Waiting at an emergency shelter: in 2005, Hurricane Katrina devastated much of New Orleans, forcing hundreds of thousands to flee.
Climate change will force more and more people to leave their homes as well as their traditional social and ecological environment. If we fail to counter this trend, millions of refugees from the regions under threat will set a huge wave of migration in motion.

Cries for help around the world are becoming commonplace as water levels rise. This also applies to Shishmaref in Alaska, where the protective layer of permafrost is thawing, leaving the shoreline more vulnerable to erosion, and to Bangladesh, which is regularly visited by floods. Images showing the exodus of hundreds of thousands from the area around New Orleans devastated by Hurricane Katrina in 2005 paint a drastic picture of the possible consequences of climate change.

People have always had to adapt to changes in their environmental conditions, temporary or permanent relocation being part and parcel of successful survival strategies. The main problem today, however, is that many social systems simply cannot cope with the speed and extent of change. Factors exacerbating the problem include population growth, increasing population density, social upheavals and rapid deterioration of the environment.
Global warming harbours the risk of a growing number of extreme weather conditions and catastrophes with enormous destructive force. In the last 50 years alone, weather-related losses have risen tremendously, the trend having become even more marked since the mid-1980s. For example, mean annual economic losses caused by major weather catastrophes rose from US$ 12bn to US$ 40bn in the 1990s. We have to assume that cyclones and storm surges will pose an even greater threat in future, the consequences of which will be felt not only on the coast but also far inland.

Many people will be displaced as drought and flood lead to widespread loss of agricultural land. People in coastal areas lying between only one and ten metres above sea level will face persistent flooding. And although these areas account for only 2% of the world's total land mass, they are home to 10% of the world's population and to as many as 13% of city dwellers. Two-thirds of all cities with more than five million inhabitants can expect higher water levels. If the forecasts come true, mass migration will take place in the next 30–50 years, especially in Asia, where 75% of the people living in low-lying regions are at risk.

Those who lose their homes are also cut off from their traditional social and ecological systems. Supplies of food, water and fuel are no longer guaranteed. Migration also weakens traditional family ties, and cultural aspects together with spiritual or aesthetic symbols that define and sustain a community are irretrievably lost. The breakdown of social structures following Hurricane Katrina is indicative of the extent of this threat. Of around 1.5 million people who fled the region at that time, only one third had returned two years later. For many, life in the diaspora has become a permanent state. Experts therefore refer to the first documented “climate change refugees”, victims of global warming.

This shows just how powerful the relationship is between catastrophes, social forces and migration movements. Politicians and scientists have reacted by focusing more attention on cities such as Mumbai, Caracas, Cape Town, Dar es Salaam, Manila and Darwin. These conurbations, which have a total of approximately 50 million inhabitants, are exposed to risks similar to those of New Orleans. The material losses and human tragedies caused by Hurricane Katrina should provide the incentive needed to develop concepts, strategies and instruments that actually work. This alone will enable us to meet the growing challenges that the migration and relocation of whole population groups are likely to pose in the 21st century.

Prof. Anthony Oliver-Smith is Professor of Anthropology at the University of Florida. His work focuses on issues of post-disaster social organisation. He has been appointed to the Chair on Social Vulnerability at the United Nations University (UNU-EHS), financed by the Munich Re Foundation, for the academic year 2007/2008.
Refuge from the monsoon: in Bangladesh, hundreds of people crowd onto a narrow strip of land that has escaped the floods.