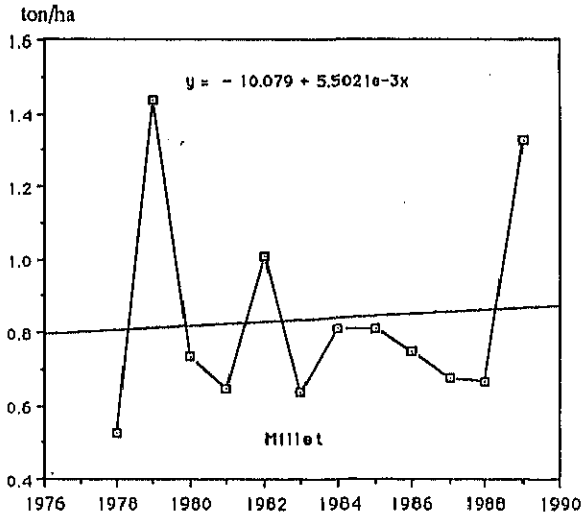

Source : Ref. 45

Figure E1.9 Trend of Unit Yield for Major Crops

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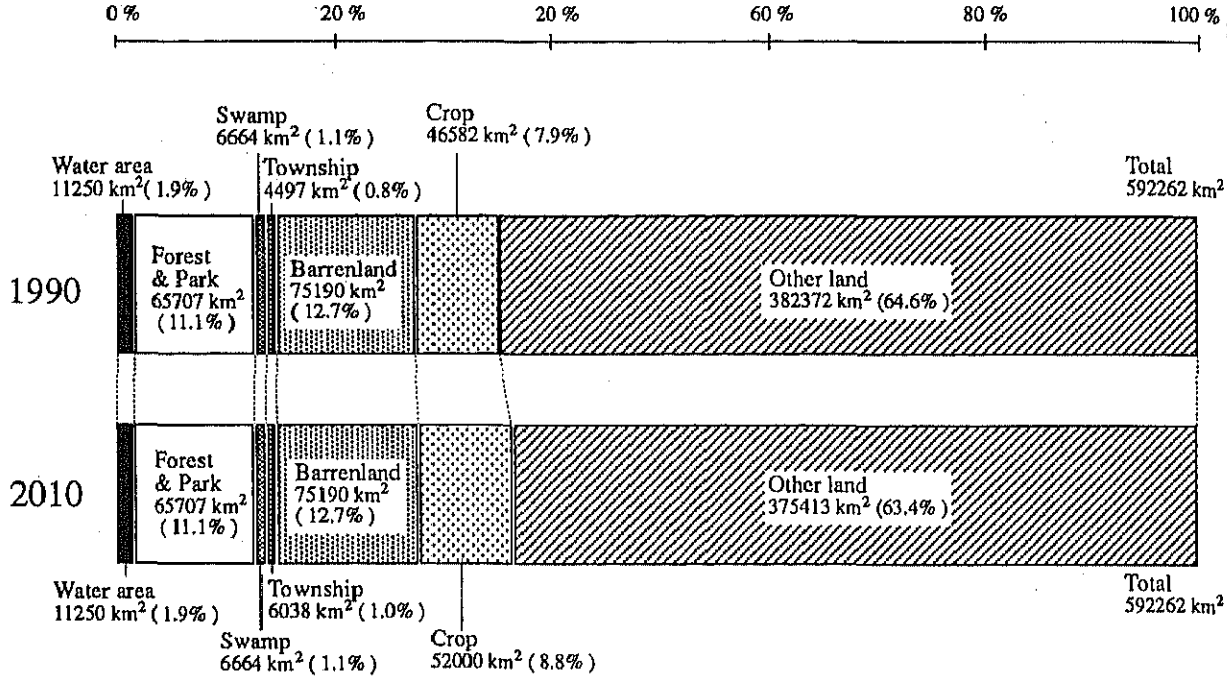
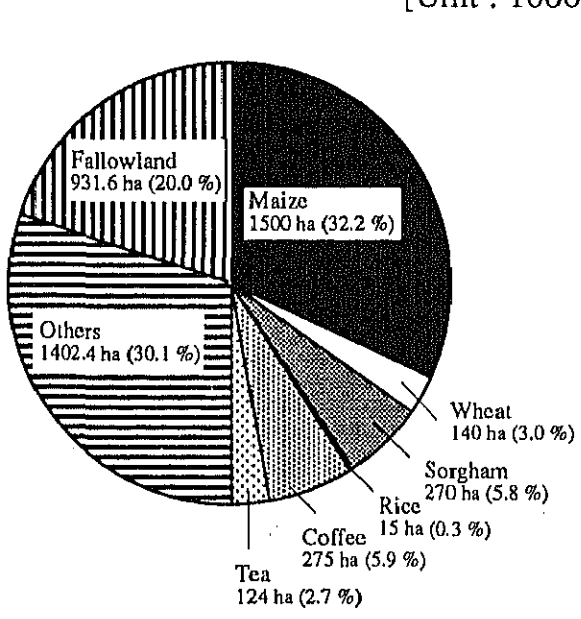
Overall Land Use



Breakdown of Crop Land

[Unit : 1000 ha]



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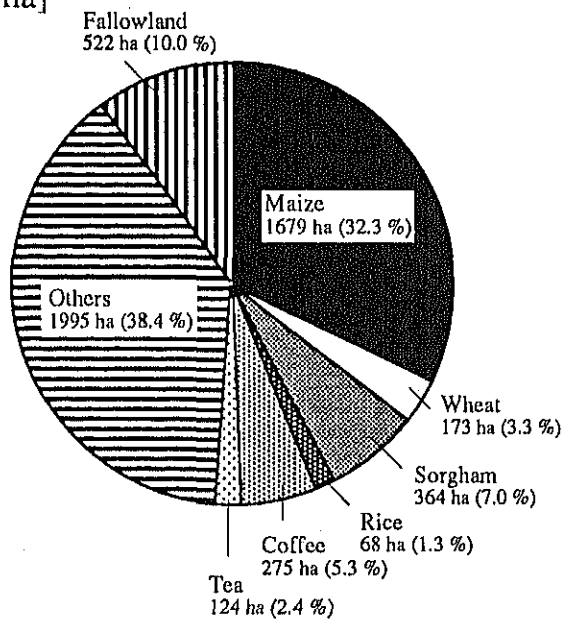

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Figure E1.10 Land Use Plan

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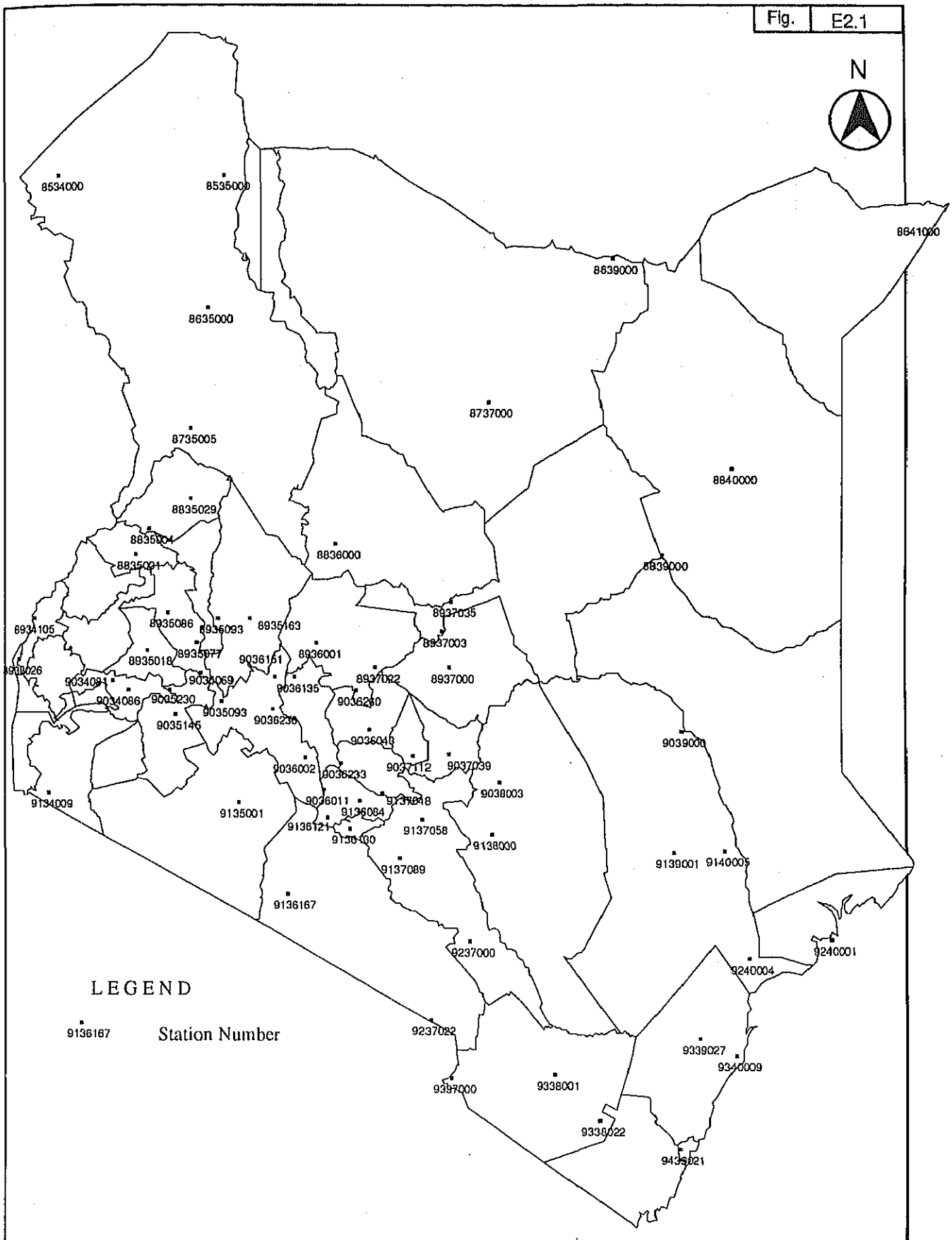

Source : Ref. E.15

Figure E2.1 Location of Water Requirement Calculation Point and Its Meteorological Stations Number

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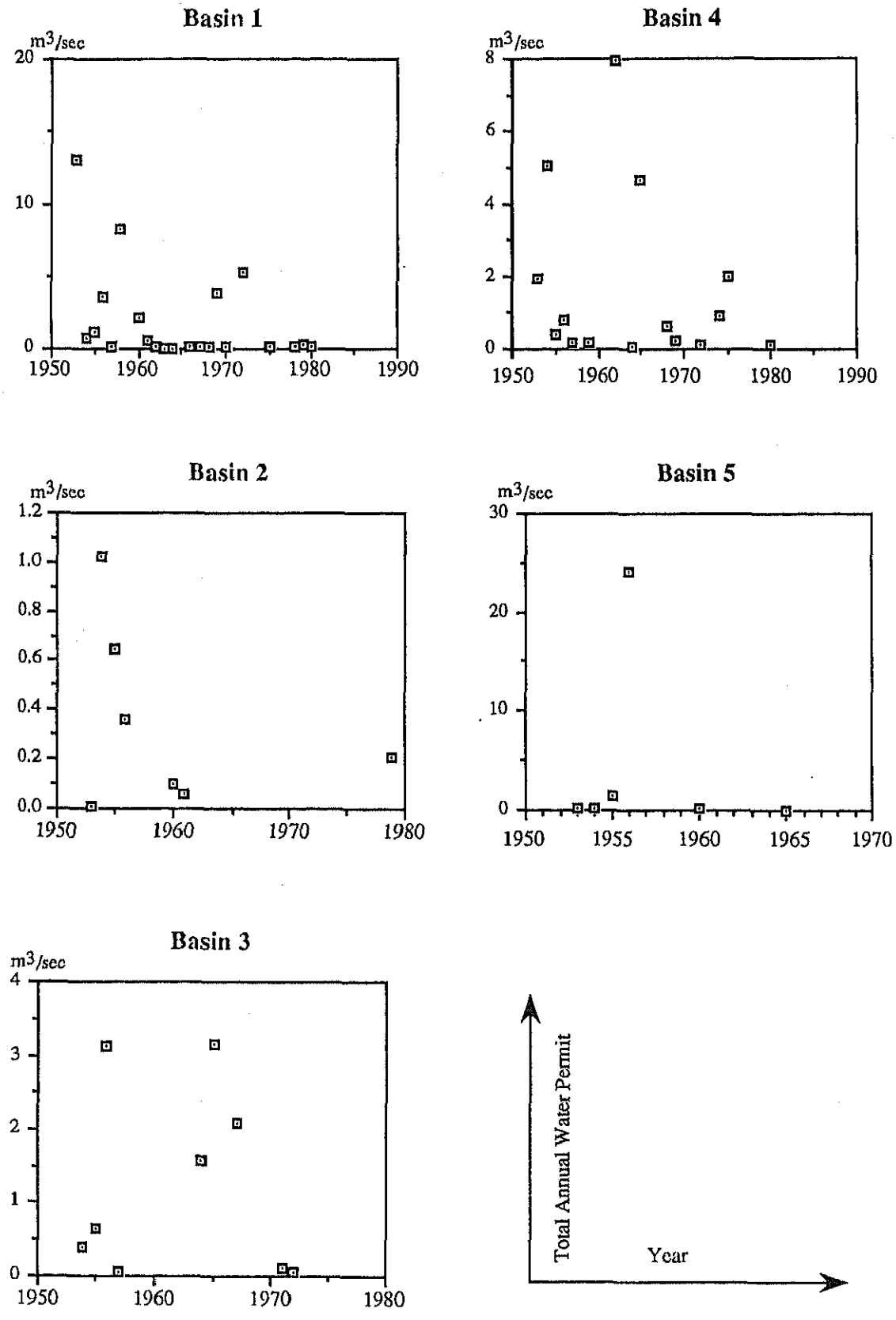

