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Does Bank credit mitigate nature and climate change effects in cereal production in Kenya

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Abstract

The study analyzed the relationship between climate change, bank credit, and cereal production in Kenya. We estimate autoregressive distributed lag using quarterly data covering the period 2000-2023. The carbon dioxide (CO2) emission, average precipitation, and average temperature are used as indicators of climate change, while private sector credit and credit to agriculture sector are proxies for bank credit. The empirical findings show that there is a long-run relationship between cereal production and banks' credit, CO2 emissions, average precipitation, average temperature, and cereal production area. The results also indicate that bank credit, average precipitation and increase in area under cereal cultivation boost cereal production, while CO2 emission and average temperature reduce cereal production in the long run. In the short run, precipitation, bank credit and mechanization increase cereal yield, while CO2 emission and average temperature reduces cereal production. The increase in CO2 emission and average temperature interfere with growth and development of crops, which lowers the yields. However, bank credit enables farmers to counteract the impact of climate change through purchase of farm inputs and adopting climate change mitigation and resilience farm practices, which boost cereal production. These findings imply that there is need to mitigate climate change, because it has adverse impact on cereal production. There is also a need to enhance lending to the agriculture sector so that farmers can enhance capacity to mitigate climate change as well as wither the impact of climate change and increase cereal production.

Keywords: Bank Credit, Climate Change Risk, Cereal Production