

HISTALP

a database for climate and impact studies

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guiding questions



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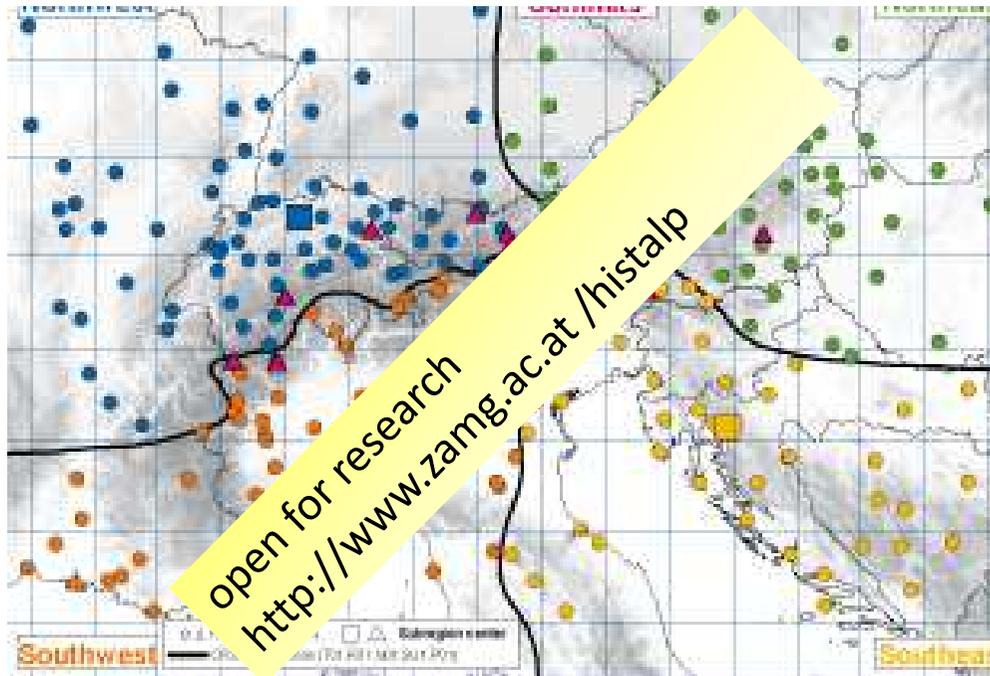
- What is HISTALP
- Why do we need long-term data of the past?
- Two existing data sources for climate impact studies
- HISTALP today
- EUMETNET and data rescue
- Future steps

What is HISTALP?

HISTORICAL INSTRUMENTAL CLIMATOLOGICAL SURFACE TIME SERIES OF THE GREATER ALPINE REGION

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sharing of knowledge: database, consisting of monthly homogenized temperature, air pressure, precipitation and sunshine records for the „Greater Alpine Region“ (GAR, 4-19 deg E, 43-49 deg N, 0-3500m asl).



the longest temperature and air pressure series extend back to 1760, precipitation to 1800, cloudiness to the 1840s and sunshine to the 1880s

Collection of climate time series from GE, F, CZ, SK, HU, SI, HR, BiH, IT, A Stations 0- 3500m, NMSs and universities

Why do we need long-term data of the past?



