The Costs of Climate Change: A Study of Cholera in Tanzania

Increased temperatures and changes in rainfall patterns as a result of climate change are widely recognized to entail potentially serious consequences for human health, including an increased risk of diarrheal diseases. This study integrates historical data on temperature and rainfall with the burden of disease from cholera in Tanzania and uses socioeconomic data to control for the impacts of general development on the risk of cholera. The results show a significant relationship between temperature and the incidence of cholera. For a 1 degree Celsius temperature increase the initial relative risk of cholera increases by 15 to 29 percent. Based on the modeling results, we project the number and costs of additional cases of cholera that can be attributed to climate change by 2030 in Tanzania for a 1 and 2 degree increase in temperatures, respectively. The total costs of cholera attributable to climate change are shown to be in the range of 0.32 to 1.4 percent of GDP in Tanzania 2030. The results provide useful insights into national-level estimates of the implications of climate change on the health sector and offer information which can feed into both national and international debates on financing and planning adaptation.
