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RECONNAISSANCE SOIL MAP OF THE LAKE BASIN DEVELOPMENT AUTHORITY AREA

Western Kenya

scale 1:250 000

LEGEND AND RATING TABLES

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Netherlands Soil Survey Institute, Wageningen
in cooperation with Kenya Soil Survey, Nairobi

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1 INTRODUCTION

In the framework of the Integrated Regional Master Plan of the Lake Basin Development Authority (LBDA) in Kenya, an integrated data base is being established of land use and land use determining factors such as climate, soils, hydrology, population density, infrastructure, etc. This data base will serve as a major tool for regional planning in the LBDA area. This area of approximately 40 000 km^2, consists of the catchment basin, in Kenya, of all rivers and streams draining into Lake Victoria. It is bordered in the north by Mount Elgon and the Cherangani hills, in the east by the Elgeyo and Mau escarpments, in the south by the Tanzanian border and in the west by Lake Victoria and Uganda.

For the purpose of supplying soil information in a standardized format to the data base, the Netherlands Soil Survey Institute (Stiboka), on the request of the LBDA, prepared the present "Reconnaissance Soil Map of the LBDA area, scale 1:250 000" consisting of two map sheets (north sheet and south sheet) with accompanying legend and rating tables (this booklet).
The LBDA soil map is partly a compilation of existing soil information, supplemented by field work in areas not previously surveyed. Soil maps with scales between 1:50 000 and 1:250 000 are available for about 50 to 60 percent of the area. They include the systematic reconnaissance soil maps of the Kenya Soil Survey (KSS; scale 1:100 000) as well as semi-detailed soil surveys and site evaluation reports, also mainly of the KSS. A list of main information sources used, is given in Chapter 6. A diagram showing the location of the main information sources is presented on the map sheets.
Field work was conducted during January and February, 1985 by two teams consisting of staff of KSS (Messrs. J.R. Rachilo and F.M. Shitakha) and of Stiboka (Messrs. W. Andriesse and B.J.A. van der Pouw). Logistic support (transport, equipment) was provided by KSS. Soil observations were carried out in augerholes and road cuts to characterize the soils and to confirm or adjust the adequacy of soil boundaries that were tentatively drawn on topographic base maps (Survey of Kenya; scale 1:50 000). These boundaries were based on a physiographic interpretation of the topographic maps, airphoto-interpretation (Survey of Kenya, 1967 b/w airphotos; scale 1:50 000) in pre-selected representative key areas, geologic maps (Mines and Geological Dept.; scale 1:125 000), the Exploratory Soil Map of Kenya (Sombroek et al., 1982; scale 1:1 000 000), the Vegetation Maps of Western Kenya (DOS, 1966; and 1969; scale 1:250 000) and satellite imagery (LANDSAT; 1:250 000).
It should be noted that, due to the limited time available, observation density in those areas not previously surveyed, is below the regular KSS standard for reconnaissance surveys. Map reliability is indicated in a diagram on the map sheets.

Stiboka is indebted to the Kenya Soil Survey for its cooperation in the field work and for providing relevant soil information as well as logistic support. Acknowledgment is also made of the assistance of the International Soil Reference and Information Centre (ISRIC), Wageningen which made available valuable soil information of the survey area.

2 LEGEND COMPOSITION

The legend of the Reconnaissance Soil Map of the Lake Basin Development Authority area has been set up according to the legend of the Exploratory Soil Map of Kenya (Sombroek et al., 1982). It is based on the physiographic soil survey methodology as developed by the Kenya Soil Survey. In this methodology landforms are distinguished at the highest level of categorization and geology at the second. Table 1 shows the sequence of the landforms as applied in the legend. They are arranged approximately in sequence from high to low. Geological subdivisions are listed, in alphabetical order, in Table 2.

In the codes of the map units, the first capital letter refers to the landform (e.g: H-Hills and minor scarps, F-Footslopes, etc.). Some landforms have been subdivided into sub-units and in these cases the capital letter is followed by a lower-key letter (e.g.: U-Uplands; Uu-Upper-level uplands, Ul-Lower-level uplands, etc.).

The second capital letter in the map unit code refers to geology (e.g.: B-Basic igneous rocks, G-Granites and granodiorites, etc.). If the symbol $^{+}$ is added to the symbol for geology, this indicates admixture of volcanic ashes (e.g.: UhI^{+}-Upper-middle level uplands on intermediate igneous rocks with volcanic ash admixture).

The third entry in the legend consists of the actual soil or soils as grouped in individual map units. In the legend, each map unit is described in terminology as used by the Kenya Soil Survey. It should be realized that at the present level of mapping, a map unit may comprise inclusions of minor associates. Wherever possible, the characteristics of these inclusions are included in the descriptions of the map units. In such a case, one of the following phrases is used:

"in places" ..... (e.g.: in places rocky), if the characteristic occurs over up to 30% of the area of the map unit

and:

"in many places" ..... (e.g.: in many places with a humic topsoil), if the characteristic occurs over 30-50% of the area of the map unit.

Soil map units comprising several soils of considerable extent are called associations or complexes. In a soil association, the various soils of the map unit occur in a recognizable geographic pattern in defined proportions. In a soil complex such pattern is absent.
The figure following the letters in the map unit code, refers to a specific soil map unit (e.g. FB6). Soil associations are identified with an A (e.g. UmGA or LIA1) and soil complexes are indicated by means of a C (e.g. HQC or VXC7). The areas occupied by the individual components of a soil association have been indicated (in parenthesis) in the descriptions, as percentages of the total area of the map unit. Also, their physiographic position within the map unit is described. Wherever possible this information is also given for soil complexes.

Table 1 Key to landforms (sequence as in legend)

code	landform
M	Mountains and major scarps
H	Hills and minor scarps
L	Plateaus and high-level structural plains
Lu	Plateau/upper-level upland transitions
R	Volcanic footridges
F	Footslopes
Y	Piedmont Plains
U	Uplands
Uu	Upper-level uplands
Uh	Upper middle-level uplands
Um	Lower middle-level uplands
Ul	Lower-level uplands
Up	Upland/high-level plain transitional lands
P	Plains
Pn	Non-dissected erosional plains
Pd	Dissected erosional plains
Pv	Volcanic plains
Pl	Lacustrine plains
A	Floodplains and river terraces
B	Bottomlands
V	Minor valleys
Z	Lake-side beach ridges

Table 2 Key to geological subdivisions (codes in alphabetical order)

code	geology
A	(alluvial) sediments from various sources*)
B	basic and ultra-basic igneous rocks (basalts, nepheline phonolites, etc.)
B^+	as in B, but with volcanic ash admixture
BP	as in B, but with influence of volcanic ash predominant
D	mudstones, claystones
F	gneisses rich in ferromagnesian minerals, hornblende gneisses
G	granites, granodiorites
G^+	as in G, but with volcanic ash admixture
GF	biotite-hornblende granites
GF^+	as in GF, but with volcanic ash admixture
GP	as in G, but with influence of volcanic ash predominant
I	intermediate igneous rocks (andesites, phonolites, syenites, etc.)
I^+	as in I, but with volcanic ash admixture
N	biotite gneisses
N^+	as in N, but with volcanic ash admixture
P	pyroclastic rocks
Q	quartzites
R	quartz-felspar gneisses
S	sandstones, grits, arkoses
U	undifferentiated Basement System rocks (predominantly gneisses)
V	undifferentiated or various igneous (volcanic) rocks
V^+	as in V, but with volcanic ash admixture
X	undifferentiated or various rocks
X^+	as in X, but with volcanic ash admixture
Y	acid igneous rocks (rhyolite, etc.)
Y^+	as in Y, but with volcanic ash admixture

* If the source of alluvial sediments or bottomland infills is known (e.g.: basalts), then the code for this rock is used. Otherwise, the code A applies.

The map unit descriptions may further contain some additional information on special topsoil or subsoil characteristics. The following phrases are used:

"with a humic topsoil", referring to a mollic A horizon or a eutric histic H horizon.

"with an acid humic topsoil", referring to an umbric A horizon or a dystric histic H horizon.

"with a thick topsoil", referring to a topsoil of 30 tot 60 cm thick.

"abruptly underlying" referring to "planic" textural changes, used for Planosols.

"with a deeper subsoil", referring to the subsoil below 80 cm.

On the map, slope classes have been indicated by capital letters below the map unit code. The following slope classes are distinguished:

A	0 - 2%	flat to very gently undulating
B	2 - 5%	gently undulating
C	5 - 8%	undulating
D	8 - 16%	rolling
E	16 - 30%	hilly
F	>30%	steep

Slope classes have not been indicated for the map units of the Mountains (M) and Hills (H) as these landforms are characterized by a steep and a hilly topography, respectively. On the map, mountains and hills have been indicated with screens.

3 SOIL CLASSIFICATION

The soils of the map units are classified according to the legend of the Soil Map of the World (FAO-Unesco, 1974). However, "Kenya concepts" (adaptations and additions by the KSS), as defined in the legend of the Exploratory Soil Map of Kenya (Sombroek et al., 1982) and by Siderius and Van der Pouw (1980) have been used, wherever applicable.
In the legend, the soil classification names are placed, in parenthesis, below the map unit descriptions. If a soil map unit is classified as one classification unit, one classification name only is given. If a map unit comprises one major unit and one or more minor unit(s) occupying less than 30% of the map unit area, than this is indicated as follows (example from unit FQ1): humic ACRISOLS, with luvic ARENOSOLS. If the map unit comprises two or more major classification units, than this is indicated as follows (example from unit RB4): chromo-luvic PHAEOZEMS and mollic NITISOLS. Also, a map unit may comprise one or more phases of a classification unit. If these occupy less than 30% of the map unit area, this is indicated as follows (example from unit YB2): chromic VERTISOLS, sodic and partly saline phase.

In deviation of the legend of the Exploratory Soil Map of Kenya, the term Ironstone soils for soils with a massive ironstone layer within 50 cm of the surface, is not used here. Such soils are presently mapped as petroferric phases of shallow Cambisols, Acrisols, Ferralsols, etc.

4 SOIL PHASES

Phases are subdivisions of soil units based on characteristics which are significant to the use or management of the land but are not diagnostic for the separation of the soil units themselves (FAO-Unesco, 1974). The phases recognized on the LBDA map are: stony, bouldery, rocky, lithic, paralithic, petrocalcic, pisocalcic, petroferric, pisoferric, saline, sodic and saline-sodic. They are defined as follows:

stony phase	- the presence of stones (diameter: 7.5 - 25 cm) in the surface layers makes the use of mechanized agricultural equipment impracticable (over 15% stones, by volume)
bouldery phase	- as for stony phase, but with boulders (diameter: >25 cm)
rocky phase	- the presence of rock outcrops makes the use of mechanized agricultural equipment impracticable (rock outcrops occupy over 10% of the area)
lithic phase	- continuous and hard rock occurs within 50 cm of the surface
paralithic phase	- as for lithic phase, but with softer, weathering rock
petrocalcic phase	- soils with a continuous cemented or indurated calcic horizon, starting within 100 cm of the surface. A calcic horizon is a horizon of accumulation of calcium carbonate, with a thickness of at least 15 cm, a $CaCO_3$ equivalent content of 15% or more and at least 5% greater than that of the C horizon
pisocalcic phase	- soils with a layer, consisting of 40% or more, by volume, of loose fragments of secondary calcium carbonate, usually concretions, with a thickness of at least 25 cm and starting within 100 cm of the surface
petroferric phase	- soils with a continuous layer of hardened plinthite (petroplinthite or ironstone), starting within 100 cm of the surface. Plinthite is an iron-rich, humus-poor mixture of clay with quartz and other diluents, which changes irreversibly to petroplinthite or ironstone on exposure to repeated wetting and drying
pisoferric phase	- soils with a layer, consisting of 40% or more, by volume, of oxidic concretions or of hardened plinthite (= ironstone, see definition above) with a thickness of at least 25 cm, and starting within 100 cm of the surface
saline phase	- electrical conductivity of the saturation extract (ECe) is higher than 4 mmhos/cm in some horizon within 80 cm of the surface
sodic phase	- exchangeable sodium percentage (ESP) is higher than 6% in some horizon within 80 cm of the surface
saline-sodic phase	- combined saline and sodic phases as defined above.

5 INTERPRETATION OF SELECTED SOIL CHARACTERISTICS AND QUALITIES

In the legend, the descriptions of the map units are followed by ratings, in tabular format, of 11 soil characteristics and qualities. These are:

Drainage	(Dra)
Effective soil depth	(Dep)
Inherent fertility	(Fer)
Salinity	(Sa)
Sodicity	(So)
Stoniness/Boulders	(SB)
Rockiness	(Ro)
Consistence	(Co)
Moisture storage capacity	(Msc)
Infiltration capacity	(In)
Excess surface water	(Ew)

The rating classes for these characteristics and qualities are partly derived from KSS survey methodology (Drainage, Depth, Stoniness, Boulders, Rockiness and Consistence), partly they are based on rating tables that are derived from "Proposals for Ratings of Land Qualities" by KSS (1977). The rating classes and their ranges are given below. The ratings as shown in the legend, following the map unit descriptions, refer to the main soil of the respective map units. Characteristics of inclusions have been weighed in these ratings only if they comprise over 30% of the map unit, i.e. if in the description the phrase "in many places" is used.

Soil drainage classes (Dra)

1	excessively and somewhat excessively drained
2	well drained
3	moderately well drained
4	imperfectly drained
5	poorly and very poorly drained

Effective soil depth (Dep)

Depth to hard or very concretionary, root impeding layers: rock, weathering rock, petroplinthite, petrocalcic, pisoferric and pisocalcic material (as in pisoferric and pisocalcic phases), including "planic" (abrupt) textural changes (in Planosols only)

1	extremely deep	> 180 cm
2	very deep	120 - 180 cm
3	deep	80 - 120 cm
4	moderately deep	50 - 80 cm
5	shallow	25 - 50 cm
6	very shallow	0 - 25 cm

Inherent fertility (Fer)

The rating components for "Chemical soil fertility" according to the KSS are: CEC, available nutrients and mineral reserve. As, for the present survey, insufficient analytical data are available for rating according to the KSS system, a simplified rating system is applied here, based on soil classification criteria mainly. It should be noted that the ratings arrived at, refer to broad inherent fertility classes only. They should not be used for the assessment of fertilizer requirements. The latter can only be carried out on basis of field trials. The inherent fertility ratings refer to topsoil characteristics (0-25 cm).

1 high : three of the following criteria are met:
- CEC >24 me/100 gr clay and fine textural class*
- BS >50%
- OM >1.5%
- rich parent rock**

2 moderate: two of the following criteria are met:
- CEC >16 me/100 gr clay and either: medium or fine textural class* or : OM >1.5%
- BS >50%
- moderately rich or rich parent rock**

3 low : two of the following criteria are met:
- CEC <16 me/100 gr clay and medium or fine textural class*
- BS <50%
- OM <1.5%

4 very low: all of the following criteria are met:
- CEC <16 me/100 gr clay and coarse textural class*
- BS <50%
- OM <1.5%
- poor parent rock**

Note: downgrade by 2 classes for Solonetz and Solonchakes and for saline and/or sodic phases

* Textural classes according to FAO-Unesco (1974).

** Rich parent rocks : B, B^+, BP, F, GF^+, I^+, N^+, P

Moderately rich parent rocks: (A), D, G^+, GF, GP, I, N, R, S, (U), (V), (V^+), (X), (X^+), Y^+

Poor parent rocks : G, Q, Y

Salinity (Sa)

0 non saline : ECe <4 mmhos/cm throughout profile
1 slightly saline: ECe 4-8 mmhos/cm within 80 cm] saline phase
2 saline : ECe >8 mmhos/cm within 80 cm]

Sodicity (So)

0	non sodic	: ESP <6% throughout profile	
1	slightly sodic	: ESP 6-15% within 80 cm	] sodic phase
2	sodic	: ESP >15% within 80 cm	]

Stoniness, Boulders (SB)

Loose mineral fragments; stones: 7.5 - 25 cm diam.; boulders: more than 25 cm diam.

0	non stony	non bouldery	0 - 2% by volume	
1	slightly stony	slightly bouldery	2 - 15%	
2	stony	bouldery	15 - 50%	] stony/bouldery phase
3	very stony	very bouldery	>50%	]

Rockiness (Ro)

Outcrops of solid rock at soil surface

0	non rocky	: 0 - 2% of area consists of bedrock	
1	fairly rocky	: 2 - 10%	
2	rocky	: 10 - 25%	] rocky phase
3	very rocky	: 25 - 50%	]
4	extremely rocky	: 50 - 90%	]

Consistence (Co)

Moist consistence of the subsoil; rated according to FAO (1977)

1 half ripe
2 loose
3 very friable
4 friable
5 firm
6 very firm
- not rated (shallow and very shallow soils)

Moisture storage capacity (Msc)

Available moisture; estimated over effective soil depth

1	very high	>160 mm
2	high	120 - 160 mm
3	moderate	80 - 120 mm
4	low	<80 mm

Note: downgrade by one class for strongly stratified soils (Fluvisols)
downgrade by two classes for Solonetz and for sodic phases

Infiltration capacity (In)

Maximum amount of water infiltrating into the dry soil, per unit of time and per unit of area; estimated on basis of soil texture, soil depth, stoniness, boulders and cracking properties; ranges according to Israelsen and Hansen (1962), adapted.

1 high >2.5 cm/hr
2 medium 0.5 - 2.5 cm/hr
3 low <0.5 cm/hr

Note: downgrade by one class for Planosols, Solonetz and for sodic phases

Excess surface water (Ew)

0 none
1 seasonal flooding
(flooding refers to superficial passage of water originating from areas outside the terrain concerned; it is usually accompanied by scouring and sedimentation)
2 seasonal ponding
(ponding refers to the accumulation of water in and on the terrain concerned due to its relatively low and flat position)
3 permanently waterlogged

6 REFERENCES AND MAIN INFORMATION SOURCES

6.1 References

DOS (1966 and 1969). Vegetation-Land Use Survey of South-Western Kenya. Vegetation maps: Sheet 1 and 3, scale 1:250 000. DOS/EAAFRO. London, Nairobi.

FAO (1977). Guidelines for soil profile description (second edition). FAO, Rome. 66 p.

FAO-Unesco (1974). Soil map of the world, 1:5 000 000. Vol. I, Legend. Unesco, Paris. 59 p.

Israelsen, O.W. & V.E. Hansen (1962). Irrigation principles and practices. Wiley & Sons, New York. 447 p.

Jaetzhold, R. & H. Schmidt (1982). Farm management handbook of Kenya; Natural conditions and farm management information. Vol. II/A, West Kenya. Min. of Agric./GTZ, Nairobi.

KSS (1977). Proposals for rating of land qualities; 2nd approximation. Internal Comm. No. 7 (mimeograph). Kenya Soil Survey, Nairobi. 15 p.

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Siderius, W. & B.J.A. van der Pouw (1980). The application of the Soil map of the World legend for soil classification in Kenya. Misc. Soil Paper M 15. KSS, Nairobi. 21 p.

Sombroek, W.G., H.M.A. Braun & B.J.A. van der Pouw (1982). Exploratory soil map and agro-climatic-zone map of Kenya, scale 1:1 000 000. Expl. Soil Survey Rep. No. E1. KSS, Nairobi, 56 p.

