The Global Precipitation Analysis Centre - a Global Data Center of CEOP

- Background
- Recent Achievements
- Contributions to GEWEX Milestones
- Issues and Plans (1-3 years)

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Background and Objectives

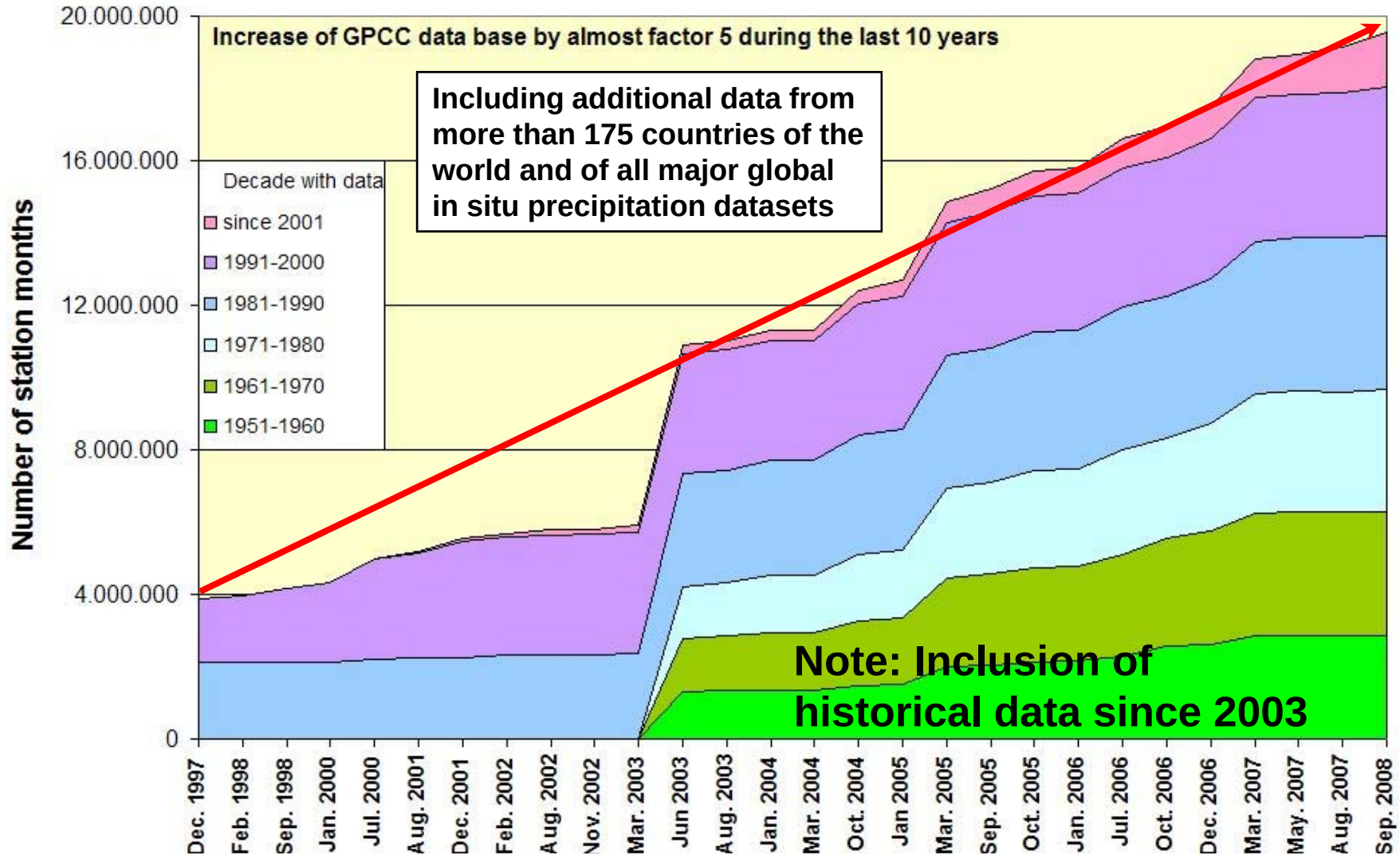
The Global Precipitation Climatology Centre (GPCC) is operated by the Deutscher Wetterdienst (DWD) since 1989 following the invitation of the World Meteorological Organisation (WMO).

GPCC is integrated in the Global Climate Observing System (GCOS) and in the World Climate Research Programme (WCRP).

