

PROJECT **4**

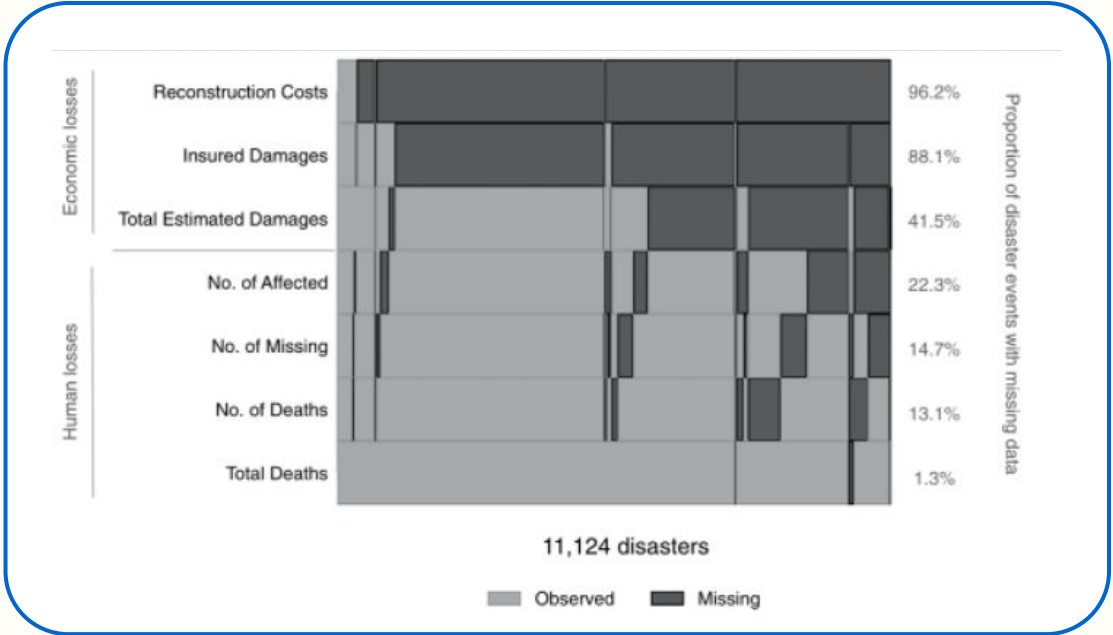
# Natural hazard impacts in the Global South



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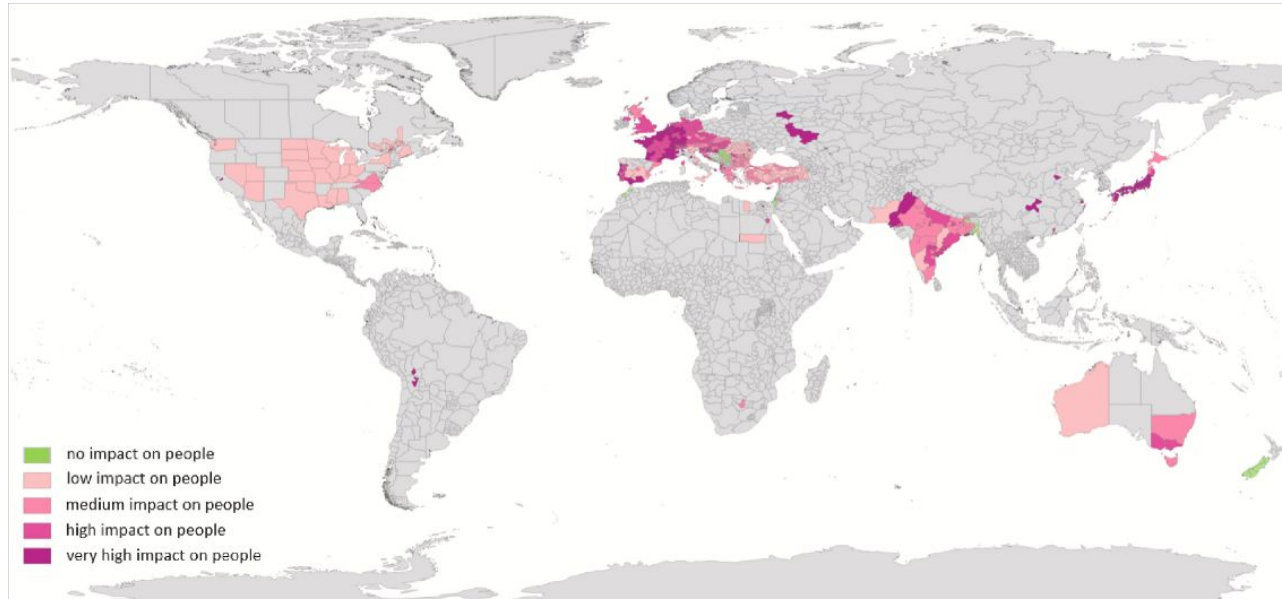
# Motivation



