









ISRIC
World Soil Information



The World Soil Museum of ISRIC

Stephan Mantel, ISRIC World Soil Information

Els sòls i el canvi climàtic, Tremp, 12-11-2017





Content



- About ISRIC its collections and services
- The World Soil Reference Collection
- Soil monoliths and the world soil museum
- Digitization and accessibility
- Virtual soil museum
- Soil stories



ISRIC history



- Founded in 1966 as the 'International Soil Museum' (linked the FAO soil map of the world); initiative of the ISSS, adopted by UNESCO General Council (1964)
- In the museum, students and scientists would be able to learn from these different types of soils from around the world. In addition, the museum could act as an international reference centre for soil data.
- Became the "International Soil and Information Reference Centre" (ISRIC) in 1984
- ICSU World Data Centre for Soils (1989)



Metadata



Vocabulary



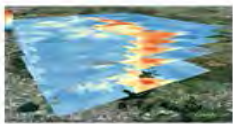
Databases



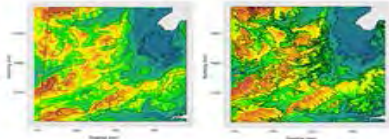
Storage



Museum



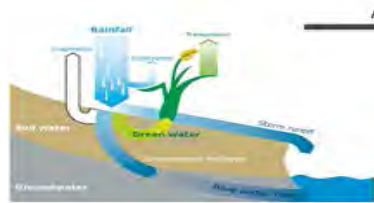
Prediction



Visualisation



Education



Analyse





World Soil Reference Collections

- Soil monolith collection (1,200)
- Reference soil samples (10,000)
- Micromorphology collections (soil reference profiles, and various orphan collections)
- 16,000 slides and photographs
- Glinka Memorial Collection, soils of the former USSR collected during the 1920s.
- Kubiiena and Mohr collections & hand pieces of soils and soil phenomena



Report and maps collection



15,000 reports and 8000 maps
Scanned: 85% of maps and 30% of reports





Search Library and map collection

Search



e.g. hydrology AND Nigeria, "land use", water* AND (irrigation OR drainage), "W.G. Sombroek"

Library and map collection

Do you need soil information for the Kilifi area, Zimbabwe, Asia or the whole world? The ISRIC library has built up a collection of around 8000 (digitized) maps and 15.000 reports and books; many of these materials can be accessed on-line.

Over the last 45 years, ISRIC - World Soil Information has compiled a large collection of articles, country reports, books and maps with emphasis on the developing countries. The subject emphasis is on soils, but related geographic information on climate, geology, geomorphology, vegetation, land use, and land suitability is also collated.

The map collection contains mainly small-scale (1:250.000 or smaller) maps. Many of these are accompanied by reports and related thematic and derived materials. A significant part of the ISRIC map collection was scanned at JRC as a foundation for the European Digital Archive of Soil Maps (EuDASM).

Metadata for items in the collection can be queried using the online ISRIC World Soil Information Document Database; searches can be by name of the author, title words, keywords or country names, using basic and advanced search options.

Some 80% of the maps are now digitized and these can be downloaded at high resolution and viewed on screen with a zoom facility. Over 30% of the country reports is currently available as full text (PDF). Scanning of ISRIC's library holdings is ongoing; new materials are always welcome for incorporation in the collection.

The ISRIC World Soil Information Document Database also provides to links to external databases, national and international organizations, electronic books hosted by third parties, newsletters, journals, and reference materials related to soil science.

The collection is housed at Droevendaalsesteeg 3, 6708 PB, building 101 in Wageningen and is publicly accessible.

Subscriptions



Subscribe to ISRIC Newsfeed on reports and maps by Email

Links

[EuDASM, the European Digital Archive of Soil Maps](#)

Latest news

Veenvorming

[Soils of India: historical perspective, classification and recent advances.](#)

[Advanced analysis with ArcGIS exercises : Esritalia 5567 : Course version 1.3.](#)

[Advanced analysis with ArcGIS : Esritalia 5567 : Course version 1.3.](#)

[Soil map Kali Konto Watershed Kabupaten Malang East Java Indonesia : Soil Survey Kali Konto Watershed : Proyek Kali Konto Ata 206 : Sheet East.](#)

Contact

Multiple address



Search Library and map collection

Search result

e.g. hydrology AND Nigeria, "land use", water* AND (irrigation OR drainage), "W.G. Sombroek"

