

*Global Biogeochemical Cycles*

Supporting Information for

**Carbon and greenhouse gas budgets of Europe: trends, interannual and spatial variability, and their drivers**

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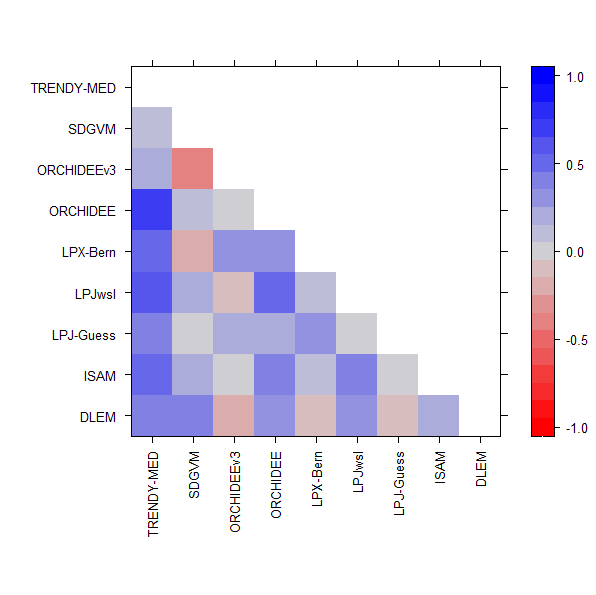
**Additional Supporting Information (Files uploaded separately)**

Tables S1 to S8 stored in one separate excel file

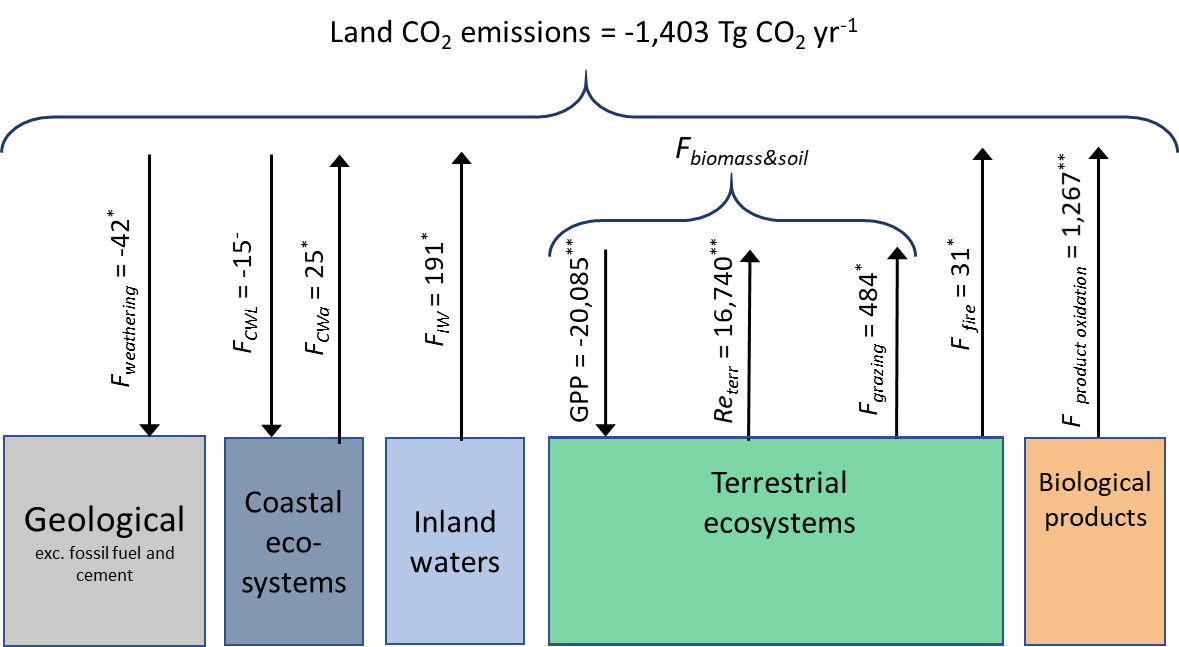
**Introduction**

The auxiliary material contains six supplemental figures S1 to S6, which are included here below, as well as eight tables S1 to S8, which are stored in a separate xlsx-file.

