HEATING UP

Poor countries bear the brunt of climate change, but they are in the worst position to do so

THE TEMPERATURE of the Earth's surface is rising, and no country will be spared the consequences. Many countries will experience the direct impact of climate change, such as more frequent (and damaging) natural disasters, rising sea levels, and biodiversity loss. But low-income countries will suffer the most from this global threat, despite having contributed very little to the problem. And within these countries, the poor will likely be the most severely affected.

Domestic policies can help offset the impact of weather shocks. Strategies aimed at helping countries adapt—such as climate-resilient infrastructure projects, adoption of appropriate technologies, and mechanisms to transfer and share risks through financial markets—could help reduce the economic damage caused by weather shocks or climate change.

But implementing such policies is difficult in low-income countries, which have large spending needs already and limited scope to find the resources necessary to fight climate change. And domestic policies alone cannot fully insulate low-income economies from its adverse effects; climate change is a global problem, and only collective action can effectively address it.

Mitigating climate change would entail radically transforming the global energy system, including through the use of fiscal instruments to better reflect environmental costs in energy prices and promote cleaner technologies. ***Adapting*** to the consequences of climate change calls for major investments to boost infrastructure, reinforce coastal zones, and strengthen water supplies and flood protection.

The international community will have a key role to play in fostering and coordinating support—financial and otherwise—for affected low-income countries. The richer economies have contributed the lion's share to actual and projected climate change. Helping poorer countries cope is thus both a humanitarian imperative and sound global economic policy. FD

Prepared by ***MARIA JOVANOVIĆ****. Text and charts are based on Chapter 3 of the IMF's October 2017* World Economic Outlook.

What are the economic consequences?

1

Global temperatures have increased by roughly 1°C compared with the 1880–1910 average. The rise started in earnest in the 1970s, following a large increase in carbon dioxide (CO_2) emissions.

2

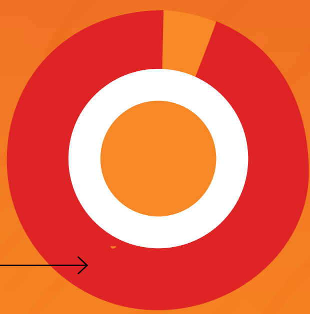
The scientific consensus predicts that without further action to tackle climate change, **average temperatures could rise by 4°C or more** by the end of the century.

3

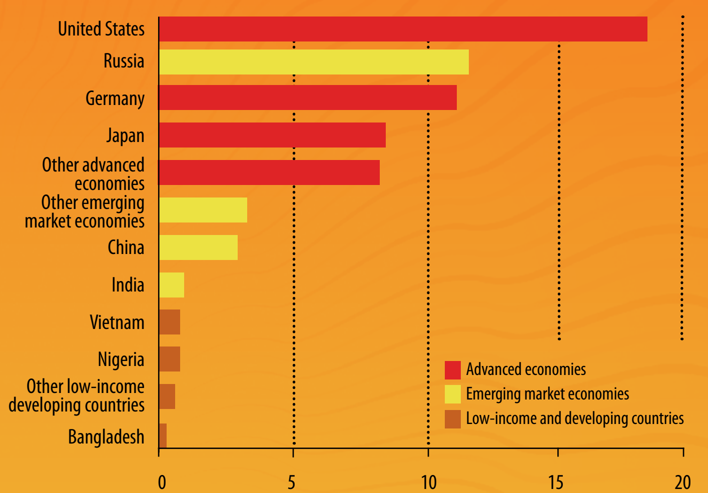
Higher temperatures significantly reduce economic growth in warmer countries: **per capita output peaks at about 13°C** and declines markedly at higher temperatures.

Who is contributing?

Natural factors explain some of the warming over the past century, but according to the Intergovernmental Panel on Climate Change, **most of the temperature increase since 1950 can be attributed to human activity**.



Average CO_2 emissions per capita, 1970–2014 (metric tons)



How can poor countries manage?

Dealing with the effects of climate change requires countries to pursue both ***mitigation*** (measures to address the root causes) and ***adaptation*** (measures to lower the risks posed by its consequences).

Mitigation

- Reflect environmental costs in energy prices—for example, by:
  - imposing carbon taxes
  - eliminating energy subsidies
- Promote cleaner technologies

Adaptation

- Strengthen water supply
- Boost flood protection
- Reinforce coastal zones
- Enhance infrastructure

ART: ISTOCK/IKRYANNIKOVGMAILCOM, ILYALIREN, JABKITTICHA, CDH_DESIGN, SHOWVECTORSTUDIO

4

A typical low-income country's per capita GDP would be **9% lower in 2100** without any mitigation efforts.

5

Rising temperatures result in lower per capita output in warmer countries, and most low-income countries are in some of the hottest geographic areas on the planet. The adverse effects operate through several channels: **lower agricultural output, weaker labor productivity** in sectors more exposed to the weather, **lower investment,** and **poorer human health**. Populations may respond to changing climatic conditions by **migrating**.