Table S1 Distribution coefficients of photosynthetic products to leaves (PL_O) and roots (PR_O), and the ratio of yellow to green leaves (YGR_O) in the Agro-C model

	Maize			Wheat		
DVI	PL_O	PR_O	YGR_O	PL_O	PR_O	YGR_O
0	0.45	0.3	0	0.425	0.3	0
0.1	0.45	0.3	0	0.425	0.3	0
0.2	0.4	0.3	0	0.425	0.3	0
0.3	0.4	0.3	0	0.425	0.3	0
0.4	0.3	0.3	0	0.425	0.3	0
0.5	0.3	0.2	0	0.425	0.25	0
0.6	0.25	0.13	0.027	0.34	0.19	0.319
0.7	0.2	0.06	0.037	0.255	0.13	0.349
0.8	0.1	0	0.048	0.17	0.1	0.378
0.9	0	0	0.061	0.085	0.05	0.408
1	0	0	0.076	0	0	0.438
1.1	0	0	0.148	0	0	1.276
1.2	0	0	0.221	0	0	2.134
1.3	0	0	0.293	0	0	2.993
1.4	0	0	0.366	0	0	3.851
1.5	0	0	0.438	0	0	4.709
1.6	0	0	0.51	0	0	5.567
1.7	0	0	0.583	0	0	6.425
1.8	0	0	0.655	0	0	7.284
1.9	0	0	0.728	0	0	8.142
2	0	0	0.8	0	0	9

