



Regional Climate Projections Consortium and Data Facility in Asia and the Pacific (RCCDF)

www.csiro.au

The project is being implemented by the Asian Development Bank through the technical assistance (TA 8359-REG) financed by the Japan Fund for Poverty Reduction.



Overall guidelines for using climate information/projections

- Decide **what is needed/important** for vulnerability and impact assessment
- Collect and **evaluate current climate** information
- Do we need to ‘bias-correct’ the projections to match obs?
- Ascertain **natural variability** – is climate change signal greater than natural variability?
- Decide on **timescale** of projections needed
- Use **range of** climate projection **scenarios**
- **Assess the full range of possible futures**
 - Ideally assess a ‘median’, ‘best-case’ and ‘worst-case’ projection

Criteria for Selecting Historical Observational Climate Data

- What **variables** are needed for case study?
- Do you need **point or gridded** spatial data?
- What **spatial resolution and time frequency** is needed?
- What data is **available**?
- What is the **quality** of the data?
 - Accuracy of observations (station metadata?)
 - Accuracy of gridding process (number/location on input data used, interpolation technique)
- Is the available data **representative** for case?
- Is there sufficient data to capture the **natural variability**?

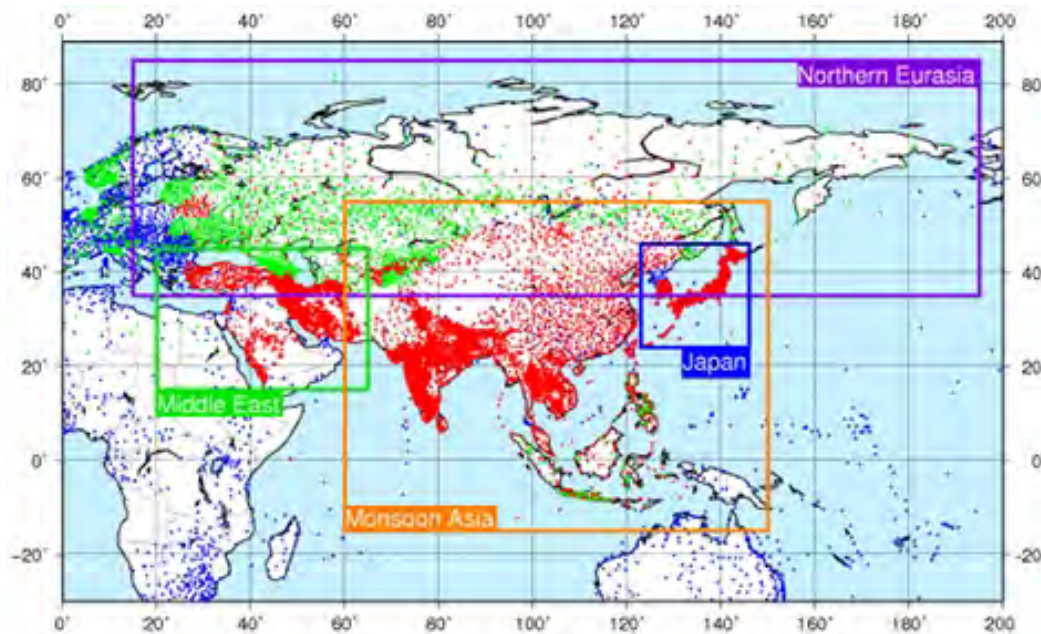
Example of gridded data

APHRODITE: Asian Precipitation - Highly-Resolved Observational Data Integration Towards Evaluation of Water Resources

Years of Record: 1951/01 to 2007/12

Type of data product: [Gridded rainfall and temperature from obs](#)

Institution and PI: University of Tsukuba,
Japan Meteorological Agency/ Akiyo Yatagai



Current version: V1101 [Download](#) [»Readme](#)

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1951-2007
Middle East (ME)	20°E-65°E, 15°N-45°N		
Russia (RU)	15°E-165°W, 34°N-84°N		

Current version, with Rain/Snow discrimination: V1101R2 [Download](#)

[»Readme](#)