Objectives of the GPCC are:

- **to analyse monthly global land-surface precipitation**
- **in its spatio-temporal distribution**
- **based on *in situ* observed data.**

Recent achievements



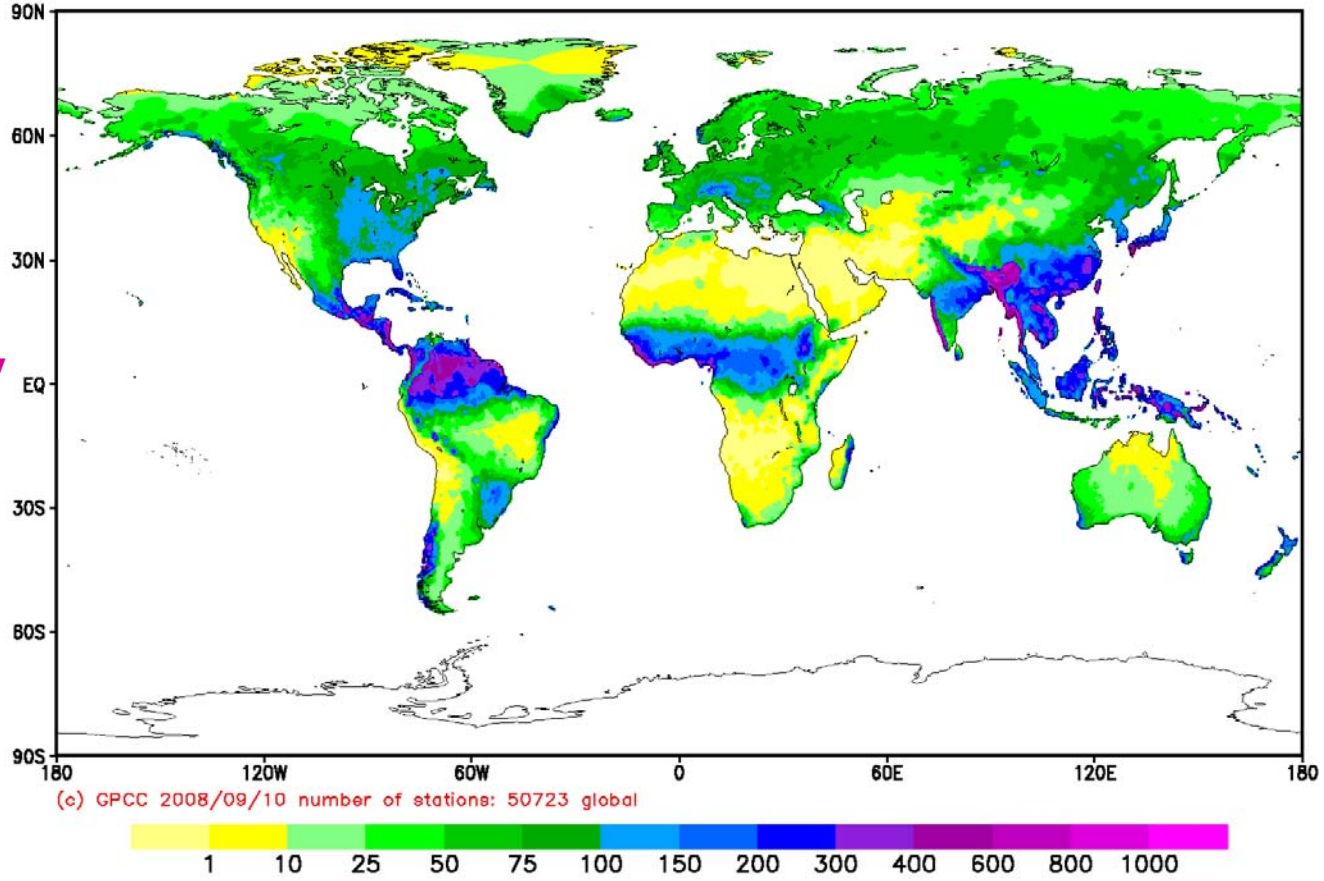
Temporal evolution of the GPCC Database from Jan. 2000 until Sep 2008 (Number of records per time of data base query).

