

Union Civil Protection Knowledge Network

DRM training 6 (31/10/2023):

How prioritization of short term and long term humanitarian aid funding can be influenced by a number of climate change, disaster, socio-economic, political elements

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European Commission/DG ECHO



Agenda of the training session*

1. 09.00 – 09.30 (UTC)

A crash course on prioritising funding and resources in a complex system

2. 09.30 – 09.40

Q&A + group assignment on prioritising per two different cases

3. 09.40 – 10.20

Divided into six groups and group work (incl. health breaks)

4. 10.20 – 11.00

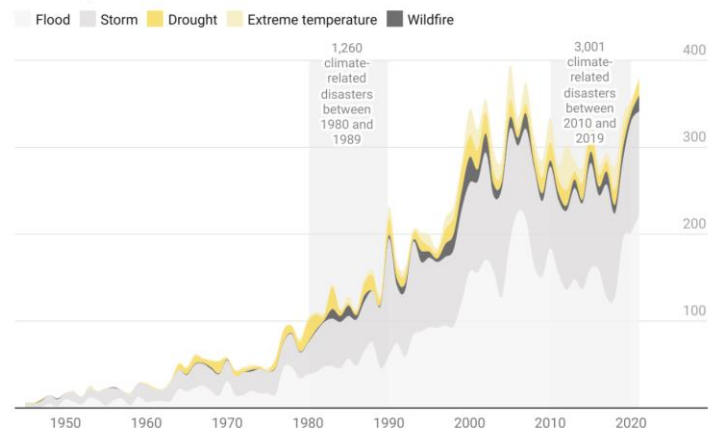
Presentations on each group work (4~ mins each) and closing

One way to frame the problem

Climate-related disasters rising and likely to rise

Climate-related disasters almost tripled in current decade compared to 1980s

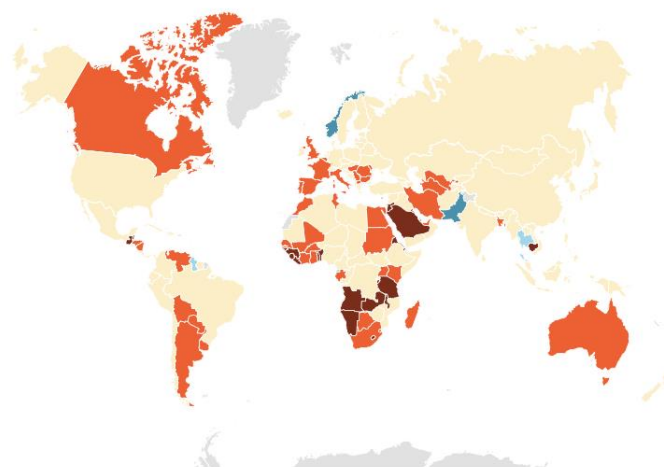
Flood occurrences tripled, while the number of extreme-temperature was six times more during the same period.



Vastly different situations projected around the world

Optimistic climate and socio-economic scenario (RCP 4.5 + SSP1)

Change in risk (2050-baseline)



How to allocate unearmarked global envelope equitably?



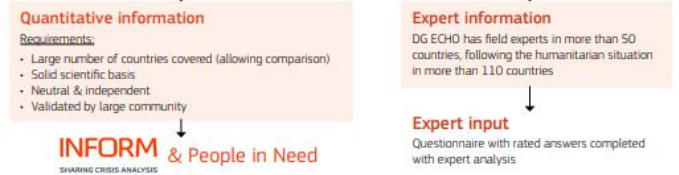
One way to examine a prioritisation process



HUMANITARIAN AID FUNDING ALLOCATION

- Evidence-based assessment of the needs
- Covering more than 85 countries worldwide
- In respect of Humanitarian Principles (1)

DG ECHO's evidence-based funding allocation methodology relies on



Risk

INFORM Risk Assesses countries at risk of humanitarian crisis & disaster that would overwhelm national response capacity.

Three dimensions: hazard & exposure, vulnerability, and lack of coping capacity.

Severity

INFORM Severity Assesses the severity of a crisis (Methodology: min. 2 years duration).

People in Need (PIN) PIN levels 3-5, representing the moderate, severe and extreme humanitarian conditions.

