



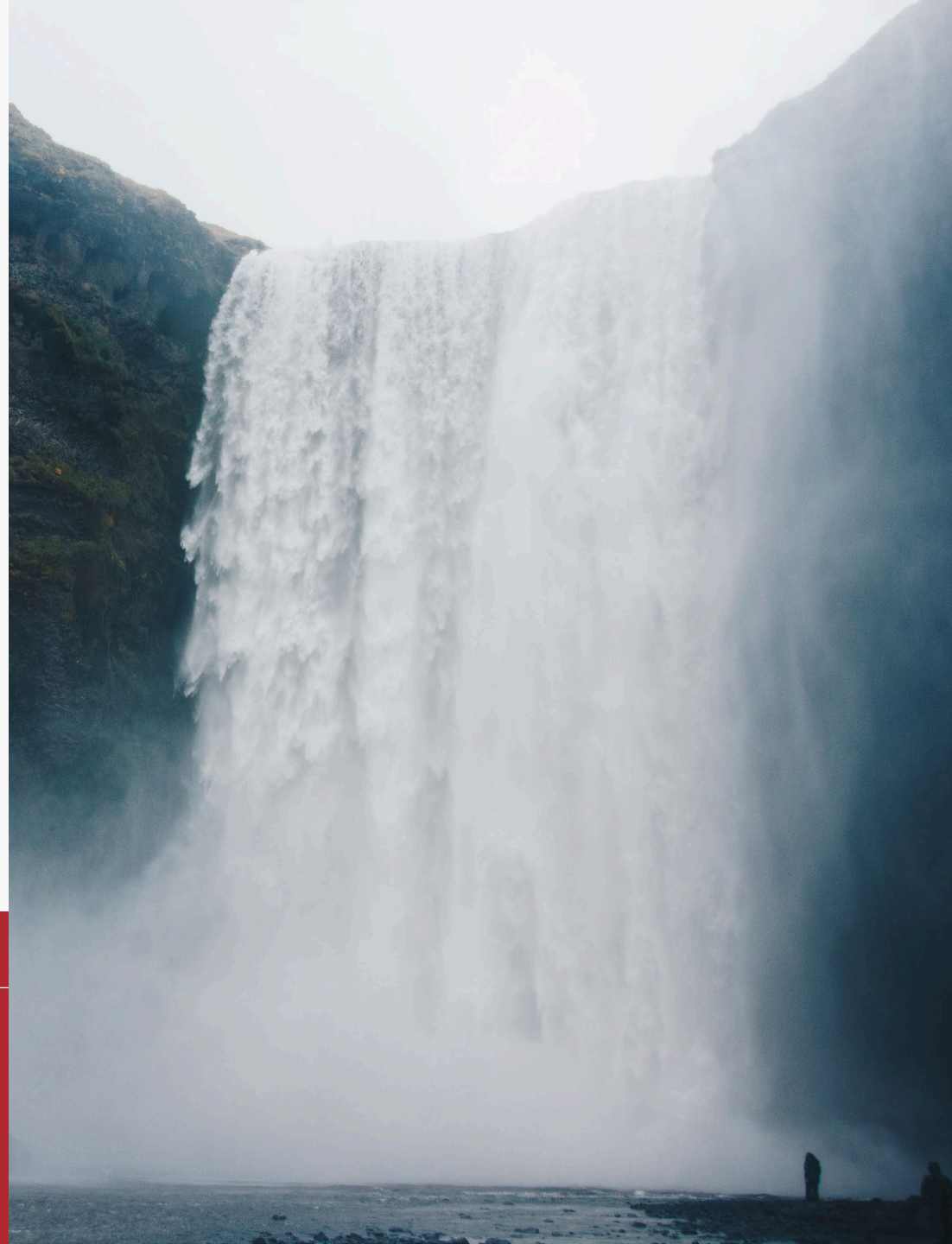
cascades



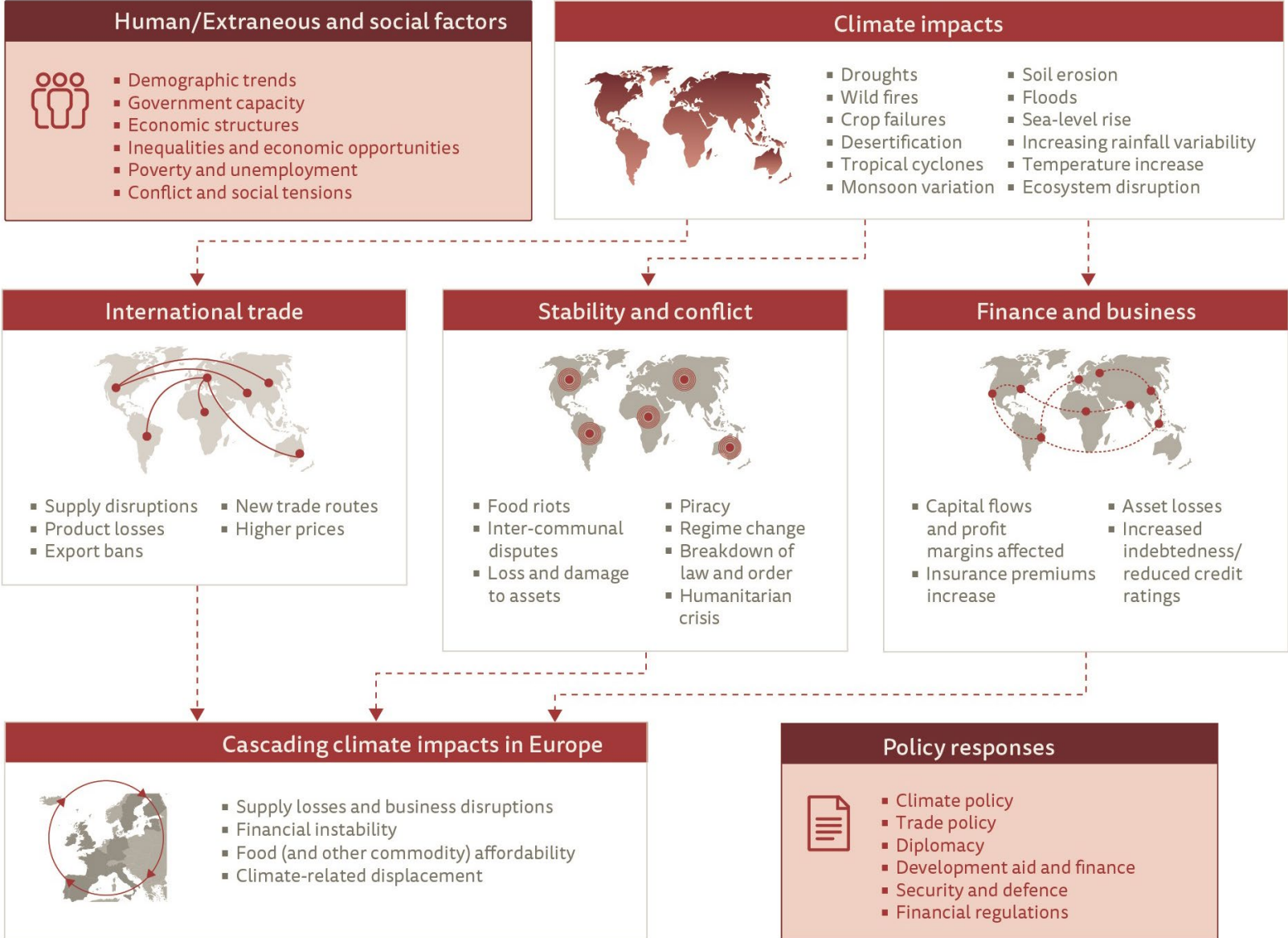
Cascading climate risks:
Towards adaptive and
resilient European Societies