Figure E2.2 Trend of Water Permit

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Fig. E2.3

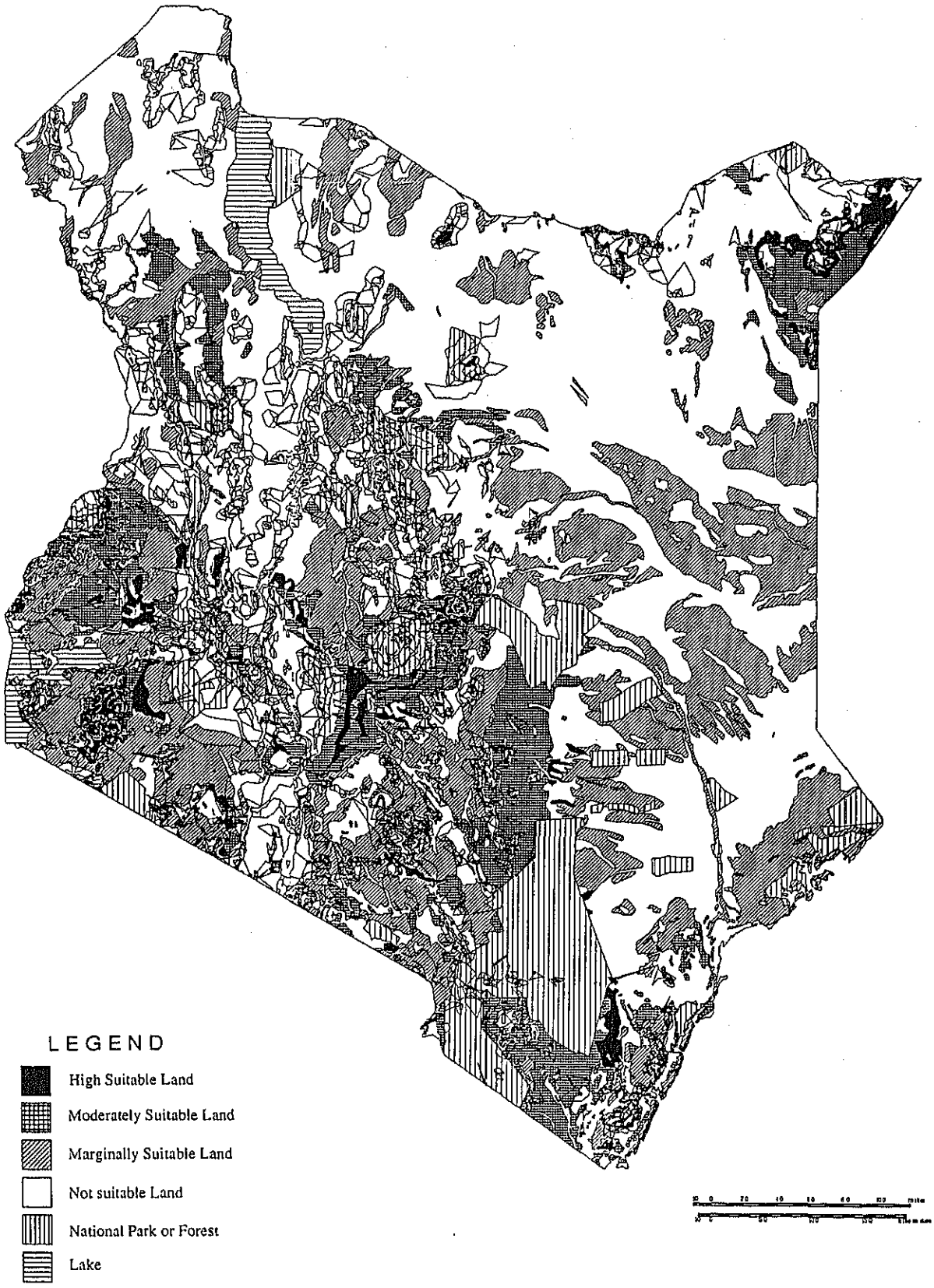

Figure E2.3 Irrigation Potential for Upland Crops

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Fig. E2.4

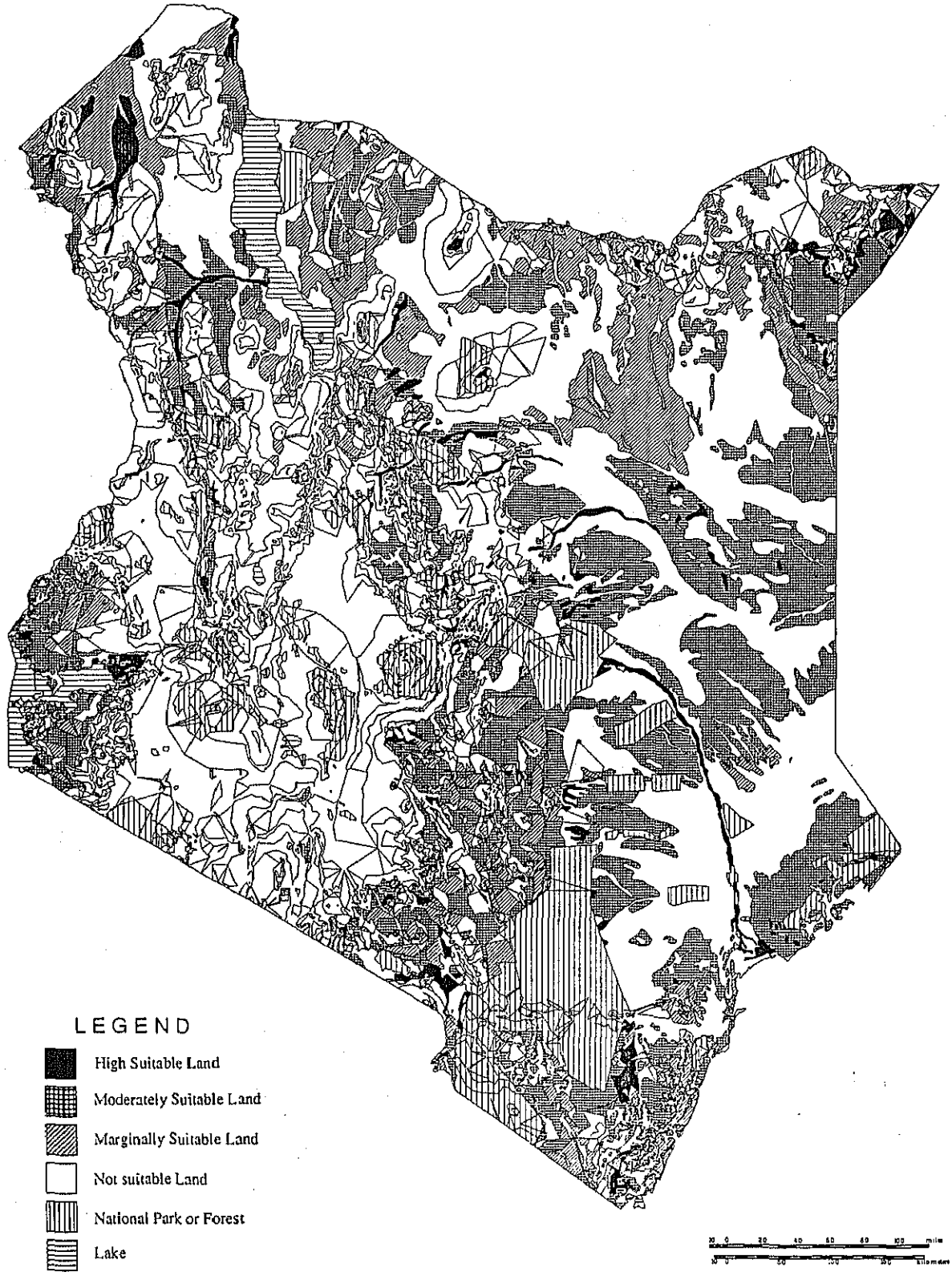

Figure E2.4 Irrigation Potential for Lowland Crops

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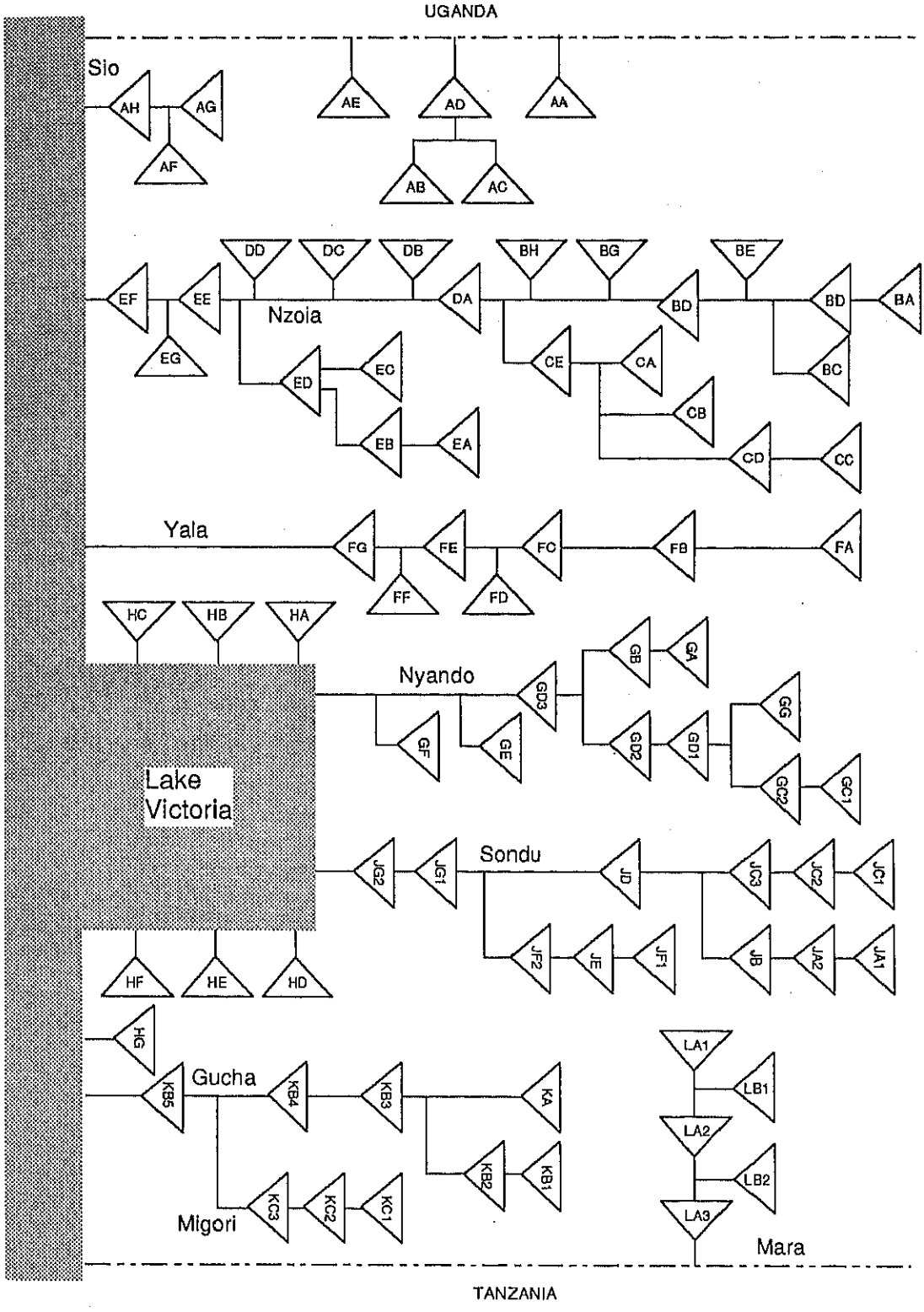

Figure E2.5 River System (1/5)
(Basin 1)

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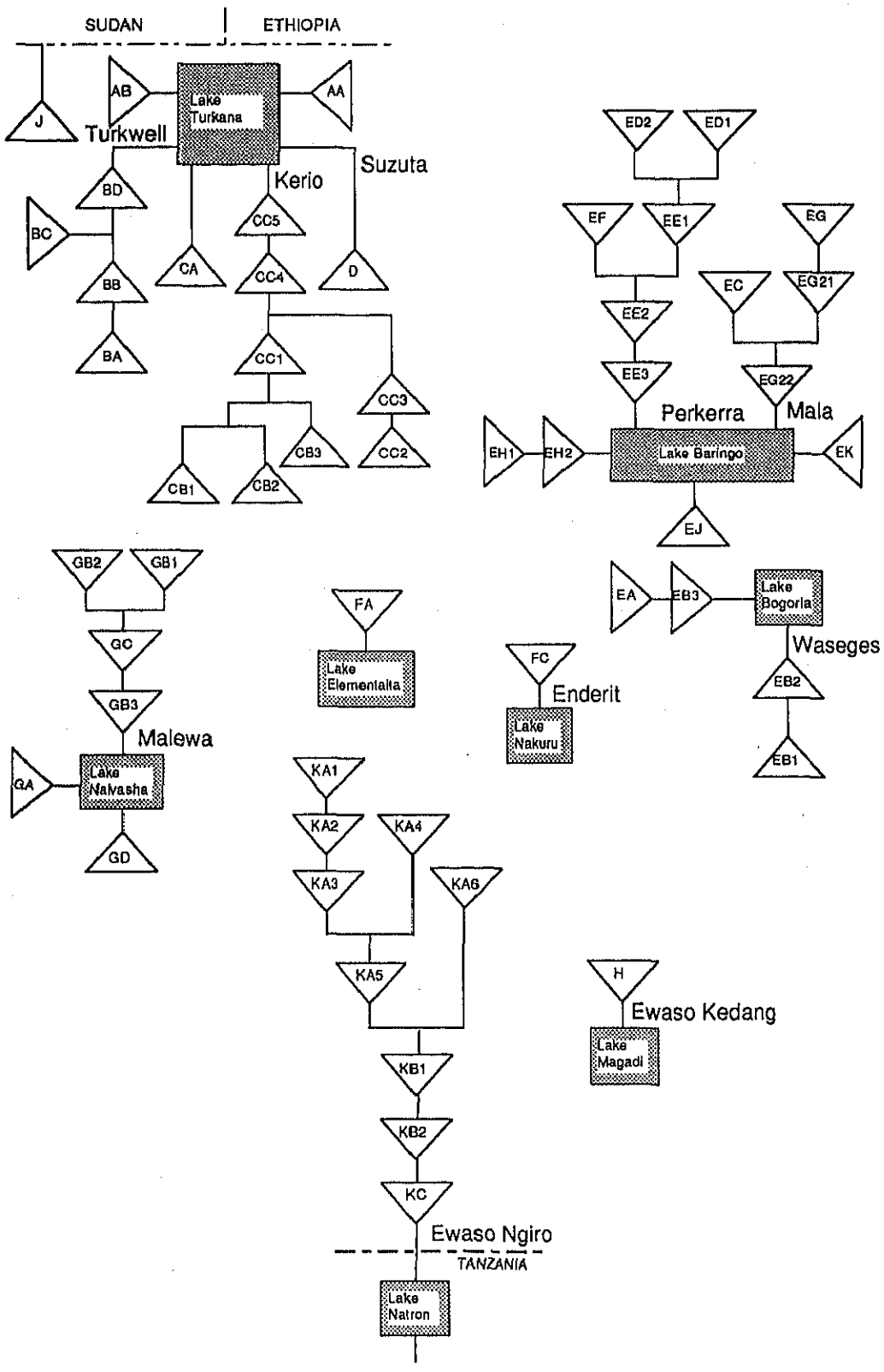

Figure E2.5 River System (2/5)
(Basin 2)

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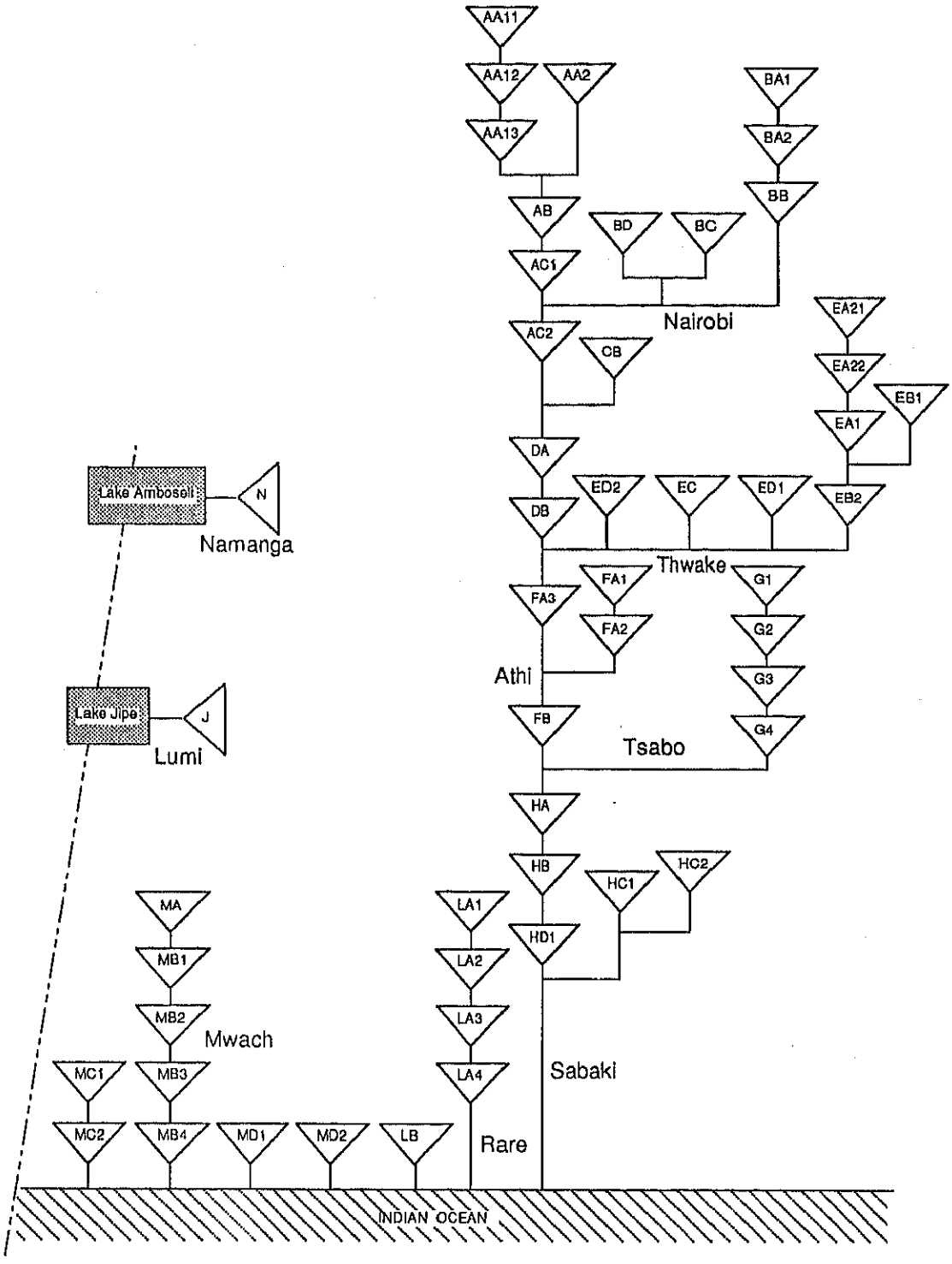

Figure E2.5 River System (3/5)
(Basin 3)

