



ETHIOPIA - FRANCE COOPERATIVE PROGRAM
WABI SHEBELLE SURVEY

IN COLLABORATION WITH
FRENCH MINISTRY OF FOREIGN AFFAIRS
NATIONAL WATER RESOURCES COMMISSION
BCEOM, ORSTOM, EDF I.G.N., B.D.P.A.

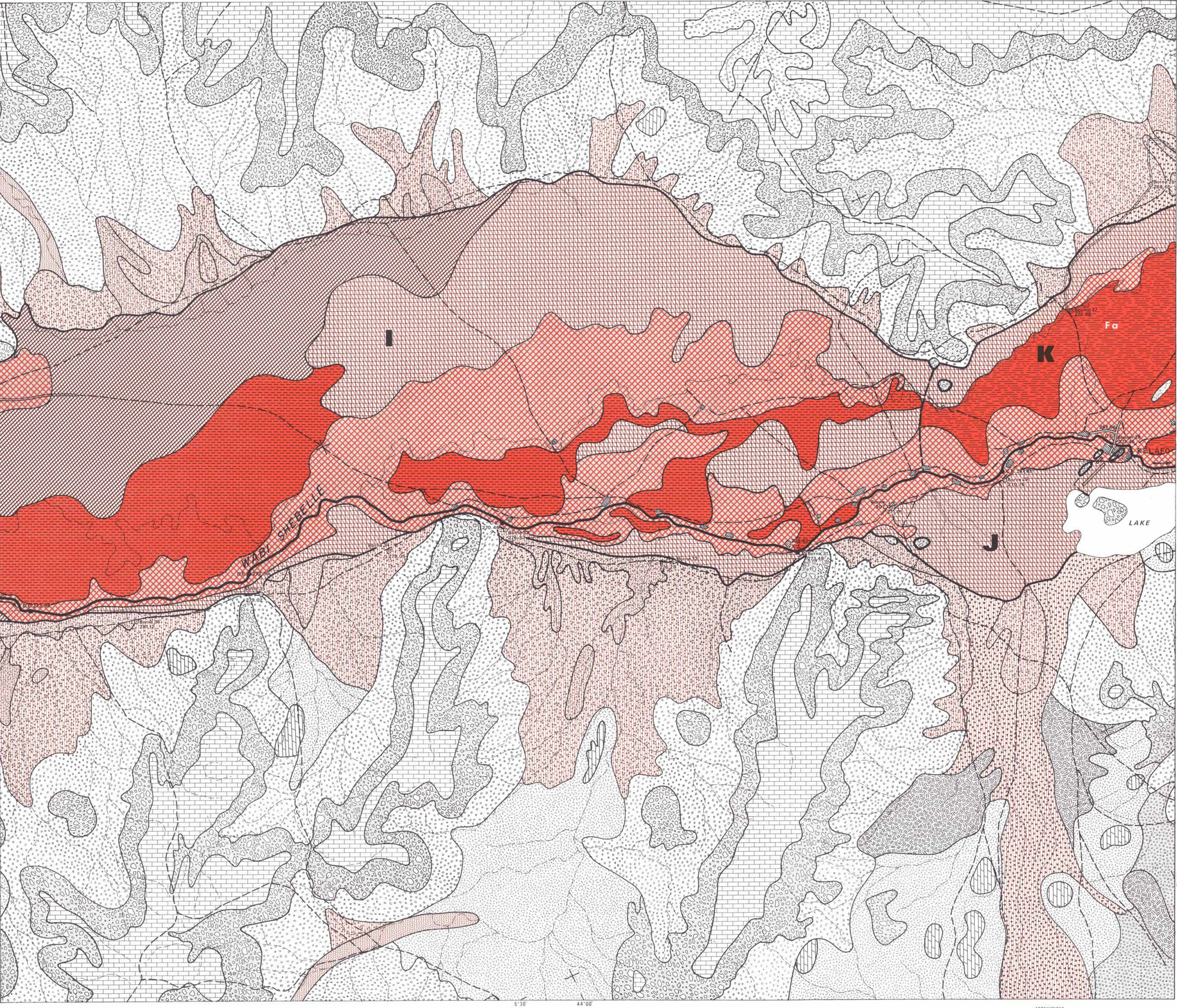
V
SOILS MAP - CARTE DES SOLS
Lower Valley - Basse Vallée