Recent achievements

GPCC just finalised a new monthly Global Precipitation Climatology:

- **-> based on more than 50,000 stations with at least 10 years of data;**
- **-> intensive QC of metadata and data;**
- **-> doubling of the number of available stations compared to the previous normals;**
- **-> spatial grid resolution: 0.25°, 0.5°, 1°, 2.5°**

Example:
New GPCC Global precipitation climatology analysis for June;
spatial resolution: 0.25°



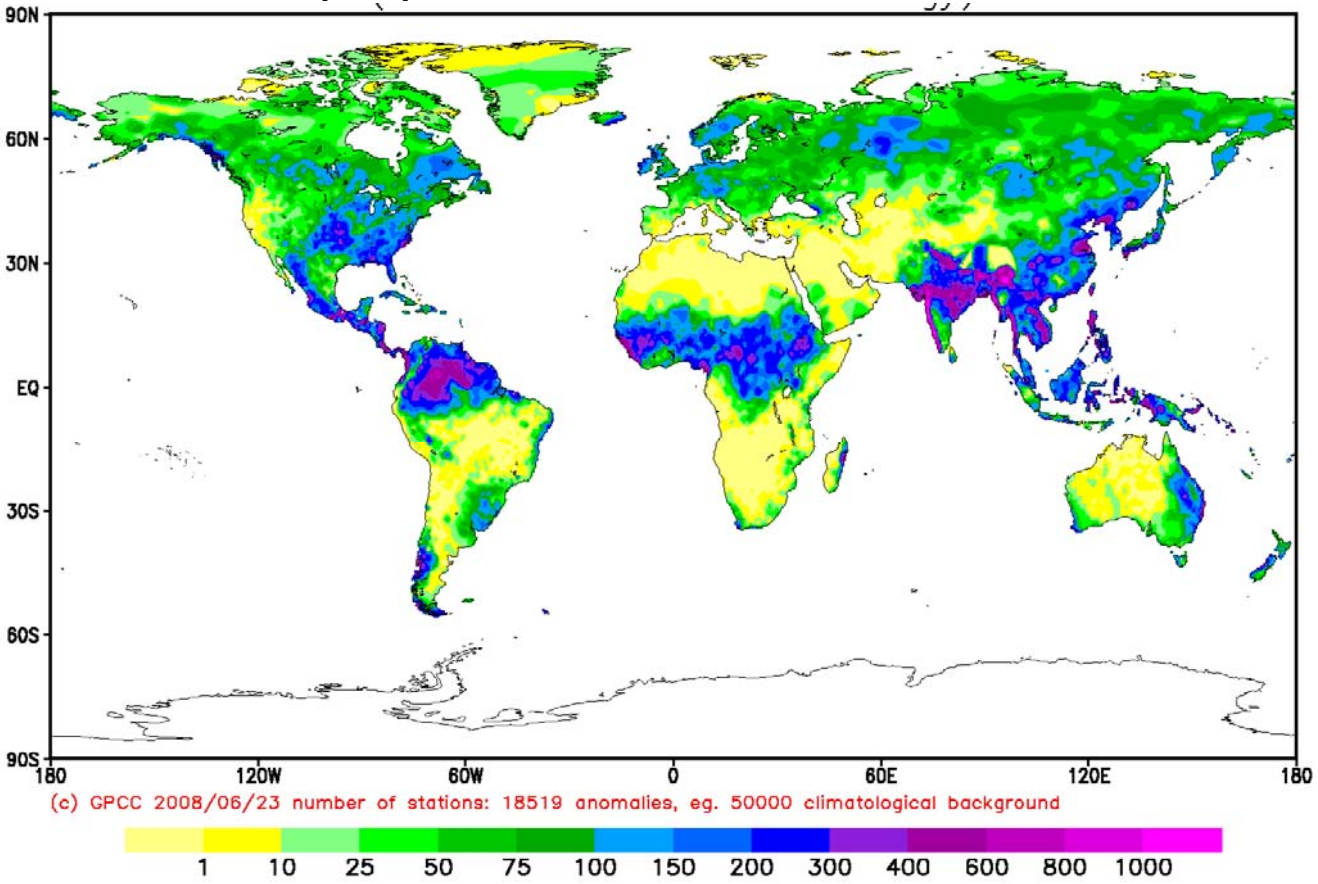
Recent achievements

GPCC just finalised a new

Full Data Global Precipitation Reanalysis (Version 4):

- **-> analyses for all months of the time period 1901-2007;**
- **-> intensive QC of metadata and data;**
- **-> using the GPCC global precipitation climatology as background;**
- **-> spatial grid resolution: 0.5°, 1°, 2.5°**

Example:
New GPCC Global precipitation reanalysis for July 1950;
spatial resolution: 0.5°



Contributions to GEWEX milestones

Contributions to GEWEX Objective 1:

- **Production of consistent quality data sets of monthly precipitation on earths‘ landsurface based on *in situ* data**
- ***In situ* component of merged monthly *in situ* – satellite data sets covering the whole earth (GPCP, CMAP)**

Contributions to GEWEX Objective 4:

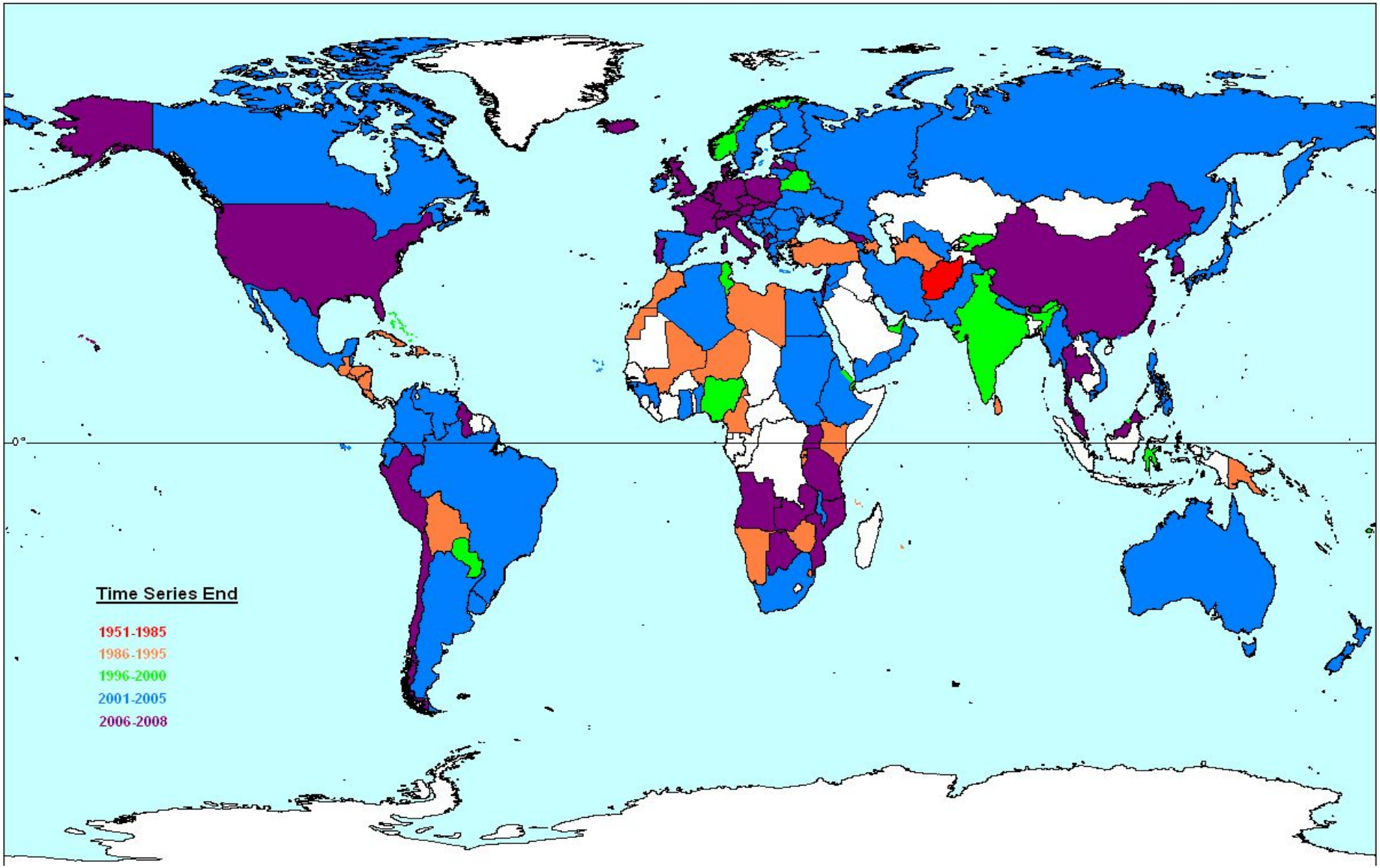
- **Cooperation with operational hydrometeorological services of the world concerning data acquisition and use of GPCC products**
- **Strengthening cooperation – jointly with GRDC – with WMO HWRP and UNESCO IHP**

Issues for GEWEX

- **CEOP RHPs are invited to consider using GPCC products as well as contributing to further improvements of the GPCC database;**
- **GPCC cooperation might be possible with research activities in context of HAP, EXTREMES, MONSOON, HIGH ELEVATION, and COLD REGIONS;**
- **CEOP model initiatives might consider using GPCC analysis products for validation purposes;**
- **Links of the CEOP Global Data Centers with CEOP Data Management (esp. *in situ*) might be strengthened**