Transboundary climate impacts on Europe: Early insights from CASCADDES

Prof. Dr. Ilona M. Otto and Dr. Christopher Reyer + CASCADDES consortium



CASCADES objective and partners



Centre for Systems Solutions

PIK

SYKE

SEI

CHATHAM HOUSE
The Royal Institute of International Affairs

CIDOB
BARCELONA CENTRE FOR INTERNATIONAL AFFAIRS

cmcc
Centro Euro-Mediterraneo sui Cambiamenti Climatici

European Centre for Development Policy Management
ecdpm

WU
WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

UNIVERSITY of York

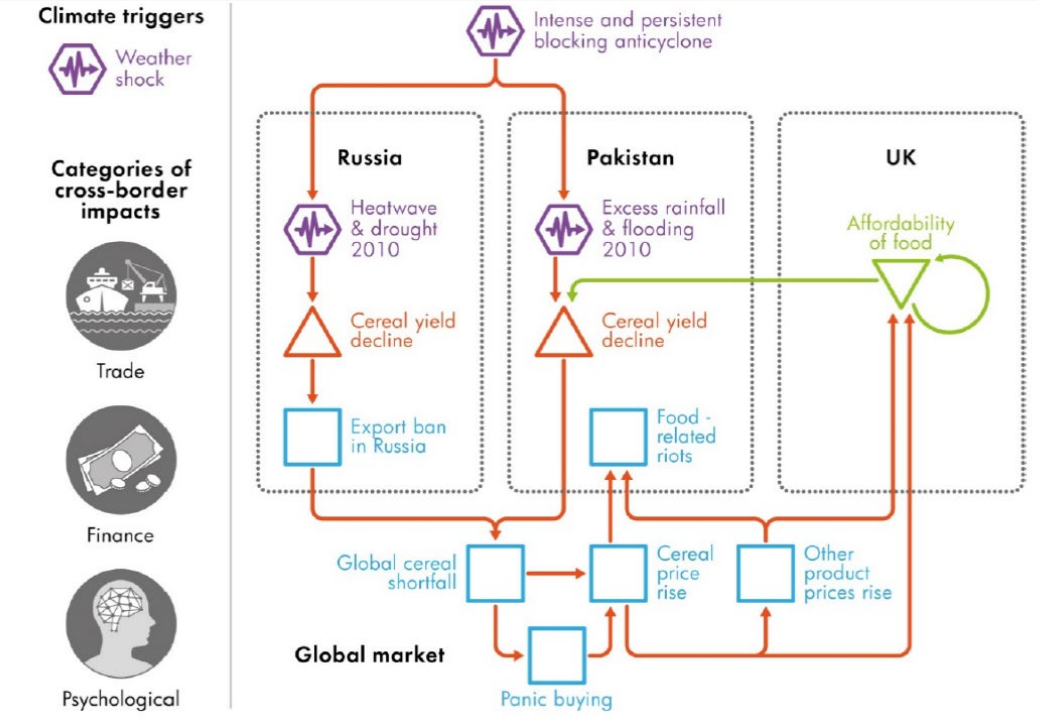
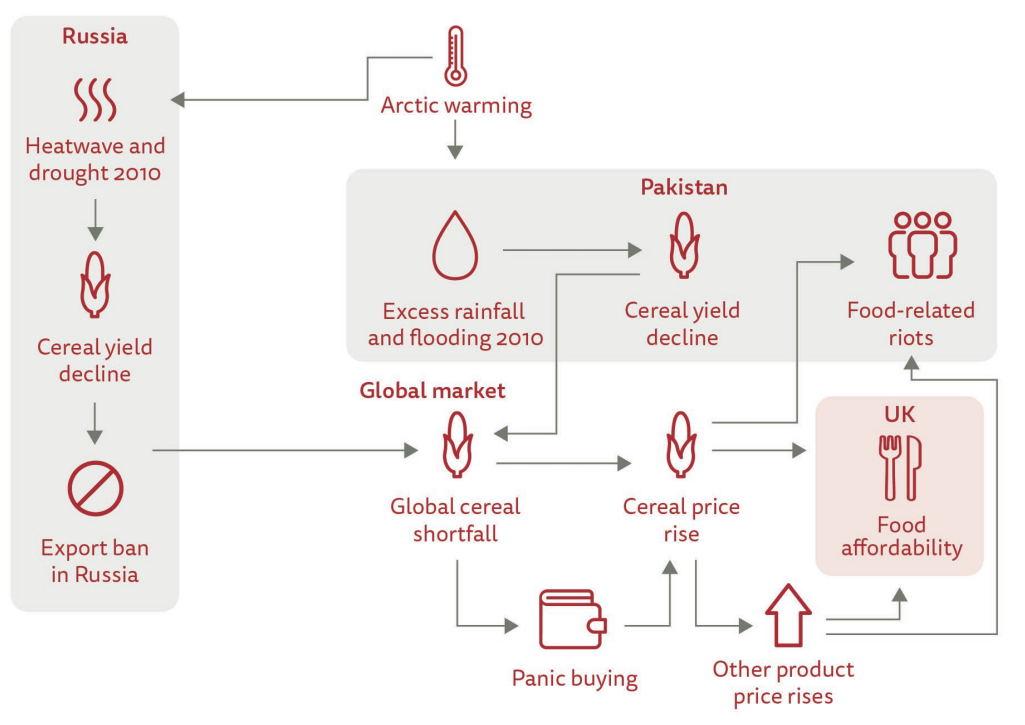
adelphi

