Supporting information

Historical nitrogen fertilizers use in China from 1952 to 2018

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Fig. S1 Supplementary information showing the datasets used for reconstruction and spatialization of nitrogen fertilizers use in China.

Fig. S2 Supplementary information showing nitrogen fertilizers use rate in major crop types from 1952 to 2018 using data of nearby provinces for gap-filling.

Fig. S3 Supplementary information showing nitrogen fertilizers use rate in major crop types from 1952 to 2018 using data of national averages for gap-filling.

Fig. S4 Supplementary information showing total nitrogen fertilizers input for each major crop types from 1952 to 2018 using data of nearby provinces for gap-filling.

Fig. S5 Supplementary information showing total nitrogen fertilizers input for each major crop types from 1952 to 2018 using data of national averages for gap-filling.

Fig. S1 Supplementary information showing the datasets used for reconstruction and spatialization of nitrogen fertilizers use in China. (Yu's cropland: the cropland data reconstructed in Yu et al., (2021); Liu' data: crop rotation maps from Liu et al., (2018); CAY: Chinese Agricultural Yearbook; FAO: FAO statistical database obtained from http://faostat.fao.org; CSY: Chinese Statistical Yearbook).

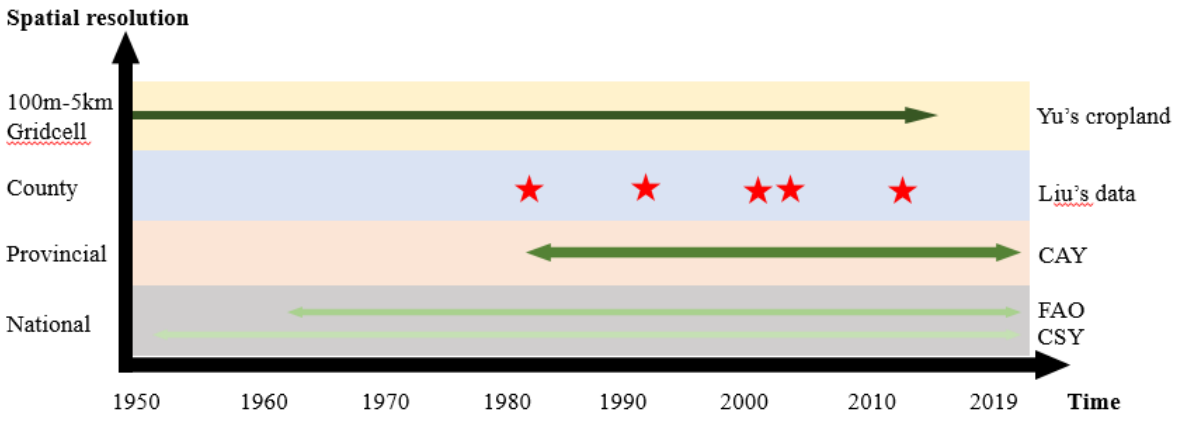

Fig. S2 Supplementary information showing nitrogen fertilizers use rates in major crop types in China from 1952 to 2018 using data of nearby provinces for gap-filling. (panel a: N fertilizer rate of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizers contains 16% of N; panel b: N fertilizers use rates of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; panel c: N fertilizer rate of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizer rate of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; Unit: g N m^{-2} yr^{-1})

