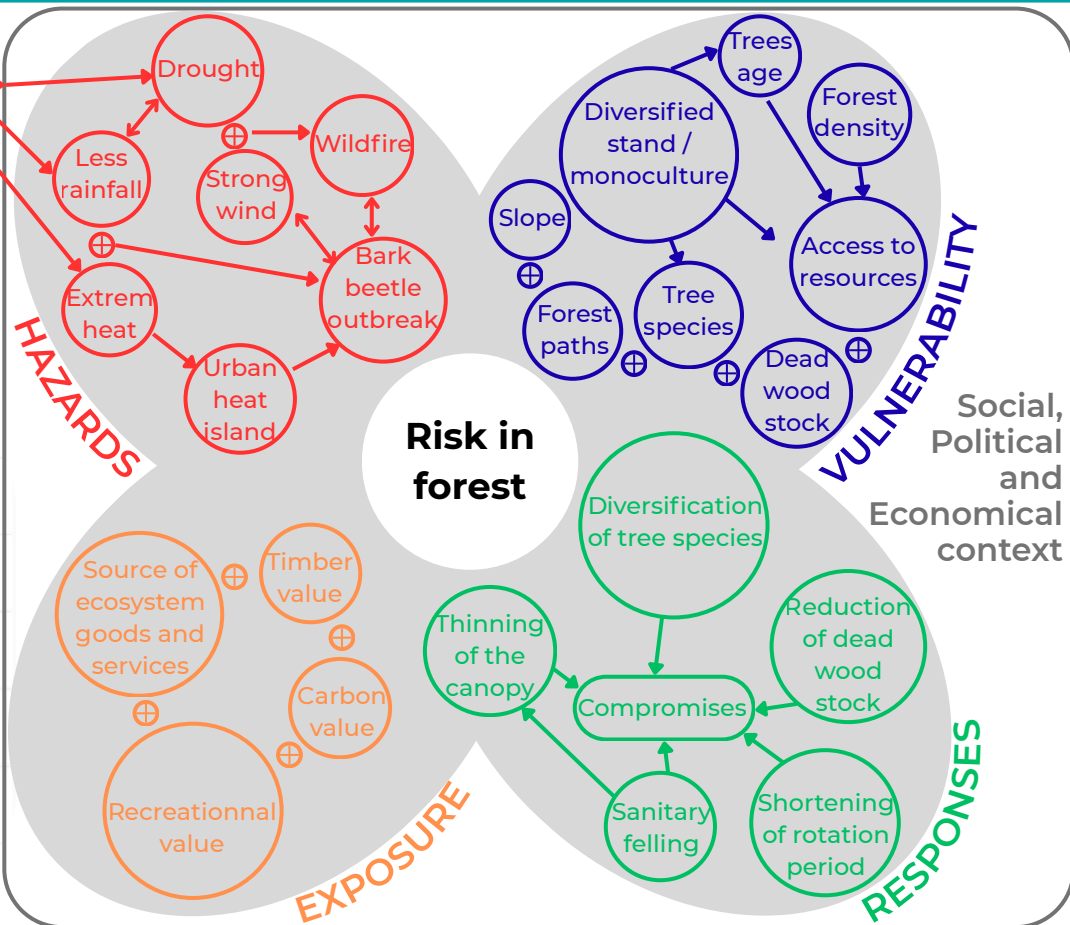
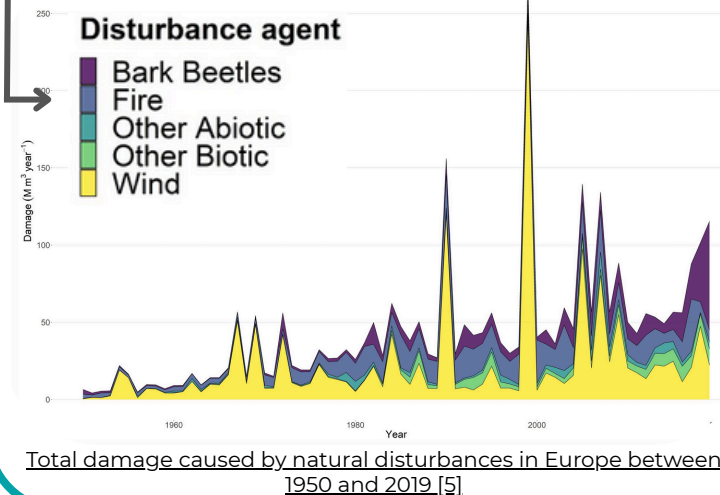