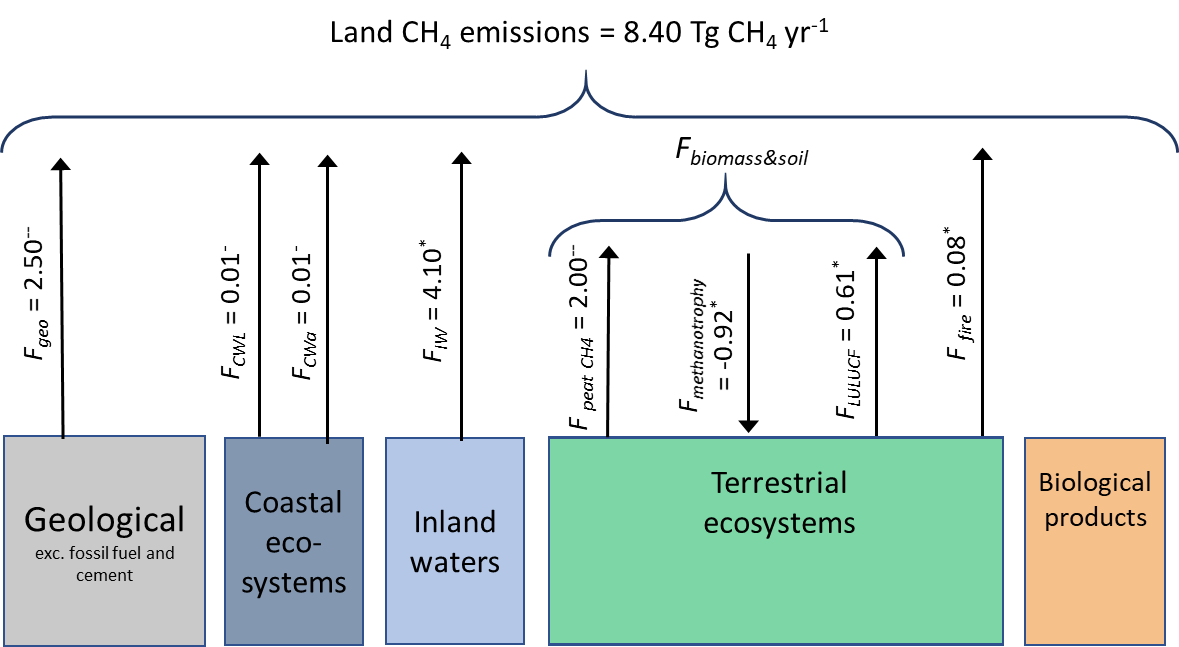
**Supplemental figures**



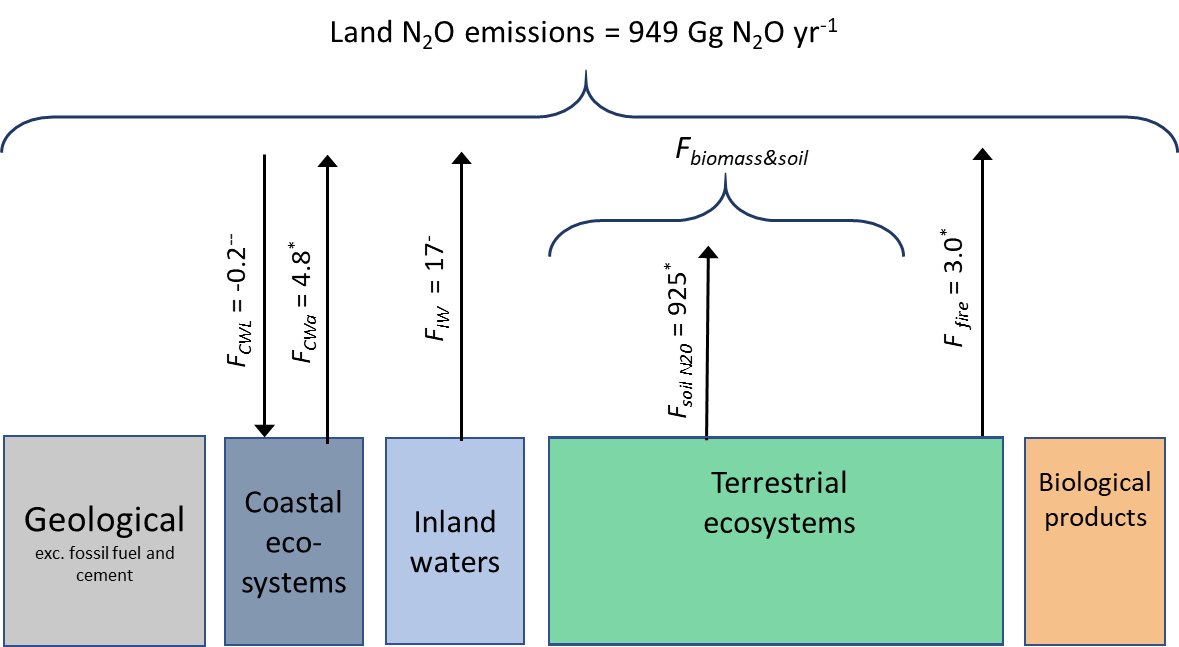
**Figure S1:** Matrix of Spearman Rank correlation coefficients indicating degree of spatial correlation among the eight TRENDY v10 models that have a spatial correlation of 0.5º and their ensemble median. The matrix represents spatial correlations based on average NEEC simulated over the period 2010 to 2019.



