

COLLECTING DATA FOR NATURAL CATASTROPHES

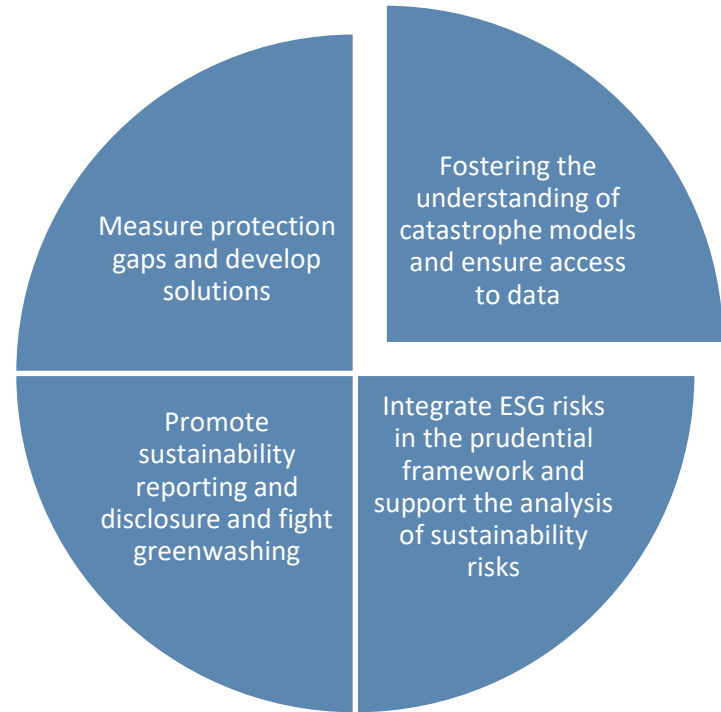
Marie Scholer

Policy department

EIOPA REGULAR USE

EIOPA'S APPROACH ON SUSTAINABLE FINANCE

- Climate change is a reality that affects the financial sector, the economy and society at large.
- Besides clear knowledge of risks and gaps, adaptation requires the actual management of these risks via risk-based solutions and an appropriate regulatory framework.



KEY AREAS OF ACTIVITY

6

PROMOTE THE USE OF OPEN SOURCE MODELLING AND DATA IN RELATION TO CLIMATE CHANGE RISKS

Data and models on climate-related risks are crucial to improve the accuracy of climate risk assessment for the industry and supervisory community. EIOPA aims to support the modelling and management of climate change risks, by positioning itself as a relevant open source data hub providing relevant aggregate data, such as for example climate-related insured loss data, in a transparent and easily accessible manner.

KEY AREAS OF ACTIVITY

- › Analyse opportunities for the use of open source nat cat modelling tools
- › Develop ways to improve the collection of uniform and comprehensive insured loss data



LEARN MORE

EIOPA supervisory technology strategy

› [Read more](#)

WHY SHOULD WE COLLECT DATA FOR NATURAL CATASTROPHES?

Insured loss and risks data for natural catastrophes are extremely valuable

- For supervisors: understand size of the nat cat losses, capital requirement calibration, understand the insurance protection gap, financial stability analysis, supervisory analysis...
- For insurance sector: all industry players would benefit from getting access to loss data (100% market view), it will foster further development of cat models (loss data are used to calibrate the models).
- For academic: more independent models, studies (on the increase of losses due to climate change for example) could be developed by universities if loss data would be available open-source.
- For States&COM: in order to take adequate prevention measures... the States and the Commission need to know what are the losses.

Some databases exists but ...

Databases are either private (MunichRe, SwissRe, CatDat*...) or there is one public database (EMDAT** - humanitarian focus) but which is not focused on insurance data and therefore not complete to perform analyses.