Records 1 - 20 / 90

check title to add to marked list next 20 records

- Bibliography on Micronutrients in Soils, Plants and Animals of Sub-Saharan Africa. Working Document, No. B8**
Haque I.; (1988)
- Identification of the Soils of the Sugar Industry. \ Bulletin no. 19, (Revised), 1984.**
(1984)
- Organic-Recycling in Africa. Papers Presented at the FAO-SIDA Workshop on the Use of Organic Materials as Fertilizers in Africa, held in Buea, Cameroon, 5-14 December 1977. FAO Soils Bulletin 43.**
(1980)
- Organic Recycling in Africa: Papers Presented at the FAO/SIDA Workshop on the Use of Organic Materials as Fertilizers in Africa, held in Buea, Cameroon, 5-14 December 1977. \ FAO Soils Bulletin no. 43.**
FAO (1980)
- Selected Bibliography on Soils and Land Use in Sierra Leone, West Africa + Supplement.**
Dijkerman, J.C.; (1976)
- The Soils of Rhodesia and their Classification. (+ map) \ Technical Bulletin no. 6.**
 Thompson, J.G.; (1965)
- Application of Soil Taxonomy to the Soils of Zaire (Central Africa), Pédologie no. spéc. 5.**
Smith, G.D.; Sys, C.; Wambeke, A. van; (1975)
- Soils of the Tugela Basin. A Study in Subtropical Africa, with a Soil Association Map 1: 100,000. Natal Town and**

Country

- [Kenya \(18\)](#)
- [South Africa \(17\)](#)
- [Ethiopia \(16\)](#)
- [Sudan \(16\)](#)
- [Ghana \(13\)](#)
-

Region

- [Africa \(61\)](#)
- [Asia \(3\)](#)
- [South America \(2\)](#)
- [Central America and the Caribbean \(1\)](#)
- [World \(1\)](#)

Keyword

- [soil \(15\)](#)
- [soil management \(12\)](#)
- [soil classification \(11\)](#)
- [soil fertility \(11\)](#)
- [fertilizers \(8\)](#)
-

Documenttype

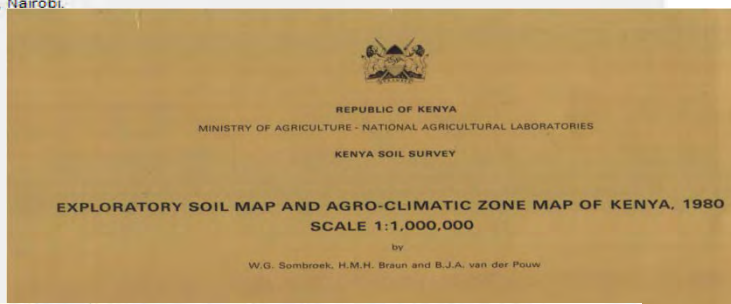
- [report \(63\)](#)



Search Library and map collection

[My Library](#) > [Search result](#) > [Record nr. 6336](#)

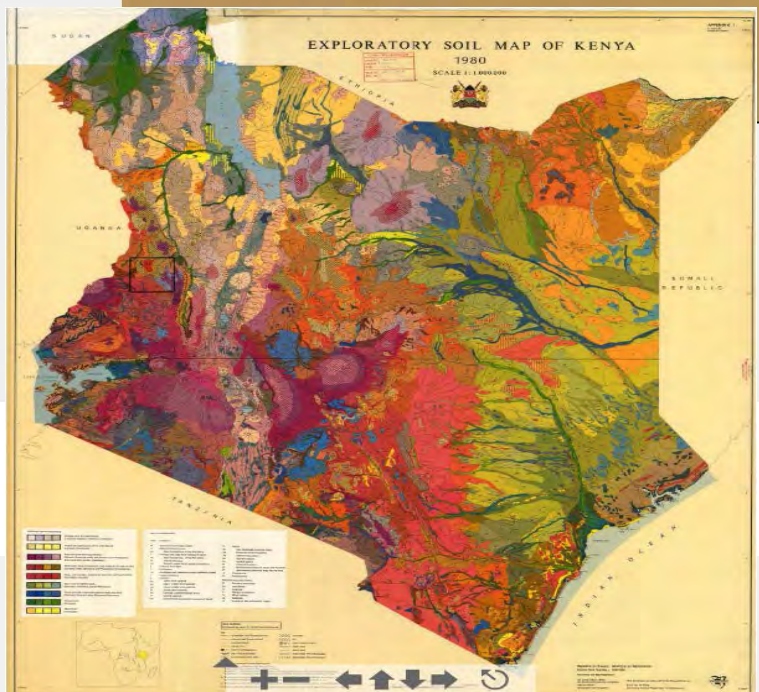
ISN	6336
Title	Exploratory Soil Map and Agroclimatic Zone Map of Kenya. Scale 1: 1,000,000. Exploratory Soil Survey Report no. E-1. Republic of Kenya.
Author(s)	Sombroek, W.G.; Braun, H.M.H.
Publisher(s)	Ministry of Agriculture, National Agricultural Laboratories, Nairobi.
Publication year	1982
Regions	Africa
Countries	Kenya
Library holding	KE 1982.03
Document type	report
Full text	isricu_00006336_001_03.pdf
Map(s)	5 Map descriptions
Zoomable map	