Expert Information

Expert Survey

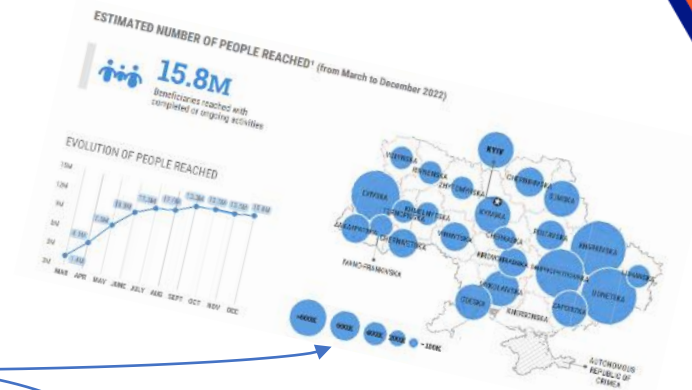
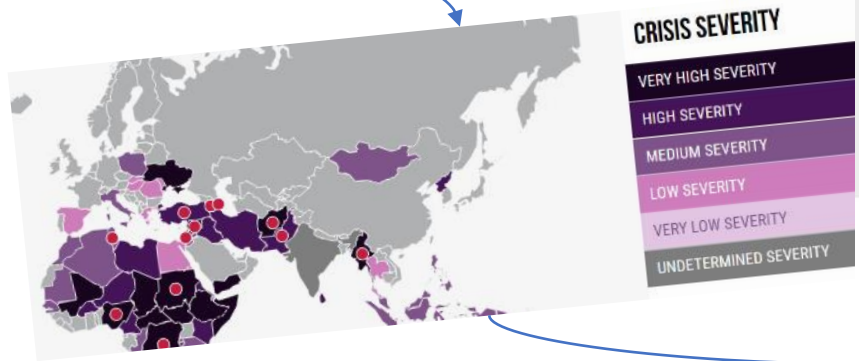
A Expert Index calculated for algorithm - Containing 11 questions to assess humanitarian aid response, implementation capacity & expected outlook of the crisis.

Quality control - 11 questions to support decision making.

B Respondents choose from scale (eg. deteriorating - increasing)

7% Risk Index + 3% Vulnerability GAP + 90% (Average (Severity, PIN))

80% Quantitative information **20% Expert information**

$$\text{Funding Allocation Index} = \text{Funding Allocation}_{\text{Country } i} = \frac{\text{Funding Allocation Index}_{\text{Country } i} \times \text{Total available Budget}}{\sum_{c=1}^n \text{Funding Allocation Index}_{\text{Country } c}}$$


Plan Type	People targeted	People reached	People reached %
HRP	22.1 M	27.2 M	100%
HRP	20.0 M	21.7 M	100%
HRP	11.5 M	15.4 M	100%
HRP	17.9 M	15.0 M	84%
HRP	11.8 M	7.8 M	66%
HRP	7.6 M	7.3 M	96%
HRP	10.9 M	7.1 M	65%
HRP	6.8 M	6.8 M	100%
HRP	8.8 M	6.2 M	71%
HRP	9.5 M	4.5 M	47%
HRP	6.2 M	4.3 M	69%

A few ways to reflect the real world



People in need (all plans) **364.6 million**
 People targeted (all plans) **250.2 million**



Article | [Published: 23 March 2023](#)

New damage curves and multimodel analysis suggest lower optimal temperature

[Kaj-Ivar van der Wijst](#), [Francesco Bosello](#), [Shouro Dasgupta](#), [Laurent Drouet](#), [Johannes Emmerling](#), [Andries Hof](#), [Marian Leimbach](#), [Ramiro Parrado](#), [Franziska Piontek](#), [Gabriele Standardi](#) & [Detlef van Vuuren](#)

RESEARCH ARTICLE | ECONOMIC SCIENCES | 8

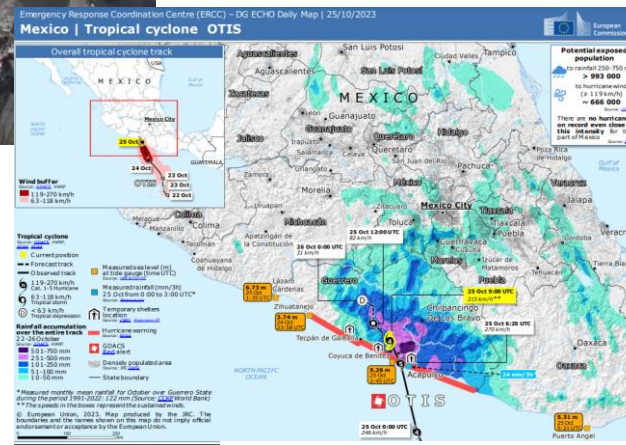


Evidence for sharp increase in the economic damages of extreme natural disasters

[Matteo Coronese](#), [Francesco Lamperti](#), [Klaus Keller](#), [+1](#), and [Andrea Roventini](#) | [Authors Info & Affiliations](#)

Edited by Arild Underdal, University of Oslo, Oslo, Norway, and approved September 5, 2019 (received for review May 8, 2019)

October 7, 2019 | 116 (43) 21450-21455 | <https://doi.org/10.1073/pnas.1907826116>



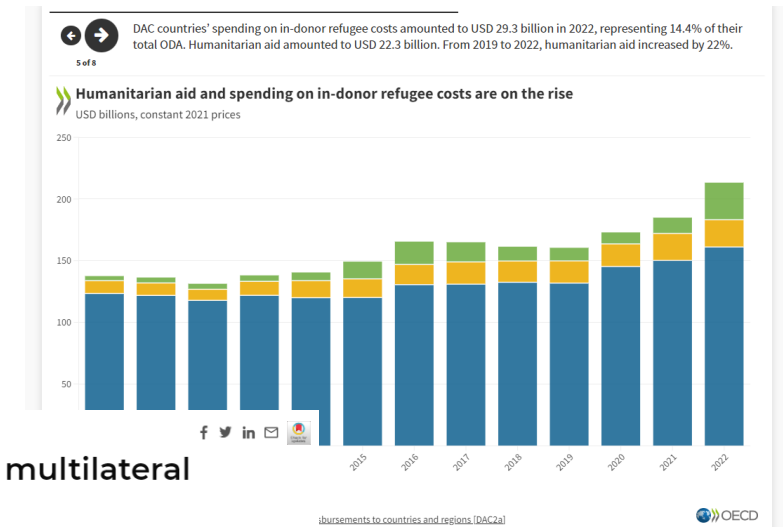
RESEARCH ARTICLE | POLITICAL SCIENCES | 8