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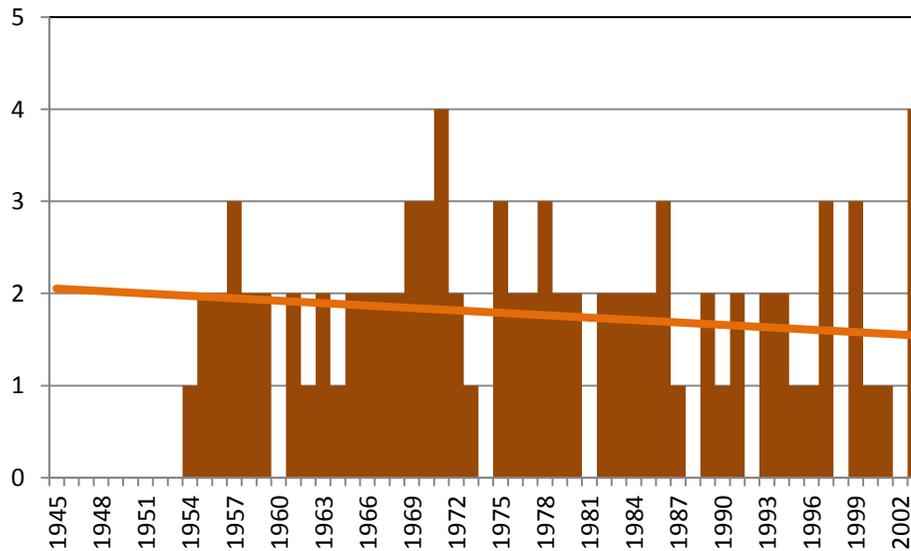
1. Learning from the past to understand important mechanisms of the climate system; e.g. temperature increase in relation to frost frequency, temperature and snow, humidity and air temperature (sultriness)
2. For climate model evaluation – if it does not work in the past, how can we trust for the future
3. To classify extreme events, to calculate return periods, 50 years may be too short to estimate a trend,

We cannot understand the future without understanding the past!

50 years may be too short to estimate a trend or return periods

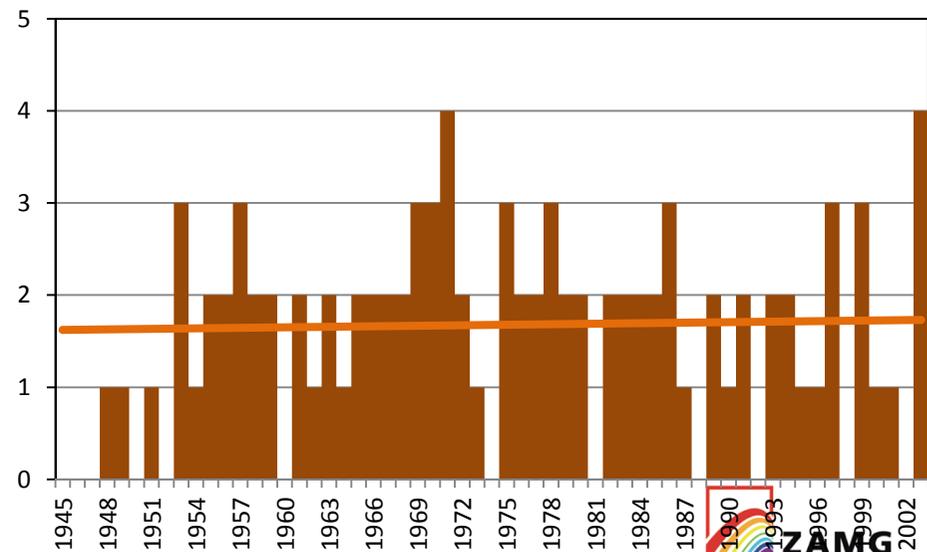


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No of dry periods in Feldkirch (west of Austria) of at least 10 days, autumn 1948 - 2003

No of dry periods in Feldkirch (west of Austria) of at least 10 days, autumn 1954 - 2003

