Interreg CENTRAL EUROPE



Clim4Cast

Clim4Cast - Central European Alliance for Increasing Climate Change Resilience to Combined Consequences of Drought, Heatwave, and Fire Weather through Regionally-Tuned Forecasting

Database of "DHF" events

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PROJECT CLIM4CAST





Duration: 3/2023-2/2026

Provider: Interreg Central Europe

Coordinator: Global Change research institute, CAS

PROJECT GOALS

- Creation of an Early Warning System (EWS) for drought, heatwaves and
 fireweather (DHF) for 7 countries within Central Europe
- Implementation of the EWS to national meteorological services
- Improvement of information transfer concerning warnings within Central
 Europe
- Creation of a database, concerning DHF events and their impacts

PROJECT PARTNERS







AUSTRIA Wien

CROATIA Grad Zagreb

CZECHIA Jihovýchod (CzechGlobe, MUNI)

GERMANY Brandenburg

POLAND Lubelskie

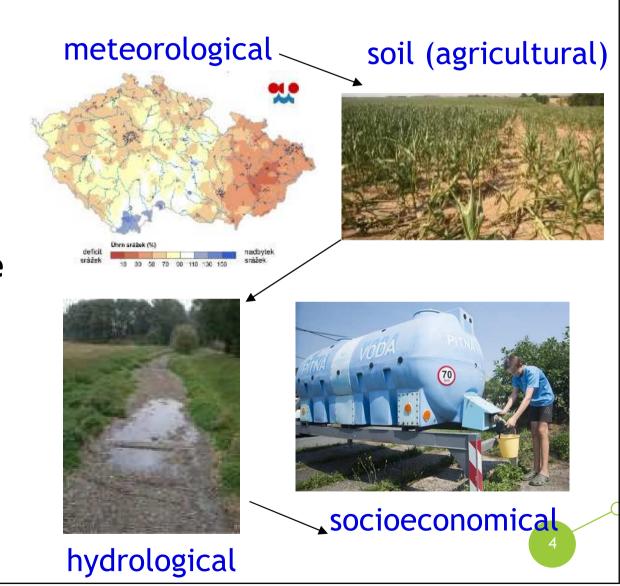
SLOVAKIA Bratislavský kraj

SLOVENIA Zahodna Slovenija



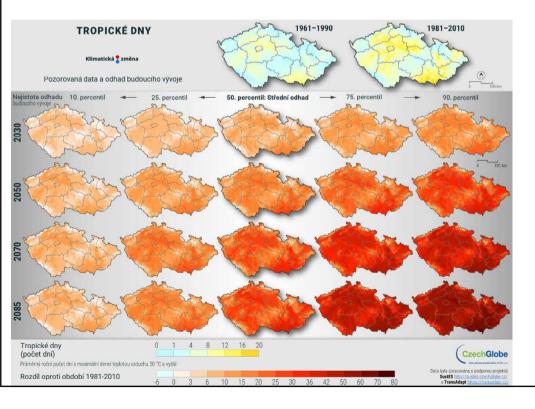
DROUGHT

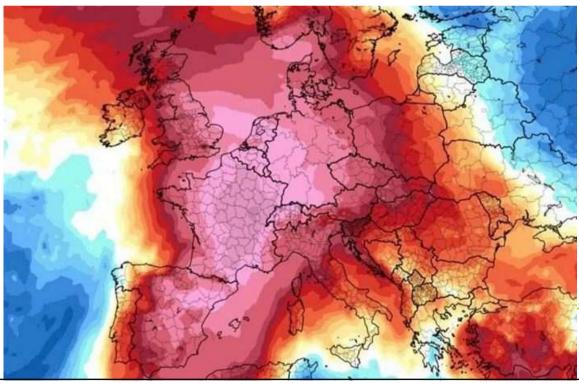
- Generally lack of water within environmental / socio-environmental systems
- Caused by negative balance between precipitation and evapotranspiration
- Drought indices, soil moisture simulations, satelite products



HEAT WAWES

- Period with daily maximum temperatures exceeding a certain threshold (e.g., 30 °C)
- Based on indices like Heat Index



