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[Abstract Title]

Assessment of the economic cascading effect on future climate change in China: Evidence from agricultural direct damage

[Abstract]

The agricultural sector is extremely vulnerable to climate change and also plays a very important role in the operation of the entire economic system, leading many studies to evaluate the possible agricultural direct economic damage (ADED) of climate change. However, this damage may have an amplification impact through the intricate industrial linkages that exist among sectors, and this impact may be even greater than the original damage. Therefore, to elucidate the economic cascading effect (ECE) in China caused by ADED and industrial linkage, this paper used the ARIO model to evaluate it by taking the ADED under future annual mean temperature (AMT) increases of 1-5℃ as the input condition and adjusting the exogenous parameters to enhance the adaptability of the model. The results show that (i) there is a significant amplifying impact of ECE, it will be 4.24~5.25 times that of ADED.(ii) Manufacturing will be the sector most affected by the industrial linkage under ADED, which accounts for 26.58% of total ECE, followed by agriculture (10.39%) and construction (8.5%). This paper aims to provide a new perspective from which to evaluate the economic impact of climate change by studying ECEs behind sectoral interactions.

[Keywords]

Economic cascading effect; ARIO model; Agriculture; Climate change; China