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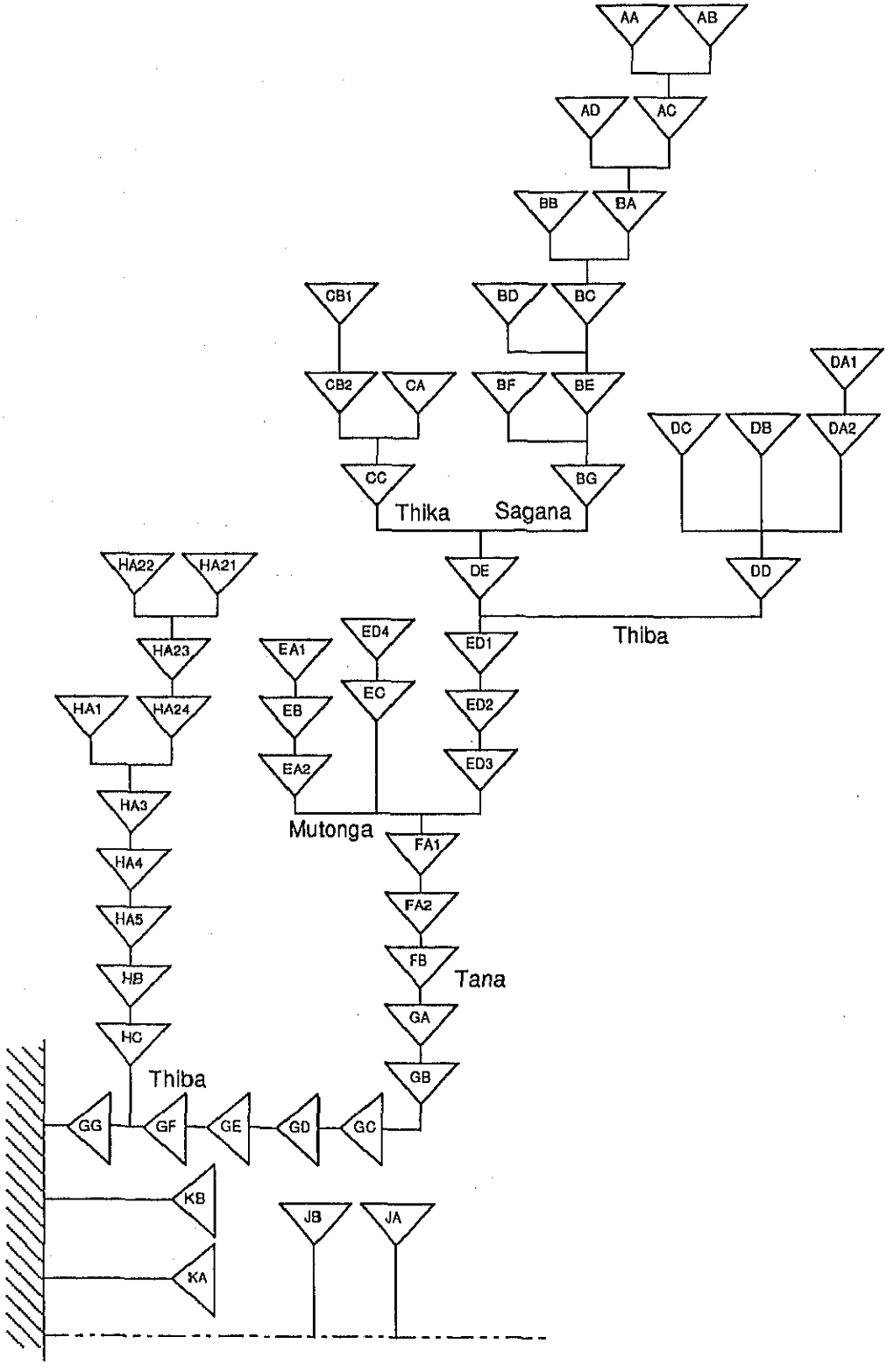

Figure E2.5 River System (4/5)
(Basin 4)

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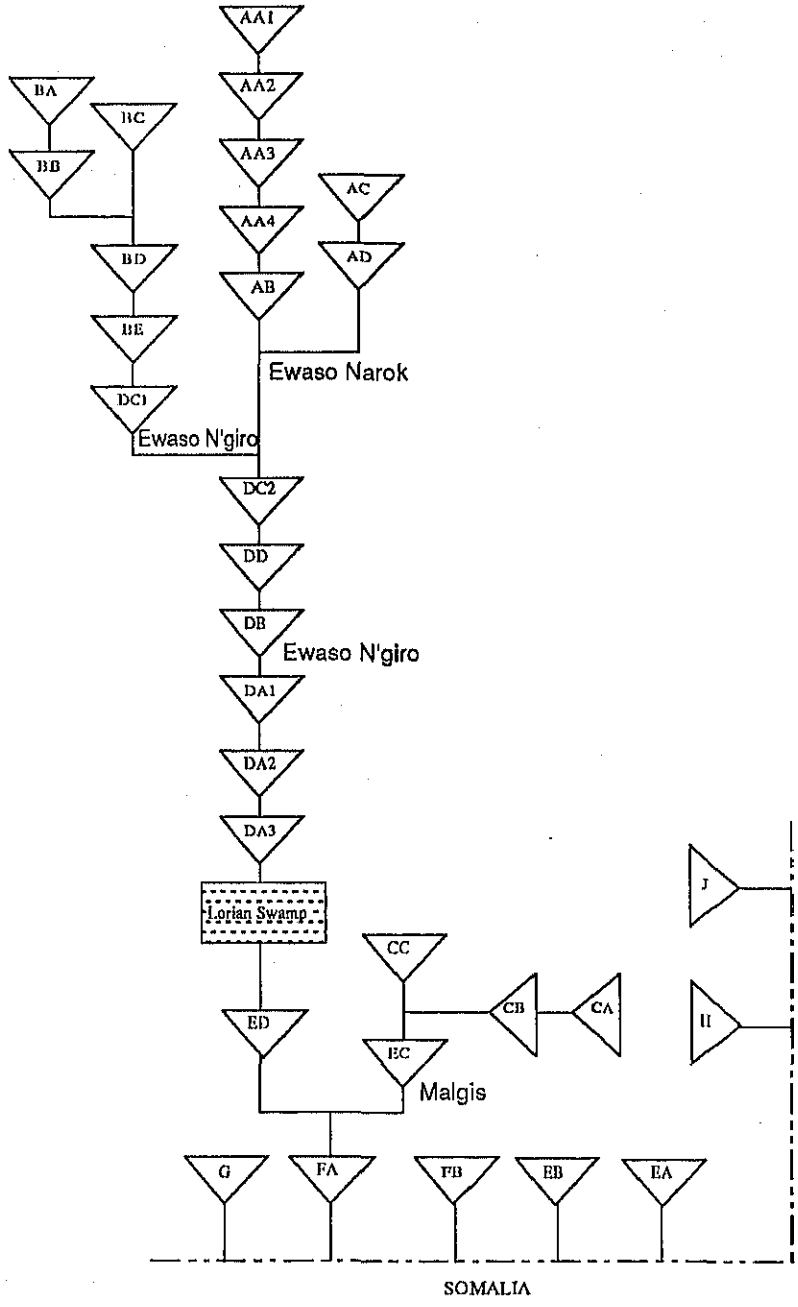

Figure E2.5 River System (5/5)
(Basin 5)

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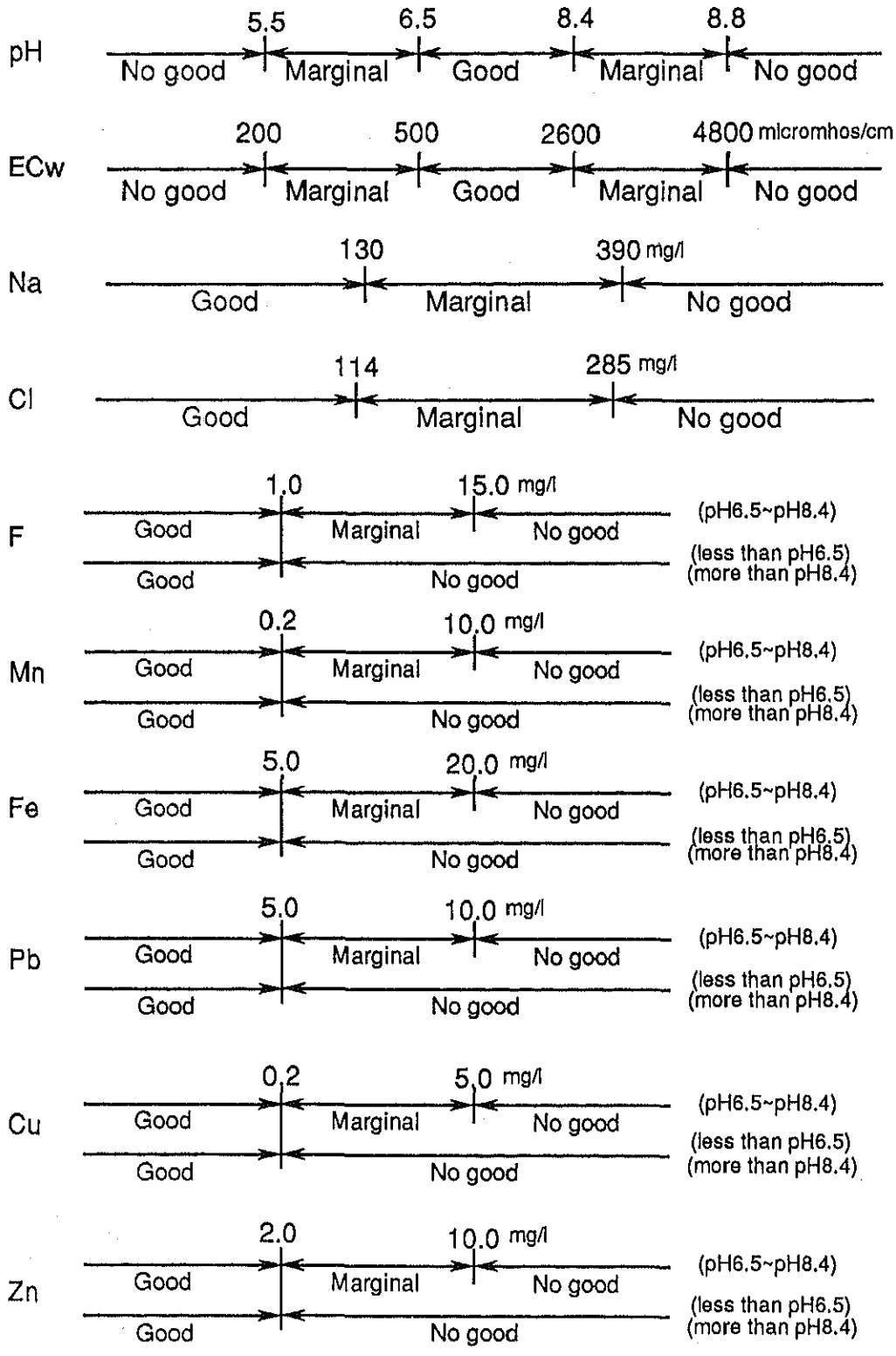

Source : Ref. E.46

Figure E2.6 Water Quality Evaluation Criteria for Irrigation

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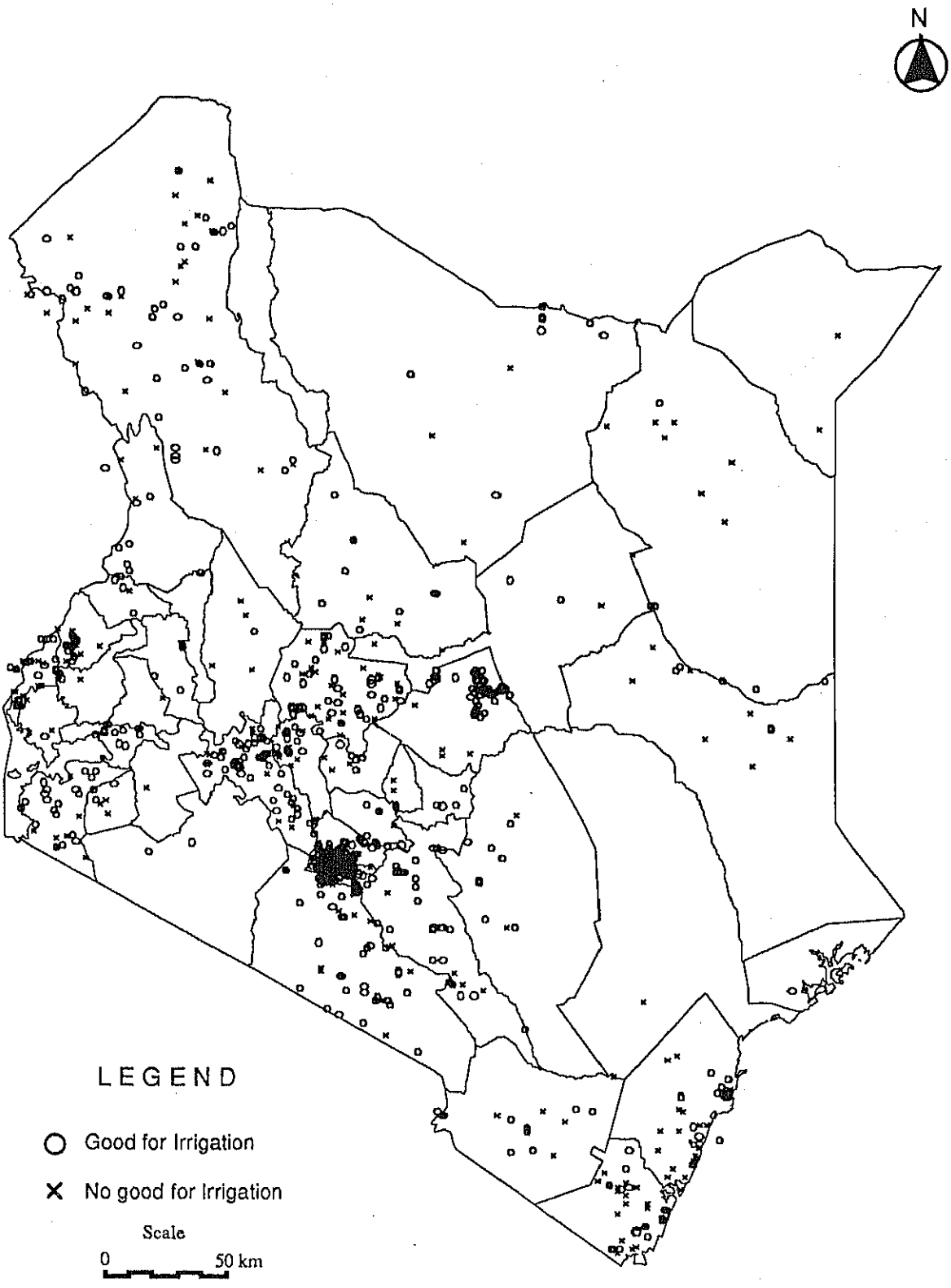

Figure E2.7 Location of Borehole and Groundwater Quality for Irrigation

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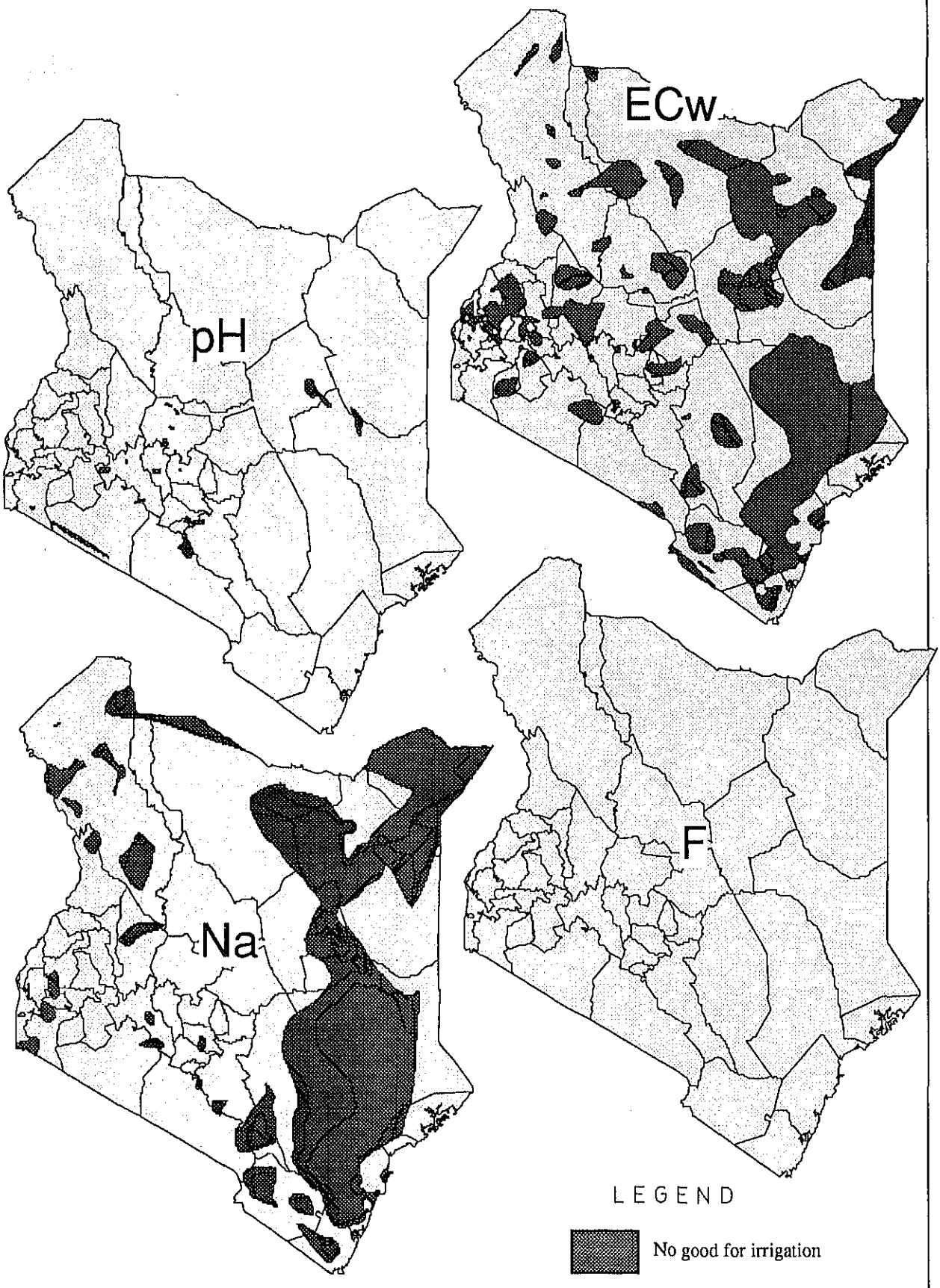