*Risklayer **Database | EM-DAT (emdat.be)

2021 THE EU CLIMATE CHANGE ADAPTATION STRATEGY

- More and better climate-related risk and losses data
- EIOPA identified as a key partner

[EUR-Lex - 52021DC0082 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/lexUri.do?uri=CELEX:52021DC0082:EN)

To avoid “climate-blind” decisions, data from both the private and public sector should be recorded, collected and shared in a comprehensive and harmonised way. The Commission will promote common rules and specifications for the recording and collection of data on climate-related losses and physical climate risk, and support the central recording of this data from the public and private sector at EU level through its Risk Data Hub²⁵. It will encourage at the national level a voluntary approach of public private partnerships for the collection and sharing of loss data based on enhanced cooperation with Member States, cities and industry. The Commission will also define the data needs, and explore with industry the best ways to collect comprehensive and harmonised data from insurers, empowering, as relevant, the European Insurance and Occupational Pensions Authority (EIOPA).

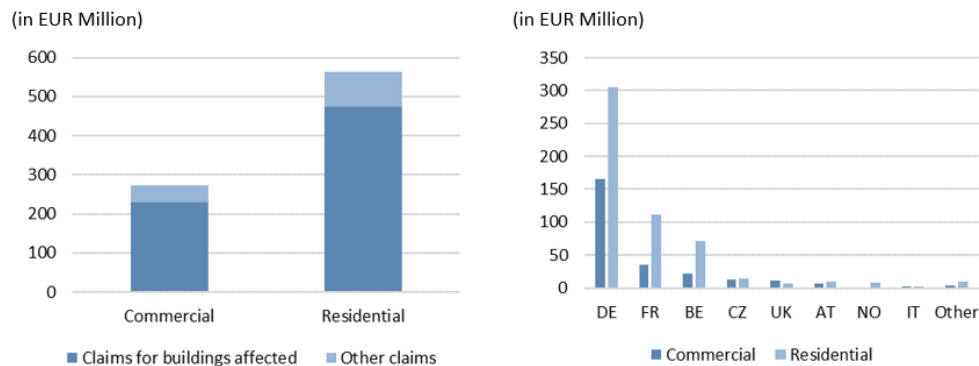
The Commission will facilitate access to climate-related risk and losses data for stakeholders. The review of the INSPIRE Directive in 2021 as part of the ‘GreenData4All’ initiative offers an opportunity to revise the legislation to cover environmental and climate-related disaster loss data, extending the scope of public access. Climate-related disaster loss data could also be considered as high value datasets in future revisions of the implementing act of the Directive on open data and the re-use of public sector information. Similarly, data collected in public private partnerships will be made as accessible as possible.

The Commission will:

- promote and support the use of its Risk Data Hub to harmonise the recording and collection of comprehensive and granular climate-related risk and losses data, and promote national level public private partnerships to collect and share such data;
- explore with EIOPA and industry the best ways to improve the collection of uniform and comprehensive insured loss data, and will empower EIOPA as needed;
- extend the scope of public access to environmental information in the INSPIRE Directive to include climate-related risk and losses data.

EIOPA TESTED THE COLLECTION OF INSURED LOSS DATA

- EIOPA has collected insured loss data during the data collection for the physical risk and [protection gap dashboard](#) conducted in 2021.
- An analysis of the collected losses was published in 2022 (see example for Windstorm Ciara):



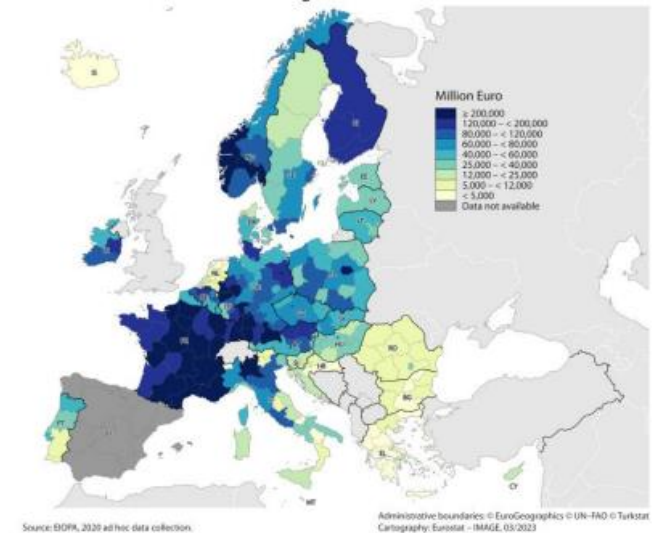
[Discussion paper on physical climate change risks | Eiopa \(europa.eu\)](#)

EIOPA TESTED THE COLLECTION OF NAT CAT EXPOSURE DATA

- In addition to loss data, EIOPA had also collected exposure data during the data collection for the physical risk and [protection gap dashboard](#) conducted in 2021.
- The exposure data are used in the protection gap dashboard as we all in the study “Assessing future river flood risk for the European insurance sector using the open-source CLIMADA model”.

