

**IMPACT OF CLIMATE CHANGE ON ECONOMIC GROWTH:
A CASE STUDY OF INDIA**

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Abstract

Climate change is the single biggest threat facing mankind today. This paper is a contribution to the research literature in the field of climate change and its impact on economic variables in the context of India. We begin by using state level data on the widely used variables, temperature and rainfall and growth of per capita gross district domestic product. We employ fixed effects technique on a balanced panel data ranging from 1980-2019. We establish that a rise in temperature has a negative impact on growth rate. Moreover, we control for “poor” and “hot” dummy and observe that the negative impact of climate change shows through being poor and being hot. In order to have a more refined approach, we move on to using granular district-level data. We perform two kinds of analysis, with and without lags in an attempt to estimate the short- and persistent medium-run effects of climate change on growth. We also analyze the role played by various developmental factors including rural labour productivity, access to finance and financial institutions, rural infrastructure, urbanization, and luminosity in the temperature growth relationship. We establish three main results. First, higher temperatures have a greater negative impact for poorer districts: a 1 °C rise in temperature leads to nearly 4.716% percent fall in growth rate of district per capita income. Second, higher temperatures not only have level effects, but also growth effects, especially in richer districts. Third, electrification and urbanization may play a significant role in mitigating the negative impact of climate change.