ETH zürich

Wegener Center

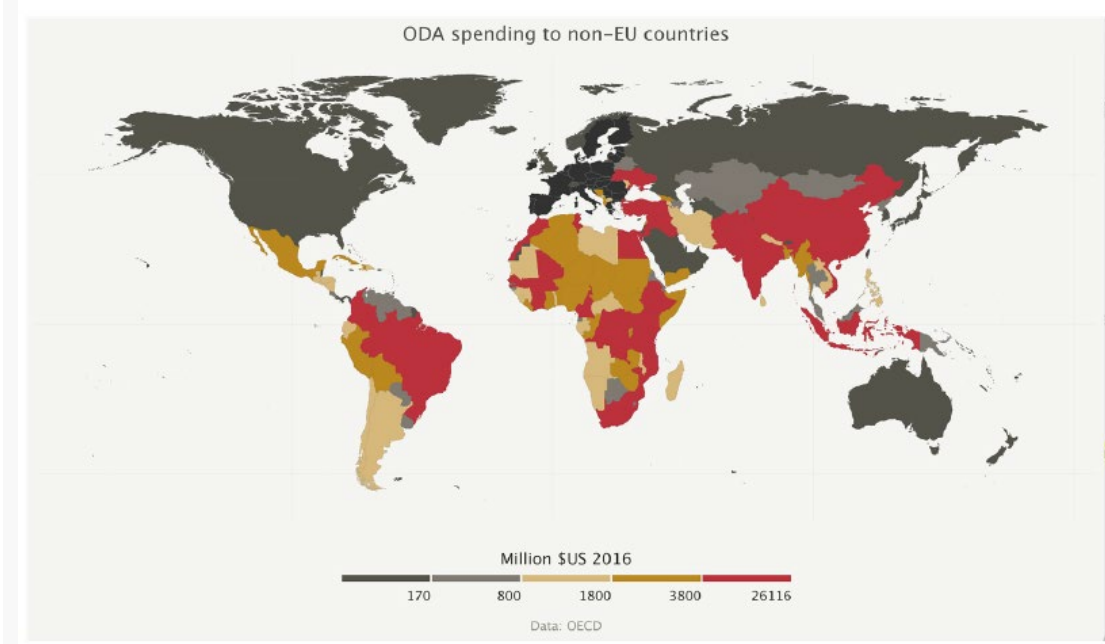
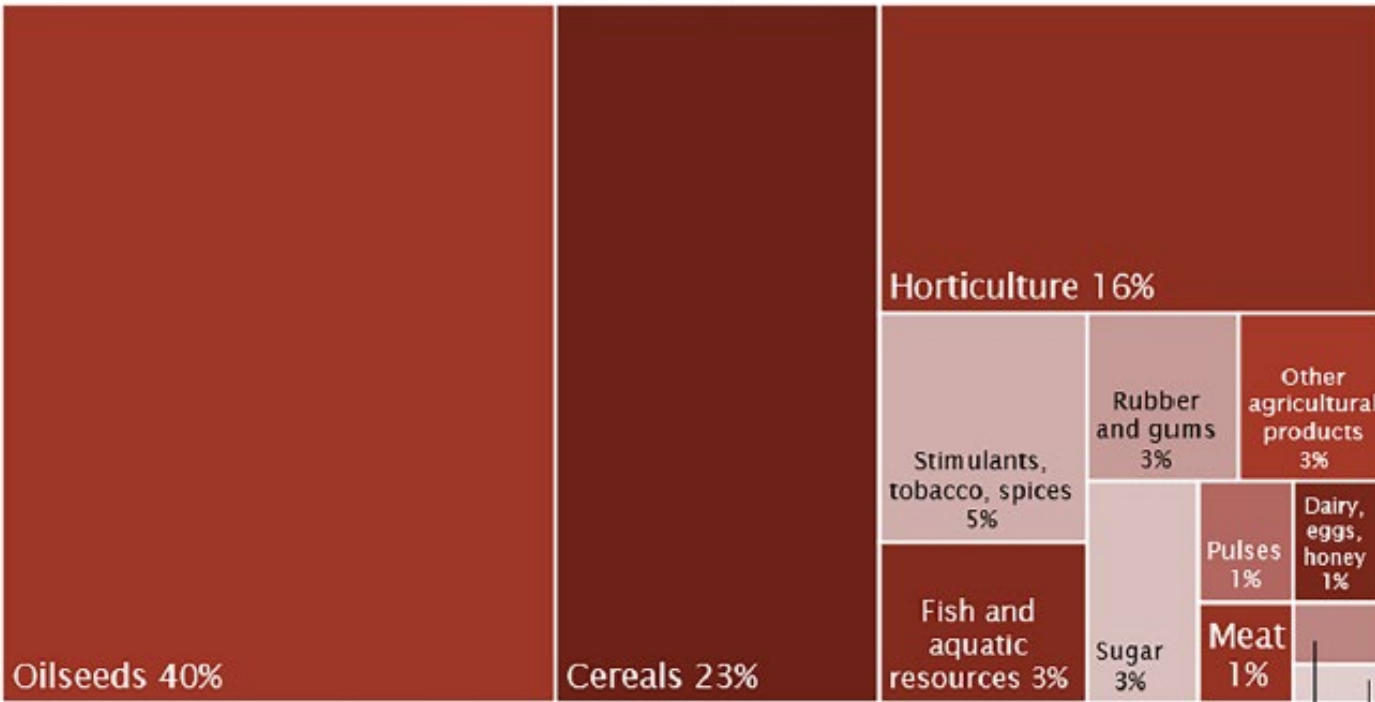
UNI GRAZ