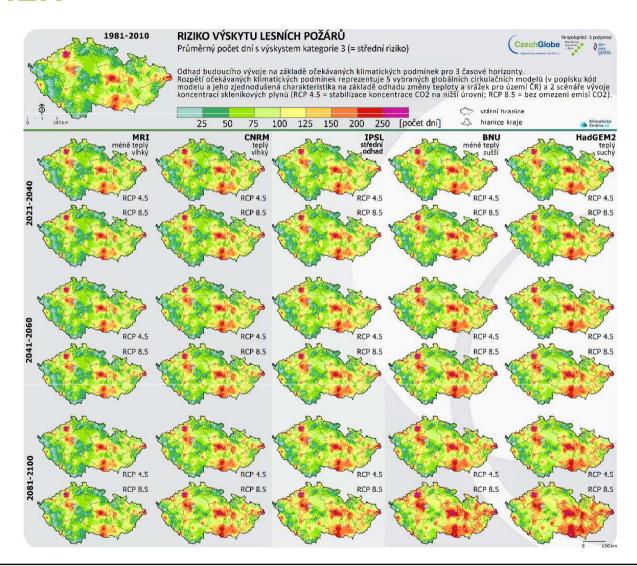


FIREWEATHER

- Weather conditions that are hazardous for the occurrence and spread of wildfires
- High air temperature and wind speed, low humidity, drought



