Details to the REMO Climate Diagrams

Data:

- The climate digrams depend on the output of the REMO consortial runs at the time period 1960-2050. Until 2000, only the observed green house gas concentrations have been used as forcing. Since 2001, the model has been calculated with the forecasts of two future scenarios out of the 2001 IPCC report, the A1B and the B1 scenario.
- For both, a prodeeding change of the vegetation coverage is included. The diagrams itself are assessed out of the ensemble means of three runs for each REMO scenario (control, A1b, B1) so a period of 30 model years is included in a 10 year period climatology
- The REMO rainfall data are revised by a MOS to correct the systematic errors of the model rainfall, i.e. the overestimated coastal monsun time lag due to orographical reproduction.
- Due to this revision, a slight inconsistence in the seasonal cycle of the global radiation occurs south of 8°N, so that only its annual mean is quoted.
- The downscaling of the MOS data for the 24 Benin stations is made by the "Wettergenerator" WEGE.

Diagrams:

- Following 15 diagrams are available for 24 stations in Benin:
- 1x 1961-1990
- 4x Decadal mean for 1961-2000
- 5x Decadal mean for 2001-2050 (A1b scenario)
- 5x Decadal mean for 2001-2050 (B1 scenario)
- In the upper figure of the diagrams, three lines represent the monthy means of the daily maximum temperatures, the mean temperatures and the minimum tempertures
- The monthly mean amounts of rainfall are shown as a histogram in the lower figure. Additionally, the broken black line shows the aridity line (precipitation = 2x temperature), known from other climate diagrams. For all stations north of 8°N, a green graph shows the monthly mean values of the global radiation.
- The diagrams are based on model output. Therefore, a careful interpretation is needed, especially for the extreme temperature values for each time period shown at the left border of the diagram. Those values could possibly be more extreme in reality. Also, a bias error based upon the model is in the values for the mean global radiation and the amount of rain days. But a better fault analysis is not possible due to missing observation data.
- Nevertheless, the representation of the annual cycle and the change of the amounts through the decades is reliable, and that's the task the diagrams do perform.

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