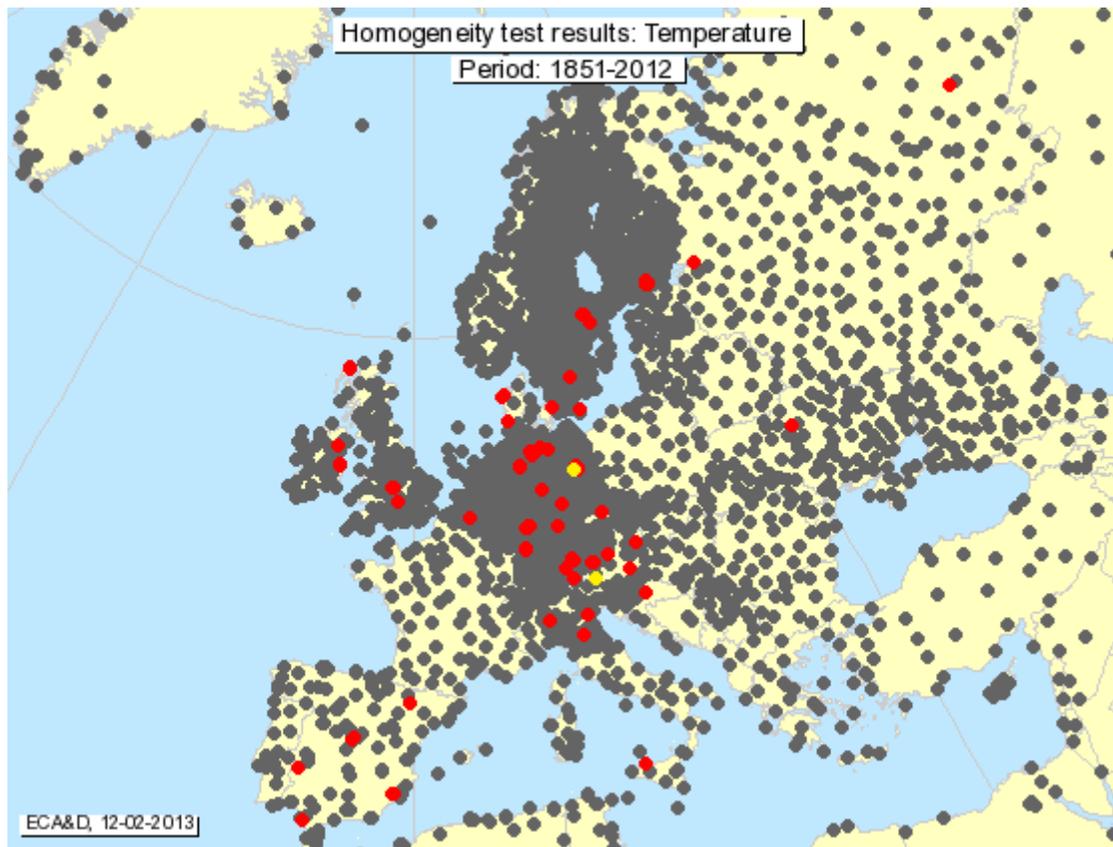


Source: Auer I, Korus E, Böhm R, Schöner W. 2005. Endbericht StartClim2004: Projekt: Analysen von Hitze und Trockenheit und deren Auswirkungen in Österreich.

