Selection of the flood events and data for the present period

Databases
- INUNGAMA
- PRESSGAMA
- FLOODHYMEX

Flood event dates
Affected basins

Use of the data for developing the model

Development of the damage model for the present climate:
Probability of a damaging event

**Generalized linear mixed model (GLMM)**

Insurance payments $\sim$ Mean precipitation in 24 h + total population

Binary data ($\pi$)

\[
\log \left( \frac{\pi}{1-\pi} \right) = \beta_0 + \beta_1 P + \beta_2 R + b_i + b_j
\]

Data for the future period

- Precipitation $\rightarrow$ seven simulations from EURO-CORDEX
- Population $\rightarrow$ five SSPs + 2UP model

Use of the data from the projections

Application of the model with projected data

Estimation of the probability of damaging event

Reference period 1976–2005

Changes in the probability of damaging event

- $+1.5 \, ^\circ \text{C}$
- $+2 \, ^\circ \text{C}$
- $+3 \, ^\circ \text{C}$