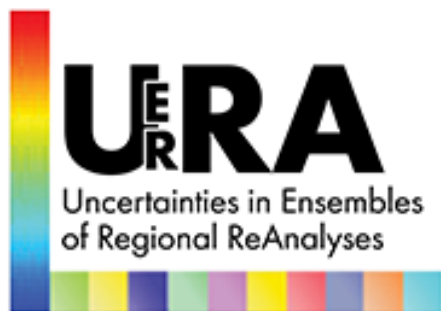




Royal Netherlands
Meteorological Institute
Ministry of Infrastructure and the
Environment



WACA&D



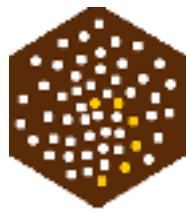
Development of the West-African Climate Assessment and Dataset (WACA&D)



Gé Verver (KNMI)
Andre Kamga (ACMAD)
Albert Klein Tank (KNMI)
Gerard van der Schrier (KNMI)
Per Uden (SMHI)



Royal Netherlands
Meteorological Institute
Ministry of Infrastructure and the
Environment



WACA&D



Development of the West-African Climate Assessment and Dataset (WACA&D)



- 1- The international Climate Assessment & Dataset
- 2- Examples from other regions
- 3- Plan for Western Africa

Questions that require climate observations:



What is the skill of a forecast?

How good are climate models for a specific area?

How accurate are satellite observations?

How rare is an event that has happened recently?

Will past weather statistics be valid in the future?

Can reanalysis provide answers the questions above?

...





Some answers obtained from the International Climate Assessment & Dataset (ICA&D)

The European implementation of ICA&D: **ECA&D**



Home

Home

Welcome to the website of the European Climate Assessment & Dataset (ECA&D) project. Presented is information on changes in weather and climate extremes, as well as the dataset needed to monitor and analyse these extremes. ECA&D is part of the International Climate Assessment & Dataset (ICA&D) project, which is supported by the European Climate Support Network [ECSN](#) and supported by the European Met. Services [EUMETNET](#).

What's new?



The database is updated regularly. The latest update is for August 2011 - Added new country. August 2011 - The database has been updated within 12.5 km distance. July 2011 - Increased the number of stations. June 2011 - Periodic update. May 2011 - The database has been changed. [All news items](#)

Participants and data

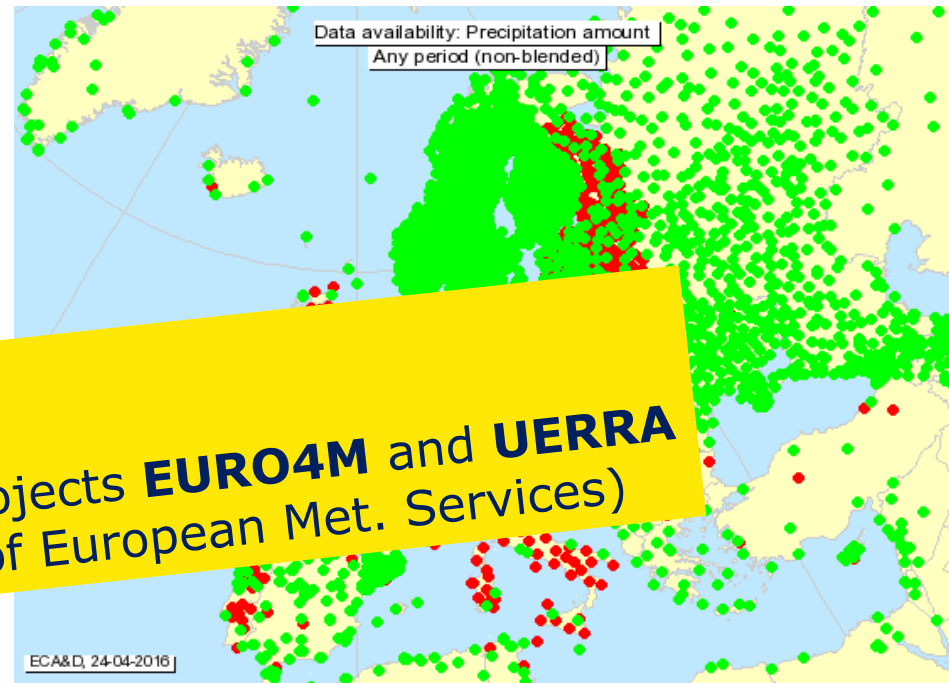


Today, ECA&D is receiving data from [56 participants](#) for [62 countries](#) and the ECA dataset contains 25269 series of observations for [12 elements](#) at [4641 meteorological stations](#) throughout Europe and the Mediterranean (see Daily data > [Data dictionary](#)). 46% of these series is public, which means downloadable from this website for non-commercial research. Participation to ECA&D is open to anyone maintaining daily station data. If you want to join please contact us.

