

**CLIMATE CHANGE POSING A THREAT
TO CHINA'S LONG-TERM
FOOD SECURITY**

John WONG & CHEN Gang

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Executive Summary

1. Long-term impacts of climate change on agriculture are lower crop yields and loss of arable land. But these threats can happen sooner with extreme and abnormal weather conditions, which have already occurred in greater frequency.
2. Large disaster-prone countries like China and India are particularly vulnerable to climate change and extreme weather. The yields of China's three main crops, i.e. wheat, rice and maize, are likely to decline if no proper adaptation measures are taken.
3. The extent of predictable impacts highly depends on the categories and geographical locations of the crops, range of yearly temperature and precipitation change, variations in extreme weather, CO₂ fertilisation effect assumption and adaptation abilities.
4. Increasing affluence in China has facilitated a diet shift from basic staples to livestock-based food, constraining the country's food-output capacity and complicating China's food security situation already under the threat of climate change.
5. In general, rain-fed crops rather than irrigated crops are likely to be much more severely affected by climate change. The Intergovernmental Panel on Climate Change expects climate change, under the worst case scenario, to lead to a drop in China's rain-fed yields of rice and corn by 20-36% over the next 20 to 80 years.
6. According to Chinese scientists, the long-term warming trends of the past 20 years or so had been harmful for both wheat and corn but beneficial to rice yields. Without taking CO₂ fertilisation into account, domestic output of all three major crops are expected to drop, leading to a decrease in China's food export and an increase in food imports.

7. China's agricultural output has been growing at an average of 5% annually. Its agricultural trade grows even faster than its agricultural production, with total food imports exceeding exports in recent years.
8. China has mapped out policies to address climate change, including agricultural infrastructure improvement, irrigation coverage expansion, seed technology enhancement to resist adverse weather, cloud-seeding technologies application, and development of nationwide insurance for farmers and landowners.
9. The long-term climate change trend coupled with increasing short-term weather disasters, soil/water contamination and food consumption increase may put China's food self-sufficiency rate at risk.