Figure E2.8 Groud Water Quality Map (1/2)

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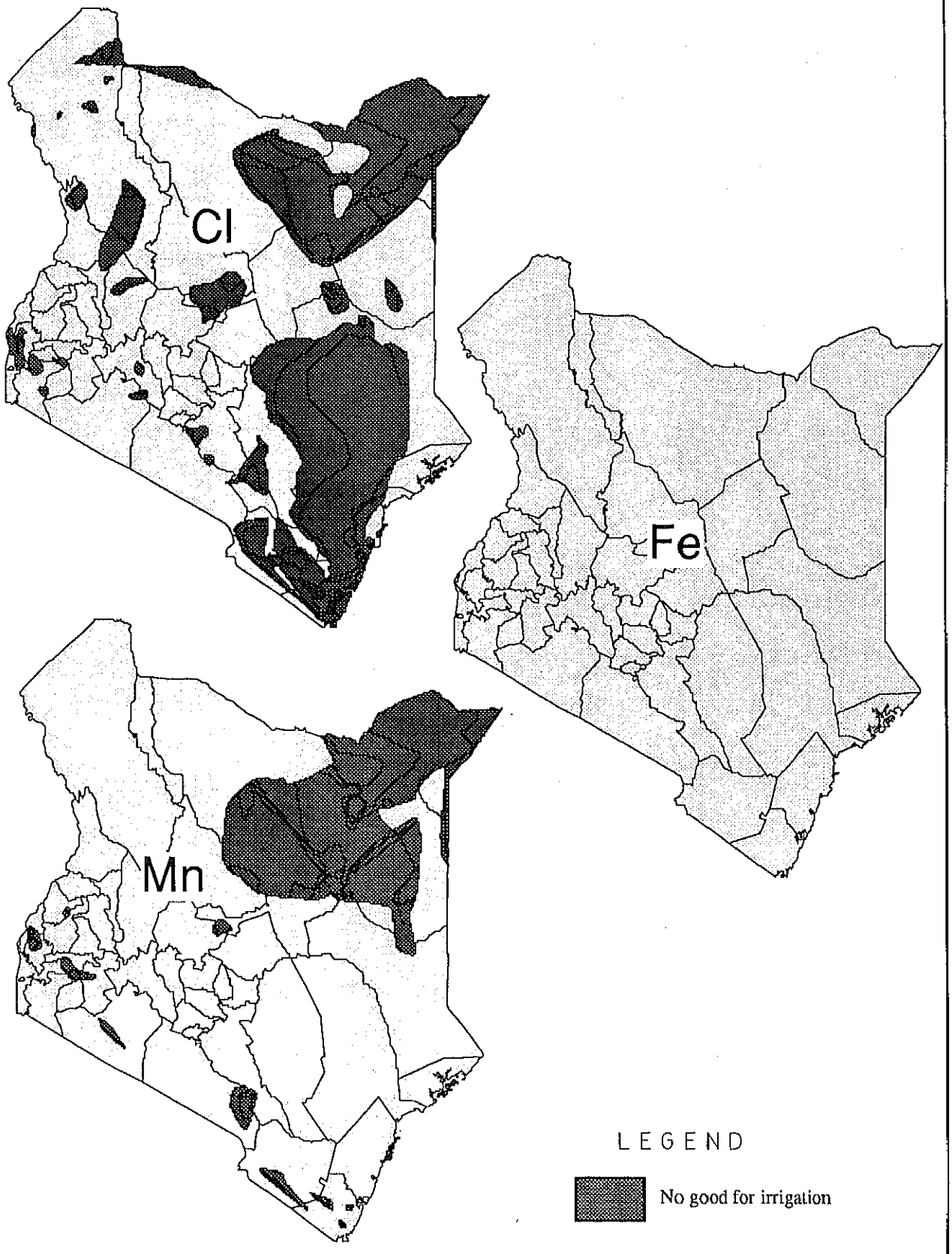

Figure E2.8 Groud Water Quality Map (2/2)

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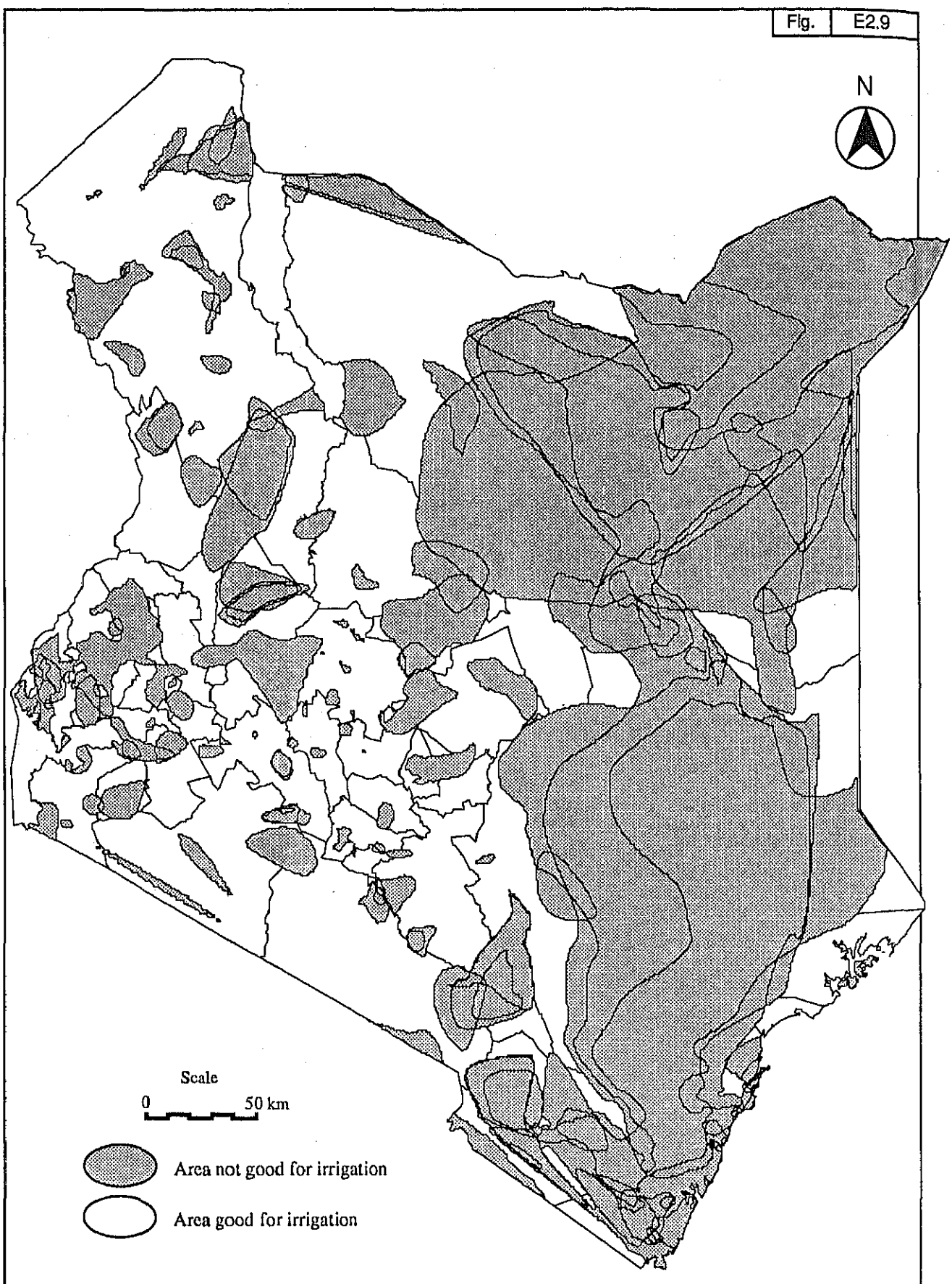

