

Global drought impact monitoring system based on online media mining and participative data collection

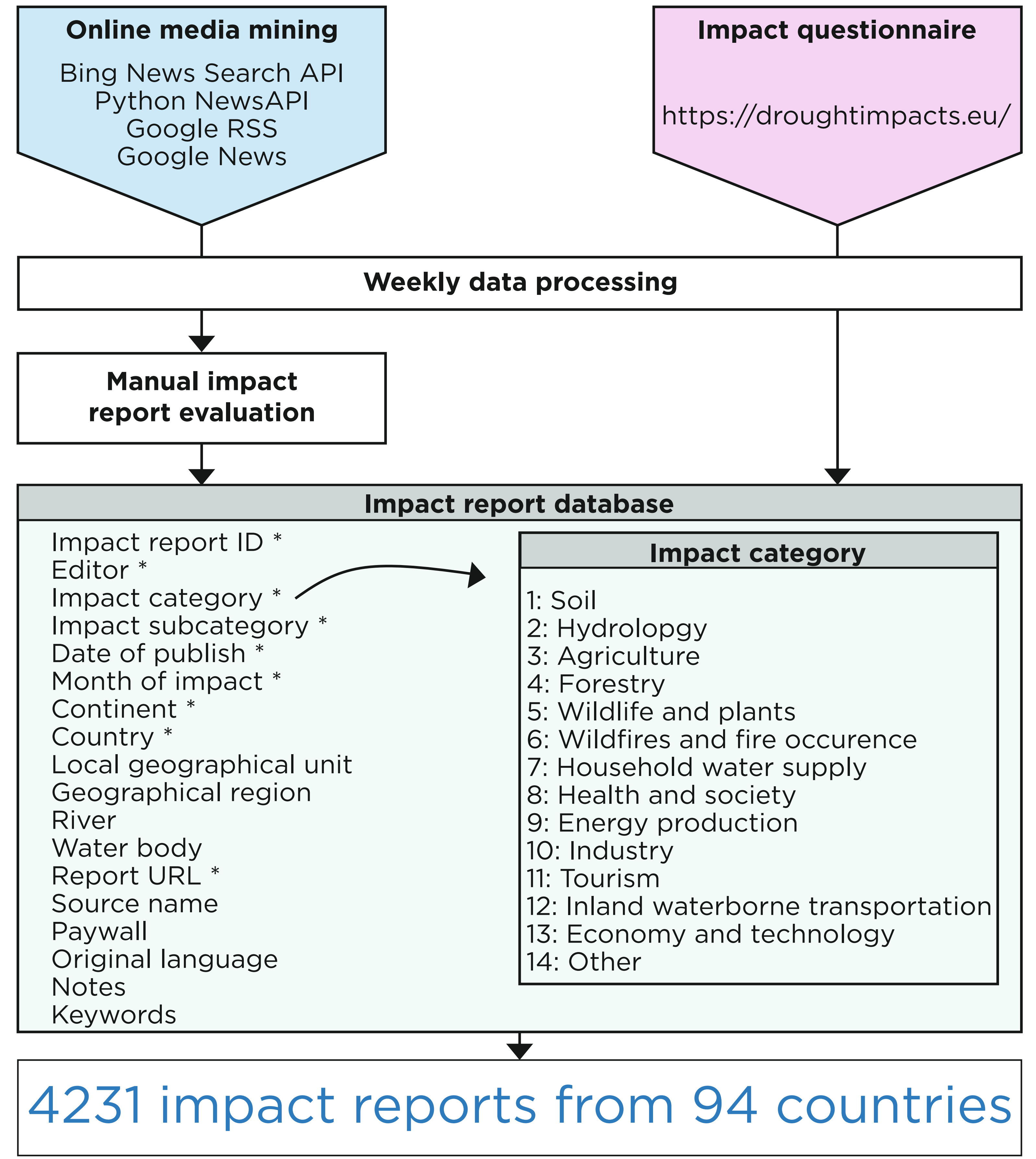


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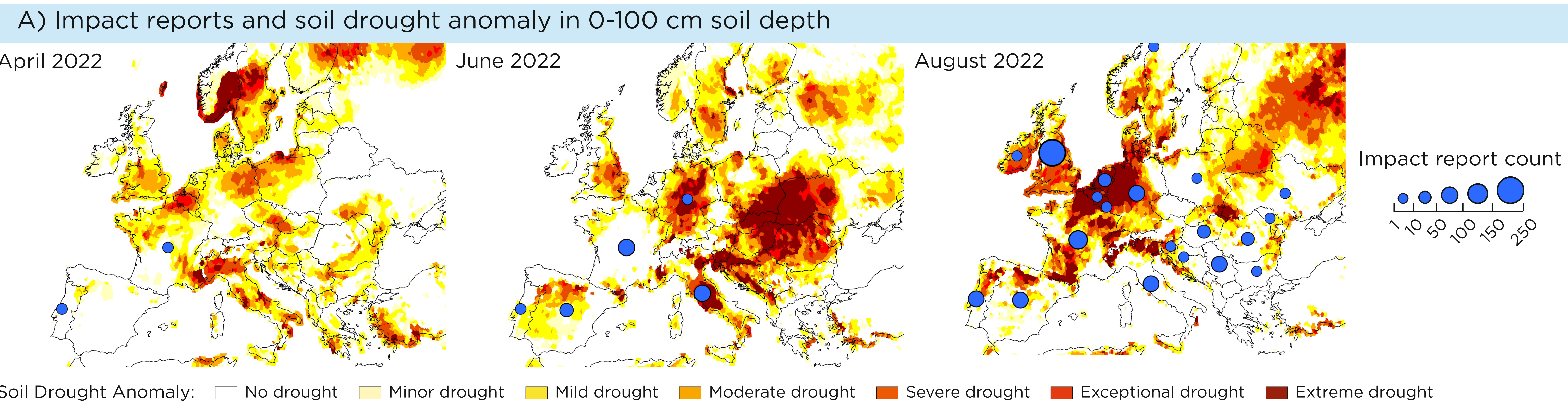
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Introduction and methods

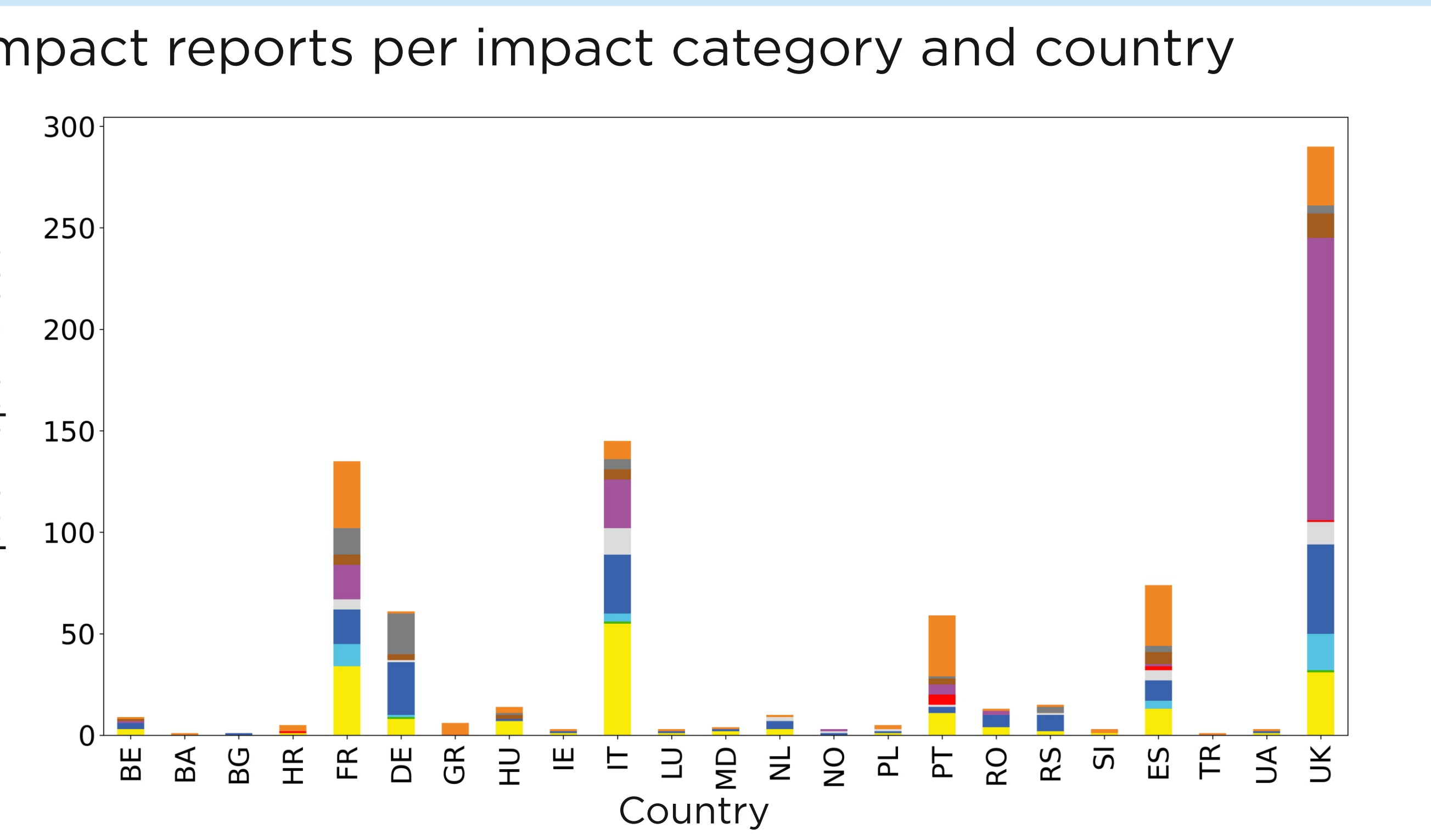
Drought events are becoming one of the costliest phenomena under changing climate conditions, affecting almost every field of human activity and many ecosystems. Increasing severity and frequency of drought occurrence have led to the development of drought monitoring and predicting tools on both regional and global scales. Together with monitoring and analyzing drought risk and occurrence comes the necessity to monitor and evaluate single and multisectoral drought impacts. Aiming for early detection and a detailed description of drought impacts, we decided to design a system combining semi-automated online media scraping with a participative questionnaire accessible through Windy.com.



