

Supplement

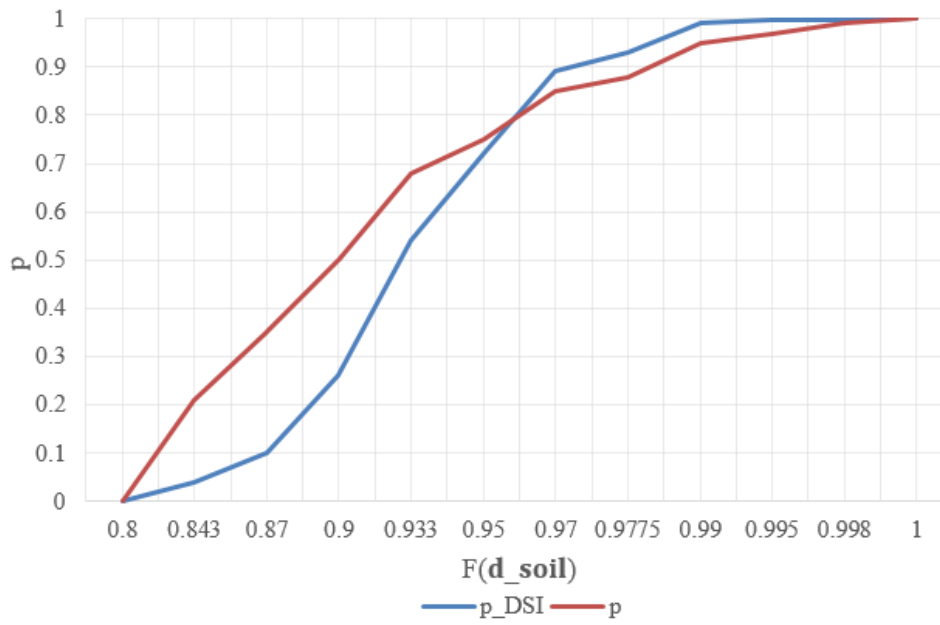


Figure S1. Comparison of p_{soil} with p_{DSI} values as a function of $F(d_{\text{soil}})$ as presented in Table 1.