Figure E2.9 Area of Groundwater Unsuitable for Irrigation

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Fig. E2.10

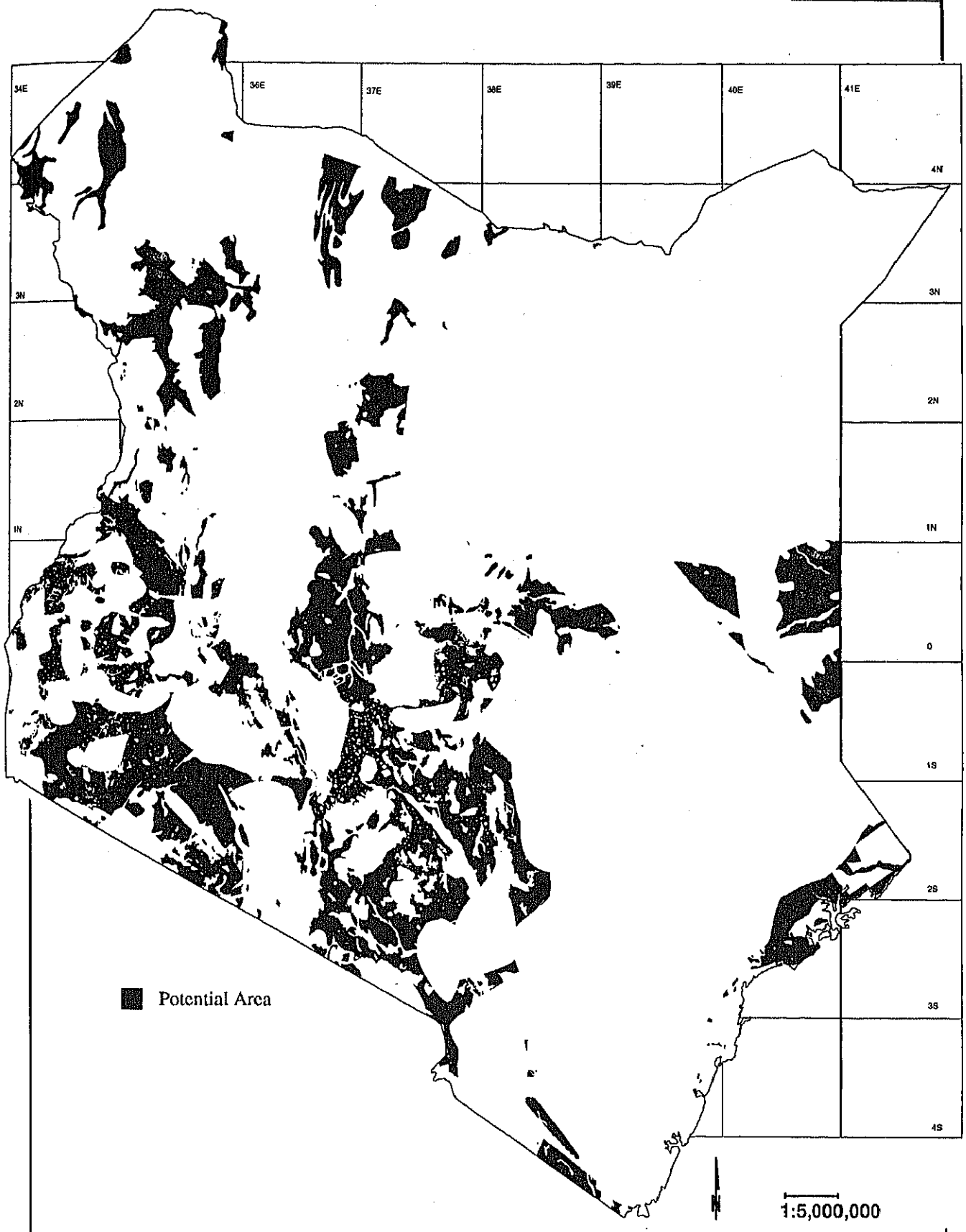

Figure E2.10 Irrigation Potential Area by Groundwater for Upland Crops

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Fig. E2.11

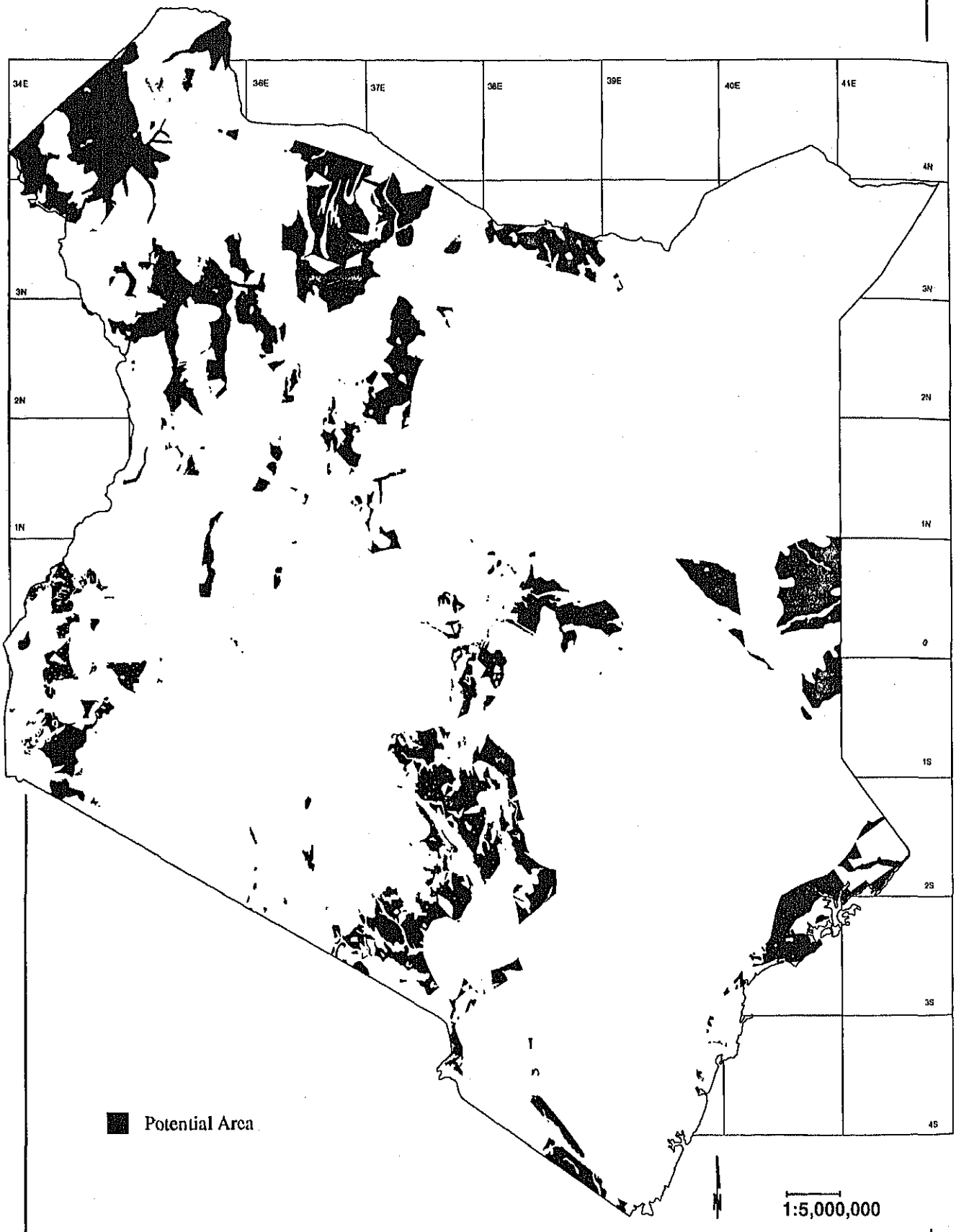

Figure E2.11 Irrigation Potential Area by Groundwater for Lowland Crops

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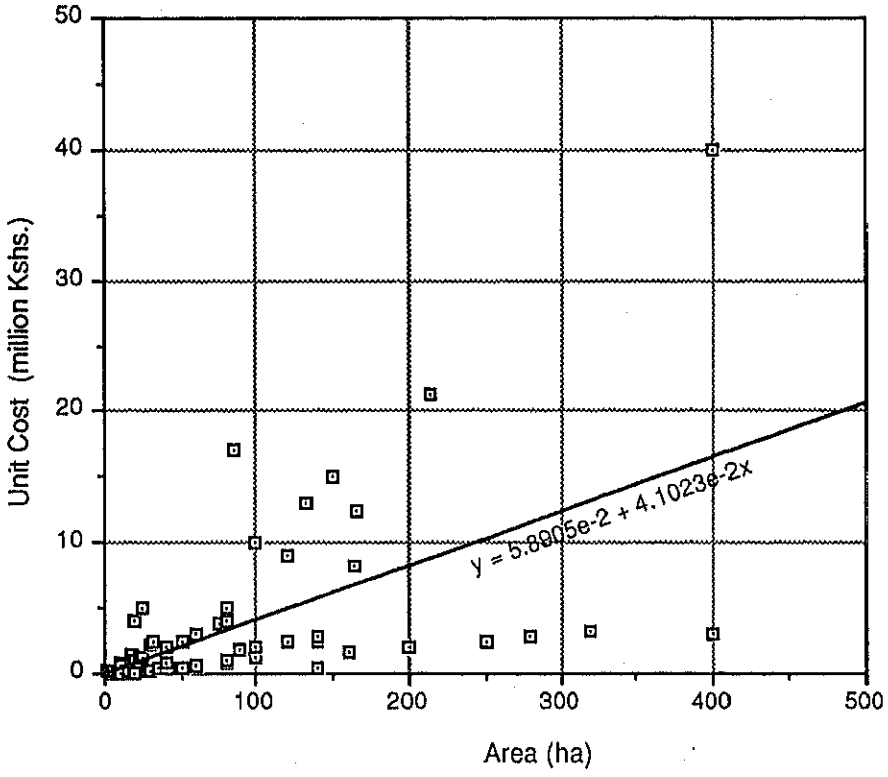

from above simple regression line
following formula is applied to estimate small scale irrigation project cost

Project Cost = Area(ha) x 41,000 Kshs

Figure E2.12 Area and Cost Relation on Small Scale Irrigation Scheme

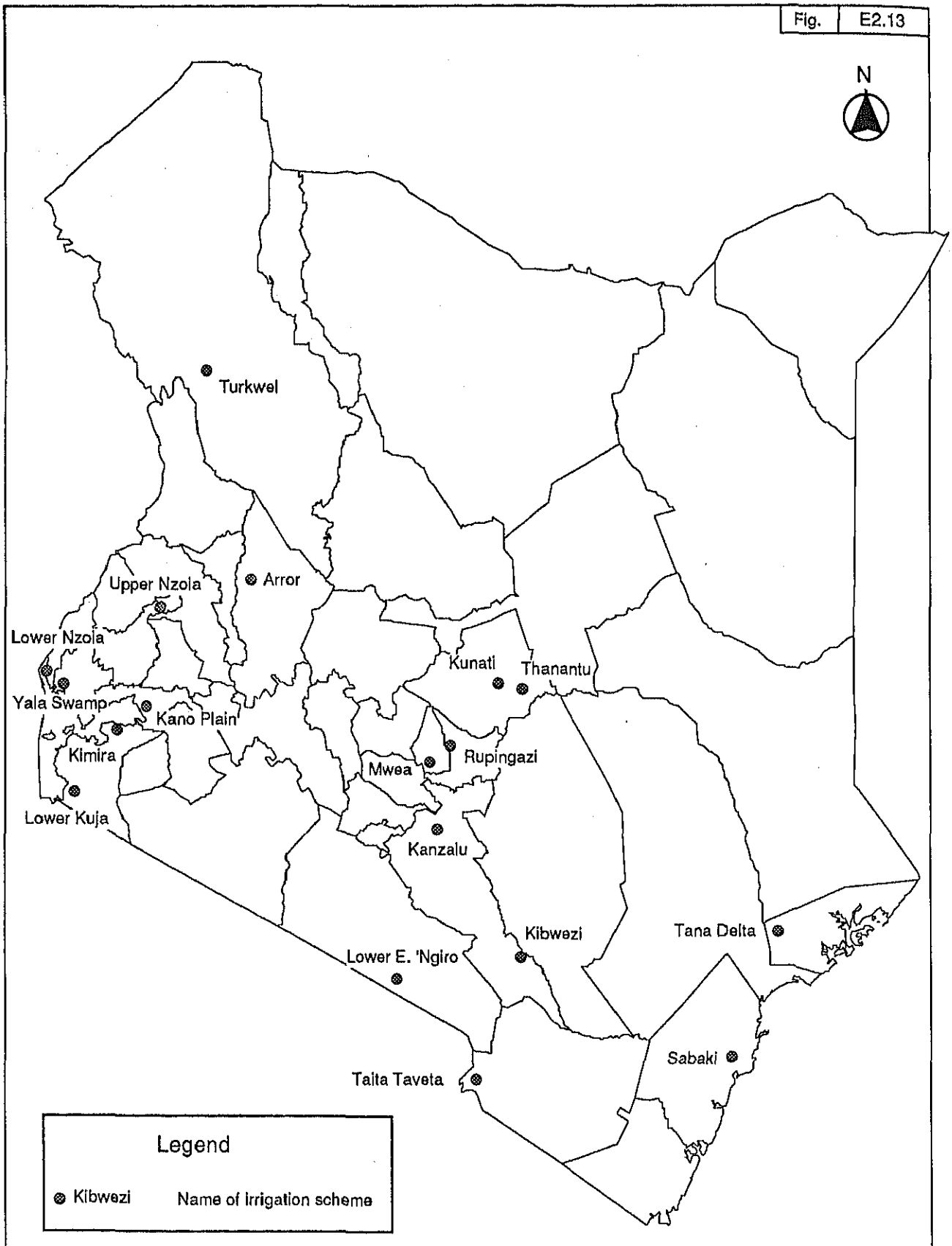

Figure E2.13 Location of Selected Large Scale Irrigation Schemes

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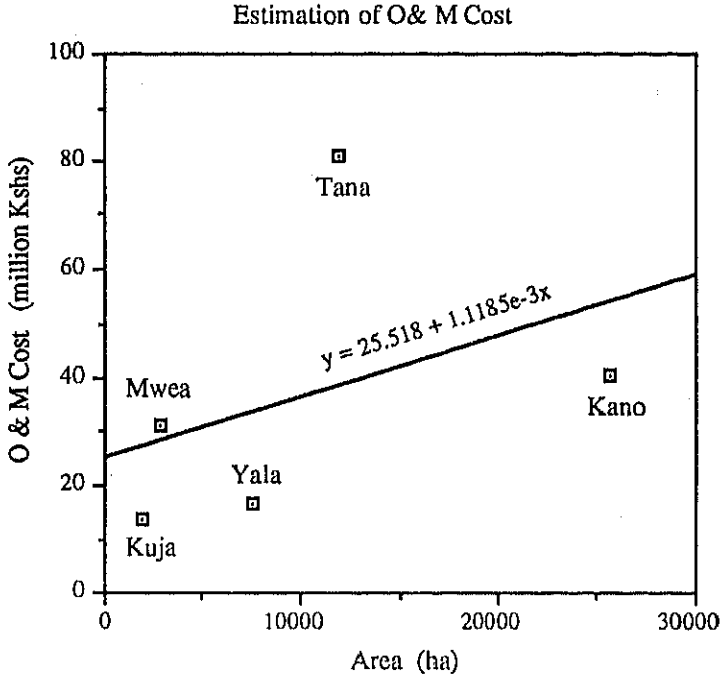
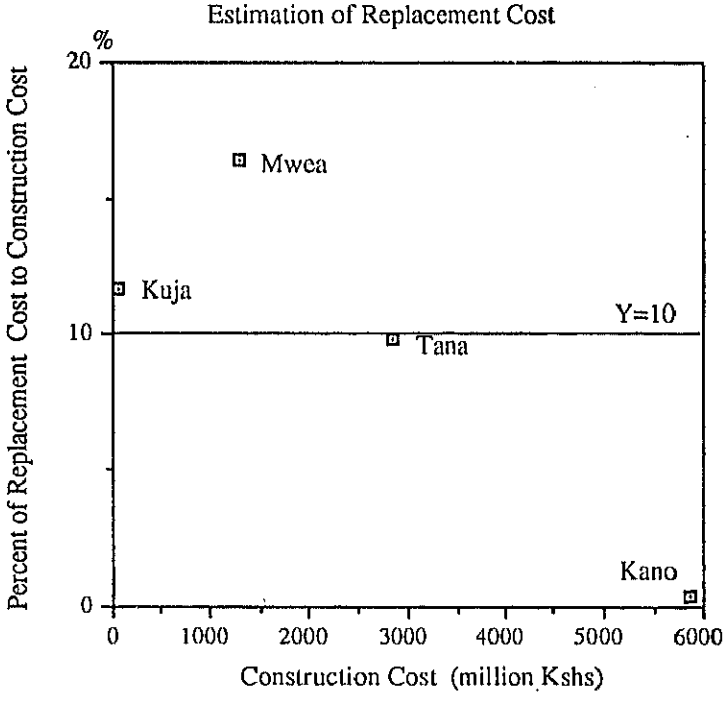


Note : O&M cost was estimated at about Kshs 10,000/ha based on the above graph



Note : from above graph replacement cost was estimated at 10% of construction cost

Figure E2.14 Estimation of O&M and Replacement Cost

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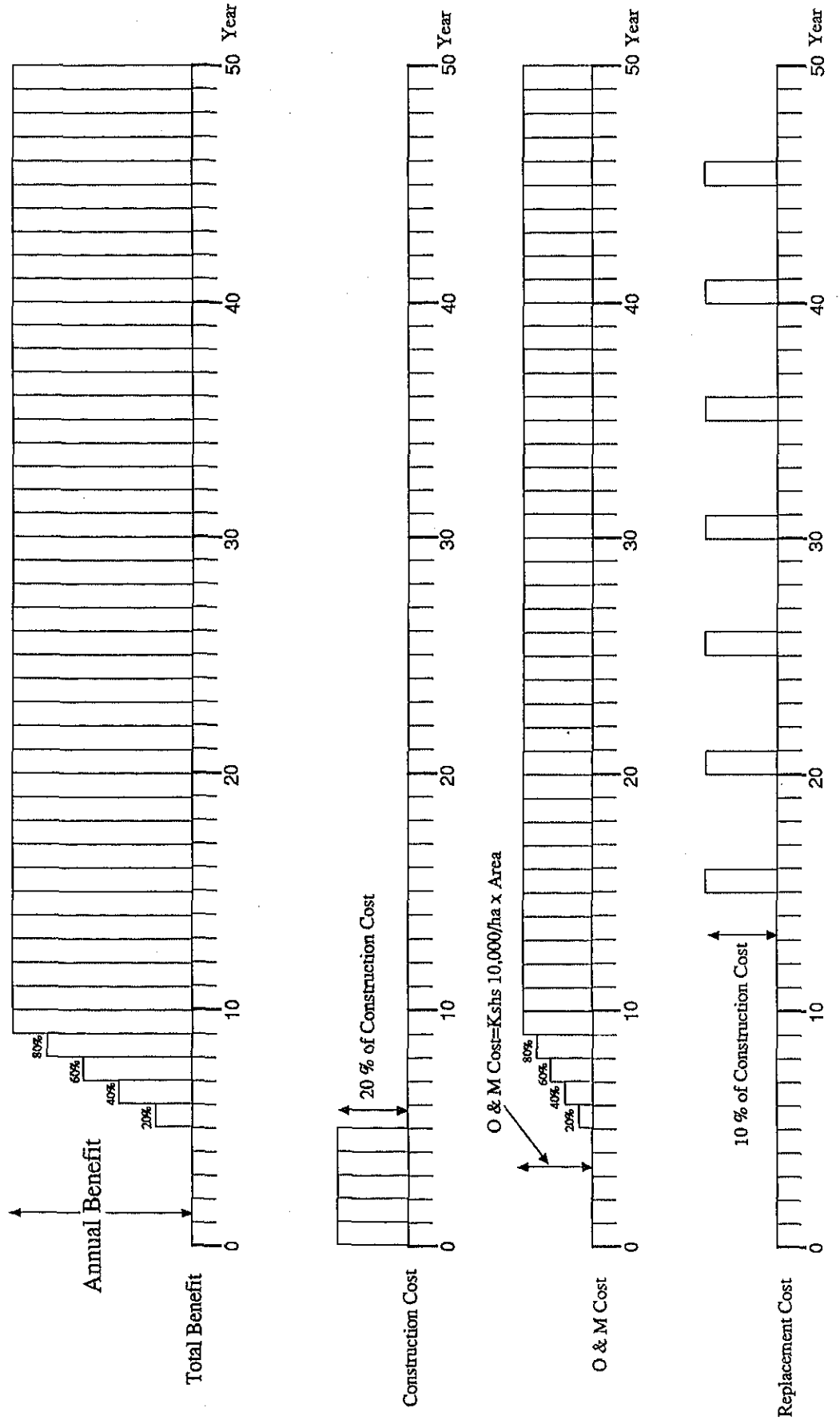

Figure E2.15 IRR Calculation Concept

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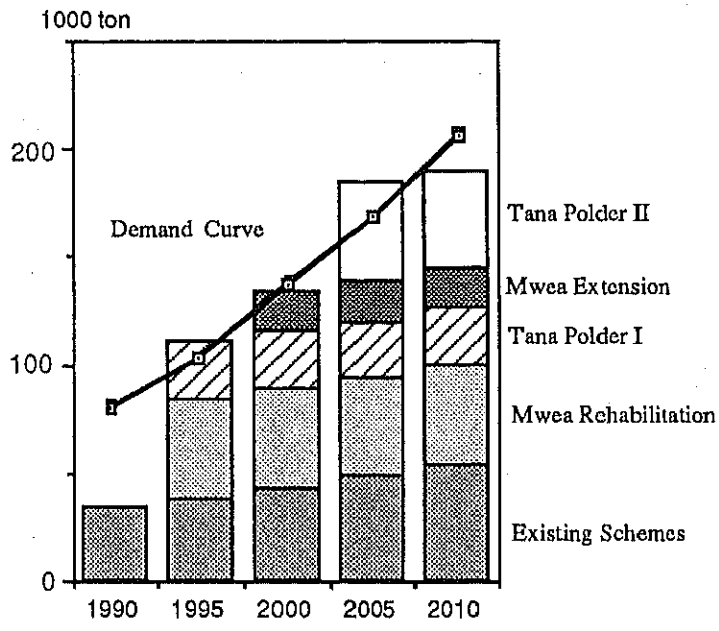

Rice Production Projection

Unit : 1000 ton

Year	Demand *1	Existing Scheme *2	Mwea Rehabili	Tana Polder I *3	Mwea Extension	Tana Polder II *3	Total Production *4	Balance
1990	78.2	52					33.8	-44.4
1995	101.4	58	70.4	26.5			109.96	8.56
2000	135.8	66	70.4	26.5	28.6		133.75	-2.05
2005	167.2	74	70.4	26.5	28.6	45.1	184.05	16.85
2010	204.9	82	70.4	26.5	28.6	45.1	189.25	-15.65

*1 see Table E.1.20
*2 projected from past production trend as shown in Figure below
*3 milled rice
*4 applying 65% of milling rate from paddy to milled rice