6.2 Main information sources

(a) Reconnaissance soil surveys

KSS code	Reference	Map scale
R2	H.F. Gelens, H.C. Kinyanjui & R.F. van de Weg (ed.) (1976). Soils of the Kapenguria area (quarter degree sheet 75)	1:100 000
R4	W.G. Wielemaker & W.H. Boxem (1982). Soils of the Kisii area (quarter degree sheet 130)	1:100 000
R8	D.O. Michieka & J.R. Rachilo (in prep.). Soils of the Busia area (quarter degree sheet 101)	1:100 000
R10	C.K.K. Gachene et al. (in prep.). Soils of the Bondo area (quarter degree sheet 115)	1:100 000
R13	W.N. Wamicha et al. (in prep.). Soils of the Transmara area (quarter degree sheet 144).	1:100 000
-	A.P. Oosterom (1984, first draft). Soils of the Homa Bay-Migori area; quarter degree sheets 115 (3,4), 129 and 143 (1,2). Agric. Univ. Wageningen.	1:100 000

(b) Semi-detailed soil surveys

KSS code	Reference	Map scale
S1	J. Thorp et al. (1960). Soil survey of the Songhor area. Govt. Printer, Nairobi	1: 50 000

KSS code	Reference	Map scale
S2	F.T. Miller et al. (1961). Soil survey of the East Konyango area. Govt. Printer, Nairobi	1: 50 000
S4	J.M. Kibe, O.O. Oswago & K.L. Sogomo (1981). Semi-detailed soil survey of a part of Muhoroni area	1: 25 000
S7	J.R. Rachilo, A.M. Ali & G.O. Mochiemo (1984). Semi-detailed soil survey of part of the Nyanza sugar belt rehabilitation area	1: 50 000
S12	J.R. Rachilo & W.W. Aore (in prep.). Semi-detailed soil survey of the area north of Nyando escarpment	1: 50 000
-	J.R. Rachilo (1984). Semi-detailed soil map of the Nyanza sugar belt - Kano plains area (KSS internal doc.)	1: 50 000
Sb	J. Makin & N.N. Nyandat (1965). A reconnaissance investigation of the agricultural potential of the Lambwe Valley. Govt. Report	1: 50 000
Sc	J. Makin (1966). The soils of Western Samia. Govt. Report	1: 50 000
Se	J. Makin & V. D'Costa (1966). The soils of the country around Mumias. Govt. Report	1: 12 500
Sg	G.A. Woodruff (1967). Reconnaissance soil map of Sotik area	1: 30 000
Si	V. D'Costa & S.H. Ominde (1973). Soil and land use survey of the Kano plain, Nyanza Province. Occ. Memoir No. 2, Dept. of Geogr., Univ. of Nairobi	1: 50 000

(c) Site evaluations

KSS code	Reference	Map scale
P4	H.F. Gelens & G. Ngari (1973). Report of a site evaluation of the proposed location of Alupe sub-station	1: 12 500
P11	H.M.H. Braun & H.W. Okwaro (1974). Drainage problems of soils in the Bomet area	1:100 000
P18	J.P. Mbuvi (1975). A preliminary evaluation on the suitability of the area of Busia District for sugarcane development	1:100 000
P19	J.P. Mbuvi & R.F. van de Weg (1974). A preliminary evaluation of the soils around Nyangoma Mission (Bondo Division)	1: 50 000
P27	F.N. Muchena (1976). Soil recources of Maseno Division (Kisumu District), a preliminary investigation	1:100 000
P28	W. Siderius & E.B. Njeru (1976). Soils of Trans-Nzoia District	1:100 000
P33	W. Siderius (1977). Soil conditions in the Kimalewa area (Bungoma District)	1: 25 000
P46	W.N. Wamicha et al. (in prep.). Soil of the Transmara division, a preliminary investigation	1:100 000
P74	V.W.P. van Engelen (1984). Soil conditions of the Lelmolk Settlement Scheme	1: 10 000
P75	F.N. Muchena & J.M. Kibe (1984). The soils of the Sangurur-Kapsowar-Chesoi area	1: 50 000

(d) Geological maps

Mines and Geological Dept., Min. of Environment and Natural Resources. 1:125 000

Rep. no.	Area	DOS quarter degree sheet
16	Sotik	131
18	Kisii	130

Rep. no.	Area	DOS quarter degree sheet
21	Kisumu	116
26	Broderick Falls	88
28	Kakamega	102
35	Kitale-Cherangani	75
45	Gwasi	129
50	Kericho	117
63	Kapsabet	103
64	Eldoret	89
66	Mara river/Sianna	145/158
83	Eldama Ravine/Kabarnet	104
86	Molo	118

