INREV

Opening the 'black-box' of EU-level flood risk assessments

PROJECT:
EU-level flood risk assessments

COMPANY:
APG

LOCATION:
The Netherlands

FOCUS:
Climate resilience

The tool is based on an open approach that allows asset owners and managers to improve, compare and combine results. It has been implemented and tested by leading Dutch pension provider and investor APG, as well as real estate investment manager AEW.


Challenge

Climate change poses increasing risks of flooding, prompting an assessment of its potential impact on real estate assets. Failure to account for these risks could lead to a depreciation in the market value of properties.

Following the implementation of the EU Taxonomy, EU regulations will mandate the disclosure of physical climate risks. However, organisations within the real estate sector often lack expertise in addressing climate change risks, leading to the rise of commercial providers offering risk assessment methodologies. Yet, many providers use 'black box' approaches with unpublished methodologies, lacking transparency and hindering trust. A recent analysis by APG on various data vendors providing risk metrics uncovered a concerning lack of correlation among the findings.

Approach

To support consistent and comparable assessments of EU-level physical climate risks, scientists and investors are calling for a level playing field, based on open data and with transparency on the methods used. To achieve this, we should aim for a common language, moving away from relying on 'black box' models. Therefore, an open access, freely available tool was developed as part of the European Commission funded project REACHOUT (https://reachout-cities.eu). This REACT tool empowers data analysts of real estate owners, managers, and investors to carry out a simplified flood risk assessment for real estate assets. By utilising publicly accessible EU-level climate data and maintaining full transparency regarding the underlying methodologies, the objective was to enhance the comparability and reproducibility of resulting risk assessments.
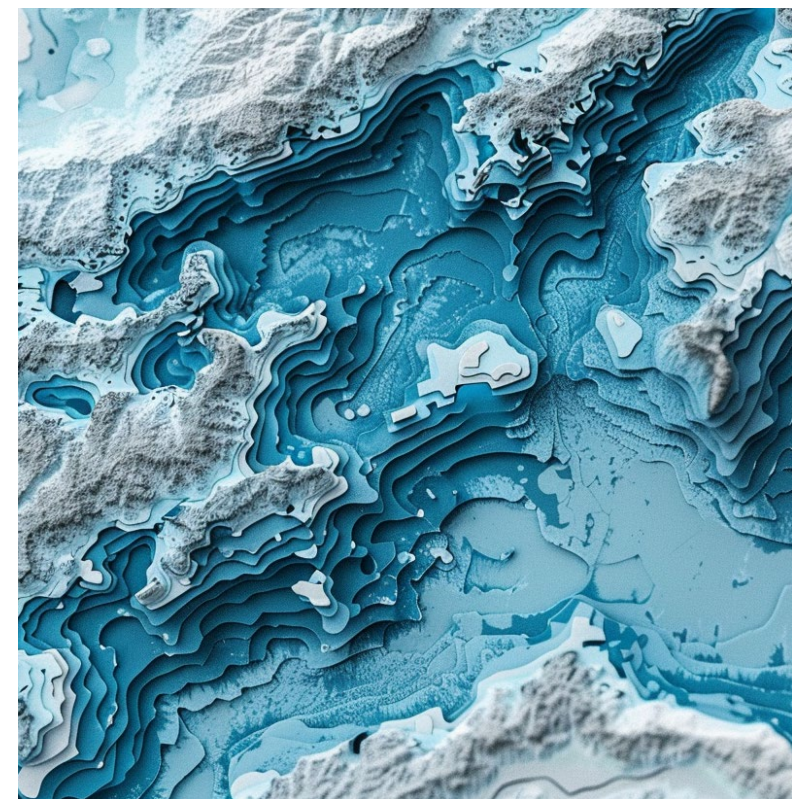
Results

The deployment of the [REACT tool](#) represents a pivotal step towards democratising flood risk analysis within the real estate sector. Impacts observed by APG include:

1. **Fact 1**: The analysis, indicating potential increases in flood risk for assets in certain European countries by up to 78% by 2080 under RCP8.5, has heightened risk awareness.

2. **Fact 2**: Insights from the varied projections have supplemented adaptive management strategies, reinforcing our capability to navigate the complexities of climate-related risks effectively.

3. **Fact 3**: The use of open-source data through the REACT tool complements our efforts towards transparent and standardised risk assessments, supporting the industry's push for clarity.

3. **Fact 4**: The tool's straightforward design has complemented existing methods, fostering a shared understanding of climate risks and moving away from complex 'black box' models.

Outcome

Utilising the REACT tool, APG's assessment on a random sample of European real estate assets revealed interesting insights into flood risk dynamics, influenced by open-source data and regional protection measures. Key findings include:

In-depth regional analysis: As illustrated in figure 1, the study unveiled distinct vulnerabilities across European assets, with varying degrees of risk escalation under different climate scenarios. This variability underscores the complexity of flood risk factors, including geographical location, climate change impacts, and the effectiveness of existing flood defenses.

