The WMO Services Commission and Data Rescue

The importance of Data Rescue activity

The study of climate change requires comprehensive, long-term global observations of all climate system components. The more homogeneous, high-quality, and continuous the observational data, the better scientists can analyze climate variability and change, leading to improved climatological services.

While global datasets began to emerge in 1850, they only became significantly more complete in the 1950s. Data Rescue aims to recover historical data that can enrich long-term records, fill temporal and geographical gaps, and enhance climate models as reanalysis. By adhering to best practices in data stewardship—such as collection, preservation, imaging, digitization, and homogenization—Data Rescue establishes a long-term, collective strategy to achieve these objectives.

The Standing Committee on Climate Services (SC-CLI) and Data Rescue

SERCOM continues the legacy of the former Commission on Climatology, which integrated Data Rescue into the core activities of national meteorological and hydrological services.

Since its inception, the Standing Committee on Climate Services has overseen Data Rescue initiatives, particularly through its Expert Team on Data Development and Stewardship (ET-DDS) and the priority projects of the Global Framework on Climate Services (GFCS).

The ET-DDS has the mandate, in its term of reference, to "define modern standards and best practices for climate data stewardship, including quality control, homogenization, exchange, **archiving, and the rescue of historical and current data** for climate monitoring, assessment, prediction, and other climate applications."

In June 2024, the Seventy-eighth Session of the Executive Council, through Resolution 8 (pages 57-61) titled *'Accelerating Climate Data Stewardship and Data Rescue'*, formally designated SERCOM as the lead entity in advancing the WMO Climate Data Stewardship framework.

Recent SERCOM initiatives and publications related to data rescue

SERCOM brings together a multidisciplinary team of experts, including climate data historians, archivists, data managers, analysts, and climate service producers, to advance Data Rescue efforts.

Initiatives:

- ✓ **International Data Rescue initiative** (SERCOM-3, March 8, 2024): A global platform for discussing Data Rescue strategies.
- ✓ **Enhancing International Data Rescue initiatives**: Integrating existing WMO and C3S guidelines and portals to optimize efficiency and minimize redundancy. C3S efforts include modernizing the C3S data rescue portal by incorporating functionalities from the I-DARE portal.
- ✓ **Supporting Data Rescue Projects:** Assisting with assessments, strategic planning, and the technical aspects of Data Rescue (e.g., retrieving data from magnetic tapes and diskettes, supporting the Early Warnings for All initiative).
- ✓ **Strengthening International Collaboration:** Partnering with IEDRO, ACRE, C3S and private-sector organizations such as HMEI, Google and VARYSIAN.
- ✓ **Contextualizing Data Rescue:** Emphasizing the role of long-term observing stations, Climate Data Management Systems (CDMSs), the rediscovery of nationally lost data within international archives, and foundational climate statistics.
- ✓ **Promoting Data Rescue:** Engaging in awareness-building activities, including posters, presentations, side events, resolutions, conferences and workshops (including CLIMSA). Additionally, integrating Data Rescue components into WMO projects, conducting regional online consultations, and providing specialized training.
- ✓ **Participation in the CLIMSA Angola Data Rescue Pilot Project:** Collaborating with INAMET, SADC, KNMI, IEDRO, IDEMS, and MFI to recover and preserve climate data in Angola.

Publications:

- ✓ *Guidelines on Best Practices for Climate Data Rescue* (WMO-No. 1182, 2024), update in close collaboration with ACRE, IEDRO and C3S communities—thereby integrating marine and hydrological data rescue.
- ✓ Data Rescue Activities (C3S, 2021): A joint publication by Météo-France, SERCOM, C3S, ACRE, IEDRO, NCEI, KNMI and BMKG.
- ✓ *Guidelines on homogenization* (WMO-No. 1245, 2020)