



Supplementary Fig. S2 Annual changes of N input (a) and output (b) in China's crop production systems during 1961 and 2018. Abbreviations: N_{ENV} , N from the environment (sum of N fixation, deposition and irrigation); N_{FER} , N from fertilizer; N_{OM} , N from manure; N_{UP} , N uptake by crop; N_{NH3} , N loss from NH_3 emission; $N_{L/R}$, N loss from leaching and runoff; N_{DN} , N loss from denitrification and nitrification (N_2 , NO , and N_2O).