[Financial Stability Report June 2023 \(europa.eu\)](#)

Flood risk - sum insured by NUTS 2 regions
Residential and commercial buildings



POTENTIAL WAY FORWARD

- Use the next Implementing Technical Standard amendment on reporting to introduce the requirement insurance and reinsurance undertakings to report nat cat data (loss and exposure data).
- To introduce a unified nat cat event IDs in the Quantitative Reporting Templates. This could allow:
 - a standardised reporting
 - anyone (EU institutions, private/public bodies / citizens...) to have full transparency about the event considered
 - other bodies (such as governments) to report economic losses, losses paid by EU Solidarity funds, losses paid by governments...
- For this EIOPA would collaborate with the JRC.
- After collection, the insured loss data could be made available as open source on EIOPA's website (aggregating all losses per event). The insured loss data could be linked to the RDH from the JRC which presents economic losses.



**Risk
Data
Hub**

Disaster loss data collection – Risk Data Hub

Samuel ROESLIN

Project Officer - [DRMKC - Risk Data Hub](#)

What is the JRC?



- Joint Research Centre (JRC) of the European Commission
- Directorate general (DG)
- Provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society
- Plays a key role at multiple stages of the EU policy cycle
- Contributes to the overall objective of [Horizon Europe](#) (research and innovation funding programme until 2027)
- Core strengths: anticipation, integration, impact
- Work is organised in [33 portfolios](#) ([JRC Revitalising Strategy 2030](#))

What is the Risk Data Hub (RDH)?



A data hub for pan-European risk and loss data

- Host and share disaster risk and loss data at pan-European level
- Host data and results from research projects (EU funded projects and internal JRC projects)



A platform to share information on risk and loss

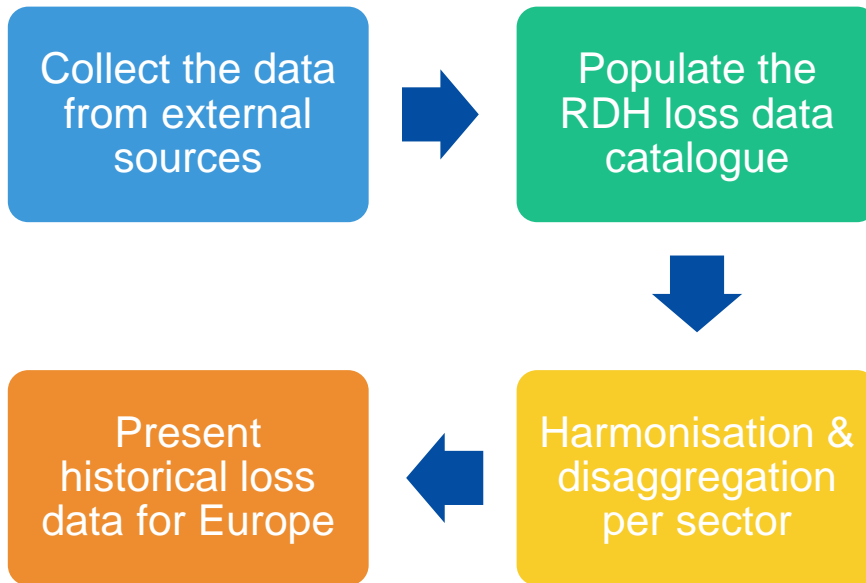
- Share insights on losses, hazard, exposure and vulnerability
- Compute probabilistic risk for Europe
- Provide information regarding methodologies for risk calculation
- Support the new EU strategy on adaptation to climate change