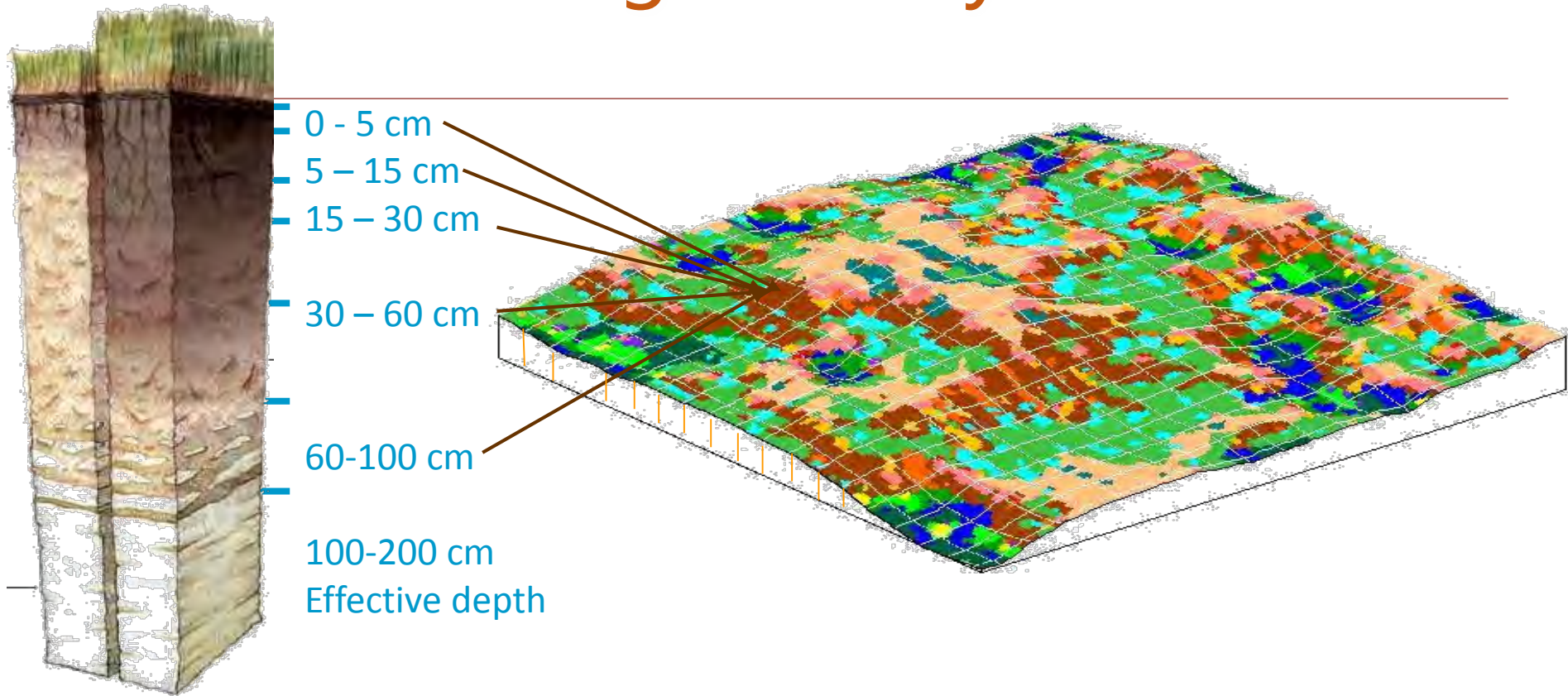
Zoomable map [Download high resolution version](#)