Context

In the context of climate change:

- Increased frequency and intensity of natural hazards [1,2,3]
- Emergence of interactions between natural hazards → it is the **multirisk** "set of different hazards that can act in combination over time and impact different issues in a given territory" [4]

→ Increased damages to forests

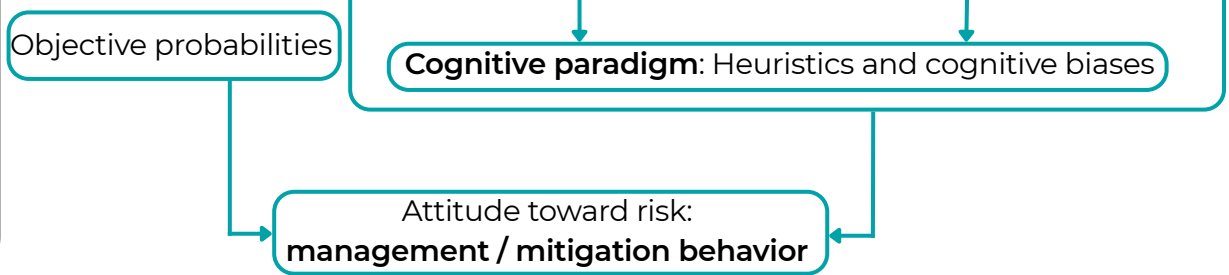


Multirisk alters decision-making processes because interactions are difficult to measure and formalize, introducing further ambiguity and uncertainty.

The decision-making process based on two dimensions :

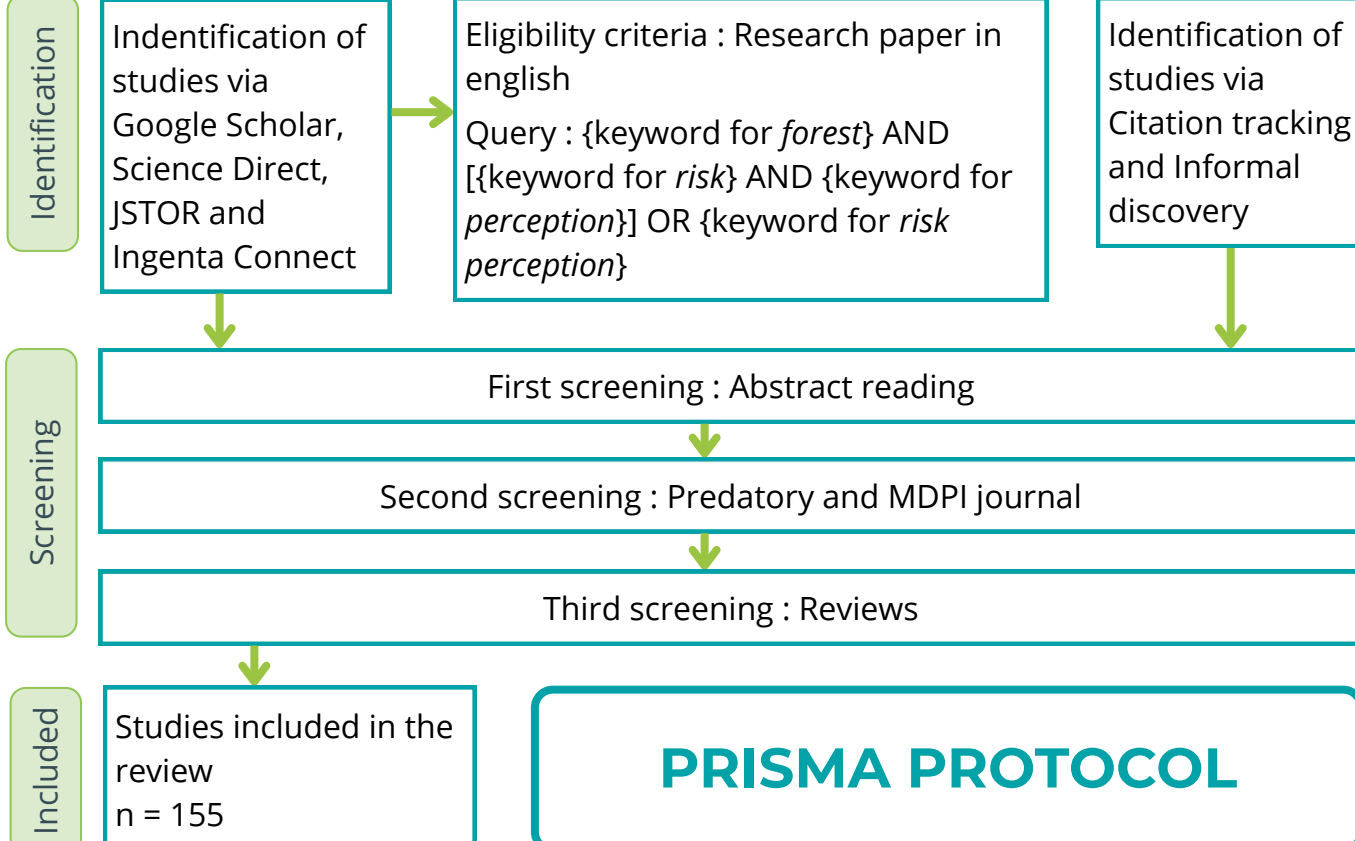
Physical dimension: risk assessment based on measurable characteristics of hazard and forest: **Objectivist theory** (e.g., expected utility theory);

