



## Loss of work productivity in a warming world: Differences between developed and developing countries

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Comparable estimates of the heat-related work productivity loss (WPL) in different countries over the world are difficult partly due to the lack of exact measures and comparable data for different countries. In this study, we analysed 4363 responses to a global online survey on the WPL during heat waves in 2016. The participants were from both developed and developing countries, facilitating estimates of the heat-related WPL across the world for the year. The heat-related WPL for each country involved was then deduced for increases of 1.5, 2, 3 and 4 °C in the global mean surface temperature under the representative concentration pathway scenarios in climate models. The average heat-related WPL in 2016 was 6.6 days for developing countries and 3.5 days for developed countries. The estimated heat-related WPL was negatively correlated with the gross domestic product per capita. When global surface temperatures increased by 1.5, 2, 3 and 4 °C, the corresponding WPL was 9 (19), 12 (31), 22 (61) and 33 (94) days for developed (developing) countries, quantifying how developing countries are more vulnerable to climate change from a particular point of view. Moreover, the heat-related WPL was unevenly distributed among developing countries. In a 2°C-warmer world, the heat-related WPL would be more than two months in Southeast Asia, the most influenced region. The results are considerable for developing strategy of adaptation especially for developing countries.