

# Risks and contingencies

## General (from DoW, more in Lessons..)



- Large-scale computing demanding
- Data services extensive
- EURO4M dependencies or delays
  - > Only some delay and SMHI ran 20, then 30 + years anyway in parallel to UERRA
- Global lateral boundary forcing
  - ECMWF ERA-5 (SAT) somewhat late, needed for ensembles and possible to use ERA-Interim

# 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 (France, Nordic) open data**
  - Transfer to [MARS@ECMWF](mailto:MARS@ECMWF)
    - International data centres and transfer/ encoding for MARS
    - The transfer of national data to international data centres and to MARS VERY time consuming and/or complex
- => **MARS data used and supplemented with ASCII files**
- Crucial for 2m T/RH and precipitation reanalysis!
- Satellite data from also other sources and processing needd

# 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 and not guaranteed to work within time frame

# 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

# Lessons for Evaluation



- UERRA reanalyses not available yet
- Lots of work on defining output and archiving parameters
- Resort to preliminary archives (EURO4M and DWD) reanalyses and observational data sets

# Lessons for common archive



- Model parameters and definitions differ sometimes or may not exist in all models
- Takes long time to define and agree
- GRIB2 definitions
- The subset to be archived needs to be extracted and efficient archiving system still to be built