

Concurrent extreme weather events in major cultivated regions and related crop failures can have outsized societal repercussions. In the mid-latitudes, amplified Rossby waves are associated with a strongly meandering jet-stream and can cause simultaneous heatwaves and floods in major crop producing regions, posing a risk to global food security. While no scientific consensus on future changes in these wave-patterns has been accomplished so far, extreme weather events associated with wave-patterns are expected to become more severe due to thermodynamic factors alone, potentially enhancing crop production co-variability across major breadbasket regions and amplifying risks of multiple harvest failures. We investigate the skill of the latest CMIP6 models in reproducing observed impacts of amplified wave patterns. We then assess the consequences for simulated crop production losses and co-variability between affected regions. We find that while CMIP6 models accurately reproduce wave patterns themselves, but they strongly underestimate the surface response and the significant yield co-variability driven amplified waves detected in observations. We find that biases in CMIP6 models account for a larger part of the disagreements, whereas biases from crop models prove to be relatively low. Our results suggest that current risk assessment strongly underestimate risks to future global food security from concurrent breadbasket failures.