AGRICULTURE

In recent years, global food security has become a pressing concern that is substantially affected by climate change. The effects of climate change have led to reduced agricultural yields, increased prevalence of livestock diseases, and shifts in fishery resources. According to statistics from Taiwan's Ministry of Agriculture, the country's food self-sufficiency rate, calculated using caloric intake, has declined from 43% to 31%. Taiwanese and international studies have indicated that climate change has adversely aected crop yields and caused economic losses. The TCCIP team employed the Decision Support System for Agrotechnology Transfer (DSSAT) crop growth model, integrating climate projection data to assess the projected changes in rice and corn yields in Taiwan to facilitate analysis under the high-emissions global warming scenario RCP8.5. The overall trend is a decline in rice yields, with reductions of 13% and 18% by the middle and end of 21st the century, respectively. Similarly, corn yields are expected to decline, with average reductions of 10% and 17%, respectively, with the most substantial changes occurring in northern and eastern Taiwan (Figure).

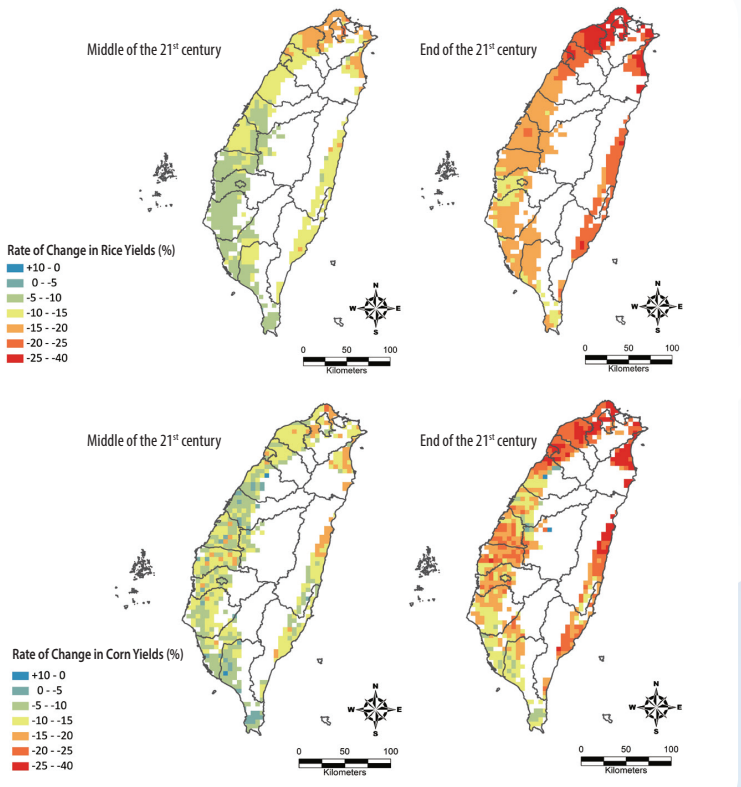

Figure
Rates of Change in Rice and Corn Yields under Climate Scenario RCP8.5