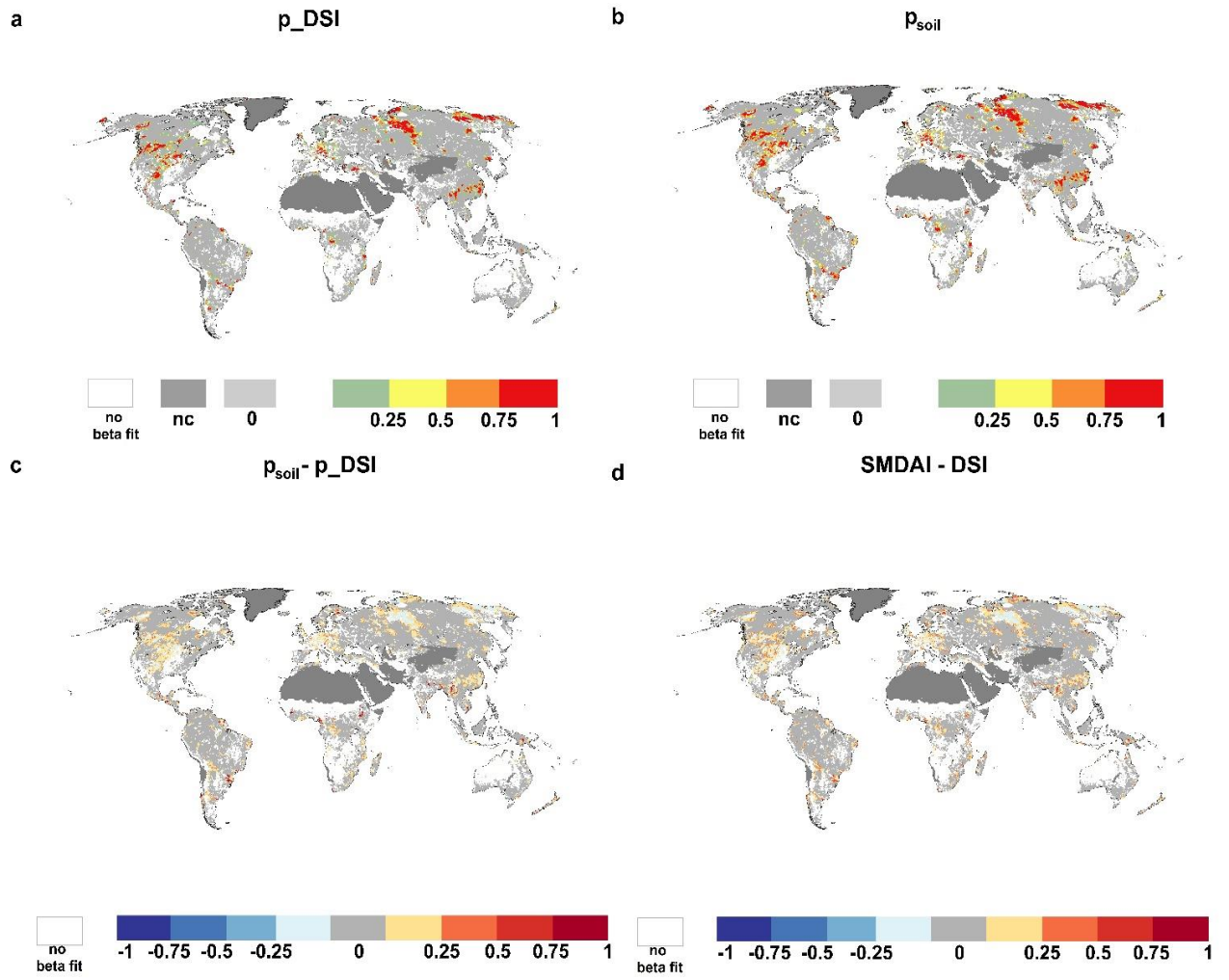


Figure S2. Global maps of p_DSI (a), p_{soil} (b), the difference between p_{soil} and p_DSI (c) and between SMDAI and DSI (d) for August 2003.

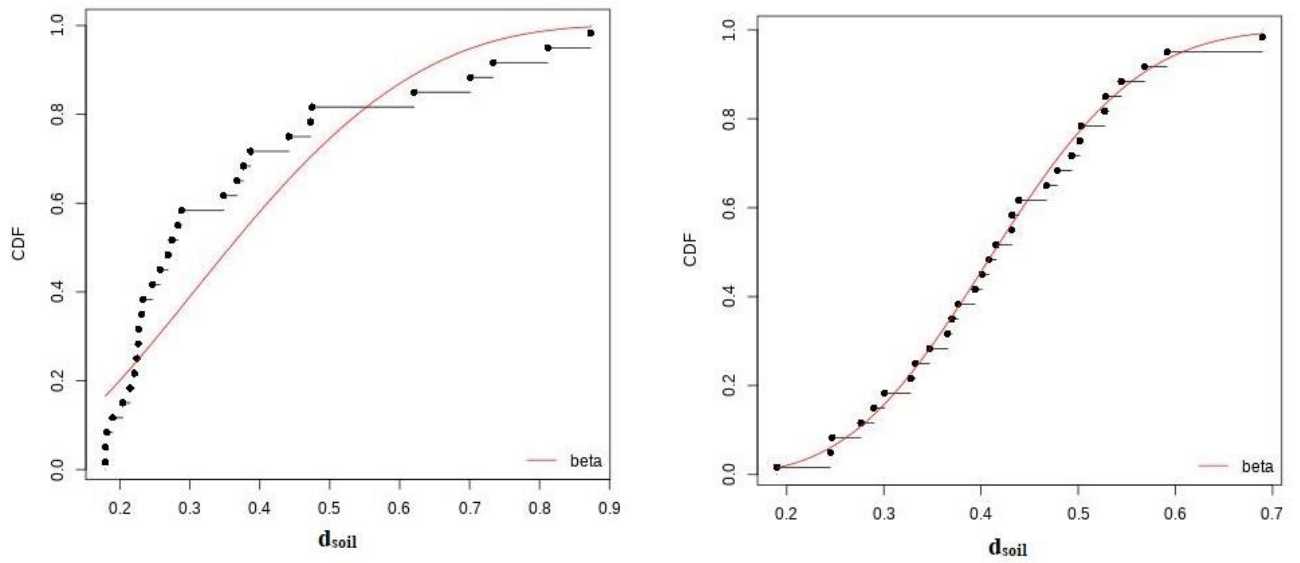


Figure S3. Two examples of CDF plots of all 30 January soil moisture deficits for a cell in the Republic of Congo (27.25E, -10.75N) for which the beta function was rejected (left) and a cell in Russia (31.25E, 56.75N), for which it was accepted (right).