KELAFO

JANUARY 1973
 MAP N°4

SOILS FEATURES
APTITUDES DES SOLS
A L'IRRIGATION

- 1ST CLASS - VERY SUITABLE SOILS FOR IRRIGATION**
CLASSE I - SOLS TRÈS FAVORABLES À L'IRRIGATION
1A - for all tropical crops in arid zone.
pour toutes cultures tropicales de zone aride.
1A ds 24 25 26 27 28 29 30 31
1A ds 23 24 25 26 27 28 29 30 31
1B - for tropical fruit-trees, citrus, pine-apples, tomatoes (juice) vegetables, maize, sorghum, wheat, groundnuts, other oilseeds, forages (graminae).
pour arbres fruitiers tropicaux, agrumes, ananas, tomates (jus), cultures légumières, maïs, sorgho, blé, arachide, autres oléagineux, graminées fourragères.
1B ds 30 31 32 33 34 35 36 37 38 39 40 41 42
1B ds 31
1C - for sugar-cane, cotton, artificial pastures, maize, sorghum, wheat, textile fiber plants, oilseeds.
pour canne à sucre, coton, pâturages artificiels, maïs, sorgho, blé, plantes à fibres, plantes à huile.
1C ds m 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
1D_A - for sugar-cane, cotton, hill rice.
pour canne à sucre, coton, riz pluvial.
1D_A D s m 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
2ND CLASS - LOW SUITABILITY FOR IRRIGATION
CLASSE II - SOLS PEU FAVORABLES À L'IRRIGATION
II B - possible crops: tropical fruit-trees, citrus, pine-apples, tomatoes (juice) vegetables, maize, sorghum, wheat, groundnuts, other oilseeds.
cultures possibles: arbres fruitiers tropicaux, agrumes, ananas, tomates (jus), cultures légumières, maïs, sorgho, blé, arachide, autres oléagineux.
II B d m 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
II C - possible crops: sugar-cane, cotton, artificial pastures, maize, sorghum, wheat, textile fiber plants.
cultures possibles: canne à sucre, coton, pâturages artificiels, maïs, sorgho, blé, plantes à fibres textiles.
II C D S M 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
II C D S G M 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
II C D S P 50
3RD CLASS - UNSUITABLE FOR IRRIGATION
CLASSE III - SOLS NON IRRIGABLES
III Y 1
III RU 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
III RT 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
III U 6
III W 20 21
EXPLANATION OF THE SYMBOLS
SIGNIFICATION DES SYMBOLES
Factors changing the quality of the soils suitable for irrigation.
Facteurs altérant les qualités des sols irrigables.
d Slight drainage necessary
D Drainage important
S Shallow water table
G High salinity affecting the whole soil
M Free iron-sulphate nodules
M Microscopic iron nodules
M Microscopic iron nodules
P Depth of the soil below 1 m
Symbols concerning non irrigable soils.
Symboles concernant les sols non irrigables.
R Hardened crust (cementation)
T Steep slopes
U Unfavourable location in respect of irrigation
W Depth of soil below 100 cm
Y Dunes



Planimetric sketch executed from the mosaics of 1964-67 aerial photos.
Esquisse planimétrique exécutée d'après les mosaïques photographiques de 1964-67.

A Limits of irrigable soils. 1st Class
Limite des sols irrigables. Classe I

Indication of large irrigable zones
Indication des grandes zones irrigables

Fa Flooded area (highly)
Zone fortement inondable

C.E. Water level
Cote d'eau

o Bench-mark
Benchmark, borne

Scale 1:50000 approximate

Miles 0 1 2 3
 Kilometers 0 1 2 3 4 5

INDEX SHEET

11	10	9	8	7	6	5	4	3	2	1
WEST	WEST	EAST	EAST	EAST	EAST	EAST	EAST	EAST	WEST	WEST
IM I	IM I	MAISID	GODE WEST	GODE EAST	KELAFO	MUSTAHIL WEST	MUSTAHIL	BURKUR		