FIRE WEATHER



MONITORING AND EARLY WARNING SYSTEMS

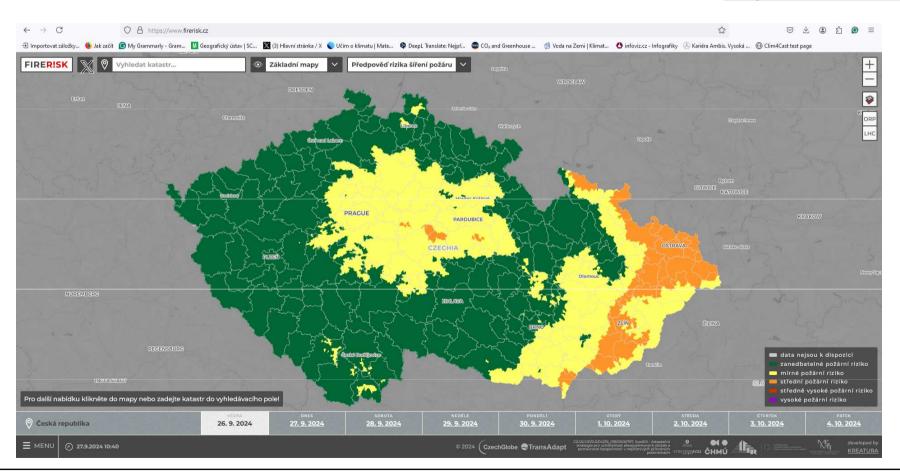


https://www.intersucho.cz

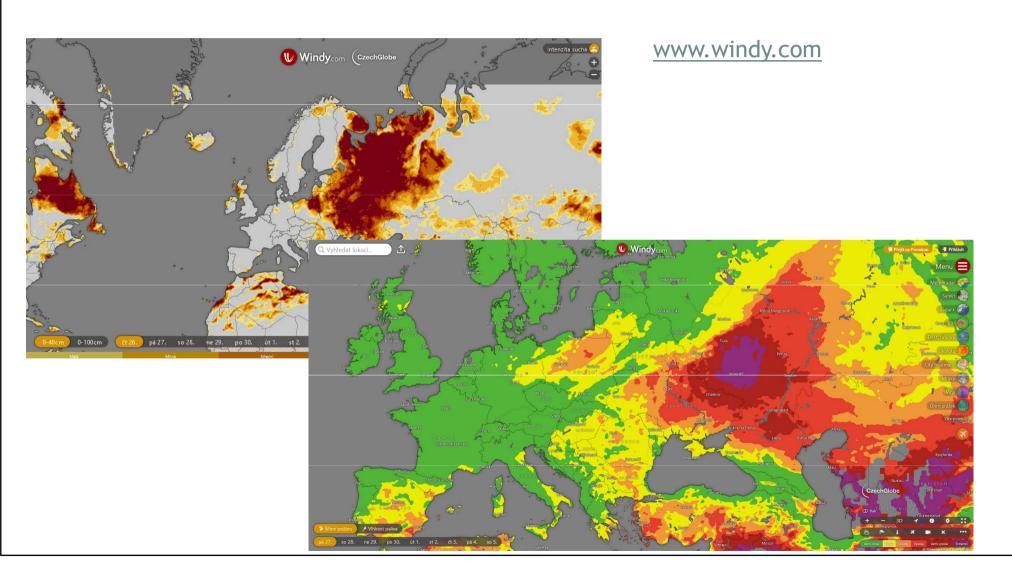


MONITORING AND EARLY WARNING SYSTEMS

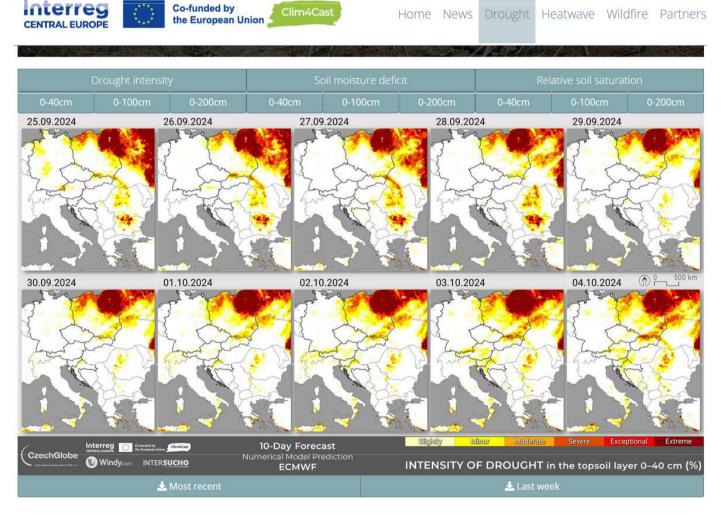
https://www.firerisk.cz/



MONITORING AND EARLY WARNING SYSTEMS

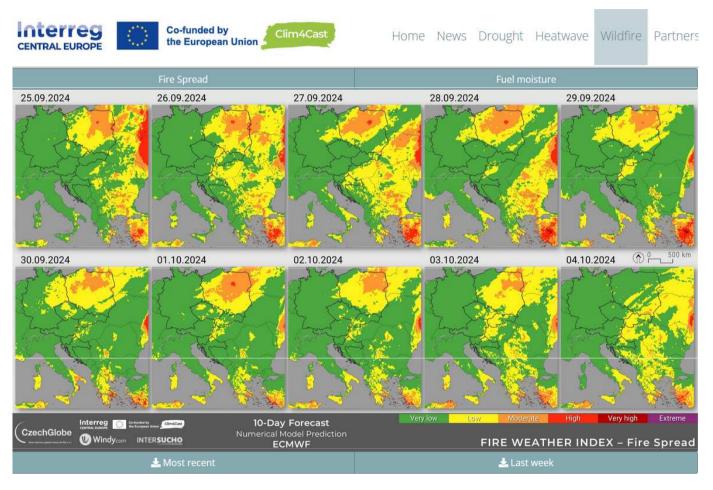