Humanitarian need drives multilateral disaster aid

[Lisa M. Dellmuth](#), [Frida A.-M. Bender](#), [Alden R. Jonsson](#), [+1](#), and [Nina von Uexkull](#) | [Authors Info & Affiliations](#)

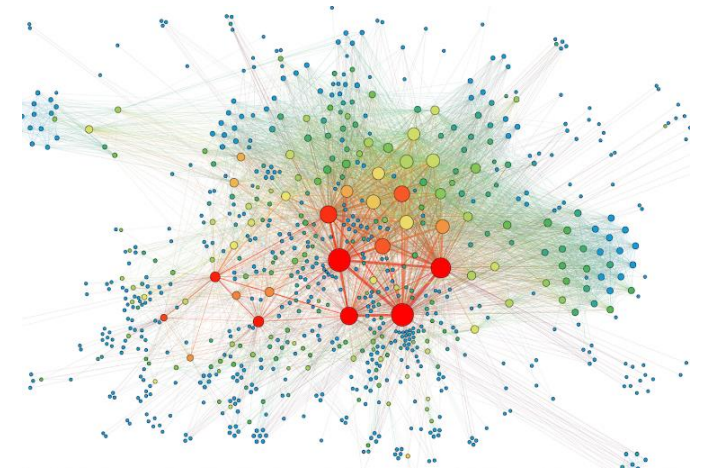
Edited by Arild Underdal, University of Oslo, Oslo, Norway, and approved December 17, 2020 (received for review August 31, 2020)

January 21, 2021 | 118 (4) e2018293118 | <https://doi.org/10.1073/pnas.2018293118>



Multiple ways to theoretically approach the problem

- Constitutional economics (Buchanan) exploring the choice of alternative sets of legal-institutional-constitutional rules that constrain the choices and activities of economic and political agents.
 - *Legal?* Equality, effectiveness, sound financial management, impartiality (means that humanitarian aid must be provided solely on the basis of need, without discrimination)
 - *Political realism?*
- Behavioural economics: Decision maker can be a flawed human with limited cognitive capacity (Thaler, 1980)
- Forced-choice decision-making, multi-criteria decision analysis, operational science, etc. contribute
- Better to ask than to assume. (Rising et al., 2022, Lentz & Maxwell, 2022)
- Weaknesses in damage estimation are a key research area. (IPCC WG2, 2022)



Tyranny of the Present

Or “to what timeframe do we focus on?”

Figure 2.10. “Innovation curve” – from destructive to regenerative approaches



(Source: UNDRR 2019)

Source: <https://www.preventionweb.net/understanding-disaster-risk/key-concepts/disaster-risk-reduction-disaster-risk-management>

Tyranny of the Present

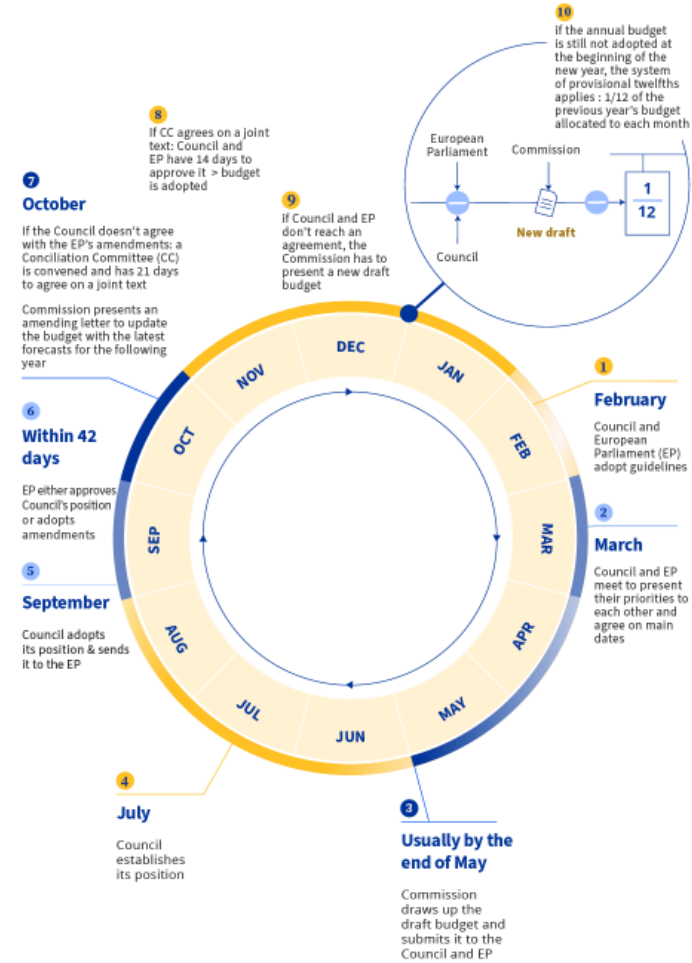
Or “to what timeframe do we focus on?”