Zoomable map [Download high resolution version](#)

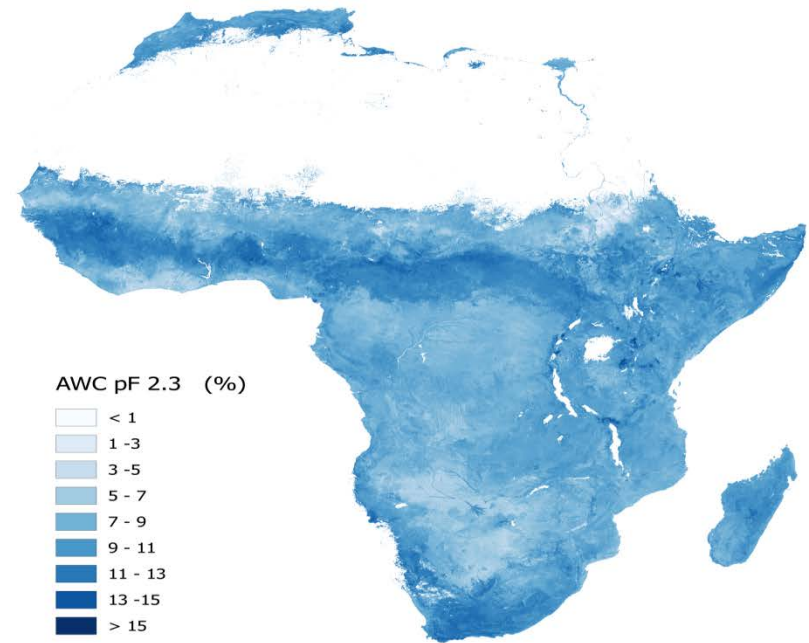
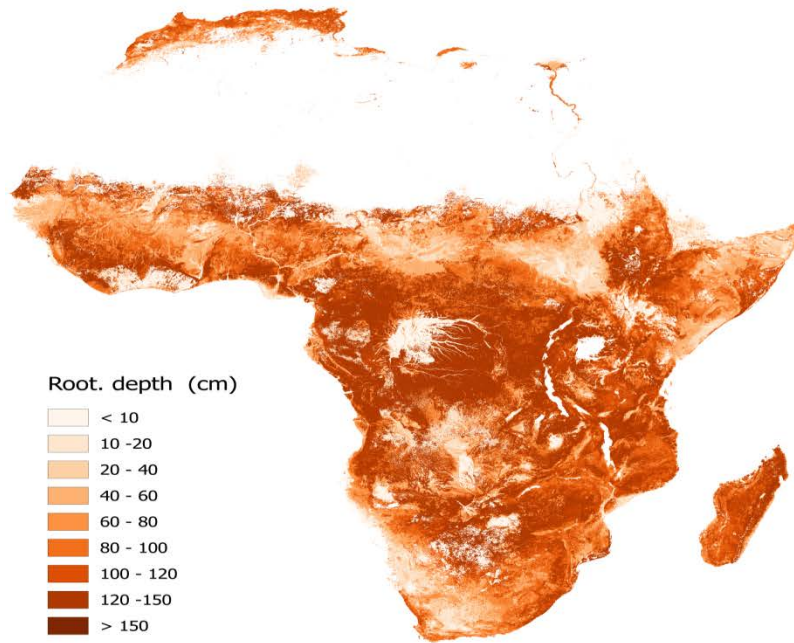
Zoomable map



