Supplement of

Historical nitrogen fertilizer use in China from 1952 to 2018

Zhen Yu et al.

Correspondence to: Zhen Yu (zyu@nuist.edu.cn)

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

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

**Fig. S3** Supplementary information showing nitrogen fertilizer 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 fertilizer 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 fertilizer 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 fertilizer use in China. (Yu’s cropland: the cropland data reconstructed in Yu et al., (2021); Liu’s 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 fertilizer 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 contain 16% of N; panel b: N fertilizer 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$^{-1}$)
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Fig. S4 Supplementary information showing total nitrogen fertilizer input for each major crop types from 1952 to 2018 using data of nearby provinces for gap-filling. (panel a: N fertilizer 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 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; 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 fertilizer 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 fertilizer 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 fertilizer 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 fertilizer 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)