“What timeframe(s) are you most likely to allocate funding for and to use as your forecast?”

(Multiple can be chosen.) (N=36) (unpublished)

	Answers	Ratio
Hour(s) forward	2	5.56 %
Day(s) forward	16	44.44 %
Month(s) forward	24	66.67 %
Year(s) forward	16	44.44 %
Decade(s) forward	4	11.11 %
2041-2060 (IPCC mid-term)	1	2.78 %
2081-2100 (IPCC long-term)	0	0 %

EU Budget Timing (pragmatic calendar)

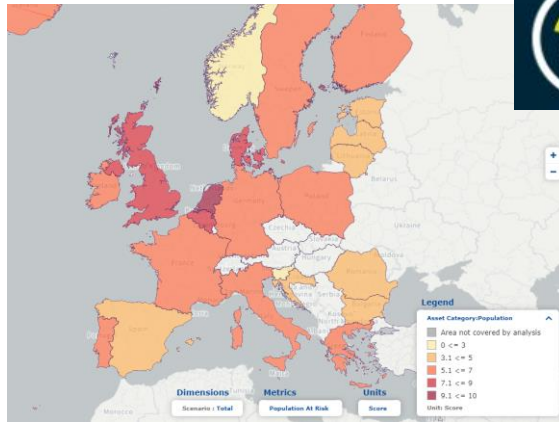


Inequity Aversion

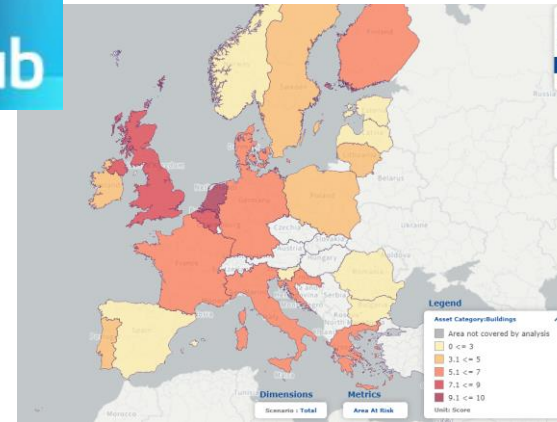
Or “how should we distribute funding objectively and on what basis?”