E-OBS gridded dataset



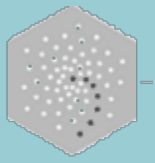
[E-OBS version 4.0](#) has been released. E-OBS is a daily gridded observational dataset for precipitation, temperature and sea level pressure in Europe based on ECA&D information. The full dataset covers the period 1950-2010. It has originally been developed as part of the [ENSEMBLES](#) project (EU-FP6) and is



Developed by:
KNMI
European Research Projects **EURO4M** and **UERRA**
EUMETNET (Network of European Met. Services)

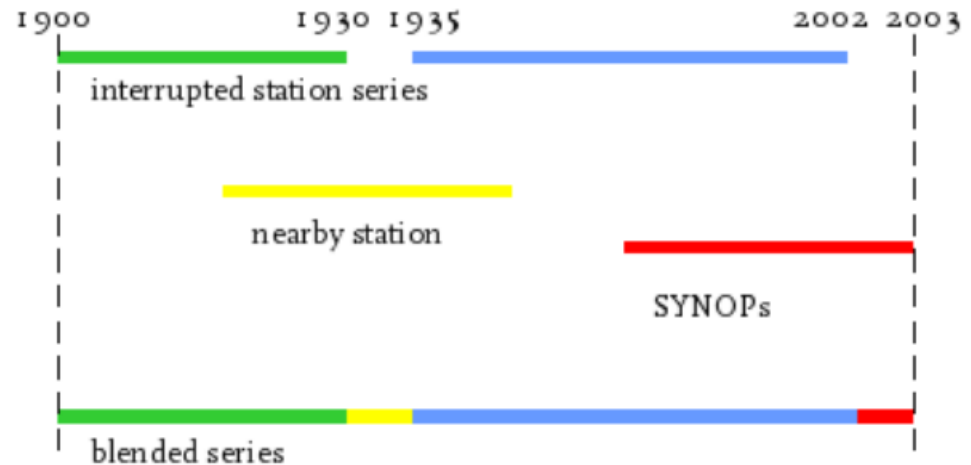
- 68 Participants
- 63 Countries
- 10615 Stations
- 44003 Daily station series
- 70 Derived indices





QC: All data is checked and spurious values are removed (e.g. $T_n \leq T_g \leq T_x$, repetitive values for 5 days)

Blending: infill & extend with other series, nearby (within 12.5km & 25m height) stations and/or synop



Homogeneity: ➡



old

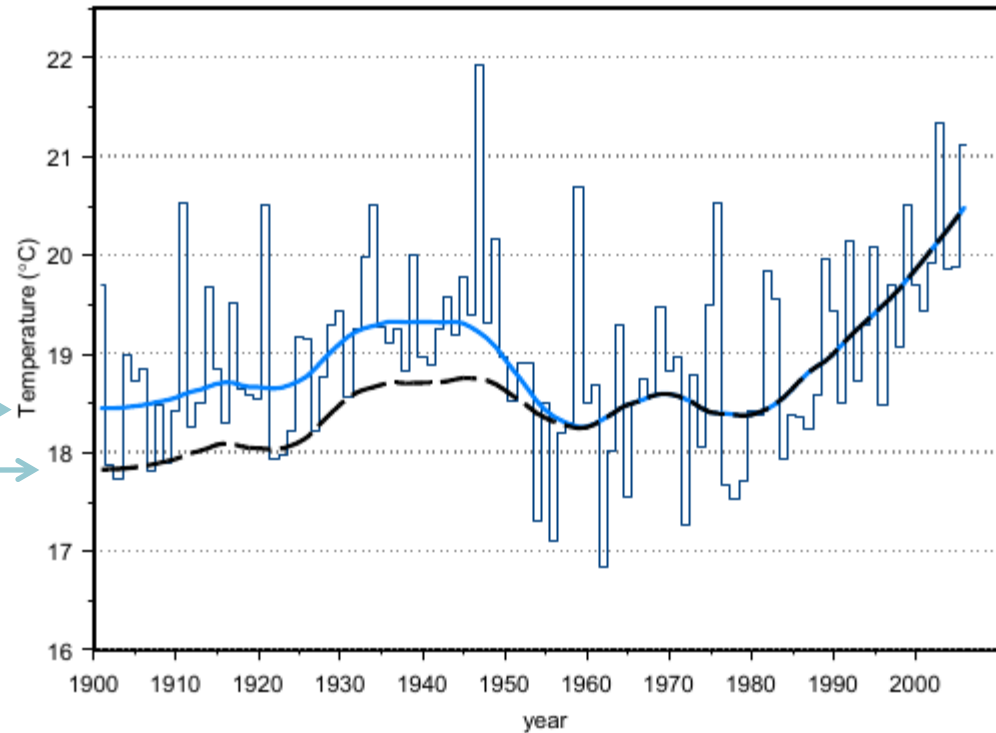


new

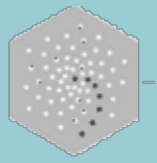


old →

new →

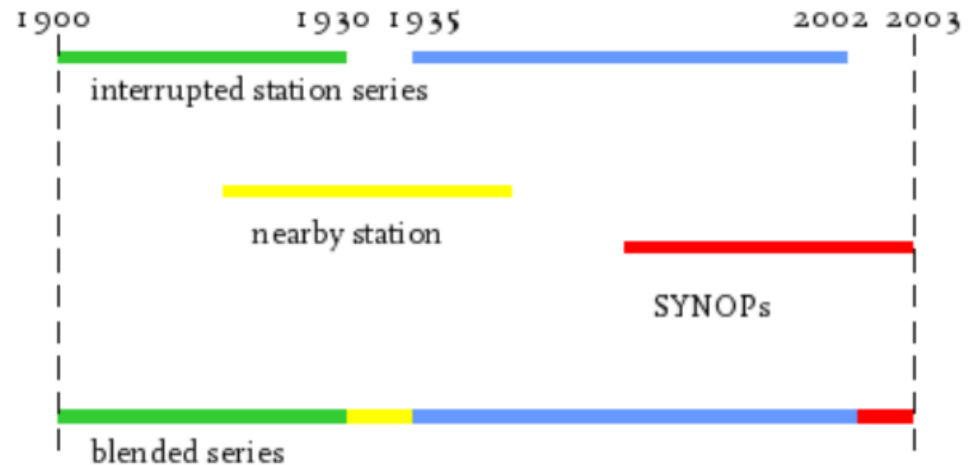


4 **homogeneity** tests performed (Wyngaard et al., 2003)
Evaluation presented but no correction applied