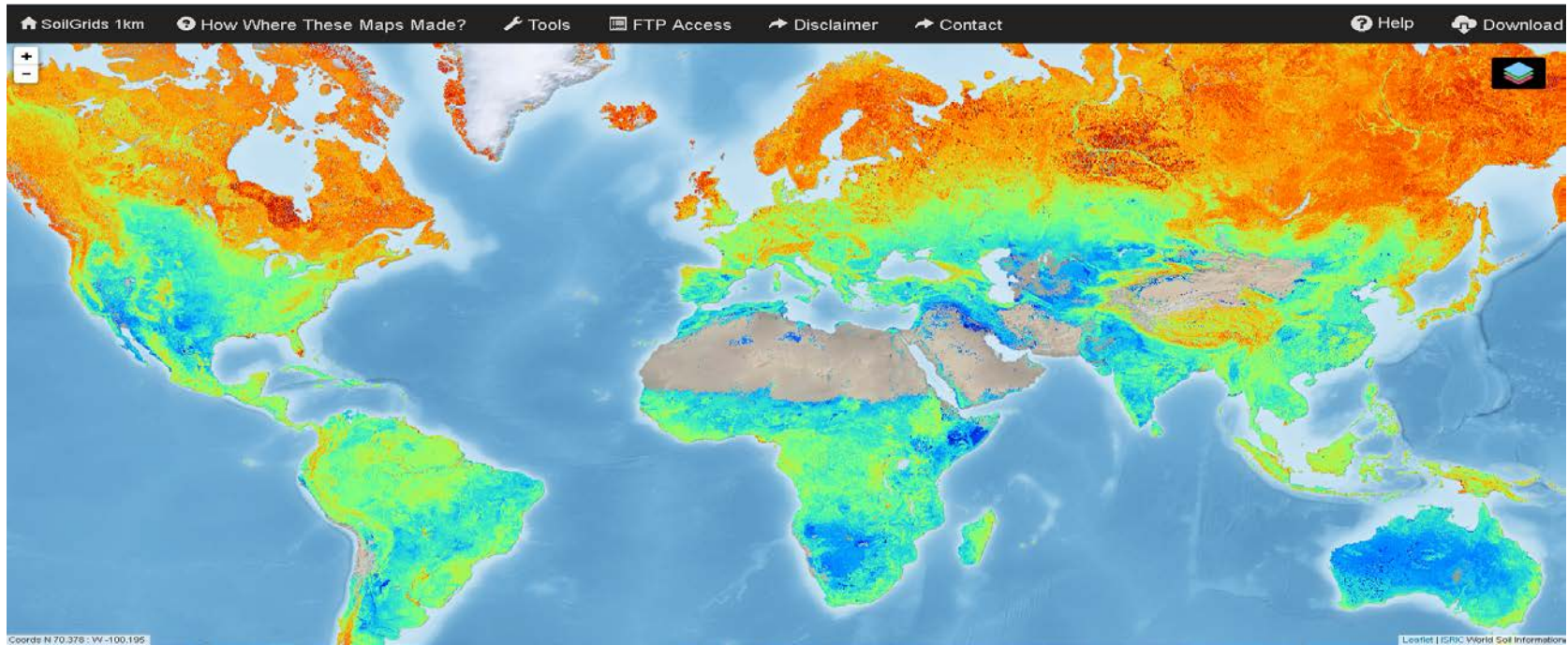
Fine resolution grid 90 by 90 m



Soil data and mapping - Continental



Soil data and mapping - Global



<https://www.soilgrids.org>



World Soil Reference Collections



Soil monolith sampling and preparation