CASCADES Conceptual Framework



Europe's connection with the world (trade, development)

Agricultural products



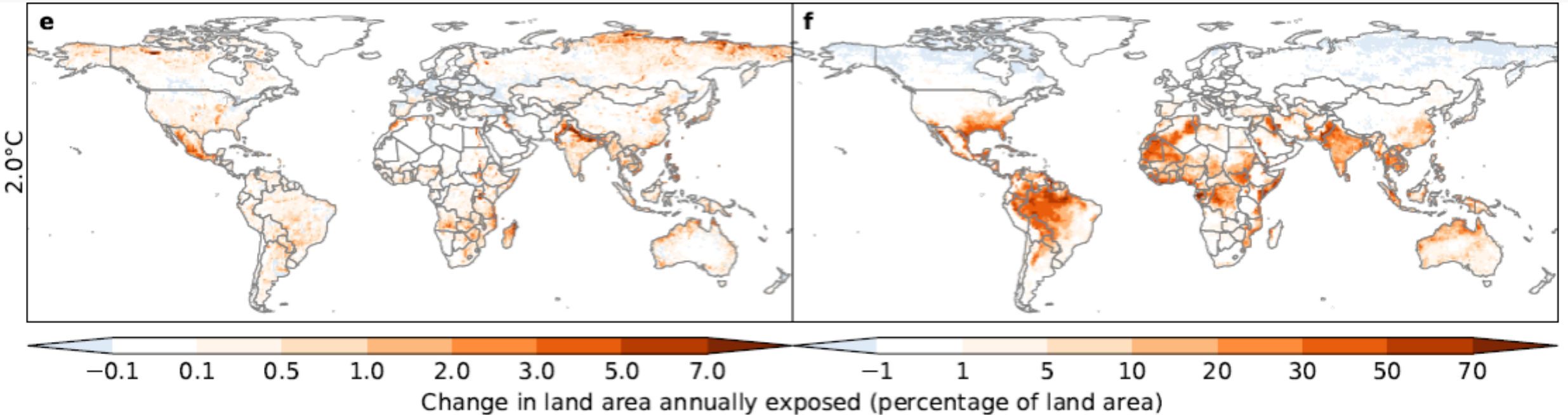
- Agriculture makes up 19% (monetary value) or 9% (mass-based) of total EU imports in 2018
- Fossil fuels are most important imports but here focus agriculture most sensitive to climate risk