Coastal Flood – Risk to population

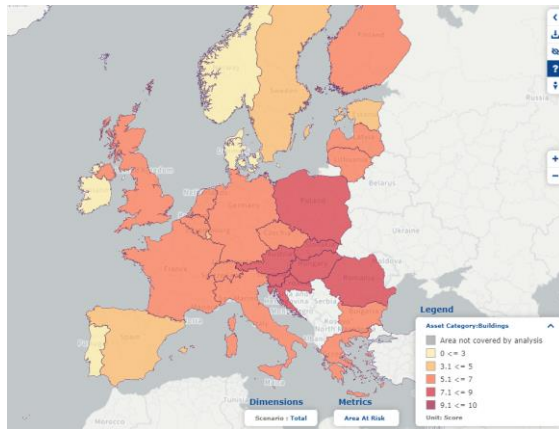


Coastal Flood – Risk to buildings

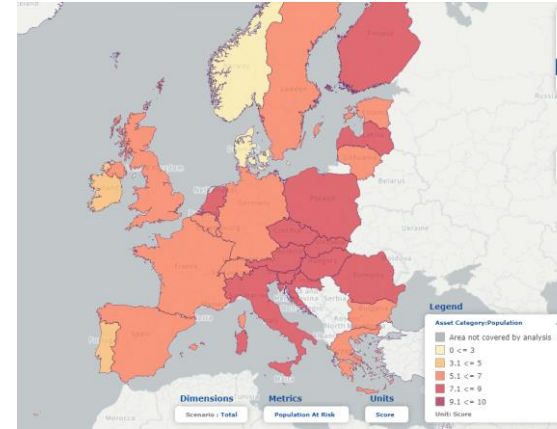


versus

River Flood – Risk to population



River Flood – Risk to buildings



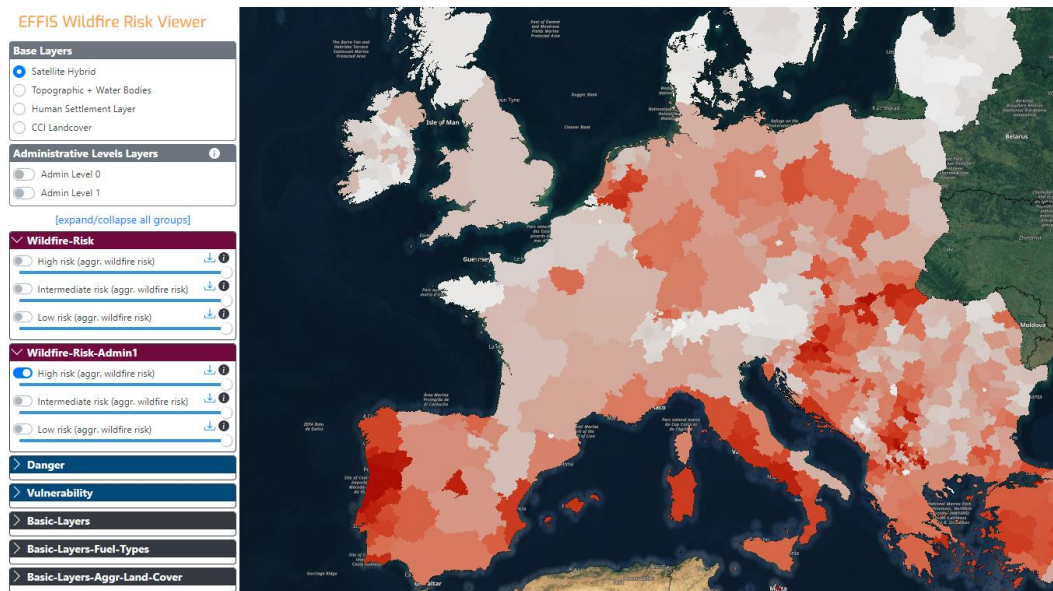
Inequity Aversion



Emergency Management Service

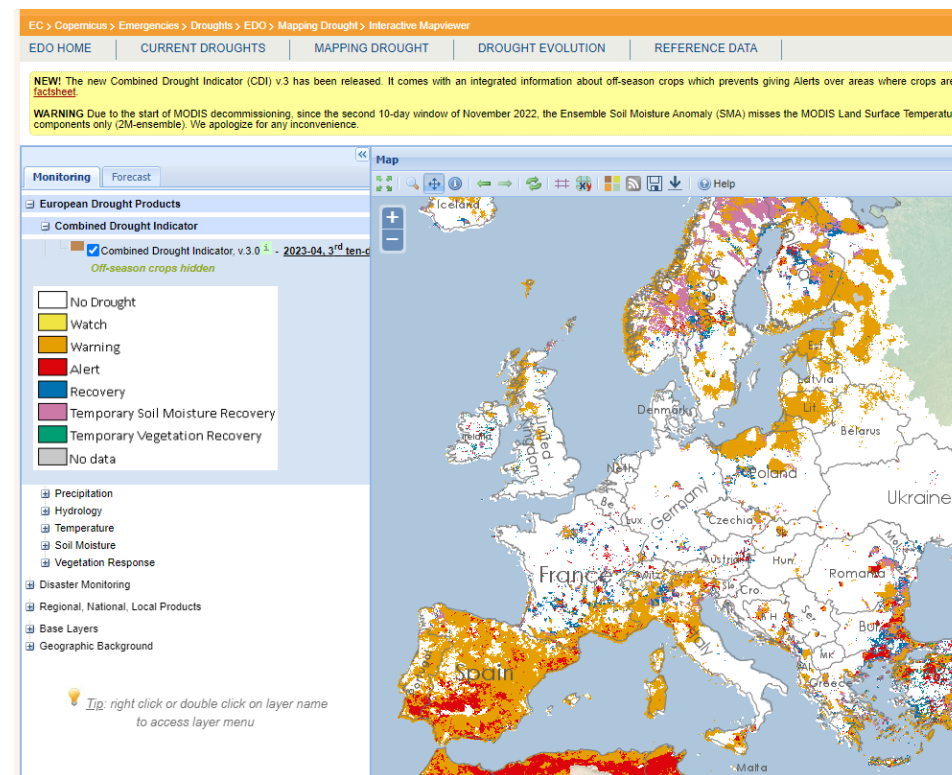
Or “how should we distribute funding objectively and on what basis?”

EFFIS Wildfire Risk



versus

EDO Drought Risk



Sources: <https://effis.jrc.ec.europa.eu/apps/fire.risk.viewer/> & <https://edo.jrc.ec.europa.eu/edov2/php/index.php?id=1111>

Inequity Aversion

Source: https://joint-research-centre.ec.europa.eu/system/files/2020-05/pesetaiv_summary_final_report.pdf

Or “how should we distribute funding objectively and on what basis?”

