About the SWITCH-ON Data Catalogue

The data catalogue is part of the EU funded SWITCH-ON project, which compiles open data relevant for hydrological studies and applications. Its purpose is to facilitate data acquisition for hydrologists and researchers, and provide data to experiments within the Virtual Water Laboratory.

The catalogue primarily contains hydrological and meteorological resources, but hydrologically relevant data from other scientific fields, such as biology, geology, and society, is also available. Geospatially, the majority of the datasets is found within the European continent or with global coverage. The data providers are organizations, governmental agencies, institutes, and universities, such as: EEA, ESA, USGS, JRC, etc. Some data also originates from the experiments and products within the SWITCH-ON project.

A majority of the data is available to download, view, and process with open source software. Recommended software for different format types are listed below.

Text Resources	Geodata	Other
Excel/Google spreadsheet	ArcGIS	NetCDF reader
Notepad	QGis	Matlab
MS Word		Winzip
Adobe		

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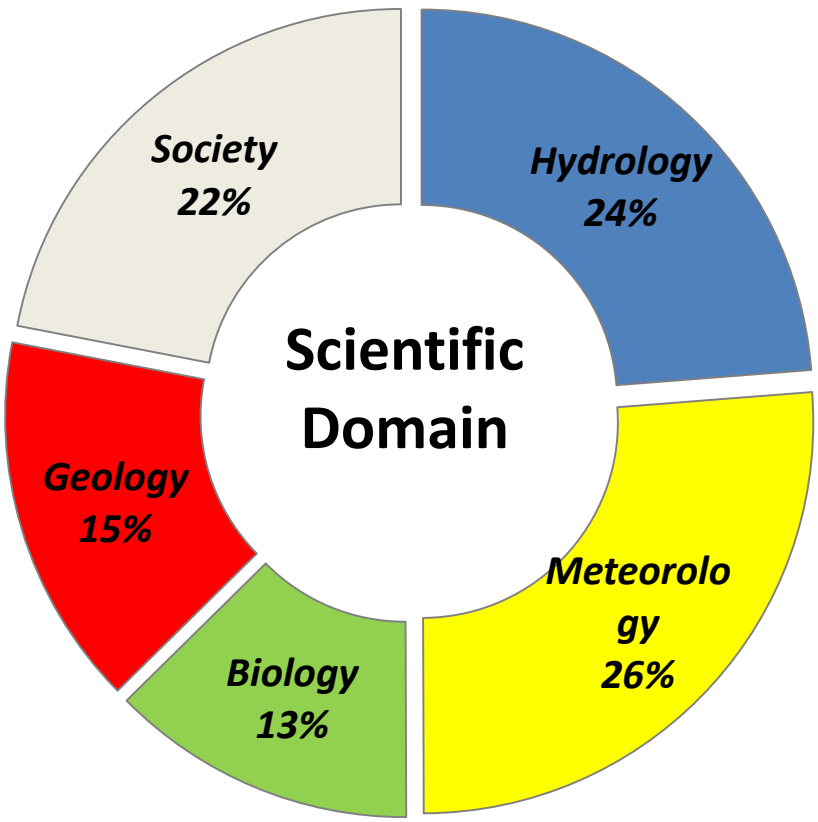
The following figures describe the content of the SWITCH-ON database

Scientific domain: The database primarily supports hydrology research by providing a catalog of hydrological (e.g. water bodies, discharge, solubles), meteorological (e.g. precipitation, temperature, pressure), biological (e.g. vegetation, land cover, species), geological (e.g. soil, faults, topography), and societal data (e.g. demography, urban land cover and management). The high representation of the meteorological domain is mainly due to large about of radiation and precipitation time-series, serving as forcing data in hydrological experiments, and several resources being provided as multiple measures (e.g. maximum, minimum, and average values). The society domain is statistically high due to demographic resources being provided as both millennial and centennial data.