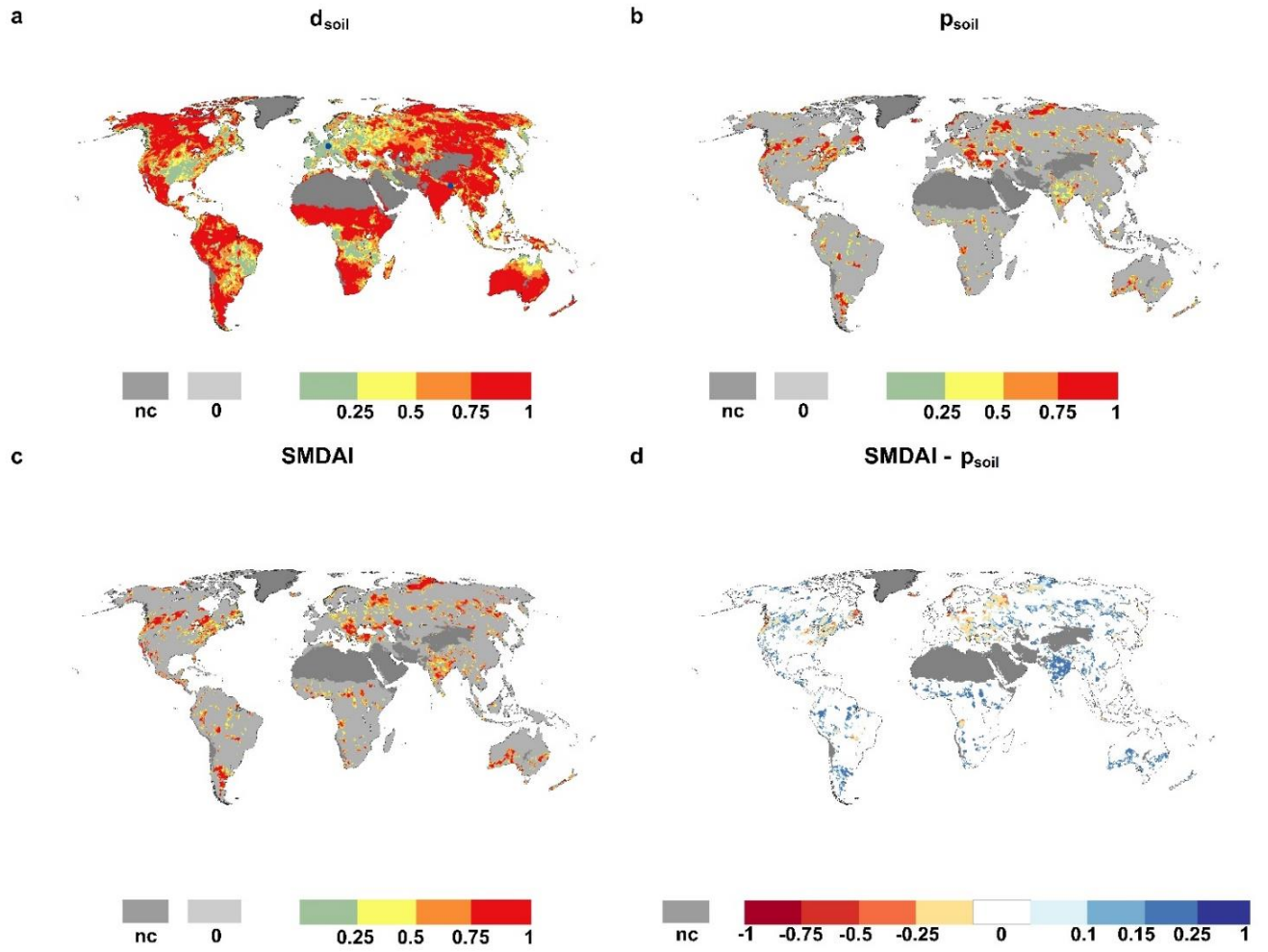


Figure S4. Global maps of d_{soil} , p_{soil} , SMDAI and the difference between SMDAI and p_{soil} for December 1999