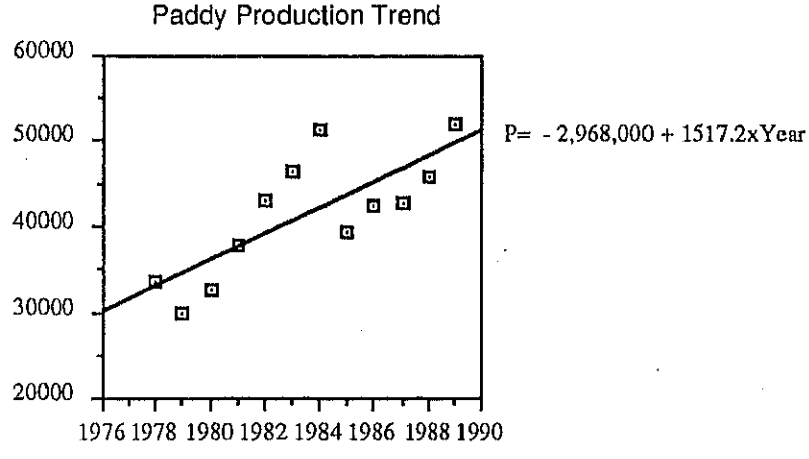

Figure E2.16 Rice Production Projection

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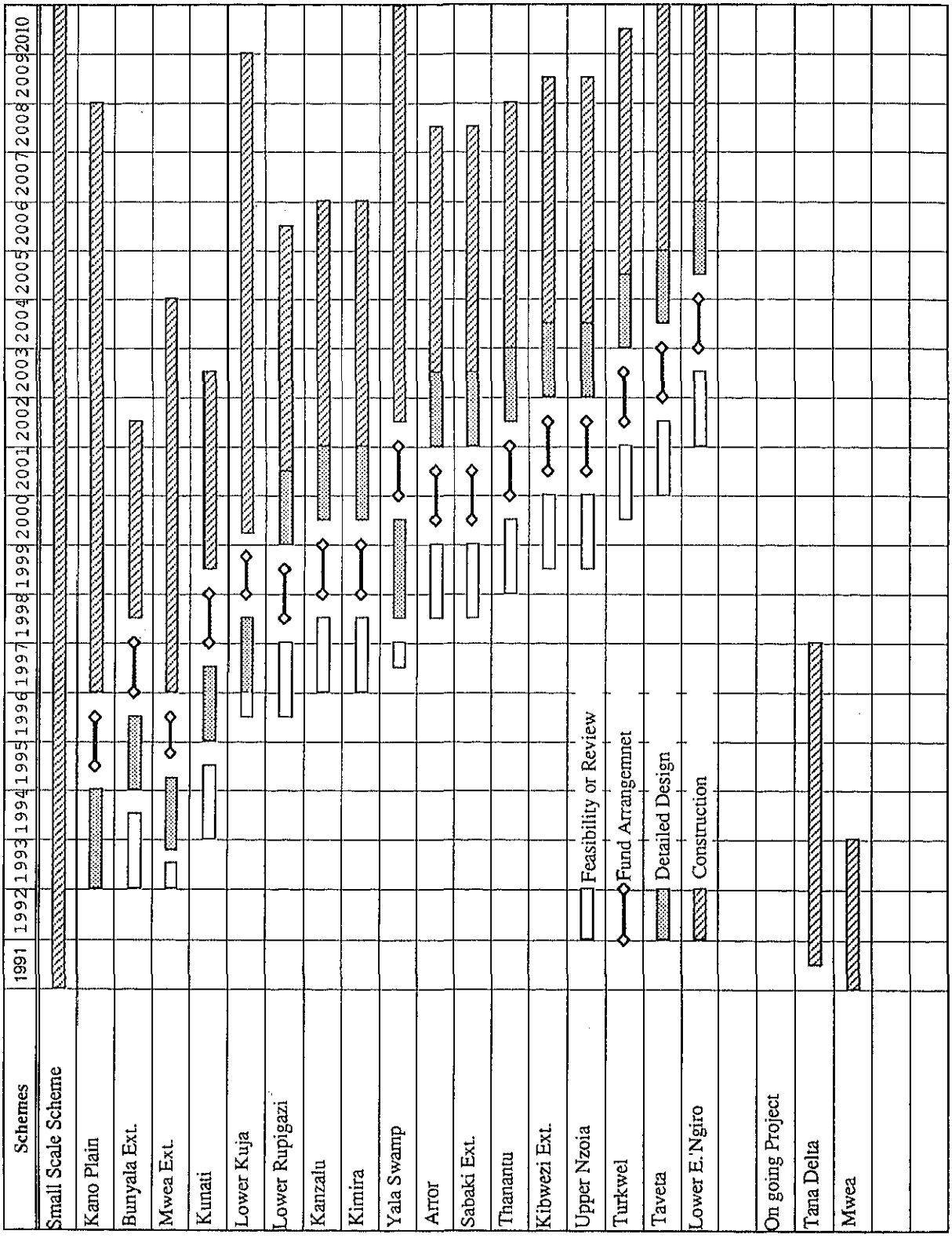

Figure E2.17 Implementation Schedule for Irrigation Development

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APPENDIXES

APPENDIX E.1

Land Evaluation

Appendix E.1
Land Evaluation

Table of Contents

1. General

This Appendix were prepared for detailed explanation of the land evaluation procedures used in this Study and misunderstandings. General ideas and principals of land evaluation in this Study are not new nor invented by the Study team. Land evaluation in this Study was carried out based on the "A FRAME WORK FOR LAND EVALUATION" prepared by FAO/ILRI*.

1.1 The aims of land evaluation

The aims of land evaluation in this Study is very simple, to answer the question:

Where is it good for planting maize, beans, rice, etc.?

1.2 Approach to land evaluation

According to the FRAME WORK, two approaches 1) a two-stage approach and 2) a parallel approach are recommended as shown in Figure 1.

Two-stage approach

The first stage is mainly concerned with qualitative land evaluation, later (although not necessarily) followed by a second stage consisting of economic and social analysis.

The land suitability classifications in the first stage are based on the suitability of the land for kinds of land use which are selected at the beginning of the survey. The contribution of economic and social analysis to the first stage is limited to a check on the relevance of the kinds of land use. After the first stage has been completed and its results presented in a map and report, these results may then be subject to the second stage, that of economic and social analysis, either immediately or after an interval of time.

Parallel approach

In this approach the economic and social analysis of the kinds of land use proceeds simultaneously with the survey and assessment of physical factors. The kinds of use to which the evaluation refers are usually modified in the coarse of the study. This procedure is mostly favoured for specific proposals in connection with development projects and at semi-detailed and detailed levels of study.

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* FAO : Food and Agriculture Organization of the United Nations
LRI : International Institute for Land Reclamation and Improvement

The purpose of this land evaluation is not evaluation or recommendation of the suitable land use plan for specific area in terms of economic and social aspects. Therefore, the two-stage approach without second stage was applied to land evaluation in this Study (see Figure 1).

2. Suitability Classification

Because of the simple purpose of this land evaluation, namely, good or not for agriculture, the following two categories are applied.

1. Land Suitability Orders : reflecting kinds of suitability
2. Land Suitability Classes : reflecting degrees of suitability within orders

2.1 Land suitability orders

Land suitability orders indicate whether land is assessed as suitable or not suitable for the defined purpose.

Order *S*	Suitable	Land on which sustained use of the kind under consideration is expected to yield benefits which justify the inputs, without unacceptable risk of damage to land resources.
Order *N*	Not suitable	Land which appears to preclude sustained use of the kind under consideration.

2.2 Suitability classes

Land Suitability Classes reflect degrees of suitability. As recommended in FRAME WORK, the following three classes are applied.

Class *S1*	High Suitable	Land having no significant limitations to sustained application of a given use, or only minor limitations that will not significantly reduce productivity or benefits and will not raise inputs above an acceptable level.
Class *S2*	Moderately Suitable	Land having limitations, which in aggregate are moderately severe for sustained application of a given use; the limitations will reduce productivity or benefits and increase required inputs to the extent that

		the overall advantage to be gained from the use, although still attractive, will be appreciably inferior to that expected or Class S1 land.
Class *S3*	Marginally Suitable	Land having limitations which in aggregate are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified.

Within the Order *Not Suitable*, no Class division is applied.

Then the structure of the suitability classification applied to this Study is summarized below:

Suitable	----------	*S1* *S2* *S3*
Not suitable	----------	*N*

3. Land Evaluation Procedures

The main activities in land evaluation are as follows:

- Initial consultations, concerned with the objective of the evaluation, and the data and assumptions on which it is to be based
- Description of the kinds of land use to be considered, and establishment of their requirements
- Description of land mapping units, and derivation of land qualities
- Comparison of kinds of land use with the types of land present
- Land suitability classification
- Presentation of the results of the evaluation

Figure 2 illustrate above land evaluation activities schematically.

A general working chart for land use evaluation procedure, proposed by KSS is given in Figure 3.

The following section describes each procedure in more detail and shows the actual figures used in this Study according to KSS's flow chart.

3.1 Preparatory work

Before starting evaluation work, the following matters require a decision for further smooth evaluation works.

- objectives of the evaluation
- data to be used

3.1.1 Objective

The objective of the land evaluation in the Study is:

> to clarify the size and distribution of potential agricultural land with master plan level in whole country.

3.1.2 Data and assumptions

There are various and much data usable for land evaluation analysis at KSS, Meteorological Station and Survey of Kenya. Among them the following data is used.

Exploratory Soil Map	Scale = 1:1,000,000
Topographic Map	Scale = 1:250,000
Agro Ecological Zone Map	Scale = 1:1,000,000
Meteorological Data	Temperature, Evaporation
Forest Map	Scale = 1:1,000,000
National Park & Reserve Map	Scale = 1:1,000,000

Available raw data which is not ready to use for this Study is omitted from the available data list.

3.2 Land use requirements

Requirements for those crops which cultivated under rainfed are so determined to evaluate the land condition. For example, *highly suitable* land for maize requires, high or moderate fertility of soil such as humic gleysols, cambic rendzinas, etc., salinity of 0-8 mmho/cm ECe, Sodicity of 0-15 ESP, well drained condition, deep effective soil depth of 80-120 cm and medium soil texture. To simplify those requirement, classification into same grade was made for each required item. For example, effective soil depth is classified into five as follows:

Class	Effective Soil Depth	Depth (cm)
1	Extremely deep	more than 180
2	Very deep	12 - 180
3	Deep	80 - 120
4.	Moderately deep	50 - 80
5	Shallow	0 - 50

Table 1 presents other factor's classification. The requirement of above *highly suitable* for maize land can be written as fertility = 2, Salinity = 1, Sodicity = 1, Drainage = 1 and Soil depth = 3.

Table 2 shows the requirement of land suitability class for major crops together with required Agro-ecological Zone.

Agro-ecological zone

Agro-ecological zone system assess the land suitability for crops in terms of temperature (t) and moisture availability (r/Eo).

Existing agro-ecological zone map covered southern half of Kenya using eight temperature zones and eight moisture availability zones. The eight temperature zones are defined on the basis of annual mean air temperature and mean maximum temperature as follows:

Name of Belt	Symbol	Annual Mean Temp.	Mean Max. Temp.
Tropical Alpine Belt	TA	2 - 10	
Upper Highland Belt	UH	10 - 15	
Lower Highland Belt	LH	15 - 18	
Upper Midland Belt	UM	81 - 21	
Lower Midland Belt	LM	21 - 24	
Lowland	L		
Inner Lowland	IL	> 24	> 31
Coastal Lowland	CL	> 24	< 31

Moisture availability zones are defined on the basis of the ratio of the annual precipitation/potential evaluation (r/Eo) as follows:

Number of Zones	Term used for Zones	Ratio of Annual precipitation/ Potential Evaporation
0	Perhumid	1.20 < r/Eo
1	Humid	0.80 < r/Eo < 1.20
2	Sub-humid	0.65 < r/Eo < 0.79
3	Semi-humid	0.50 < r/Eo < 0.64
4	Transitional	0.40 < r/Eo < 0.49
5	Semi-arid	0.25 < r/Eo < 0.39
6	Arid	0.10 < r/Eo < 0.24
7	Per-Arid	r/Eo < 0.10

Remaining northern Kenya's AEZ was made by Study team using available climatological data obtained from 90 stations.

Land Slopes

Land slope is one of the important land elements in view of high erosion susceptibility and low workability. The requirements of land slope for crops adopted KSS's guideline as shown in Table 3.

3.3 Definition of Suitability Classes

As mentioned above definition of suitability classes are presented in Table 2 and Table 3. These table would use for final evaluation through matching with land qualities.

3.4 Available Land Qualities

Available land information covering whole country are:

Soil quality
Agro-ecological zone
Topographic condition

3.5 Rating of Land Qualities

3.5.1 Soil quality

The soils of whole Kenya has been classified by KSS into 390 soil mapping unit with information of soil characteristics such as drainage, fertility, soil depth, etc. Based on the these information and Table 1 of classification guide, all 390 units are rated and results are shown in Table 4. For example, Mapping unit M1 has class of Depth = 5, Drainage = 1, Sodicity = 3, Salinity = 3, Fertility = 2 and Texture = M and S.

3.5.2 Agro-ecological zone

Figure 4 shows AEZ covering whole country.

3.5.3 Topographic condition

Using topographic map at a scale of 1:250,000, whole of the country was classified into six classes of land steepness as given below:

	Gradient (%)	Class	Land Suitability
Class 1	0 - 2	flat to very gently undulating	Suitable for paddy field
Class 2	2 - 5	gently undulating	
Class 3	5 - 8	undulating	Suitable for irrigated farming*
Class 4	8 - 16	rolling	Suitable for rainfed farming*
Class 5	16 - 30	hilly	Marginal for rainfed farming*
Class 6	> 30	steep	Unsuitable for agriculture

Note : *) Not include rice
Source : Sondu River Multipurpose Development Project (JICA, 1985)

Figure 5 presents distribution of above classes.

3.6 Matching Land Use Requirement vs. Land Quality

Matching procedure was carried out crop by crop in following sequence.

1. Select Crop (Maize, Rice, ...)
2. Select Suitable class (S1, S2, S3, NS)

If Maize and S1 was selected then land use requirements for this crop & class were determined from Tables 2 & 3 as follows for example:

Requirements for Class S1 of Maize

AEZ	=	UM2 or LM2 or CL2
Soil texture	=	UM
Soil fertility	=	2
Salinity	=	1
Sodicity	=	1
Drainage	=	1
Soil depth	=	3
Slope	=	1

3. Matching quality of soil vs. above requirements for each mapping unit (Table 4).

For example, mapping code Uu1, Uu2 and Uu3 were checked as follows:

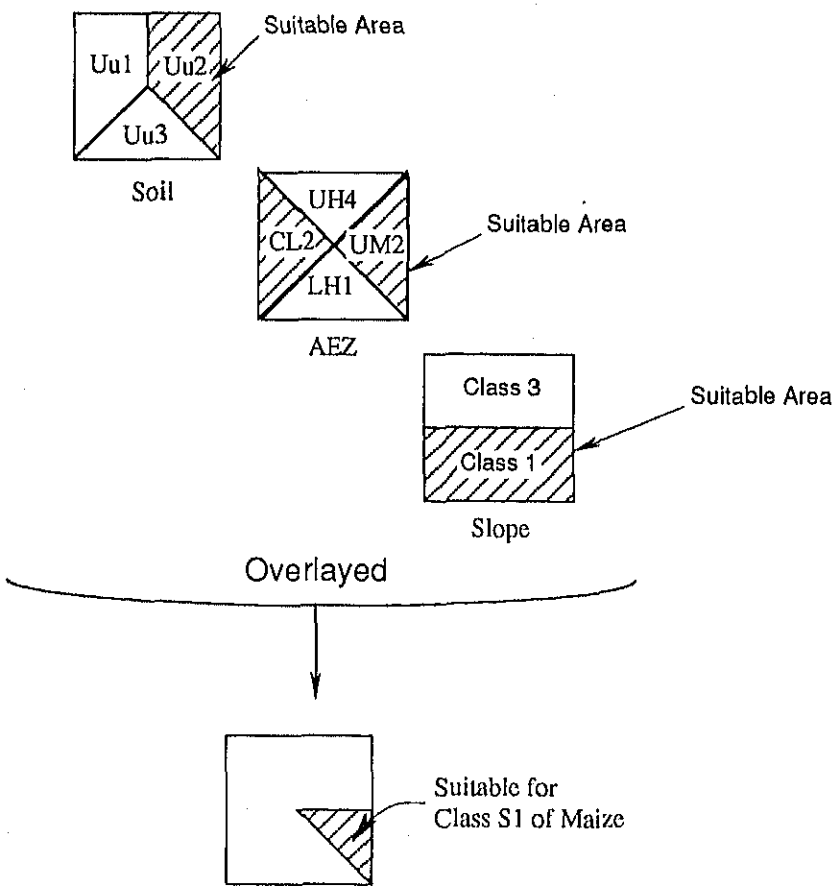
	Serial No.	Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture	Matching
Requirement			3	1	1	1	2	M	
Quality	122	Uu1	3	1	1	1	1	H	No
	123	Uu2	3	1	1	1	2	M	Yes
	124	Uu3	5	1	1	1	1	M	No

As can be seen in the above table, Mapping Code Uu1 is not suitable for class S1 of Maize because fertility and texture items are not matched with their requirements. An Uu3 has two items of mismatch, depth and fertility. Mapping Code Uu2 has no mismatch items, namely this Mapping Code has suitability of class S1 of Maize.