Jones, R. L., Guha-Sapir, D., & Tubeuf, S. (2022). Human and economic impacts of natural disasters: can we trust the global data?. *Scientific data*, 9(1), 572.

# Motivation

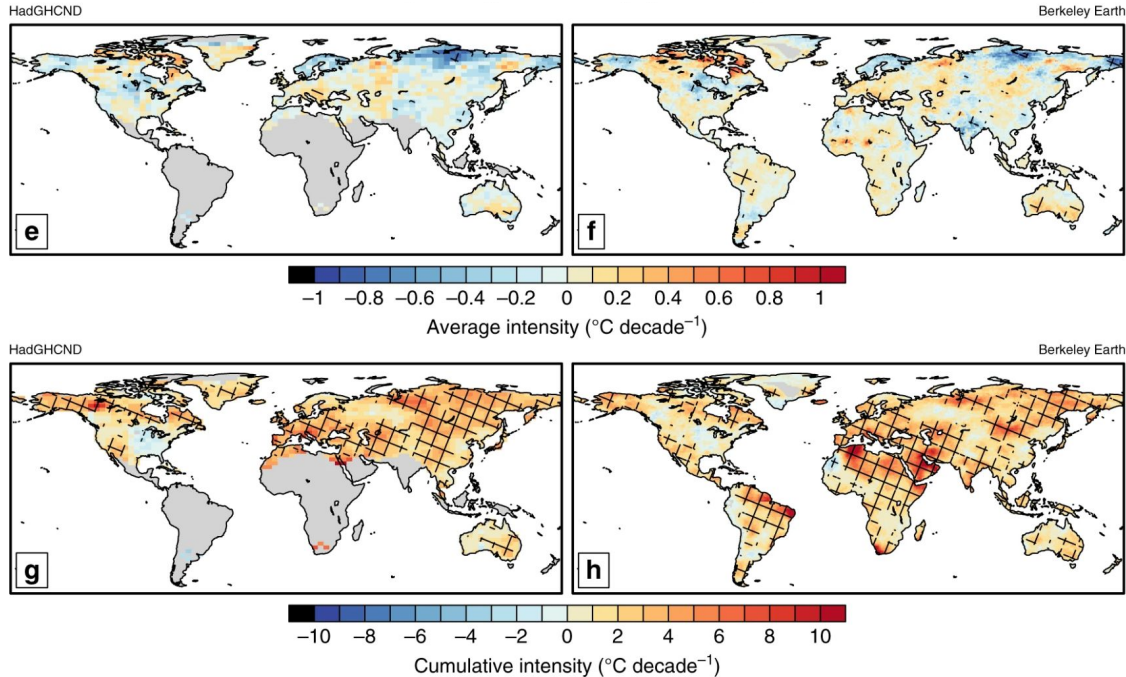
Level of impact from **heat waves** between 2000 and 2020 from EM-DAT



Donatti, C. I., et al. (2024). Global hotspots of climate-related disasters. *International Journal of Disaster Risk Reduction*, 108, 104488.