A European data base for research: ECA&D Dataset - daily series

Hosted by KNMI - <http://eca.knmi.nl/>

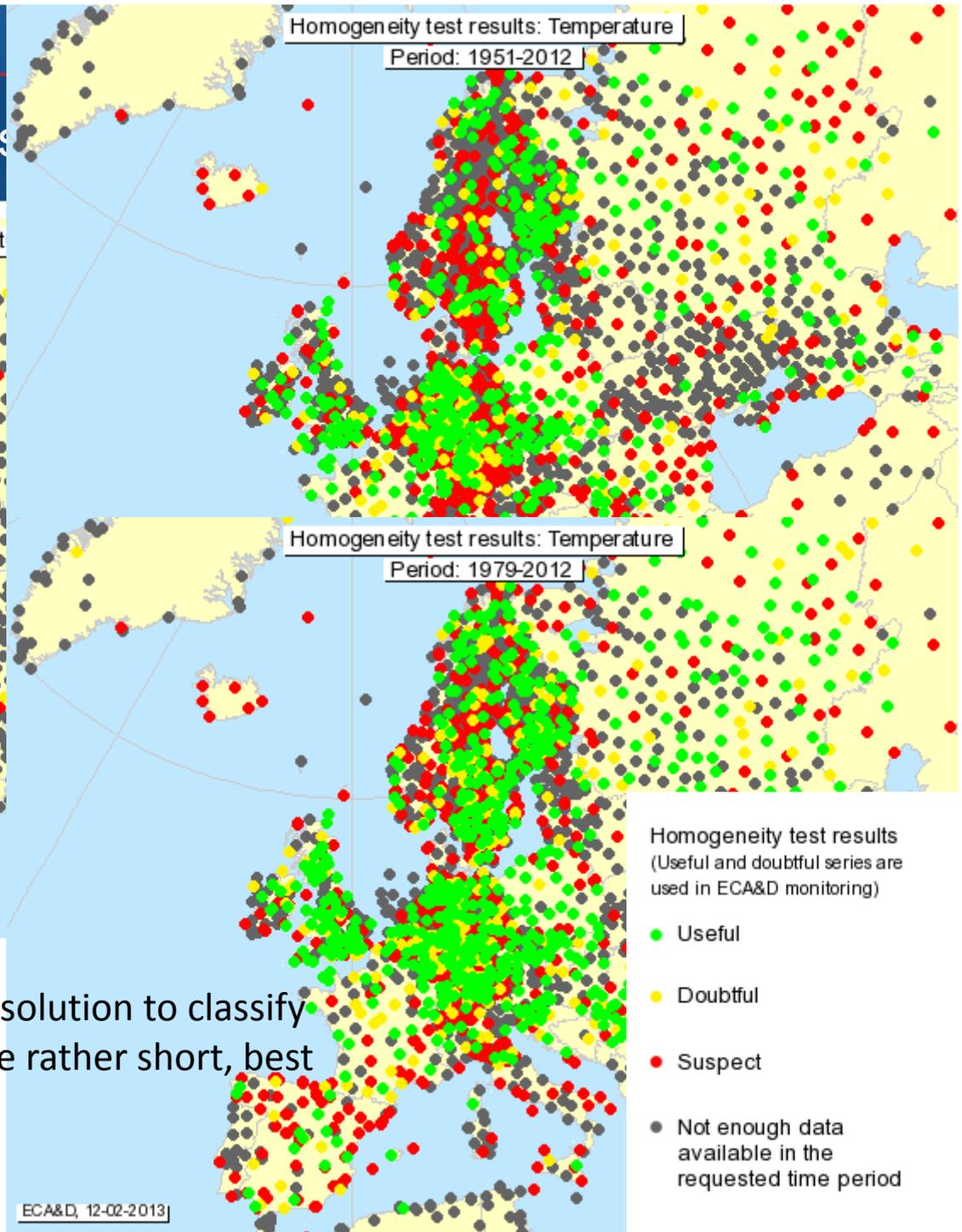
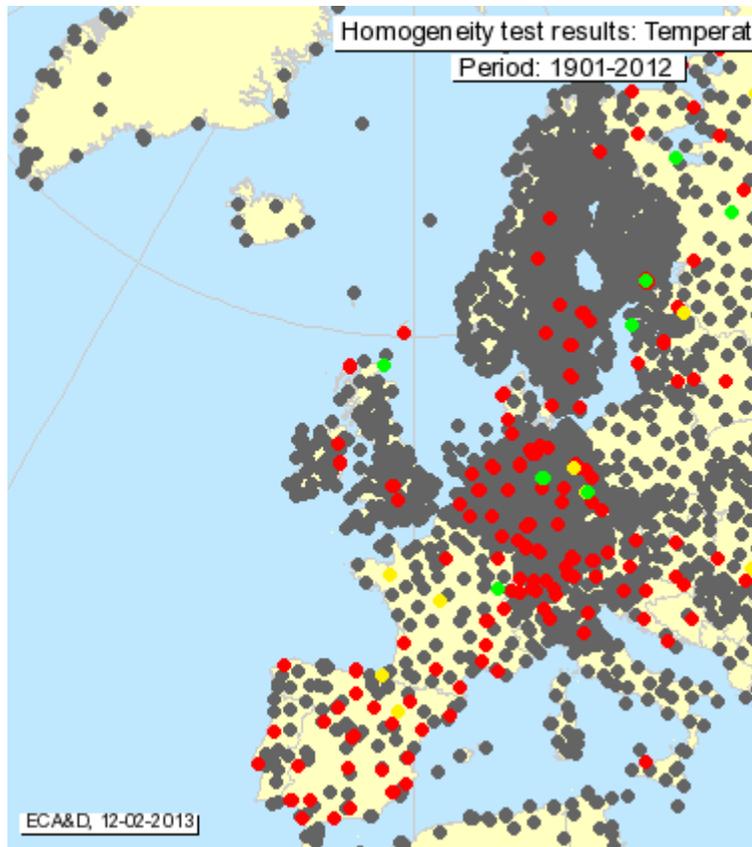
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Homogeneity test results
(Useful and doubtful series are used in ECA&D monitoring)

