

> CASE STUDY:

Meteorology climatology hydrology (MCH) database management system

The Meteorology Climatology Hydrology (MCH) Database Management System was implemented throughout Phase I of the WMO HydroHub (January 2017 – June 2021).

Challenge

Effective management of climate, hydrological and other environmental data is critical for Earth system monitoring, analysis, modelling and prediction at the national, regional and global levels and essential for the timely provision of related services. A powerful, well-designed Data Management System (DMS) is one of the most important elements in effective Earth system data management.

The Software

The Programa de Modernización del Manejo del Agua (PROMMA) technical cooperation project, which ran from 1996–2005, developed the Meteorology Climatology Hydrology (MCH) Database Management System tailored to the needs of the Mexican National Water Commission. At the end of the project, Mexico made the system available to PROHIMET, the WMO-supported Ibero-American Programme for Cooperation of National Meteorological and Hydrological Services (NMHSs). A Trust Fund established by Spain at WMO permitted PROHIMET to add a meteorological component to MCH, thereby adapting it to serve a broader audience. In 2011, MCH ownership was transferred to WMO, where the software was translated into English and French and made available to all WMO Members free-of-charge.

MCH is designed for NMHSs that need a simple, customizable and license free solution to manage and store real-time and historical data. It permits its users to manage all environmental data sets. Training on its installation and use is provided free-of-charge to WMO Members. The MCH user community can share their experiences and ask questions pertaining to the software in an online forum.

Benefits

- MCH functionalities include data rescue, data analyses/quality control, export and import interfaces, customizable user access/role and standardized formats. It centralizes in a unique system, all data needed for cross-cutting analysis of climate, weather and water phenomena
- It facilitates data exchange between national services as well as among NMHSs and contributions to broader data sharing initiatives at basin, regional or global levels
- It reduces the amount of staff time spent managing data, permits various kinds of data analyses as well as the transformation of raw data into a valuable resource, and improves the quality and consistency of information
- No license fees, which allows services to allocate resources to other activities.

Countries

Albania, Belize, Comoros, Dominican Republic, Ecuador, El Salvador, Gambia, Guatemala, Guyana, Haiti, Honduras, Kazakhstan, Kosovo, Myanmar, Nicaragua, North Macedonia, Paraguay

Way Forward

1

Collaboration within the WMO open-source climate DMS solutions for Earth system data to be provided to WMO Members free-of-charge to ensure the sustainability of future developments and interoperability between the existing database management system used by WMO Members

2

Efforts to integrate recent WMO standards such as OGC (WaterML 2.0), WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS) 2.0.



To contact the team please send an email to: hydrohub@wmo.int