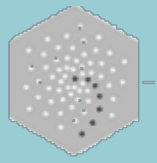
QC: All data is checked and spurious values are removed (e.g. $T_n \leq T_g \leq T_x$, repetitive values for 5 days)

Blending: infill & extend with other series, nearby (within 12.5km & 25m height) stations and/or synop



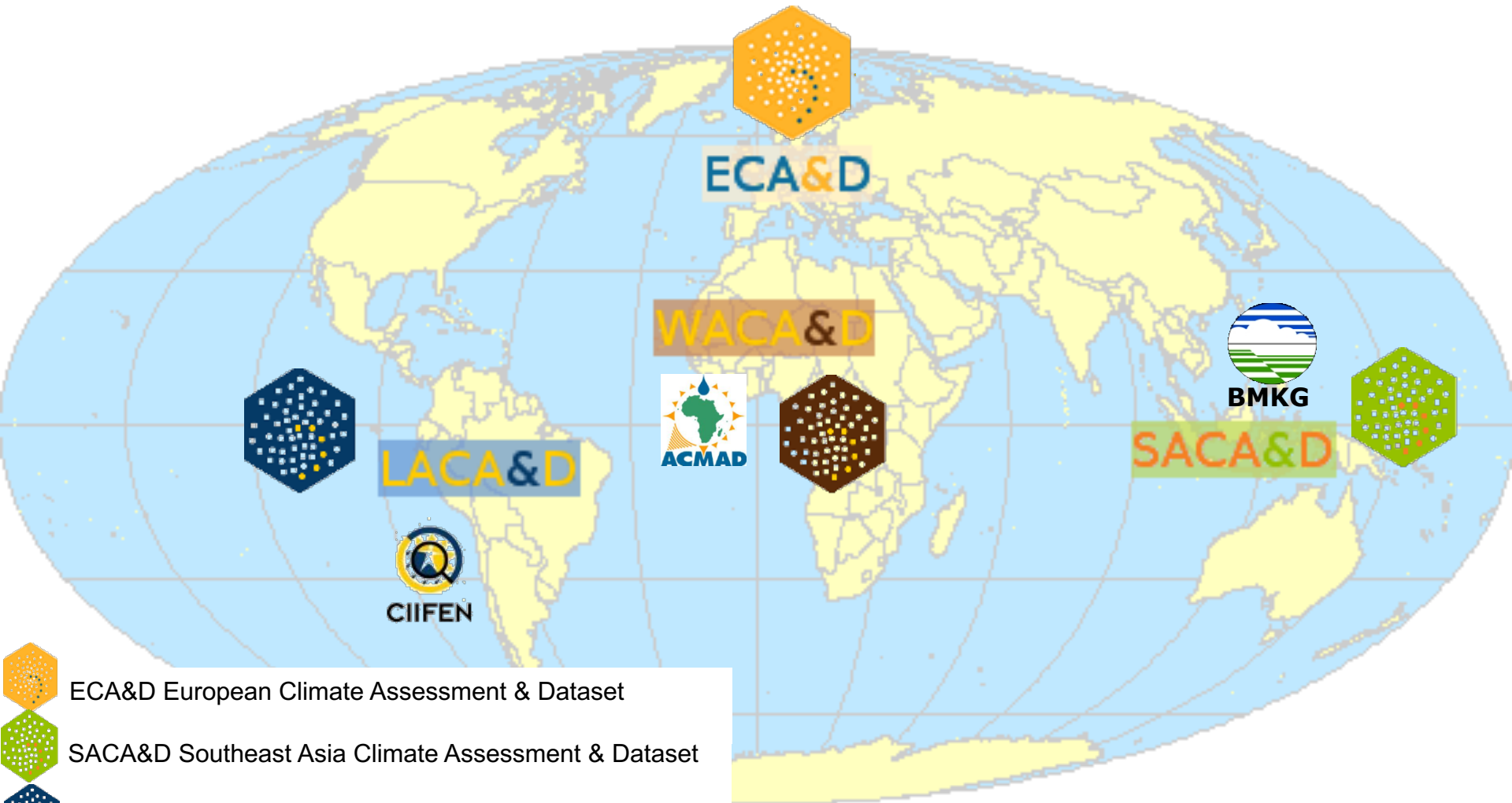
Homogeneity: ➡





Derived products: gridded climate data, trends, return periods, indices ➡ ➡ ➡



International Climate Assessment & Dataset

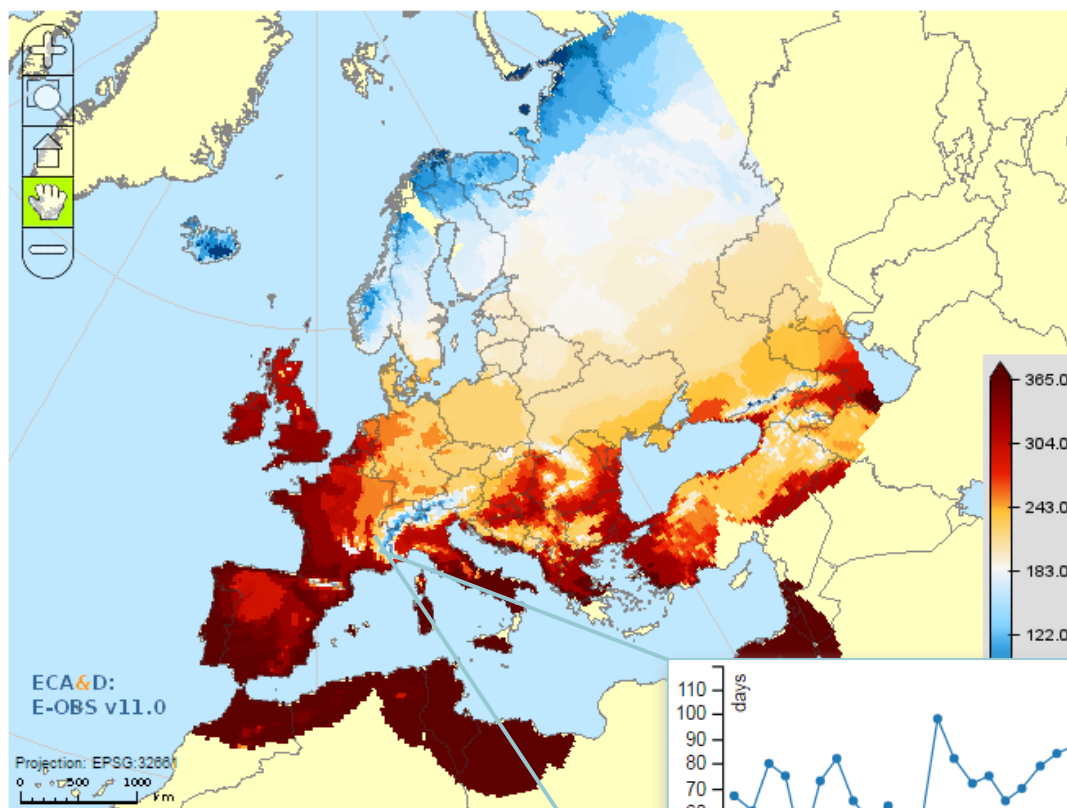