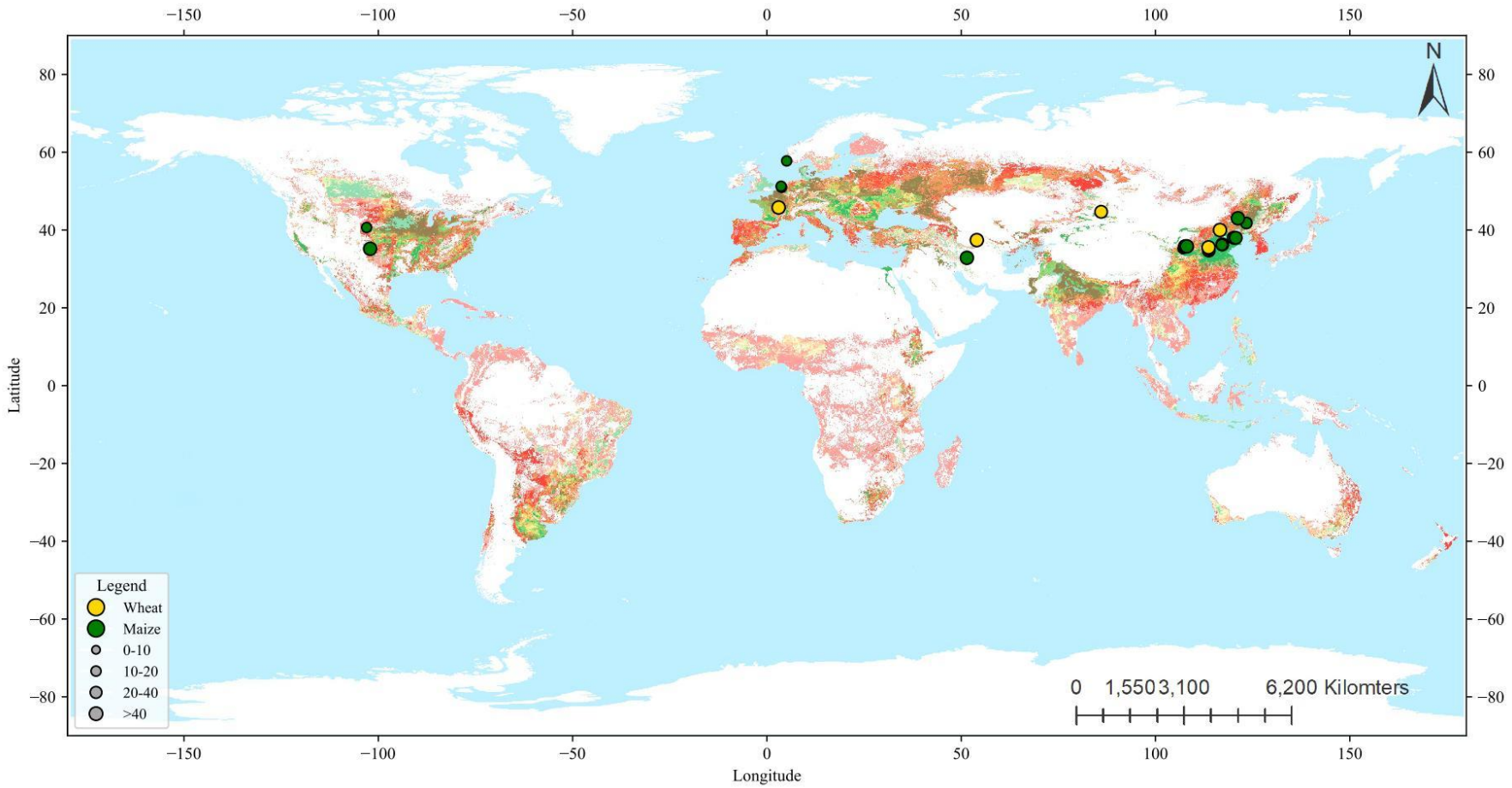

Fig. S1 Distribution of the observation sites for maize and wheat crops. The size of the circle represents the amount of data obtained at each site. Wheat and maize division map from Qin et al. (2023).

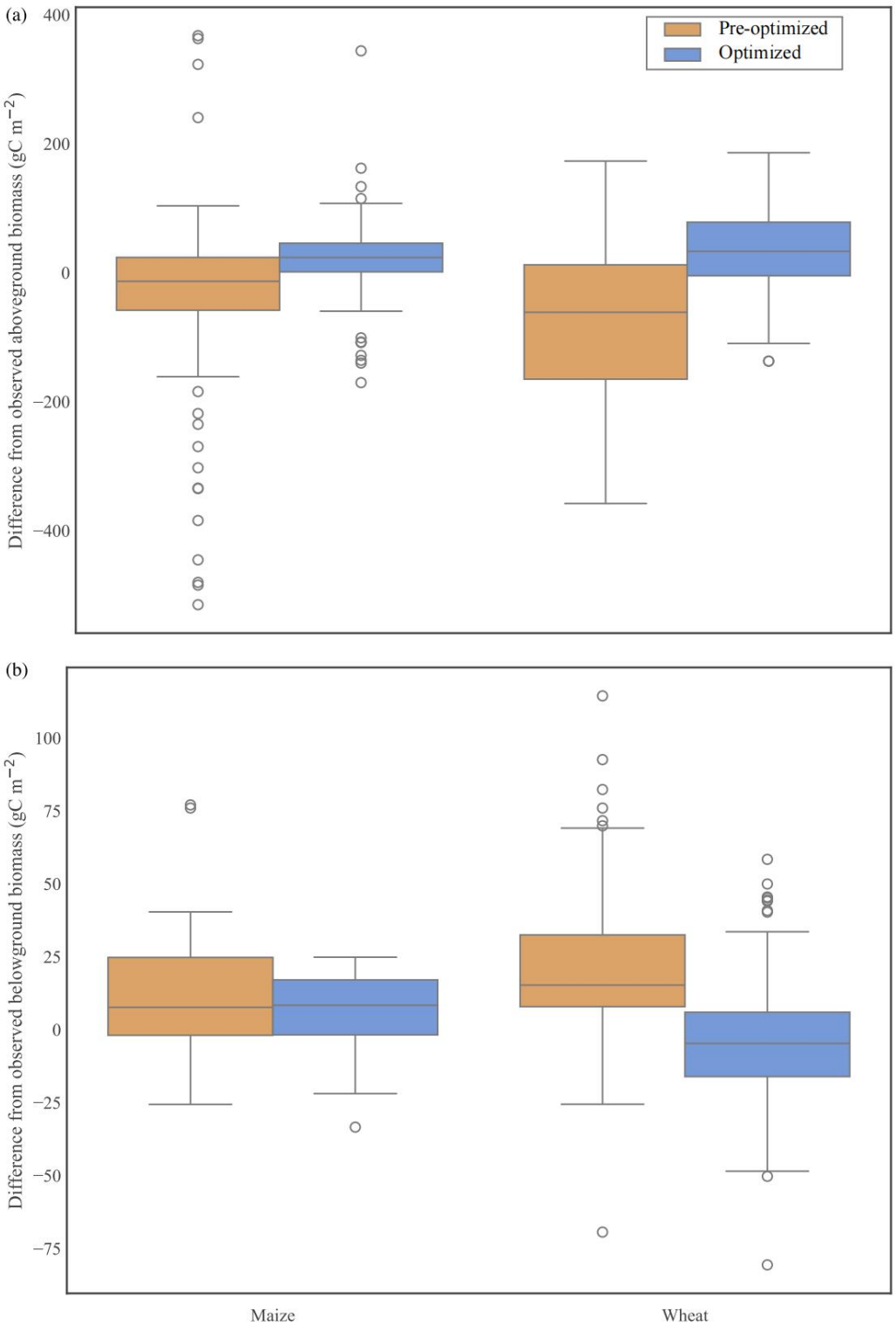

Fig. S2 Differences between simulated and observed values of aboveground biomass (AGB) and belowground biomass (BGB) for maize and wheat using the pre-optimized Agro-C model, and the optimized Agro-C model.

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