# Motivation

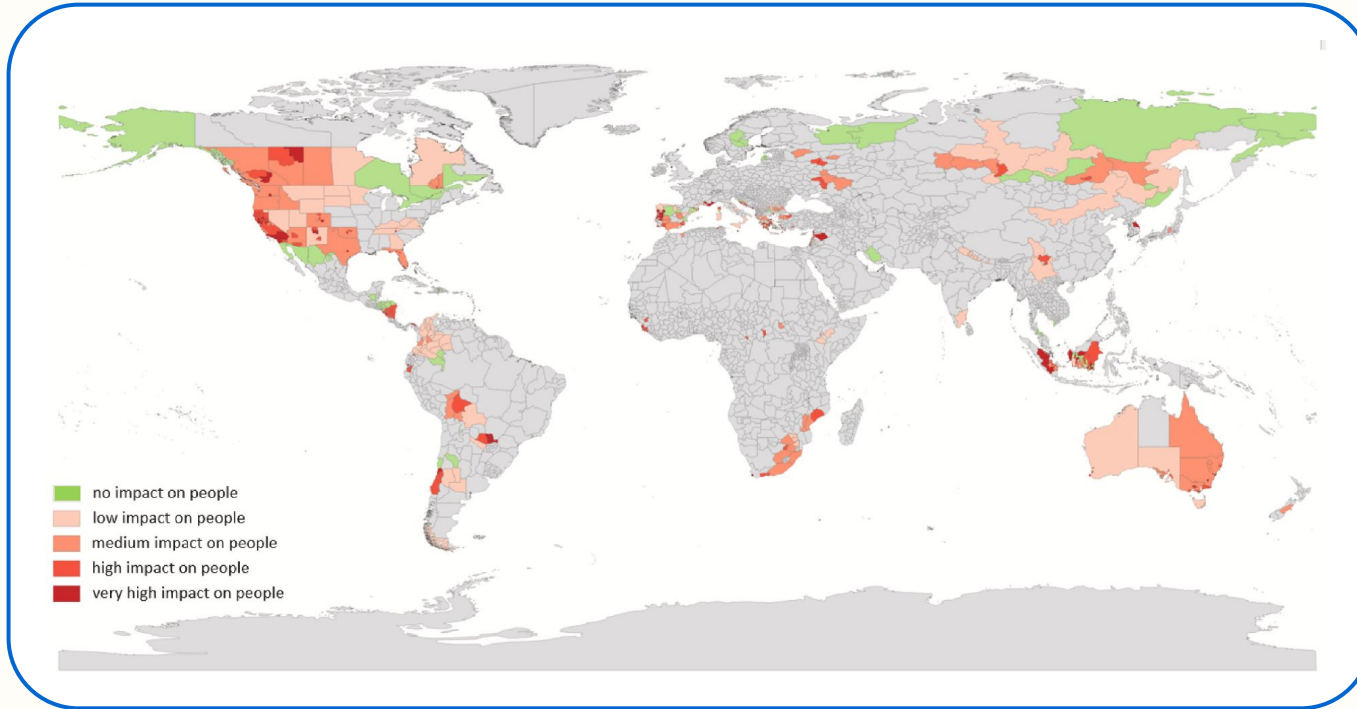
Av. heatwave intensity and cumulative heat from 1950 to 2014



Perkins-Kirkpatrick, S.E.,  
Lewis, S.C. Increasing  
trends in regional  
heatwaves. Nat Commun  
11, 3357 (2020).  
<https://doi.org/10.1038/s41467-020-16970-7>