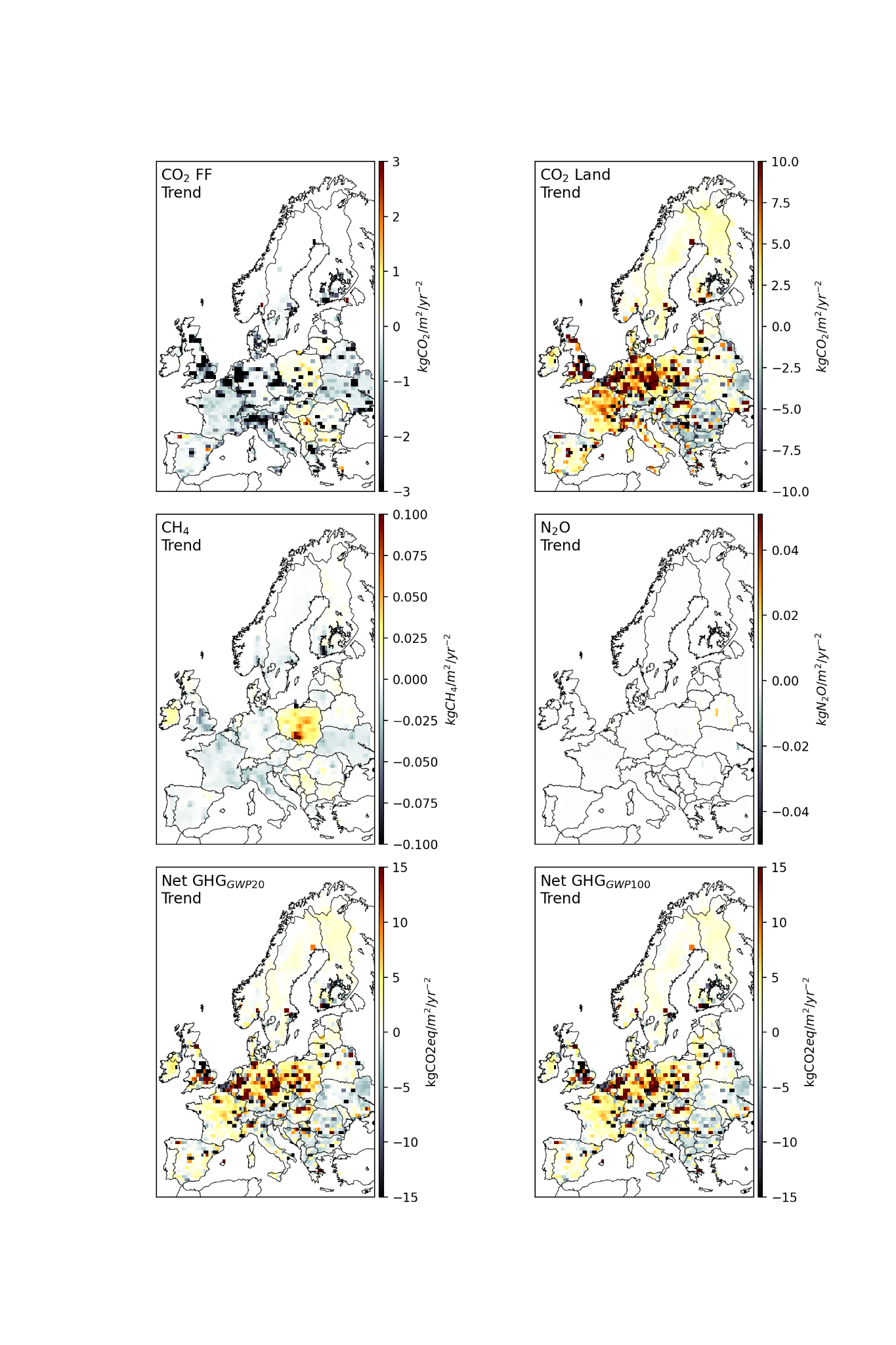
**Figure S2:** The European land CO2 budget over the period 2010-2019. Number give average annual fluxes in Tg CO2 yr-1. We assign different level of confidence to our estimates: very high: ±10% (\*\*\*), high: ±25% (\*\*), moderate: ±50% (\*), low: ±100% (-), and very low (--).