7 LEGEND AND RATING TABLES

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
M	MOUNTAINS AND MAJOR SCARPS (steep; slopes predominantly over 30 %; relief intensity more than 300 m (Mountains) or more than 100 m (Major Scarps); altitudes up to 4250 m)											
MB	Soils developed on basic igneous rocks (basalts, nepheline phonolites; older basic tuffs included)											
MB1	well drained, very shallow to moderately deep, dark reddish brown, friable and slightly smeary, gravelly clay; in places with a humic topsoil, deep and/or rocky (ando-eutric CAMBISOLS, with ando-haplic PHAEOZEMS, predominantly lithic phases, and with LITHOSOLS, and Rock Outcrops)	2	4-6	1	0	0	0	0	4	4	2	0
MB2	well drained, very shallow to moderately deep, dark reddish brown, friable, stony, gravelly clay; in places rocky (LITHOSOLS and eutric CAMBISOLS, lithic and stony phase; with Rock Outcrops)	2	4-6	1	0	0	2	0	4	4	2	0
MB3	well drained, shallow to moderately deep, dark reddish brown, friable, gravelly clay loam to clay, with an acid humic topsoil; in places stony and rocky, or deep (humic CAMBISOLS, partly lithic, stony phase; phase; with Rock Outcrops)	2	4-5	2	0	0	0	0	2	4	2	0
MB4	somewhat excessively drained, shallow, dark reddish brown to dark brown, very stony, clay loam to clay, with a humic or acid humic topsoil; in places moderately deep to deep (haplic PHAEOZEMS and RANKERS, lithic and stony phases)	1	5	2	0	0	3	0	-	4	2	0
MBC	complex of: excessively to moderately well drained, very shallow to moderately deep, very dark brown to dark reddish brown, friable to firm, stony and rocky, gravelly clay loam to clay; on steep slopes (LITHOSOLS, chromic CAMBISOLS and eutric REGOSOLS, stony, rocky and partly lithic phases)	1-3	4-6	3	0	0	2	2	4	3-4	2	0
	and: moderately well to imperfectly drained, moderately deep to deep, very dark greyish brown to black, firm, slightly calcareous, gravelly, cracking clay; on interfluves and lower slopes (vertic CAMBISOLS)	3-4	3-4	1	0	0	0	0	5	2-3	2	0
MB+	Soils developed on basic igneous rocks, with volcanic ash admixture											
MB+1	well drained, shallow to moderately deep, dark reddish brown, friable and slightly smeary, stony and rocky, clay loam; in many places with a humic topsoil (humic and ando-eutric CAMBISOLS, stony, rocky and partly lithic phases)	2	4-5	1-2	0	0	2	2	4	4	2	0
MF	Soils developed on hornblende gneisses and other ferromagnesium-rich gneisses											
MF1	well drained, deep, dark red to yellowish red, friable, sandy clay loam to clay loam; in places stony and rocky (chromic CAMBISOLS, partly stony phase; with Rock Outcrops)	2	3	1	0	0	0	0	4	2	1	0
MG	Soils developed on granites and granodiorites											
MGC	complex of: excessively to well drained, shallow, dark red to brown, sandy clay loam to clay; in many places stony, bouldery and rocky; in places with an acid humic topsoil (dystric REGOSOLS, with ferralic and humic CAMBISOLS, lithic, rocky and stony phases, and with LITHOSOLS)	1	5	3	0	0	2	2	-	4	2	0
MI	Soils developed on intermediate igneous rocks (andesites, phonolites, syenites, etc.)											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
MI1	somewhat excessively drained, very shallow to shallow, yellowish red to dark reddish brown, stony and rocky, gravelly clay loam to sandy clay; in places moderately deep (LITHOSOLS, stony phase, with dystric REGOSOLS and CAMBISOLS, lithic, rocky and stony phases)	1	5-6	3	0	0	2	2	-	4	2	0
MP	Soils developed on pyroclastic rocks, predominantly Tertiary explosion breccias											
MPC	complex of: somewhat excessively to well drained, very shallow to shallow, reddish brown, stony and very rocky, very gravelly sandy clay loam (eutric REGOSOLS, lithic, stony and rocky phase and LITHOSOLS, stony phase)	1-2	5-6	2	0	0	2	3	-	4	1	0
MQ	Soils developed on quartzites											
MQC	complex of: somewhat excessively drained, shallow, dark brown, gravelly sandy loam to clay loam; in many places with an acid humic topsoil; in places very shallow and rocky (RANKERS, with LITHOSOLS and Rock Outcrops)	1	5	3	0	0	0	0	-	4	2	0
MR	Soils developed on quartz-felspar gneisses											
MR1	well drained, moderately deep to deep, reddish brown to brown, friable, sandy clay loam to clay loam, with a thick acid humic topsoil; in places stony and rocky (humic CAMBISOLS, partly rocky and stony phase; with Rock Outcrops)	2	3-4	2	0	0	0	0	4	2-3	1	0
MU	Soils developed on undifferentiated Basement System rocks (predominantly gneisses)											
MU1	well drained, moderately deep to deep, dark reddish brown to brown, friable sandy loam to clay, with a humic topsoil (haplic PHAEOZEMS)	2	3-4	2	0	0	0	0	4	2-3	1	0
MU2	well drained, very shallow to shallow, brown to reddish brown, stony and rocky, gravelly to very gravelly sandy loam to sandy clay loam (LITHOSOLS and dystric REGOSOLS, rocky and stony phases)	2	5-6	4	0	0	2	2	-	4	2	0
MV	Soils developed on various igneous (volcanic) rocks											
MV1	imperfectly drained, shallow to moderately deep, greyish brown, friable loam to clay loam, with an acid humic to peaty topsoil; in places very shallow or rocky (dystric HISTOSOLS, predominantly lithic phase; with LITHOSOLS and Rock Outcrops)	4	4-5	2	0	0	0	0	4	3-4	1	2
MV2	well drained, shallow to moderately deep, dark reddish brown, friable, stony clay loam, with an acid humic topsoil; in places very shallow and rocky (humic CAMBISOLS, stony and partly lithic phase; with LITHOSOLS and Rock Outcrops)	2	4-5	2	0	0	2	0	4	3-4	1	0
MX	Soils developed on various rocks											
MX1	well drained, moderately deep to deep, dark reddish brown to dark brown, friable to firm, very stony and bouldery, gravelly clay loam to clay (eutric REGOSOLS and eutric and chromic CAMBISOLS, stony and bouldery phases)	2	3-4	3	0	0	3	0	4	3	1	0
H	HILLS AND MINOR SCARPS (hilly to steep; slopes predominantly over 16%; relief intensity up to 300 m (Hills) or up to 100 m (Minor Scarps); altitudes up to 2850 m)											
HB	Soils developed on basic igneous rocks (basalts, nepheline phonolites; older basic tuffs included)											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
HB1	somewhat excessively to well drained, very shallow to moderately deep, dark reddish brown, friable, gravelly clay; in many places with an acid humic topsoil; in places stony and rocky (dystric and humic CAMBISOLS, partly lithic and stony phases, and LITHOSOLS; with Rock Outcrops)	1-2	4-6	2	0	0	0	0	4	3-4	1	0
HB2	somewhat excessively drained, very shallow to shallow, yellowish red to dark reddish brown, stony and extremely rocky, gravelly sandy clay to clay; in places with a humic topsoil (LITHOSOLS, stony and rocky phase and eutric REGOSOLS and CAMBISOLS, with haplic PHAEOZEMS, lithic, stony and rocky phases)	1-2	5-6	2	0	0	2	4	-	4	2	0
HB3	moderately well drained, deep, dark brown, firm, cracking clay, with a humic topsoil (verto-luvic PHAEOZEMS)	3	3	1	0	0	0	0	5	2	1	0
HBC	complex of: excessively to moderately well drained, very shallow to moderately deep, dark reddish brown to very dark brown, friable to firm, stony and rocky, gravelly clay loam; on steep slopes (LITHOSOLS, chromic CAMBISOLS and eutric REGOSOLS, stony, rocky and partly lithic phases)	1-3	4-6	2	0	0	2	2	4	3-4	2	0
	and: moderately well to imperfectly drained, moderately deep to deep, very dark greyish brown to black, firm, slightly calcareous, gravelly, cracking clay; on interfluves and lower slopes (vertic CAMBISOLS)	3-4	3-4	1	0	0	0	0	5	2-3	2	0
HB^{+}	Soils developed on basic igneous rocks (basalts, nepheline phonolites, etc.) with volcanic ash admixture											
HB^{+}1	somewhat excessively to well drained, shallow to moderately deep, brown to dark reddish brown, friable and slightly smeary clay loam to clay; in places stony and rocky (ando-eutric CAMBISOLS, partly lithic and stony phase; with Rock Outcrops)	1-2	4-5	1	0	0	0	0	4	3-4	1	0
HF	Soils developed on hornblende gneisses and other ferromagnesium-rich gneisses											
HFC	complex of : somewhat excessively drained, shallow to moderately deep, dark reddish brown, friable sandy clay to clay; in places stony and rocky (chromic CAMBISOLS, with eutric REGOSOLS, partly lithic and stony phases; with Rock Outcrops)	1	4-5	1	0	0	0	0	4	3-4	1	0
HG	Soils developed on granites and granodiorites											
HGC	complex of: somewhat excessively drained, shallow, stony and rocky soils of varying colour, consistence and texture (dystric REGOSOLS and RANKERS, with ferralic and humic CAMBISOLS, lithic, rocky and stony phases, LITHOSOLS and Rock Outcrops)	1	5	3-4	0	0	2	2	-	4	2	0
HI	Soils developed on intermediate igneous rocks (andesites, phonolites, syenites, etc.)											
HI1	somewhat excessively drained, very shallow to shallow, yellowish red to dark reddish brown,stony and rocky, gravelly clay loam to sandy clay; in places moderately deep (LITHOSOLS, stony phase, with dystric REGOSOLS and CAMBISOLS, lithic, stony and rocky phases)	1	5-6	2	0	0	2	2	-	4	2	0
HI2	well drained, shallow to deep, dark reddish brown, friable, bouldery clay loam to clay (eutric CAMBISOLS, lithic and bouldery phase and chromic LUVISOLS, bouldery phase)	2	3-5	2	0	0	2	0	4	2-4	1	0
HI3	somewhat excessively drained, shallow, reddish brown, rocky, sandy clay loam; in many places with a humic topsoil; in places very shallow (haplic PHAEOZEMS with eutric CAMBISOLS, lithic and rocky phases, with LITHOSOLS and Rock Outcrops)	1	5	2	0	0	0	2	-	4	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
HIC	complex of: well drained, shallow to deep, dark red to strong brown, friable, gravelly sandy clay to clay; over petroplinthite or rock; in many places very shallow, stony and rocky (ferralo-chromic CAMBISOLS and orthic and rhodic FERRALSOLS, partly lithic, stony and rocky phases, with LITHOSOLS)	2	3-5	3	0	0	2	2	4	2-4	1	0
HN	Soils developed on biotite gneisses											
HN1	well drained, moderately deep to deep, yellowish red, friable clay, with an acid humic topsoil; over pisoferric material or rock (ferralo-humic ACRISOLS, partly pisoferric phase)	2	3-4	2	0	0	0	0	4	2-3	1	0
HNC	complex of: excessively to well drained, shallow to moderately deep, dark red to reddish brown, friable clay loam to clay; in places rocky (rhodic FERRALSOLS, with ferralo-chromic ACRISOLS and CAMBISOLS, partly lithic and rocky phases)	1-2	4-5	3	0	0	0	0	4	3-4	1	0
HP	Soils developed on pyroclastic rocks of Recent volcanoes											
HPC	complex of: well drained, deep to very deep, dark brown to dark greyish brown, friable and smeary sandy clay loam, with a thick humic topsoil (mollic ANDOSOLS)	2	2-3	1	0	0	0	0	4	1-2	1	0
	and: somewhat excessively drained, shallow to moderately deep, dark brown to brown, friable and slightly smeary, stony and rocky clay loam (ando-eutric CAMBISOLS, stony and rocky, partly lithic phase)	1	4-5	1	0	0	2	2	4	3-4	1	0
HQ	Soils developed on quartzites											
HQC	complex of: somewhat excessively drained, shallow, dark brown, gravelly sandy loam to clay loam; in many places with an acid humic topsoil; in places very shallow and rocky (RANKERS; with LITHOSOLS and Rock Outcrops)	1	5	3	0	0	0	0	-	4	2	0
HR	Soils developed on quartz-felspar gneisses											
HRC	complex of: excessively to well drained, shallow, dark reddish brown, sandy clay loam to clay; in many places stony, bouldery and rocky; in places with an acid humic topsoil (dystric REGOSOLS with humic CAMBISOLS, lithic, stony, bouldery and rocky phases, and with LITHOSOLS and Rock Outcrops)	1-2	5	3	0	0	2	2	-	4	1	0
HU	Soils developed on undifferentiated Basement System rocks (predominantly gneisses)											
HU1	well drained, moderately deep to deep, dark reddish brown, friable sandy clay loam to clay, with an acid humic topsoil (humic CAMBISOLS)	1	3-4	2	0	0	0	0	4	2-3	1	0
HU2	well drained, deep, brown to dark reddish brown, friable clay loam to clay, with a thick humic topsoil; in places moderately deep or shallow and rocky (luvic PHAEOZEMS, partly lithic phase; with Rock Outcrops)	2	3	2	0	0	0	0	4	2	1	0
HUA	association of: well drained, very shallow, brown to dark brown, stony, sandy loam; on ridges (50%) (dystric REGOSOLS, stony phase)	2	6	3	0	0	2	0	-	4	2	0
	and: well drained, deep, brown to reddish brown, friable to firm (compact) sandy clay, with an acid humic topsoil of increasing thickness downslope (50%) (humic ACRISOLS)	2	3	2	0	0	0	0	4	2	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
HUC1	complex of: excessively to well drained, shallow, dark red to brown, sandy clay loam to clay; in many places stony, bouldery and rocky; in places with an acid humic topsoil and/or moderately deep to deep (dystric REGOSOLS, with humic CAMBISOLS, lithic, bouldery and rocky phases, with LITHOSOLS and Rock Outcrops)	1-2	5	3	0	0	2	2	-	4	2	0
HUC2	complex of: somewhat excessively drained, shallow, reddish brown to yellowish brown, stony and rocky, gravelly sandy clay loam to sandy clay; in places very shallow to moderately deep (eutric REGOSOLS and calcic and eutric CAMBISOLS, lithic, stony and rocky phases, with LITHOSOLS)	1	5	3	0	0	2	2	-	4	2	0
HX	Soils developed on various rocks											
HX1	well drained, shallow, reddish brown, stony and rocky, sandy clay to clay (chromic CAMBISOLS and eutric REGOSOLS, lithic, stony and rocky phases and LITHOSOLS)	2	5	2	0	0	2	2	-	4	1	0
HX2	excessively drained, very shallow to shallow, yellowish red to dark brown, stony and rocky, gravelly sandy loam to clay (LITHOSOLS and RANKERS, stony and rocky phases)	1	5-6	3	0	0	2	2	-	4	2	0
HX3	well drained, moderately deep to deep, dark reddish brown to dark brown, friable to firm, stony and bouldery, gravelly clay loam to clay (eutric and chromic CAMBISOLS and eutric REGOSOLS, stony and bouldery phases)	2	3-4	2	0	0	2	0	4	3-4	1	0
HXC	complex of: excessively to well drained, shallow, dark reddish brown to dark greyish brown, soils of varying stoniness, rockiness and texture (mainly gravelly sandy loam to gravelly clay loam); in many places with a humic topsoil; in places calcareous or overlying pisocalcic material; over Tertiary carbonatites (Ruri Hills) (calcaric and haplic PHAEOZEMS, calcaric and eutric REGOSOLS, calcic CAMBISOLS, lithic, stony and rocky phases, and LITHOSOLS)	1-2	5	2	0	0	2	2	-	4	1	0
HY	Soils developed on acid igneous rocks (rhyolites, etc.)											
HY1	somewhat excessively drained, very shallow to shallow, dark reddish brown, stony, very gravelly sandy clay (LITHOSOLS and haplic REGOSOLS, lithic and stony phase)	1	5-6	3	0	0	2	0	-	4	2	0
HY2	somewhat excessively drained, shallow to moderately deep, brown to reddish brown, friable, rocky sandy clay loam; in many places with a humic topsoil; in places very shallow (eutric REGOSOLS and haplic PHAEOZEMS, rocky and partly lithic phases; with LITHOSOLS)	1	4-5	3	0	0	0	2	4	3-4	1	0
HY^{+}	Soils developed on acid igneous rocks (rhyolites, etc.), with volcanic ash admixture											
HY^{+}1	somewhat excessively drained, very shallow to shallow, dark reddish brown, gravelly clay, with an acid humic topsoil (RANKERS and LITHOSOLS)	1	5	3	0	0	0	0	-	4	1	0
L	PLATEAUX (very gently undulating to undulating; slopes less than 8%; altitudes between 1200 and 1600 m - Maseno/Kisumu/Muhoroni/Sondu - and between 2000 and 2500 m - Uasin Gishu and Siria Plateaux)											
LB	Soils developed on basic igneous rocks (nepheline phonolites); on Siria Plateau											
LB1	well drained, very deep, dark red to reddish brown, friable to firm clay loam to clay, with an acid humic topsoil; in places shallow or moderately deep over pisoferric material or rock (humic ACRISOLS, partly pisoferric and lithic phase)	2	2	2	0	0	0	0	4	1	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
LBA	association of: well drained, moderately deep to deep, dark brown to dark reddish brown, friable, gravelly clay loam to clay; over pisoferric material; on relatively high parts (30-40%) (dystric CAMBISOLS and orthic ACRISOLS, partly pisoferric phase) and: imperfectly drained, deep to very deep, very dark grey to black, mottled, firm cracking clay, abruptly underlying a topsoil of friable clay loam; in places with a topsoil of friable humic clay loam; in slight depressions (60-70%) (verto-orthic GREYZEMS, with verto-eutric PLANOSOLS)	2	3-4	3	0	0	0	0	4	2-3	1	0
		4	5	2	0	0	0	0	5	4	3	2
LBC	complex of: somewhat excessively to well drained, very shallow to shallow, dark reddish brown, stony and rocky, sandy clay loam; in many places with an acid humic topsoil (LITHOSOLS and RANKERS, stony and rocky phases)	1-2	5-6	2	0	0	2	2	-	4	2	0
LGF+	Soils developed on biotite-hornblende granites, with volcanic ash admixture; on Siria Plateau											
LGF+1	imperfectly drained, deep to very deep, very dark greyish brown to black, firm, cracking clay, with a topsoil of friable, humic sandy clay loam to silty clay loam; in places moderately deep over petroplinthite (verto-orthic GREYZEMS and verto-luvic PHAEOZEMS, partly petroferric phases)	4	2-3	2	0	0	0	0	5	3	2	0
LI	Soils developed on intermediate igneous rocks (phonolites, syenites, trachytes, etc.)											
LI1	well drained, moderately deep to deep, yellowish red, friable clay; over petroplinthite; in places shallow; on Uasin Gishu plateau and on plateau near Maseno (orthic FERRALSOLS, petroferric phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
LI2	well drained, very shallow to moderately deep, dark red to dark reddish brown, friable clay; over petroplinthite or rock; in places rocky; on Uasin Gishu plateau (ferralic CAMBISOLS and rhodic FERRALSOLS, petroferric and lithic phases, with LITHOSOLS and Rock Outcrops)	2	4-6	3	0	0	0	0	4	3-4	2	0
LI3	well drained, very deep, dark reddish brown to dark red, friable clay; on low plateaux near Maseno and Kisumu (nito-rhodic FERRALSOLS)	2	2	3	0	0	0	0	4	1	1	0
LI4	well drained, moderately deep to deep, dark red, friable clay; over petroplinthite; in places shallow; on plateau near Sondu (rhodic FERRALSOLS, petroferric phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
LI5	well to moderately well drained, shallow, dark reddish brown to brown, clay loam to clay; over petroplinthite or rock; on plateau near Sondu (dystric REGOSOLS and ferralic CAMBISOLS, lithic and petroferric phases)	2-3	5	3	0	0	0	0	-	4	2	0
LI6	imperfectly drained, deep to very deep, very dark brown, very firm clay, abruptly underlying a topsoil of friable clay loam; on plateau near Sondu (eutric PLANOSOLS)	4	5	3	0	0	0	0	6	4	3	2
LI7	well drained, shallow, dark reddish brown to brown, sandy clay loam to gravelly clay; over petroplinthite or rock; in places moderately deep; on low plateaux near Kisumu and Muhoroni (ferralic and dystric CAMBISOLS, lithic and petroferric phases)	2	5	3	0	0	0	0	-	4	2	0
LIA1	association (on Uasin Gishu plateau) of: well drained, moderately deep to deep, dark red, very friable clay; over petroplinthite; on relatively higher parts (60%) (rhodic FERRALSOLS, partly petroferric phase)	2	3-4	3	0	0	0	0	3	2-3	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	and: well to imperfectly drained, shallow to moderately deep, dark red to brown, friable clay; over petroplinthite or rock; in many places mottled, in places very shallow and/or rocky; near depressions and valley sides (20%) (ferralic and gleyic CAMBISOLS, petroferric and lithic phases, with LITHOSOLS and Rock Outcrops)	2-4	4-5	3	0	0	0	0	4	4	2	0
	and: poorly drained, moderately deep to deep, dark grey to grey, mottled, firm clay, with a humic topsoil; in many places over petroplinthite; in depressions (20%) (mollic GLEYSOLS, partly petroferric phase)	5	3-4	2	0	0	0	0	5	2-3	3	2
LIA2	association (on Uasin Gishu plateau) as in unit LIA1 but with:											
	- 30%: (rhodic FERRALSOLS, partly petroferric phase)	2	3-4	3	0	0	0	0	3	2-3	1	0
	- 50%: (ferralic and gleyic CAMBISOLS, petroferric and lithic phases, with LITHOSOLS and Rock Outcrops)	2-4	4-5	3	0	0	0	0	4	3-4	2	0
	- 20%: (mollic GLEYSOLS, partly petroferric phase)	5	3-4	2	0	0	0	0	5	2-3	3	2
LIC	complex (on Uasin Gishu plateau) of: well drained, moderately deep to deep, yellowish red, very friable clay; over petroplinthite or rock (30%) (orthic FERRALSOLS; partly petroferric phase)	2	3-4	3	0	0	0	0	3	2-3	1	0
	and: well to imperfectly drained, shallow to moderately deep, dark red to brown, friable to firm, fairly bouldery clay loam to clay; over petroplinthite or rock; in many places with a humic topsoil and/or mottled; in places shallow and/or rocky (50%) (ferralic and gleyic CAMBISOLS and haplic and gleyic PHAEOZEMS, petroferric and lithic phases, with LITHOSOLS and Rock Outcrops)	2-4	4-5	3	0	0	1	0	4	3-4	2	0
	and: poorly drained, moderately deep to deep, dark grey to grey, mottled, firm clay, with a humic topsoil; in many places over petroplinthite; in depressions (20%) (mollic GLEYSOLS, partly petroferric phase)	5	3-4	2	0	0	0	0	5	2-3	2	2
LP	Soils developed on ashes and other pyroclastic rocks of Recent volcanoes											
LP1	well drained, moderately deep to very deep, dark brown, friable and slightly smeary, clay loam to clay, with a humic topsoil (ando-luvic PHAEOZEMS)	2	3-4	1	0	0	0	0	4	2-3	2	0
Lu	PLATEAU/UPPER-LEVEL UPLAND TRANSITIONS (undulating; slopes between 5 and 8%; altitudes between 2500 and 3000 m; Keringet/Eastern Mau Forest)											
LuBP	Soils developed on basic igneous rocks (basalts, etc.) with influence of volcanic ash predominant											
LuBP1	well drained, deep to very deep, dark brown to dark red, friable and smeary sandy clay to clay, with an acid humic topsoil (humic ANDOSOLS)	2	2-3	1	0	0	0	0	4	1-2	1	0
LuP	Soils developed on ashes and other pyroclastic rocks of Recent volcanoes											
LuP1	well drained, deep to very deep, dark brown to dark red, friable and smeary sandy clay to clay; in many places with an acid humic topsoil (humic and ochric ANDOSOLS)	2	2-3	1	0	0	0	0	4	1-2	1	0
R	VOLCANIC FOOTRIDGES (dissected lower slopes of major older volcanoes and older lava flows, undulating to hilly; slopes between 5 and 30%; altitudes between 2000 and 3000 m; Mount Elgon/Tinderet mountains/Mau Forest											
RB	Soils developed on Tertiary basic igneous rocks (basalts, nepheline phonolites; older basic tuffs included)											
RB1	well drained, deep to extremely deep, dark reddish brown to dark brown, friable and slightly smeary clay, with an acid humic topsoil; in places shallow and rocky (ando-humic NITISOLS and humic ANDOSOLS, partly lithic phases; with Rock Outcrops)	2	1-3	1	0	0	0	0	4	1-2	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
RB2	well drained, extremely deep, dusky red to dark reddish brown, very friable clay, with an acid humic topsoil (humic NITISOLS)	2	1	1	0	0	0	0	3	1	1	0
RB3	well drained, moderately deep to deep, dark reddish brown to dusky red, very friable clay (nito-rhodic FERRALSOLS)	2	3-4	3	0	0	0	0	3	2-3	1	0
RB4	well drained, moderately deep to very deep, dark reddish brown to dark brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	2-4	1	0	0	0	0	4	1-3	1	0
RB5	well drained, moderately deep to deep, dark reddish brown to brown, friable to firm clay, with a humic topsoil; in places shallow and fairly bouldery (luvic PHAEOZEMS, with haplic PHAEOZEMS, lithic phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
RB6	well drained, shallow to moderately deep, dark reddish brown to dark brown, friable to firm, bouldery and fairly rocky clay, with a humic topsoil; in places imperfectly drained, deep, dark greyish brown, firm clay; on agglomerates of phonolitic and nephelinitic composition (RANKERS and haplic PHAEOZEMS, lithic phases and luvic PHAEOZEMS, with gleyic PHAEOZEMS)	2	4-5	2	0	0	2	1	4	3-4	2	0
RB7	somewhat excessively drained, shallow to moderately deep, dark brown to brown, friable to firm, bouldery, rocky clay, with a humic topsoil; on agglomerates of phonolitic and nephelinitic composition (RANKERS and haplic PHAEOZEMS, bouldery and partly lithic phases and Rock Outcrops)	4	4-5	3	0	0	2	2	4	3-4	2	0
RB8	somewhat excessively to well drained, shallow to moderately deep, brown to reddish brown, friable clay loam, with an acid humic topsoil; in places stony and rocky (humic CAMBISOLS, partly lithic and stony phase; with Rock Outcrops)	1-2	4-5	2	0	0	0	0	4	3-4	1	0
RB9	well drained, very shallow and shallow, brown to reddish brown, bouldery and stony sandy clay; in places rocky (dystric CAMBISOLS, bouldery and stony phase and LITHOSOLS; with Rock Outcrops)	2	5-6	2	0	0	2	0	-	4	2	0
RBA	association of: well drained, very deep to extremely deep, dark reddish brown, friable clay, with an acid humic topsoil; on interfluves (60-70%) (humic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
	and: well drained, shallow to moderately deep, dark reddish brown to dark brown, friable clay loam to clay, with an acid humic topsoil; on sideslopes (30-40%) (humic CAMBISOLS, partly lithic phase)	2	4-5	2	0	0	0	0	4	3-4	1	0
RB^{+}	Soils developed on Tertiary basic igneous rocks (basalts, etc.) with volcanic ash admixture											
RB^{+}A	association of: well drained, very deep to extremely deep, dark reddish brown to dark red, friable and slightly smeary clay, with an acid humic topsoil; on interfluves (60-70%) (ando-humic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
	and: well drained, shallow to moderately deep, dark brown, friable clay loam to clay, with an acid humic topsoil; on side slopes (30-40%) (humic CAMBISOLS, partly lithic phase)	2	4-5	2	0	0	0	0	4	3-4	1	0
RI	Soils developed on intermediate igneous rocks (andesites, phonolites, etc.)											
RI1	well drained, extremely deep, dark red, very friable clay, with an acid humic topsoil (humic NITISOLS)	2	1	2	0	0	0	0	3	1	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
RP	Soils developed on ashes and other pyroclastic rocks of Recent volcanoes											
RPA	association of: well drained, very deep, dark reddish brown, very friable and smeary, sandy clay loam to clay, with a thick humic topsoil; on interfluves (70-80%) (mollic ANDOSOLS)	2	2	1	0	0	0	0	3	1	1	0
	and: well drained, shallow to moderately deep, dark brown to dark reddish brown, friable and slightly smeary clay loam to clay; in places with a humic topsoil; on sideslopes (20-30%) (ando-eutric CAMBISOLS, with humic CAMBISOLS, partly lithic phases)	2	4-5	1	0	0	0	0	4	3-4	1	0
F	FOOTSLOPES (at the foot of Hills and Mountains; gently undulating to rolling; slopes between 2 and 16%; various altitudes)											
FB	Soils developed on colluvium from basic igneous rocks (basalts, etc.)											
FB1	well drained, deep to very deep, dark reddish brown, friable clay with a humic topsoil; in places shallow to moderately deep and rocky (mollic NITISOLS and chromo-luvic PHAEOZEMS) partly lithic and rocky phase)	2	2-3	1	0	0	0	0	4	1-2	1	0
FB2	well drained, very deep, dark red to dark reddish brown, friable clay (eutric NITISOLS)	2	2	1	0	0	0	0	4	1	1	0
FB3	well drained, deep to very deep, dark reddish brown to dark red, friable clay (rhodic FERRALSOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
FB4	well drained, moderately deep to deep, dark reddish brown, friable, gravelly clay loam to clay, with a humic topsoil; in places stony and rocky (luvic PHAEOZEMS, partly stony phase; with Rock Outcrops)	2	3-4	1	0	0	0	0	4	2-3	1	0
FB5	well to moderately well drained, deep, dark brown to dark reddish brown, firm, cracking clay, with a humic topsoil; in places moderately deep (verto-luvic PHAEOZEMS)	2-3	3	1	0	0	0	0	5	2	1	0
FB6	well to imperfectly drained, deep, dark reddish brown, friable sandy clay loam; in places mottled (chromic CAMBISOLS, with gleyic CAMBISOLS)	2-4	3	2	0	0	0	0	4	2	1	0
FB7	moderately well to imperfectly drained, very deep, very dark grey to very dark greyish brown, friable to very firm, clay loam to cracking clay; predominantly with a thick humic topsoil; in places with a calcareous deeper subsoil (verto-luvic and haplic PHAEOZEMS, with chromic VERTISOLS)	3-4	2	1	0	0	0	0	4-6	1	2	0
FB8	well to imperfectly drained, shallow, dark brown to dark greyish brown, gravelly sandy loam to clay; over weathering rock or petrocalcic material; in many places with a humic topsoil; in places calcareous and rocky (haplic PHAEOZEMS, with calcic CAMBISOLS, paralithic and partly petrocalcic phase)	2-4	5	1	0	0	0	0	-	4	1	0
FB+	Soils developed on colluvium from basic igneous rocks, with volcanic ash admixture.											
FB+1	well drained, moderately deep to deep, reddish brown to dark brown, friable and slightly smeary silty clay, with a humic topsoil; in places shallow and rocky (ando-luvic PHAEOZEMS, partly lithic phase; with Rock Outcrops)	2	3-4	1	0	0	0	0	4	2-3	1	0
FF	Soils developed on colluvium from hornblende gneisses and other ferromagnesium-rich gneisses											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
FF1	well drained, deep, dark red to dark reddish brown and yellowish red, friable sandy clay loam to clay; in places moderately deep (rhodic FERRALSOLS and ferralo-chromic ACRISOLS)	2	3	3	0	0	0	0	4	2	2	0
FF2	well drained, deep to very deep, yellowish red, friable to firm, bouldery, fairly rocky, sandy clay to clay, with an acid humic topsoil; in places moderately deep (ferralo-humic ACRISOLS, bouldery phase)	2	2-3	2	0	0	2	1	4	2-3	1	0
FG	Soils developed on colluvium from granites											
FG1	well drained, shallow to moderately deep, dark yellowish brown to reddish brown, friable, stony, sandy clay loam to gravelly sandy clay; in places very shallow and rocky (ferralic and dystric CAMBISOLS and orthic ACRISOLS, stony and partly lithic and rocky phases; with LITHOSOLS and Rock Outcrops)	2	4-5	3	0	0	2	0	4	4	2	0
FG2	well drained, moderately deep to deep, dark yellowish brown, friable sandy clay; in many places with an acid humic topsoil, rocky and/or stony (dystric and humic CAMBISOLS, stony and rocky phases)	2	3-4	3	0	0	2	2	4	3-4	2	0
FG3	well drained, very deep, dark red, friable clay, with an acid humic topsoil (humic ACRISOLS)	2	2	3	0	0	0	0	4	1	1	0
FG4	well drained, moderately deep to deep, yellowish red to dark reddish brown, friable, slightly gravelly, sandy loam to clay loam; in places stony (chromic LUVISOLS, partly stony phase)	2	3-4	2	0	0	0	0	4	2-3	2	0
FI	Soils developed on colluvium from intermediate igneous rocks											
FI1	well drained, deep, dark red to yellowish red and strong brown, friable clay; in places shallow over petroplinthite or pisoferric material (rhodic and orthic FERRALSOLS, partly petroferric or pisoferric phase)	2	3	3	0	0	0	0	4	2	1	0
FI2	well drained, shallow to moderately deep, dark red to dark yellowish brown, friable, gravelly clay loam to clay; in places stony and rocky; in places over petroplinthite (ferralic CAMBISOLS, lithic or petroferric phase, partly stony phase and LITHOSOLS; with Rock Outcrops)	2	4-5	3	0	0	0	0	4	3-4	2	0
FI3	well drained, moderately deep, dark reddish brown to dark brown, gravelly clay to clay, with an acid humic topsoil; in places over petroplinthite; in places shallow, stony or rocky (humic CAMBISOLS, partly petroferric or lithic phase; with Rock Outcrops)	2	4	2	0	0	0	0	4	3	1	0
FI4	well drained, deep to very deep, reddish brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	2-3	2	0	0	0	0	4	1-2	1	0
FIA	association of: well drained, very deep to extremely deep, dark red, friable clay; on sloping land (60%) (eutric NITISOLS)	2	1-2	2	0	0	0	0	4	1	1	0
	and: somewhat excessively drained, shallow to deep, dark reddish brown, friable to firm, bouldery, fairly rocky clay; on steep slopes (40%) (ferralo-chromic LUVISOLS and ferralo-chromic CAMBISOLS, partly lithic phases)	1	3-5	3	0	0	2	1	4	3-4	2	0
FN	Soils developed on biotite gneisses											
FN1	well drained, moderately deep to deep, dark red to reddish											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	brown, friable to firm clay loam to clay (ferralo-chromic ACRISOLS and CAMBISOLS)	2	3-4	3	0	0	0	0	4	2-3	2	0
FP	Soils developed on colluvium from ashes and other pyroclastic rocks from Recent volcanoes											
FP1	Well drained, deep to very deep, dark brown, friable and slightly smeary clay, with a humic topsoil (ando-luvic PHAEOZEMS)	2	2-3	1	0	0	0	0	4	1-2	1	0
FP2	moderately well to imperfectly drained, deep, reddish brown, mottled, friable clay loam to clay (gleyic LUVISOLS)	3-4	3	2	0	0	0	0	4	2	2	0
FQ	Soils developed on colluvium from quartzites											
FQ1	Well drained, deep to very deep, reddish brown to yellowish red, friable sandy loam to clay, with an acid humic topsoil (humic ACRISOLS, with luvic ARENOSOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
FQ2	Well drained, moderately deep to deep, reddish brown to yellowish red, friable sandy clay loam to clay, with an acid humic topsoil; in places shallow and rocky (humic ACRISOLS, partly lithic phase; with Rock Outcrops)	2	3-4	3	0	0	0	0	4	2-3	1	0
FR	Soils developed on colluvium from quartz-felspar gneisses											
FR1	well drained, deep, dark reddish brown to yellowish red, friable sandy clay; in places moderately deep and rocky. (orthic ACRISOLS, partly rocky phase)	2	3	3	0	0	0	0	4	2	1	0
FU	Soils developed on colluvium from undifferentiated Basement System rocks (predominantly gneisses)											
FU1	well drained, very deep, dusky red to dark reddish brown, friable clay (ferralo-chromic LUVISOLS)	2	2	3	0	0	0	0	4	1	1	0
FU2	well drained, deep, yellowish red to dark reddish brown, friable to firm, fairly rocky, sandy clay loam to clay; in places moderately deep (orthic LUVISOLS and eutric CAMBISOLS)	2	3	2	0	0	0	1	4	2	1	0
FU3	well drained, shallow to moderately deep, yellowish brown to dark reddish brown, friable to firm, gravelly sandy clay loam to clay; in places stony and rocky (eutric CAMBISOLS and orthic LUVISOLS, partly lithic and stony phases; with Rock Outcrops)	2	4-5	2	0	0	0	0	4	3-4	2	0
FUC	complex of: well drained, deep, dark reddish brown to dark yellowish brown soils of varying consistence and texture; in places moderately deep, gravelly and/or stony (orthic FERRALSOLS, orthic ACRISOLS and ferralic ARENOSOLS, partly stony phases)	2	3	3	0	0	0	0	-	2	1	0
FX	Soils developed on colluvium from various rocks											
FX1	well drained, deep, dark reddish brown to brown, friable to firm, slightly gravelly, sandy clay loam to sandy clay (orthic LUVISOLS)	2	3	2	0	0	0	0	4	2	1	0
FX2	somewhat excessively drained, moderately deep, dark brown to dark greyish brown, friable, stony and rocky, very gravelly sandy clay loam to clay loam; predominantly with a humic topsoil (haplic PHAEOZEMS with eutric CAMBISOLS, stony and rocky phases)	1	4	2	0	0	2	2	4	4	1	0
FX3	somewhat excessively drained, moderately deep to deep, dark reddish brown, friable, stony, very gravelly clay loam, with											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	a humic topsoil; over pisocalcic material (luvic PHAEOZEMS, stony and partly pisocalcic phase)	1	3-4	2	0	0	2	0	4	2-3	1	0
FX4	well drained, very deep, dark brown to dark reddish brown, friable, strongly calcareous clay, with a humic topsoil (luvic PHAEOZEMS)	2	2	2	0	0	0	0	4	1	1	0
FX5	well to moderately well drained, shallow, dark brown to dark greyish brown, stony, calcareous silty clay loam to clay loam; over gravel or weathering rock; in places with a humic topsoil (calcaric PHAEOZEMS and calcaric and eutric REGOSOLS, with calcic CAMBISOLS, paralithic and stony phases)	2-3	5	2	0	0	2	0	-	4	2	0
FX6	well drained, very deep, dark red, firm clay loam (chromic LUVISOLS)	2	2	3	0	0	0	0	5	1	2	0
FXC	complex of: well drained, moderately deep to very deep, dark reddish brown to yellowish red, friable, gravelly loam to clay; in many places with a humic toposil; in places stony (chromic LUVISOLS, partly stony phase, chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	2-4	2	0	0	0	0	4	1-3	1	0
FY	Soils developed on colluvium from acid igneous rocks (rhyolites)											
FY1	Well drained, deep to very deep, reddish brown, friable clay, with a humic topsoil (luvic PHAEOZEMS and mollic NITISOLS)	2	2-3	2	0	0	0	0	4	1-2	1	0
FY2	Well drained, moderately deep to deep, friable, sandy clay to clay over pisoferric material (ferralo-orthic ACRISOLS, partly pisoferric phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
FY^{+}	Soils developed on colluvium from acid igneous rocks (rhyolites), with volcanic ash admixture											
FY^{+}1	moderately well to imperfectly drained, deep, dark reddish brown, mottled, friable clay loam, with a humic topsoil and a deeper subsoil of compact clay (gleyic PHAEOZEMS)	3-4	3	2	0	0	0	0	4	2	2	0
Y	PIEDMONT PLAINS (nearly flat to gently undulating; slopes between 0 and 5%; altitudes between 1150 and 1500 m; in Olambwe Valley, in Kanò Plains and near Lake Victoria coast-line)											
YB	Soils developed on alluvium from basic igneous rocks (mainly Tertiary alkali basalts)											
YB1	well to moderately well drained, deep to very deep, brown to very dark greyish brown, friable to very firm, clay loam to cracking clay; predominantly with a thick humic topsoil; in places calcareous (verto-luvic and haplic PHAEOZEMS, with calcic CAMBISOLS and chromic VERTISOLS)	2-3	2-3	1	0	0	0	0	4-6	1-2	2	0
YB2	imperfectly to poorly drained, deep to very deep, dark grey to very dark greyish brown, very firm, calcareous and sodic, cracking clay; in places saline (chromic VERTISOLS, sodic and partly saline phase)	4-5	2-3	3	0	2	0	0	6	4	3	0
YB3	imperfectly drained, deep, dark greyish brown to dark grey, very firm, cracking clay, with a slightly calcareous deeper subsoil (chromic VERTISOLS)	4	3	1	0	0	0	0	6	3	2	0
YBC	complex of: well to imperfectly drained, deep to very deep, dark brown to very dark greyish brown, strongly calcareous soils of varying consistence and texture; in places firm, cracking clay and/or saline and sodic (chromic VERTISOLS, vertic and calcic CAMBISOLS and calcaric FLUVISOLS, partly saline-sodic phases)	2-4	2-3	1-2	0	0	0	0	-	1-3	2	0
YU	Soils developed on alluvium from undifferentiated Basement System rocks (predominantly gneisses)											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
YU1	imperfectly drained, very deep, dark greyish brown to very dark grey, mottled, very firm, cracking clay, with a calcareous and slightly sodic deeper subsoil; in many places abruptly underlying a firm topsoil of sandy clay (chromic VERTISOLS and verto-eutric PLANOSOLS)	4	2-5	2	0	1	0	0	6	3-4	2	0
YU2	moderately well to imperfectly drained, deep, brown to very dark grey, mottled, friable to firm sandy loam to sandy clay, with a sodic subsoil; in many places stratified (eutric and vertic FLUVISOLS and chromic VERTISOLS, sodic phases)	3-4	3	4	0	2	0	0	4	4	3	1
YU3	imperfectly to poorly drained, deep to very deep, very dark grey to dark greyish brown, mottled, firm to very firm, saline and sodic, sandy clay loam to cracking clay; in many places abruptly underlying a topsoil of firm sandy loam to sandy clay loam (vertic SOLONETZ and solodic PLANOSOLS, saline phases and chromic VERTISOLS, saline-sodic phase)	4-5	2-5	4	2	2	0	0	5-6	4	3	0
YU4	poorly drained, very deep, dark greyish brown to very dark grey, mottled, firm to very firm, cracking clay, abruptly underlying a topsoil of friable sandy clay loam; in places with a sodic subsoil (verto-eutric PLANOSOLS, with solodic PLANOSOLS)	5	5	3	0	0	0	0	5-6	4	3	0
YU5	moderately well to imperfectly drained, deep, very dark grey, mottled, firm, concretionary clay, with an acid humic topsoil; in many places with a sodic subsoil (humic GLEYSOLS and gleyic SOLONETZ)	3-4	3	2-4	0	2	0	0	5	2-4	2-3	2
YUC	complex of: moderately well to poorly drained, very deep, dark brown to very dark grey, firm to very firm sandy clay to cracking clay; in places stratified, sodic, or gravelly (PLANOSOLS, GLEYSOLS, SOLONETZ, VERTISOLS and FLUVISOLS)	3-5	2-5	2-4	0	0	0	0	5-6	3-4	2-3	2
YX	Soils developed on alluvium from various rocks											
YX1	moderately well drained, very deep, dark brown to dark greyish brown, firm, calcareous or cracking clay (orthic LUVISOLS and vertic CAMBISOLS)	3	2	2	0	0	0	0	5	1	2	0
YX2	well drained, deep to very deep, brown to dark reddish brown, friable sandy loam to clay loam, with a humic topsoil (luvic PHAEOZEMS)	2	2-3	2	0	0	0	0	4	1-2	1	0
YXC1	complex of: well to imperfectly drained, deep to very deep, dark brown to very dark greyish brown, firm, strongly calcareous clay to cracking clay; in many places with a humic topsoil; in places saline and/or sodic (calcaric PHAEOZEMS, vertic and calcic CAMBISOLS, calcaric FLUVISOLS and chromic VERTISOLS, partly saline-sodic phases)	2-4	2-3	2	0	0	0	0	5	1-2	1-2	0
YXC2	complex of: well to imperfectly drained, very deep, dark brown to dark greyish brown, friable to firm loam to cracking clay; in many places with a humic topsoil; in places stratified, calcareous, saline and/or sodic (haplic, calcaric and vertic PHAEOZEMS, eutric, calcaric and vertic FLUVISOLS and chromic VERTISOLS, partly sodic and saline phases)	2-4	2	2	0	0	0	0	4-5	1	1-2	1
U	UPLANDS											
Uu	UPPER-LEVEL UPLANDS (rolling to hilly; slopes between 8 and 30%; altitudes between 1800 and 2200 m - Kisii Highlands - and between 2600 and 2900 m - Cherangani Hills -)											
UuI	Soils developed on intermediate igneous rocks (andesites and felsites; in Kisii Highlands											
UuI1	well drained, extremely deep, dark red to reddish brown, friable clay, with a thick humic topsoil (mollic NITISOLS)	2	1	1	0	0	0	0	4	1	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UuQ	Soils developed on quartzites; in Kisii Highlands											
UuQ1	well drained, deep to very deep, reddish brown, friable clay, with an acid humic topsoil (humic FERRALSOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UuU	Soils developed on undifferentiated Basement System rocks (predominantly gneisses); in Cherangani Hills											
UuU1	well drained, moderately deep to deep, dark reddish brown to yellowish red, friable sandy clay loam to clay, with an acid humic topsoil; in places shallow and rocky (humic CAMBISOLS, partly lithic phase; with Rock Outcrops)	2	2-3	2	0	0	0	0	4	1-2	1	0
UuU2	well drained, deep, dusky red to dark reddish brown, friable sandy clay loam to clay (dystric CAMBISOLS)	2	3	3	0	0	0	0	4	2	1	0
UuY+	Soils developed on acid igneous rocks (rhyolites), with volcanic ash admixture; in Kisii Highlands											
UuY+1	well drained, deep to extremely deep, reddish brown, friable clay, with a thick humic topsoil (mollic NITISOLS and chromo-luvic PHAEOZEMS)	2	1-3	1	0	0	0	0	4	1-2	1	0
UuY+2	well drained, deep to very deep, dark reddish brown, friable and slightly smeary silty clay loam, with a thick humic topsoil (ando-luvic PHAEOZEMS)	2	2-3	1	0	0	0	0	4	1-2	1	0