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1961-2007

AphroTemp Current version: V1204R1 [Download](#) [»Readme](#)

Name	Domain	Resolution	Period
Monsoon Asia (MA)	60°E-150°E, 15°S-55°N	0.5° and 0.25°, daily	1961-2007

APHRO_JP Current version: V1207 [Download](#) [»Readme](#)

Name	Domain	Resolution	Period
Japan (JP) (Kamiguchi et al. 2010, 2011)	123°E-146°E, 24°N-46°N	0.05°, daily	1900-2011

APHRODITE evaluation

<https://climatedataguide.ucar.edu>)

Key Strengths:

- High density and quality station network.

Key Limitations:

- Station network changes with time and season.
- We do not homogenize the observed time series of temperature data. Changes in gauges, location of the stations, and many other factors might cause discontinuity of observation data.
- Lack of observation data (in India, Indonesia and Papua New Guinea)

See more at:

<https://climatedataguide.ucar.edu/climate-data/aphrodite-asian-precipitation-highly-resolved-observational-data-integration-towards#sthash.dDdKKJRa.dpuf>

Criteria for Selecting Climate Scenarios

- **Criterion 1:** Chose **range** consistency with global projections.
- **Criterion 2:** **Physical plausibility.**
- **Criterion 3:** Applicability in impact assessments. They should describe changes in a sufficient number of **variables on a spatial and temporal scale** that allows for impact assessment.
- **Criterion 4:** **Representative.** They should be representative of the potential range of future regional climate change.
- **Criterion 5:** **Accessibility.** They should be straightforward to obtain, interpret and apply for impact assessment.

Evaluation of model performance

There are several generic model evaluation approaches (See the IPCC [Working Group I](#), Chapter 9, 2013):

- **Evaluate the overall model results**
 - Use standard evaluation metric
- **Isolation of climate processes in climate models**
 - Ensure climate processes are properly represented in the models
- **Instrument simulators**
 - convert model output to match instruments such as satellites
- **Ensemble approaches**
 - explore the uncertainty in climate model simulations

Evaluation of model performance

Why measure model performance?

- Climate models should capture the main internal and external responses (e.g. volcanoes, GHG changes)
- Forms an integral part of the confidence building for climate change projections

What are the regional differences in performances?

- Usually there is a small subset of models that perform poorly across a number of performance metrics

What about El Niño and/or the Monsoon?

- Most models exhibit biases in the central Pacific sea surface temperatures, which impact on the El Niño Southern Oscillation (ENSO) relationship with rainfall. Some of the models also show biases for the monsoon.

Evaluation of model performance

Does sub-setting of models according to evaluation results change rainfall projections?

- Subset of better models did not provide more clarity on the direction of the expected rainfall changes.
- Using the full range of available models, rather than a performance-based selection or weighting, is the chosen method for regional applications.
- Model evaluation results, however, may influence the choice of individual models in some applications.

Thank you

FOR MORE INFORMATION CONTACT:

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Regional Climate Projections Consortium and Data Facility for Asia and the Pacific

Use of climate services in Asia and the Pacific is challenged by limited reliable climate information, insufficient capacity to interpret and use climate information, and limited technical and financial resources.

The Regional Climate Projections Consortium and Data Facility (RCCDF) will develop a community of practice to provide this in a cost-effective and sustainable manner through capacity building. The RCCDF project¹ will address these challenges by providing:

1 Access to climate information.



2 Guidelines and examples for conducting impacts and vulnerability assessments.



3 Knowledge sharing and learning.



RCCDF GOALS:

- Adopt best practices for adaptation planning
- Support learning by doing
- Develop in-country capacity for using climate information in impacts and vulnerability assessments
- Implement and support the portal (an online resource with links to data and information)
- Increase collaboration on assessment of common regional climate impacts

THE RCCDF WILL PROVIDE ACCESS TO:

- Available current and future climate information
- Guidelines on how to develop, interpret and use climate information
- An online web interface (portal) to provide access to the guidelines, learning materials and other related services.

¹ The project is being implemented by the Asian Development Bank through the technical assistance for Regional Climate Projections Consortium and Data Facility in Asia and the Pacific (TA 8359-REG) financed by the Japan Fund for Poverty Reduction.