Implementations



-  ECA&D European Climate Assessment & Dataset
-  SACA&D Southeast Asia Climate Assessment & Dataset
-  LACA&D Latin American Climate Assessment & Dataset
-  WACA&D West African Climate Assessment & Dataset

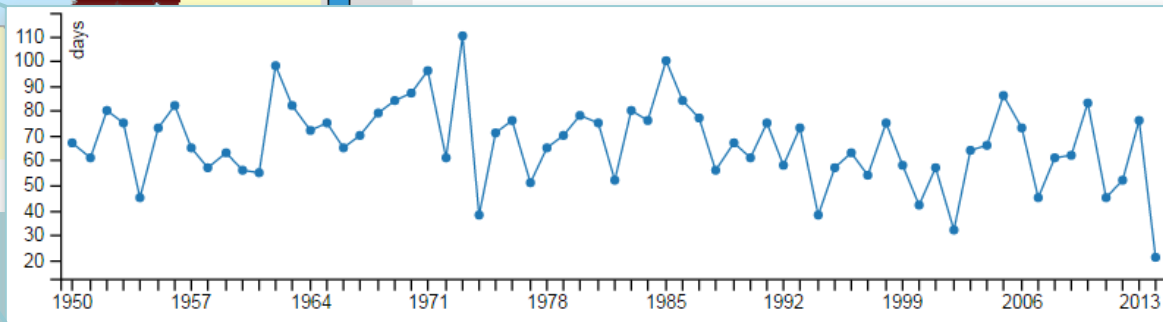


Number of frost days ($T_{min} < 0^{\circ} \text{ C}$)



Web interface for browsing time series plots, trend maps, climatology/anomaly maps, and return value maps for selected stations, time periods, etc.

