Full title of the project:

Design guideline for a transnational database of downscaled climate projection data for road impact models - CliPDaR

Short title: ***Climate projection data base for roads- CliPDaR***

An important topic of the project CliPDaR was the „Chain of Uncertainty“ leading to the concept of using an „Ensemble of Climate Projections“:

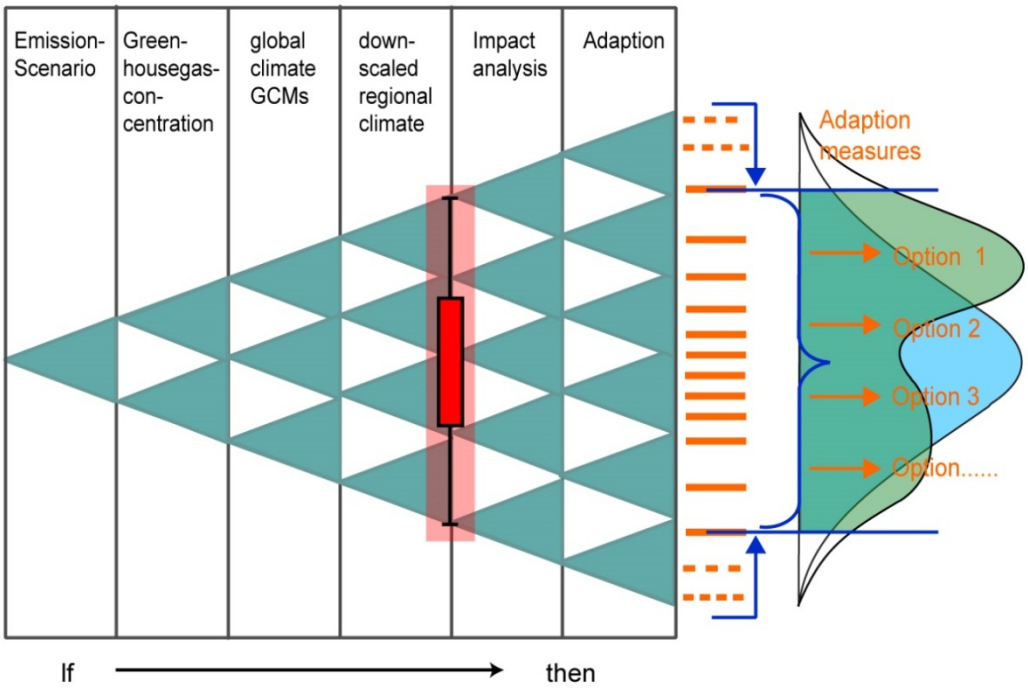

Figure 1: Starting from a particular emission scenario the uncertainty grows with every step that is necessary to derive different adaptation measures to mitigate the impact of climate change (schematic diagram). Source: DWD, after Viner 2002.

Viner, D. (2002). A qualitative assessment of the sources of uncertainty in climate change impacts assessment studies. In Climatic Change: Implications for the Hydrological Cycle and for Water Management Advances in Global Change Research, 10, 139-149.

The second important topic of CliPDaR is the “climate indices (CI) approach”:

The CI (“potential rutting days”), given as an example, describes days that is characterized by high daily temperatures (T_{max}≥30°C, Hot Days) together with T_{min} ≥20°C (Tropical Nights). Such days bear the potential of harming road surfaces.

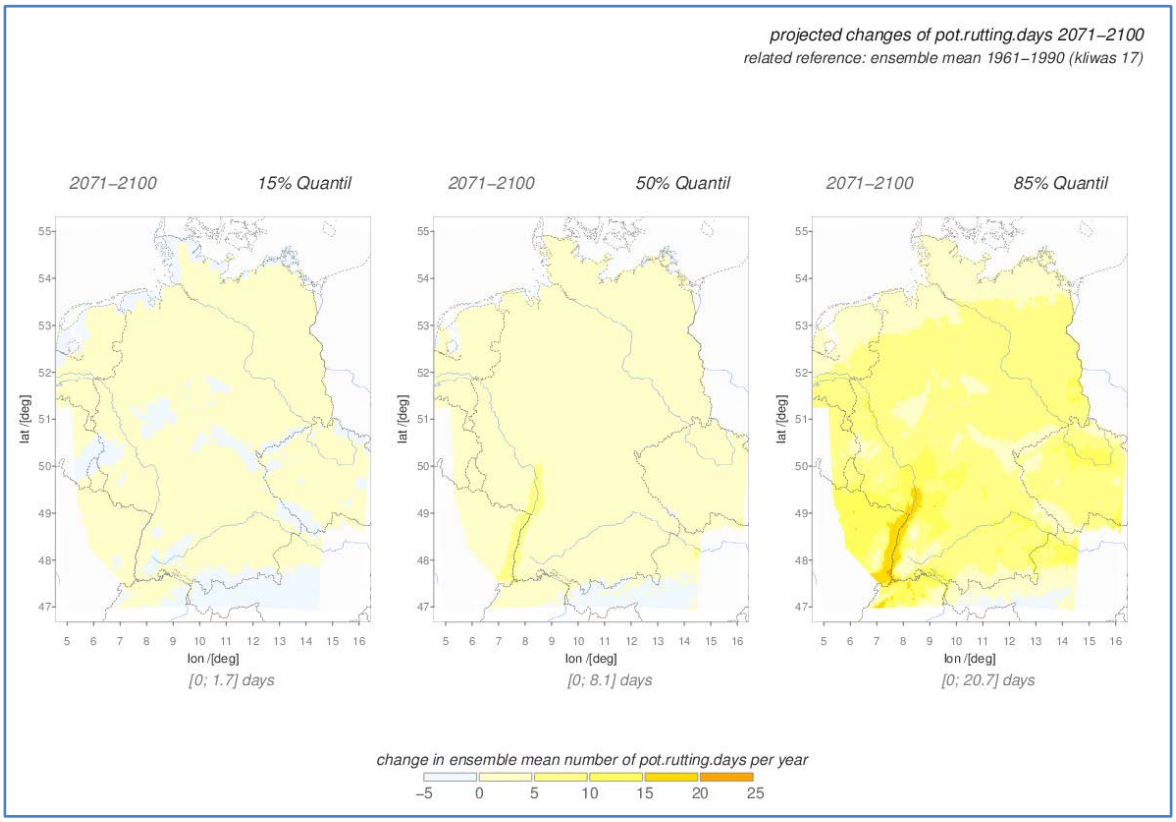

Figure 2: The increase of rutting days shown by comparing the period 2071-2100 to the climate normal period 1961-1990 (as defined by the WMO). The Figure is based on the so called KLIWAS17 ensemble which is a ‘models & initial conditions vary’-ensemble (see Imbery et.al., 2013). The panels show the 15th, 50th and 85th percentile (from left to right).

Imbery, F., Plagemann, S. & Namyslo, J. (2013). Processing and Analysing an Ensemble of Climate Projections for the Joint Research Project KLIWAS. Advances in Science and Research, 10, 91-98, doi:10.5194/asr-10-91-2013.

Logos of project partners:

Deutscher Wetterdienst

ZAMG