

**Supplementary Table 2. Multilevel linear regression for *yield gap* by  $r_{\text{yield}}$  to  $r_{\text{area}}$  in global regions.**

	Factor	$\beta$	error	$t$	$p$
	(Intercept)	-236.36	91.03	-2.596	0.014842*
Rice	$r_{\text{area}}$	-319.7	77.29	-4.137	0.000291***
	$r_{\text{yield}}$	384.89	66.81	5.761	0.00000349***
	(Intercept)	-483.1	187.4	-2.579	0.0155*
Maize	$r_{\text{area}}$	283.4	398.9	0.71	0.4833
	$r_{\text{yield}}$	632.5	131.2	4.82	0.0000453***
	(Intercept)	-7.696	94.981	-0.081	0.936
Wheat	$r_{\text{area}}$	546.964	111.914	4.887	0.0000377***
	$r_{\text{yield}}$	155.489	72.401	2.148	0.0405*
	(Intercept)	-189.79	17.32	-10.959	0.0000000000123***
Soybean	$r_{\text{area}}$	187.88	69.51	2.703	0.0115*
	$r_{\text{yield}}$	210.34	11.81	17.81	< 2e-16***