Home

Home

Welcome to the website of the Southeast Asian Climate Assessment & Dataset (SACA&D) project. 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: Dec 30, 2014.
March 2011 - Website online.
January 2011 - Logo included and website colours updated.
[All news items](#)

Participants and data



Today, SACA&D is receiving data from [24 participants](#) for [15 countries](#) and the SACA dataset contains 6477 series of observations for [10 elements](#) at [4090 meteorological stations](#) throughout Southeast Asia. 31% of these series is public, which means downloadable from this website for non-commercial research (see Daily data > [Data dictionary](#) for an overview of all available series). Participation to SACA&D is open to anyone maintaining daily station data. If you want to join please contact us. See our [Data Policy](#) for more details.

DiDaH project



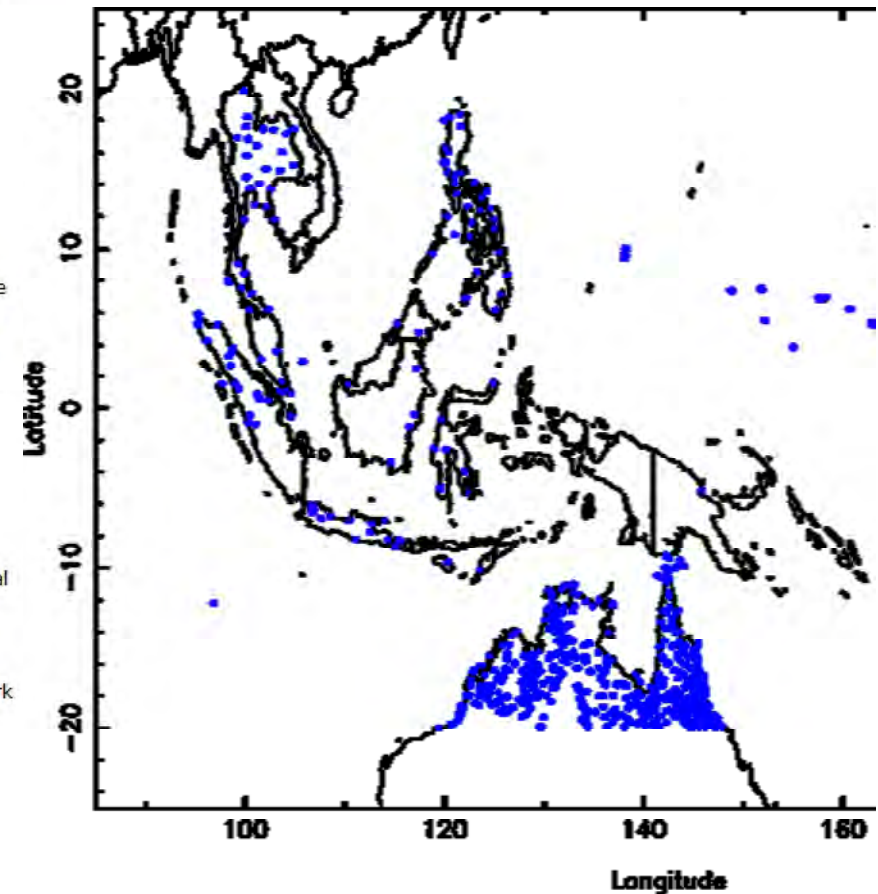
SACA&D is developed as part of the Digitisasi Data Historis ([Didah](#)) project. This project is focusing on the digitization and use of high-resolution historical climate data from Indonesia and other Southeast Asian countries. Didah is a joint project between the National Meteorological Services of [Indonesia \(BMKG\)](#) and [the Netherlands \(KNMI\)](#).

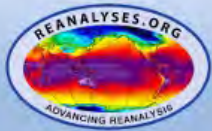
The results on this website contribute to the work of the Asian Pacific Network for climate extremes ([APN](#)).