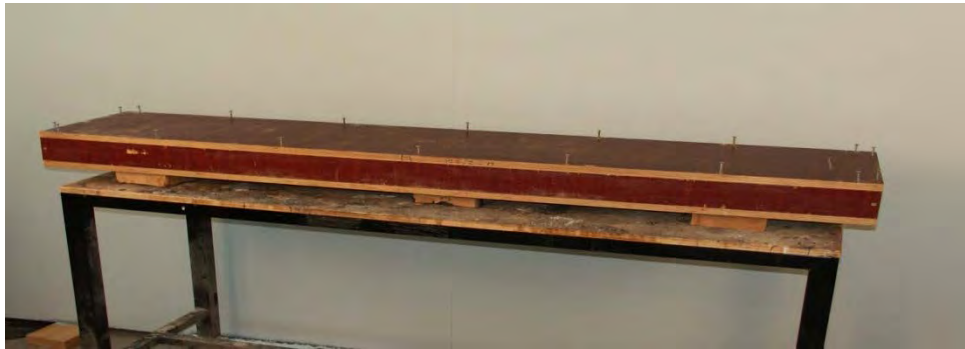




















The World Soil Museum

WORLD
SOIL
MUSEUM







HUMID TROPICS

DESERT

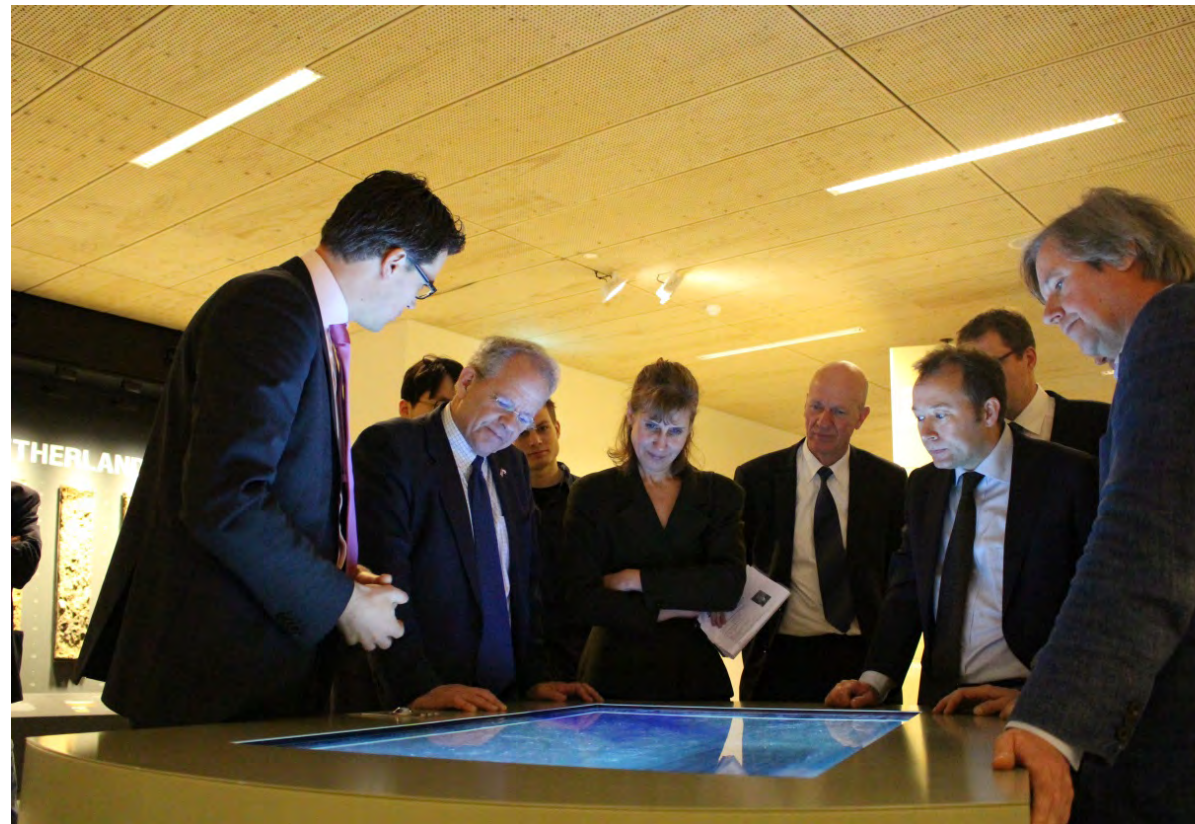






















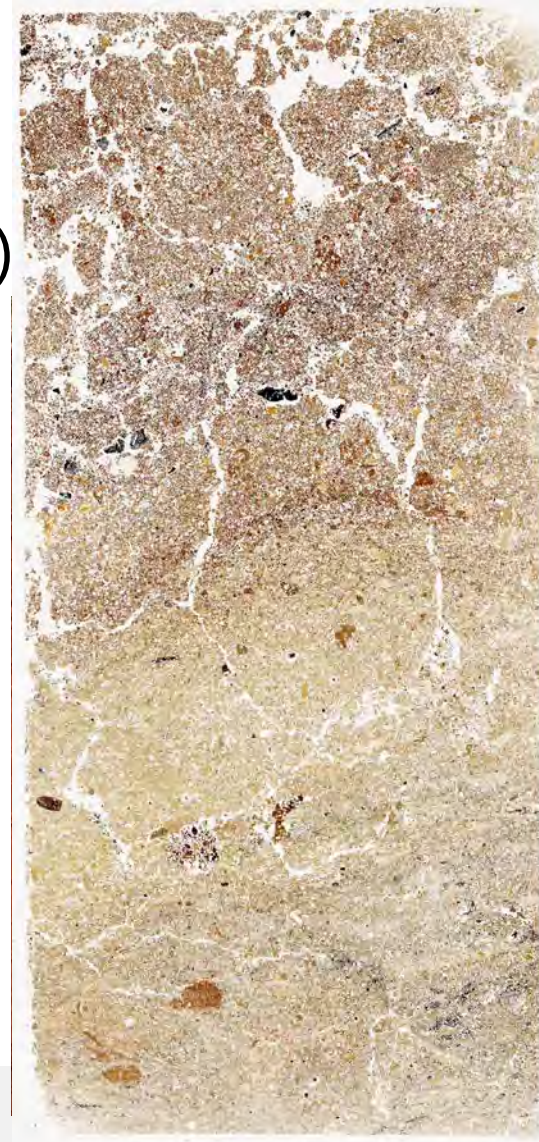




