

DATA SET DESCRIPTION

Multi-annual grids of drought index (de Martonne) over Germany

Version v1.0

Cite data set as: DWD Climate Data Center (CDC): Multi-annual grids of drought index (de Martonne) over Germany, version v1.0.

INTENT OF THE DATASET

This describes the freely available data of the DWD Climate Data Center. Grids are derived from DWD stations and legally and qualitatively equivalent partner stations in Germany run for climatological and climate related applications, considering the height dependencies.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage	Germany
Temporal coverage	31.12.2010 - 40543
Spatial resolution	1 km x 1 km
Temporal resolution	30 years multi-annual
Projection	3-degree Gauss-Kruger zone 3, Ellipsoid Bessel, Datum Potsdam (central point Rauenberg), EPSG:31467, see http://spatialreference.org/ref/epsg/31467/ . To define the spatial projection in GIS, the file https://opendata.dwd.de/climate_environment/CDC/help/gk3.prj can be used. Help is given on importing into ESRI ArcGIS in https://opendata.dwd.de/climate_environment/CDC/help/Hilfe_Gauss-Krueger-Raster2GIS.pdf .
Format(s)	The file in ESRI-ascii-grid-format has in the header the coordinates for the lower left grid cell, including the definition of its center [XLLCENTER],[YLLCENTER] or its corner [XLLCORNER],[YLLCORNER]. It contains a table of 654 x 866 numbers. Each row goes from West to East. The first row is the northernmost one (654 values with 4 digits). Missing values are marked with -999.
Parameters	30 year means of the drought index after de Martonne, unit: mm/°C.
Uncertainties	Uncertainties are caused by the interpolation method, and erroneous or missing observations. When comparing grid fields for different periods, it should be considered that the measurement network has changed over time.

DATA ORIGIN

The multi-annual grids are calculated from the respective annual grids.

VALIDATION AND UNCERTAINTY ESTIMATE

The annual drought index (from de Martonne) dMI is calculated with: $dMI = P/(T+10)$ using the values T (in degree Celsius) from temperature grids and P (in mm) from precipitation grids. For quality considerations refer to the quality of the input data (temperature grids, precipitation grids).

ADDITIONAL INFORMATION

When using the drought index after de Martonne, note that the class definitions known from literature (arid/humid) apply only for the annual values.

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REVISION HISTORY

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