

Risks and contingencies for computing and data



- Large-scale computer resources
 - Demanding and may exceed allocation
 - ECMWF upgrade necessary and counted on
 - > Being monitored and seem to be under control and MO has made spare resources available to SMHI
- Data services and dissemination
 - Builds on established services and a lot of experience available
- Global lateral boundary forcing
ECMWF ERA-5 (SAT) somewhat late, needed for ensembles and possible to use ERA-Interim
 - > ERA-Interim used (ERA40)

Risks and contingencies

General



- Staffing
 - Risks of losing competent staff when leaving or short term contracts
 - New recruitments needed for the Project
 - > Staff have been replaced/found but some delays incurred
- Coordinator and coordinator's office
 - Long experience of earlier projects and of other ones
 - Good WP leaders that support
 - Some WP leaders left and were replaced

Risks and contingencies Observations



- Observation coverage low or missing for some periods / regions
 - Data policies sometimes/often prohibitive for DARE
 - **Still problem but some (Nordic+CAT) open data**

Transfer to **MARS@ECMWF**

- International data centres and transfer/ encoding for MARS
 - The transfer of national data to international data centres and t
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- Crucial for 2m T/RH and precipitation reanalysis!

Risks and contingencies for the Reanalyses



- Scientific developments
- Regional Ensemble DA systems not identical to the resp. Global or Meso-scale Forecasting systems
 - MO developed ENS-4DVAR for this purpose
 - SMHI with MF support ALADIN non operational domain
 - UB / DWD developed L-ETKF for the purpose but nudging assimilation ensemble used



- UERRA reanalyses available late in the Project
- Lots of work on defining output and archiving parameters
- Resort to preliminary archives (EURO4M and DWD) reanalyses and observational data sets
- Priority periods produced first (2005-2010 and 1981-85 (not so much) and evaluation done on sub-periods.

Lessons for common archive



- Model parameters and definitions differ sometimes or may not exist in all models
- Took long time to define and agree
- GRIB2 definitions
- The subset to be archived needed to be extracted and efficient archiving system built (MO more in line archiving production GRIB2)
- Took a long time to archive and check and still some errors
- Everything on tape makes is slow for evaluation and users.....