

Angry Weather – Towards a global inventory of climate change impacts

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In the scientific reports, political debates, and to a large degree also in the media, the measure of global climate change around the world is global mean temperature rise used as the metric to determine how humans are changing the climate by burning fossil fuels. It is, however, not the abstract measure of global mean temperature that cause loss and damage from climate change, instead the impacts of climate change primarily manifest through rising sea levels and the changing risks of extreme weather events.

For a long time it has not been possible to make the - arguably for the day to day life of most people crucial link – from anthropogenic climate change and global warming to individual weather and climate-related events with confidence but this has changed in recent years. Quantifying and establishing the link between individual weather events, that often lead to large damages, has been the focus of the emerging science of extreme event attribution. Attribution studies enhance climate science in two ways. Firstly, that even if a comprehensive inventory of the impacts of climate change today does not exist, nor is it discussed, attribution allows us to understand what climate change means. Today, to every one of us. Attribution brings climate change from an abstract threat in the future, to a concrete reality today.

Secondly, disentangling predictable drivers of an extreme event like climate change, from natural variability and changes in vulnerability and exposure will allow a better understanding of where risks are coming from and in turn how they can be addressed. Extreme events open a window to address the problem of exposure and vulnerability. Scientific evidence of the importance of different drivers is essential to avoid playing blame games and allows instead for a well-informed debate about addressing risk.

By systematically recording key details of high-impact events on a national scale, combined with recent advances in event attribution and thus modifying the standard risk framework it would be possible to create inventories of climate change impacts. Not only would this aid disaster preparedness and adaptation at local and national scales, such inventories also provide a comprehensive source of evidence for global stocktakes on adaptation and loss and damage such as mandated by the Paris Climate Agreement and would finally put adaptation on an equal footing with mitigation.