GPCC plans 1-3 years

-> Continuous update of the GPCC database



GPCC plans 1-3 years

On the basis of the new GPCC climatology and on the significantly enlarged GPCC database

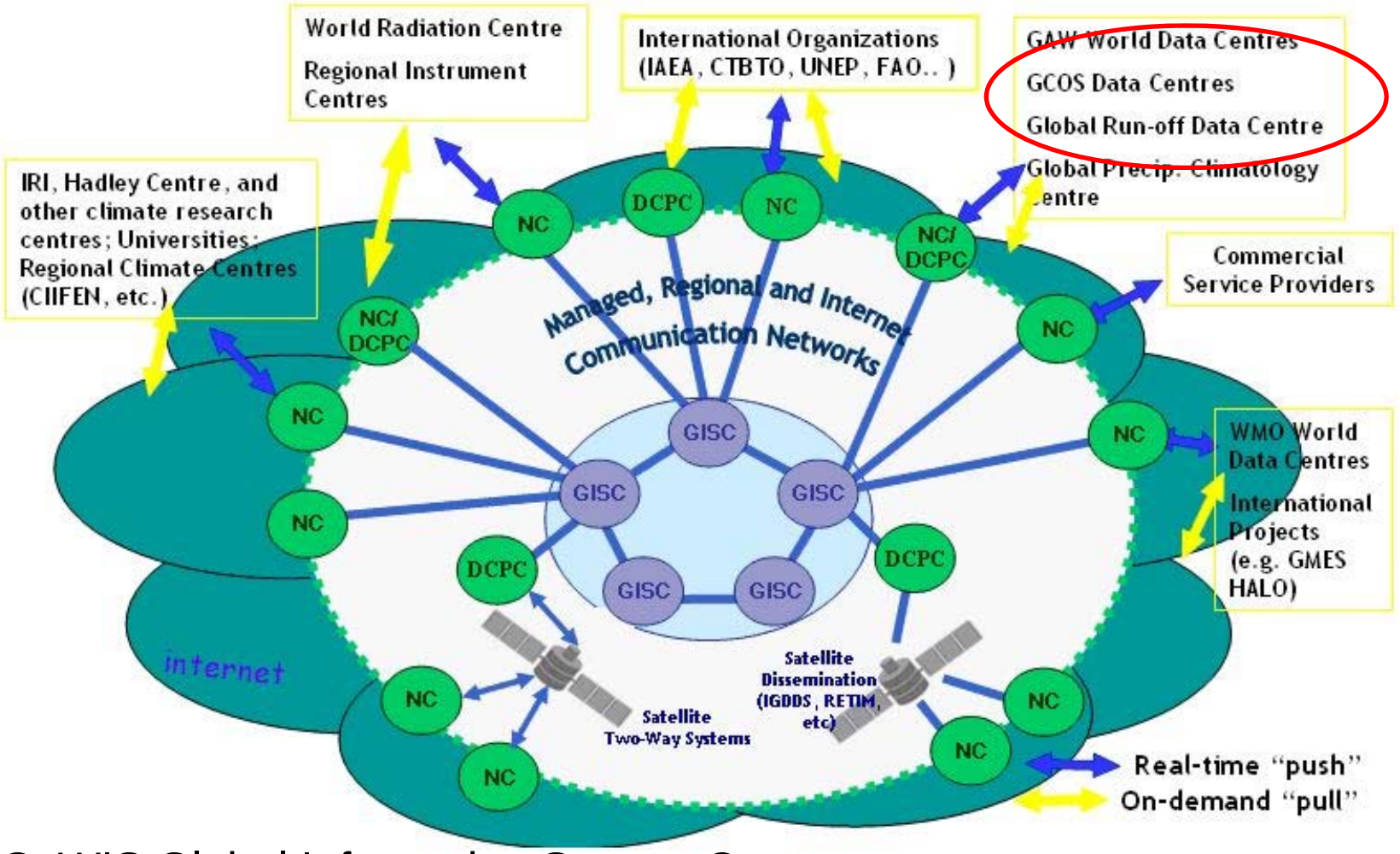
The homogenised monthly GPCC VASClimO Reanalysis product will be reanalysed (as anomalies from the climatology) and extended:

- **new Version 2, time period: 1951-2005, grid resolution: 2.5°, 1°, 0.5°**
- **50% increase of the number of available stations**
- **consistency with other GPCC products**

-> new analysis to be available until early 2009!

GPCC plans 1-3 years

WMO Information System structure in prep.