UuY+3	somewhat excessively drained, shallow, dark reddish brown, gravelly clay, with a humic topsoil (RANKERS, with ando-haplic PHAEOZEMS, lithic phases and LITHOSOLS)	1	5	3	0	0	0	0	-	4	1	0
Uh	UPPER-MIDDLE LEVEL UPLANDS (undulating to rolling; slopes between 5 and 16%; altitudes between 1650 and 2650 m);											
UhB	Soils developed on basic igneous rocks (basalts, nepheline phonolites, etc.)											
UhB1	well drained, very deep to extremely deep, dark red to dark reddish brown, friable clay, with a humic topsoil (mollic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
UhB2	well drained, very deep to extremely deep, dark reddish brown, very friable clay (eutric NITISOLS)	2	1-2	1	0	0	0	0	3	1	1	0
UhB3	well drained, shallow to moderately deep, dark red, friable clay; over pisoferric material (ferralo-chromic CAMBISOLS and rhodic FERRALSOLS, pisoferric phases)	2	4-5	2-3	0	0	0	0	4	3-4	2	0
UhB4	well drained, moderately deep to extremely deep, dark red to dark reddish brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	1-4	1	0	0	0	0	4	1-3	1	0
UhB5	well drained, deep to extremely deep, dark red, friable clay; in places moderately deep over pisoferric material (rhodic FERRALSOLS, partly pisoferric phase)	2	1-3	3	0	0	0	0	4	1-2	1	0
UhB6	well drained, very deep to extremely deep, dark reddish brown to dusky red, friable clay, with an acid humic topsoil (humic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
UhB+	Soils developed on basic igneous rocks, with volcanic ash admixture											
UhB+1	well drained, very deep to extremely deep, dark reddish brown, friable clay (eutric NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
UhD	Soils developed on Kavirondian sedimentary rocks, mainly mudstones and claystones											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UhD1	well drained, very deep, dark reddish brown to yellowish red, friable clay (ferralo-orthic ACRISOLS)	2	2	3	0	0	0	0	4	1	1	0
UhD2	well drained, extremely deep, dusky red to dark red, very friable clay (nito-rhodic FERRALSOLS)	2	1	3	0	0	0	0	3	1	1	0
UhDC	complex of:											
	soils of unit UhD1: (ferralo-orthic ACRISOLS)	2	2	3	0	0	0	0	4	1	1	0
	and:											
	unit UhD2: (nito-rhodic FERRALSOLS)	2	1	3	0	0	0	0	3	1	1	0
UhF	Soils developed on hornblende gneisses and other ferromagnesium-rich gneisses											
UhF1	well drained, extremely deep, dark reddish brown, friable clay, with a thick acid humic topsoil (humic NITISOLS)	2	1	1	0	0	0	0	4	1	1	0
UhF2	well drained, deep to very deep, yellowish red, friable clay (ferralo-orthic ACRISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UhG	Soils developed on granites and granodiorites											
UhG1	well drained, deep, yellowish red to dusky red, friable sandy clay to clay; in places shallow (on steeper slopes) and rocky (ferralo-chromic ACRISOLS, partly lithic phase; with Rock Outcrops)	2	3	3	0	0	0	0	4	2	1	0
UhG2	well drained, very deep, yellowish red to dark reddish brown, friable to firm sandy clay to clay, with an acid humic topsoil (ferralo-humic ACRISOLS)	2	2	3	0	0	0	0	4	1	1	0
UhG3	soils as in unit UhG2, but bouldery and in places rocky (ferralo-humic ACRISOLS, bouldery phase; with Rock Outcrops)	2	2	3	0	0	2	0	4	2	1	0
UhG4	well drained, deep to very deep, brown to strong brown, friable to firm, bouldery and fairly rocky, gravelly sandy clay to clay, with an acid humic topsoil; in places stony (humic ACRISOLS, bouldery and partly stony phase)	2	2-3	3	0	0	2	1	4	2-3	1	0
UhG5	well drained, moderately deep to deep, strong brown, friable to firm, bouldery and fairly rocky, sandy clay, with an acid humic topsoil (humic ACRISOLS, bouldery phase)	2	3-4	3	0	0	2	1	4	3-4	1	0
UhG6	well drained, extremely deep, dark red, very friable clay; in many places bouldery and rocky (rhodic FERRALSOLS, bouldery and rocky phase)	2	1	3	0	0	2	2	3	2	1	0
UhG7	well drained, extremely deep, dark red, friable sandy clay to clay, with an acid humic topsoil (humic ACRISOLS)	2	1	3	0	0	0	0	4	1	1	0
UhG8	well drained, very deep, dark red to yellowish red, friable to firm clay, with an acid humic topsoil; in places moderately deep to deep, bouldery and rocky (humic ACRISOLS and chromic LUVISOLS, partly bouldery and rocky phase)	2	2	2-3	0	0	0	0	4	1	1	0
UhGA1	association of:											
	well drained, moderately deep to deep, brown, friable to firm, fairly bouldery and fairly rocky, gravelly coarse sandy clay; on moderate slopes (60%) (dystric CAMBISOLS)	2	3-4	3	0	0	2	1	4	2-3	1	0
	and:											
	somewhat excessively drained, very shallow to shallow, brown, friable, bouldery and extremely rocky, gravelly coarse sandy clay loam; in places with an acid humic topsoil; on steep slopes (40%) (LITHOSOLS and RANKERS, rocky and bouldery phase)	1	5-6	3	0	0	2	4	-	4	2	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UhGA2	association of: well drained, moderately deep to deep, strong brown, friable to firm, fairly bouldery, gravelly coarse sandy clay, with an acid humic topsoil; on moderate slopes (60%) (humic CAMBISOLS)	2	3-4	2	0	0	1	0	4	1-3	1	0
	and: somewhat excessively drained, very shallow to shallow, brown, bouldery and rocky, gravelly coarse sandy clay loam, in places with an acid humic topsoil; on steep slopes (40%) (dystric CAMBISOLS, with humic CAMBISOLS, lithic, bouldery and rocky phases, and with LITHOSOLS)	1	5-6	3	0	0	2	2	-	4	2	0
UhI	Soils developed on intermediate igneous rocks (andesites, phonolites, syenites, etc.)											
UhI1	well drained, very deep to extremely deep, dark red to dark reddish brown, friable clay (eutric NITISOLS)	2	1-2	2	0	0	0	0	4	1	1	0
UhI2	well drained, deep to very deep, strong brown to dark reddish brown, friable clay, with a humic topsoil; in places shallow to moderately deep (luvic PHAEOZEMS, partly lithic phase)	2	2-3	1	0	0	0	0	4	1-2	1	0
UhI3	well drained, very deep to extremely deep, dark red to dark reddish brown, friable clay, with a humic topsoil (mollic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
UhI4	well drained, moderately deep to extremely deep, dark red to dark reddish brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	1-4	1	0	0	0	0	4	1-3	1	0
UhI5	well to moderately well drained, shallow to moderately deep, dark red to brown, friable to firm clay, with a humic topsoil; over rock or pisoferric material (haplic and luvic PHAEOZEMS, partly lithic or pisoferric phases)	2-3	4-5	1	0	0	0	0	4	3-4	1	0
UhI+	Soils developed on intermediate igneous rocks, with volcanic ash admixture											
UhI+1	well drained, very deep to extremely deep, reddish brown, friable clay, with a thick humic topsoil (mollic NITISOLS)	2	1-2	1	0	0	0	0	4	1	1	0
UhN	Soils developed on biotite gneisses											
UhN1	well drained, very deep to extremely deep, dusky red to dark reddish brown, friable clay, with a thick acid humic topsoil (humic NITISOLS)	2	1-2	2	0	0	0	0	4	1	1	0
UhN2	well drained, moderately deep to very deep, dark reddish brown, friable sandy clay to clay, with a thick humic topsoil; in places shallow and fairly rocky (luvic PHAEOZEMS, partly lithic phase)	2	2-4	1	0	0	0	0	4	1-3	1	0
UhN3	well drained, deep to very deep, dark reddish brown to dark brown, friable to firm clay, with a thick acid humic topsoil (humic ACRISOLS, with humic CAMBISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UhN4	well drained, very deep to extremely deep, dark red, friable to firm clay, with an acid humic topsoil (ferralo-humic ACRISOLS)	2	1-2	3	0	0	0	0	4	1	1	0
UhQ	Soils developed on quartzites											
UhQ1	well drained, very deep, dark reddish brown, friable to firm sandy clay to clay, with a humic topsoil (chromo-luvic PHAEOZEMS)	2	2	2	0	0	0	0	4	1	1	0
UhU	Soils developed on undifferentiated Basement System rocks (predominantly gneisses)											
UhU1	well drained, deep, dark reddish brown to dark brown, friable sandy clay loam to clay, with a thick acid humic topsoil; in											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	places shallow and rocky (humic ACRISOLS and CAMBISOLS; partly lithic phases; with Rock Outcrops)	2	3	2-3	0	0	0	0	4	2	1	0
UhU2	well drained, moderately deep to very deep, dark reddish brown, friable clay, with an acid humic topsoil (ferralo-humic ACRISOLS)	2	2-4	3	0	0	0	0	4	1-3	1	0
UhU3	well drained, moderately deep to deep, dark reddish brown, friable sandy clay loam to clay, with a thick acid humic topsoil (humic CAMBISOLS)	2	3-4	2	0	0	0	0	4	2-3	1	0
UhU4	well drained, shallow to moderately deep, dark brown to yellowish brown, friable sandy clay loam to sandy clay, with an acid humic topsoil; in places very bouldery and rocky; with inclusions of very deep, dark reddish brown, friable clay (humic CAMBISOLS and ACRISOLS, partly lithic and bouldery phases, with Rock Outcrops and humic NITISOLS.	2	3-4	2-3	0	0	0	0	4	2-3	2	0
UhUA	association of: well drained, moderately deep to deep, dark reddish brown to yellowish red, friable clay loam to clay; on upper slopes (50%) (dystric CAMBISOLS)	2	3-4	3	0	0	0	0	4	2-3	1	0
	and: well drained, deep, dark reddish brown to dark brown, friable sandy clay loam to clay, with a thick acid humic topsoil; in places moderately deep; on lower slopes (50%) (humic ACRISOLS and CAMBISOLS)	2	3	3	0	0	0	0	4	2	1	0
UhV	Soils developed on various igneous (volcanic) rocks											
UhV1	well drained, extremely deep, dark red, friable clay (dystric NITISOLS)	2	1	2	0	0	0	0	4	1	1	0
UhV2	well drained, extremely deep, dusky red to dark red, friable clay, with a thick humic topsoil. (mollic NITISOLS)	2	1	1	0	0	0	0	4	1	1	0
UhV$^+$	Soils developed on various volcanic rocks, with volcanic ash admixture											
UhV$^+$1	well drained, deep, reddish brown to dark red, friable and slightly smeary silty clay to clay, with a thick humic topsoil; in places moderately deep (ando-luvic PHAEOZEMS)	2	3	1	0	0	0	0	4	2	1	0
UhV$^+$2	well drained, moderately deep to deep, reddish brown to dark red, friable and slightly smeary silty clay to clay, with a humic topsoil; in places shallow (ando-luvic PHAEOZEMS, partly lithic phase)	2	3-4	1	0	0	0	0	4	2-3	1	0
UhY$^+$	Soils developed on acid igneous rocks (rhyolites), with volcanic ash admixture											
UhY$^+$1	well drained, very deep, dark red to dark reddish brown, friable sandy clay to clay; in places moderately deep to deep (nito-rhodic FERRALSOLS)	2	2	3	0	0	0	0	4	1	1	0
Um	LOWER MIDDLE-LEVEL UPLANDS (gently undulating to undulating; slopes between 2 and 8%; altitudes between 1200 and 2200 m)											
UmB	Soils developed on basic igneous rocks (basalts, nepheline phonolites; older basic tuffs included)											
UmB1	well drained, extremely deep, dark reddish brown, friable clay (dystric NITISOLS)	2	1	2	0	0	0	0	4	1	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UmB2	well drained, extremely deep, dark red, friable clay, with a thick humic topsoil (mollic NITISOLS)	2	1	1	0	0	0	0	4	1	1	0
UmB3	well drained, deep to extremely deep, dark red, friable clay, with a thick humic topsoil; in places moderately deep over pisoferric material (mollic NITISOLS and chromo-luvic PHAEOZEMS, partly pisoferric phase)	2	1-3	1	0	0	0	0	4	1-2	1	0
UmD	Soils developed on Kavirondian sedimentary rocks, mainly mudstones and claystones											
UmD1	well drained, very deep, red to dark red, friable clay (dystric NITISOLS)	2	2	2	0	0	0	0	4	1	1	0
UmD2	well drained, deep to very deep, reddish brown to strong brown, friable clay (orthic FERRALSOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UmD3	well drained, extremely deep, dark red, very friable clay (rhodic FERRALSOLS)	2	1	3	0	0	0	0	3	1	1	0
UmF	Soils developed on hornblende gneisses, and other ferromagnesium-rich gneisses											
UmF1	well drained, moderately deep to deep, dark yellowish brown, friable, gravelly clay; in many places with a humic topsoil; in places shallow (eutric CAMBISOLS and haplic PHAEOZEMS, partly lithic phases)	2	3-4	1	0	0	0	0	4	2-3	1	0
UmF2	well drained, moderately deep to very deep, yellowish red to strong brown, friable to firm clay (ferralo-orthic ACRISOLS)	2	2-4	3	0	0	0	0	4	4-5	1	0
UmG	Soils developed on granites and granodiorites											
UmG1	well drained, deep, reddish brown, friable, gravelly sandy clay to clay, with an acid humic topsoil (humic ACRISOLS, with humic CAMBISOLS)	2	3	3	0	0	0	0	4	2	1	0
UmG2	well drained, deep, dark yellowish brown to dark brown, friable sandy clay loam to sandy clay; in places gravelly in the deeper subsoil (orthic ACRISOLS)	2	3	3	0	0	0	0	4	2	2	0
UmG3	well drained, deep to very deep, brown to dark brown, friable sandy clay to clay (ferralo-orthic ACRISOLS)	2	2-3	3	0	0	0	0	4	1-2	2	0
UmG4	well drained, shallow to moderately deep, dark yellowish brown, friable, gravelly clay to clay (dystric CAMBISOLS, lithic phase)	2	4-5	3	0	0	0	0	4	3-4	2	0
UmG5	well drained, moderately deep to deep, dark yellowish brown to dark reddish brown, friable, gravelly sandy clay to clay, with an acid humic topsoil (humic ACRISOLS)	2	3-4	3	0	0	0	0	4	2-3	1	0
UmG6	well drained, shallow to moderately deep, dark yellowish brown, friable sandy clay (orthic ACRISOLS)	2	4-5	3	0	0	0	0	4	3-4	2	0
UmG7	somewhat excessively drained, shallow, very dark grey to strong brown, friable, fairly rocky, fairly bouldery, coarse sandy loam with an acid humic topsoil; in places moderately deep to deep, coarse sandy loam (RANKERS and humic CAMBISOLS, lithic phase)	1	5	3	0	0	1	1	-	4	2	0
UmG8	well drained, moderately deep to deep, reddish brown, friable, very gravelly sandy clay loam, with an acid humic topsoil; in places over pisoferric material (humic ACRISOLS, partly pisoferric phase)	2	3-4	3	0	0	0	0	4	2-3	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UmG9	well drained, deep, dark red, friable clay, with an acid humic topsoil (humic ACRISOLS)	2	3	3	0	0	0	0	4	2	1	0
UmGA	association of: well drained, moderately deep to deep, reddish brown, friable, very gravelly sandy clay loam, with an acid humic topsoil; in places over pisoferric material; on relatively higher parts (50%) (humic ACRISOLS, partly pisoferric phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
	and: moderately well to imperfectly drained, moderately deep to deep, dark yellowish brown to very dark brown, mottled, firm silty clay; in places abruptly underlying a topsoil of friable loamy sand to sandy loam; in places rocky and shallow; in slight depressions (50%) (gleyic LUVISOLS and ACRISOLS, partly lithic phases; with eutric PLANOSOLS and Rock Outcrops)	3-4	3-4	2-3	0	0	0	0	5	2-3	2	1
UmGC	complex of: well to moderately well drained, shallow to moderately deep, brown to dark reddish brown, very friable loamy sand to friable gravelly sandy loam to clay loam; over petroplinthite or rock; in many places very shallow and/or rocky (humic and ferralic CAMBISOLS, petroferric lithic and rocky phases, with LITHOSOLS)	2-3	4-6	2-3	0	0	0	2	3-4	4	2	0
UmGF	Soils developed on biotite-hornblende granites											
UmGF1	well drained, very deep, dark red to reddish brown, friable clay loam to clay, with an acid humic topsoil; in places shallow to moderately deep over petroplinthite or rock (nito-humic FERRALSOLS, partly petroferric or lithic phase)	2	2	3	0	0	0	0	4	1	1	0
UmGF2	well drained, moderately deep to deep, yellowish red to red, friable, clay; in many places with an acid humic topsoil; in places very shallow or rocky (humic and ferralo-orthic ACRISOLS; with LITHOSOLS and Rock Outcrops)	2	3-4	3	0	0	0	0	4	2-3	1	0
UmGF^{+}	Soils developed on biotite-hornblende granites, with volcanic ash admixture											
UmGF^{+}1	moderately well to imperfectly drained, moderately deep to deep, dark brown to dark greyish brown and black, firm, cracking clay, with a topsoil of friable, humic silty clay loam; over petroplinthite; in places shallow (verto-luvic PHAEOZEMS with orthic GREYZEMS, petroferric phases)	3-4	3-4	1	0	0	0	0	5	2-3	2	0
UmI	Soils developed on intermediate igneous rocks (andesites, phonolites, syenites, etc.)											
UmI1	well drained, extremely deep, dusky red to dark reddish brown, friable clay, with an acid humic topsoil (humic NITISOLS)	2	1	2	0	0	0	0	4	1	1	0
UmI2	well drained, very deep, reddish brown to red, friable clay, with a thick acid humic topsoil (nito-humic FERRALSOLS)	2	2	3	0	0	0	0	4	1	1	0
UmI3	well drained, moderately deep to deep, reddish brown to brown, friable gravelly clay loam to clay; over petroplinthite; in many places with a humic topsoil; in places shallow (chromo-luvic PHAEOZEMS and orthic LUVISOLS, partly petroferric phases)	2	3-4	1	0	0	0	0	4	2-3	1	0
UmIC	complex of: well drained, moderately deep to deep, reddish brown to brown, friable, gravelly clay loam to clay; over petroplinthite; in many places with a humic topsoil; in places shallow (chromo-luvic PHAEOZEMS with orthic LUVISOLS, partly petroferric phases)	2	3-4	1	0	0	0	0	4	2-3	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	and: moderately well to imperfectly drained, deep, dark grey to dark reddish grey, mottled, friable clay, with a humic topsoil (gleyic PHAEOZEMS)	3-4	3	1	0	0	0	0	4	2	2	0
UmN	Soils developed on biotite gneisses											
UmN1	well drained, moderately deep to deep, brown to dark yellowish brown, firm sandy clay loam (orthic LUVISOLS)	2	3-4	2	0	0	0	0	5	2-3	2	0
UmN2	well drained, deep to very deep, red to dark red, friable clay; in places moderately deep (rhodic FERRALSOLS, with ferralo-chromic ACRISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UmR	Soils developed on quartz-felspar gneisses											
UmR1	well drained, deep to very deep, dark red to brownish yellow, friable clay; in places moderately deep (orthic FERRALSOLS and ferralo-orthic ACRISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
UmU	Soils developed on undifferentiated Basement System rocks (predominantly gneisses)											
UmU1	well drained, very deep, red to dark red, very friable clay (rhodic FERRALSOLS)	2	2	3	0	0	0	0	3	1	1	0
UmU2	well drained, moderately deep to deep, strong brown to red, friable sandy clay loam to clay; in many places over petroplinthite; in places rocky (orthic and rhodic FERRALSOLS, with ferralic CAMBISOLS, partly petroferric phases; with Rock Outcrops)	2	3-4	3	0	0	0	0	4	2-3	1	0
UmU3	well drained, moderately deep to deep, dark reddish brown to yellowish red, friable sandy clay loam to sandy clay (orthic FERRALSOLS, with orthic ACRISOLS)	2	3-4	3	0	0	0	0	4	2-3	1	0
UmU4	well drained, shallow to moderately deep, very dark greyish brown, friable, gravelly sandy clay; in places with a humic topsoil; in places stony and very shallow (eutric CAMBISOLS, with haplic PHAEOZEMS, partly stony and lithic phases and with LITHOSOLS, partly stony phase)	2	4-5	2	0	0	0	0	4	3-4	2	0
UmU5	well drained, shallow, dark brown to dark yellowish brown, gravelly sandy clay loam to sandy clay; over weathering rock (eutric CAMBISOLS, paralithic phase)	2	5	2	0	0	0	0	-	4	2	0
UmUA1	association of: well drained, deep, red to dark red, friable clay; on crests, truncated (30%) (ferralo-chromic ACRISOLS)	2	3	3	0	0	0	0	4	2	1	0
	and: well drained, deep, red to dark red, friable clay, with an acid humic topsoil of increasing thickness downslope (70%) (ferralo-humic ACRISOLS)	2	3	3	0	0	0	0	4	2	1	0
UmUA2	association of: well drained, moderately deep to deep, brown to reddish brown, friable to firm (compact) sandy clay loam to clay loam; in places shallow and rocky; on crests, truncated (30%) (ferralo-orthic ACRISOLS, partly lithic phase; with Rock Outcrops)	2	3-4	3	0	0	0	0	4	2-3	1	0
	and: well drained, moderately deep to deep, brown to reddish brown, friable sandy clay loam to clay loam, with an acid humic topsoil of increasing thickness downslope (70%) (ferralo-humic ACRISOLS)	2	3-4	3	0	0	0	0	4	2-3	1	0
UmV	Soils developed on various igneous (volcanic) rocks											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UmV1	well drained, extremely deep, dark red, friable clay (eutric NITISOLS)	2	1	2	0	0	0	0	4	1	1	0
UmV2	well drained, deep to very deep, yellowish red to strong brown, friable to firm clay; in places shallow to moderately deep over petroplinthite; in places rocky or stony (chromic and orthic ACRISOLS, partly petroferric and stony phase; with Rock Outcrops)	2	2-3	3	0	0	0	0	4	1-2	1	0
UmX	Soils developed on various rocks											
UmX1	moderately well to imperfectly drained, moderately deep to deep, very dark greyish brown to dark brown, firm, gravelly sandy clay loam to sandy clay; in many places mottled and/or with an acid humic topsoil; in places shallow (humic and gleyic ACRISOLS, partly lithic phases)	3-4	3-4	3	0	0	0	0	5	2-3	1	0
UmX2	well drained, shallow, dark reddish brown, clay; in places with a humic topsoil (chromic LUVISOLS, with chromo-luvic PHAEOZEMS, lithic phases)	2	5	2	0	0	0	0	-	4	2	0
UmY	Soils developed over acid igneous rocks (rhyolites)											
UmY1	well drained, deep to extremely deep, reddish brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS and mollic NITISOLS)	2	1-3	2	0	0	0	0	4	1-2	1	0
UmY2	well drained, moderately deep to deep, reddish brown, friable clay, predominantly with a humic topsoil (luvic PHAEOZEMS, with chromic LUVISOLS)	2	3-4	2	0	0	0	0	4	2-3	1	0
U1	LOWER-LEVEL UPLANDS (very gently undulating to undulating; slopes between 2 and 8%; altitudes between 1200 and 2100 m)											
U1B	Soils developed on basic igneous rocks (basalts, nepheline phonolites, etc.)											
U1B1	well drained, extremely deep, dark red, very friable clay (eutric NITISOLS)	2	1	1	0	0	0	0	3	1	1	0
U1B2	well drained, moderately deep to deep, red, friable to firm clay, with a humic topsoil; over pisoferric material or petroplinthite; in places shallow (chromo-luvic PHAEOZEMS, pisoferric or petroferric phase)	2	3-4	1	0	0	0	0	4	2-3	1	0
U1B3	well drained, moderately deep to deep, reddish brown, friable clay, with a humic topsoil (chromo-luvic PHAEOZEMS)	2	3-4	1	0	0	0	0	4	2-3	1	0
U1B4	moderately well drained, deep, dark brown, firm, cracking clay, with a humic topsoil (verto-luvic PHAEOZEMS)	3	3	1	0	0	0	0	5	2	1	0
U1B5	soils as in unit ULB4, but moderately deep to deep, in places shallow (verto-luvic PHEAOZEMS, partly lithic phase)	3	3-4	1	0	0	0	0	5	2-3	1	0
U1B6	soils as in unit ULB4 but shallow (verto-luvic PHAEOZEMS, lithic phase)	3	5	1	0	0	0	0	5	4	2	0
U1B7	moderately well to imperfectly drained, deep, very dark grey to very dark greyish brown, mottled, firm, cracking clay; in places moderately deep over petroplinthite (vertic LUVISOLS, partly petroferric phase with chromic VERTISOLS)	3-4	3	1	0	0	0	0	5	2	2	0
U1B8	well drained, shallow to moderately deep, reddish brown to dark reddish brown, firm clay; over petroplinthite or rock (chromic LUVISOLS and ACRISOLS, petroferric and lithic phases)	2	4-5	1-2	0	0	0	0	4	3-4	1	0
U1B9	imperfeclty drained, deep to very deep, very dark greyish brown, very firm, cracking clay, in many places calcareous (chromic VERTISOLS)	2	2-3	1	0	0	0	0	6	1-2	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
U1B10	well drained, deep to very deep, dark yellowish brown to strong brown, firm clay (orthic LUVISOLS)	2	2-3	1	0	0	0	0	5	1-2	1	0
U1BC	complex of: soils as in unit U1B1: (eutric NITISOLS)	2	1	1	0	0	0	0	3	1	1	0
	and: soils as in unit U1B8: (chromic LUVISOLS and ACRISOLS, petroferric and lithic phases)	2	4-5	1-3	0	0	0	0	4	3-4	1	0
U1D	Soils developed on Kavirondian sedimentary rocks, mainly mudstones and claystones, locally conglomerates											
U1D1	well drained, deep to very deep, dark red to strong brown, friable clay; in many places shallow to moderately deep over petroplinthite (chromic ACRISOLS, with orthic ACRISOLS, partly petroferric phases, and dystric NITISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
U1D2	well drained, moderately deep to deep, red to dark red, friable clay; over petroplinthite; in places shallow (rhodic FERRALSOLS and chromic ACRISOLS, partly petroferric phases)	2	3-4	3	0	0	0	0	4	2-3	1	0
U1D3	well to moderately well drained, shallow to moderately deep, yellowish red to strong brown, friable clay; over petroplinthite (ferralic CAMBISOLS, petroferric phase)	2-3	4-5	3	0	0	0	0	4	3-4	2	0
U1D4	well drained, very shallow to shallow, dark reddish brown to dark brown, fairly stony, sandy clay to clay; over pisoferric material or conglomerate rock (LITHOSOLS, stony phase and orthic ACRISOLS, pisoferric or lithic and stony phase)	2	5-6	3	0	0	1	0	-	4	2	0
U1G	Soils developed on granites and granodiorites											
U1G1	well drained, deep to very deep, yellowish red to strong brown, friable clay; in places moderately deep over petroplinthite or rock; in places rocky (orthic ACRISOLS; with Rock Outcrops)	2	2-3	3	0	0	0	0	4	1-2	2	0
U1G2	well drained, moderately deep to deep, dark reddish brown to red, friable, stony, gravelly sandy clay to clay; over petroplinthite; in places shallow or rocky (orthic ACRISOLS, with orthic FERRALSOLS, stony and partly petroferric phases; with Rock Outcrops)	2	3-4	3	0	0	2	0	4	3-4	2	0
U1G3	well drained, shallow to moderately deep, dark yellowish brown to strong brown, friable sandy clay; over petroplinthite; in places very shallow, stony or rocky (orthic ACRISOLS, petroferric and partly stony phase, with LITHOSOLS and Rock Outcrops)	2	4-5	3	0	0	0	0	4	3-4	2	0
U1G4	well drained, deep, strong brown to yellowish brown, friable sandy clay loam to sandy clay; in places shallow to moderately deep over petroplinthite (orthic FERRALSOLS, partly petroferric phase)	2	3	3	0	0	0	0	4	2	2	0
U1G5	poorly drained, shallow to moderately deep, dark brown, mottled, firm clay, abruptly underlying a topsoil of loose to friable sand to sandy loam; partly over rotten rock (dystric PLANOSOLS, partly lithic or paralithic phase)	5	4-5	3	0	0	0	0	5	4	2	2
U1G6	somewhat excessively to well drained, shallow to moderately deep, greyish brown, friable, fairly bouldery, coarse sandy loam; over petroplinthite or rock; in places strongly eroded and very bouldery (dystric CAMBISOLS, lithic or petroferric phase, with orthic ACRISOLS, partly petroferric phase)	1-2	4-5	3	0	0	1	0	4	3-4	2	0
U1G7	excessively drained, shallow, dark reddish brown to brown, very gravelly sandy clay loam, over pisoferric material or weathering rock (dystric REGOSOLS and ferralic CAMBISOLS, paralithic or pisoferric phases)	1	5	3	0	0	0	0	-	4	2	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
U1G8	excessively drained, shallow, dark reddish brown to brown, bouldery and fairly rocky, very gravelly sandy clay loam (dystric REGOSOLS, lithic and bouldery phase)	1	5	3	0	0	2	1	-	4	1	0
U1G9	well to moderately well drained, shallow, very dark greyish brown, sandy clay to clay, over petroplinthite (orthic ACRISOLS, petroferric phase)	2-3	5	3	0	0	0	0	-	4	2	0
U1G10	well drained, deep to very deep, dark brown, firm clay, with a humic topsoil (haplic PHAEOZEMS)	2	2-3	2	0	0	0	0	5	1-2	1	0
U1G11	well to moderately well drained, shallow to moderately deep, greyish brown to dark brown, firm to very firm, fairly bouldery, loamy coarse sand to coarse sandy loam; over petroplinthite or rock; in most places abruptly underlying a topsoil of loose to friable sand (dystric PLANOSOLS, with dystric ARENOSOLS, petroferric or lithic phases)	2-3	4-5	4	0	0	1	0	5-6	4	2	0
U1G12	well drained, deep, reddish brown, friable, sandy clay loam, with an acid humic topsoil; in places shallow to moderately deep over pisoferric material (humic ACRISOLS, partly pisoferric phase)	2	3	3	0	0	0	0	4	2	1	0
U1G13	well to moderately well drained, shallow, dark reddish brown, sandy clay loam; over petroplinthite; in many places with an acid humic topsoil (humic and ferralic CAMBISOLS, petroferric phase)	2-3	5	3	0	0	0	0	-	4	1	0
U1GA1	association of: well drained, deep to very deep, dark yellowish brown to strong brown, friable clay loam to clay; in places with an acid humic topsoil; in places stony; on straight side slopes (50%) (orthic ACRISOLS, with humic ACRISOLS, partly stony phases)	2	2-3	3	0	0	0	0	4	1-2	2	0
	and: well drained, shallow to moderately deep, dark yellowish brown to brown, friable sandy clay loam; over petroplinthite; in places excessively drained and sandy; on interfluves, convex slopes and near fringes to bottomlands (50%) (orthic ACRISOLS, petroferric phase, with ferralic ARENOSOLS)	2	4-5	3	0	0	0	0	4	3-4	2	0
U1GA2	association of: well drained, moderately deep, reddish brown, friable to firm, fairly bouldery, sandy clay; over pisoferric material; on gentle slopes (50%) (ferralic CAMBISOLS, pisoferric phase)	2	4	3	0	0	1	0	4	3	2	0
	and: soils as above, but shallow and bouldery; over rock or pisoferric material; on steeper slopes (50%) (ferralic CAMBISOLS, lithic or pisoferric phase)	2	4	3	0	0	2	0	-	4	2	0
U1GC1	complex of: well drained, moderately deep to very deep, reddish brown to yellowish brown, friable clay; over petroplinthite (70%) (orthic FERRALSOLS, with orthic ACRISOLS, partly petroferric phases)	2	2-4	3	0	0	0	0	4	1-3	2	0
	and: moderately well drained, shallow, brown to dark brown, sandy clay loam; over petroplinthite (30%) (ferralic CAMBISOLS, petroferric phases)	3	5	3	0	0	0	0	-	4	2	0
U1GC2	complex of: somewhat excessively to well drained, shallow to deep, reddish brown to reddish yellow, friable to firm, soils of varying texture (loamy sand to clay); in places very shallow, stony and/or extremely rocky (chromic and haplic CAMBISOLS, eutric REGOSOLS, and chromic VERTISOLS, partly lithic and stony phases, LITHOSOLS and Rock Outcrops)	1-2	3-5	2-3	0	0	0	0	4-5	2-4	2	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
U1I	Soils developed on intermediate igneous rocks (andesites, phonolites, syenites, etc.)											
U1I1	well drained, deep, red to dark red, friable clay; in places (mainly on interfluves) shallow to moderately deep over petroplinthite (chromic ACRISOLS, partly petroferric phase)	2	3	3	0	0	0	0	4	2	2	0
U1I2	well drained, shallow to moderately deep, reddish brown to dark red, friable gravelly clay to clay; over petroplinthite (chromic ACRISOLS, petroferric phase)	2	4-5	3	0	0	0	0	4	3-4	2	0
U1I3	well drained, shallow, dark reddish brown to brown, sandy clay loam to gravelly clay; in many places over petroplinthite (orthic FERRALSOLS and ferralic CAMBISOLS, lithic and petroferric phases)	2	5	3	0	0	0	0	-	4	2	0
U1I4	imperfectly drained, shallow to moderately deep, dark brown to dark yellowish brown, mottled, firm sandy clay to clay, abruptly underlying a topsoil of friable to firm sandy loam to sandy clay loam; in places over weathering rock (eutric PLANOSOLS, partly (para-)lithic phase)	4	4-5	2	0	0	0	0	5	4	3	2
U1I5	well drained, moderately deep to deep, strong brown to dark red, friable to firm clay; over petroplinthite; in places shallow (ferralo-chromic and orthic LUVISOLS, partly petroferric phases)	2	3-4	2	0	0	0	0	4	2-3	2	0
U1IA	association of: well drained, deep, strong brown to dark brown, friable clay; on side slopes (50%) (orthic ACRISOLS)	2	3	3	0	0	0	0	4	2	2	0
	and: well drained, shallow to moderately deep, yellowish red to dark reddish brown, friable, gravelly sandy clay to clay; over petroplinthite; in places stony or rocky; on interfluves (50%) (orthic ACRISOLS and dystric and ferralic CAMBISOLS, petroferric and partly stony phases; with Rock Outcrops)	2	4-5	3	0	0	0	0	4	3-4	2	0
U1IC	complex of: well drained, very shallow to moderately deep, dark reddish brown to strong brown, friable, gravelly clay to clay; over petroplinthite, pisoferric material or rock; in places stony (orthic ACRISOLS and dystric CAMBISOLS, petroferric, pisoferric or lithic phases and partly stony phases, and LITHOSOLS, partly stony phase)	2	4-6	3	0	0	0	0	4	2-4	2	0
U1N	Soils developed on biotite gneisses											
U1N1	well drained, deep to very deep, dark red to dark reddish brown, very friable, sandy clay loam to clay; in places moderately deep over petroplinthite (rhodic and orthic FERRALSOLS, partly petroferric phase)	2	2-3	3	0	0	0	0	3	1-2	1	0
U1N2	well drained, moderately deep, dark reddish brown to strong brown, very friable sandy clay loam to clay; over petroplinthite; in places shallow (orthic FERRALSOLS, petroferric phase)	2	4	3	0	0	0	0	3	3	1	0
U1N3	well drained, deep to very deep, dark red to dark reddish brown, very friable sandy clay loam to clay (rhodic FERRALSOLS)	2	2-3	3	0	0	0	0	3	1-2	1	0
U1NA	association of: well drained, moderately deep to very deep, red, very friable sandy clay to clay; over petroplinthite; on side slopes (50%) (rhodic FERRALSOLS, partly petroferric phase)	2	2-4	3	0	0	0	0	3	1-3	1	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	and: well drained, shallow, dark reddish brown, sandy clay loam; over petroplinthite; on interfluves (50%) (orthic FERRALSOLS and ferralic CAMBISOLS, petroferric phase)	2	5	3	0	0	0	0	-	4	1	0
U1R	Soils developed on quartz-felspar gneisses											
U1R1	well drained, deep, strong brown to reddish yellow, friable sandy clay loam to sandy clay; in places shallow to moderately deep over petroplinthite; in places red to dark red (orthic FERRALSOLS, with ferralic CAMBISOLS, partly petroferric phases and with rhodic FERRALSOLS)	2	3	3	0	0	0	0	4	2	1	0
U1RA	association of: well drained, deep, strong brown to yellowish red and dark red, friable sandy clay loam to sandy clay; in places shallow to moderately deep over petroplinthite; on interfluves (70%) (orthic FERRALSOLS with rhodic FERRALSOLS, partly petroferric phases)	2	3	3	0	0	0	0	4	2	1	0
	and: well drained, moderately deep to deep, dark yellowish brown to brown, friable sandy clay loam to clay, with an acid humic topsoil; in places shallow; on steeper valley sides (30%) (humic CAMBISOLS; partly lithic phase)	2	3-4	2	0	0	0	0	4	2-3	1	0
U1S	Soils developed on Kavirondian sedimentary rocks, mainly sandstones											
U1S1	well drained, moderately deep to deep, dark reddish brown to strong brown, friable sandy clay loam to clay, over petroplinthite; in places shallow (orthic ACRISOLS, with orthic FERRALSOLS, partly petroferric phases)	2	3-4	3	0	0	0	0	4	2-3	2	0
U1SA	association of: well drained, shallow to moderately deep, dark reddish brown to yellowish red, friable sandy clay loam to clay; over petroplinthite; on interfluves (60%) (orthic ACRISOLS with dystric CAMBISOLS, petroferric phases)	2	4-5	3	0	0	0	0	4	3-4	2	0
	and: imperfectly drained, moderately deep, dark yellowish brown to reddish brown, mottled, friable sandy clay; over petroplinthite; in places shallow; on lower slopes and fringes to bottomlands (40%) (gleyic ACRISOLS, petroferric phase)	4	4	3	0	0	0	0	4	3	2	2
U1U	Soils developed on undifferentiated Basement System rocks (predominantly gneisses)											
U1U1	well drained, very deep, red to dark red, very friable clay (rhodic FERRALSOLS)	2	2	3	0	0	0	0	3	1	1	0
U1U2	well drained, deep to very deep, dark reddish brown to yellowish red, friable clay; in many places with an acid humic topsoil (orthic and humic FERRALSOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
U1U3	well drained, moderately deep to deep, strong brown to reddish yellow and red, friable sandy clay loam to clay; in many places over petroplinthite (orthic and rhodic FERRALSOLS, with ferralic CAMBISOLS, partly petroferric phases)	2	3-4	3	0	0	0	0	4	2-3	1	0
U1U4	well drained, shallow to moderately deep, strong brown to reddish yellow, friable sandy clay loam to gravelly clay; over petroplinthite (orthic FERRALSOLS with ferralic CAMBISOLS, petroferric phases)	2	4-5	3	0	0	0	0	4	3-4	1	0
U1V	Soils developed on various volcanic rocks											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
U1V1	well drained, deep to very deep, yellowish red to strong brown, friable clay (chromic and orthic ACRISOLS)	2	2-3	3	0	0	0	0	4	1-2	1	0
U1V2	well drained, moderately deep to deep, reddish brown to dark red, friable to firm, clay; over petroplinthite or pisoferric material (chromic LUVISOLS and ferralo-chromic ACRISOLS, petroferric and pisoferric phases)	2	3-4	2	0	0	0	0	4	2-3	2	0
U1V3	well drained, moderately deep to deep, yellowish red to reddish brown, friable to firm, gravelly clay to clay; over pisoferric material (chromic ACRISOLS, partly pisoferric phase)	2	3-4	3	0	0	0	0	4	2-3	4	0
U1V4	well drained, very shallow to shallow, reddish brown to dark reddish brown, fairly rocky, stony, gravelly clay to clay; over pisoferric material or rock (LITHOSOLS, stony phase and eutric CAMBISOLS, pisoferric and stony phase)	2	5-6	4	0	0	2	1	-	4	2	0
ULV5	well drained, shallow, dark yellowish brown, gravelly clay to clay; over petroplinthite; in places very shallow and stony (orthic LUVISOLS and eutric CAMBISOLS, petroferric phases, with LITHOSOLS, stony phase)	2	5	2	0	0	0	0	-	4	2	0
U1VC	complex of: well drained, very shallow to moderately deep, yellowish red to strong brown, friable, gravelly clay loam to clay of varying rockiness and stoniness; over petroplinthite or rock (chromic and orthic ACRISOLS and ferralic CAMBISOLS, petroferric and lithic phases, partly stony phases, with LITHOSOLS and Rock Outcrops)	2	4-6	3	0	0	0	0	4	3-4	2	0
U1X	Soils developed on undifferentiated rocks (Kavirondian and Nyanzian rocks, often mudstones; Pleistocene sediments, etc.)											
U1X1	well drained, deep to very deep, dark red to strong brown, friable clay; in many places shallow or moderately deep over petroplinthite (orthic to rhodic FERRALSOLS, partly petroferric phase)	2	2-3	3	0	0	0	0	4	1-2	1	0
U1X2	well drained, shallow to moderately deep, dark reddish brown to strong brown, friable clay; over petroplinthite; in places deep (orthic FERRALSOLS, petroferric phase)	2	4-5	3	0	0	0	0	4	3-4	2	0
U1X3	well to moderately well drained, moderately deep to deep, dark reddish brown to dark brown, friable to firm, sandy clay to clay; in many places with a humic topsoil and/or calcareous; in places with severe gully erosion (badlands) (verto-luvic PHAEOZEMS with orthic LUVISOLS)	2-3	3-4	2	0	0	0	0	5	2-3	2	0
U1X4	well drained, shallow to moderately deep, dark brown, firm clay, with a humic topsoil; in places gravelly (verto-luvic PHAEOZEMS, partly lithic phase)	2	4-5	2	0	0	0	0	5	3-4	2	0
U1X5	somewhat excessively to moderately well drained, shallow, dark brown to dark greyish brown, calcareous, silty clay loam to clay loam; over gravel or weathering rock; in places very shallow, stony or with a humic topsoil (calcaric and eutric REGOSOLS and calcic and eutric CAMBISOLS, with calcaric PHAEOZEMS, paralithic and partly stony phases, and with LITHOSOLS, partly stony phase)	1-3	5	4	0	0	0	0	-	4	2	0
U1X6	well to moderately well, shallow to moderately deep, reddish brown to red, friable to firm, slightly gravelly clay to clay; over gravel or rock; in places with a humic topsoil; in places imperfectly drained and dark grey (chromic LUVISOLS, with luvic PHAEOZEMS and gleyic LUVISOLS, partly lithic phases)	2-3	4-5	2	0	0	0	0	4	3-4	2	0
U1X7	imperfectly drained, shallow to moderately deep, dark brown, mottled, firm, stony, gravelly clay to clay, abruptly underlying a topsoil of friable to firm sandy loam;											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	in places over pisoferric material (eutric and dystric PLANOSOLS, with gleyic LUVISOLS, stony and partly pisoferric or lithic phase)	4	5	3	0	0	2	0	4	4	3	0
U1X8	imperfectly to poorly drained, moderately deep to deep, very dark grey, very firm, cracking clay; over weathering rock; calcareous in the deeper subsoil (pellic VERTISOLS)	4-5	3-4	2	0	0	0	0	6	2-3	2	2
U1X9	well drained, shallow, dark yellowish brown to dark brown, friable to firm, gravelly clay to clay; over petroplinthite or rock (orthic ACRISOLS, petroferric and lithic phase)	2	5	3	0	0	0	0	4	4	2	0
U1XA1	association of: well drained, shallow to moderately deep, dark brown to dark greyish brown, friable, gravelly sandy clay to clay, with a humic to acid humic topsoil; in many places over petroplinthite; on relatively higher parts (40-50%) (haplic PHAEOZEMS and humic CAMBISOLS, petroferric and lithic phases)	2	4-5	2	0	0	0	0	4	3-4	2	0
	and: imperfectly to poorly drained, moderately deep to deep, very dark greyish brown, mottled, very firm cracking clay; in many places over petroplinthite; in places with a humic topsoil; in slight depressions (50-60%) (chromic VERTISOLS, with verto-luvic PHAEOZEMS, petroferric phases)	4-5	3-4	2	0	0	0	0	6	2-3	2	2
U1XA2	association of: moderately well to well drained, moderately deep, dark brown to dark greyish brown, friable gravelly clay loam, with a humic to acid humic topsoil; over petroplinthite or rock; in places shallow; on relatively higher parts (30-50%) (haplic PHAEOZEMS and humic CAMBISOLS, petroferric and partly lithic phases)	2-3	4	2	0	0	0	0	4	3	1	0
	and: imperfectly drained, moderately deep to deep, dark greyish brown to very dark brown, mottled, firm sandy clay loam to clay, with a humic topsoil; in places abruptly underlying a topsoil of friable sandy loam; in places over petroplinthite; in slight depressions (50-70%) (gleyic PHAEOZEMS, with eutric PLANOSOLS, partly petroferric phases)	4	3-4	2	0	0	0	0	5	2-3	2	2
U1XC	complex of: well drained, shallow, brown to very dark greyish brown, gravelly sandy clay to silty clay; over petroplinthite or rock; in places stony; in places with a humic topsoil (eutric CAMBISOLS, with haplic PHAEOZEMS, petroferric, lithic phases and partly stony phases)	2	5	2	0	0	0	0	-	4	2	0
	and: moderately well to imperfectly drained, deep, very dark brown to very dark grey, mottled, firm silty clay to cracking clay; in many places abruptly underlying a topsoil of friable loam (gleyic and vertic LUVISOLS and eutric PLANOSOLS)	3-4	3-5	2	0	0	0	0	5	2-4	2	0
U1Y	Soils developed on acid igneous rocks (rhyolites)											
U1Y1	well drained, moderately deep to deep, yellowish red to strong brown, friable clay; over petroplinthite or rock; in places shallow over petroplinthite or bouldery (orthic FERRALSOLS, partly petroferric or bouldery phase)	2	3-4	3	0	0	0	0	4	2-3	1	0
U1Y2	well drained, shallow, dark reddish brown, slightly gravelly clay loam to clay; over pisoferric material or petroplinthite; in places moderately deep (ferralic CAMBISOLS, pisoferric or petroferric phase)	2	5	3	0	0	0	0	-	4	2	0
U1Y3	well drained, moderately deep to deep, brown to reddish brown, friable, gravelly clay loam to clay; predominantly with a humic topsoil; in places shallow over weathering rock (luvic PHAEOZEMS and orthic LUVISOLS, partly paralithic phases)	2	3-4	2	0	0	0	0	4	2-3	1	0
U1Y4	moderately well drained, deep, dark grey to dark reddish grey, mottled, friable to firm clay, with a humic topsoil (gleyic PHAEOZEMS)	3	3	2	0	0	0	0	5	2	2	2