Variability across countries: There is considerable variability in the average protection standards among countries, with the Netherlands having significantly higher standards compared to others (figure 2). This variation could be explored further to understand the diverse approaches to flood risk management across Europe.

Figure 1: Projected Increase in Flood Risk (2030-2080) under RCP8.5 Scenario
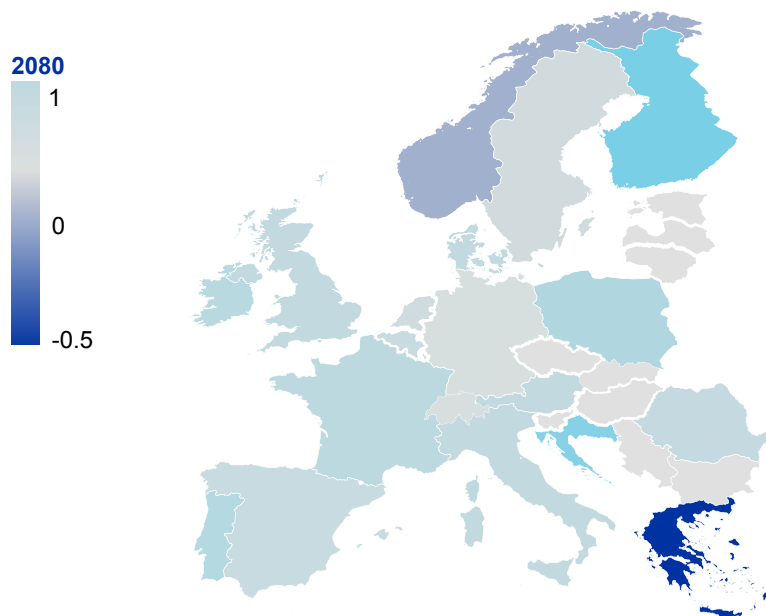
Source: retrieved flood risk data from WRI's Aqueduct Floods Tool, 2023)

Figure 2: Average protection standard
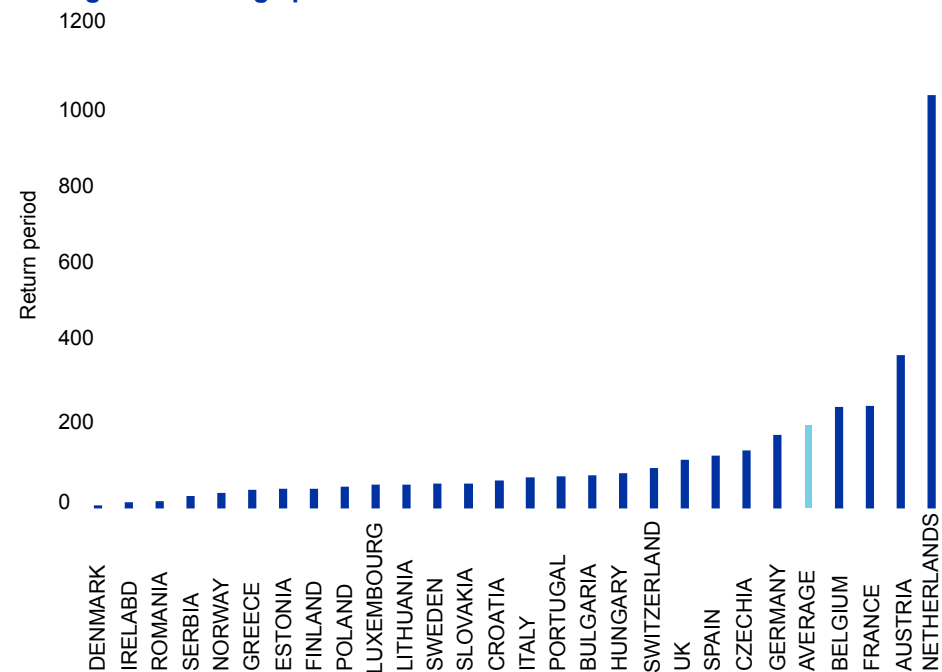
Source: flood protection data retrieved from FLOPROS: an evolving global database of flood protection standards, 2023)

Strategic implications for asset management:
The findings emphasise the need for ongoing risk assessment and the integration of adaptive risk management strategies into the broader asset management framework. This approach is crucial for ensuring that real estate investments remain resilient in the face of evolving climate threats.

Project scope and limitations: It's important to acknowledge that the insights derived from this analysis are specific to the sampled assets and do not encompass a full national risk profile. The selected sample, while illustrative, points to the broader need for targeted risk assessments and tailored mitigation strategies across the real estate portfolio.

The sample set utilised for this analysis is for illustrative purposes and does not represent APG's real estate portfolio.

Follow this link to download the tool and a step-for-step guide in the technical report.

APG
APG is a leading Dutch pension provider and investor, with a strong commitment to sustainable and responsible investing. Specialising in managing assets for various pension funds, it prioritises long-term stability and growth, ensuring the financial well-being of its clients.