



## **New LocClim - the Local Climate Estimator of FAO**

**J. Grieser**(1), R. Gommès (2), M. Bernardi(3)

(1) Global Precipitation Climatology Centre (GPCC), Deutscher Wetterdienst (juergen.grieser@dwd.de), (2) Food and Agriculture Organization of the UN, FAO/SDRN (agromet@fao.org)

New LocClim is a freeware tool to estimate local climatic conditions for any location on earth. The user can choose among the popular interpolation techniques (kriging, thin plate splines, inverse distance weighting, Shepard's method, Direction dependent weighting, etc). Furthermore altitude regression and local or regional horizontal gradients can be taken into account. New LocClim uses the FAO agroclimatic database with observations from nearly 30,000 stations worldwide.

The program runs in 3 modes:

1) In Single-Point Mode, the user selects a location anywhere on land, and the programme displays the mean annual cycle of 8 climatological variables (monthly means of minimum, maximum and average daily temperature, precipitation, potential evapotranspiration, wind speed, water vapour pressure, and sunshine fraction or sunshine hours). Since the annual cycle of long term averages can be regarded as smooth, a Fourier interpolation of the monthly values is used to obtain expectations on daily and decadal time scales as well. Furthermore, various features of the growing season, defined by Franquin's method, can be calculated, e.g. dates of beginning and end, days above threshold and heating degree days. The Interpolation error is estimated. A regional map displays the features of the stations surrounding the selected location and an Observation-Altitude Plot allows to investigate altitude dependence of the climate variables. The user gets warnings in case of extrapolation (horizontal or with respect to altitude), strange data, or lack of neighbouring stations given the chosen settings. All information can be exported as maps or tables.

2) The Workbench Mode produces and exports regional maps of the variables listed in point 1. Furthermore spatial and altitude statistics can be calculated. This mode allows

to select a region by country or by rectangle from a world map. In addition to using the data of the built-in FAO data base, the user can import his own data to be interpolated and spatially analysed.

3) The Automatic Mode produces tables of the desired climatological variables and/or growing season features in a variety of formats, for arbitrary self defined grids and self defined digital elevation models.

Version 1.06 of the New\_LocClim can be downloaded from [ftp://ext-ftp.fao.org/SD/SDR/Agromet/New\\_LocClim/](ftp://ext-ftp.fao.org/SD/SDR/Agromet/New_LocClim/)

For a description of the New\_LocClim and other tools, refer to sections 3.2, 3.3 and 3.4 in file FAO\_software.pdf available from the same FTP site.