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
UlYA	association of: somewhat excessively to well drained, shallow to moderately deep, brown to reddish brown, friable, gravelly loam to clay, over weathering rock; predominantly with a humic topsoil; on higher parts (50-60%) (luvic PHAEOZEMS and haplic PHAEOZEMS, paralithic phases, with orthic LUVISOLS)	1-2	4-5	2	0	0	0	0	4	3-4	2	0
	and: moderately well drained, deep, dark grey to dark reddish grey, mottled, friable to firm clay, with a humic topsoil; on lower slopes (40-50%) (gleyic PHAEOZEMS)	3	3	2	0	0	0	0	5	2	2	2
UlYC	complex of: somewhat excessively to well drained, shallow to deep, brown to reddish brown, friable, gravelly loam to clay, over weathering rock; predominantly with a humic topsoil (luvic PHAEOZEMS and haplic PHAEOZEMS, paralithic phase, with orthic LUVISOLS)	1-2	3-5	2	0	0	0	0	4	2-4	2	0
Up	UPLAND/HIGH-LEVEL PLAIN TRANSITIONAL LANDS (gently undulating; slopes between 2 and 5%; altitudes between 1650 and 2000 m)											
UpB+	Soils developed on basic igneous rocks (basalts, nepheline phonolites, etc.), with volcanic ash admixture											
UpB+1	imperfectly drained, deep, very dark greyish brown to black, firm clay, with a sodic subsoil; in places with a humic topsoil (verto-luvic PHAEOZEMS, sodic phase)	4	3	3	0	2	0	0	5	4	2	0
UpB+2	well drained, very shallow to shallow, dark greyish brown to black, gravelly clay; in places stony and bouldery (LITHOSOLS and eutric REGOSOLS, partly stony and bouldery phases)	2	5-6	1	0	0	0	0	-	4	2	0
UpB+A	association of: imperfectly drained, deep, very dark greyish brown to very dark grey, very firm clay, abruptly underlying a topsoil of friable, silty clay loam; on straight to convex slopes (60-70%) (eutric PLANOSOLS)	4	5	3	0	0	0	0	6	4	3	0
	and: imperfectly drained, deep, very dark greyish brown to very dark grey, very firm, cracking clay; in places sodic; on interfluves (30-40%) (chromic VERTISOLS, partly sodic phase)	4	3	1	0	0	0	0	6	2	2	0
UpN+	Soils developed on biotite gneisses, with volcanic ash mixture											
UpN+1	imperfectly drained, deep, very dark greyish brown to black, firm clay, with a humic topsoil and a sodic subsoil (verto-luvic PHAEOZEMS, sodic phase)	4	3	3	0	2	0	0	5	4	2	0
UpN+2	imperfectly drained, moderately deep to deep, dark greyish brown to dark grey, very firm sandy clay to clay, abruptly underlying a topsoil of friable loam (verto-eutric PLANOSOLS)	4	4-5	2	0	0	0	0	6	4	3	2
UpN+3	imperfectly drained, very deep, very dark greyish brown to black, very firm, sodic, cracking clay, with a calcareous subsoil (pellic VERTISOLS, sodic phase)	4	2	3	0	2	0	0	6	3	3	2
UpY+	Soils developed on acid igneous rocks (rhyolites), with volcanic ash admixture											
UpY+A	association of: poorly drained, deep, very dark grey, very firm, cracking clay; in many places abruptly underlying a topsoil of friable loam; on flat parts (50%) (chromic VERTISOLS and eutric PLANOSOLS)	5	3-5	2	0	0	0	0	6	2-4	2	2

