Supporting information

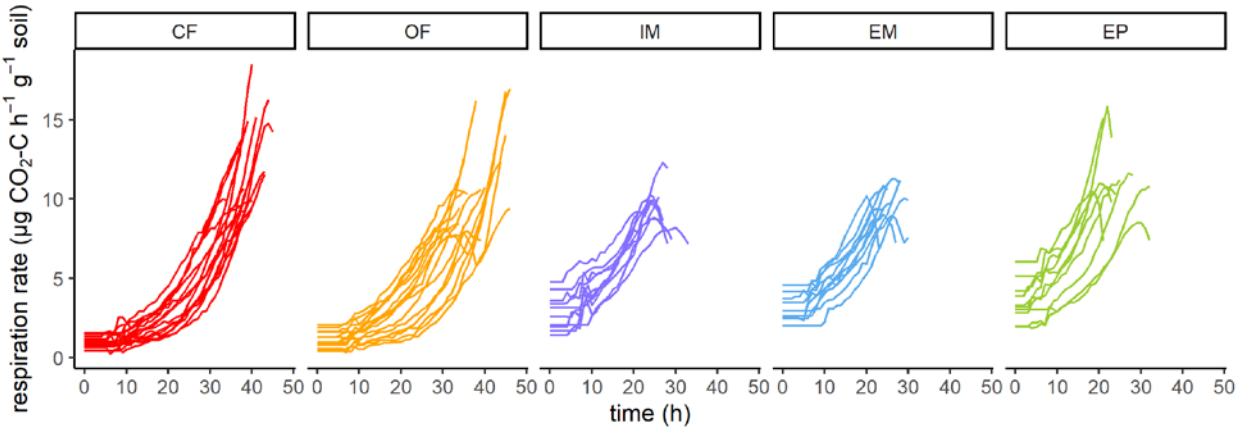

Figure S 1: Time series of CO_2 release for each replicate during substrate-induced respiration until the CO_2 capacity of the respirometer was reached (n=15 for CF, OF, n=10 for IM, EM, EP). CF conventional farming, OF organic farming, IM intensively managed meadow, EM extensively managed meadow , EP extensively managed pasture.

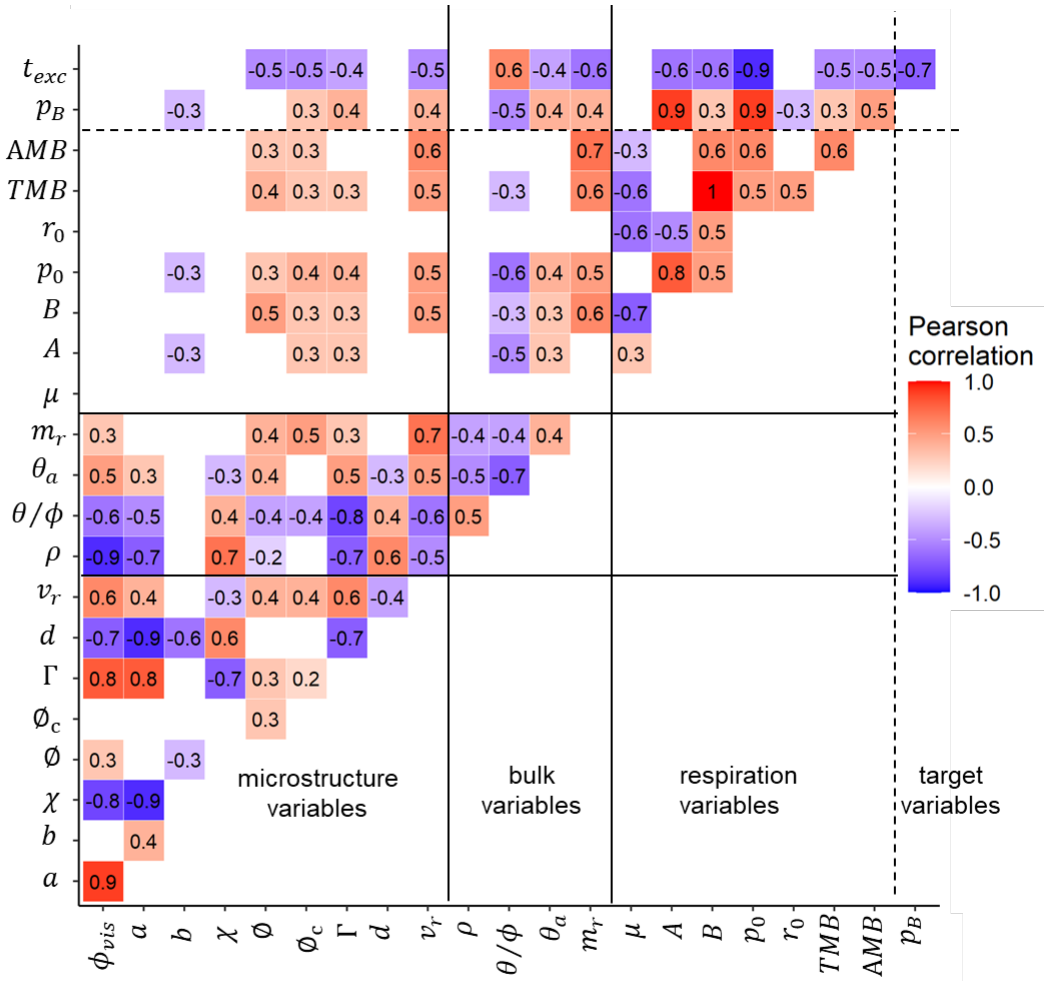

Figure S 2: Correlation matrix of all investigated properties based on all samples from all land uses: t_{exc} and p_B are considered target variables during partial least square regression, whereas all other properties are considered as explanatory variables. Only significant (p<0.05) correlations are displayed. Symbols represent: ϕ_{vis} – visible porosity, a – pore surface area density, b – mean breadth density, χ – Euler number density, $\emptyset$ – average pore diameter, $\emptyset_c$ – critical pore diameter, Γ– connection probability, d – average pore distance, v_r – POM volume fraction, ρ – bulk density, θ/ϕ – field water saturation, θ_a – air content after glucose addition, m_r – POM content, μ – growth rate, A – growth independent release CO_2 release rate, B – growth dependent release CO_2 release rate, p_0 – substrate induced CO_2 release, r_0 – active microbial fraction, TMB – total microbial biomass, AMB – active microbial biomass, p_B – basal respiration rate, t_{exc} – time until respirometer capacity excess.