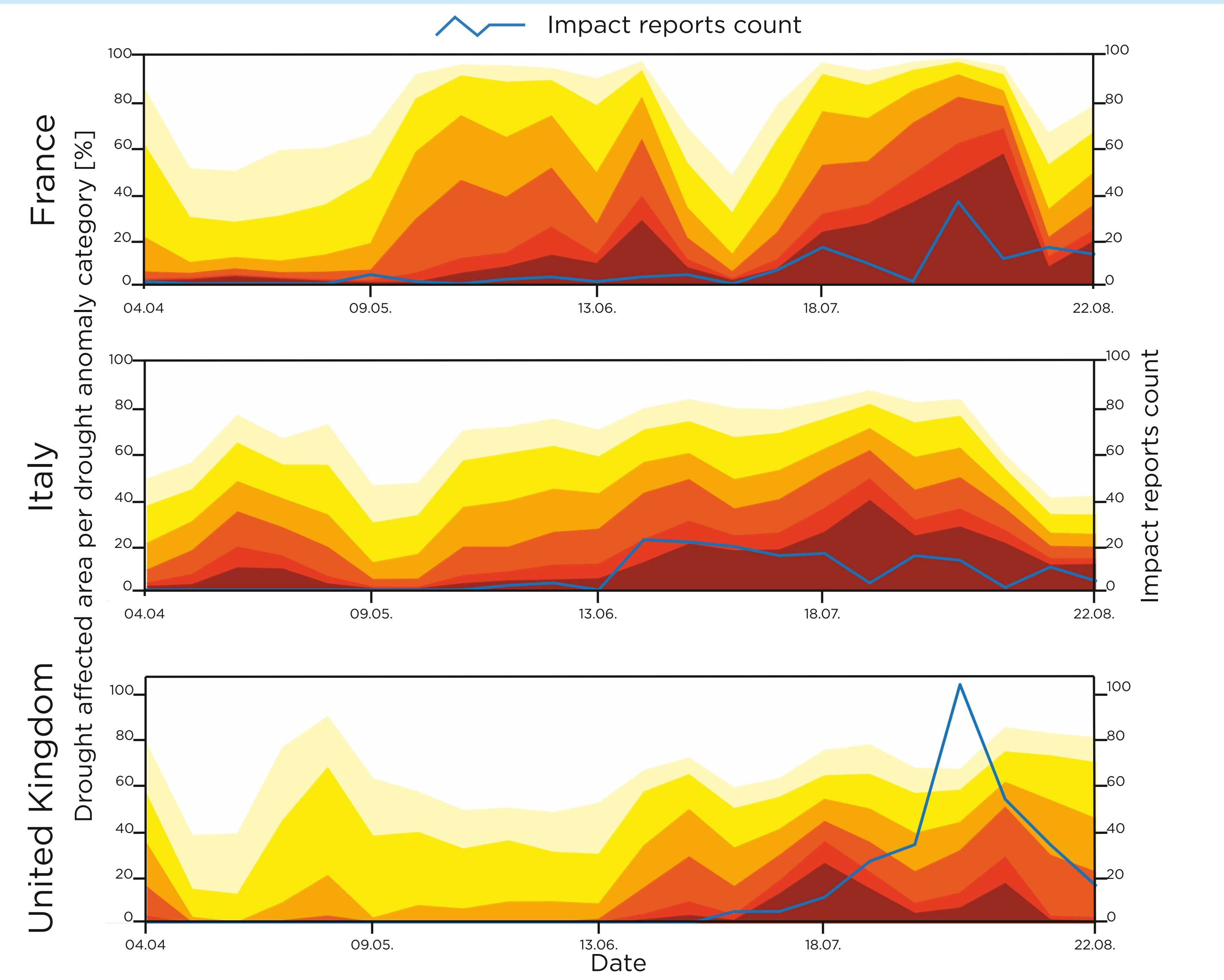
Proof of concept - European drought 2022 (April-August)