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	and: well drained, moderately deep, dark reddish brown, firm clay loam, with a humic topsoil; on sloping parts (50%) (chromo-luvic PHAEOZEMS)	2	4	2	0	0	0	0	5	3	1	0
P	PLAINS											
Pn	NON-DISSECTED EROSIONAL PLAINS (very gently undulating to undulating; slopes between 0 and 8%; various altitudes)											
PnB	Soils developed on basic igneous rocks (Tertiary alkali basalts, nepheline phonolites, etc.)											
PnB1	imperfectly to poorly drained, very deep, very dark grey to greyish brown, mottled, very firm, cracking clay (chromic VERTISOLS)	4-5	2	1	0	0	0	0	6	2	2	0
PnB2	soils as in unit PnB1, but moderately deep to deep (chromic VERTISOLS)	4-5	3-4	1	0	0	0	0	6	2-3	2	0
PnB3	moderately well to imperfectly drained, moderately deep to deep, very dark grey to dark greyish brown, mottled, firm clay, with a humic topsoil (gleyic PHAEOZEMS and mollic GLEYSOLS)	3-4	3-4	1	0	0	0	0	5	2-3	2	2
PnB4	moderately well drained, moderately deep, very dark grey to very dark greyish brown, firm, cracking clay, with a humic topsoil; over pisoferric material or weathering rock; in places shallow and stony (verto-luvic PHAEOZEMS, partly pisoferric or paralithic and stony phase)	3	4	1	0	0	0	0	5	3	2	0
PnB5	well drained, moderately deep, dark red to dark reddish brown, friable sandy clay loam, with a humic topsoil; over pisoferric material or weathering rock; in places shallow and stony (haplic PHAEOZEMS, partly pisoferric or paralithic and stony phase)	2	4	2	0	0	0	0	4	3	1	0
PnB6	imperfectly to poorly drained, deep to very deep, dark grey to very dark greyish brown, firm clay, abruptly underlying a topsoil of friable to firm loam (dystric PLANOSOLS)	4-5	5	3	0	0	0	0	5	4	3	0
PnB^{+}	Soils developed on basic igneous rocks (basalts, nepheline phonolites, etc.), with volcanic ash admixture											
PnB^{+}1	imperfectly drained, deep, black to very dark greyish brown, very firm, cracking clay, with a calcareous deeper subsoil; in places saline and sodic (pellic VERTISOLS, partly saline-sodic phase)	4	3	1	0	0	0	0	6	2	2	0
PnB^{+}2	imperfectly drained, deep, dark brown to dark grey, firm sandy clay to clay, abruptly underlying a topsoil of friable silt loam to clay loam (verto-eutric PLANOSOLS)	4	5	2	0	0	0	0	5	4	3	0
PnB^{+}3	imperfectly to poorly drained, deep, very dark greyish brown to black, mottled, firm clay loam to cracking clay, abruptly underlying 20-30 cm of bleached, friable silty clay loam to silty clay; in places with an acid humic topsoil. (dystric PLANOSOLS, with humic PLANOSOLS)	4-5	5	2-3	0	0	0	0	5	4	3	0
PnB^{+}C1	complex of: moderately well to imperfectly drained, moderately deep to very deep, very dark greyish brown to black, calcareous, firm to very firm, silty clay to cracking clay; in places saline and sodic (pellic VERTISOLS and orthic GREYZEMS, partly saline-sodic phase)	3-4	2-4	1-2	0	0	0	0	6	1-3	2	0
PnB^{+}C2	complex of: well to imperfectly drained, shallow to deep, very dark greyish brown to black, friable to firm, sandy clay to cracking clay; in many places sodic; in places calcareous											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	and saline; in places shallow and gravelly over petroplinthite (orthic GREYZEMS, sodic phase, verto-luvic CHERNOZEMS, partly saline phase and vertic LUVISOLS, petroferric phase)	2-4	3-5	2-4	0	2	0	0	5	2-4	2	0
PnBP	Soils developed on basic igneous rocks (Tertiary alkali basalts) with influence of volcanic ash predominant											
PnBP1	imperfectly drained, deep, dark grey to grey, very firm, cracking clay (pellic VERTISOLS)	4	3	1	0	0	0	0	6	2	2	0
PnG	Soils developed on granites											
PnG1	imperfectly drained, deep to very deep, dark brown to dark greyish brown, mottled, friable to firm clay (gleyic ACRISOLS and dystric GLEYSOLS)	4	2-3	3	0	0	0	0	5	1-2	2	0
PnG2	imperfectly to poorly drained, deep to very deep, very dark greyish brown to black, mottled, firm clay, abruptly underlying a thick topsoil of friable loamy sand to sandy loam (dystric PLANOSOLS)	4-5	4	3-4	0	0	0	0	5	3	2	0
PnG+	Soils developed on granites, with volcanic ash admixture											
PnG+1	imperfectly drained, deep, dark greyish brown, mottled, very firm, gravelly clay loam to clay, abruptly underlying a thick topsoil of friable loam (eutric PLANOSOLS)	4	4	2	0	0	0	0	6	3	3	0
PnGP	Soils developed on granites, but with influence of volcanic ash predominant											
PnGP1	imperfectly drained, moderately deep, very dark greyish brown, mottled, very firm, slightly sodic, gravelly clay, abruptly underlying a topsoil of friable loam (solodic PLANOSOLS)	4	5	4	0	1	0	0	6	4	3	0
PnN+	Soils developed on biotite gneisses, with volcanic ash admixture											
PnN+1	imperfectly poorly drained, deep, dark grey to black, very firm, sodic clay, with a calcareous deeper subsoil; in places abruptly underlying a topsoil of friable loam (pellic VERTISOLS, with verto-eutric PLANOSOLS, sodic phases)	4-5	5	4	0	2	0	0	6	4	3	0
PnN+2	imperfectly drained, deep, very dark grey to very dark greyish brown, very firm clay; in most places abruptly underlying a topsoil of friable clay loam (verto-eutric PLANOSOLS, with verto-orthic GREYZEMS)	4	5	2	0	0	0	0	6	4	3	0
PnN+A	association of: well drained, deep, very dark greyish brown to black, firm calcareous sandy clay to clay; in places sodic; on sloping parts (40%) (verto-luvic CHERNOZEMS, partly sodic phase)	2	3	1	0	0	0	0	5	2	2	0
	and: well drained, deep, very dark grey to black, firm, calcareous, clay; on relatively high parts (30%) (verto-luvic PHAEOZEMS)	2	3	1	0	0	0	0	5	2	2	0
	and: imperfectly to poorly drained, moderately deep to deep, very dark grey to black, very firm, calcareous and sodic, cracking clay; in slight depressions (30%) (pellic VERTISOLS, sodic phase)	4-5	3-4	3	0	2	0	0	6	4	3	0
PnX	Soils developed on various rocks											
PnX1	Imperfectly drained, moderately deep to very deep, dark grey, mottled, firm, slightly gravelly sandy clay to crack-											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	ing clay; in most places abruptly underlying a topsoil of friable to firm silt loam (verto-eutric PLANOSOLS, with gleyic LUVISOLS)	4	5	3	0	0	0	0	5	4	3	0
PnXA1	association of: moderately well to imperfectly drained, moderately deep to deep, dark brown to very dark greyish brown, firm clay to cracking clay, with a humic topsoil; over petroplinthite; in places shallow; on relatively higher parts (50-60%) (haplic and verto-luvic PHAEOZEMS)	3-4	3-4	2	0	0	0	0	5	2-3	2	0
	and: imperfectly drained, deep, dark grey, mottled, firm, slightly gravelly sandy clay, abruptly underlying a topsoil of friable silt loam; in slight depressions (40-50%) (eutric PLANOSOLS)	4	5	2	0	0	0	0	5	4	3	2
PnXA2	association of: moderately well to imperfectly drained, shallow to moderately deep, dark brown to dark greyish brown, friable, gravelly clay loam, with a humic topsoil; over petroplinthite, on relatively higher and sloping parts (50-60%) (haplic PHAEOZEMS, petroferric phase)	3-4	4-5	2	0	0	0	0	4	3-4	2	0
	and: imperfectly to poorly drained, deep, dark grey, mottled, firm clay, abruptly underlying a topsoil of friable silt loam; in slight depressions (40-50%) (eutric PLANOSOLS)	4-5	5	2	0	0	0	0	5	4	3	2
PnX^{+}	Soils developed on various rocks with volcanic ash admixture											
PnX^{+}1	imperfectly to poorly drained, deep, dark grey, mottled, firm clay, abruptly underlying a topsoil of friable silt loam; in places with a sodic deeper subsoil (eutric PLANOSOLS, with solodic PLANOSOLS)	4-5	5	2	0	0	0	0	5	4	3	2
Pd	DISSECTED EROSIONAL PLAINS (gently undulating to undulating; slopes between 2 and 8%; altitude approximately 1500 m; near Mara River)											
PdV	Soils developed on various volcanic rocks											
PdV1	well to moderately well drained, shallow, dark brown to black, gravelly and stony clay, with a humic topsoil; in places imperfectly drained and mottled (verto-luvic PHAEOZEMS, with mollic GLEYSOLS, lithic and stony phases)	2-3	5	2	0	0	2	0	-	4	2	0
Pv	VOLCANIC PLAINS (almost flat to gently undulating; slopes between 0 and 5%; altitude approximately 1800 m; near Kilgoris, Loita Plains)											
PvP	Soils developed on ashes and other pyroclastic rocks of Recent volcanoes											
PvP1	imperfectly drained, moderately deep to deep, dark yellowish brown, to very dark greyish brown, firm to very firm, slightly sodic, silty clay loam to clay, abruptly underlying a thick topsoil of friable silt loam to clay loam (solodic PLANOSOLS)	4	4	4	0	1	0	0	5	4	3	0
PvP2	imperfectly to poorly drained, deep, black, very firm clay, abruptly underlying a topsoil of friable loam, with a slightly calcareous deeper subsoil (eutric PLANOSOLS)	4-5	5	2	0	0	0	0	6	4	3	0
Pl	LACUSTRINE PLAINS (almost flat to gently undulating; slopes between 0 and 5%; altitude approximately 1200 m; along Lake Victoria)											
PlA	Soils developed on Quaternary alluvials and Lake sediments											
PlA1	well drained, very deep, dark reddish brown, friable clay loam to clay (eutric LUVISOLS)	2	2	2	0	0	0	0	4	1	1	0
PlA2	imperfectly drained, very deep, very dark grey to black, mottled, firm, slightly saline and sodic, cracking clay, with a humic topsoil (verto-luvic PHAEOZEMS, saline-sodic phase)	4	2	3	1	1	0	0	5	3	3	1

