

Fig. S1 Spatial patterns of annual three key phenological dates during $2000 \sim 2015$ for rice.

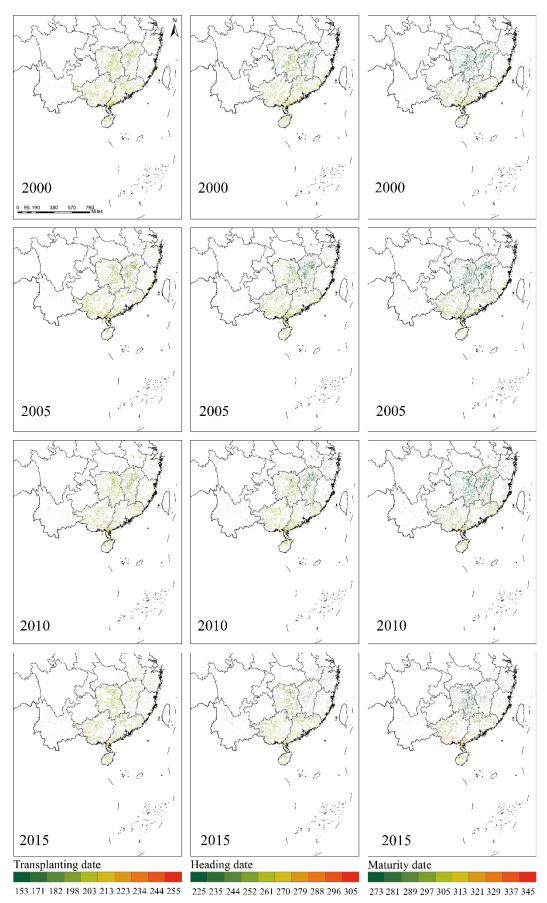


Fig. S2 Spatial patterns of annual three key phenological dates during 2000~2015 for late-rice

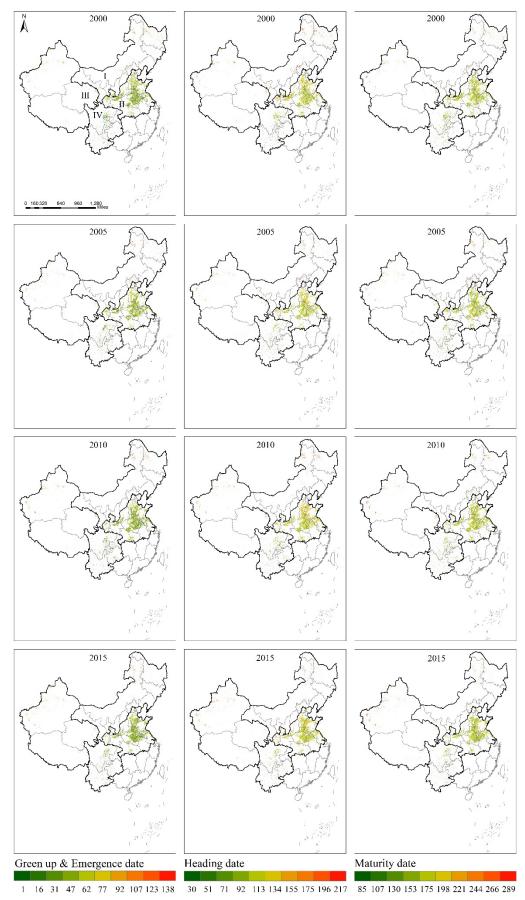


Fig. S3 Spatial patterns of annual three key phenological dates during $2000 \sim 2015$ for wheat

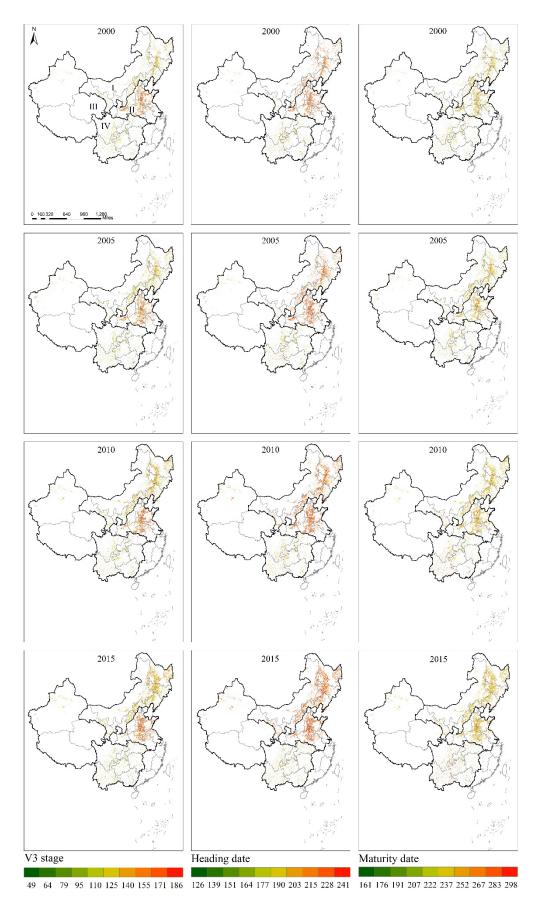


Fig. S4 Spatial patterns of annual three key phenological dates during $2000 \sim 2015$ for maize