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Rising pollution in the developing world

Vehicles and buildings are seen through a haze in Beijing's central business district, China
© REUTERS/Jason Lee



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The industrialization of the developing world is creating unsustainable pollution levels. The solution requires a technological and an intellectual revolution; an alternative route to economic prosperity that preserves resources and limits carbon emissions has to be developed before it's too late.

The developing world has learned a lot about commercial models, infrastructure and technology from Europe and North America. Those patterns worked well economically, but the world's carbon capacity cannot allow us to continue on this path.

Rising pollution in the developing world is ranked as the sixth most significant global trend this year – and in Asia it's the third. China became the largest greenhouse gas emitter in 2005 and

remains in this position, followed by the United States and the European Union, according to the World Resources Institute. Brazil and India are the fifth and the eighth biggest polluters.

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Developing countries will suffer the most from the weather-related disasters and increased water stress caused by global warming, consequences outlined in our other trend chapters. Even 2°C warming above pre-industrial

temperatures – the minimum the world will experience – would result in 4-5% of African and South Asian GDP being lost and developing countries are expected to bear 75-80% of impact costs.

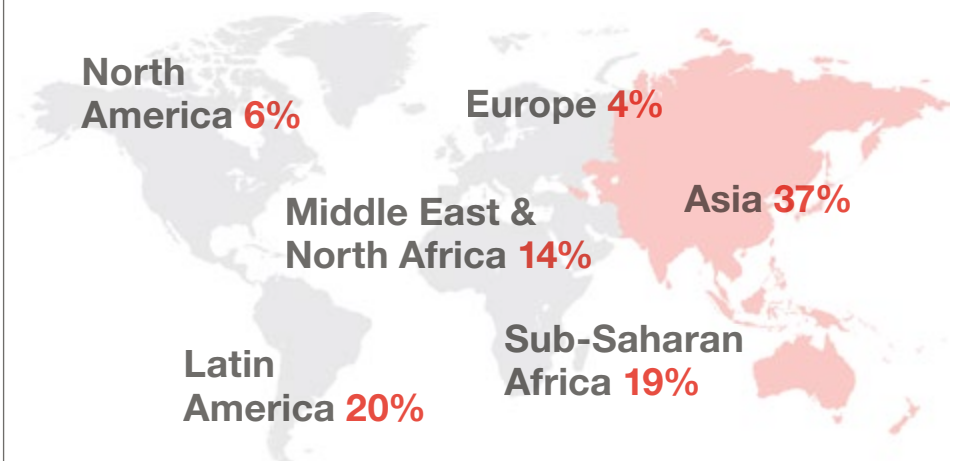
China's burgeoning manufacturing sector produced one of the biggest historical increases in power generation capacity – but this has come at a huge cost. According to analysis by the Global Burden of Disease Study, air pollution in China contributed to 1.2 million premature deaths in 2010, representing a loss of 25 million years of healthy life. We need to find a means to continue the country's expansion while reducing fossil fuel use. This means investing in a power generation network that can replace coal, including renewables, nuclear and gas, and phasing out low-efficiency generators. Progress needs to be measured by something other than GDP, which does not include environmental conditions or quality of life.

As important as China's role will be, the developing world must stick to targets set for renewable power generation, ensure high-polluting industries are properly regulated, and promote clean energy. As the biggest emitter of greenhouse gases, China's policies are critical in addressing global warming, and are also influential for other developing nations. The latter have the most work to do to reduce greenhouse gas emissions and will bear the impacts of global warming, yet the responsibility for the crisis can't rest with them alone; World Bank research estimates high-income countries are responsible for two-thirds of the CO₂ released into the atmosphere since 1850.

There are two main ways developed countries need to help with this process. There needs to be a flow of funding to the developing world, providing the means to finance change, and we must cooperate to develop new low-carbon technologies. It's crucial that countries such as China build up their research and development capacity for solar power, wind turbines and carbon capture, and international cooperation can help developed countries become involved higher up the supply chain.

