Urgent need to reduce vulnerability in least developed countries

Vulnerability to climate change is likely to rise faster in the least developed countries over the next two decades than it will do in the three decades after 2030, according to a new study. Researchers suggest that this signifies an imminent need for greater international financial assistance.

The estimated cost of adaptation to climate change in developing countries ranges from US$9 to $100 billion annually. Current international support for adaptation is well below these figures, but its urgency is recognised and developed countries committed in Copenhagen will provide new and additional resources of nearly $30 billion “fast start finance” for the period 2010-2012. They are further committed to jointly mobilising $100 billion a year by 2020 to help developing countries implement transparent mitigation actions. Funding will come from a variety of sources including, public and private, bilateral and multilateral.

The EU currently accounts for 55 per cent of the world’s total development aid and is committed to integrating environmental concerns into EU development policy. Insight into future trends in the vulnerability of countries could help this integration.

A country’s vulnerability depends not only on the impact of climate change, but on its ability to cope with the impacts, which in turn depends on social, economic and institutional factors. This new study was the first to consider these factors while examining human losses to extreme weather events, such as droughts, floods or storms, as an indicator of vulnerability.

It analysed the relationship of human losses primarily to the Human Development Index (HDI). The HDI is an indicator developed by the UN that comprises per capita income, average education and literacy rates, and average life expectancy. The results indicated that for countries with HDI values of less than 0.5, the transition to greater development in the absence of targeted intervention could potentially exacerbate vulnerability.

The study applied this to develop 50 year scenarios for human losses for the specific example of Mozambique. It considered two scenarios from the Intergovernmental Panel on Climate Change Special Report on Emission Scenarios: A2, which describes high population and economic growth, and B1, which describes greater globalisation tied to improvements in sustainability. These scenarios were combined with projections for extreme weather events in Mozambique. Both the numbers of people killed and affected by weather events rose fastest under both scenarios until 2030, after which the numbers declined and, in the B1 scenario, began to fall. In the business-as-usual scenario, the numbers of human losses continued to accelerate.

The study extended the analysis to 23 other least developed countries. The results indicated the same pattern of human loss under both scenarios, rising fastest until 2030 and then rising more slowly, or even falling.

The researchers point out some limitations to the study. For example, the analysis ignored some complexities, such as the possible delay between a country’s development and a reduction in its vulnerability. The scenarios also assumed a linear increase in disaster frequencies over the next 50 years when feedback loops in the climate system could lead to rapid increases as tipping points are reached. Nevertheless, the results provide an estimate of the relative contributions of climate change and socio-economic development to vulnerability in the least developed countries over the next 50 years. These findings indicate that reducing vulnerability requires international assistance to an extent, but the increase in assistance ought not to be slow.


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