RDH - Loss Data Catalogue



Historical Analysis of Natural Hazards
in Europe database (HANZE)



Risk Data Hub (RDH) – Unique event identifier

- Unique identifier per disaster event

2021 European floods

FLDE202107120046

Collect the data
from external
sources



FL

- Hazard: code of two characters

DE

- Country: ISO code

20210712

- Start date of the event YYYYMMDD

0046

- Four digit number assigned by the RDH

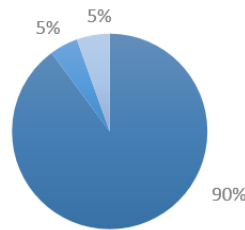
RDH Disaster Loss Data Catalogue



- Over 45,000 records collected from 9 different (open) data sources

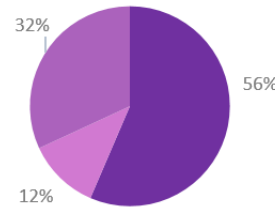
Present historical
loss data for
Europe

Fatalities per Hazard Category - % (1980-2022)



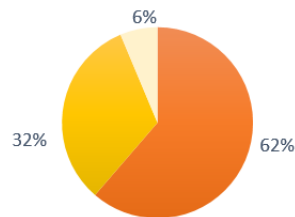
■ Climatological and Meteorological ■ Hydrological ■ Geophysical

People injured per Hazard Category - % (1980-2022)



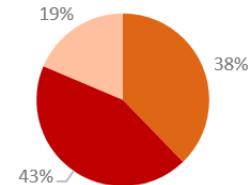
■ Climatological and Meteorological ■ Hydrological ■ Geophysical

People affected per Hazard Category - % (1980-2022)



■ Climatological and Meteorological ■ Hydrological ■ Geophysical

Economic losses (adjusted for inflation) per Hazard Category - % (1980-2022)