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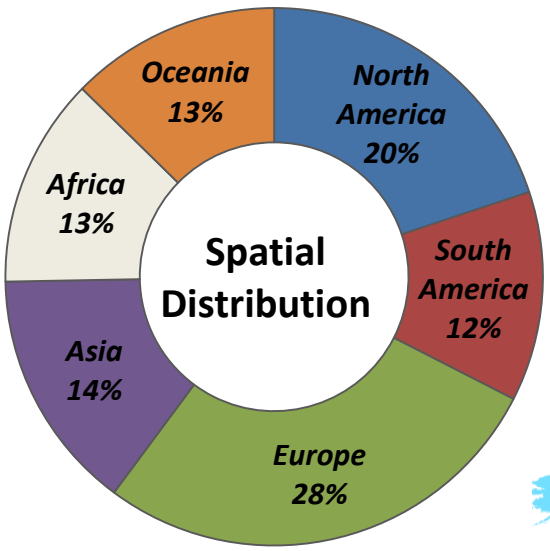
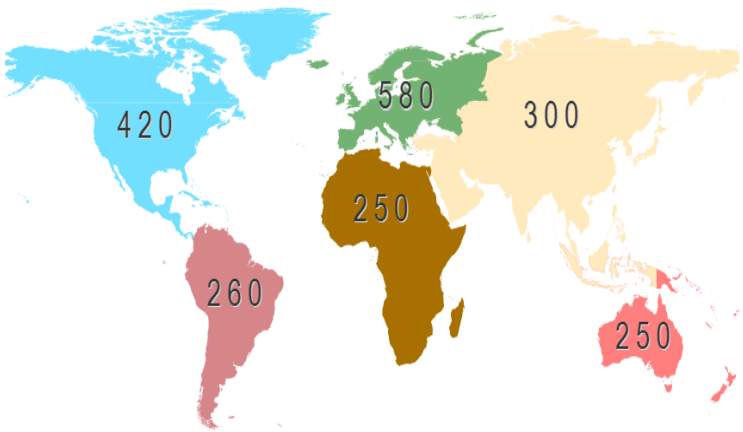
Spatial Distribution: Data from all parts of the world are available in the database. To illustrate the spatial distribution of resources the number of datasets per continent has been quantified (global datasets have been counted as one resource per continent). The majority of the data can be found in Europe as contributors mainly have used, and therefore also provided, European data. The geospatial extent of the resources ranges from single point observations to global coverage areal data. Note that; Even though North America has the second largest proportion of datasets, a large number of these originate from small-scale experimental studies covering minor areas. Some resources are not geographically bound to specific regions.





