



**Supplementary Figure 2.**  $r_{yield}$  and *yield gap* show a strong positive correlation in global regions. (a) Correlation analysis of  $r_{yield}$  with *yield gap* for rice, maize, soybean, and wheat in global regions. (b) Correlation analysis of  $r_{area}$  with *yield gap* for rice, maize, soybean, and wheat in global regions.