4. Matching AEZ requirement vs. AEZ Map
   All AEZ of UM2, LM2 and CL2 were selected from AEZ Map for class S1 of Maize.

5. Matching Land Slope requirement vs. Land Slope Classification Map
   Land Slope Class of 1 were selected from land classification map for class S1 of Maize.

6. Overlay of the above three maps, i.e. selected soil mapping code map (soil map), selected AEZ map and selected Land Slope Classification Map in order to select suitable area for class S1 of Maize.



7. Overlay of above selected suitable area map and National Park/Reserve Area, township area and Forest area map in order to deduct those reserved area for other purpose than agriculture.

3.7 Land Suitability Classification

The results of above matching process are given in Figure 6 (for Maize). For other crops such as wheat, beans, rice, etc. results are presented in Appendix E.6 of this report.

Usually these land suitability classification maps have tabular legends which may shows land mapping units and its suitability for each kind of land use like as follows:

Land Mapping Units	Maize	Wheat	Rice	. . . . .
1	S1	S1	S2	
2	S2	S3	N3	
3	S1	NS	S2	
4	N3	S1	S1	
.				
.				

Actually these table were made on the computer during overlay and matching process but not made on the paper because of our intention of this land evaluation work is not required those tables and also the depth of this Study may not demand these tables.

Table 1 Criteria for Rating

(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
Feralsols	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
	farralo-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
Kastanozen	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	ando-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
	ando-humic	high	1
	dystric	moderate	2
	verto-mollic	moderate	2
	humic	high	1
Cambisols	humic	high	1
	eutric	high	1
	nito-chromic	moderate	2
	ando-eutric	high	1
	chromic	moderate	2
	ferralic	moderate	2
	calcic	mdoerate	2
	ando-chromic	moderate	2
	dystric	moderate	2
	vertic	moderate	2
	gleyic	moderate	2
Phaeozems	gleyic	high	1
	ando-haplic	high	1
	hapic	high	1
	verto-luvic	high	1
	ortho-luvic	moderate	2
	chromo-luvic	high	1
	ando-luvic	high	1
	luvic	moderate	2
	nito-luvic	moderate	2
	ando-haplic	high	1
Histosols	dystric	moderate	2
Xerosols	calcic	moderate	2
	haplic	moderate	2
	gypsic	moderate	2
Acrisols	chromic	low	3
	ando-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

Table 2 Land Suitability Class for Major Crops

Suitabillit Class	Agro-ecolozical 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
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)

Table 3 Land Classification Criteria for Upland Crops (1/2)

Land characteristic	Land Class			
	S1	S2	S3	NS1 and S2
Teture(s)	Sandy loam to friable clay loam	Sandy loam to very permeable clay, non compacted	Loamy sand to permeable clay	NS1: Includes : lands which require additional investigations to determine . their irrigability NS2: Includes lands . which do not meet the minimum requirements for the other land classes and are not suitable for irrigation.These include lands with very shallow soils impermeable soils,excessive concentrations of salts, pH above 9.0 and more than 15% ESP etc.
Depth(s) to sand,gravel	90 cm plus and greater than 150cm to impermeable horizon	60 cm plus and greater than 120cm to impermeable horizon	45 cm plus and greater than 100cm to impermeable horizon	
Alkalinity (reaction)	pH-H20 less than 7,5 for noncalcareous soils and less than 8.6 for calcareous soils	pH-H20 less than 9.0 unless soil is calcareous and non sodic	pH-H20 less than 9.0 unless soil is calcareous and non sodic	
Salinity (ECe)	Total salts not to exceed 0.2%, ECe less than 4mhos/cm	Total salts not to exceed 0.5%, ECe less than 8mmhos/ cm	Total salts not to exceed 0,5%, ECe less than 8mmhos/cm	
Slopes(t)	Flat to ver gently undulating (less than 2%)	Flat to very gently undulating (less than 5% in general)	Flat to undulating (less than 8% in general)	
Surface (micro relief)	Even enough to require only small amounts of levelling and no heavy grading	moderate grading required but in amounts found feasible at reasonable cost	heavy and expensive grading required	
Vegetation)	Woody cover less than 20%. Clearing cost small	Woody cover less than 40% Clearing required but at a moderate cost	Woody cover less than 80% Expensive clearing costs	
Drainage(d)	well drained to moderately well drained. No flooding	Well drained to imperfectly drained. My have surface water for short periods	well drained to poorly drained, may have surface water for several months	

Table 3 Land Classification Criteria for Paddy (2/2)

Land characteristic	Land Class			
	S1	S2	S3	NS1 and S2
Teture(s)	Topsoil: fine sandy loam. to clay subsoil: clay but non-compacted	Topsoil: fine sandy loam. to clay loam subsoil: sandy clay to clay but non-compacted	Topsoil: sandy loam to clay loam subsoil:clay to clay loam but non-compacted	NS1: Includes lands which require additional investigations to determine their irrigability NS2: Includes lands which do not meet the minimum requirements for the other land classes.
Depth(after land development) To clear sand or gravel.	Over 80 cm	Over 50 cm	Over 30 cm	
To pisoplinthite in permieable rock.	Over 80 cm	Over 50 cm	Over 30 cm	
To relatively impermeable zone (water)	less than 210 cm	less than 210 cm	less than 210 cm	
Alkalinity (reaction)	pH-H20 less than 7,5 for noncalcareous soils and less than 8.6 for calcareous soils	pH-H20 less than 9.0 unless soil is calcareous and non sodic	pH-H20 less than 9.0 unless soil is calcareous and non sodic	
Salinity (ECe)	Total salts not to exceed 0.2%, ECe less than 4mhos/cm	Total salts not to exceed 0.5%, ECe less than 8mmhos/ cm	Total salts not to exceed 0,5%, ECe less than 8mmhos/cm	
Slopes(t)	less than 1%	less than 1%	less than 2%	
Surface (micro relief)	smooth except for gilgai and minor undulations	smooth except for gilgai and minor undulations (sink holes)	somewhat irregular but no major gulleys, sink holes or dissection	
Vegetation)	Woody cover less than 20%. Clearing cost small	Woody cover less than 40% Clearing required but at a moderate cost	Woody cover less than 80% Expensive clearing required	
Drainage(d)	Well drained to imperfectly drained. My have surface water but only for short periods	well drained to poorly drained, may have surface water for several months	well drained to poorly drained, may have surface water or be waterlogged for major parts of the year	

Source : Ref F

Table 4 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	L-M
71.	R1	1	1	1	1	1	H
72.	Lu1	3	1	1	1	1	M-H

Serial No.	Soil Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture
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.	Uh1	1	1	1	1	1	H
126.	Uh2	1	1	1	1	1	H
127.	Uh3	1	1	1	1	1	H
128.	Uh4	5	1	1	1	2	H
129.	Uh3+Uh4	5	1	1	1	2	H
130.	Uh5	1	1	1	1	1	H
131.	Uh6	2	1	1	1	3	M-H
132.	Uh7	2	1	1	1	3	M-H
133.	Uh8	2	1	1	1	3	M-H
134.	Uh9	3	1	1	1	2	M
135.	Uh10	1	1	1	1	1	H
136.	Uh11	1	1	1	1	1	H
137.	Uh12	4	1	1	1	3	M-H
138.	Uh13	3	1	1	1	3	M
139.	Uh14	3	1	1	1	3	M
140.	Uh15	4	1	1	1	3	M-H
141.	Uh16	2	1	1	1	1	M-H
142.	Uh17	2	1	1	1	2	M-H
143.	Uh18	2	1	1	1	3	M-H
144.	Uh19	4	2	1	1	1	M

Source : Exploratory Soil Map of Kenya (KSS, 1982)

Table 4 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

Serial No.	Soil Mapping Code	Depth	Drainage	Sodicity	Salinity	Fertility	Texture
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.	Pn1	2	1	1	1	3	H
225.	Pn2	5	1	1	1	2	M-H S
226.	Pn3	3	3	4	1	2	H
227.	Pn4	3	3	3	3	2	H
228.	Pn5	3	3	1	1	2	M-H
229.	Pn6	3	3	1	1	2	M-H
230.	Pn7	4	3	2	1	2	H
231.	Pn8	3	1	1	1	3	M
232.	Pn9	4	1	1	1	2	M
233.	Pn10	3	3	3	1	2	H
234.	Pn11	3	3	1	1	2	H
235.	Pn12	3	1	1	1	3	M-H
236.	Pn13	4	1	1	1	3	M-H
237.	Pn14	4	3	3	2	3	M
238.	Pn15	3	2	3	1	2	H
239.	Pn16	4	1	1	1	2	M-H
240.	Pn17	3	3	1	1	2	H
241.	Pn18	3	2	3	2	1	H
242.	Pn19	4	3	3	2	3	M
243.	Pn20	2	2	3	2	2	H
244.	Pn21	2	3	3	2	1	H
245.	Pn22	2	3	3	1	3	H
246.	Pn23	3	4	3	1	2	H
247.	Pn24	5	4	1	1	2	M-H
248.	Pn25	4	1	1	1	2	H
249.	Pn26	5	3	1	1	2	M
250.	Pn27	5	3	1	1	2	M
251.	Pn28	2	3	3	3	2	H
252.	Pn29	4	3	3	1	1	M-H
253.	Pn30	5	1	1	1	1	M-H
254.	Pn31	2	1	1	1	3	M-H
255.	Pn32	3	1	1	1	2	M-H
256.	Pn33	3	1	1	1	3	M-H
257.	Pn34	3	1	1	1	4	L-M
258.	Pn35	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+Ps15	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 : Exploratory Soil Map of Kenya (KSS, 1982)

Table 4 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.	Pt1	3	1	1	1	2	M
332.	Pt2	3	2	1	1	1	M-H
333.	Pt3	2	1	1	1	4	M
334.	Pt4	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.	A8+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 : Exploratory Soil Map of Kenya (KSS, 1982)

Fig. 1

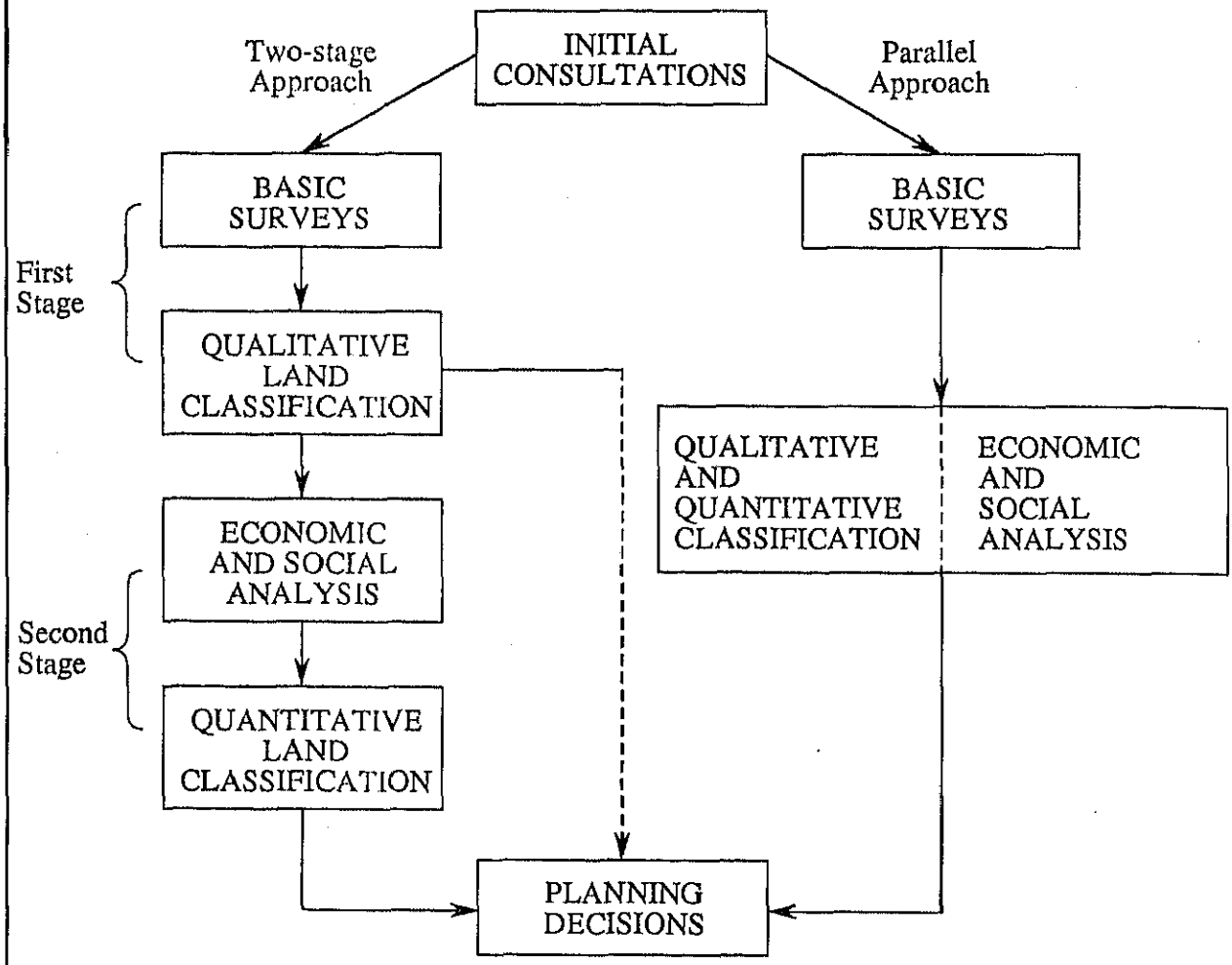


Fig. 1 Two-stage and Parallel Approaches to Land Evaluation

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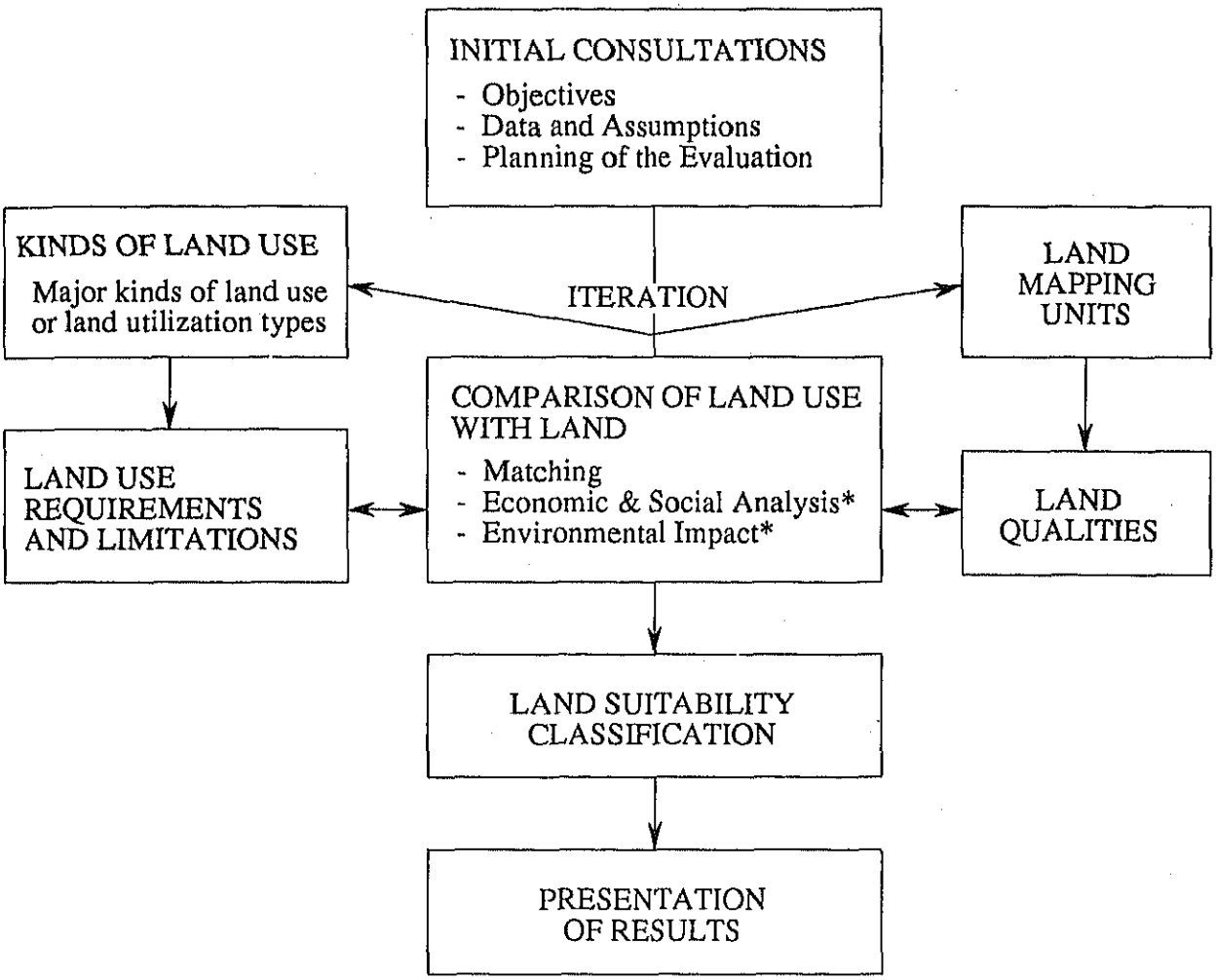

Note : * Not specifically examined in this Study.