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
P1A3	imperfectly to poorly drained, very deep, very dark grey to black, firm, slightly saline and sodic, cracking clay; in many places with a humic topsoil; in places abruptly underlying a topsoil of friable to firm clay loam (vertic PHAEOZEMS and pellic VERTISOLS, saline-sodic phases, with solodic PLANOSOLS; saline phase)	4-5	2	3	1	1	0	0	5	3	3	1
P1A4	poorly drained, very deep, dark grey to olive gray, firm clay loam to clay, with a humic topsoil (mollic GLEYSOLS)	5	2	2	0	0	0	0	5	1	2	1
P1A5	imperfectly to poorly drained, very deep, black, very firm, calcareous, gypsiferous, saline and sodic, cracking clay; in places with a humic topsoil (pellic VERTISOLS, saline-sodic phase, with mollic SOLONETZ, saline sodic phase)	4-5	2	4	2	2	0	0	6	3	3	2
P1A6	imperfectly to poorly drained, very deep, grey to black, very firm, calcareous, saline and sodic, cracking clay (pellic VERTISOLS, saline-sodic phase)	4-5	2	4	2	2	0	0	6	3	3	2
P1A7	imperfectly to poorly drained, very deep, very dark greyish brown to black, very firm, cracking clay; in places calcareous, saline and/or sodic (chromic and pellic VERTISOLS, partly saline-sodic phases)	4-5	2	2	0	0	0	0	6	2	2	2
P1A8	poorly drained, deep to very deep, very dark grey, mottled, firm clay, with a thick acid humic topsoil; in places cracking clay (humic GLEYSOLS, with vertic GLEYSOLS)	5	2-3	2	0	0	0	0	5	1-2	2	2
P1A9	imperfectly to poorly drained, deep to very deep, very dark grey, very firm, slightly sodic, cracking clay, with a calcareous and sodic deeper subsoil; lower level of Kano Plains (pellic VERTISOLS, sodic phase)	4-5	2-3	4	0	2	0	0	6	3-4	3	1
P1A10	poorly drained, very deep, very dark grey to black, firm to very firm, sodic, cracking clay; lower level of Kano Plains (pellic VERTISOLS and vertic GLEYSOLS, sodic phase)	5	2	4	0	2	0	0	5	3	3	1
P1A11	imperfectly to poorly drained, moderately deep to deep, very dark brown to very dark grey, firm to very firm, slightly sodic, cracking clay; over mudstones; upper level of Kano Plains (chromic VERTISOLS, sodic phase)	4-5	3-4	4	0	1	0	0	5	4	3	0
P1A12	imperfectly to poorly drained, shallow, very dark brown to very dark grey, firm, slightly sodic, cracking clay, over mudstone (chromic VERTISOLS, lithic and sodic phase)	4-5	5	4	0	1	0	0	5	4	3	0
P1A13	imperfectly drained, deep, dark greyish brown to brown, mottled, firm clay loam to clay, with a humic topsoil; in places with a slightly sodic deeper subsoil (mollic GLEYSOLS)	4	3	2	0	0	0	0	5	2	2	2
P1A14	imperfectly to poorly drained, deep, very dark grey to dark greyish brown, mottled, firm clay, abruptly underlying a topsoil of friable to firm clay loam, with a calcareous deeper subsoil (eutric PLANOSOLS)	4-5	5	2	0	0	0	0	5	4	3	1
A	FLOODPLAINS AND RIVER TERRACES (almost flat to gently undulating; slopes between 0 and 5%; various altitudes; seasonally flooded or ponded)											
AA	Soils developed on Recent alluvial sediments from various sources											
AA1	well to moderately well drained, deep, dark greyish brown to yellowish brown, friable, stratified, sandy clay loam to clay; in places mottled, firm clay; in places slightly saline or sodic; on river levees (eutric FLUVISOLS, with vertic FLUVISOLS and vertic and eutric GLEYSOLS, partly saline-sodic phases)	2-3	3	2	0	0	0	0	4	3	2	1
AA2	imperfectly to poorly drained, deep, greyish brown to very											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	dark grey, mottled, very firm, saline and sodic, cracking clay; in river backswamps (pellic VERTISOLS and vertic GLEYSOLS, saline and sodic phases)	4-5	3	4	2	2	0	0	6	4	3	2
AA3	imperfectly to poorly drained, deep, dark yellowish brown to dark greyish brown, mottled, firm clay loam to clay, with a humic topsoil; in places stratified (mollic GLEYSOLS, with eutric FLUVISOLS)	4-5	3	2	0	0	0	0	5	2	2	1
AA4	moderately well to imperfectly drained, deep, very dark brown to dark greyish brown, friable to firm sandy clay loam to clay; in places sodic and/or saline; older floodplains in Kano Plains (eutric FLUVISOLS and gleyic and eutric CAMBISOLS, partly saline-sodic phases)	3-4	3	2	0	0	0	0	3	3	2	1
AA5	moderately well to poorly drained, very deep, dark greyish brown to brown, mottled, firm clay, abruptly underlying a topsoil of dark grey, gravelly sandy clay loam; on low terraces (eutric PLANOSOLS)	3-5	5	2	0	0	0	0	5	4	3	1
B	BOTTOMLANDS (almost flat to gently undulating; slopes between 0 and 5%; various altitudes; seasonally ponded)											
BB	Soils developed on infill derived from basic igneous rocks											
BB1	imperfectly to poorly drained, deep, dark greyish brown to very dark grey, mottled, firm clay to very firm cracking clay; in places abruptly underlying an acid humic topsoil of friable loam to clay loam (chromic VERTISOLS, with humic PLANOSOLS)	4-5	3	1	0	0	0	0	5	2	2	2
BB2	imperfectly to poorly drained, moderately deep to deep, dark greyish brown to very dark grey, mottled, firm clay; in many places with an acid humic topsoil (dystric and humic GLEYSOLS)	4-5	3-4	2-3	0	0	0	0	5	2-3	2	2
BG	Soils developed on infill derived from granites											
BG1	imperfectly drained, deep, very dark grey to dark greyish brown, mottled, firm clay, abruptly underlying a topsoil of friable loamy sand to sandy loam; in places sodic (eutric PLANOSOLS, with solodic PLANOSOLS)	4	5	3	0	0	0	0	5	4	3	2
BI	Soils developed on infill derived from intermediate igneous rocks (phonolites)											
BI1	poorly drained, moderately deep to deep, grey to dark grey, mottled, firm clay, with a humic topsoil; in places over petroplintite; on Uasin Gishu plateau (mollic GLEYSOLS, partly petroferric phase)	5	3-4	2	0	0	0	0	5	2-3	2	2
BP	Soils developed on infill derived from ashes and other pyroclastic rocks of Recent volcanoes											
BP1	imperfectly to poorly drained, deep, dark greyish brown to dark brown, mottled, very firm clay, abruptly underlying a humuc topsoil of friable silty clay loam to clay loam (humic PLANOSOLS)	4-5	5	2	0	0	0	0	6	4	3	2
BV	Soils developed on infill derived from various volcanic rocks											
BV1	poorly drained, deep, dark grey to grey, mottled, firm clay, with a humic topsoil (mollic GLEYSOLS)	5	3	2	0	0	0	0	5	2	2	2
BV2	poorly drained, deep, grey to light olive brown, mottled, firm clay, abruptly underlying a thick topsoil of silt loam; with inclusions of peaty soils of unit BV3 (eutric PLANOSOLS, with dystric HISTOSOLS)	5	4	2	0	0	0	0	5	3	3	2
BV3	very poorly drained, deep, acid peat to peaty clay, overlaying half ripe, dark olive to black clay (dystric HISTOSOLS)	5	2	3	0	0	0	0	1	1	1	2