MONITORING AND EARLY WARNING SYSTEMS - CLIM4CAST



https://clim4cast.czechglobe.cz/#drought

MONITORING AND EARLY WARNING SYSTEMS - CLIM4CAST



https://clim4cast.czechglobe.cz/#wildfire

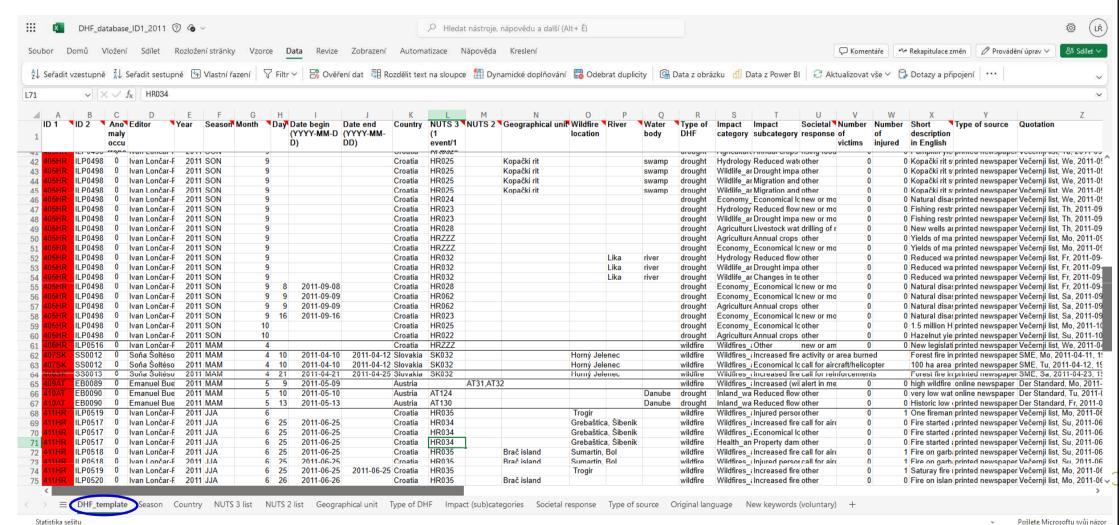
DATA COLLECTION

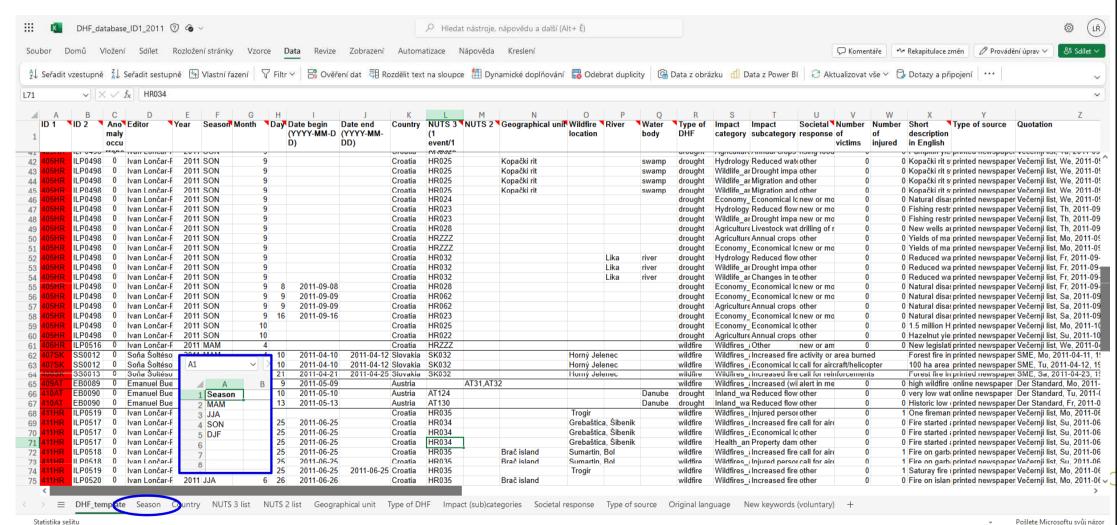
- Data sources: newspapers and other public reports for the 2000-2023 period
