



RESOURCE

# The Costs to Developing Countries of Adapting to Climate Change: New methods and estimates

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## Description / Abstract

Even with global emissions of greenhouse gases drastically reduced in the coming years, the global annual average temperature is expected to be 2° C above pre-industrial levels by 2050. A 2° C warmer world will experience more intense rainfall and more frequent and more intense droughts, floods, heat waves, and other extreme weather events. Households, communities, and planners need to put in place initiatives that “reduce the vulnerability of natural and human systems against actual and expected climate change effects” (IPCC 2007). Without such adaptation, development progress will be threatened—perhaps even reversed.

While countries need to adapt to manage the unavoidable, they need to take decisive mitigation measures to avoid the unmanageable. Unless the world begins immediately to reduce greenhouse gas emissions significantly, global annual average temperature will increase by about 2.5° –7° C above pre-industrial levels by the end of the century. Temperature increases higher than 2° C—say on the order of 4° C—are predicted to significantly increase the likelihood of irreversible and potentially catastrophic impacts such as the extinction of half of species worldwide, inundation of 30 percent of coastal wetlands, and substantial increases in malnutrition and diarrheal and cardio-respiratory diseases. Even with substantial public interventions, societies and ecosystems will not be able to adapt to these impacts.

Under the December 2007 Bali Action Plan adopted at the United Nations Climate Change Conference, developed countries agreed to allocate “adequate, predictable, and sustainable financial resources and [to provide] new and additional resources, including official and concessional funding for developing country parties” (UNFCCC 2008) to help them adapt to climate change.

Yet, existing studies on adaptation costs provide only a wide range of estimates, from \$4 billion to \$109 billion a year, and have many gaps. Similarly, National Adaptation Programs of Action (prepared by Least Developed Countries under the United Nations Framework Convention on Climate Change, UNFCCC) identify and cost only urgent and immediate adaptation needs, and countries do not typically incorporate adaptation measures into long-term development plans.

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