WORLD METEOROLOGICAL ORGANIZATION

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Expert Team on Data Requirements
for Climate Services (ET DRC),
Topic meeting on data gaps,
26 April 2023, 13:00 – 15:00 Geneva time

Original: English

**DRAFT VERSION of 15 May 2023**

**Participants:**

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| Mr Reinaldo Silveira | Mr Ali Eddenjal | Mr Atsushi Goto |
| Mr Rachid Sebbari | Ms Xiaolan Wang | Mr Urip Haryoko |
| Mr Uli Looser | Mr Jose Guijarro | Mr Markus Ziese |
| Ms Christina Lief | Mr Denis Stuber | Ms Caterina Tassone |
| Ms Ge Peng | Mr William Wright | Mr Peer Hechler |
| Mr Rob Allan | Mr. Markus Donat | |

**Notes** (actions and key agreements highlighted in **bold**)**:**

Denis and Christina opened the meeting, which was expected to clarify the 'what and who' (what to deliver and who is going to work on it).

Peer briefly summarised the outcome of the previous topic meeting.

Atsushi informed that publication of the GCF/WMO scientific paper on modern methods on infilling gaps is scheduled for 2024/2025 timeframe.

Peer introduced the attached outline for a WMO guidance brochure for Members (Annex). This brochure is intended to provide an overview of the process to identify and treat data gaps in time-series data, thereby contributing to the above GCF/WMO paper. Specific scientific aspects of infilling methods may be addressed in the work plan for the next SERCOM intersessional period 2024-2027 and may lead to complementary guidance material.

Participants discussed various aspects of infilling and **expressed basic agreement with the attached proposal. Peer agreed to provide a first draft of the brochure by August 2023.** Expert review and consolidation may take place in September/October period. WMO publication may then be initiated in November/December 2023.

**Peer will propose another topic meeting on data gaps in late August upon circulation of the first draft of the brochure.**

Christina and Denis thanked the experts for their participation and closed the meeting.

ANNEX

**A suggested approach to address gaps in in-situ observational time-series data**

(four pages, to be delivered in 2023 by ET DRC and Secretariat; more comprehensive guidance requirements may be submitted for SERCOM workplan 2024+)

1. **Intro**

   Impacts of data gaps (CLINO etc)

   Scope of Guidelines (in-situ observational time-series data of daily (hourly???) to yearly temporal resolution)

   Acknowledgement of wider dimensions of the data gap challenges (gaps in remote-sensing and model data, gaps in high-resolution data etc)

2. **Suggested approach**

   Overview (process diagramme)

   How to prevent gaps

   Identify and document gaps

   Infilling techniques

- Search for missing data (national and international archives, DARE)
- Data estimation (spatial and temporal interpolation, disaggregation, use of remote sensing data, use of model data, alternative elements …)

   Processing data with gaps (rules on missing data)

   Flagging (flagging requirement for infilled data including infilling method used)

   Final QC and homogenisation

3. **?(How to support Members)**

   SERCOM/INFCOM/RB

   Guidelines

   Training

4. **References**

   WMO references

   Non-exhaustive list of other references