



## IEAGHG Information Paper: 2016-IP8; Turn Down the Heat: Confronting the New Climate Normal

The World Bank has published a series of reports entitled “Turn Down the Heat “. The recently published and latest report in the series; ***Turn Down the Heat: Confronting the New Climate Normal*** was again commissioned by the World Bank Group from the Potsdam Institute for Climate Impact Research and Climate Analytics. See:

The report can be found on the World Bank Web site at:

<https://openknowledge.worldbank.org/handle/10986/20595>

The previous two reports in the series were:

- Turn Down the Heat: Why a 4°C world must be avoided, November 2012<sup>1</sup>
- Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience, June 2013<sup>2</sup>

The first report warned that the world is on track to warm by 4°C above pre-industrial times by the end of the century if the global community failed to act on climate change. All regions of the world would suffer but the report finds that the poor will suffer the most. The authors find that a world 4°C warmer could be devastating, with coastal cities inundated; food security at risk, leading to higher rates of malnutrition; unprecedented heat waves in many regions, especially in the tropics; substantially exacerbated water scarcity in many regions; more intense tropical cyclones; and irreversible loss of biodiversity, including coral reef systems.

The second report examined in more detail the likely impacts on three regions (Sub-Saharan Africa, South Asia, and South East Asia). The report shows how rising global temperatures on this trajectory will threaten the health and livelihoods of their most vulnerable populations. It describes the risks to agriculture and food security in Sub-Saharan Africa; rise in sea-level and devastation of coastal areas in South East Asia; and fluctuating rain patterns and food production impacts in South Asia.

This latest report focuses on the risks of climate change to development in Latin America and the Caribbean, the Middle East and North Africa, and parts of Europe and Central Asia. Building on the earlier reports in the series, this new scientific analysis examines the likely impacts of present day (0.8°C), 2°C and 4°C warming above pre-industrial temperatures on agricultural production, water resources, ecosystem services, and coastal vulnerability for affected populations. Data show that dramatic climate changes, heat, and weather extremes are already impacting people, damaging crops and coastlines, and putting food, water, and energy security at risk. Across the three regions studied in this report, record-breaking temperatures are occurring more frequently<sup>3</sup>, rainfall has increased in intensity in some places, while drought-prone regions are getting dryer.

One of the reports key messages is that the poor and underprivileged, as well as the elderly and children, are found to be hit the hardest. There is growing evidence that even with very ambitious mitigation action, warming close to 1.5°C above pre-industrial levels by mid-century is already locked

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<sup>1</sup> [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/07/17/090224b0828c33e7/1\\_0/Rend ered/PDF/Turn0down0the00orld0must0be0avoided.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/07/17/090224b0828c33e7/1_0/Rend ered/PDF/Turn0down0the00orld0must0be0avoided.pdf)

<sup>2</sup> <http://documents.worldbank.org/curated/en/2013/06/17862361/turn-down-heat-climate-extremes-regional-impacts-case-resilience-full-report>

<sup>3</sup> This finding is consistent with the data published by NOAA on temperatures across the globe being the highest ever in 2015, see Information Paper 2016/7 Update on CO<sub>2</sub> emissions and Global Temperatures [http://www.ieaghg.org/docs/General\\_Docs/Publications/Information\\_Papers/2016-IP7.pdf](http://www.ieaghg.org/docs/General_Docs/Publications/Information_Papers/2016-IP7.pdf)



into the Earth's atmospheric system, and climate change impacts such as extreme heat events may now be unavoidable.

The report concludes that if the planet continues warming to 4°C, climatic conditions, heat, and other weather extremes considered highly unusual or unprecedented today would become the new climate normal—a world of increased risks and instability. The consequences for development would be severe as crop yields decline, water resources change, diseases move into new ranges, and sea levels rise.

Another significant finding is that the task of promoting human development, ending poverty, increasing global prosperity, and reducing global inequality will be very challenging in a 2°C world, but in a 4°C world there is serious doubt whether this can be achieved at all.

The authors conclude that immediate steps are needed to help countries adapt to the climate impacts being felt today and the unavoidable consequences of a rapidly warming world. The benefits of strong, early action on climate change -- action that follows clean, low carbon pathways and avoids locking in unsustainable growth strategies -- far outweigh the costs. Many of the worst projected climate impacts could still be avoided by holding warming to below 2°C.

The report coming as it does after COP21 is an important reminder of the need for early action on climate change and justifies the need to go below 2°C. It is disappointing, but not unsurprising, to find that we are already locked in to warming close to 1.5°C above pre-industrial levels by mid-century and climate change impacts such as extreme heat events such as those reported recently by NOAA may now be the norm and if we continue to emit greenhouse gases at our current rates even more extreme events can be expected.

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