

OP-ED CONTRIBUTORS

Before the Flood

By Sujatha Byravan and Sudhir Chella Rajan

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CAMBRIDGE, Mass. - ONE of the paradoxes of global warming is that developing countries, which were not responsible for most of the greenhouse gas emissions that are changing the climate and did not reap the benefits of industrialization, will bear the brunt of the consequences. One of these consequences will be rising seas, which in turn will generate a surge of "climate exiles" who have been flooded out of their homes in poor countries. How should those of us in rich countries deal with this wave of immigrants? The fairest solution: allowing the phased immigration of people living in vulnerable regions according to a formula that is tied to the host country's cumulative contributions to global warming.

Conservative climate and hydrological models suggest that the average sea level will rise by about a foot by 2050, regardless of what new actions we take to reduce greenhouse gases. In some cases, entire nations will disappear; a harbinger of this is Tuvalu in the Pacific, whose government has asked Australia and New Zealand to accept its citizens as the sea swallows their island.

What we can do to prevent this is limited: the world's oceans have an enormous amount of what is called thermal inertia -- a phenomenon that means that the effects of climactic changes are manifested very slowly. The cumulative impact of the past 150 years or so of greenhouse gases emitted during industrial development is only now starting to warm the planet, and that warming will continue long after we have created sensible policies to reduce greenhouse gases. So no matter what we do, a wave of climate change exiles is inevitable.

One option for dealing with this is to tighten our borders and inure ourselves to the exiles' cries for help. A more sensible, and just, approach is for the top greenhouse gas emitters -- including China and India -- to grant entry to the up to 200 million people who could lose their homes to rising seas by 2080.

How many should go where? Under our formula, the top cumulative emitter, the United States, would absorb 21 percent of the climate-change exiles a year; the smallest of the 20 major emitters, Venezuela, would absorb less than 1 percent. If such a program were to start in 2010, the United States, for example, would have to be prepared to accept 150,000 to a half-million immigrants a year for the next 70 years or so (to put that in context, the United States now has one million legal immigrants annually). Accepting these immigrants could actually benefit the host countries; many of them face a demographic crisis with a shrinking labor force and growing numbers of retirees.

The rising tide from climate change will not create the same conditions everywhere. While people in rich countries would generally be able to protect themselves and their property with seawalls, insurance and good warning systems, the effect of warming will be calamitous for poor countries. A solution like the one we've suggested may be a relatively painless, yet humanitarian way to deal with one of the devastating effects of a warming planet.

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