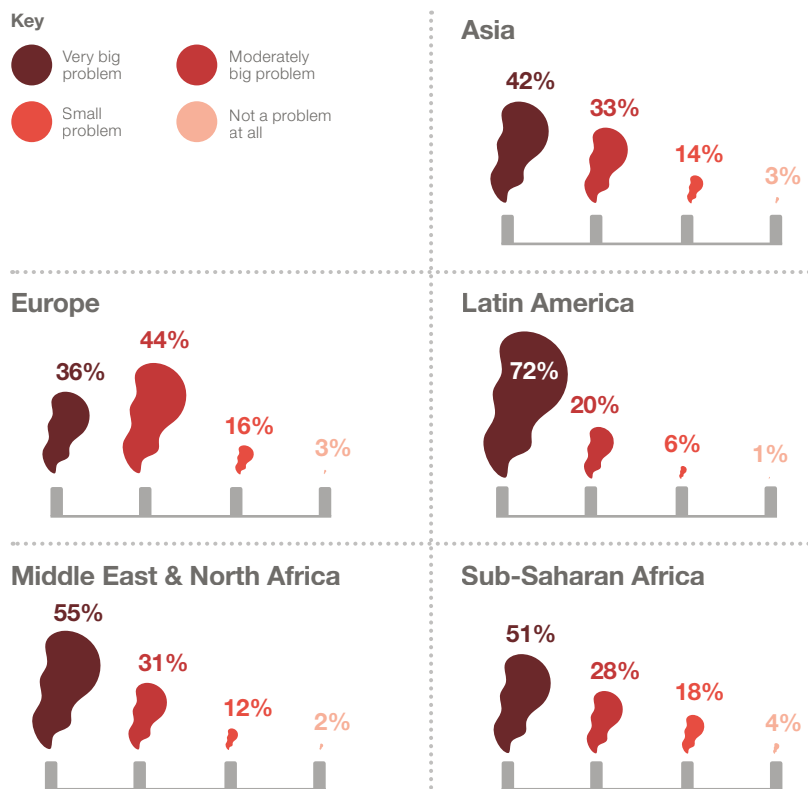
Rising pollution in the developing world: Inside the data

Which region will be most affected by **rising pollution** in the **developing world** in the next 12-18 months?



Source: Survey on the Global Agenda 2014

How great a problem does **rising pollution in the developing world** pose for regions around the world?



Source: Pew Research Center Global Attitudes Project, 2014

How will urban air pollution change over time around the world?

Projected PM10 (particles in air) concentration in major cities, $\mu\text{g}/\text{m}^3$, 2010-2050

● 2010
● 2050

World Health Organization recommended maximum concentration: 20 $\mu\text{g}/\text{m}^3$



Africa

9 1

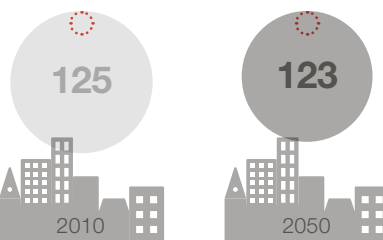


Brazil

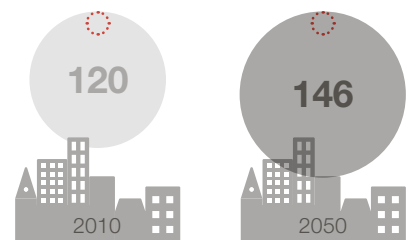
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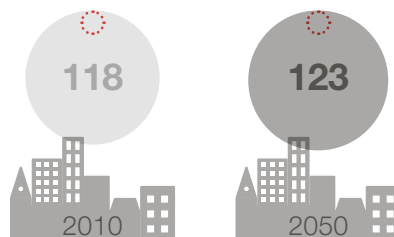
China



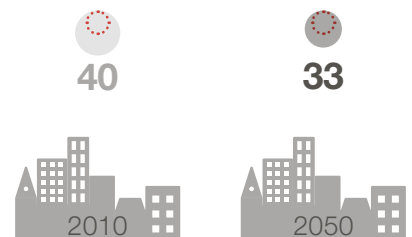
India



Indonesia



OECD

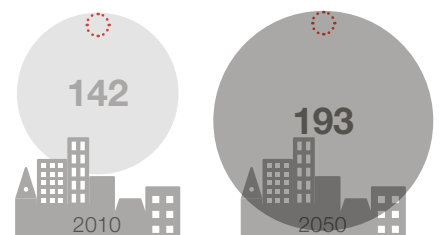


Russia

43 36



South Asia*



* South Asia excludes India. Source: OECD Environmental Outlook Baseline, 2012

The 2010 Cancun accord, which set long-term funding arrangements, is the second part of the puzzle. The Green Climate Fund, formalized at the conference, provides a mechanism for helping developing nations adapt and reduce their carbon emissions. Even so, we still need to ensure that the money flows to these projects, and developed countries need to make clear how to achieve this financial assistance target.

It's important to understand that once high-carbon solutions have been implemented, they are difficult to replace. This means the decisions being made today on power generation, and the way our cities and transport networks are designed, are absolutely crucial. There's a potential to have a big impact now, but the window of opportunity will close very soon ■