Example: Geneva, Switzerland



KNMI Regional Climate Centre (RCC) for European Climate Data



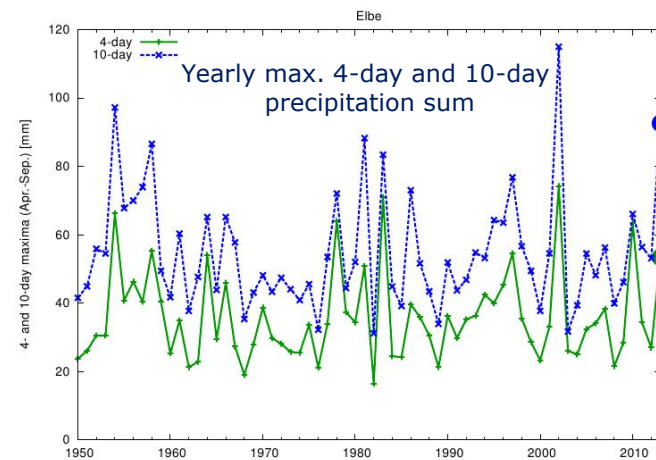
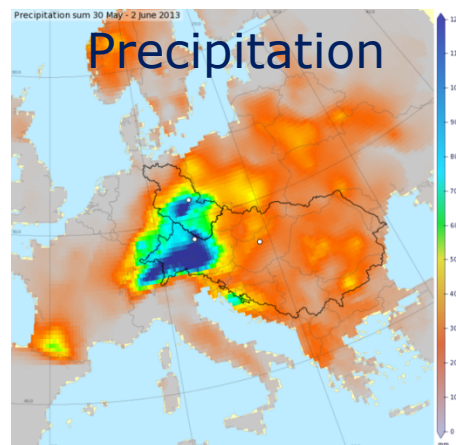
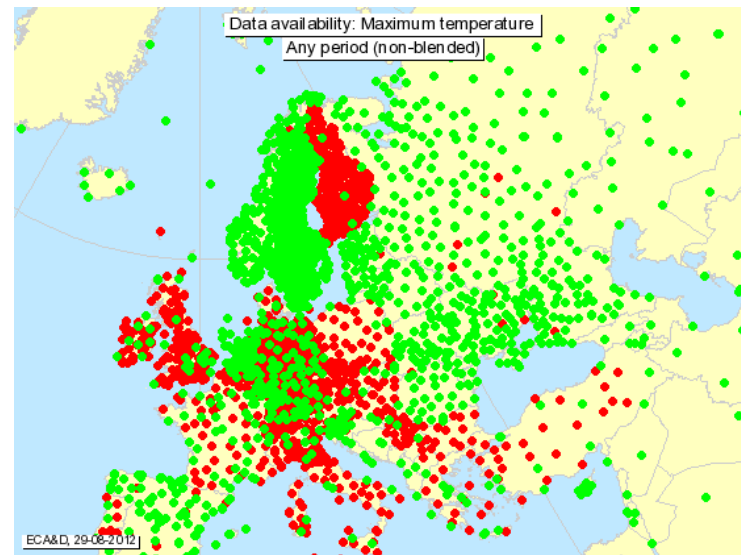
EU-project UERRA
Uncertainties in Ensembles of Regional ReAnalyses



EUMETNET
The Network of European Meteorological Services



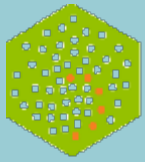
WMO-World Meteorological Organization



Central-European flooding
event in 2013

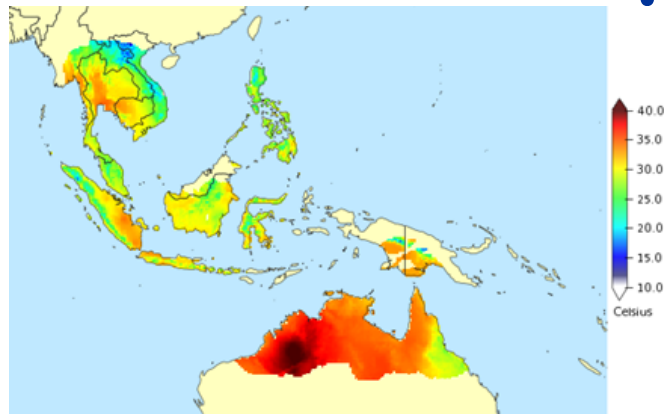
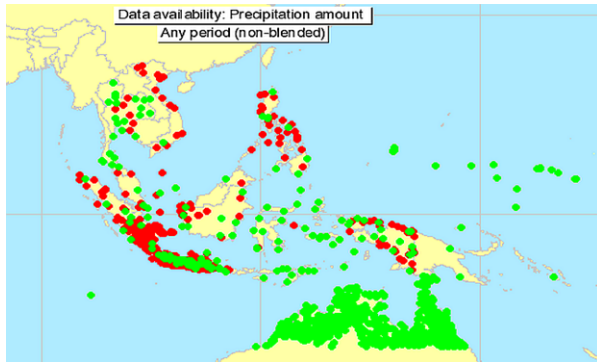


Historical perspective

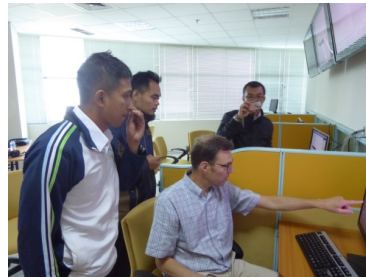


Southeast Asia Climate Assessment & Dataset (SACA&D)

Collaboration with Indonesian weather service (BMKG)



- Historical climate data
 - Contributing to water management Food Security
 - Data rescue
 - Analysis of extremes
 - Security
- Capacity building



