The MEDARE database: Need for ensuring time-series high-quality. Defining the exercises and distributing responsibilities

By Manola Brunet

Chair of the WMO/MEDARE Initiative

Centre for Climate Change (C3), Director, URV, Tarragona, Spain

Outline

- The components for ensuring the development of long-term and high-quality climate time-series
- Discussing the steps to be taken and distributing responsibilities

The components

- The recovery, extension back in time and filing in gaps of long (historical) climate series
- Climate time-series quality control
- Climate time-series homogeneity testing and homogenisation

The data recovery

- Data rescue and transfer into digital format
- A multilateral effort:
  - At the national scale through your national DARE programmes
  - At the sub-regional and regional scales through using research opportunities such as EURO4M, EURRA, SEE
- Country needs for efficient transfer into the digital format. The capacity development component: how to promote it?
- Looking for opportunities at the national, regional, international scales
- All must be responsible for DARE at the different spatial scales

Climate time-series QCs

- The need for ensuring quality control (QC) of climate time-series: looking for identifying non-systematic errors and their validation/substitution
- A previous and key exercise before undertaking any homogenisation test
- Discussion/definition of the kind of QC's to pass onto the data
  - For which climate variables
  - The time scale: monthly, daily, sub-daily
  - With which tools
- How to apply the QC and who is the responsible for QC assurance?
  - The countries providing the time-series?
  - The MEDARE database managers?
  - Need for standardisation of the QCs applied: which kind of QC, to what variables and time-scales, what tools to be used…
- The need for assistance on the application of QCs:
  - Remote assistance supported by MEDARE experts of WG3?
  - Training activities? If so, financially supported by who? With which instruments that bring this opportunity?

Climate time-series homogeneity testing and homogenisation

- Relative approaches for homogeneity testing and homogenisation require an abundant number of “reference” stations to test homogeneity of any “candidate” station and to homogenise the time-series (about 6 to 12 reference series). This points to the need to use a wider network for homogenising (estimating breakpoint adjustments)
- How to carry out the homogeneity testing and homogenisation?
  - At the regional scales and, then, being the database managers responsible for it?
  - At the national scales making use of the a more complete metadata availability and a better local knowledge of climate?
  - The national scale seems to be the best approach, but how to ensure standardisation of the tests applied?
  - Supported by MEDARE experts: a possibility
- Need for capacity development on homogenisation, but again how to get these activities funded?

Looking forward for fruitful discussions and finding the ways for developing long-term and high-quality climate series in support of climate assessments and services for the GMR

Thank you !!