LEGEND OF THE SOILS MAP
LEGENDE DE LA CARTE PEDOLOGIQUE

- WEAKLY DEVELOPED SOILS SOLS PEU EVOLUES**
XEROSOLS XERISQUES
GYPSIFEROUS SOILS Derived from marl and gypsum
GYPSIFÈRES Issus des marlles gypseuses
 1 Yellowish-grey soils, with superficial gypsum flag. LARGE FLATS (IM, KELAFO, MUSTAHIL, BURKUR).
Sols gris-bleu à terre, avec gypse superficiel. GRANDES PLATES (IM, KELAFO, MUSTAHIL, BURKUR).
 2 Yellowish-grey soils, with gypsum flag in depth. COLLINA, LARGE FLATS (IM, KELAFO, MUSTAHIL, BURKUR).
Sols gris-bleu à terre, avec gypse en profondeur. COLLINES BASSES.
NON CLIMATIC SOILS NON CLIMATIQUES
LITHIC ERODED SOILS WITH POWDERY LIME Derived from marl and gypsum
SOLS D'ÉROSION LITHIQUES À CALCARE DIFFUS Issus des marlles gypseuses
 3 Yellowish-grey soils, with superficial gypsum flag. COLLINA, BASSIN.
Sols gris-bleu à terre, avec gypse superficiel. COLLINES BASSES.
 4 Yellowish-grey soils, with gypsum flag in depth. COLLINA, DEBROS SLOPE OF THE LOWER HILLS.
Sols gris-bleu à terre, avec gypse en profondeur. COLLINES BASSES.
Derived from limestone faeces des calcaires
 5 Yellowish-red soils, to CL, with limestone fragments and calcareous nodules in COLLINA.
Sols rouge à terre, avec fragments de calcaire et nodules calcaires, sur COLLINES.
 6 Red soils, to CL, with gypsum flag in depth. COLLINA.
Sols rouge à terre, avec gypse en profondeur. COLLINES.
Derived from basaltic faeces des basaltes
 7 Brownish-grey soils, to CL, very iron rich. MUSTAHIL BURKUR, HILLS.
Sols gris-bleu à terre, très riches en fer, sur MUSTAHIL BURKUR, HILLS.
SOILS DEVELOPED ON WIND BLOWN MATERIAL WITH POWDERY LIMESTONE.
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 8 Yellow soils, to CL, on COLLINA. GODE WEST.
VERTISOLS AND VERTIC SOILS VERTISOLS ET SOLS VERTIQUES
WITH CURVED STRUCTURE A STRUCTURE ARRONDIE
BROWN OR REDDISH BROWN VERTISOLS WITH POWDERY LIME AND POWDERY GYPSUM IN THE DEPTH.
VERTISOLS BRUNS À BRUN-ROUGE À CALCARE DIFFUS ET CRISTAUX DE GYPSE EN PROFONDEUR
 9 Reddish-brown soils, to CL, with gypsum flag in depth. COLLINA, GODE WEST.
SOILS DEVELOPED ON WIND BLOWN MATERIAL WITH POWDERY LIMESTONE.
SOLS DÉVELOPPÉS SUR COLLINA À CALCARE DIFFUS
 10 Yellow soils, to CL, on COLLINA. GODE WEST.
VERTISOLS AND VERTIC SOILS VERTISOLS ET SOLS VERTIQUES
WITH CURVED STRUCTURE A STRUCTURE ARRONDIE
BROWN OR REDDISH BROWN VERTISOLS WITH POWDERY LIME AND POWDERY GYPSUM IN THE DEPTH.
VERTISOLS BRUNS À BRUN-ROUGE À CALCARE DIFFUS ET CRISTAUX DE GYPSE EN PROFONDEUR
 11 Reddish-brown soils, to CL, with gypsum flag in depth. COLLINA, GODE WEST.
SOILS WITH CALCAREOUS DIFFERENTIATION
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WITH NODULES À AMAS ET NODULES
Derived from limestone faeces des calcaires
 14 Yellowish-red soils, with many iron nodules and nodules.
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Derived from limestone faeces des calcaires
 15 Yellowish-red soils, with many iron nodules and nodules.
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Derived from limestone faeces des calcaires
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Derived from limestone faeces des calcaires
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Derived from limestone faeces des calcaires
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Derived from limestone faeces des calcaires
 19 Yellowish-red soils, with many iron nodules and nodules.
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Derived from limestone faeces des calcaires
 20 Yellowish-red soils, with many iron nodules and nodules.
WITH NODULES À AMAS ET NODULES
Derived from limestone faeces des calcaires
 21 Yellowish-red soils, with many iron nodules and nodules.
WITH NODULES À AMAS ET NODULES
Derived from limestone faeces des calcaires
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SOILS WITH CALCAREOUS DIFFERENTIATION
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SOILS WITH CALCAREOUS DIFFERENTIATION
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SOILS WITH CALCAREOUS DIFFERENTIATION
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MEDIUM ORGANIC MOYENNEMENT ORGANIQUES
HUMIC GLEY WITH POWDERY LIME HUMIQUES À GLEY À CALCARE DIFFUS
On BROWN ALLUVIA OF THE WABI SHEBELLE. SOILS ALLUVIONS BRUNS DE LA WABI SHEBELLE.
SHEBELLE plain series Série de la plaine de SHEBELLE
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SOILS WITH CALCAREOUS DIFFERENTIATION
SOLS À DIFFÉRENCIATION CALCAIRE
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COLLINA Derived from limestone COLLINATIONS issues des calcaires
MUSTAHIL plain series Série de la plaine de MUSTAHIL
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SOILS WITH CALCAREOUS DIFFERENTIATION
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COLLINA Derived from limestone COLLINATIONS issues des calcaires
SODIC SOILS SOLS SODIQUES
WITH NON DEGRADED STRUCTURE A STRUCTURE NON DEGRADÉE
SALINE SOILS WITH SALT EFFLORESCENCES SOILS SALINS À EFFLORESCENCES SALINES
On RED ALLUVIA. Sur ALLUVIONS BRUNS.
 50 Red soils, to CL, with gypsum flag in depth. COLLINA, GODE WEST.
SOILS WITH CALCAREOUS DIFFERENTIATION
SOLS À DIFFÉRENCIATION CALCAIRE
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COLLINA Derived from limestone COLLINATIONS issues des calcaires