- Useful
- Doubtful
- Suspect
- Not enough data available in the requested time period

ECA&D Dataset: daily series



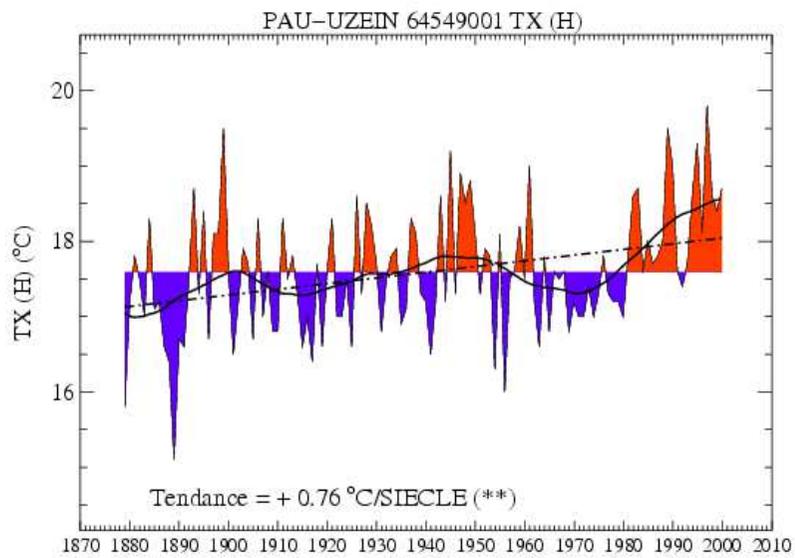
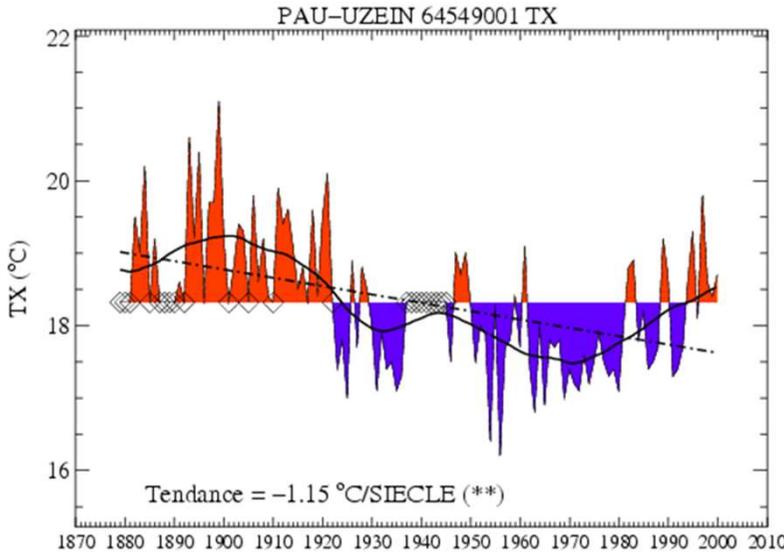
European wide information, daily resolution to classify extreme events, but useful series are rather short, best availability after 1979.

Homogenization



Most probably all long-term series are contaminated by non-climatic artificial breaks or hidden trends. Homogenized means: All non-climatic influences have been removed – breaks or trend caused by relocations, instrumental changes, observing rules, urban effect series display only the climate signal !

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HISTALP Download



station data

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Coarse Resolution *subregional means* for all elements, relative to 1961 – 1990 and 1901 – 2000 for NE, NW, SW, SE, low elevation and high elevation mean

anomaly series interpolated to a regular grid of *1° latitude and 1° longitude* for temperature, precipitation and air pressure

5 min grids: absolute values of temperature, precipitation (amount) and solid precipitation (amount and percentage) for topography height on a regular grid of 5min grid-distance ranging from 4° to 19°E and from 43° to 46°N.

the success of HISTALP and further steps (2013, 2014, 2015)



HISTALP has been incorporated as example of climate data exchange mechanisms in the 1st draft paper of WMO's contribution to the GFCS

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extension of HISTALP with Austrian funding

- additional elements (wind speed, humidity)
- increase of temporal resolution for daily tmax and tmin and hourly precip data for Austria
- re-analyses– re-homogenization every ten years to avoid new breaks due to changes in relocation, instrumentation, changes in the surroundings etc.