Agriculture and food security



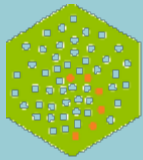
Water



Disaster Risk Reduction

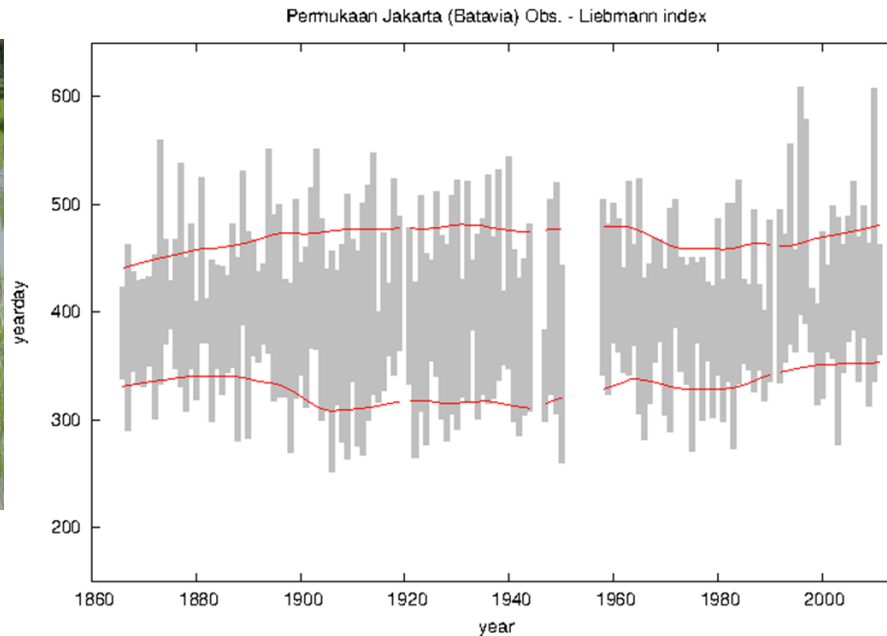


Health



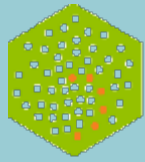
Southeast Asia Climate Assessment & Dataset (SACA&D)

Example: Start and end of the rainy season since 1866
relevant for rice production



Agriculture and
food security

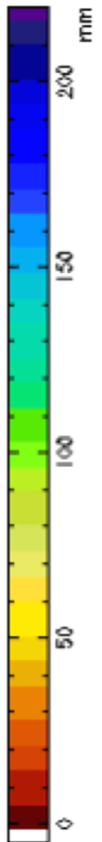
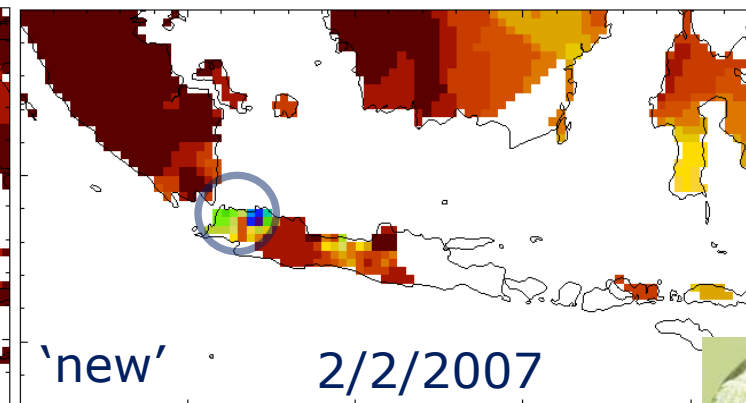
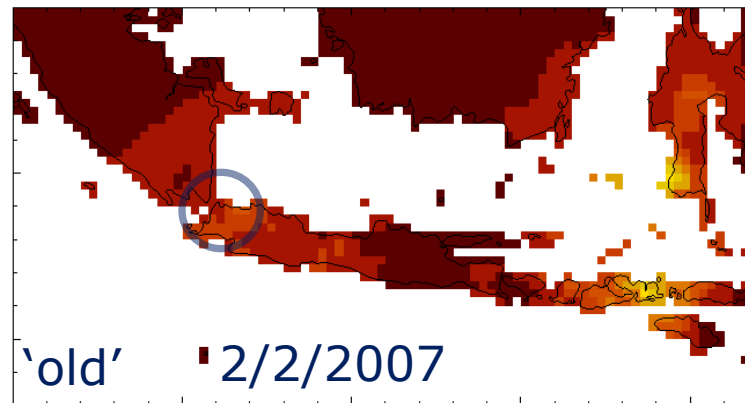
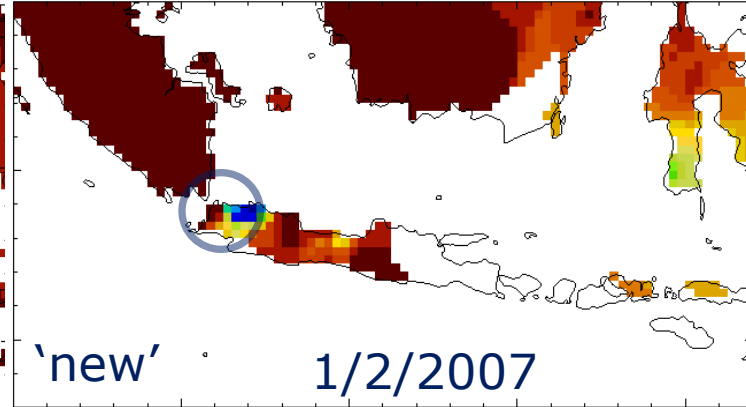
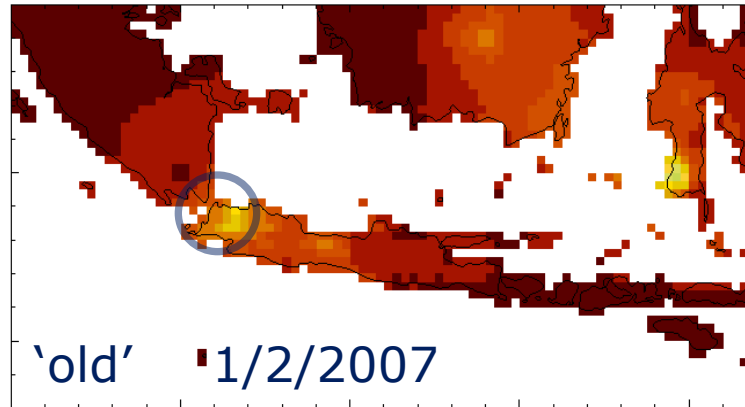




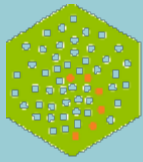
Southeast Asia Climate Assessment & Dataset (SACA&D)