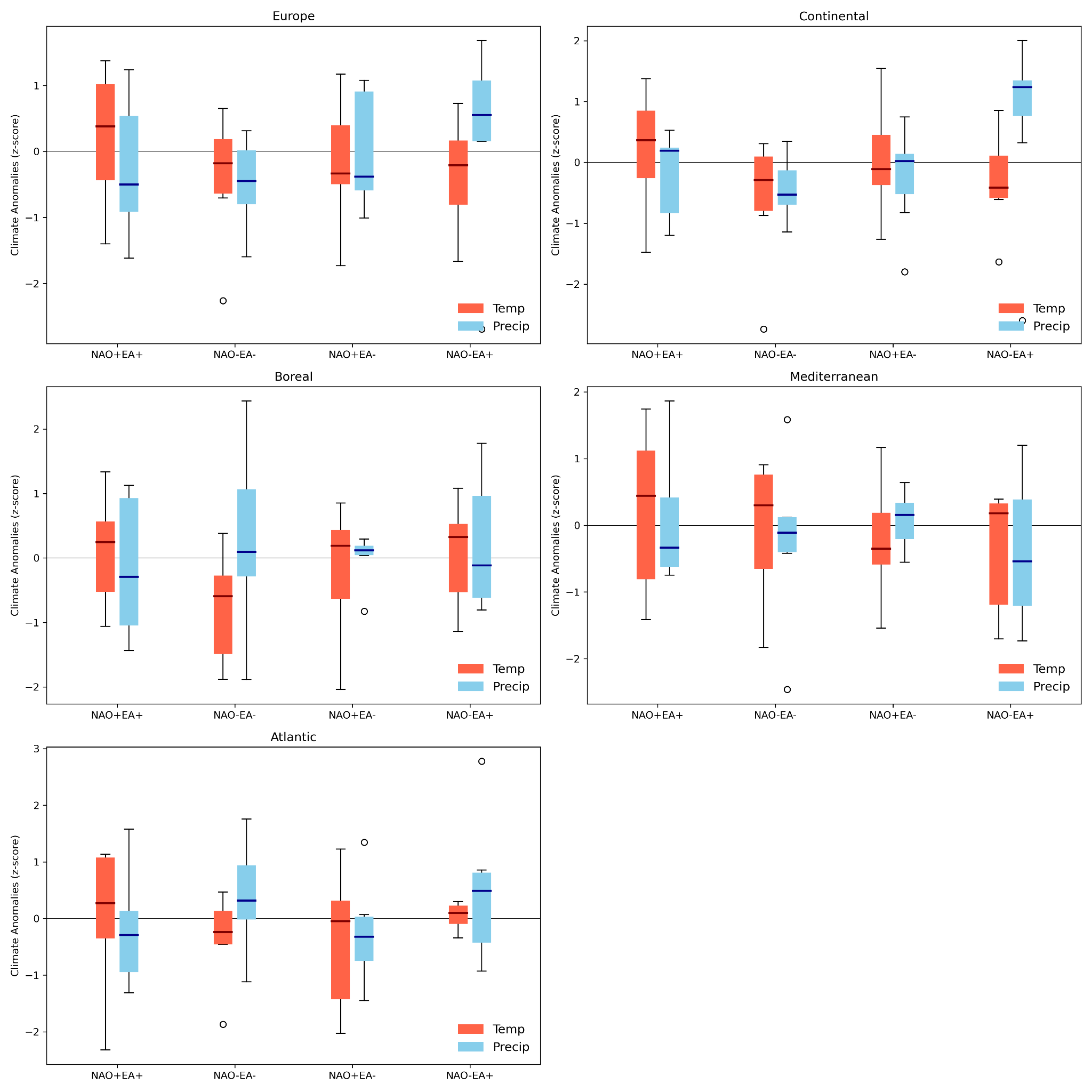
**Figure S3:** The European land CH4 budget over the period 2010-2019. Number give average annual fluxes in Tg CH4 yr-1. We assign different level of confidence to our estimates: very high: ±10% (\*\*\*), high: ±25% (\*\*), moderate: ±50% (\*), low: ±100% (-), and very low (--).



**Figure S4:** The European land N2O budget over the period 2010-2019. Number give average annual fluxes in Gg N2O yr-1. We assign different level of confidence to our estimates: very high: ±10% (\*\*\*), high: ±25% (\*\*), moderate: ±50% (\*), low: ±100% (-), and very low (--).



**Figure S5:** Trend in the prior fluxes prescribed to regional inversions (see Figure 9 in the main text).



**Figure S6:** Spread of climate anomalies corresponding to each NAO-EA combination.