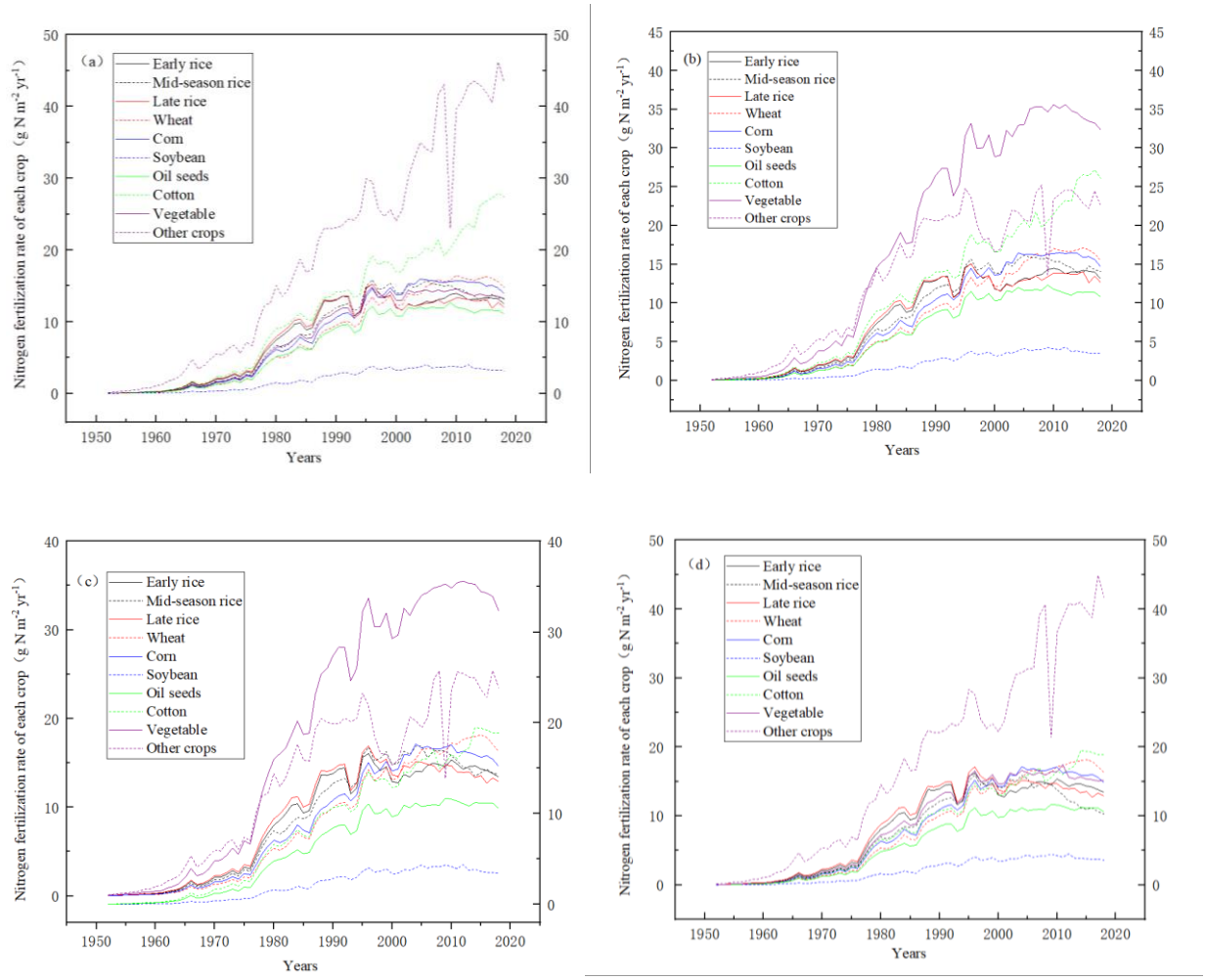

Fig. S3 Supplementary information showing nitrogen fertilizers use rates in major crop types in China from 1952 to 2018 using data of national averages for gap-filling. (panel a: N fertilizers use rate of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizer rate of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; panel c: N fertilizers use rates of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizers use rate of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; Unit: g N m^{-2} yr^{-1})