Digitization and accessibility

Digitization of all collections:

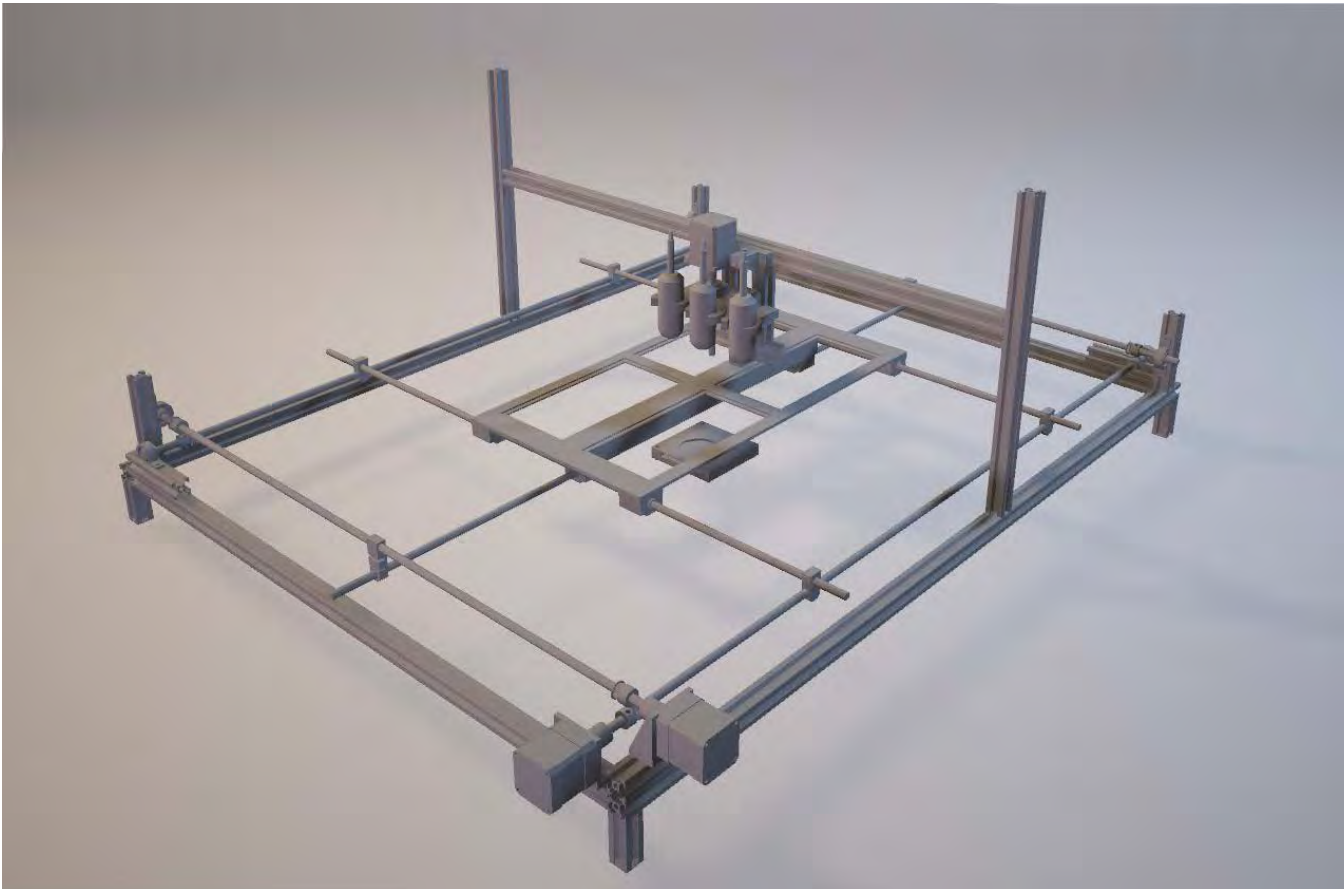
- Maps and reports (ongoing)
- Images (done,
but not easily accessible)
- Soil monoliths (done)
- Thin sections (start soon)