EXAMPLE: Jakarta
flooding in February 2007

Improved precipitation data for
water management in Jakarta ○

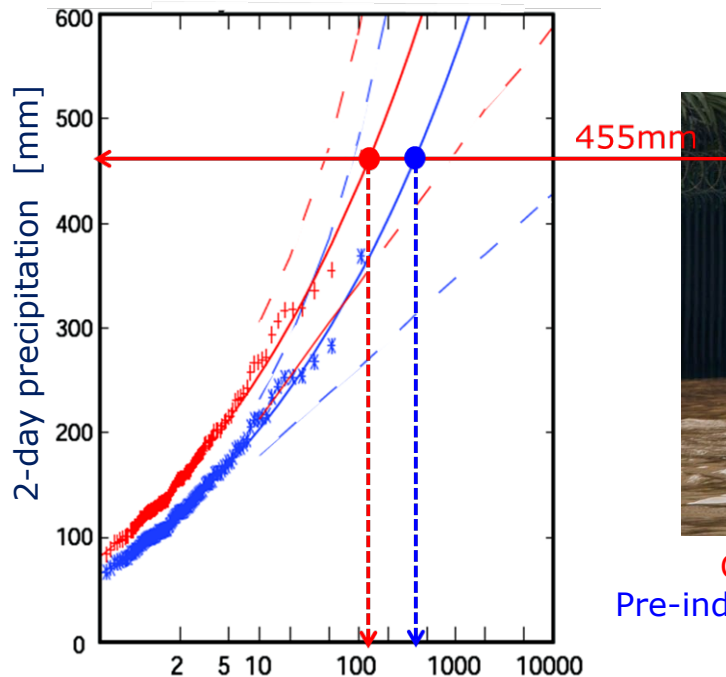


Water

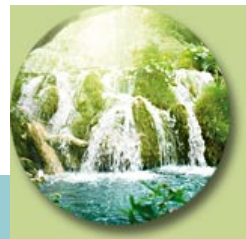


Southeast Asia Climate Assessment & Dataset (SACA&D)

Example: Annual maximum 2-day precipitation in Jakarta vs. return period
Quantifies climate change effects on extreme precipitation



Current return period : 125yrs
Pre-industrial return period : 380 yrs



Water





Latin American Climate Assessment & Dataset (LACA&D)

Home Latin American Cl... x +

ciifen.knmi.nl

Most Visited Getting Started Google

LACA&D


Home FAQ Daily data Indices of extremes Project info

See also: ICA&D KNMI Climate Explorer


Home

Welcome to the website of the Latin American Climate Assessment & Dataset. Presented is information on changes in weather and climate extremes, as well as the daily dataset needed to monitor and analyse these extremes.


What's new?

 The database is updated until: Jul 31, 2015.
April 2015 - Included 2 stations in Caribbean Netherlands (Bonaire and Sint Eustatius).
April 2015 - Included new stations and series from [DGA](#) and [Meteo Chile](#) in Chile.
March 2015 - Included new stations and series from [SENAMHI](#) in Bolivia.
March 2015 - Included new stations and series from [SENAMHI](#) in Peru.
March 2015 - Included new and updated series from [INAMHI](#) in Ecuador.
February 2014 - Included new stations from Colombia.
January 2014 - Updated series from Ecuador.
November 2013 - Included new stations from Venezuela.
November 2013 - Included new stations from Chile.
May 2012 - Included new stations from Suriname.
[All news items](#)

Participants and data

 Today, LACA&D is receiving data from [9 participants](#) for [9 countries](#) and the LACA dataset contains 1778 series of observations for [7 elements](#) at [1241 meteorological stations](#) throughout Latin America (see Daily data > [Data dictionary](#)). 69% of these series can be downloaded from this website for non-commercial research and education. Participation is open to anyone maintaining daily station data. If you want to join please contact us. See our [data policy](#) for more details.

CIIFEN

 CIIFEN

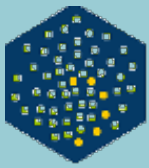
LACA&D is possible thanks to the contribution of several institutions in Latin America, with the coordination of [CIIFEN](#) and the [KNMI](#) of Netherlands. The system contributes to the objectives of the [Global Framework of Climate Services](#).



● Downloadable data

● Non-downloadable data

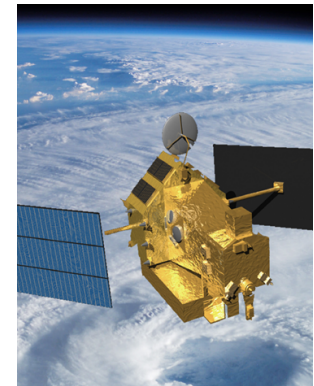
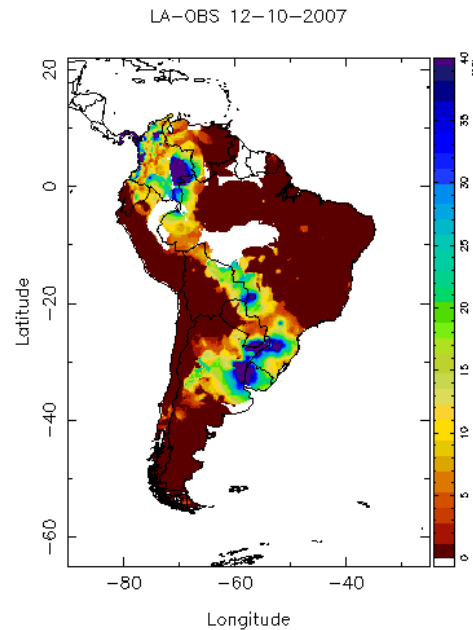
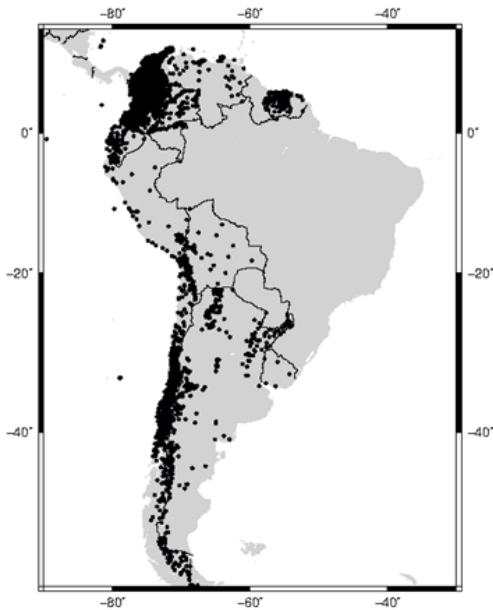
9 countries
7 elements
1241 stations
69% downloadable



