

Climate smart world within reach, says World Bank

Climate-related development challenges

If developed countries act now, a 'climate-smart' world is feasible, and the costs for getting there will be high but still manageable, says a new World Bank report released recently. High-income countries also need to act quickly to reduce their carbon footprints and boost development of alternative energy sources to help tackle the problem of climate change.

World Development Report 2010

Development and Climate Change, released in advance of the December meetings on climate change in Copenhagen, says that advanced countries, which produced most of the greenhouse gas emissions of the past, must act to shape our climate future. Developing countries can shift to lower-carbon paths while promoting development and reducing poverty, but this depends on financial and technical assistance from high-income countries. A key way to do this is by ramping up funding for mitigation in developing countries, where most future growth in emissions will occur.

The countries of the world must act now, act together and act differently on climate change, said World Bank President Robert B. Zoellick. "Developing countries are disproportionately affected by climate change a crisis that is not of their making and for which they are the least prepared. For that reason, an equitable deal in Copenhagen is vitally important."

"Countries need to act now because today's decisions determine both the climate of tomorrow and the choices that shape the future. Countries need to act together because no one nation can take on the interconnected challenges posed by climate change and global cooperation is needed to improve energy efficiencies and develop new technologies. Countries need to act differently, because we cannot plan for the future based on the climate of the past."

"Developing countries will bear most of the costs of the damage from climate change. Many people in developing countries live in physically exposed locations and economically precarious conditions, and their financial and institutional capacity to adapt is limited," says the report. Already, policymakers in some developing countries note that an increasing amount of their development budget is being diverted to cope with weather-related emergencies.

Geography coupled with high levels of poverty and population density make countries in the South Asia



Minimise environmental pollution. Courtesy: Google

region particularly vulnerable to climate change. The report says that global warming of 2 degrees Celsius above pre-industrial temperatures the minimum the world is likely to experience could result in permanent reductions in GDP of 4 to 5 percent for South Asia.

The region's water resources are likely to be affected by climate change, through its effect on the monsoon, which provides 70 percent of annual precipitation in a four-month period, and on the melting of Himalayan glaciers, particularly in the western end of the range.

Rising sea levels are also of important concern in South Asia, which has long and densely populated coastlines, agricultural plains threatened by saltwater intrusion and many low-lying islands. In more severe climate-change scenarios, rising seas would submerge much of the Maldives and inundate 18 percent of Bangladesh's land.

Agricultural productivity is one of many factors driving the greater vulnerability of developing countries. Extrapolating from past year-to-year variations in climate and agricultural outcomes, yields of major crops in India are projected to decline by 4.5 to 9 percent within the next three decades, even allowing for short-term adaptations. The report says the implications of such climate change for poverty and GDP could be enormous given projected population growth and high dependence of livelihoods on rain-fed agriculture in the South Asia region.

At the same time, the report notes that 1.6 billion people in the developing

world lack access to electricity. In India alone, more than 400 million people do not have electricity. Those developing countries whose average per capita emissions are a fraction of those of high-income countries need massive expansions in energy, transport, urban systems and agricultural production. Increasing access to energy and other services using high-carbon technologies will produce more greenhouse gases, hence more climate change.

India faces tremendous challenges in substantially altering its emissions path given its relatively efficient economy and limited endowment of clean energy resources and for carbon storage sites, the report says. India relies heavily on coal, which accounts for 53 percent of its commercial energy demand. Large potential exists, however, for improving energy efficiency and reducing transmission and distribution losses.

Energy consumption

The report finds, however, that existing low-carbon technologies and best practices could reduce energy consumption significantly, saving money. For example, the report notes that it is possible to cut energy consumption in industry and the power sector by 20-30 percent, helping reduce carbon footprints without sacrificing growth.

In addition, many changes required to reduce emissions of greenhouse gases also deliver significant benefits in environmental sustainability, public health, energy security and financial savings. Avoided deforestation, for instance, preserves watersheds and

protects biodiversity, while forests can effectively serve as a carbon sink.

With costs of renewable energy declining over the past two decades, wind, geothermal, and hydro power are already or nearly cost-competitive with fossil fuels, the report says. Thanks to innovation and technology diffusion, wind is now powering the first stages of what could become an energy revolution. And although most installed wind capacity is in Europe and the United States, the pattern is shifting. In 2008, India and China each installed more wind capacity than any other country except the United States and together they host nearly 20 percent of the world's capacity.

Solving the climate problem requires a transformation of the world's energy systems in the coming decades. Research and Development investments on the order of US\$100 - \$700 billion annually will be needed-major increase from the modest \$13 billion a year of public funds and \$40 billion to \$60 billion a year of private funds currently invested.

Developing countries, particularly the poorest and most exposed, will need assistance in adapting to the changing climate. Bangladesh, for example, is among the world's most exposed countries to rising sea levels. Bangladesh is already doing much to reduce the vulnerability of its population. It has invested in a highly effective community-based early warning system for cyclones and a flood forecasting and a response program drawing on local and international expertise. But the scope of possible adaptation is limited by resources-its annual per capita income is \$450.

Climate finance must be greatly expanded, since current funding levels fall far short of foreseeable needs. Climate Investment Funds (CIFs), managed by the World Bank and implemented jointly with regional developing banks, offer one opportunity for leveraging support from advanced countries, since these funds can buy-down the costs of low-carbon technologies in developing countries.

"Developing countries face 75-80 percent of the potential damage from climate change. They urgently need help to prepare for drought, floods, and rising sea levels."

They also need to intensify agricultural productivity, contain malnutrition and disease, and build climate-resilient infrastructure," said Justin Lin, World Bank Chief Economist and Senior Vice-President, Development Economics.

The current financial crisis cannot be an excuse to

put climate on the back burner, the report warns. While financial crises may cause serious hardship and reduce growth over the short- to medium-term, they rarely last more than a few years. The threat of a warming climate is far more severe and long lasting.

The earth's warming climate is making the challenge of development more complicated, even as one in four people still live on less than \$1.25 a day, and over a billion people do not have sufficient food to meet their daily basic nutritional needs.

New energy technologies

"Grappling with climate shocks that are already hampering development will not be easy. But promising new energy technologies can vastly reduce future greenhouse gas emissions and prevent catastrophic climate change. We also need to manage our farms, forests, and water resources to ensure a sustainable future," said Rosina Bierbaum, WDR co-director and Dean of the University of Michigan's School of Natural Resources and Environment.

"The good news is that a climate-smart world is within reach if we work together now to overcome inertia, keep costs down, and modify our energy, food, and risk management systems to ensure a safer future for everybody," said Marianne Fay, WDR co-director and Chief Economist for Sustainable Development at the World Bank.

"There are real opportunities to shape our climate future for an inclusive and sustainable globalization, but we need a new momentum for concerted action on climate issues before it is too late," said Robert B. Zoellick, World Bank Group President.

The World Bank Group's "Strategic Framework for Development and Climate Change" puts emphasis on including mitigation and adaptation initiatives in its lending, while recognizing that developing countries need to encourage economic growth and reduce poverty.

The number of World Bank-financed studies that help client countries plan and implement low-carbon growth strategies are also growing, and the Bank Group's energy financing is increasingly turning towards renewable energies and energy efficiency.

Over the past three years, approximately two-thirds of the Bank Group's total energy financing was in the area of non-fossil fuels whereas around one-third was for fossil fuels, of which half was for natural gas. Courtesy: World Bank - South Asia