- **DHF events and their impacts** within the environment, ecosystems or socioeconomic systems (health, economy, agriculture)
- Every country searched within their local sources + some larger-scale online monitoring

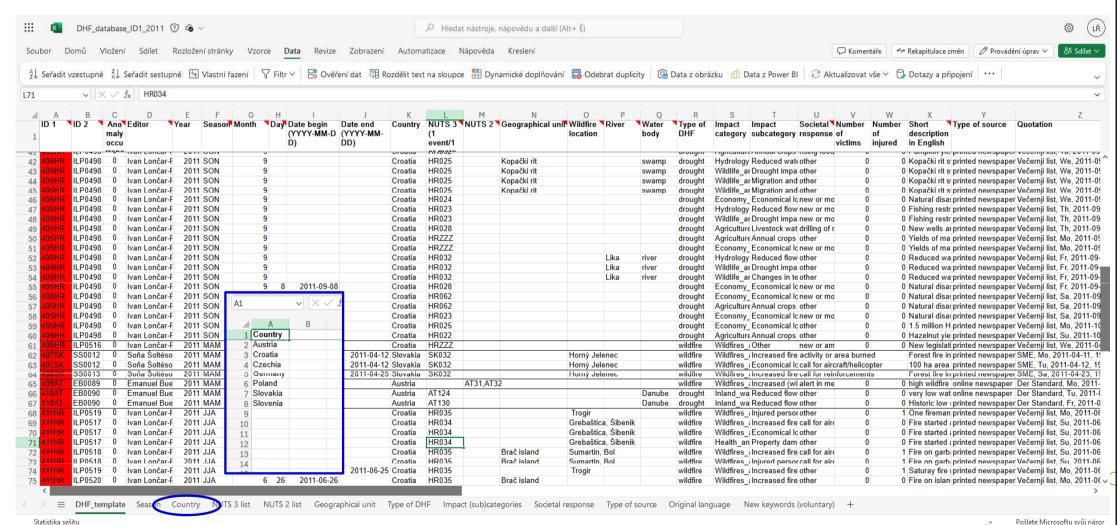
DATA COLLECTION

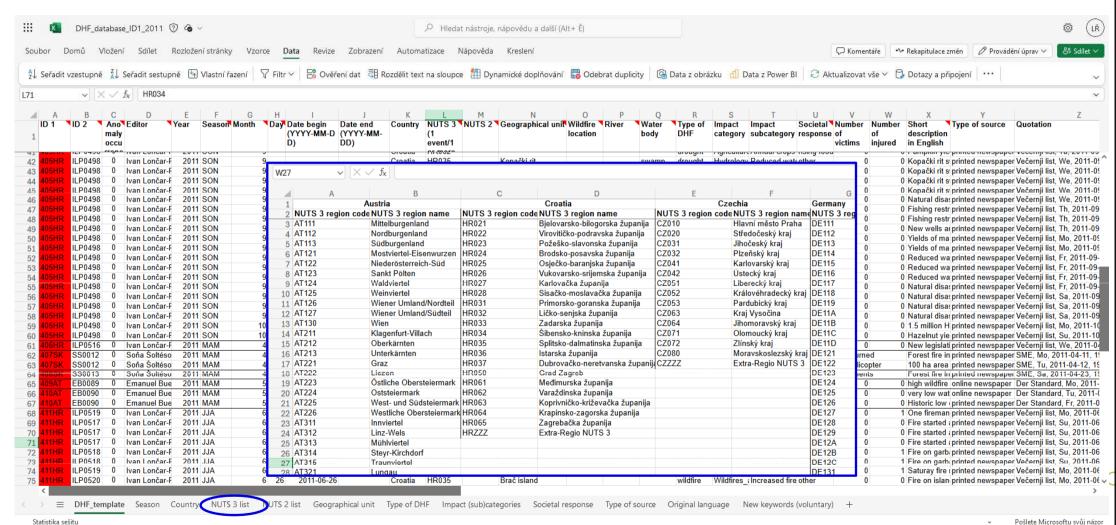
DHF events specification:

- Drought: all references to meteorological, agricultural, hydrological, socio-economic, etc. drought and their negative impacts
- Heat wave: all references to summer high temperatures, heat waves, heatwaves, etc., and their negative effects
- Wildfires: all references to fires occurring outside urban areas in the sense of forest fire, vegetation fire or field fire that was not intentionally set up for farming purposes

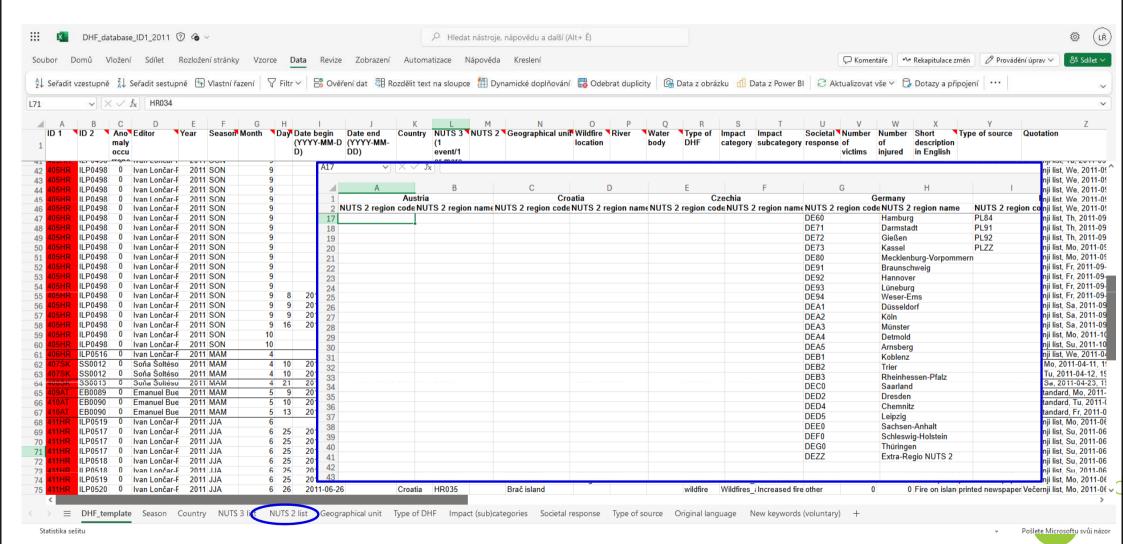


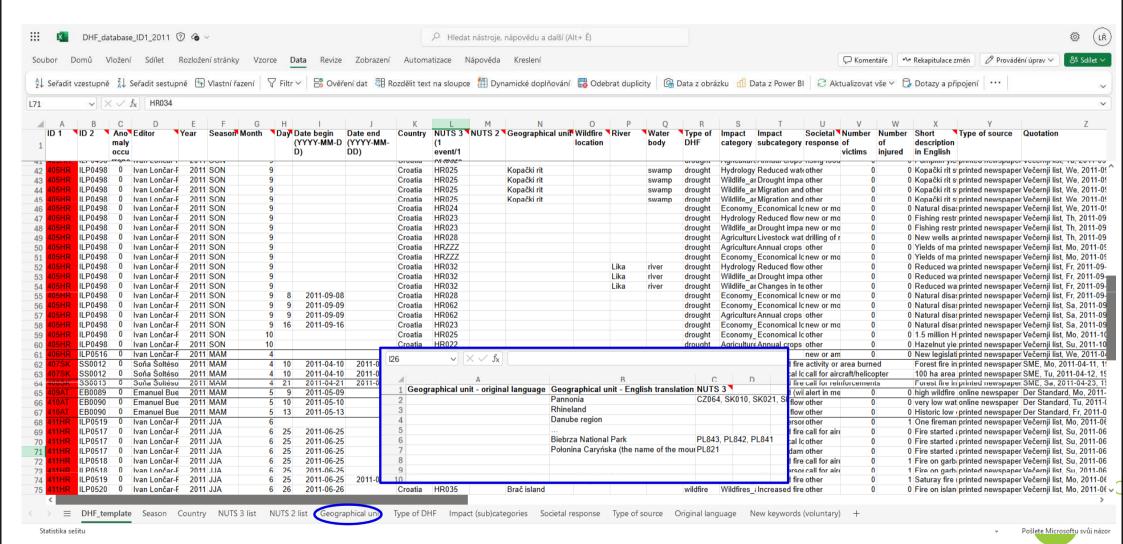




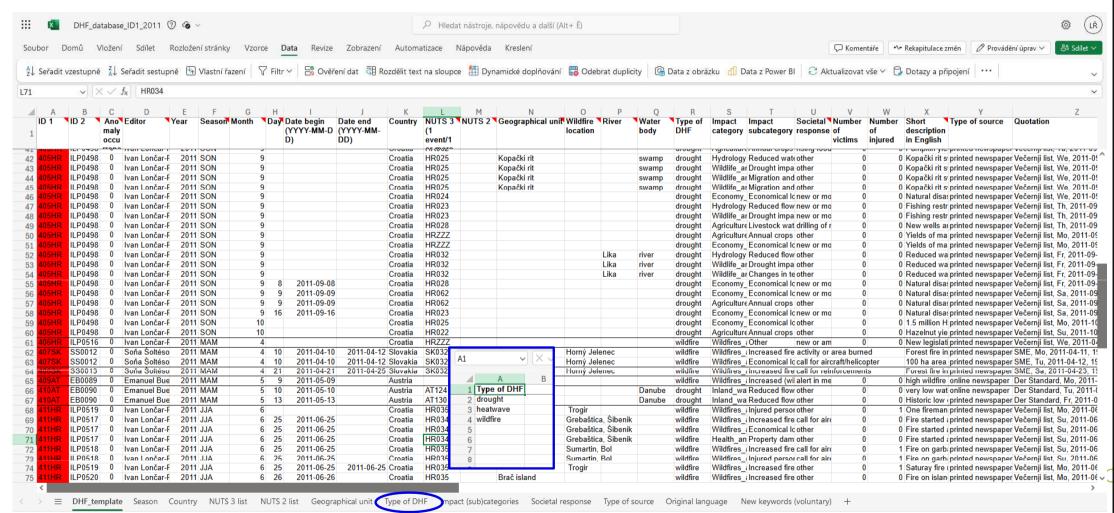


Pošlete Microsoftu svůj názor

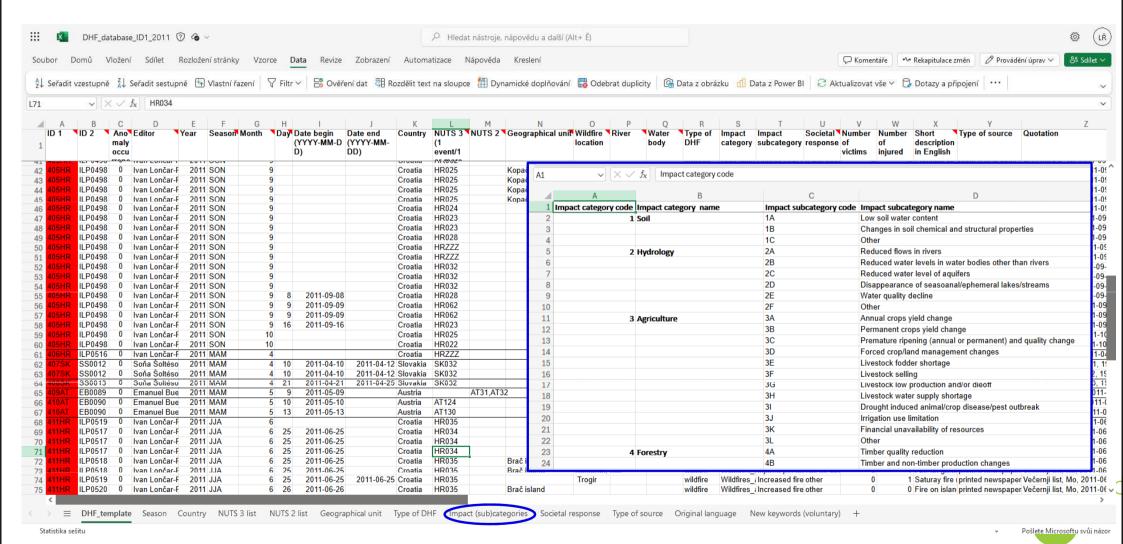


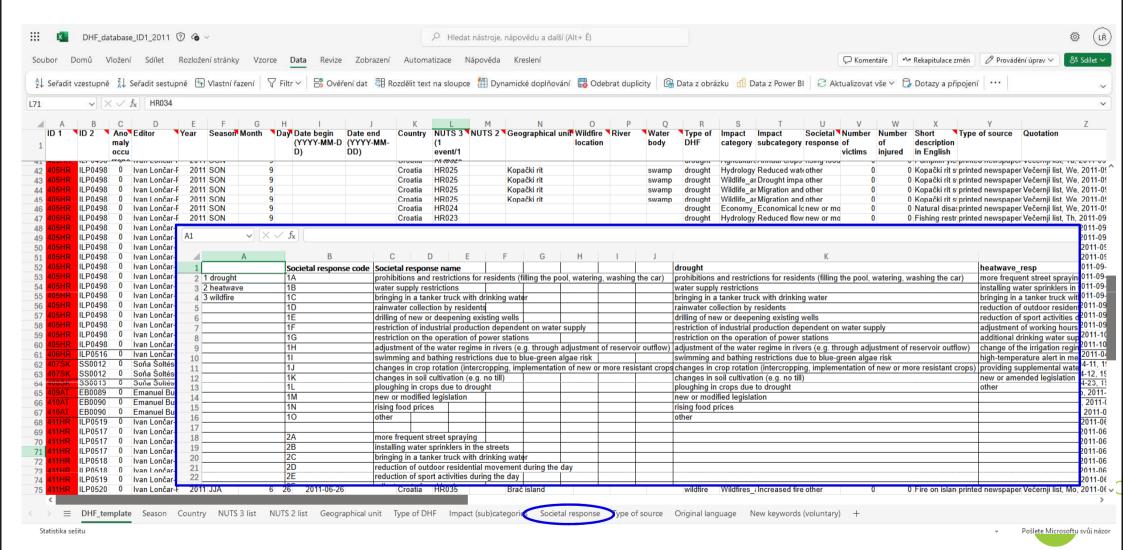


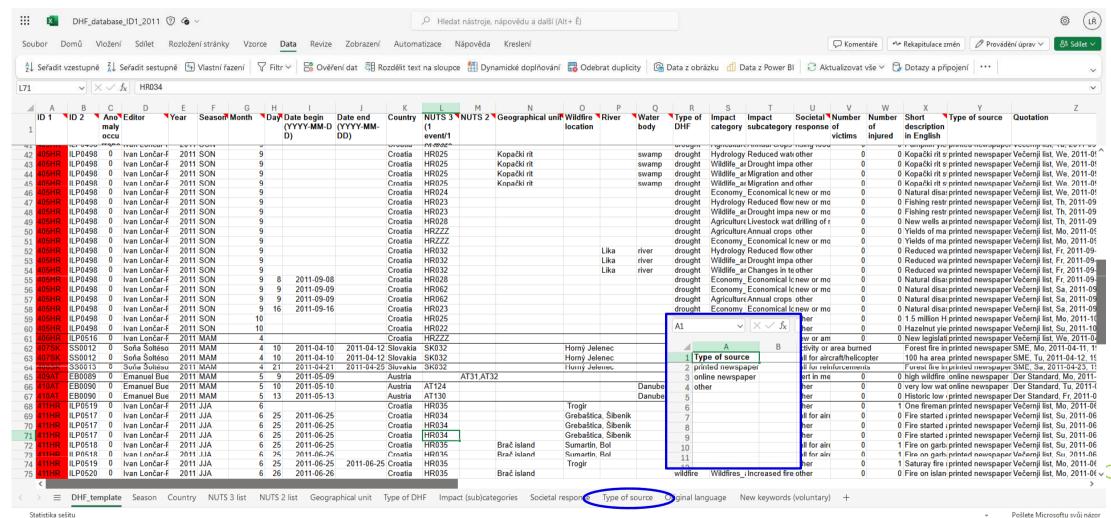
Statistika sešitu



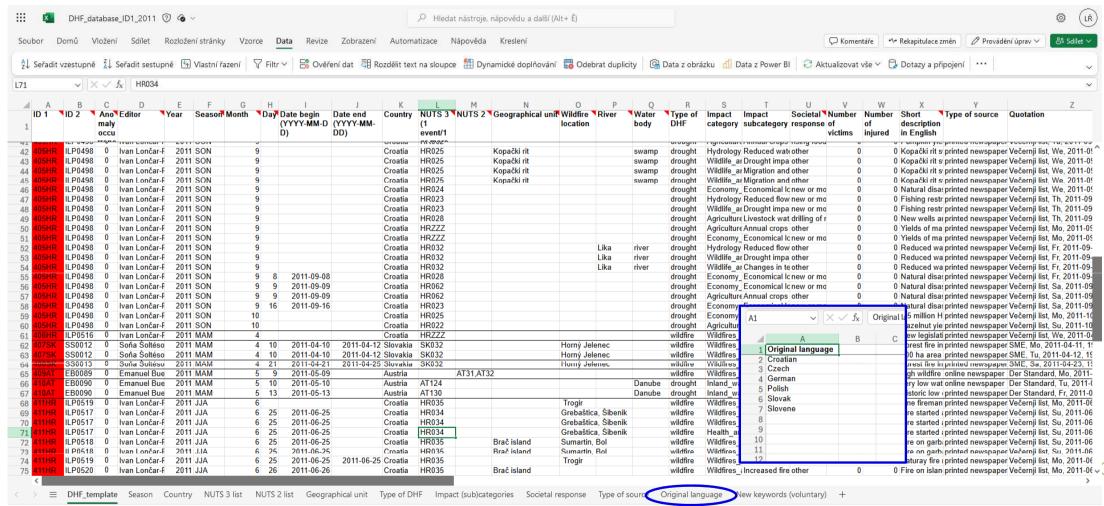
Pošlete Microsoftu svůj názor







Statistika sešitu



Pošlete Microsoftu svůj názor

DHF IMPACTS

83

84

85

86 87

88

89 90 14 Heatwave

15 Other

1	Impact category code	Impact category name	Impact subcategory code	Impact subcategory name		1 Impact category code Impact category name		Impact subcategory code Impact subcategory name	
2		Soil	1A	Low soil water content		35	6 Wildfires and fire occurrence	6A	Increased fire activity or area burned
3	_		1B	Changes in soil chemical and stru	ctural properties	36		6B	Economical losses due to wildfire activity
4			1C	Other		37		6C	Increased (wild)fire danger
5	2	Hydrology	2A	Reduced flows in rivers		38		6D	Casualty due to heatwave
6		,	2B	Reduced water levels in water boo	dies other than rivers	39		6E	Injured person(s)