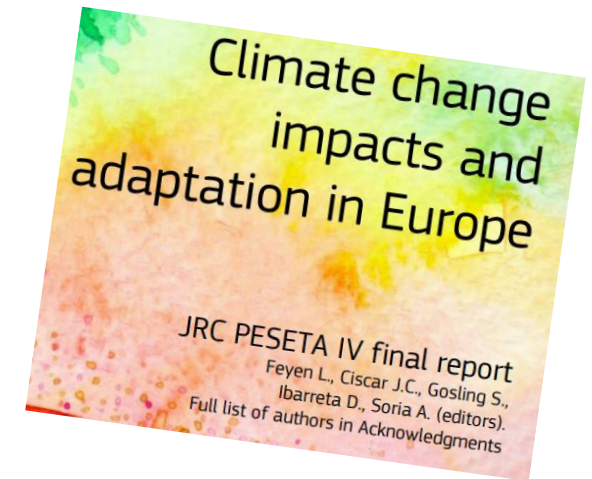
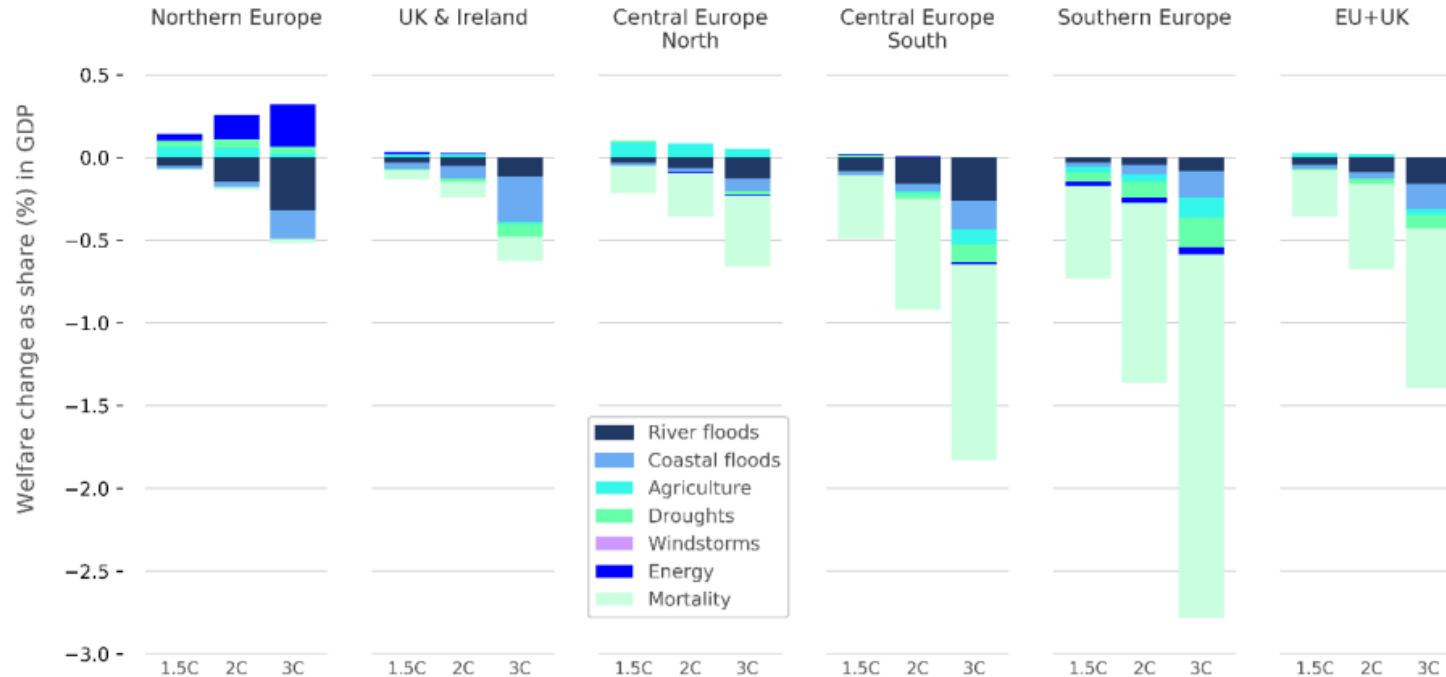
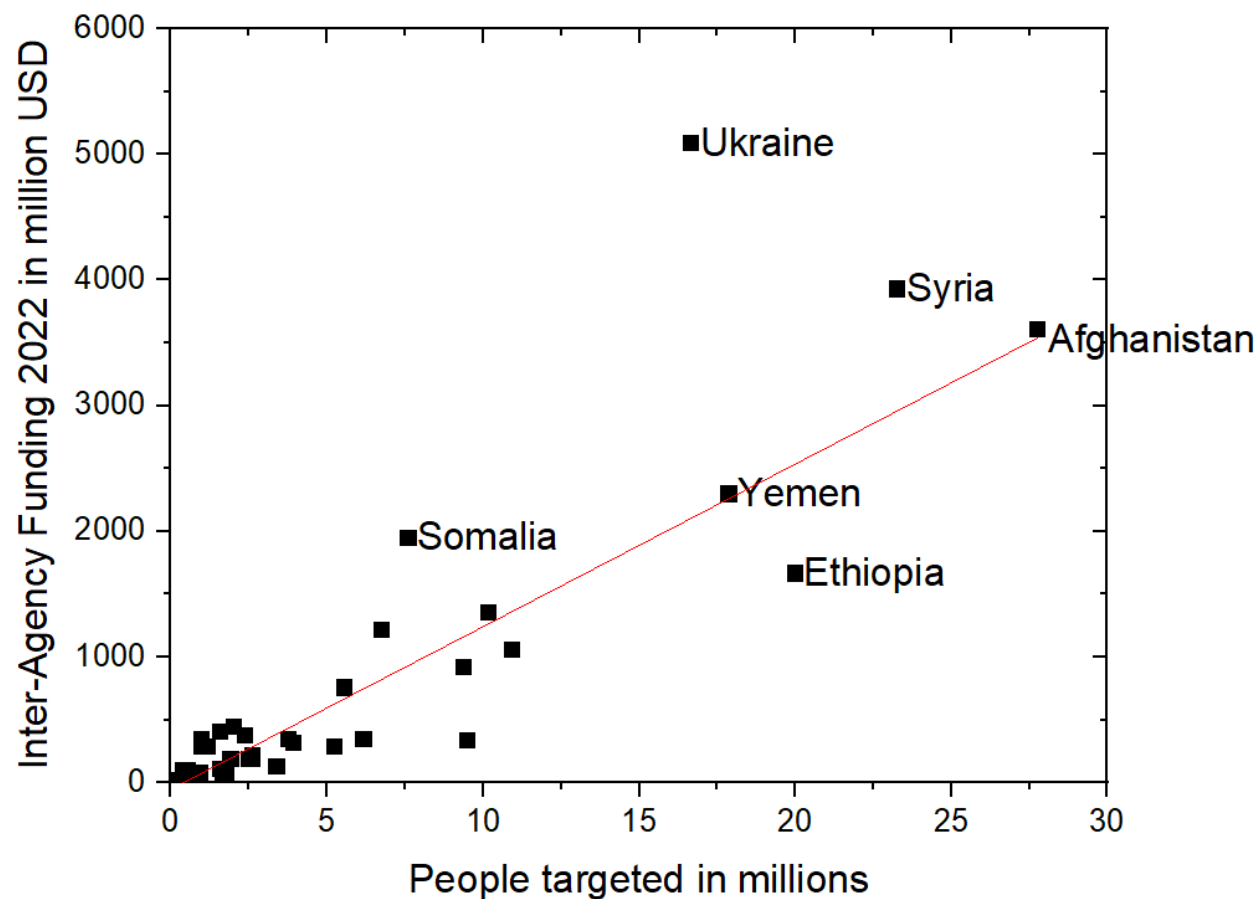