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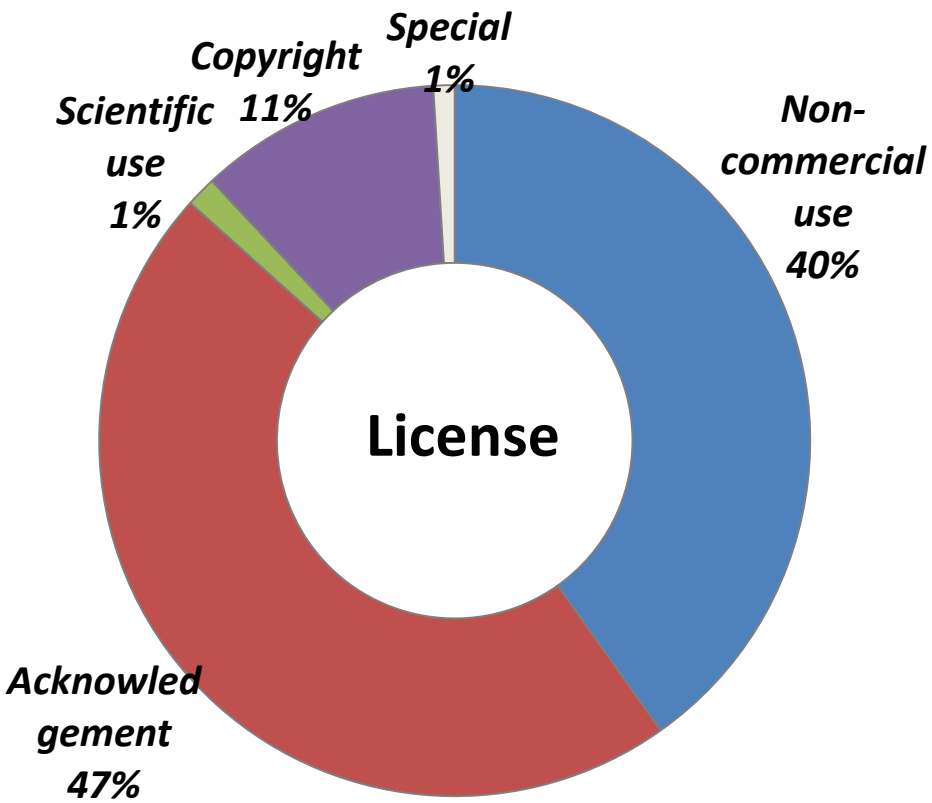
Licenses. The database contains open data, and thus has open licenses. Most data require acknowledgement (47%) or are limited to non-commercial use (40%). 11% of the data require permission from copyright holder. The remaining data have conditions limiting their uses, such as to science or education. Majority of the resources free for non-profit purposes originates from governmental organizations and institutions, while data with licenses requiring a citation of the contributor often are provided by the scientific community (universities, research projects, etc.).



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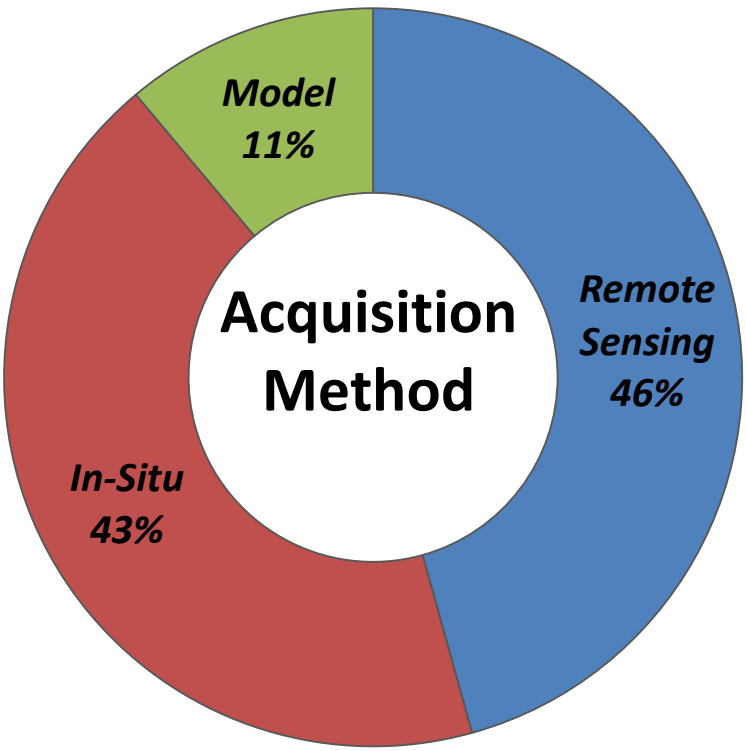
Acquisition Method. The majority of the data in the database has been acquired by remote sensing (primarily satellite imagery and LIDAR) or in-situ measurements from hydrological and meteorological observation stations and surveys. The remote sensing data mainly consist of land cover and management, topographic maps and DEMs, and meteorological measurements, while the in-situ data to a large extent are composed by unprocessed time-series of various variables. 11% of the catalogue content is composed by modelling output data. Note that datasets can be derived from more than one of these acquisition methods and that such datasets also has been assign in multiple classifications.



Note: statistics were calculated on the 25.08.2016

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