

Preparing for climate change-induced weather disasters

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The news sounds grim: mounting scientific evidence indicates climate change will lead to more frequent and intense extreme weather that affects larger areas and lasts longer.

However, we can reduce the risk of weather-related [disasters](#) with a variety of measures, according to Stanford Woods Institute Senior Fellow Chris Field.

While [climate change](#)'s role in tornadoes and hurricanes remains unknown, Field says, the pattern is increasingly clear when it comes to heat waves, [heavy rains](#) and droughts. Field explains that the risk of climate-related disaster is tied to the overlap of weather, exposure and vulnerability of exposed people, ecosystems and investments.

While this means that moderate extremes can lead to major disasters, especially in communities subjected to other stresses or in cases when extremes are repeated, it also means that prepared, resilient communities can manage even severe extremes.

During the past 30 years, economic losses from weather-related disasters have increased. The available evidence points to increasing exposure (an increase in the amount and/or value of the assets in harm's way) as the dominant cause of this trend. Economic losses, however, present a very incomplete picture of the true impacts of disasters, which include human and environmental components. While the majority of the economic losses from weather-related disasters are in developed world, the

overwhelming majority of deaths are in developing countries.

Withstanding these increasingly frequent events will depend on a variety of disaster preparations, early warning systems and well-built infrastructure, Field says. The most effective options tend to produce both immediate benefits in sustainable development and long-term benefits in reduced vulnerability. Solutions that emphasize a portfolio of approaches, multi-hazard risk reduction and learning by doing offer many advantages for resilience and sustainability. Some options may require transformation, including questioning assumptions and paradigms, and stimulating innovation.

Field will discuss how to prepare for and adapt to a new climate at the annual American Association for the Advancement of Science (AAAS) meeting in Boston.

Provided by Stanford University

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