# eurostat

**TechnicalDocuments**

2015

# LUCAS 2015

## (Land Use / Cover Area Frame Survey)

Technical reference document U1
LUCAS Survey data user guide

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# 1 Scope and Introduction

This document is part of a series of reference documents defining the framework of the Land Use / Cover Area frame statistical Survey (LUCAS). The LUCAS reference documents are periodically improved and adapted taking into account the experience from the implemented surveys and the requirements of the LUCAS data & information users.

The aim of LUCAS (Land Use/Cover Area frame Statistical survey) is to collect land cover/land use, agro-environmental and soil data by field observation of geographically referenced points. The observations are documented by filling in the field form and by taking photographs. All the data is stored in the Data Management Tool (DMT).

LUCAS is co-ordinated by The Statistical Office of the European Commission (Eurostat).

For the statistical sample of the LUCAS survey, a regular 2 km grid with over 1,100,000 points is overlaid on the EU territory. In 2015, the LUCAS survey was carried out in 28 European countries. In 2015 LUCAS points were either visited by field surveyors or photo interpreted in the office.

At each visited point, the surveyors fill in a field form with alphanumerical data. They document the visit to each point by taking a number of photographs of the point, resulting on more than 2,000,000 photos per campaign. Moreover a transect (a 250 meters walk to the East of each point) is recorded; the surveyors walking the transect are requested to register all the land cover transitions they can observe according to a list of codes including both areal land cover classes and linear elements. A topsoil sample of approximately 500g is collected in 10% of the visited points. The topsoil sample must be labelled, dried, stored and sent to the JRC in Italy before the end of the project.

Since 2009 Eurostat uses the LUCAS Data Management Tool based on MS Access to collect the land use and land cover data in the field, manage the data flow in the quality control chain and perform automatic and visual quality control. The tool underwent major improvements for the 2012 campaign, and subsequently for the 2015 campaign. An improved version of the tool (LUCAS DMT 2015, which is composed of LUCAS DMT Client, Agent, Map, Viewer and Server) was available for the LUCAS 2015 contractors.

The surveyor registers the data in LUCAS DMT 2015. The data goes through a multi-level chain of quality controls, starting with embedded automated quality controls on data input, followed by a visual consistency check in order to guarantee its good quality. All data is verified at RO and/or CO level and if conformant with the quality requirements, it is then forwarded up in the quality control chain to the independent external quality control (XQC) and the Commission. If mistakes are found, the data is returned to the surveyors via the responsible CO for further corrections, and possibly revisiting the point, in an iterative manner. Finally the data is sent to the Commission for final approval.

The Commission uses the micro data collected in the LUCAS survey to produce land cover and land use aggregated statistical tables and to calculate Sustainable Development Indicators and Land take (these indicators are used in monitoring the implementation of the Europe 2020 strategy). Landscape indicators are also derived from the data collected in the survey.

A soil component has been incorporated in the LUCAS survey in order to improve the quality of soil modelling and monitoring in Europe. The outcome of the soil component of the LUCAS is used for updating the European soil map and analysing the quantity of organic carbon in soil.

LUCAS micro data is also used for Agro Environmental Indicators (AEI), LULUCF (land use, land use change and forestry) indicators, for Europe Resource Efficiency indicators.

Moreover in the context of the Copernicus programme CORINE Land Cover (CLC) and other Pan-EU land cover mapping initiatives, such as the Copernicus HRL (High Resolution Layers), LUCAS micro data and photos[1] are used for production, verification and validation processes.

More information on land cover/use statistics and on LUCAS in general can be found on the Eurostat website: http://epp.eurostat.ec.europa.eu/portal/page/portal/lucas/introduction.

The document at hand provides information for the user on how to handle the microdata files made available in the LUCAS dedicated section.

# 2 Version

The LUCAS 2015 survey data made available on the 29th July 2016 corresponds to raw microdata. This means that part of the data already went through the level 0 (internal consistency with IT requirements) and part of level 1 (consistency within the dataset) validation processes, but that changes are still foreseen in the following months as further quality checks are implemented.
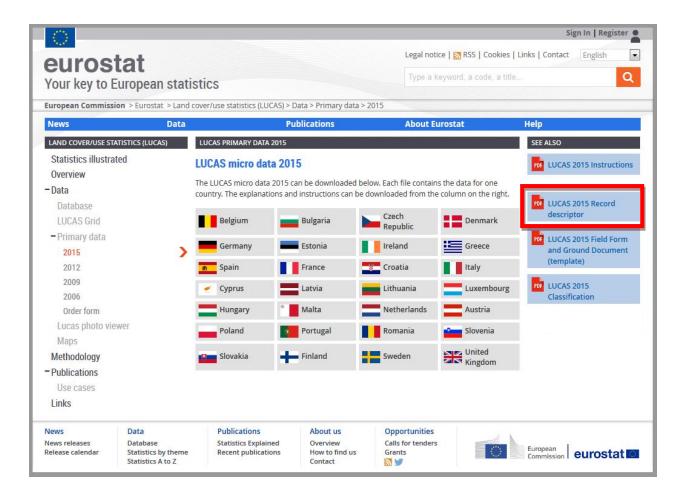
# 3 Downloading the files

Go to http://ec.europa.eu/eurostat/web/lucas/data/primary-data/2015 and click the flag to access the data file for each country. You will be prompted to open or save the file. The format is .csv (a text file with comma separated values). It can be converted to other formats by the user.

# 4 Record descriptor

The description of each record of the .csv file is available on the record descriptor. It can be found on the right hand side of the primary data page.

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[1] *Point and landscape photos in the four cardinal directions collected during the LUCAS in-situ survey*

# 5 Instructions and classification

Further information on the data collection process can be found on the LUCAS 2015 C1 document. The details of the classification can be found on the LUCAS 2015 C3 document. Both are also available on the primary data page.

# 6 Additional data

Some data is no longer available on the country file. The data on NUTS, strata and other ancillary data is available on the LUCAS Grid file (http://ec.europa.eu/eurostat/web/lucas/data/lucas-grid ). A join by POINT_ID can be used as foreign key to link the two tables.

# 7 Point coordinates

The LUCAS point is a theoretical point located on a 2x2 grid. The coordinates of the theoretical point can be found on the LUCAS Grid.They are available in both non projected (WGS84 latitude and longitude) and projected Lambert Albers Equal Area (ETRS89 + LAEA). On the survey microdata you can find the coordinates from where the point was observed by the surveyor (also in WGS84 latitude and longitude).