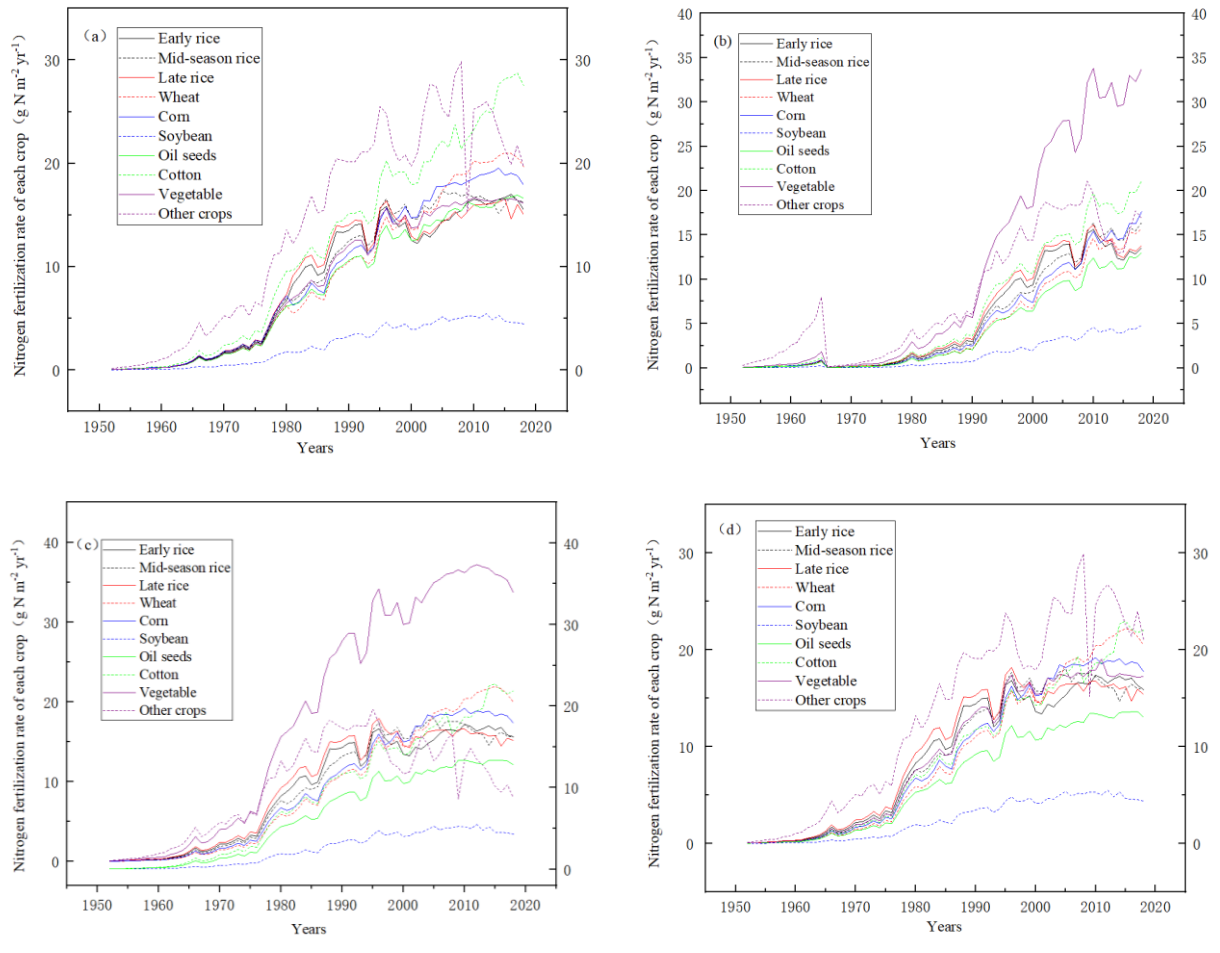

Fig. S4 Supplementary information showing total nitrogen fertilizers input for each major crop types from 1952 to 2018 using data of nearby provinces for gap-filling. (panel a: N fertilizers use rates of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizer rate of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; panel c: N fertilizer rate of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizers use rates of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; Unit: Tg N yr^{-1})