Human dimension: risk assessment shaped by cognitive and social factors: **Constructivist theory** (e.g., behavioral decision theory), refers to the **risk perception**:



To what extent are existing approaches to risk perception in forests relevant for addressing the issue of multirisk?

Research strategy



PRISMA PROTOCOL

Extractions of variables

	Article reference	Risks studied	Methodology
Description	Description of articles for bibliometric analysis	Identification of the types of risks studied and their potential interaction(s)	Description of the research protocol and analyses carried out for the analysis of the methodologies used
No. variables	11	4	12
Examples	Authors' names, Years of publication, Countries of study	Risk context, Type of interaction between risks	Methodological framework, Type of actor studied, Data collection method, Type of analysis

Conclusion

Approaches that can be used to understand multirisk perception: **Surveys and questionnaires** and **different types of variables**.

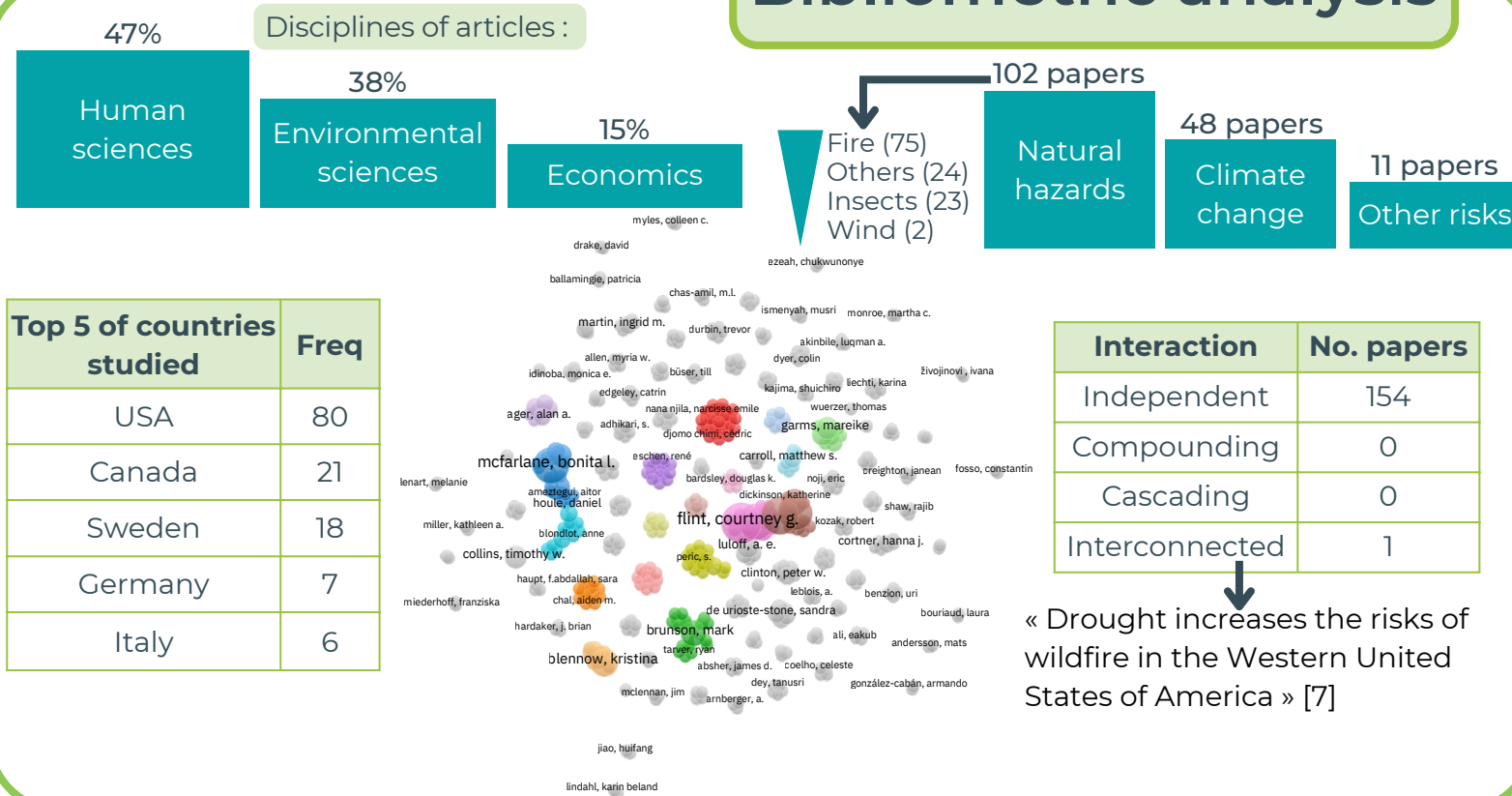
Large gap in the literature on risk perception: heterogeneity of study subjects, no study on multirisk perception in forests, very few theoretical methods and economic models, almost no use of methods other than surveys.

