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## High-Quality Global Data Management Framework for Climate: A Collaboration Framework for Assessing, Validating and Sharing Datasets for Climate Monitoring

**William Wright**<sup>1</sup>, Christina Lief<sup>1</sup>, Ge Peng<sup>2</sup>, Omar Baddour<sup>3</sup>, Peter Siegmund<sup>4</sup>, Dominique Berod<sup>3</sup>, Robert Dunn<sup>5</sup>, Anny Cazenave<sup>6</sup>, and Manola Brunet<sup>7</sup>

<sup>1</sup>International Expert Group on Climate Data Modernization (IEG-CDM)

<sup>2</sup>North Carolina Institute for Climate Studies, NC State University, Asheville, NC, USA

<sup>3</sup>World Meteorological Organization (WMO)

<sup>4</sup>Royal Netherlands Meteorological Institute (KNMI)

<sup>5</sup>Met Office Hadley Centre, UK

<sup>6</sup>Laboratoire d'Etudes en Géophysique et Oceanographie Spatiale (LEGOS) at Observatoire Midi-Pyrénées, France

<sup>7</sup>University Rovira i Virgili, Spain

In recognition of the need for data used in climate-related activities to be reliably and transparently managed, the World Meteorological Organization (WMO[1]) Congress adopted a High-Quality Global Data Management Framework for Climate (HQ-GDMFC) at its eighteenth session in June 2019. The HQ-GDMFC enables effective standards-based development and exchange of high-quality climate data. The scope of the HQ-GDMFC includes all of the Essential Climate Variables under WMO auspices, as described in WMO Resolution 60 (Cg-17). This includes observational data as well as data derived from climate analysis, reanalysis, predictions and projections. The framework of collaboration incorporates the National Meteorological and Hydrological Services' Data Management units, Regional Climate Centers, international data centers, climate research bodies, certain Government agencies, academia and any other institution dealing with climate data archival, management, analysis and exchange. An International Expert Group on Climate Data Modernization (IEG-CDM<sup>2</sup>) was established in 2018<sup>3</sup>, involving subject matter experts from several WMO programs and international data centers to guide the development of practical tools required for assessing data maturity for climate purposes.

We present here the structure, elements and associated guidance and tools of the HQ-GDFMC. The essential components are: (1) The standards and recommended best practices for climate data management and stewardship are encapsulated in a **regulatory manual called the Manual on HQ-GDMFC** (WMO-No 1238). (2) A **guidance booklet provides guidance on maturity assessment of climate datasets** that contribute to the computation and analysis of climate indicators supporting climate policy-relevant information. (3) **A climate data catalogue** in support of climate change monitoring has been established, with the aim of providing a living list of datasets, with a primary focus on climate indicators. It is recommended that the maturity of such

datasets be assessed; a maturity rating provides users with information on the level of maturity in documentation, archival, access, data quality assurance, data integrity and more, for each of the datasets.

[1] The World Meteorological Organization (WMO) is a United Nations' specialized agency in the field of weather, water and climate. As part of its activities, WMO fosters international collaboration to develop technical guidance and standards for the collection, processing, and management of data and forecast products.

<sup>2</sup> The International Expert Group on Climate Data Modernization (IEG-CDM) is an Ad-Hoc group run with the support of the World Meteorological Organization (WMO).

<sup>3</sup> The participants of the 2018 workshop implicitly formed the membership of the Ad-Hoc IEG-CDM team. (Reference report)