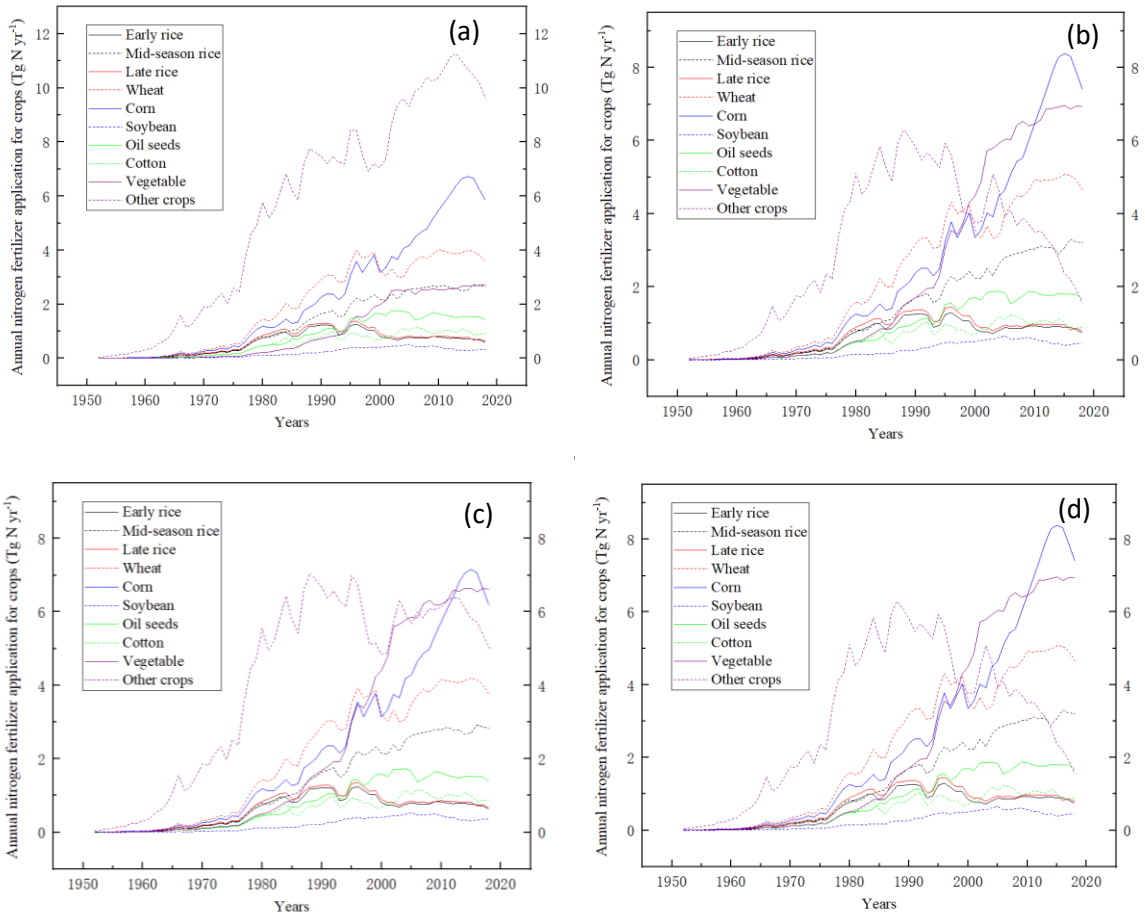

Fig. S5 Supplementary information showing total nitrogen fertilizers input for each major crop types from 1952 to 2018 using data of national averages for gap-filling. (panel a: N fertilizer rate of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizers use rates of vegetable is the average of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; panel c: N fertilizer use rates of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 16% of N; panel b: N fertilizers use rates of vegetable is 3.3 times of the average rate of all other crops (except 'Other crops'), and compound fertilizer contains 33% of N; Unit: Tg N yr^{-1})