7			2C	Reduced water level of aquifers		40		6F	Health difficulties
8			2D	Disappearance of seasoanal/ephe	emeral lakes/streams	41		6G	Other
9				Water quality decline		42	7 Household water supply	7A	Water use restricted
10			2F	Other		43	1	7B	Water unavailable for households
11	3	Agriculture	3A	Annual crops yield change		44		7C	Increased water price
12			3B	Permanent crops yield change		45		7D	Impaired water quality
13			3C	Premature ripening (annual or per	manent) and quality change	46		7E	Deepening or drilling new wells
14			3D	Forced crop/land management ch	anges	47		7F	Other
15			3E	Livestock fodder shortage		48	8 Health and society	8A	Disease outbreak due to drought
16			3F	Livestock selling		49	•	8B	Healthcare difficulties due to drought
17			3G	Livestock low production and/or di	ieoff	50		8C	Humanitarian aid in place
18			3H	Livestock water supply shortage		51		8D	Drought induced migration
19			31	Drought induced animal/crop dise	ase/pest outbreak	52		8E	Drought-induced conflict and/or violence
20			3J	Irrigation use limitation		53		8F	Casualty due to drought
21			3K	Financial unavailability of resource	es	54		8G	Area inhabitable due to lack of water
22			3L	Other		55		8H	Social inequalities in/due to water accesibility and social changes
23	4	Forestry	4A	Timber quality reduction		56		81	Food unavailable/restricted
24		-	4B	1 Impact category code Impact category name		Impact cubeatagan	code Impact subcategory name		Drinking water unavailable/restricted
