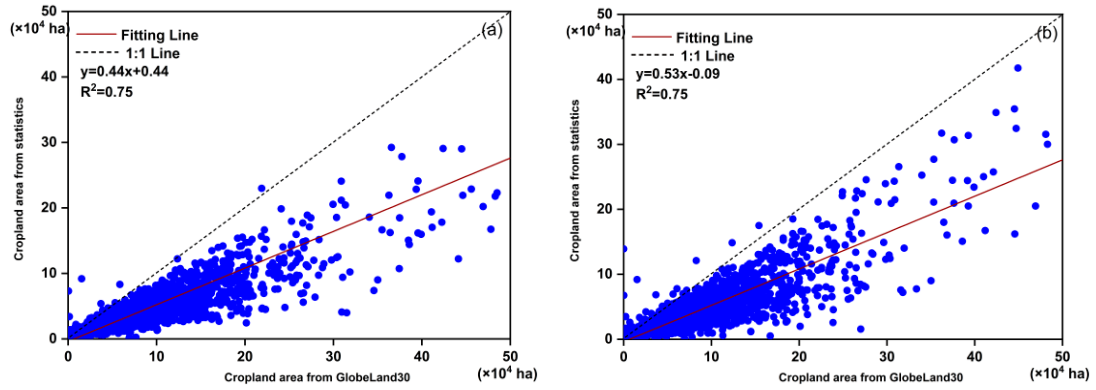# Supplementary Material

Figure S1. Cropland area in GlobeLand30 and statistical data correlations for 2000 and 2010. (**a**) the correlations in 2000. (**b**) the correlations in 2010. Each point presents the data of a county, in total 2396 counties were computed. Linear regression was used to measure the R^2 with the red fitting line.

Table S1. Decomposition factors for a given county, mean parcel size, and number of parcels are calculated based on FRAGSTATS 4.2 software. $yield_i^{2010}$ represents yield in 2010 in county i.

Factor	Symbol	LMDI form
Yield	ΔC_{yield^i}	$\sum_i \dfrac{C^{2010}_{total^i} - C^{2000}_{total^i}}{ln\,C^{2010}_{total^i} - ln\,C^{2000}_{total^i}} \cdot ln \dfrac{yield_i^{2010}}{yield_i^{2000}}$
MCI	ΔC_{MCI^i}	$\sum_i \dfrac{C^{2010}_{total^i} - C^{2000}_{total^i}}{ln\,C^{2010}_{total^i} - ln\,C^{2000}_{total^i}} \cdot ln \dfrac{MCI_i^{2010}}{MCI_i^{2000}}$
MPS	ΔC_{MPS^i}	$\sum_i \dfrac{C^{2010}_{total^i} - C^{2000}_{total^i}}{ln\,C^{2010}_{total^i} - ln\,C^{2000}_{total^i}} \cdot ln \dfrac{MPS_i^{2010}}{MPS_i^{2000}}$
NP	ΔC_{NP^i}	$\sum_i \dfrac{C^{2010}_{total^i} - C^{2000}_{total^i}}{ln\,C^{2010}_{total^i} - ln\,C^{2000}_{total^i}} \cdot ln \dfrac{NP_i^{2010}}{NP_i^{2000}}$