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
BX	Soils developed on infill derived from various rocks											
BX1	imperfectly to poorly drained, deep to very deep, dark grey to greyish brown, mottled, firm sandy clay to cracking clay; in places with a peaty topsoil; in places with a calcareous subsoil (eutric and vertic GLEYSOLS, with mollic GLEYSOLS)	4-5	2-3	1-2	0	0	0	0	5	2	2	2
BX2	imperfectly to poorly drained, deep to very deep, greyish brown to very dark grey and black, mottled, firm to very firm clay to cracking clay; in places with a saline and sodic subsoil; slightly elevated parts of bottomlands (eutric GLEYSOLS, and pellic VERTISOLS, partly saline-sodic phases)	4-5	2-3	1-2	0	0	0	0	5	2	2	2
BX3	imperfectly to poorly drained, very deep, very dark greyish brown to black, very firm, cracking clay; in places calcareous, saline and/or sodic (chromic and pellic VERTISOLS, partly saline-sodic phases)	4-5	2	1	0	0	0	0	6	2	2	2
BX4	imperfectly to poorly drained, very deep, very dark grey to black, firm to very firm clay to cracking clay; in many places with an acid humic topsoil; in places saline and/or sodic (pellic VERTISOLS and humic GLEYSOLS, partly saline-sodic phases)	4-5	2	1-2	0	0	0	0	5	2	2	2
BX5	imperfectly to poorly drained, very deep, very dark grey, very firm, sodic, cracking clay (pellic VERTISOLS, sodic phase and vertic SOLONETZ)	4-5	2	3	0	2	0	0	6	3	3	2
BX6	imperfectly to poorly drained, deep to very deep, very dark grey to very dark greyish brown, mottled, firm, sodic clay; in many places abruptly underlying a topsoil of friable, sandy loam to clay loam (solodic PLANOSOLS with orthic SOLONETZ)	4-5	5	4	0	2	0	0	5	4	3	2
BX7	moderately well to imperfectly drained, very deep, very dark grey to dark greyish brown, mottled, firm, sodic clay (gleyic and orthic SOLONETZ)	3-4	2	4	0	2	0	0	5	4	3	2
BX8	imperfectly drained, deep, dark grey, very firm clay, abruptly underlying a topsoil of friable loamy sand to sandy loam (eutric PLANOSOLS)	4	5	2-3	0	0	0	0	6	4	3	2
BXC1	complex of: imperfectly to poorly drained, deep to very deep, very dark grey to brown, mottled, firm to very firm, sandy clay to cracking clay, in many places abruptly underlying a topsoil of friable sandy loam to sandy clay loam; in places saline and sodic (dystric PLANOSOLS, dystric and vertic GLEYSOLS and pellic VERTISOLS; partly saline-sodic phases)	4-5	2-5	2-4	0	0	0	0	5	2-4	3	2
BXC2	complex of: imperfectly to poorly drained, deep to very deep, very dark grey to dark greyish brown, mottled, firm clay; in many places abruptly underlying a topsoil of friable to firm sandy loam to sandy clay loam; in many places peaty or with an acid humic or histic topsoil (dystric and humic GLEYSOLS, dystric PLANOSOLS and dystric HISTOSOLS)	4-5	2-5	3-4	0	0	0	0	5	2-4	2	2
BXC3	complex of: imperfectly drained, very deep, very dark grey to dark greyish brown, mottled, firm, slightly cracking clay, with a humic topsoil (vertic PHAEOZEMS)	4	2	1	0	0	0	0	5	2	2	2
	and: imperfectly to poorly drained, deep, very dark grey to dark greyish brown, mottled, very firm, sodic, cracking clay, abruptly underlying a topsoil of friable to firm, sandy clay to clay loam (solodic PLANOSOLS)	4-5	5	4	0	2	0	0	6	4	3	2
S	SWAMPS (nearly flat; slopes between 0 and 2%; various altitudes; permanently waterlogged)											
SA	Soils developed on Recent alluvial sediments from various sources											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
SA1	very poorly drained, deep, dark grey to black, half ripe clay, with a humic or histic topsoil; in many places peaty (mollic GLEYSOLS and eutric HISTOSOLS)	5	3	1	0	0	0	0	1	3	2	3
SA2	very poorly drained, very deep, dark grey to black, half ripe clay, with an acid humic or dystric histic topsoil; in many places peaty; papyrus swamps along Lake Victoria, including Yala Swamp, and swamps in Kano Plains (humic GLEYSOLS and dystric HISTOSOLS)	5	2	3	0	0	0	0	1	3	2	3
SA3	very poorly drained, very deep, dark grey to black, half ripe clay, with an acid humic topsoil (humic GLEYSOLS)	5	2	3	0	0	0	0	1	3	2	3
SAC1	complex of: soils as in unit BX2: (eutric GLEYSOLS and pellic VERTISOLS, partly saline-sodic phases) and: soils as in unit SA1: (mollic GLEYSOLS and eutric HISTOSOLS)	4-5 5	2-3 3	2 1	0 0	0 0	0 0	0 0	5 1	2 3	2 2	2 3
V	MINOR VALLEYS (V- or U-shaped valleys; slopes mainly up to 16%, exceptionally up to 30%; width mainly 250-500 m, up to about 1000 m; depth up to about 100 m; various altitudes)											
VB	Soils developed on basic igneous rocks											
VB1	somewhat excessively drained, shallow to moderately deep, dark reddish brown, friable gravelly clay loam to clay, with an acid humic topsoil; in places very shallow and rocky; in relatively steep and deep V-shaped valleys (humic CAMBISOLS, partly (para-)lithic phase; with LITHOSOLS and Rock Outcrops)	1	4-5	2	0	0	0	0	4	3-4	2	0
VB2	Well drained, very deep, dark red to dark yellowish brown, friable clay (nito-rhodic and nito-orthic FERRALSOLS)	2	2	3	0	0	0	0	4	1	1	0
VB3	Moderately well to well drained, deep, dark brown to dark reddish brown, firm, cracking clay, with a humic topsoil; in places moderately deep (verto-luvic PHAEOZEMS, partly lithic phase)	2-3	3	1	0	0	0	0	5	2	1	0
VG	Soils developed on granites											
VG1	imperfectly drained, moderately deep, dark yellowish brown, mottled, friable clay; in many places abruptly underlying a topsoil of loose to friable sand to sandy loam; wide and shallow, V-shaped valleys in south-west Konyango (dystric PLANOSOLS and gleyic and dystric CAMBISOLS)	4	4-5	4	0	0	0	0	4	4	3	0
VI	Soils developed on intermediate igneous rocks (phonolites); on Uasin Gishu plateau											
VIC	complex of: well to imperfectly drained, very shallow to moderately deep, dark red to dark reddish brown, friable clay; over petroplinthite or rock; in many places mottled; in places rocky; on valley sides (ferralic and gleyic CAMBISOLS and rhodic FERRALSOLS, petroferric and lithic phases; with LITHOSOLS and Rock Outcrops) and: poorly drained, moderately deep to deep, dark grey to grey, mottled, firm clay, with a humic topsoil; in many places over petroplinthite; in valley bottoms (mollic GLEYSOLS, partly petroferric phase)	 5	 3-4	 2	 0	 0	 0	 0	 5	 2-3	 2	 1
VX	Soils developed on various parent rocks											
VXC1	complex of: well to moderately well drained, shallow to moderately deep, dark yellowish brown to reddish brown, friable, gravelly sandy clay loam to sandy clay; in many places with an acid											

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
	humic topsoil; in places very shallow and rocky; in relatively steep, V-shaped valleys (dystric and humic CAMBISOLS and ferralo-orthic and humic ACRISOLS, partly lithic phases; with LITHOSOLS and Rock Outcrops)	2-3	4-5	2-3	0	0	0	0	4	3-4	2	0
VXC2	complex of: well to moderately well drained, shallow to moderately deep, dark yellowish brown to reddish brown, friable, gravelly sandy clay loam to sandy clay; in many places with a humic topsoil, in places rocky; on valley sides of U-shaped valleys (70-80%) (dystric and humic CAMBISOLS and ferralo-orthic and humic ACRISOLS, partly lithic phases; with Rock Outcrops)	2-3	4-5	2-3	0	0	0	0	4	3-4	2	0
	and: imperfectly to poorly drained, deep, dark grey to dark greyish brown, mottled, firm sandy clay loam to cracking clay; in valley bottoms (20-30%) (dystric and vertic GLEYSOLS)	4-5	3	2-3	0	0	0	0	5	2	2	1
VXC3	complex of: well to moderately well, shallow to moderately deep, dark yellowish brown to reddish brown, friable, gravelly sandy clay loam to sandy clay; in many places with a humic topsoil; in places rocky; on valley sides of U-shaped valleys (50-60%) (dystric and humic CAMBISOLS and ferralo-orthic and humic ACRISOLS, partly lithic phases; with Rock Outcrops)	2-3	4-5	3	0	0	0	0	4	3-4	2	0
	and: imperfectly to poorly drained, deep, dark grey to dark greyish brown, mottled, firm sandy clay loam to cracking clay; in places with an acid humic or histic topsoil; in valley bottoms (40-50%) (dystric and vertic GLEYSOLS, with humic GLEYSOLS and pellic and chromic VERTISOLS)	4-5	3	2	0	0	0	0	5	2	2	1
VXC4	complex of: well drained, deep, red to dark red, very friable clay, with an acid humic topsoil; in places moderately deep; on valley sides of U-shaped valleys (50-60%) (humic Ferralsols and ferralo-humic CAMBISOLS, partly petroferric phases)	2	3	3	0	0	0	0	3	2	1	0
	and: very poorly drained, deep, dark grey to black, firm clay, with an acid humic or histic topsoil; in many places peaty; in valley bottoms (40-50%) (humic GLEYSOLS and dystric HISTOSOLS)	5	3	2	0	0	0	0	5	2	2	1
VXC5	complex of: well drained, moderately deep to deep, dark reddish brown to brown, friable sandy clay to clay; in many places with a humic topsoil, in places shallow and/or rocky; on valley sides of U-shaped valleys (60%) (ferralic and humic CAMBISOLS and orthic and humic FERRALSOLS, partly lithic and rocky phases)	2	3-4	3	0	0	0	2	4	2-3	1	0
	and: imperfectly to poorly drained, deep, dark grey to dark greyish brown, mottled, firm sandy clay loam to cracking clay; in places with a humic or histic topsoil; in valley bottoms and on lower side slopes (40%) (eutric and vertic GLEYSOLS, with mollic GLEYSOLS)	4-5	3	2	0	0	0	0	5	2	2	1
VXC6	complex of: soils as in unit VXC5 but with: 40%: (ferralic and humic CAMBISOLS and orthic and humic FERRALSOLS; partly lithic and rocky phases)	2	3-4	3	0	0	0	2	4	2-3	1	0
	and: 60%: (eutric and vertic GLEYSOLS with mollic GLEYSOLS)	4-5	3	2	0	0	0	0	5	2	2	1
VXC7	complex of: somewhat excessively to well drained, shallow to moderately deep, reddish brown to yellowish brown, friable, gravelly sandy clay loam to sandy clay; in places with a humic topsoil; in places stony and rocky; in steep V-shaped valleys (eutric CAMBISOLS and REGOSOLS, with haplic PHAEOZEMS, lithic and partly stony and rocky phases)	1-2	4-5	2-4	0	0	0	0	4	3-4	2	0

		Dra	Dep	Fer	Sa	So	SB	Ro	Co	Msc	In	Ew
VXC8	complex of: moderately well to imperfectly drained, deep, dark brown to very dark greyish brown, friable to firm, stratified, sandy loam to clay; in places calcareous (eutric FLUVISOLS)	3-4	3	2	0	0	0	0	3	3	2	1
	and: imperfectly to poorly drained, deep to very deep, very dark grey to black, very firm cracking clay; in places sodic (pellic VERTISOLS and vertic GLEYSOLS, partly sodic phase)	4-5	2-3	2	0	0	0	0	6	2	2	2
Z	LAKE-SIDE BEACH RIDGES (very gently undulating; slopes between 2 and 5%; altitude approximately 1200 m; along Lake Victoria)											
ZA	Soils developed on Recent unconsolidated deposits											
ZA1	Well drained, very deep, brown to dark yellowish brown, loose, sand to loamy sand, with inclusions of imperfectly drained, greyish brown, friable to firm sandy loam to sandy clay of varying salinity and sodicity (cambic ARENOSOLS, with gleyic SOLONCHAKS, partly sodic phase)	2	2	4	0	0	0	0	2	4	1	0
ZA2	Somewhat excessively to well drained, very deep, dark brown, loose to friable loamy sand to sandy loam (cambic ARENOSOLS and dystric CAMBISOLS)	1-2	2	3-4	0	0	0	0	2	4	1	0
ZA3	well drained, very deep, very dark greyish brown, loose, stratified, coarse sand to loamy sand; in places calcareous (dystric FLUVISOLS, with calcaric FLUVISOLS)	2	2	4	0	0	0	0	2	4	1	0
ZAC	complex of: somewhat excessively to poorly drained, deep to very deep, very dark grey to dark greyish brown, mottled soils of varying consistence (loose to firm) and texture (including coarse sand and cracking clay); in many places stratified, calcareous, sodic and/or saline; complexes of beach ridges and depressions along Lake Victoria (calcaric and eutric FLUVISOLS, with cambic ARENOSOLS and pellic VERTISOLS, predominantly saline-sodic phases)	1-5	2-3	4	2	2	0	0	-	3-4	2	1