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## Learning from the past – How sensitive are our societies to changes in climate?

Global warming has already reached 1°C and the signal of climate change becomes clearly detectable on regional scale and e.g. manifests in an increasing frequencies and intensity of weather extreme events. However, the detection and attribution of observed changes in biophysical climate impacts indicators such as crop yields, river or coastal flooding, water scarcity, and wildfires or societal impacts such as displacement, migration, conflict or economic development to climate change is considerably constraint by complex interactions with direct human drivers and missing observational data. Here, we demonstrate how process-based climate impacts simulations can help to overcome at least part of the limitations and help to create an understanding on societies' sensitivities to climate change accounting for changes in exposure and vulnerability. To support a "monitoring" of historical impacts of climate change a new "attribution" scenario-set up is has been introduced into the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP, [www.isimip.org](http://www.isimip.org)). Based on the example of economic damages induced by extreme weather events we will present a possible framework for climate impact attribution.