Fig. 2 Schematic Representation of Activities in Land Evaluation

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Proposed Working Chart for a Recommended Land Use

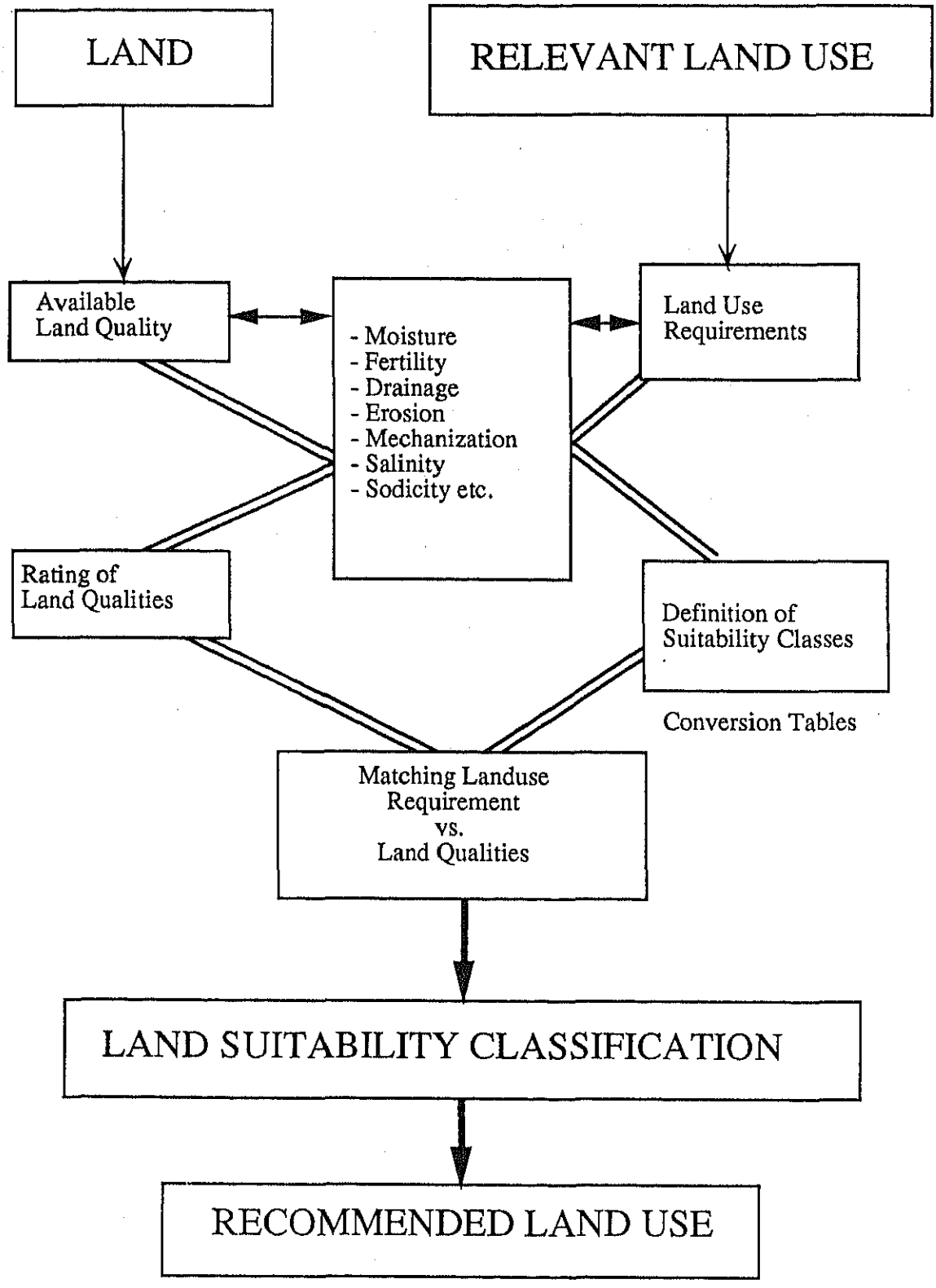

Figure 3 Proposed Working Chart for Recommended Land Use by KSS

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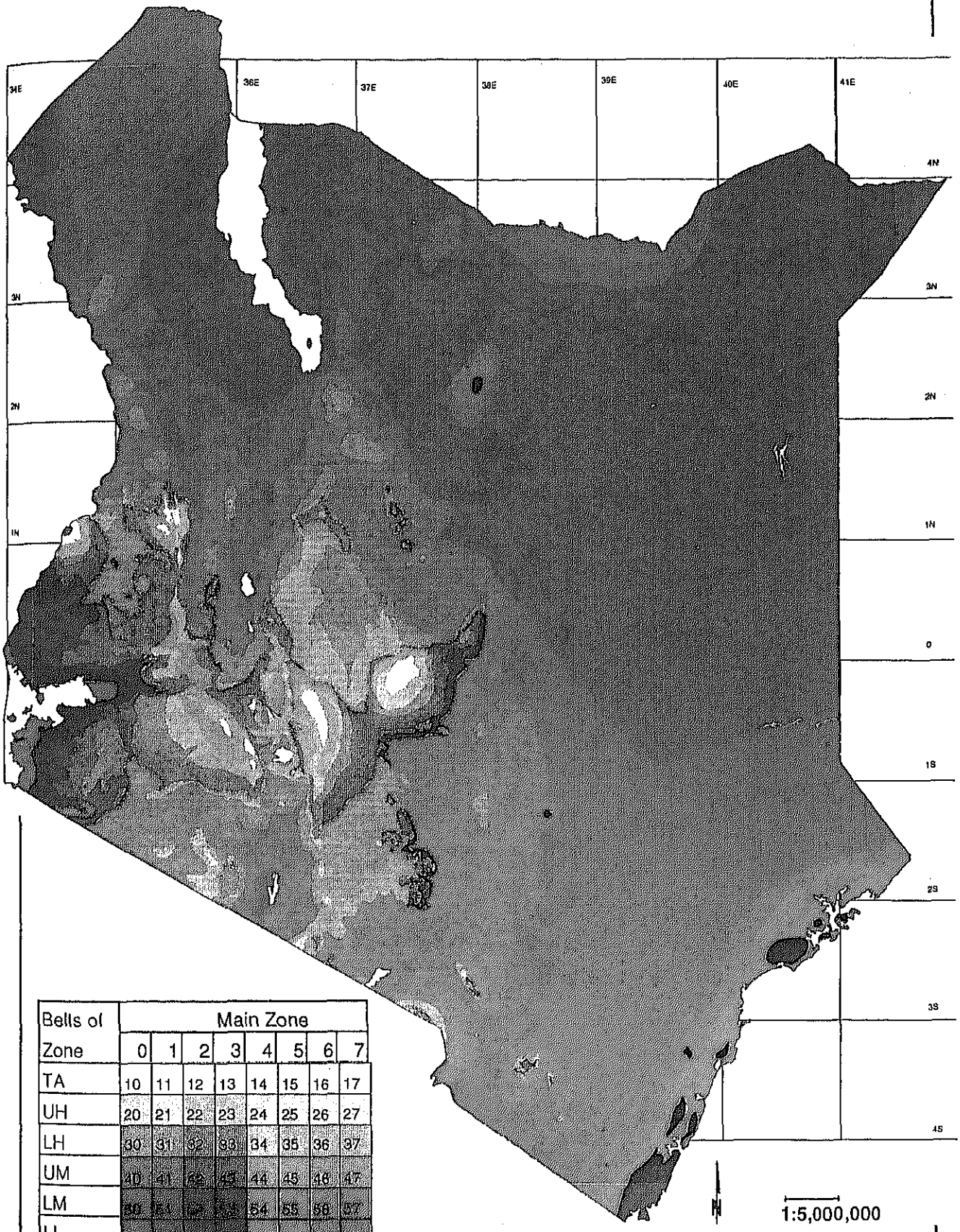
Fig. 4



Bells of	Main Zone							
Zone	0	1	2	3	4	5	6	7
TA	10	11	12	13	14	15	16	17
UH	20	21	22	23	24	25	26	27
LH	30	31	32	33	34	35	36	37
UM	40	41	42	43	44	45	46	47
LM	50	51	52	53	54	55	56	57
LL	60	61	62	63	64	65	66	67
CL	70	71	72	73	74	75	76	77

See Figure E1.3

Figure 4 Agro-ecological Zone Map

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Fig. 5

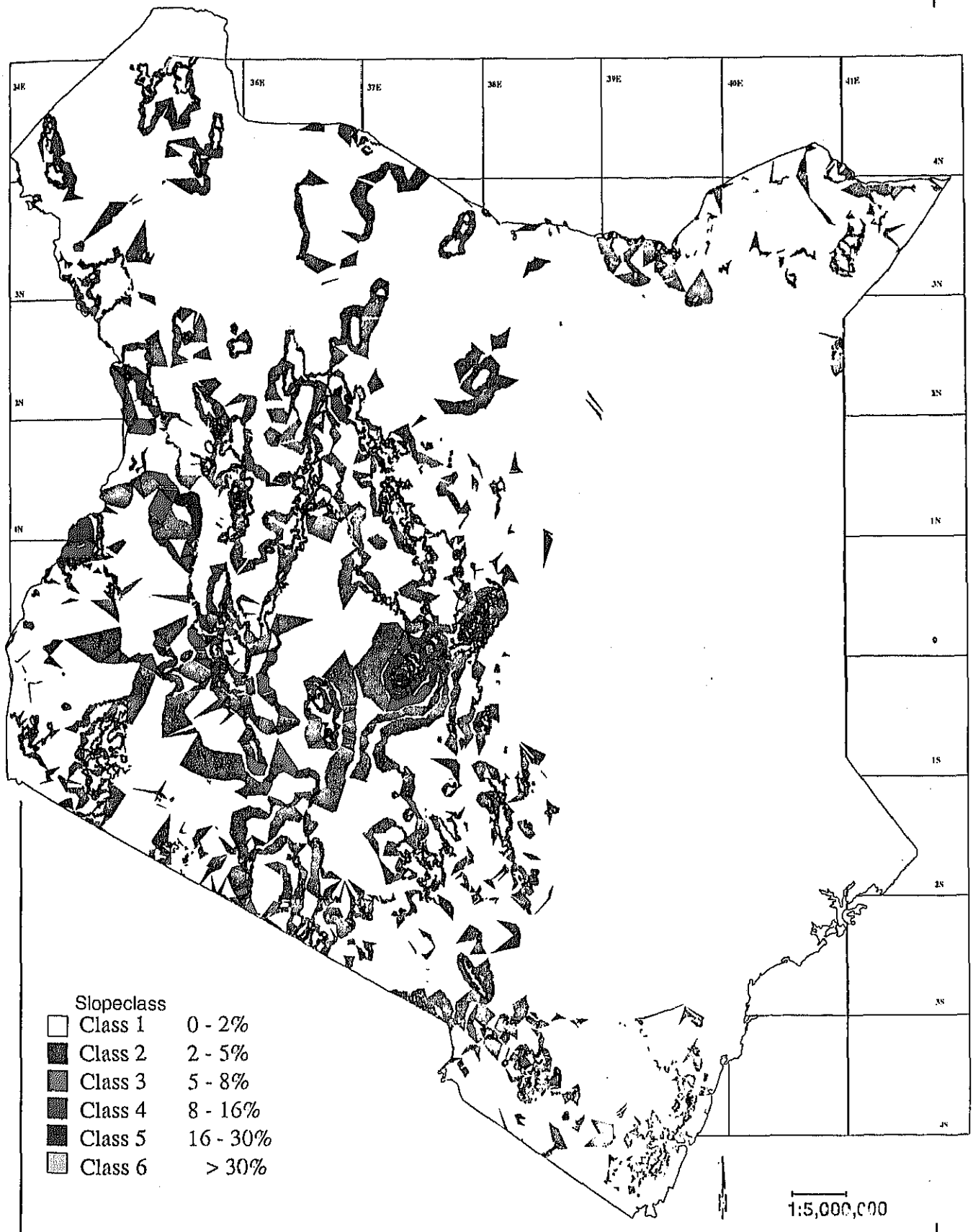

Figure 5 Slope Classification Map

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Fig. 6

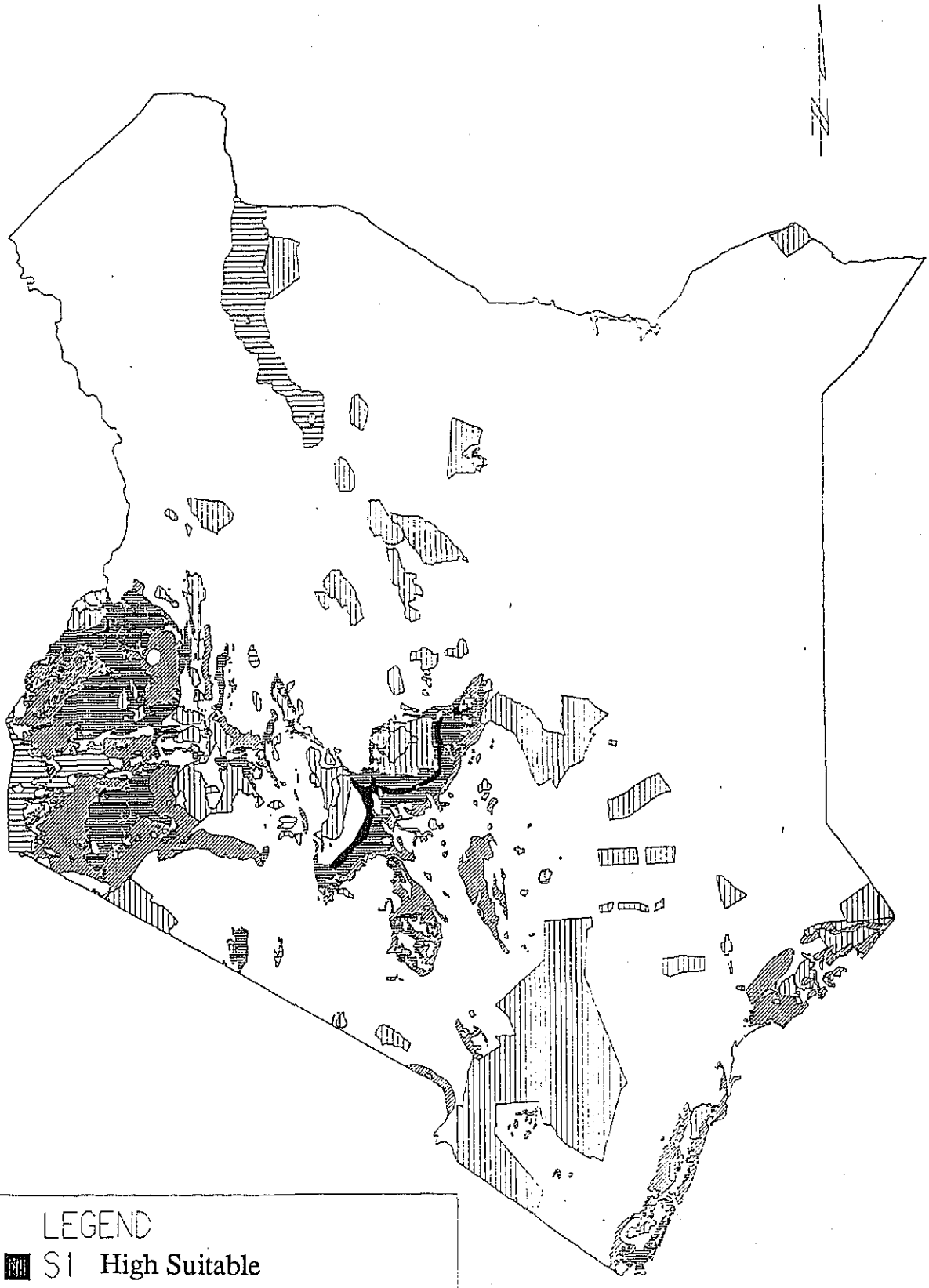

Figure 6 Land Suitability Map for Maize

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