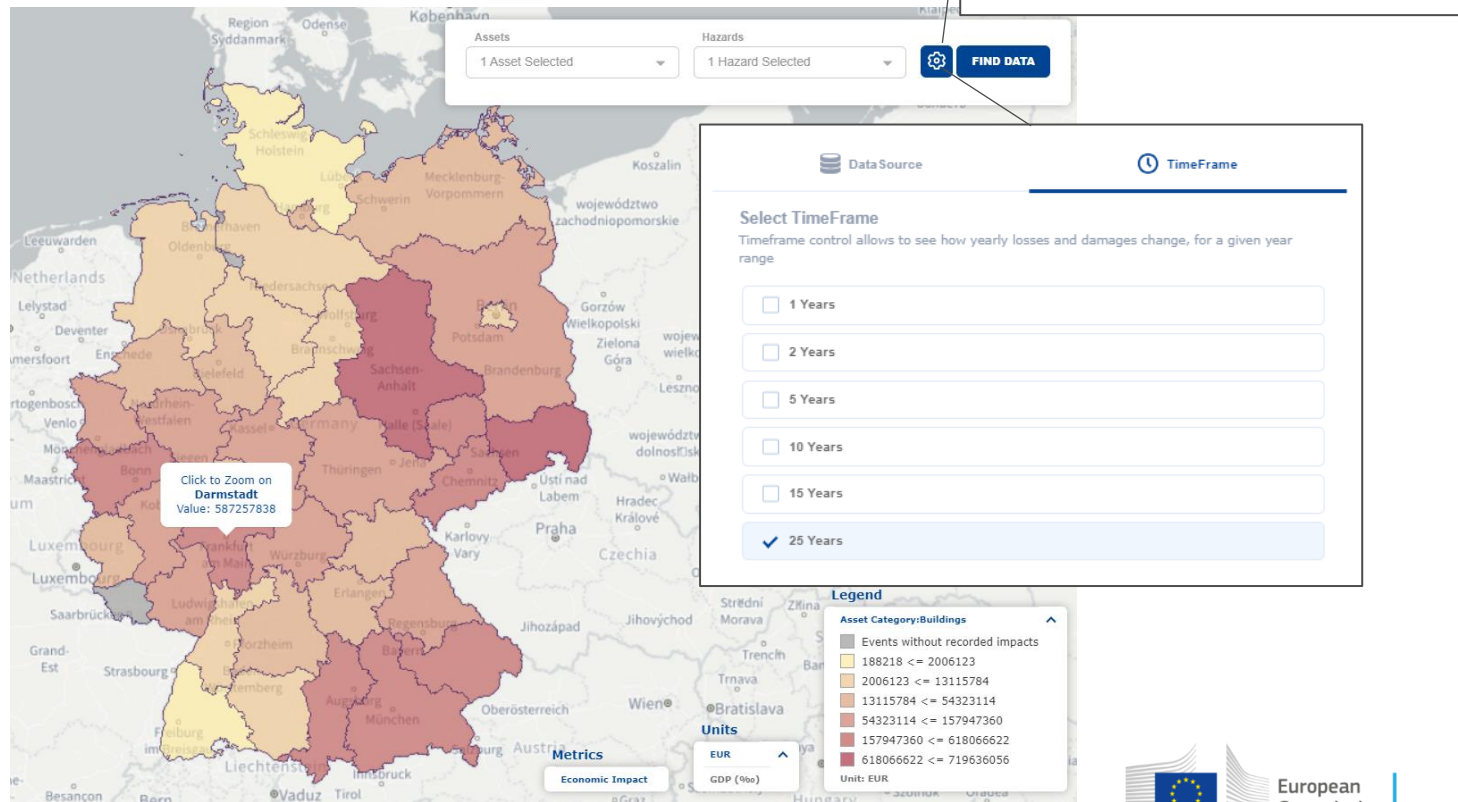


■ Climatological and Meteorological ■ Hydrological ■ Geophysical

RDH – Loss overview (map)

NUTS 2 (basic regions)

- Hazards
 - River flood
 - Coastal flood
 - Flash flood
- Assets
 - Population
 - Buildings (residential)



RDH – Loss dashboard

- Detailed insights – Residential buildings - River Flood



DRMKC Risk Data Hub

This module presents figures and charts from the DRMKC RDH losses and damage. Please select an Asset, a Hazard, a metric and the desired level of aggregation. For a smoother experience it is advisable to select NUTS-2 and NUTS-3 just for a subset of countries (filter column below this text box). For convenience, users are able to filter the visualization by years and countries.

**The data is not available and the presentation of results on the map does not imply the absence of data.*

Asset
Residential Buildings

Hazard
River Flood

Aggregation
NUTS-3

Metric
Economic Impact

Countries
Germany

Years
2023

Map of Losses (River flood)

Administrative Units Area layer
Losses

- 395.006 - < 592.509
- 197.503 - < 395.006
- 0 - < 197.503

Metadata

Data Table (River flood)

Admin Units	Total Losses ('000 €)	No. Impacted
Total	5.425.881,00	659
Dresden, Kreisfreie Stadt	592.509,00	5
Desau-Roßlau, Kreisfreie Stadt	212.100,00	3
Frankfurt am Main, Kreisfreie Stadt	219.399,00	5
Groß-Gerau	203.907,00	3
Mittelsachsen	192.580,00	6
Magdeburg, Kreisfreie Stadt	171.968,00	5
Rhein-Sieg-Kreis	171.559,00	8
Leipzig, Kreisfreie Stadt	141.046,00	5
Neu-Ulm	106.562,00	4
Main-Kinzig-Kreis	104.650,00	2
München, Kreisfreie Stadt	97.009,00	5
Ingolstadt, Kreisfreie Stadt	91.165,00	6
Rosenheim, Kreisfreie Stadt	84.304,00	6
Halle (Saale), Kreisfreie Stadt	83.405,00	4

Total Losses (River flood - '000 €) - Rank by Administrative Units

Economic Impact

- 395.006 - < 592.509
- 197.504 - < 395.006
- 1 - < 197.504

Total Losses (River flood - '000 € per Year)

Economic Impact

- 1,8M - < 2,7M
- 901,61k - < 1,8M
- 997 - < 901,61k

Sharing of Total Losses
All hazards by selected years & administrative units

THANK YOU