25			4C	11 Tourism		11A	Water attractions restricted		Property damage/Building damage/Infrastructure damage
26	5	Wildlife and plants	5A (69		11B	Water sports restriction		Restrictions in place (other than household water use)
27			5B -	70		11C	Water use in resorts restricted		Other
28			5C -	71		11D	Restricted access		Impacts on hydropower
29				72		11E	Skiing and winter activities affected		Impacts on nuclear power
30			5E -	73		11F	Other		Other
31			5F		waterborne transportation	12A	Navigation limited or prohibited		Reduced production
32			5G -	75		12B	Cargo limited or prohibited		Lower production quality
33				76		12C	Forced infractructure changes		Out of business due to drought
34			51	77		12D	Other		Other
			-	78 13 Econom	13 Economy and technology 13		Economical losses	nomical losses	
			79			13B	Layoffs due to drought		
						13C	Forced technology changes		
				31		13D	Forced water recycling (eg rain water ha	rvesting)	
				32		13E	Increase in water and food prices	3,	
				20		425	1 1 2 1		

13F

13G

14A

14B

14C

14D

15E 15A Increase in production cost

Casualty due to heatwave

Decrease in milk production

Health difficulties during heatwave

Decrease in the well-being of livestock

Other

DHF DATABASE UTILIZATION

- Spatiotemporal analysis
- Comparation with instrumental data: drought indices, Heat Index, Fire Weather Index, etc
- Evaluation of DHF risks towards society and environment
- Severity index calcualtion



Thank you for your attent



https://www.interreg-central.eu/projects/clim4cast/

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