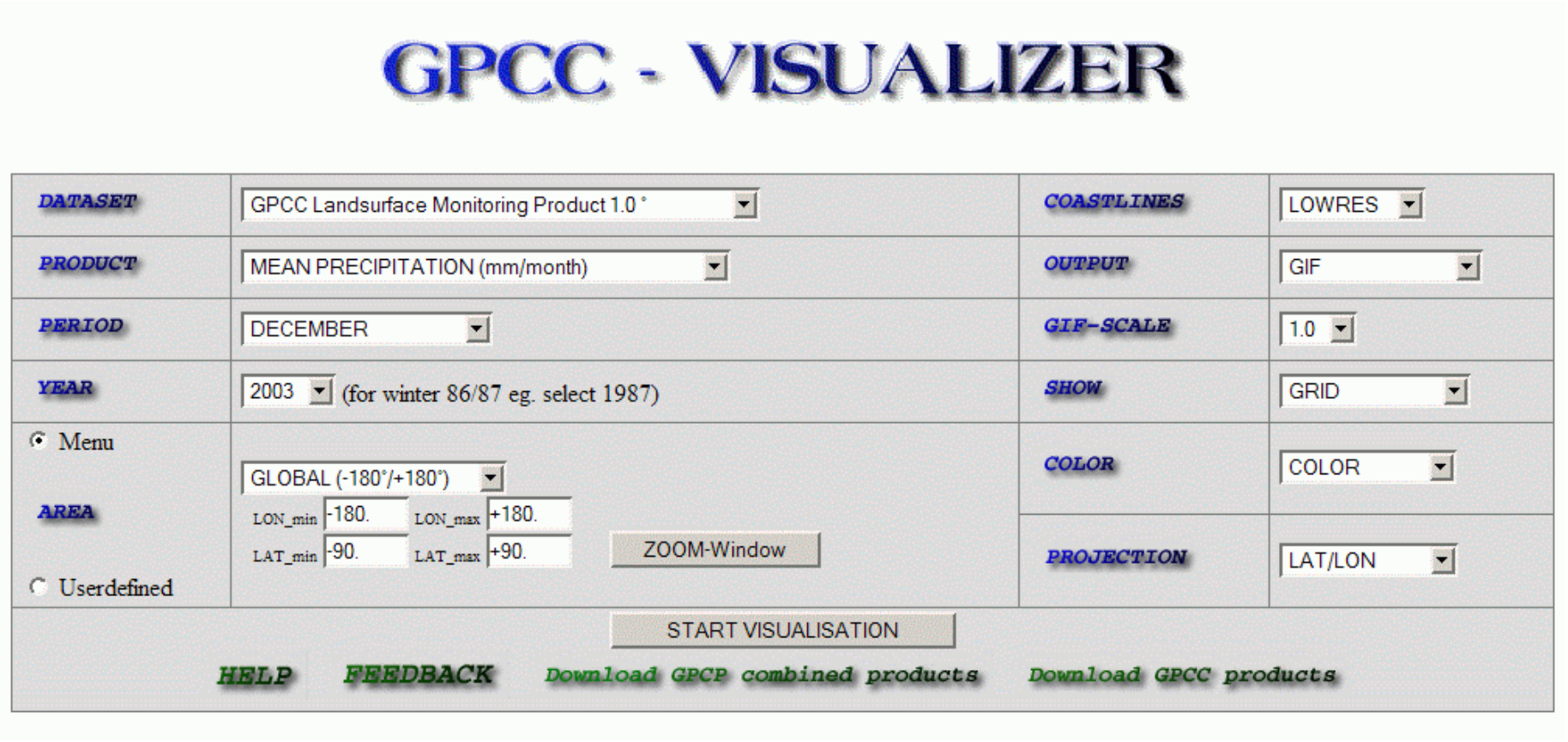
GISC: WIS Global Information System Centres

DCPC: WIS Data Collection or Production Centres (GPCC should be one)

