

Supporting the implementation of adaptation measures by visualizing benefits

NEC Adaptation Solutions: Visualizing Climate Change Risks and Accelerating Societal Resilience

As climate change causes natural disasters, such as flooding, more frequently each year, the introduction of adaptation measures has been an urgent priority. However, the reality is that investment in these measures amounts to only one-eighteenth of that for mitigation measures. NEC believes the lack of quantification and visualization of the investment effectiveness of adaptation measures is the reason for this, and is developing adaptation solutions.

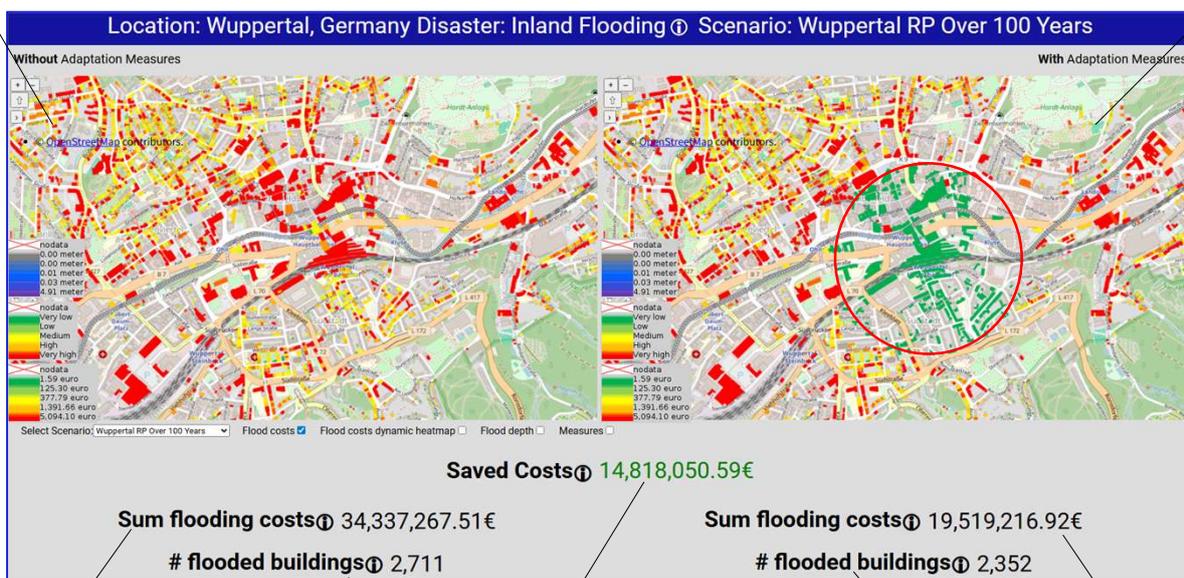
Flood Damage Simulator

- The Flood Damage Simulator calculates and visualizes flood damage costs before and after implementing adaptation measures, supporting decision-making on flood countermeasure investments for governments, municipalities, estate developers and others.
- Features
 1. Visualization of flood damage and saved costs
This system visualizes the saved costs achieved by adaptation measures, supporting decision-making on investments for flood countermeasures.
 2. Display of damage costs for individual buildings
The damage costs and flood depths for each building can be displayed in pop-up windows on the map, allowing for easier analysis of the disaster mitigation effects on individual buildings.
 3. Visualization of potential risk areas
The damage cost map visualizes the spatial distribution of damage costs for individual buildings, allowing for easier identification of areas potentially affected by economic damage and assisting in the selection of priority areas for flood mitigation measures.

UI example

Damage map (without drainage)

Damage map (with drainage)



Damage amount (without drainage)

Saved cost due to drainage system

Damage amount (with drainage)

Number of flooded buildings (without drainage)

Number of flooded buildings (with drainage)

NOTE: Assuming a drainage system that reduces flood depth by 1 meter within a 500-meter radius (red circle area)

NEC's technology supports the damage calculation

NEC tries to visualize Climate Change Risks and Accelerating Societal Resilience, however, it is not always easy. We need detailed land type/building type information for visualizing the risks, but in many cases, such data is missing from sources. To solve this, we use AI and satellite imagery to fill these gaps.



Extraction of unmapped buildings using satellite images

Extracts unmapped buildings on maps using the image segmentation analysis technology for satellite SAR images



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