Latin American Climate Assessment & Dataset (LACA&D)

Collaboration with CIIFEN(Ecuador)

- Historical daily climate data
- Data rescue
- Analysis of extremes
- Capacity building



Merging of satellite
and in-situ observations

Development of the **West African Climate Assessment and Dataset (WACA&D)**

CREWS: Climate Risk and Early Warning Systems Initiative:



Home

Accueil

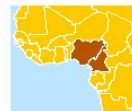
Bienvenue sur le site web de Afrique de l'Ouest & Assessment Dataset Climatique. Ce site presente des informations sur le changements meteorologiques et climatiques extremes, ainsi que le jeu de donnees quotidiennes necessaire pour surveiller et analyser ces deux extremes

Information



la base de donnees est mise a jour jusqu'au: Dec 31, 2012.
Decembre 2012 - Site Web en ligne.
[Tous les nouveaux articles](#)

Participants et Donnees



Actuellement, WACA&D a recu les donnees de [2 participants](#) de [2 Pays](#) et WACA dataset contient 37 series observations pour [3 elements](#) de [23 Stations meteorologiques](#) de l'Afrique de l'Ouest (voir les donnees journalieres > [Dictionnaire de Donnees](#)). 11% de ces series peuvent etre telecharger tous les jours a partir de notre site Internet pour la recherche non commerciale et à l'éducation. La participation est ouverte à toute personne souhaitant mettre à jour des données de stations quotidiennes. Si vous souhaitez nous rejoindre contactez nous. Voir [politique de donnees](#) pour plus de details.

ACMAD



WACA&D est possible grâce à la contribution de plusieurs Institutions en Afrique de l'Ouest, avec la coordination de [et de KNMI](#) des Pays Bas. Le systeme contribuera à atteindre les objectifs [mondial dans le cadre de services climatologiques](#).

Contactez nous

Equipe de Projet
Centre Africain pour les Applications de la Meteorologie pour le Developpement (ACMAD)
Institut Royal Meteorologique Netherlands (KNMI)
[Contact email](#)

Staff: Mme ABASS Mariama Sabiou (ACMAD)
Albert Mhanda (ACMAD)
Aryan van Engelen (KNMI)
Albert Klein Tank (KNMI)
Robert Leander (KNMI)
Elsje van den Besselaar (KNMI)
Gerard van der Schrier (KNMI)

- In LDCs and SIDS
- Implementation by WB, WMO, UNISDR;
- Funding from France, Germany, The Netherlands, Canada, Australia, Luxembourg



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21 • CMP11

Country projects in:

- Burkina Faso*
- Mali*
- Niger*
- Dem. Rep. Congo

Planned for:

- Uganda
- Senegal
- Madagascar
- Ethiopia
- Chad

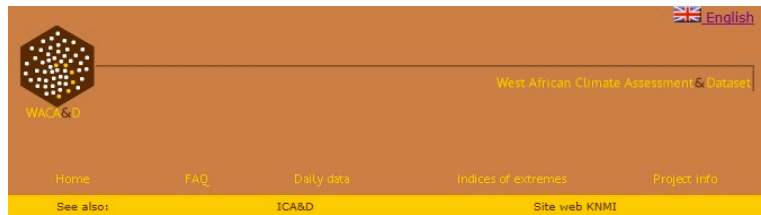
A regional project for West Africa for the development of WACA&D submitted to the CREWS Steering Committee.

Partners: KNMI, ACMAD, DWD, WMO, ...

-Decision expected this month-



Development of the West African Climate Assessment and Dataset (WACA&D)



Home

Accueil

Bienvenue sur le site web de Afrique de l'Ouest & Assessment Dataset Climatique. Ce site presente des informations sur le changements meteorologiques et climatiques extremes, ainsi que le jeu de donnees quotidiennes necessaire pour surveiller et analyser ces deux extremes

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Gerard van der Schrier (KNMI)

CREWS regional project for West Africa for the development of WACA&D

Current Partners: KNMI, ACMAD, DWD, WMO, National Meteorological Services

Additional partners are welcome:

- to provide additional data
- to develop applications
- to define the set of products
- to provide feedback on SACA&D

Opportunity:

2019 EU research call focussing on Climate services for Africa

For water, energy, land use, health, and infrastructure sectors





Thank you

