Deutsche Bank has developed a tool to forecast where its investments across the globe may be impacted by natural disasters brought on by climate change.

Although tools have existed in the insurance industry to model the impact of climate change, this is the first time this sort of data has been systematically applied to investments.

Headwinds for climate change conference
A UN-led climate conference in Bonn begins this week with US President Donald Trump's withdrawal from the Paris Climate Agreement a potentially awkward sticking point.

Deutsche Asset Management created the map with climate change intelligence firm Four Twenty Seven, covering more than one million individual locations in order to see how changes to climate will threaten its investment portfolios. The group currently has about €711 billion ($1.06 trillion) under management.
Economic modelling estimates that if carbon emissions aren't reduced throughout this century, per capita GDP will decrease by 23 per cent from what it otherwise would be.

"The effects of climate change will be ubiquitous but uneven, ranging from those that disrupt daily life, such as damaged or flooded infrastructure, to more gradual impacts like declines in labour productivity and widespread threats to global welfare through decreased crop yields," Four Twenty Seven stated.

Deutsche Bank said the development of this tool meant that exposure to catastrophic events for individual companies can now be calculated.

"It tackles physical risk head-on, giving credible insight into the vulnerability of corporate production and retail sites to climate change. Factors such as sea level rise, droughts, flooding and cyclones pose an immediate and measurable threat to investment portfolios," Deutsche Bank Asset Management said.

These issues have already been seen in Australia, where heatwaves have caused spikes in power prices, directly impacting business operating costs.
Energy price shocks are the number one concern for Australian businesses, according to a global survey.

The World Economic Forum Global Risks 2018 report, published by Zurich Insurance Group and Marsh and McLennan companies, surveyed more than 12,400 executives from 136 countries, and put energy pricing as the leading concern for businesses operating in Australia within the next 10 years.

Australia was the only country to rank energy costs as its major concern, and the only other nation apart from Canada to include adapting to climate change within its top five risks.

Climate change will wreak economic havoc, greatly reducing nations' GDPs. Illustration: Marshall Burke, Solomon M. Hsiang & Edward Miguel, Nature 527

Deutsche Asset Management calculates the impact of climate change by categorising an investment's location, its activity and business sensitivity to climate hazards. It then applies Four Twenty Seven's climate science models to provide asset-level risk assessments by calculating the potential disruption to operations, supply chain and logistics, and market risks.

It can also provide climate risk modelling at a country level.

"The data can be analysed, for example, to look at how rising sea levels could affect coastal and offshore oil and gas infrastructure, how floods could disrupt supply chains, or whether extreme heat affects labour productivity in the agricultural and construction sectors," Deutsche Bank Asset Management said.

Early research has pinpointed Asia as highly vulnerable, stating that 80 per cent of people occupying the most 'at risk' climate zones globally reside in Asia, with 145 million people in China alone living on land threatened by rising seas.

"The availability of this new data on physical climate risk is a major step forward to addressing a serious and growing risk for investors," said Nicolas Moreau, head of Deutsche Asset Management.

"Climate risk is now centre stage, however, we believe the investment industry needs to champion the disclosure of annual and
once-in-a-lifetime climate risks by companies. We have a duty to understand what more hurricanes or heatwaves mean for valuations and investment returns," he said.

According to Four Twenty Seven, the next step for this modelling will be the development of corporate resilience indicators, which "constitute the next frontier to gain a more comprehensive and nuanced understanding of all facets of company vulnerability to climate change".

The release of the project comes as nations meet to address climate change and carbon emissions at the COP23 climate conference in Bonn, Germany.