A Big Earth Data Platform for Three Poles

**1:1 million soil types map of the Yellow River Upstream (2009)**

1、Description

Ⅰ. Overview  
FAO (Food and Agriculture Organization of the United Nations) and IIASA (International Institute for Applied Systems Analysis) combined the soil information of all regions and countries in the world with the world soil map of FAO-UNESCO, formed a new soil database - Harmonized World Soil Database (HWSD). The data source in China is 1:1 million soil data provided by Nanjing Soil Research Institute of the second national land survey. The database will be of great significance to improve people's understanding of current and future soil productivity, soil carbon storage, land resources, water resources and soil degradation.   
Ⅱ. Data processing description  
The data comes from the Harmonized World Soil Database (HWSD) constructed by FAO and IIASA. The data in China comes from the 1:1 million soil data provided by Nanjing Soil Research Institute of the second national land survey. The main soil classification system is FAO-90.  
Ⅲ. Data content description  
The main fields of soil attribute table include: SU\_SYM90 (soil name in FAO90 soil classification system): SU\_SYM85 (FAO85 classification); T\_TEXTURE (top soil texture); DRAINAGE (19.5); ROOTS: String (depth classification with obstacles to the bottom of soil); SWR: String (soil water content characteristics); ADD\_PROP: Real (agricultural use related in soil unit) Specific soil type); T\_GRAVEL: Real (gravel volume percentage); T\_SAND: Real (sand content); T\_SILT: Real (silt content); T\_CLAY: Real (clay content); T\_USDA\_TEX: Real (USDA soil texture classification); T\_REF\_BULK: Real (soil bulk weight); T\_OC: Real (organic carbon content); T\_PH\_H2O: Real (PH); T\_CEC\_CLAY: Real (cation exchange of clayey soil); T\_CEC\_SOIL: Real (cation exchange capacity of soil); T\_BS: Real (basic saturation); T\_TEB: Real (exchangeable base); T\_CACO3: Real (carbonate or lime content); T\_CASO4: Real (sulfate content); T\_ESP: Real (exchangeable sodium salt); T\_ECE: Real (conductivity). The attribute field beginning with T\_ represents the upper soil attribute (0-30cm), and the attribute field beginning with S\_ represents the lower soil attribute (30-100cm) (FAO 2009).  
Ⅳ. Data usage description  
Through this database, people's understanding of current and future soil productivity, soil carbon storage and global soil carbon storage will be improved. It can help people to understand the limitation of land and water resources, and correctly assess the risk of soil degradation, especially soil loss. Through understanding the physical and chemical properties of soil, it can also help people to obtain the following information, such as the filtering function of soil on waste, the impact on biological growth, etc. The potential of soil production and the response of soil to climate change were correctly judged.

2、Keywords

Theme：Soil,Soil texture,Soil classification  
Discipline：Terrestrial Surface  
Places：The upstream of the Yellow River  
Time：2009

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：35.0MB

4.Data format：ESRI GRID、mdb

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：95.0 | - | east：112.0 |
| - | south：32.0 | - |

5、Time frame:2009-01-12 02:57:00+00:00--2010-01-11 02:57:00+00:00

6、Reference method

References to data:

XUE Xian, Food and Agriculture Organization of the United Nations（FAO）, DU Heqiang. 1:1 million soil types map of the Yellow River Upstream (2009). A Big Earth Data Platform for Three Poles, 2015

References to articles:

7、Supporting project information

the National Basic Research Program of China

8、Data resource provider

name: Food and Agriculture Organization of the United Nations（FAO）  
unit: Food and Agriculture Organization of the United Nations（FAO）  
email: FAO-HQ@fao.org  
  
name: XUE Xian  
unit:   
email: xianxue@lzb.ac.cn  
  
name: DU Heqiang  
unit:   
email: dilikexue119@163.com