- Most Overseas Development Aid (ODA) goes to neighboring regions and old colonial ties
- Immigration from northern Africa/Sahel is not large in absolute numbers but Europe is primary destination and region is climate sensitive

Land area and population exposed to extreme events

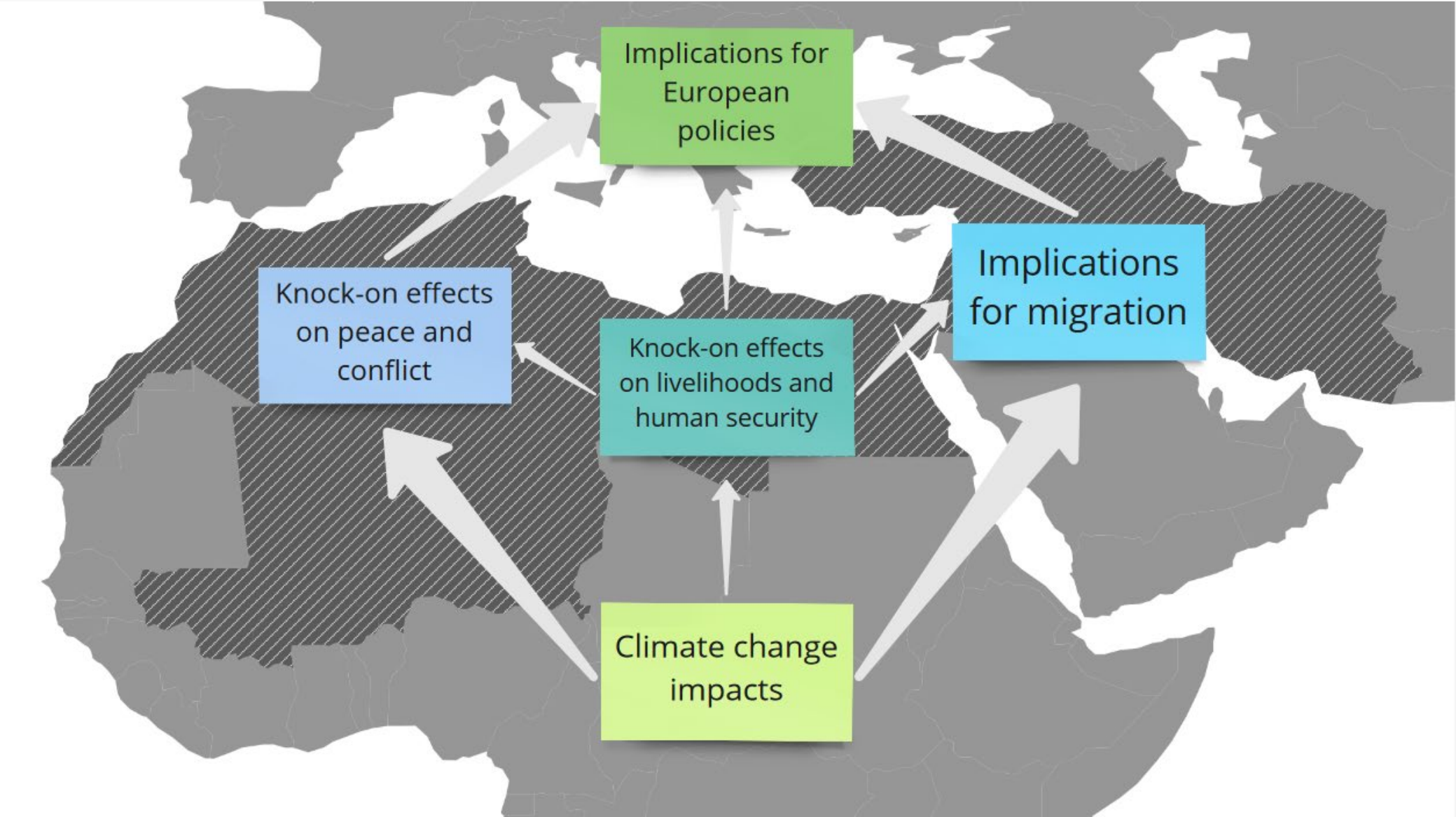
River flood/crop failure/tropical cyclone/wildfire

