



The GEOSS Portfolio for Science and Technology

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Featuring:

**Agriculture: The Harmonized World Soil
Database (HWSD) as a first step towards a
Global Soil Information System**



The Harmonized World Soil Database (HWSD) as a first step towards a Global Soil Information System



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Soil observations are of critical importance to GEOSS

The global soil survey community is contributing to GEO Task DA-09-03: Global Data Sets, sub-task Global Soil Data.

Sub-task is co-led by a group of soil institutions, including EC (JRC) and ISRIC – World Soil Information in the Netherlands.



The Harmonized World Soil Database (HWSD) as a first step towards a Global Soil Information System

Development of a global soil information system building upon the work of ongoing and completed projects.

The system will incorporate data from global, regional and national soil data projects into a coherent system using a common dictionary – to support implementation of major multilateral environmental agreements (e.g., UNFCCC, UNCCD and CBD) and provide harmonized and policy-relevant information to users at the global, regional and national level.

The freely accessible system will deliver web-based services on soil information.



The Harmonized World Soil Database (HWSD) as a first step towards a Global Soil Information System

As a first step towards a fully operational global soil information system the Food and Agriculture Organization of the United Nations (FAO) and the International Institute for Applied Systems Analysis (IIASA) took the initiative of combining the recently collected volumes of regional and national updates of soil information with the information already contained within the 1:5 M scale digital FAO-UNESCO Digital Soil Map of the World (DSWM; FAO/UNESCO 1995, 2003), into a new comprehensive Harmonized World Soil Database (HWSD).



HWSD uses 4 distinct sources of data:

Data sources for the Harmonized World Soil Database (HWSD)

- (1) The European Soil Database (ESDB) extended with information of the Northern Circumpolar soil map at 1:1 M scale. This database is considered of moderate reliability with an adequate scale but often lacking soil profile information.
- (2) The new Soil Map of China at scale 1:1 M produced by the Chinese Academy of Sciences. The database is considered of moderate reliability for the same reasons as the one above.
- (3) The SOTER databases mainly for Eastern, Central and Southern Africa, South America and the Caribbean and parts of Asia. This part is considered of variable reliability between moderate and high
- (4) For the areas not covered by the above, mainly West Africa, North America, South Asia and Australia, the DSWM was re-interpreted. This part of the database is considered of low reliability.

Sources of HWSD

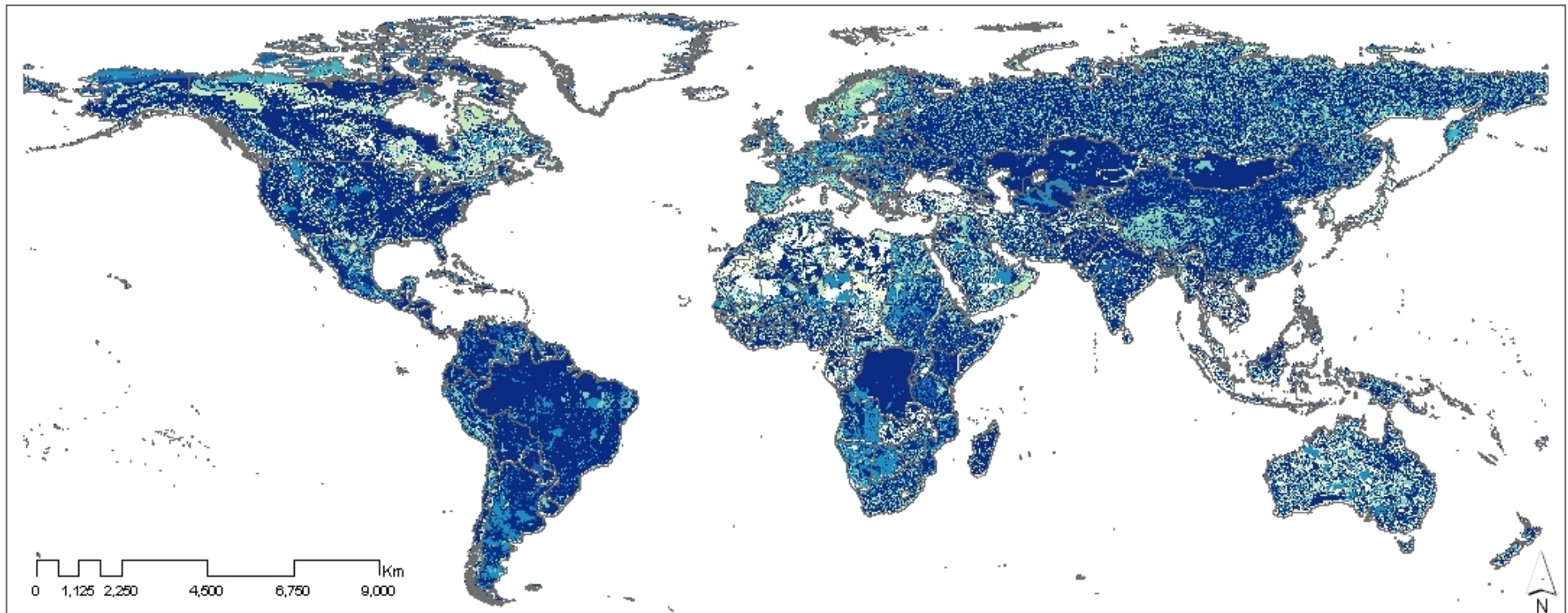


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A number of soil qualities can be derived from this new database.

Examples include the organic carbon pool and the soil water holding capacity.

Available water capacity



Average water capacity class (mm/m)



Source: Harmonized World Soil Database v 1.1. © 2008-2009 Copyright FAO, IIASA, ISRIC, ISSCAS, JRC. Geographic projection: 30 arc seconds resolution at the equator.

Soil moisture holding capacity derived from soil properties in HWSD.



The Harmonized World Soil Database (HWSD) as a first step towards a Global Soil Information System

The HWSD constitutes improvements for about 60% of the land area as compared to the FAO/UNESCO Soil Map of the World.

On-going discussions in the framework of the Group on Earth Observations (GEO) aiming towards the development of a Global Soil Information System (GLOSIS), as a “system of systems of soil data and information” as part of the Global Earth Observation System of Systems (GEOSS), have already identified a possible improved HWSD as an intermediate product to be complete at short term, prior to the final release of the future Global Soil Map (GEO 2009-2011 Work plan, 2009).



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For more information

http://eusoils.jrc.ec.europa.eu/esdb_archive/Soil_Data/Global.htm

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