Perspectives

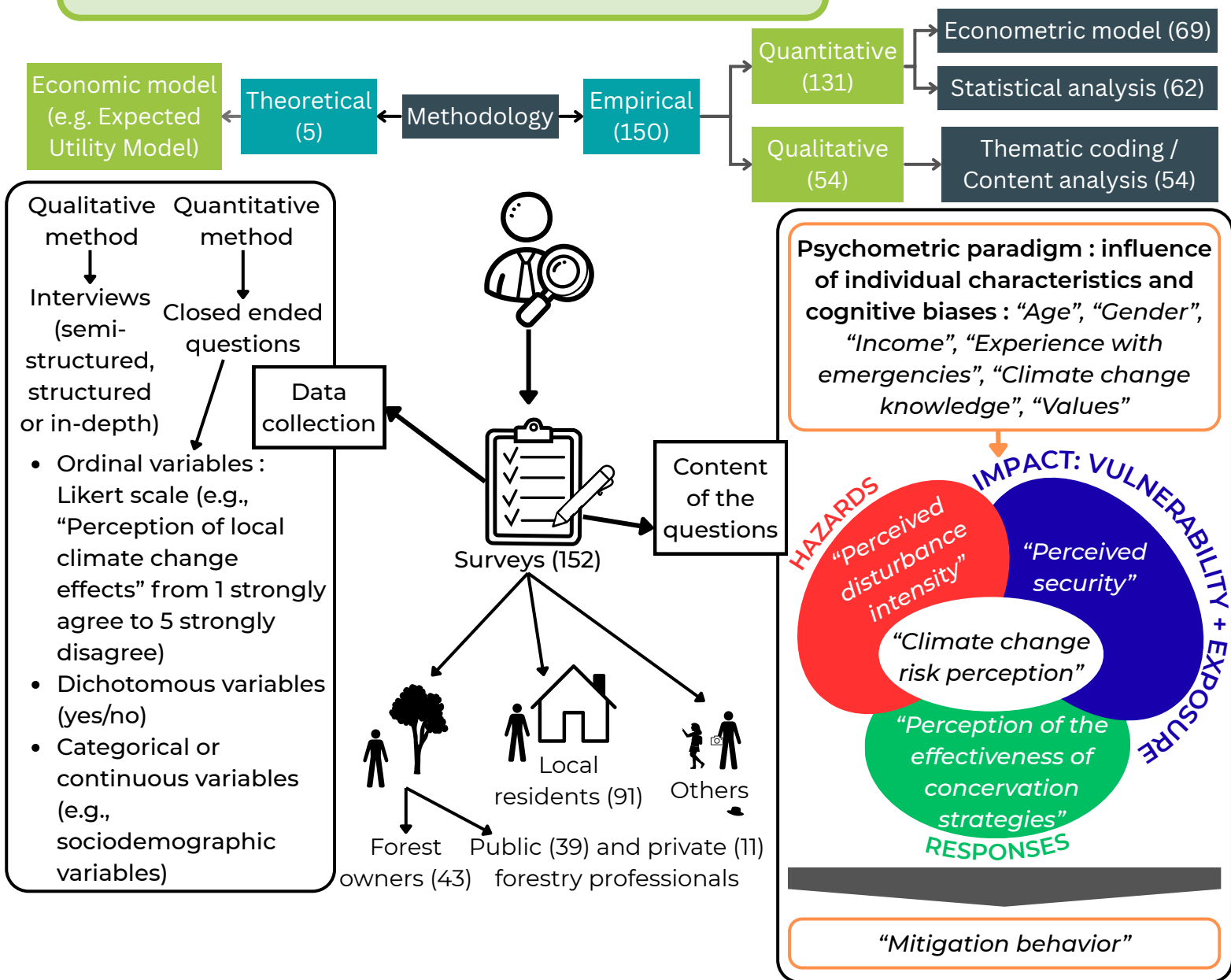
- Draw **parallels with other fields** (e.g., agriculture, health)
- Contribute to the **X-RISKS project**
- Submit the database** to the BETA repository
- Thesis continuation:
 - Conduct a **survey on multirisk perception** among forest owners in the Grand Est region
 - Integrate the **perception of multirisk into an economic model**, such as Prospect Theory

Main results

Bibliometric analysis



Analysis of methodologies



[1] Schelhaas, M. J., G. J. Nabuurs, and A. Schuck. 2003. "Natural Disturbances in the European Forests in the 19th and 20th Centuries." *Global Change Biology* 9 (11): 1620–1633.

[2] Seidl, Rupert, Mart-Jan Schelhaas, and Manfred J. Lexer. 2011. "Unraveling the Drivers of Intensifying Forest Disturbance Regimes in Europe." *Global Change Biology* 17 (9): 2842–2852.

[3] Van Aalst, Maarten K. 2006. "The Impacts of Climate Change on the Risk of Natural Disasters." *Disasters* 30 (1): 5–18.

[4] Curt, Corinne. 2021. "Multirisk: What Trends in Recent Works? – A Bibliometric Analysis." *Science of The Total Environment* 763:142951.

[5] Patacca, Marco, Marcus Lindner, Manuel Esteban Lucas-Borja, Thomas Cordonnier, Gal Fidej, Barry Gardiner, Ylva Hauf, et al. 2023. "Significant Increase in Natural Disturbance Impacts on European Forests since 1950." *Global Change Biology* 29 (5): 1359–1376.

[6] Slovic, Paul. 1987. "Perception of Risk." *Science* 236 (4799): 280–285.

[7] Craig, Christopher A., Myria W. Allen, Song Feng, and Matthew L. Spialek. 2020. "Exploring the Impact of Resident Proximity to Wildfires in the Northern Rocky Mountains: Perceptions of Climate Change Risks, Drought, and Policy." *International Journal of Disaster Risk Reduction* 44:101420.