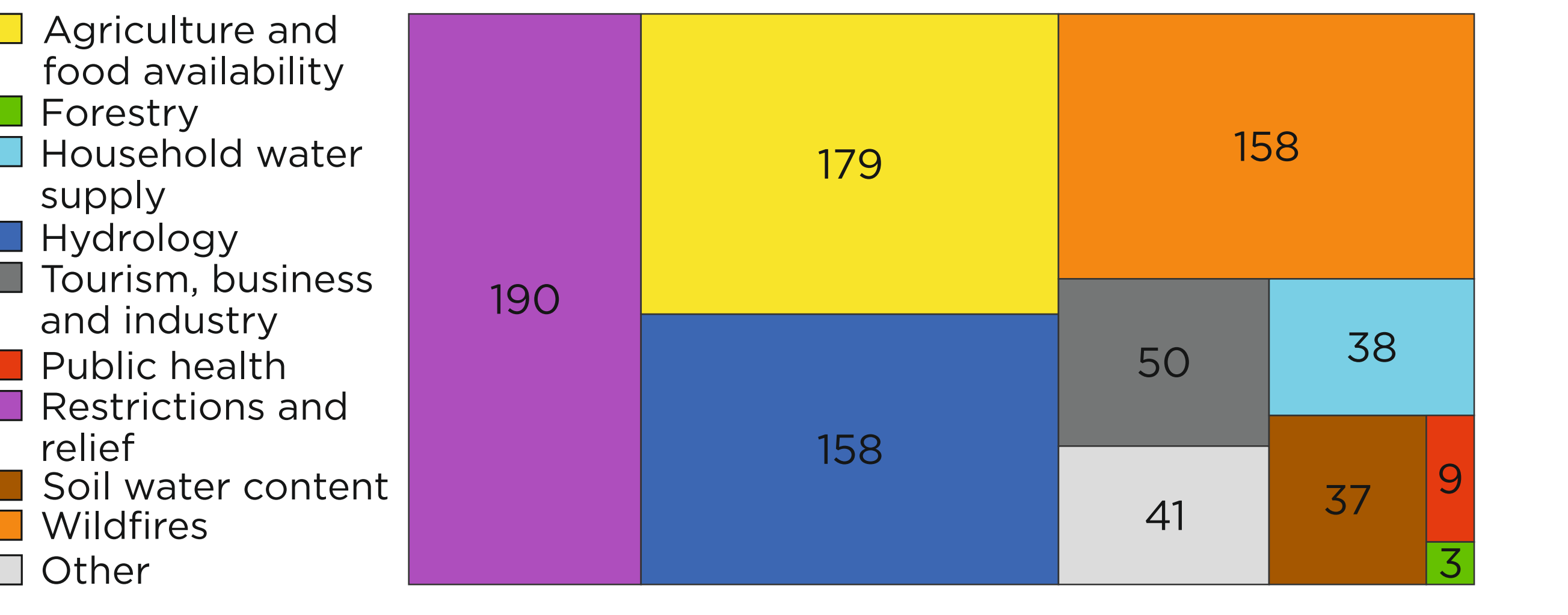
B) Impact reports per category in countries



C) Drought impact reports count and soil drought anomaly area



Impact reports in Europe per impact category



Conclusions

After one year of continuous method development, testing, and data collection, we proved the presented system as a near-real-time drought impact monitoring tool that can capture reported drought impacts, matching drought occurrence patterns according to global monitoring systems. We also identified challenges the automated searching approach brings and fine-tuned some initial issues. Besides the automated searching part, we understand that to deliver comprehensive global drought impact monitoring, the next direction of this work must address the inclusion of languages other than English into the search process and automated language processing algorithms to reduce manual data processing costs.