# Motivation

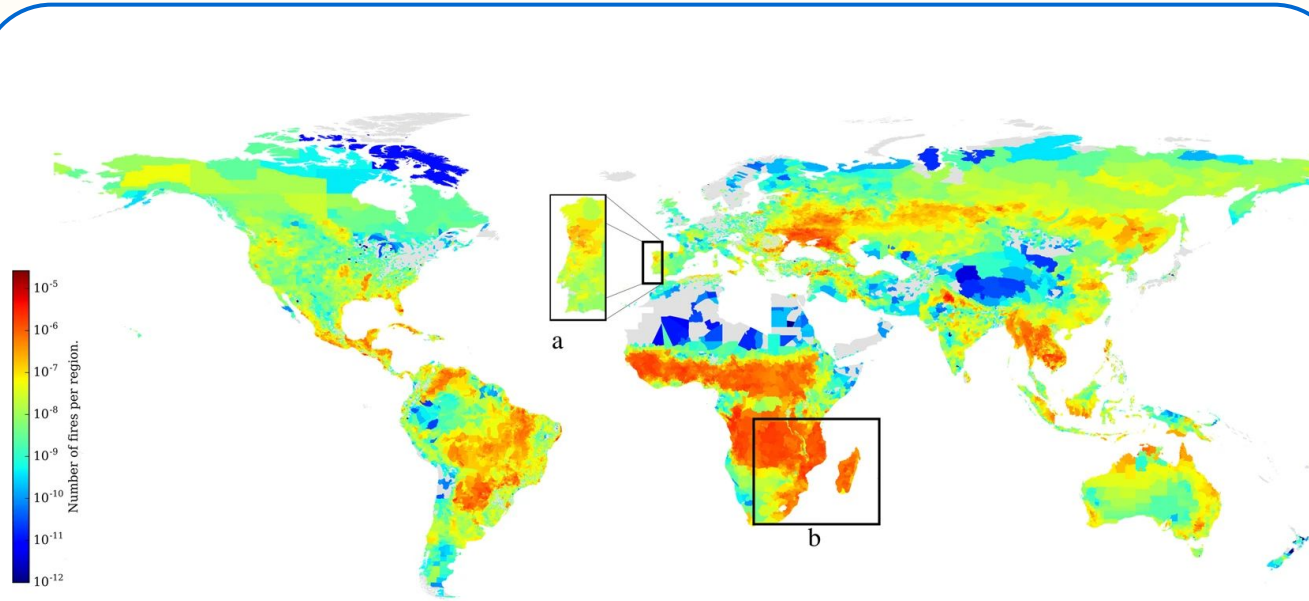
Level of impact from **wildfires** between 2000 and 2020 from EM-DAT



Donatti, C. I., et al. (2024).  
Global hotspots of  
climate-related disasters.  
International Journal of  
Disaster Risk Reduction,  
108, 104488.

# Motivation

Number of fires per region from 2001 to 2017



Artés, T., Oom, D., de Rigo, D. et al. A global wildfire dataset for the analysis of fire regimes and fire behaviour. *Sci Data* 6, 296 (2019).

<https://doi.org/10.1038/s41597-019-0312-2>

# The data

## Operations update

 International Federation  
of Red Cross and Red Crescent Societies

**Philippines:  
Typhoons**

Emergency appeal n° MDRPH005  
GLIDE n° TC-2009-000205-PHL  
Operations update n° 11  
12 February 2010

Period covered by this Operations  
Update: 1 to 31 January 2010.

Appeal target (current): CHF 16,286,096



Reports on immediate aid, recovery, and resilience-building in the aftermath of disasters led by the IFRC



[ifrc.org/appeals](http://ifrc.org/appeals)

