

Temporary Dataset Download: LUCAS 2015 TOPSOIL data

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Name of User	Cai Jack
Organization	Guilin university of technology
Type of Organization	University
-- Other	None
E-mail	caishaoyang993@gmail.com
Purpose	The data will be used for academic research in my master's thesis on soil spectroscopy and hyperspectral prediction of soil organic carbon. I plan to investigate machine learning, deep learning, and cross-domain transfer learning methods using the LUCAS soil spectral dataset. The data will be used only for non-commercial scientific research and related academic publications.
Notes	

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24. The following Annexes form an intergral part of this License Agreement: ANNEX 1: Specification of LUCAS2015_SOIL Database
25. **THE LICENCEE ACKNOWLEDGES TO HAVE READ, UNDERSTOOD AND AGREED TO BE BOUND BY THE ABOVE-MENTIONED TERMS AND CONDITIONS OF THE CONTRACT**

Technical assistance concerning the use of the LUCAS data can be obtained from : ec-esdac@ec.europa.eu

ANNEX 1: SPECIFICATION OF LUCAS2015_SOIL DATA

Database: The LUCAS2015_SOIL data are :

- In MS Excel format for all tabular data and ESRI shapefile for geographical presentation of the data
- RDATA, text and MS Excel format for Soil Multispectral dataReports (Proposed Citation)

References:

The documentation associated to the data is available from the following two reports:

[report](#) describing the 2015 dataset for the EU

Jones, A, Fernandez-Ugalde, O., Scarpa, S. LUCAS 2015 Topsoil Survey. Presentation of dataset and results, EUR 30332 EN, Publications Office of the European Union: Luxembourg. 2020, ISBN 978-92-76-21080-1, doi:10.2760/616084, JRC121325

[report](#) describing changes between 2009 and 2015.

Fernández-Ugalde, O., Ballabio, C., Lugato, E., Scarpa, S., Jones, A., Assessment of changes in topsoil properties in LUCAS samples between 2009/2012 and 2015 surveys, EUR 30147 EN, Publications Office of the European Union: Luxembourg 2020, ISBN 978-92-76-17430-1, doi:10.2760/5503, JRC120138.

The following [report](#) may provide further insights to the data. The reader should be warned that this report refers to a different number of total points, and also makes explicit reference to data that are stored internally to ESDAC, but are not available to the public:

R. Hiederer, Data Evaluation of LUCAS Soil Survey Laboratory 2009 to 2015 Data, EUR 30092 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN, 978-92-76-15648-2, doi:10.2760/791714, JRC119881.

The following Science-policy [report](#) provides insights on how the two indicators (Soil erosion, Soil organic carbon) have been developed using the LUCAS topsoil data of 2009 and 2015:

Panagos, P., Ballabio, C., Scarpa, S., Borrelli, P., Lugato, E. and Montanarella, L., Soil related indicators to support agro-environmental policies, EUR 30090 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-15644-4, doi:10.2760/011194

[Scientific publication](#) describing the LUCAS survey as a whole.

Orgiazzi, A., Ballabio, C., Panagos, P., Jones, A., Fernández-Ugalde, O. 2018. **LUCAS Soil, the largest expandable soil dataset for Europe: A review.** *European Journal of Soil Science*, 69(1): 140-153. <https://doi.org/10.1111/ejss.12499>

Scientific publication on the comparison with the Swiss sampling method.

Fernández-Ugalde, O, Jones, A, Meuli, RG. **Comparison of sampling with a spade and gouge auger for topsoil monitoring at the continental scale.** *Eur J Soil Sci.* 2020; 71: 137- 150. <https://doi.org/10.1111/ejss.12862>