Figure 31. Welfare loss (% of GDP) from considered climate impacts at warming levels for the EU and the UK, and for macro regions (see Approach). The results represent change in welfare if warming levels would act upon current economy, compared to current economy under present climate.

Political Economy

Or that “economics is a moral science”



Source: Anna Berlin via <https://humanitarianaction.info/>

Example: Delphi and funding simulation*

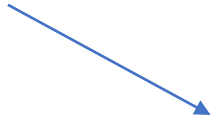
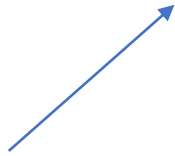
- 2-round Delphi method with funding priority simulation on a 4-point scale
 - **Q1:** What are the priority *criteria* in allocating humanitarian or disaster aid funding per future forecasts in view of climate change response or adaptation?
 - **Q2:** What are the priority *options* for which to allocate humanitarian or disaster aid funding regarding adaptation to representative key risks of climate change?
- Global frameworks, INFORM suite (Q1) and IPCC RKR (Q2), as a baseline
- Panel (N=36) composition
 - 50/50 gender, 19 countries, IOs (e.g., UN, EU, World Bank, Red Cross Red Crescent), the research sector, the public sector, and civil society (e.g., Save the Children, World Vision). Preference on near-future forecasting, primarily month(s) forward and up to year(s).



Example: Summary of panel priority preferences*

Priority ↑	Q1: <i>Criteria</i> in allocating humanitarian or disaster aid funding per future forecasts in view of climate change response or adaptation	Q2: <i>Options</i> for which to allocate humanitarian or disaster aid funding regarding adaptation to representative key risks of climate change
HIGH PRIORITY	<ul style="list-style-type: none"> PEOPLE IN NEED (PIN) PER SEVERITY LEVEL OF THEIR HUMANITARIAN CONDITIONS (INCL. AFFECTED AND DISPLACED) RISK OF HAZARD AND EXPOSURE TO DISASTERS 	<ul style="list-style-type: none"> RISK TO FOOD SECURITY RISK TO HUMAN HEALTH RISK TO WATER SECURITY
SOMEWHAT HIGH PRIORITY	<ul style="list-style-type: none"> CAPACITY OF LOCAL ACTORS AND ON-GOING PROGRAMMING TO RESPOND/ADAPT INDICATORS ON VULNERABLE GROUPS OR DIVERSITY OF GROUPS AFFECTED 	<ul style="list-style-type: none"> RISKS TO PEACE AND TO HUMAN MOBILITY
(in between)	<ul style="list-style-type: none"> HUMANITARIAN ACCESS INDICATORS LACK OF INFRASTRUCTURAL COPING CAPACITY 	<ul style="list-style-type: none"> RISK TO LIVING STANDARDS RISKS ASSOCIATED WITH CRITICAL PHYSICAL INFRASTRUCTURE, NETWORKS AND SERVICES
SOMEWHAT LOW PRIORITY	<ul style="list-style-type: none"> RULE OF LAW INDICATORS AND LACK OF INSTITUTIONAL COPING CAPACITY SOCIAL COHESION INDICATORS AND SOCIO-ECONOMIC VULNERABILITY 	<ul style="list-style-type: none"> RISK TO LOW-LYING COASTAL SOCIOECOLOGICAL SYSTEMS RISK TO TERRESTRIAL AND OCEAN ECOSYSTEMS

High priority is much more relevant than somewhat low priority during real-life funding allocation processes.