# The data

+900 reported  
disasters from IFRC

**IDs**

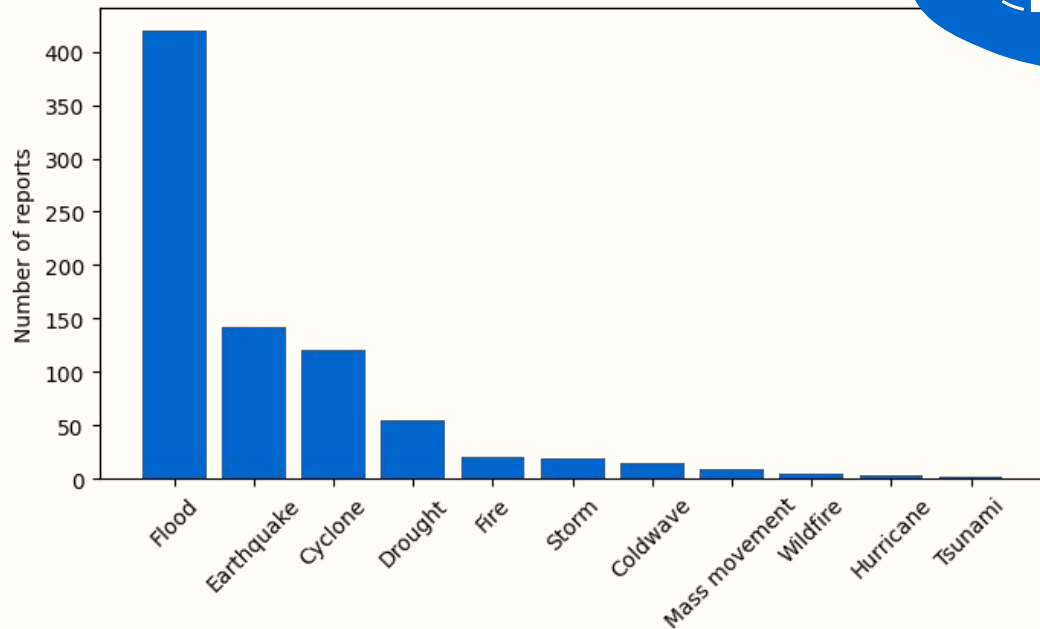
Appeal ID

Appeal type

Date

Location

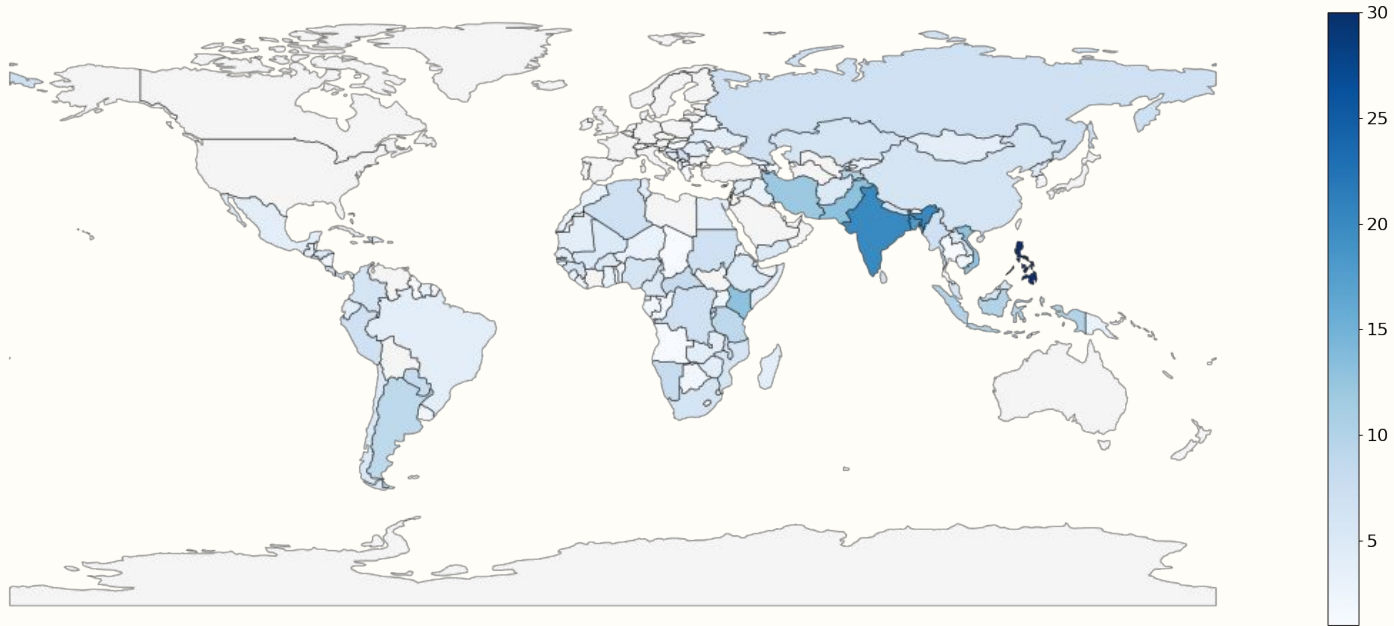
Disaster type





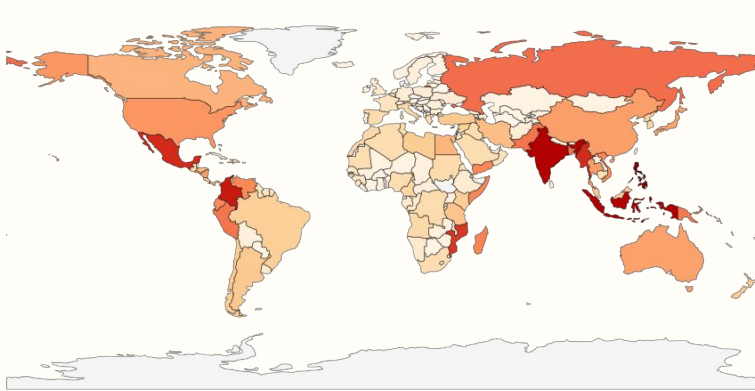
# The data

Number of unique disasters per country

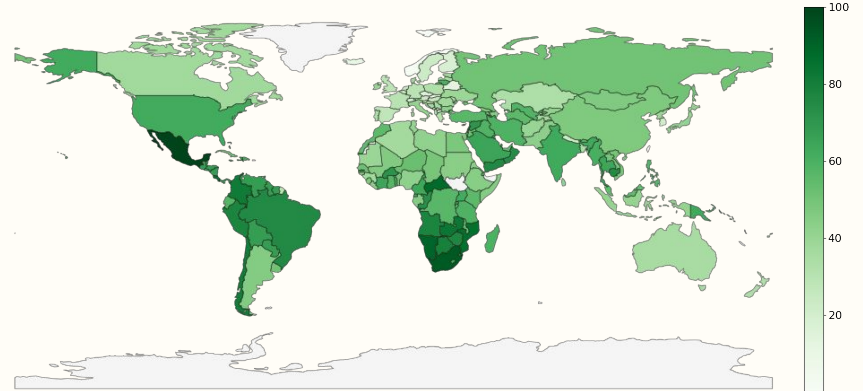


# The data

World Risk Index



Income Gini Coefficient



+ socioeconomic variables  
and vulnerability indicators

# Research questions

1

Which hazards are compounded by or associated with other hazards?



Entity linking

2

Who are the key stakeholders involved in these operations, and to what extent are local citizens and organizations included?

Named entity recognition



# Research questions

3

What are the response measures adopted by the IFRC (e.g. structural and non-structural measures)?

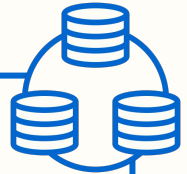
Topic modeling



4

How do the events in the IFRC database compare to other databases such as EM-DAT and DesInventar?

Statistical analyses



# Research questions

5

What is the relationship between vulnerability, hazards, socioeconomic status and the disasters in the IFRC database?

Statistical analyses

6

How long does the assistance by the Red Cross take, depending on the hazard type and if the event is compounded by other hazards or not?