NC: National Centres

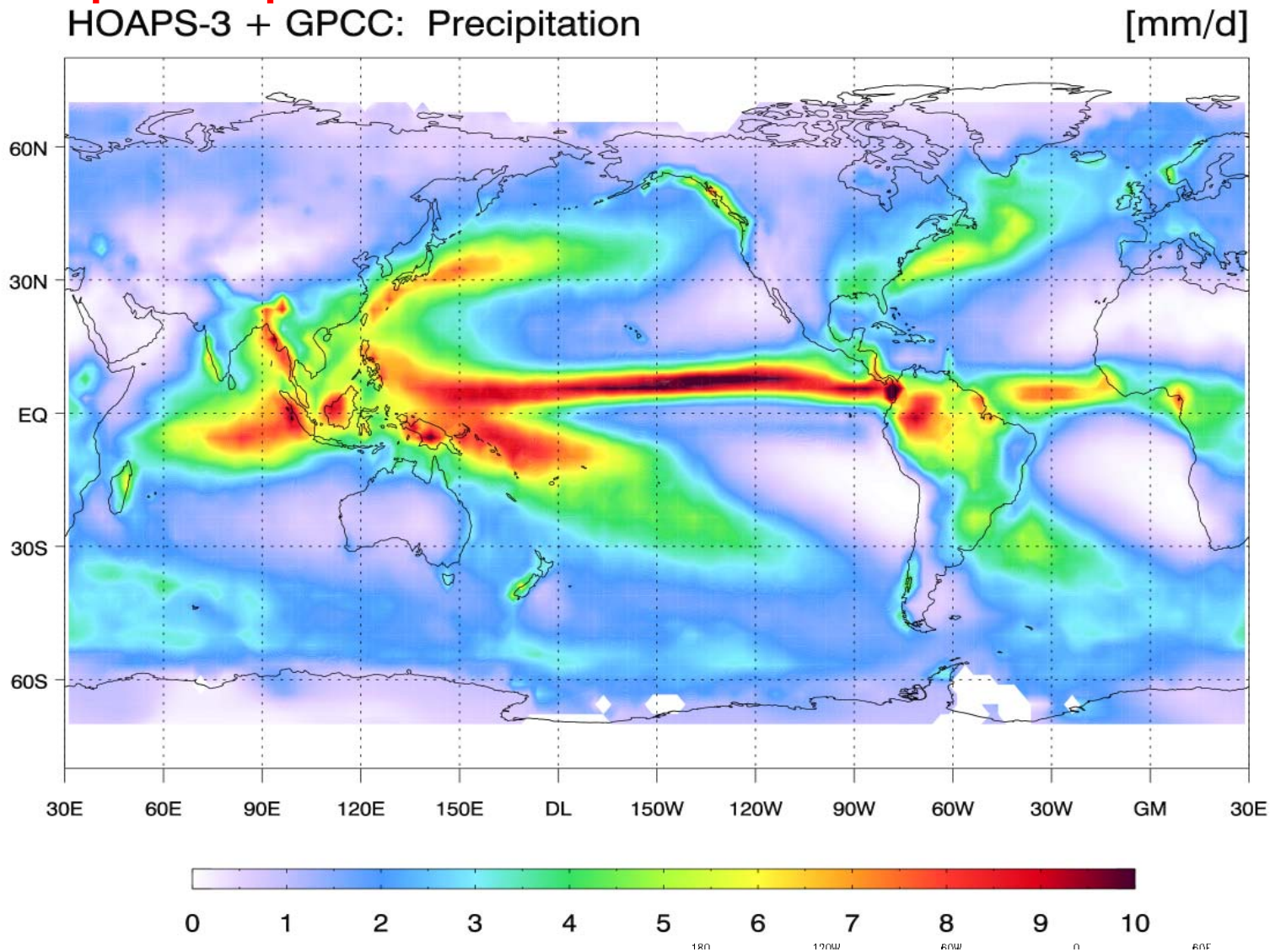
GPCC plans 1-3 years

-> Major update of the GPCC Product Visualizer



GPCC Out 2011?

Daily precipitation product based on a combination of HOAPS and GPCC?