Economics for Disaster Prevention and Preparedness

Study developed by the European Commission and the World Bank

- Financed under the European Union Civil Protection Mechanism (UCPM). **Focuses on the risk landscape of the EU and the positive effects of disaster prevention and preparedness:**
 1. “Investment in Disaster Risk Management in Europe Makes Economic Sense”
 2. “Financial Risk and Opportunities to Build Resilience in Europe”
 3. “Understanding the Needs of Civil Protection Agencies and Opportunities for Scaling up Disaster Risk Management Investments”
- Series of 3 online workshops (120 min each) where the experts involved provide more background of the study and its findings.
- Plus an online 1 hr e-learning course on EU Academy!
- Till May 2024, DG ECHO and the World Bank are collaborating on the second phase of the study



QR code to the e-learning
on EU Academy

<https://civil-protection-knowledge-network.europa.eu/economics-disaster-prevention-and-preparedness>

Group work assignment

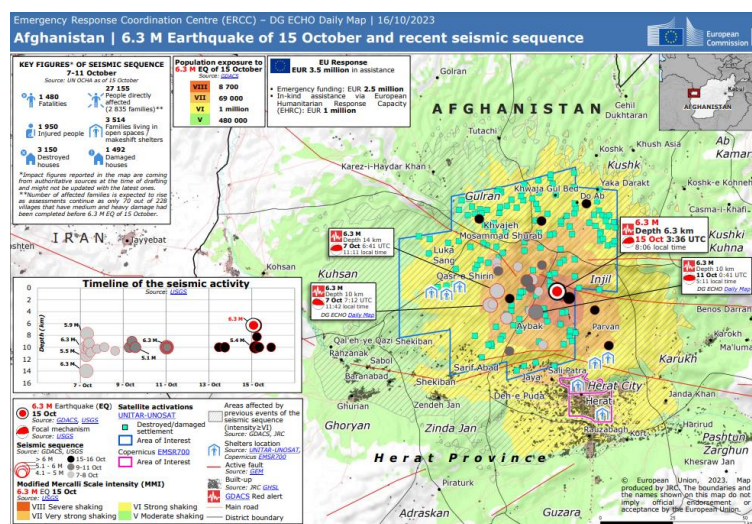
ASSIGNMENT: You have 100M€ euros to use. *How will your group prioritise and distribute it around the assigned area and to what sort of response/disaster risk reduction activities?* Please quantify the allocations and justify.

09.40 – 10.20 : Divided into six groups and group work (incl. health breaks)

10.20 – 11.00 : Presentations on each group work (4~ mins each) and closing

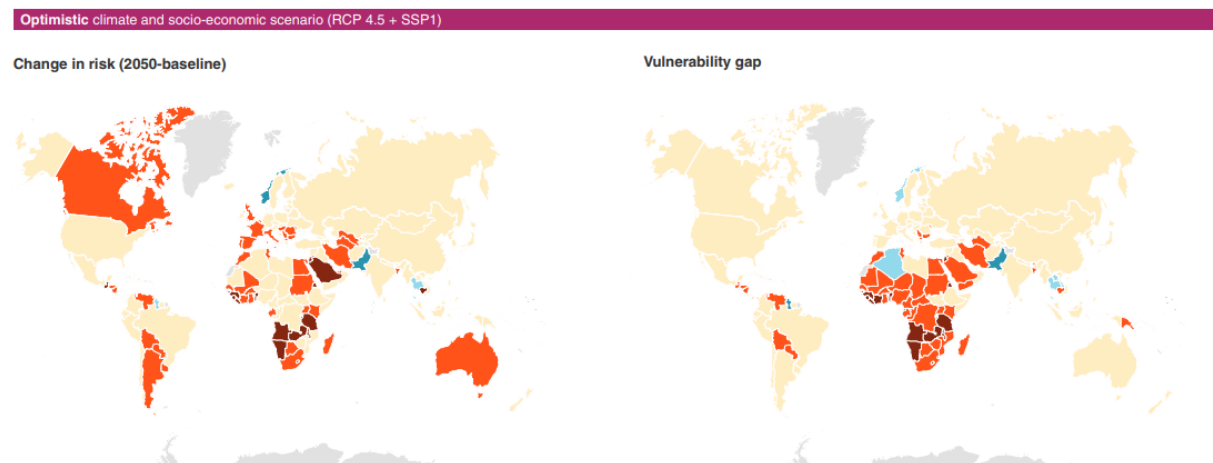
You can present with a slide, screen sharing a Word doc, one presenter or multiple = up to you how to convince your bosses, the supreme legislative body and auditors of your work. For sake of simplicity and time, only use the material assigned.

Groups 1-3 (short term funding for earthquake in Afghanistan)



<https://ercportal.jrc.ec.europa.eu/ECHO-Products/Maps#/maps/4666>

Groups 4-6 (long term funding for climate change-related crises globally)



<https://drm.jrc.ec.europa.eu/inform-index/Portals/0/InfoRM/2022/INFORM%20Climate%20Change%20Brochure.pdf> (p. 8)