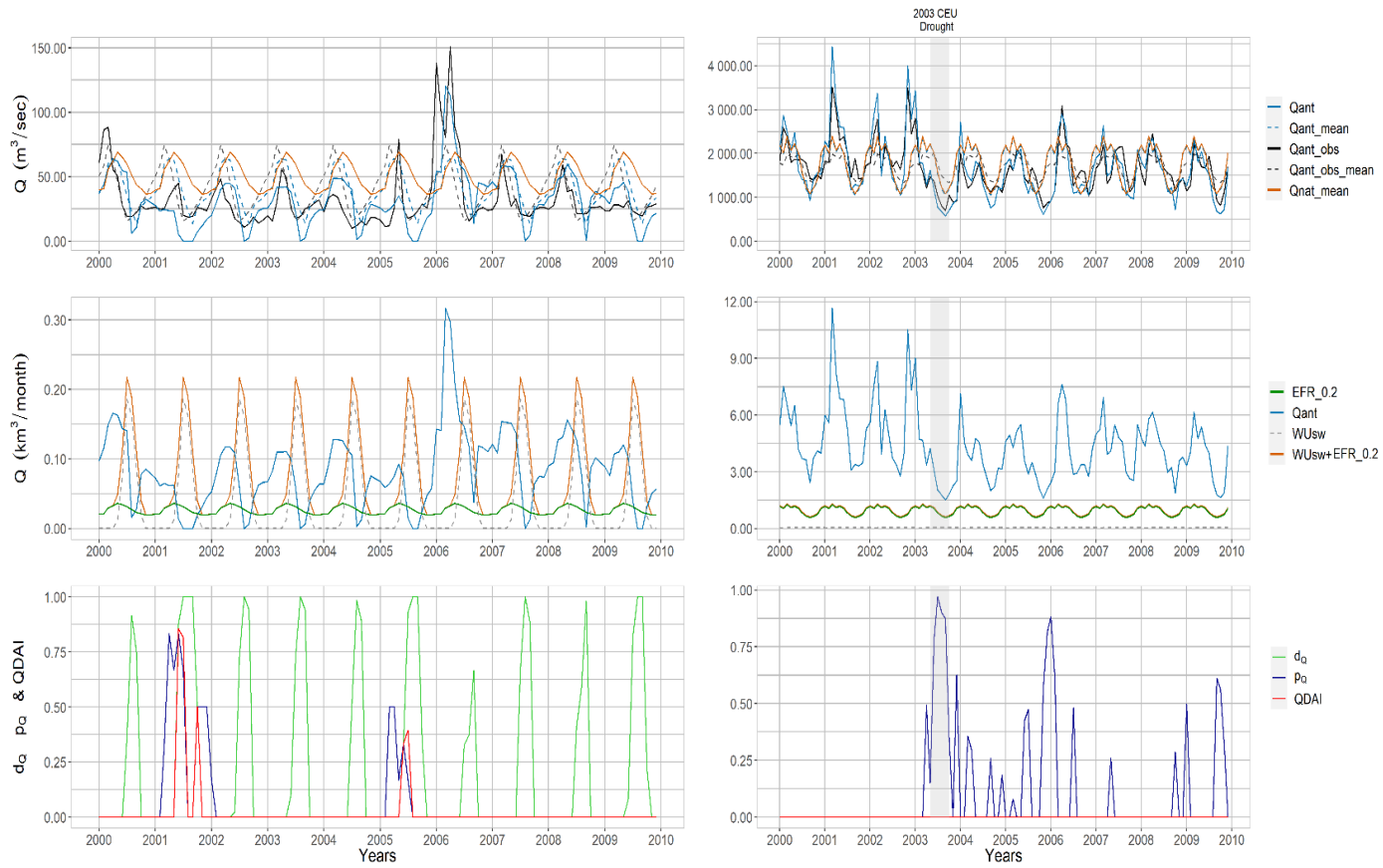


Figure S5. Streamflow drought hazard: example of time series of monthly surface water demand, surface water supply and mean seasonality of surface water supply as well as d_Q , p_Q and $QDAI$ (bottom) for a cell in the USA (left) and Germany (right) computed with $EFR = 0.2 \cdot \overline{Q_{nat}}$.

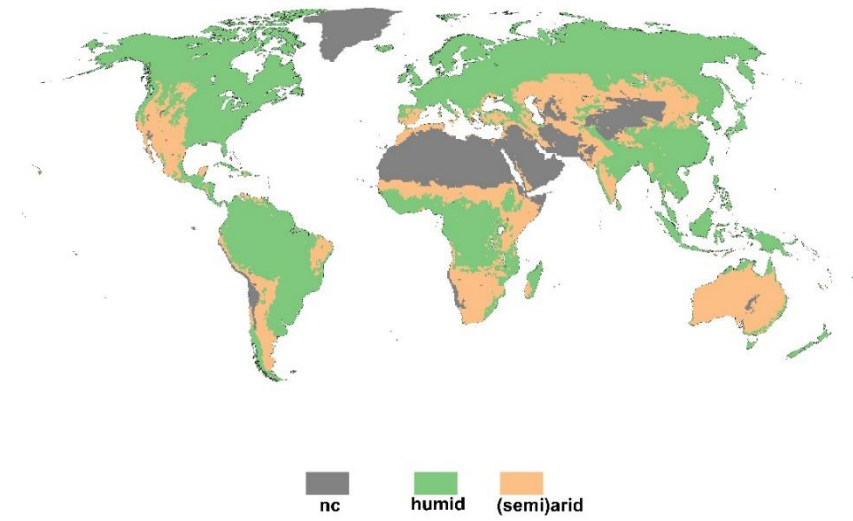


Figure S6. Spatial representation of humid and (semi)arid and arid regions