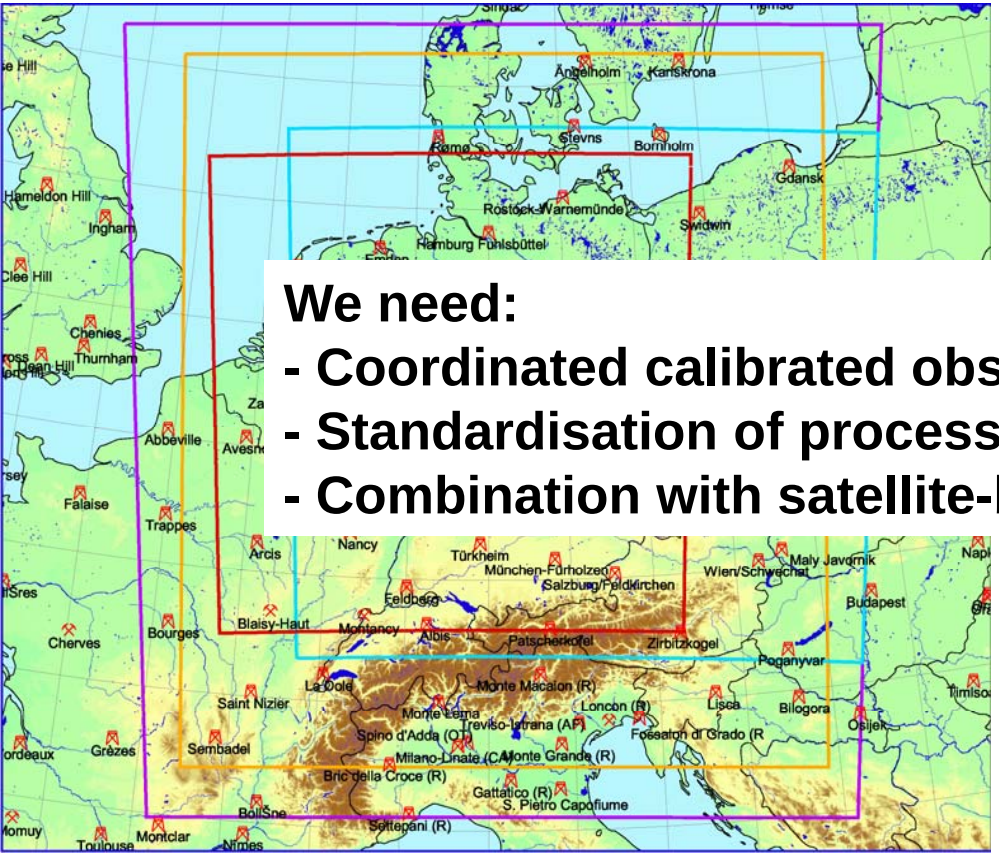


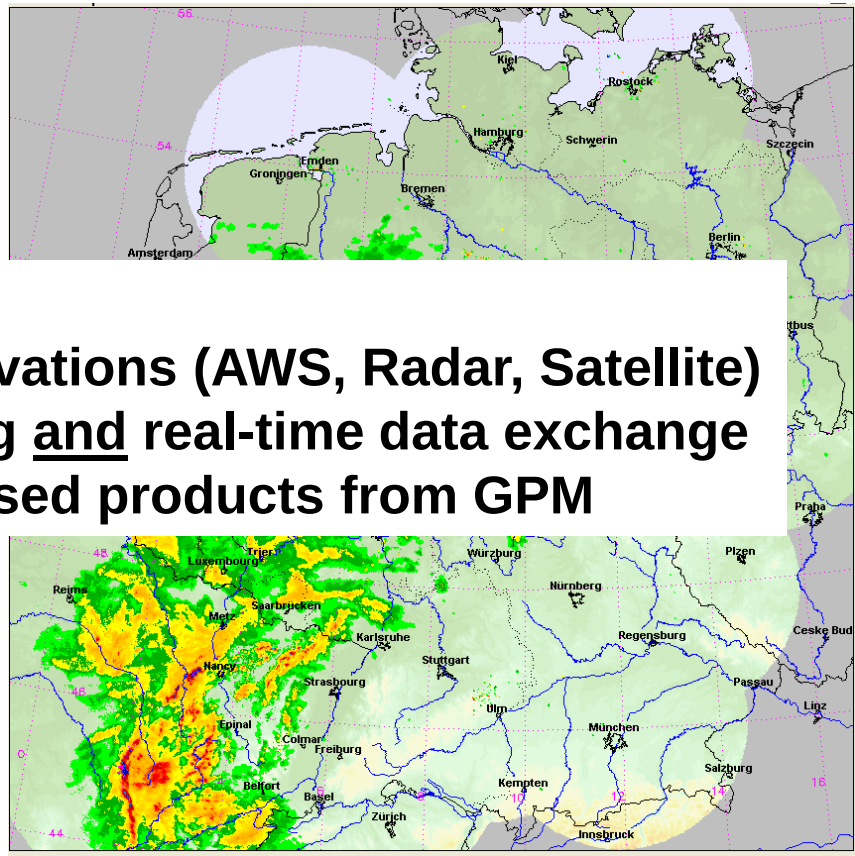
Courtesy: S. Bakan, MPI-M, Hamburg

Example: Combination of HOAPS and GPCC climatology 1994-2004

GPCC Vision 2015-2020?

GCOS/WCRP/IGBP needs (Sydney workshop, October 2007): Global hourly precipitation product based on a combination of radar QPE and automatic raingauges





We need:
- Coordinated calibrated observations (AWS, Radar, Satellite)
- Standardisation of processing and real-time data exchange
- Combination with satellite-based products from GPM

We already have: dense weather radar and automatic raingauge networks in developed regions

We already: have national and regional high resolution QPE based on radar and raingauges