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Food security challenged by climate warming-drying in arid and semiarid region, Northwest China

Xiao Guoju¹, Zhang Qiang², Wang Runyuan², Yao Yubi², Li Yu³, Shi Jie², Zhang Fengju¹, Huang Juying¹, Ma Fei¹, Luo Chengke¹ and Wang Jing¹

¹Ningxia University, Yinchuan, China

²Institute of Arid Meteorology, China

³Northwest University for Nationalities, China

China's economy may be vulnerable to climate change, and Northwest China, an arid and semiarid region, is a particularly sensitive area. Over the last 50 years, the climate in this region has undergone a series of changes, including higher temperatures, increased drought and warmer winters. The future climate will be warmer, drought will be more severe, crop growth will accelerate, crop pests will cause more damage, soil will be degraded and rain resource utilization will decline. Thus, the crop growing environment will be seriously affected, agricultural ecological system stability will be weakened, the fluctuation in grain yield will increase, adjusting crop planting structure will be more difficult, food nutrition and security will be threatened, investment in grain production will increase and the risk and uncertainty in grain security will rise. Taking scientific measures to actively keep pace with climate change will be a key strategy for reducing grain security risks in Northwest China.

xiaoguoju@hotmail.com