HISTEU – POSSIBLE FUTURE OF HISTALP

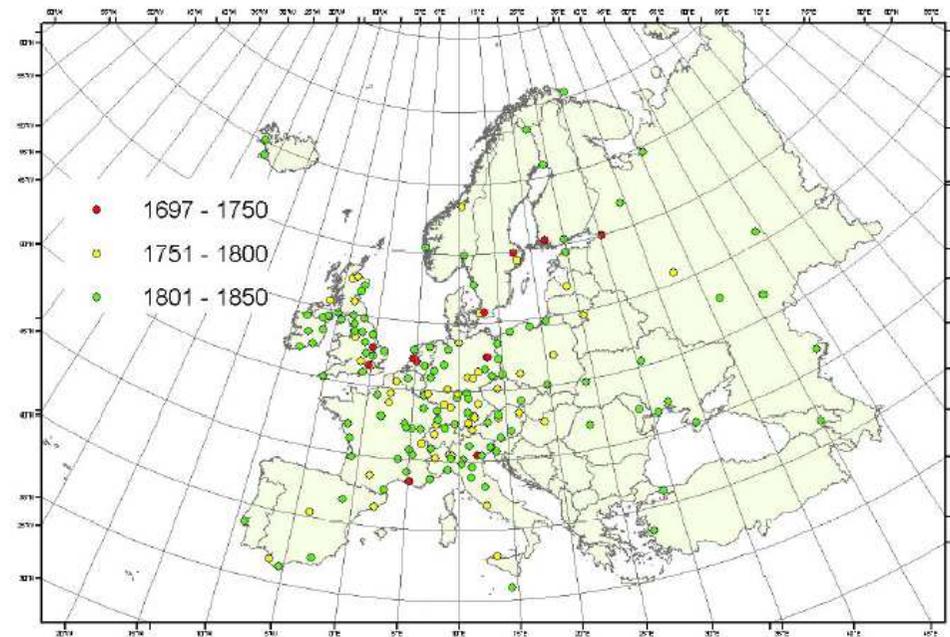
to extend HISTALP to HIST-EU a data base of European dimension

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data search and data recovery
digitization
homogenization
storage



a long and
stony way...



Quick scan of the instrumental data potential in Europe for climate time series starting before 1850

