

SCALABLE APPROACH FOR REDUCING THE GAPS IN FOREST WIND DAMAGE INSURANCE



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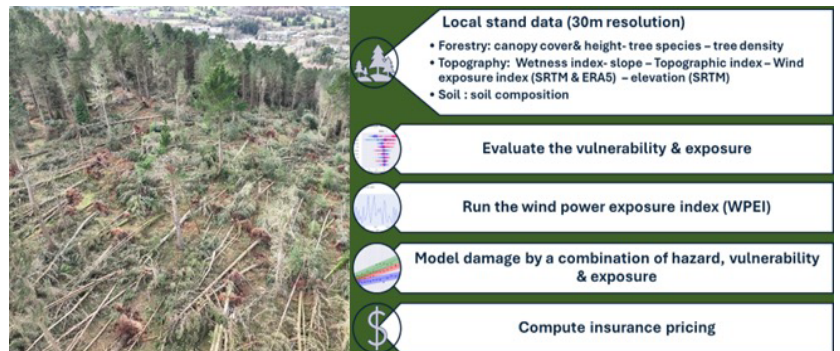
The **forest wind damage pilot** created, experimented with, and refined a novel, climate-sensitive insurance solution for windthrow risks that is informed by high-resolution climate and forest modeling. The solution incorporated hazard modeling, stand-level vulnerability assessment, and actuarial pricing.

HAZARDS	STATUS	TARGET GROUPS	PILOT CONTEXT
Forest wind damage	(present/outlook): recurring severe losses/likely to increase	Forest owners and managers, insurance companies, authorities, forestry stakeholders, climate change adaptation communities	Germany, France, Ireland, Scotland, and Denmark, with feedback from the Boreal region

In Europe, forest damage and losses have been increasing due to abiotic, biotic, and synergetic factors. Losses have likely been exacerbated by climate-driven changes and monocultural forest management.

Why is it timely to develop a novel parametric insurance for forest wind damage?

- ca. 50% of all forest losses in Europe are due to wind damage
- forest insurance remains marginal in Europe
- there is limited selection of tailored wind damage insurance products



Key Results

- **Forest vulnerability map**, including characteristics like canopy height, cover, tree density, elevation, wind exposure, slope, etc. These categories were refined using machine-learning clustering techniques, and the model design allows updates based on the availability of client-specific data.
- **Wind Power Exposure Index (WPEI)** was built on Copernicus ERA5 land data and it provides a transparent and replicable climate input.
- **The windthrow insurance prototype** developed by AXA Climate in PIISA is technically robust, economically sound, and structurally replicable.
- Although parametric insurance may not be optimal for all forest types or risk layers, the combined modelling framework – integrating hazard characteristics, stand-level vulnerability, and actuarial simulations – provides a credible foundation for climate-sensitive forestry insurance for protection against windstorms.



Recommendations to enable a wider uptake of this novel windthrow insurance concept:

- Regional calibration for replication significantly improves model accuracy. It is recommended to validate model outputs against observed data from historical storms. It is also needed before the contractualization of any product.
- Combining stakeholder engagement, regional testing, insurer dialogue, and market feedback supports exploitation through business validation and strengthens replication by assessing transferability to other forest and insurance contexts.

Learn more:

PIISA Pilot Reports: [Pilots for Forests and Concept of Climate Change Risk Sensitized Forest Insurances](#)

PIISA Report: [Role and potential of insurance in accelerating climate adaptation in Europe](#)

Info Card 3: [“Barriers and opportunities for Natural Risk Insurance”](#)

Blog: [“Quantification of forests adaptation measures for insurance application”](#)

Webinar: [Adaptive Forest Management and Policy to Tackle Climate Risks \(jointly with HEU SWIFTT\)](#)

Webinar: [Climate resilient natural resources management: simulation-based approaches, forest insurances and climate services \(jointly with HEU PRECILIENCE\)](#)