WMO OMM
World Meteorological Organization
Organisation météorologique mondiale
Organización Meteorológica Mundial
Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
世界气象组织

Secrétariat
7 bis, avenue de la Paix
Case postale 2300
CH 1211 Genève 2 – Suisse
Tél.: +41 (0) 22 730 81 11
Fax: +41 (0) 22 730 81 81
wmo@wmo.int – wmo.int

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Annex: 1

Subject: Supply of precipitation data to the Global Precipitation Climatology Centre in support of its activities

Dear Sir/Madam,

Reliable precipitation data are essential for weather, climate and water services, disaster risk reduction, early warning systems, and climate change adaptation. They underpin the monitoring of climate variability, droughts and floods, and improve predictions across timescales.

The WMO Unified Data Policy, adopted through Resolution 1 (Cg-Ext(2021)), recognizes that the free and unrestricted exchange of core Earth system data is fundamental to protecting lives and livelihoods, and to delivering high-quality services for all Members.

In this context, I encourage all Members to support the Global Precipitation Climatology Centre (GPCC) through the regular provision of precipitation observations, including historical records, ongoing updates and associated metadata. I sincerely thank those Members already contributing data. These contributions are essential for maintaining comprehensive, quality-controlled global precipitation datasets that support climate services and the implementation of the Global Framework for Climate Services.

GPCC precipitation analyses are widely used for climate monitoring, Regional Climate Centre activities and WMO flagship publications such as the State of the Climate and Water Resources reports. They also support scientific assessments of climate variability, trends and extremes as well as the evaluation of climate and Earth system models. GPCC is a key partner of the World Climate Research Programme (WCRP) Global Precipitation Experiment (GPEX), providing the long-term observational records needed to advance precipitation science and improve understanding of precipitation processes and extremes. The detailed background information and data specification of GPCC is provided in the annex.

As the recently observed evolution of the climate system increases the need for accurate monitoring of precipitation patterns and extreme rainfall events, broader and more regular data contributions are increasingly important. Enhanced data exchange through GPCC will strengthen climate services, support informed decision-making and contribute to international initiatives such as GPEX and its Years of Precipitation (2028–2030).

I therefore invite all Members to review their national data holdings and operational arrangements and, wherever possible, facilitate the regular provision of precipitation data to GPCC in accordance with the WMO Unified Data Policy. Your continued support is a vital contribution to the Global Observing System and to international cooperation under WMO.

To: Permanent Representatives of Members with WMO

cc: Hydrological Advisers

Thank you for your commitment to strengthening the global exchange of climate data for the benefit of all.

Yours faithfully,



Ms Ko Barrett
for the Secretary-General

BACKGROUND INFORMATION AND DATA SPECIFICATION

Since 1989, the Global Precipitation Climatology Centre (GPCC) has been operated by the German meteorological service, Deutscher Wetterdienst (DWD). It supports research and operational activities by providing high-quality observations and analyses of land-surface precipitation based on observations from precipitation gauge networks. The GPCC serves international scientific interests related to climate and water cycle monitoring, and works under the auspices of WMO in the framework of the Global Climate Observing System (GCOS) and the World Climate Research Programme (WCRP). Its main task is to collect and analyse conventionally observed precipitation. GPCC products, such as gridded precipitation data on a global and regional scale, are freely accessible to users.

Regular and timely provision of precipitation data is a highly important contribution for global climate monitoring and research. Reliable assessments, detection and prediction of climate variability and change depend on the availability of good-quality and uninterrupted climate data records.

So far, more than 190 countries worldwide have provided precipitation data to the GPCC. Up to now, precipitation data of more than 130 000 stations have been compiled.

Processing of additionally delivered national/regional datasets, including quality control, and inserting them into the GPCC relational data base management system is a continuous activity. The GPCC was asked by its scientific partners to extend the data collection and analysis period to the full instrumental observation period and to strive for near real-time updates of its analysis products. These gridded data, for example, are used to validate global climate models, to analyse the occurrence/changes of extreme events due to climate change and to calibrate remote sensing-based precipitation products. The results contribute to reports of the Intergovernmental Panel on Climate Change (IPCC) and WMO.

It is expected that frequency and intensity of heavy precipitation events will change due to climate change. Typical durations of those extreme events range from some minutes to a few hours, that is, well below one day. To support research and awareness on these extreme events, GPCC decided to also collect sub-daily precipitation data in preparation of dataset development. By experience, it takes several years to collect enough data for the first version of a reliable dataset. GPCC will use this dataset to support the GCOS activity F1 "Responding to user needs for higher resolution, near real time data".

In support of GPCC activities to supply precipitation products, the provision of historical sub-daily and daily data is requested. As the GPCC will continue its activities for monthly products, monthly data remains highly valuable. Ideally, the datasets should contain a reasonable number of stations covering a long period from the beginning of the observation of the respective station to the near present.

In order to support continuous climate monitoring and to ensure the high quality of GPCC precipitation products, the delivery of updates to previous data contributions are also highly valuable. When providing observational data, all relevant metadata information (geographical location (coordinates) and station name, and if possible, also further information such as national station number (ideally, WMO Integrated Global Observing System station identifier) or precipitation observing method and instrument used) should be included in the submission. Submissions of digital data files with an extensive format description are preferred. The data files can, for example, be sent as an email attachment to gpcc@dwd.de, made available on (s)ftp servers or uploaded to a GPCC sftp server. If your National Meteorological and Hydrological Service (NMHS) operates an open data server or an Application Programming Interface, GPCC would be happy to receive instructions on how to download the data from these servers. The GPCC is open to using the WMO Information System 2.0, including the WMO Hydrological Observing System (WHOS), as well as alternative data exchange mechanisms.

Please note, that in accordance with the GPCC data policy, data supplied by NMHSs will only be utilized for designed statistical analyses by GPCC. They will not be used for any commercial purposes, nor distributed to third parties, even if the data are provided under the WMO Unified Data Policy.

If you have further questions regarding data processing or datasets, feel free to get in contact with GPCC:

Global Precipitation Climatology Centre (GPCC)
c/o Deutscher Wetterdienst
Postfach 10 04 65
D-63004 Offenbach/Main
Germany

Email: gpcc@dwd.de
Tel.: + 49 (0)69 / 8062-2973

Thank you in advance for your continued support to GPCC.

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