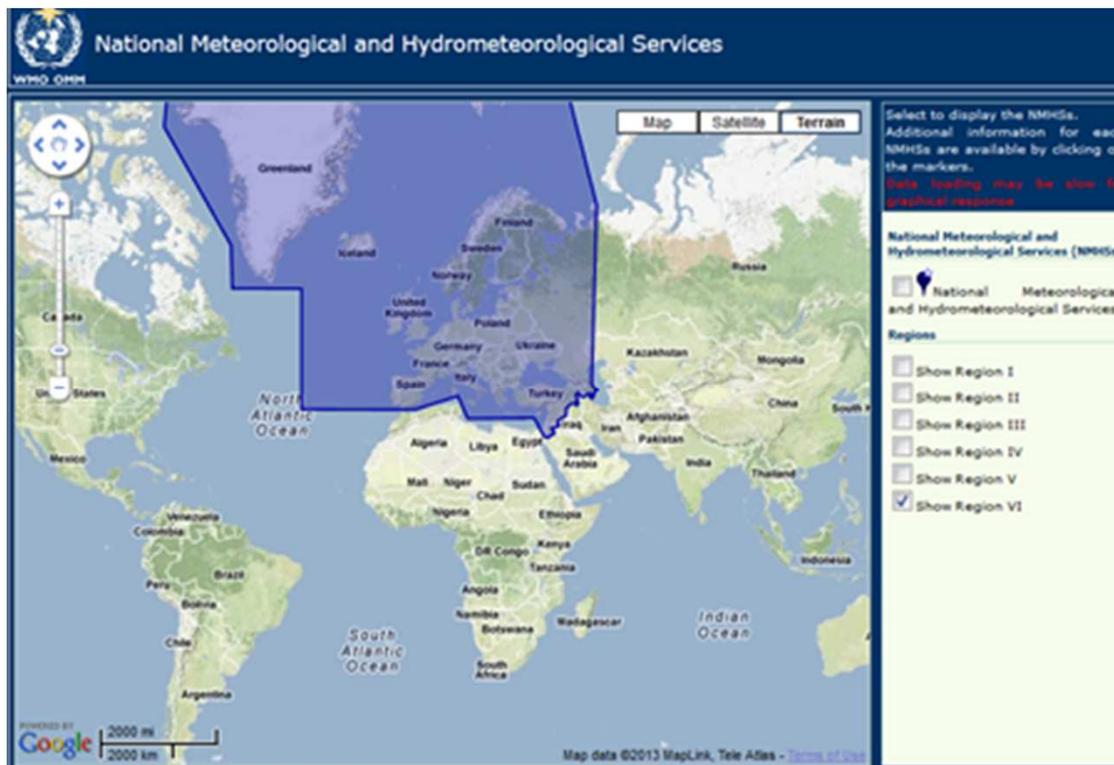
Expert Team on Data Recovery and Rescue



activity within EUMETNET

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a questionnaire with 10 questions for WMO Region VI



climate data of stations

- >100 years
- mountain stations > 50 years
- data from regions without long-term data

Question 1



1. Is there already according to long-term series and mountain series digitized data available for your country? Please give their names, the temporal resolution, the parameters, start and end date of the series.

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<u>name</u>	<u>temporal resolution</u>	<u>parameters</u>	<u>start</u>	<u>end</u>
Vilnius	Monthly	Temperature	1778	2013
Vilnius	Monthly	Precipitation	1887	2013
Kaunas	Daily	Temperature	1922	2013
Kaunas	Daily	Precipitation	1923	2013

Question 2



Do you know of any according data for your country that still needs to be digitized? Please indicate the station name, the temporal resolution, the parameter, start and end date of the series, if known. If you assume that data should be available please indicate this as well.

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<i>name</i>	<i>temporal resolution</i>	<i>parameters</i>	<i>start</i>	<i>end</i>
Vilnius (digitized from 1964)	Daily	Temperature	1853	2013
Vilnius (digitized from 1964)	Daily	Precipitation	1871	2013
Vilnius (digitized from 1976)	Daily	Wind	1876	2013
Vilnius (digitized from 1976)	Daily	Air pressure	1871	2013
Kaunas (digitized from 1976)	Daily	Wind	1922	2013
Kaunas (digitized from 1993)	Daily	Sunshine	1924	2013
Kaunas (digitized from 1976)	Daily	Air pressure	1922	2013
Kaunas (digitized from 1976)	Daily	Humidity	1922	2013
Klaipėda (digitized from 1959)	Daily	Temperature etc.	1923	2013

Questions 2 - 8



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3. Is there any metadata (station location, but also information on changes in the station configuration,...) already available /still to be recovered concerning your climate data? - **YES**

4. Do you have the resources to digitize the still unexplored climate data in your archive? - **NO**

5. Please give an estimation of the costs [€] and work hours the digitalization of the according data would take.

6. If you would have the money to do the digitalization of the data, in which time horizon would you be able to do this?

7. Would you be willing to provide your data to an international database zB: ECA&D, HIST-EU to be built up after the example of HISTALP <http://www.zamg.ac.at/histalp>? **YES/NO**

8. Would you be willing to write some data description of your data (an example would be provided in time) and participate in a common paper? **YES**

Goals 1 - 99



goal 1: to provide a data inventory for climate research with focus on centennial series and mountain stations of at least 50 years

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to form an Expert Team to push data rescue

to get an overview of existing data and their availability

to get a cost estimation and time need to have all data stored

goals 2 to 98

goal 99: to have all RAVI existing data/metadata recovered and digitized, homogenized and stored in a databank like HISTALP

final goal: to have open access for the research community to all data

Feedback

questionnaire was distributed in February 2013

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feedback and detailed information from Lithuania, Slovenia, Slovakia, Romania, Cyprus, Georgia

next relevant meeting: EUMETNET Climate Expert Team Meeting in Bilt in April 2013 –

Thank you for your attention!