User-requested distant viewing of thin sections

Remote investigation of thin sections through distant control of electronic microscope



Virtual soil museum



Virtual soil museum



- VISITS
- STAFF
- COLLECTION
- EDUCATION
- VIRTUAL TOUR
- EXPLORE COLLECTION
- SITES
- LINKS
- SOIL THEMES ▶

WORLD SOIL MUSEUM

OPEN: WEDNESDAYS 13.30H UNTIL 17.30H

GROUPS AND GUIDED TOURS: MONDAY TO FRIDAY BY APPOINTMENT, ON WORKING DAYS
(BETWEEN 9.00 17.00H)

LOCATION: WAGENINGEN CAMPUS (GAIA, BUILDING 101), THE NETHERLANDS

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Virtual soil museum



Geographic collection explorer



Geographic collection explorer



Geographic collection explorer



Geographic collection explorer



REFERENCE SOIL SPAIN 11: PETRIC CALCISOL

ES011

A very shallow, yellowish red gravelly clay Ap horizon, directly overlying more or less isotropic, very heterogeneous, strongly calcareous soil. Human activity has been going on for many centuries, resulting in trampling of the profile.

FAO LINE SCSO5BIC 1988	FAO LINE SCSO 1974
Profile: Calcisol	Class: Calcisol
0-5 cm (Ap)C: horizon	0-5 cm (Ap)C: horizon
5-8 cm (Ap)C: A horizon	5-8 cm (Ap)C: A horizon
8-10 cm (C)C: C horizon	8-10 cm (C)C: C horizon
Other classification:	

ISRIC SCS (1975). Xerochrept clayey calcareous theme.

Location:
Province of Badajoz, 5 km S of Merida, 8 km W of Tomaragosa

Parent material

The main parent rock material over which the soil has been formed. (1st entry)

Mode of Accumulation or deposition of parent material (1st entry)

Mode of Accumulation or deposition of parent material (1st entry)	unconsolidated, unstratified
Thickness of parent material (1st entry)	cm
Depth of lithologic boundary	cm

The main parent rock material over which the soil has been formed. (2nd entry)

Thickness of parent material (2nd entry)	cm
Resistance against weathering (soil rock) (2nd entry)	slightly
Soil depth (depth to which roots can easily penetrate throughout the year)	cm
Remarks on Parent Material	calc. Mottled clay

Soil

Soil moisture type (1st entry)

Occurrence of soil aggregation

Soil stability



Soil stories: Soil, Fire and revolution



Laki, Iceland - 1783



France: severe famine 1788
Storming of the Bastille
Laki one of the sparks for
the French revolution



Disaster:
Icelandic society
disrupted
10 year (global)
climate change
Coldest winter ever in
US 1784
Famines in India and
Egypt
Victims in UK (sulphur
clouds)

Antrosol plágico



Suelos formados o profundamente modificados por actividades las humanas









Ah

A/E

E

Bt1

Bt2

Bt3

Silty, low aggregate stability

Clayey, acid, high aluminium content

Cutanic Acrisol





Clear-cutting en plantation development



Soil erosion is strong if not properly managed ->
agriculture is then no longer possible and forest regrowth
is hampered



Off-site effects detrimental





Summary and conclusions



Soil monoliths allow to study the soil and educate on its intrinsic properties

Representative soil monolith collections (and their samples) provide a reference for classification and for soil science in general

Soil expositions/museums of soil monoliths provide a basis for raising awareness of soil hidden but precious natural resource for the general public, students, politicians and others

It is important that the soil collections are accessible and exposed maximally in both the virtual and physical world, so that there is societal support to maintain the collection over time

Soil museums and educational centres should have collaborate and exchange so that knowledge and methods can be exchanged (global soil museum network)



Congratulations with the soil exposition of the Centre for interpretation of soils of the Pyrenees!





ISRIC
World Soil Information



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