Contact us

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Overview of current atmospheric reanalyses

Last edited by [michael.bosilovich](#) on Tue, 10/27/2015 - 10:37

Current / State-of-the-art:

[ASR](#) | [ERA-20C](#) | [ERA-20CM](#) | [ERA-Interim](#) | [JRA-55](#) | [MERRA-2](#) | [NCEP CFSR](#) | [NOAA-CIRES 20CrV2c](#)

Possible issues: Consider other datasets for use in new research projects: [NCEP/DOE II](#) | [NCEP/NCAR](#) | [NCEP NARR](#)
Superseded / Caution use for new research projects: [ERA-40](#) | [ERA-15](#) | [JRA-25](#)

Model Change: [NCEP CFSR](#) (2011 and after)

Updated in real-time for public use (days behind): [NCEP/DOE II](#) | [NCEP/NCAR](#) | [NCEP NARR](#) | [NCEP CFSR?](#)

Updated in near real-time for public use (months behind): [ERA-Interim](#) | [JRA-55](#) | [MERRA-2](#)

Updated irregularly for public use (years behind): [ERA-20C](#) | [ERA-20CM](#) | [NOAA-CIRES 20CR](#) | [NOAA-CIRES 20CrV2c](#) | [NASA MERRA](#)

Arctic System Reanalysis (ASR): 2000-2011

The Arctic System Reanalysis (ASR), which can be viewed as a blend of modeling and observations, will provide a high resolution description in space (10-30 km) and time (3 hourly) of the atmosphere-sea ice-land surface system of the Arctic. There are two versions of ASR:

Arctic System Reanalysis-Interim (ASR-int)

Source: The Ohio State University, Byrd Polar Research Center, Polar Meteorology Group

Time Range: 2000-2010

Assimilation: WRFDA-3DVAR

Model Resolution: 30 km, 71 sigma levels

Model Output Resolution: 30 km

Publicly Available Dataset Resolution: 30 km

Dataset Output Times and Time Averaging: 3-hourly for surface and upper air fields

Monthly means of selected variables

Here is the dataset location: <http://rda.ucar.edu/datasets/ds631.4/>

A new version is expected late 2012.

Arctic System Reanalysis-Final (ASR-fnl)

Source: The Ohio State University, Byrd Polar Research Center, Polar Meteorology Group

Time Range: 2000-2011

Assimilation: WRFDA-3DVAR

Model Resolution: 10 km, 71 sigma levels

Model Output Resolution: 10 km

Publicly Available Dataset Resolution: 10 km

Dataset Output Times and Time Averaging: 3-hourly for surface and upper air fields

Monthly means of selected variables

PCMDI - Program For Climate Model Diagnosis and Intercomparison

PCMDI Home | CAPT | AMIP | SMIP | PMIP | APE | Contact

Denmark Norway Japan United Kingdom Italy
Russia S. Korea Germany France
The Netherlands China Canada
Australia USA

CMIP5 Coupled Model Intercomparison Project

WCRP World Climate Research Programme

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CMIP5 - Data Access - Data Portal

CMIP5

08/29/2012: The new ESGF peer-to-peer (P2P) enterprise system (<http://pcmdi9.llnl.gov>) is now the official site for CMIP5 model output. The old gateway (<http://pcmdi3.llnl.gov>) is deprecated and now shut down permanently. Please send e-mail to esgf-user@lists.llnl.gov to report bugs and provide feedback.

The **CMIP5** Data is now available through the new portal, the Earth System Grid - Center for Enabling Technologies (ESG-CET), on the page <http://pcmdi9.llnl.gov/>.

You may search or browse through the Earth System Grid data holdings, but you will need to create an account to download the data. To create get a new account go to [Quick Links -> Create Account](#).

It is highly recommended that read '[Getting started](#)' page first.

See also [IPCC AR5 timetable](#) for estimation of due dates for some IPCC's Fifth Assessment Report (AR5) activities.

CMIP3

If you would like to check the **CMIP3** data portal, it is available through [the Earth System Grid \(ESG\)](#) portal. You may search or browse through the Earth System Grid data holdings, but the [registration](#) is required to download data.

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http://cmip-pcmdi.llnl.gov/cmip5/data_portal.html