Drought/heatwave

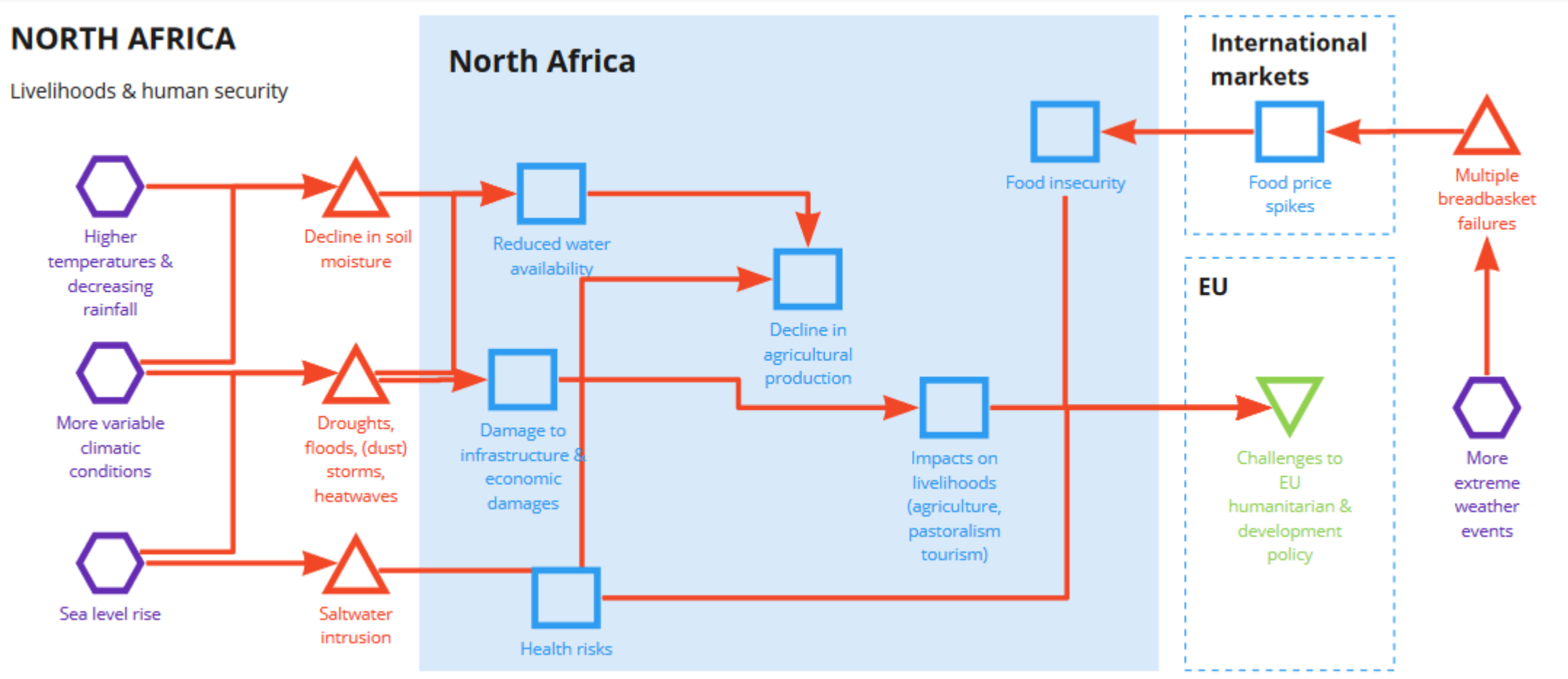


- Based on ISIMIP data: 5GCMs, RCP2.6 & RCP6.0 to drive 8 hydrological models, 5 fire models, 3 crop models, 1 hurricane model

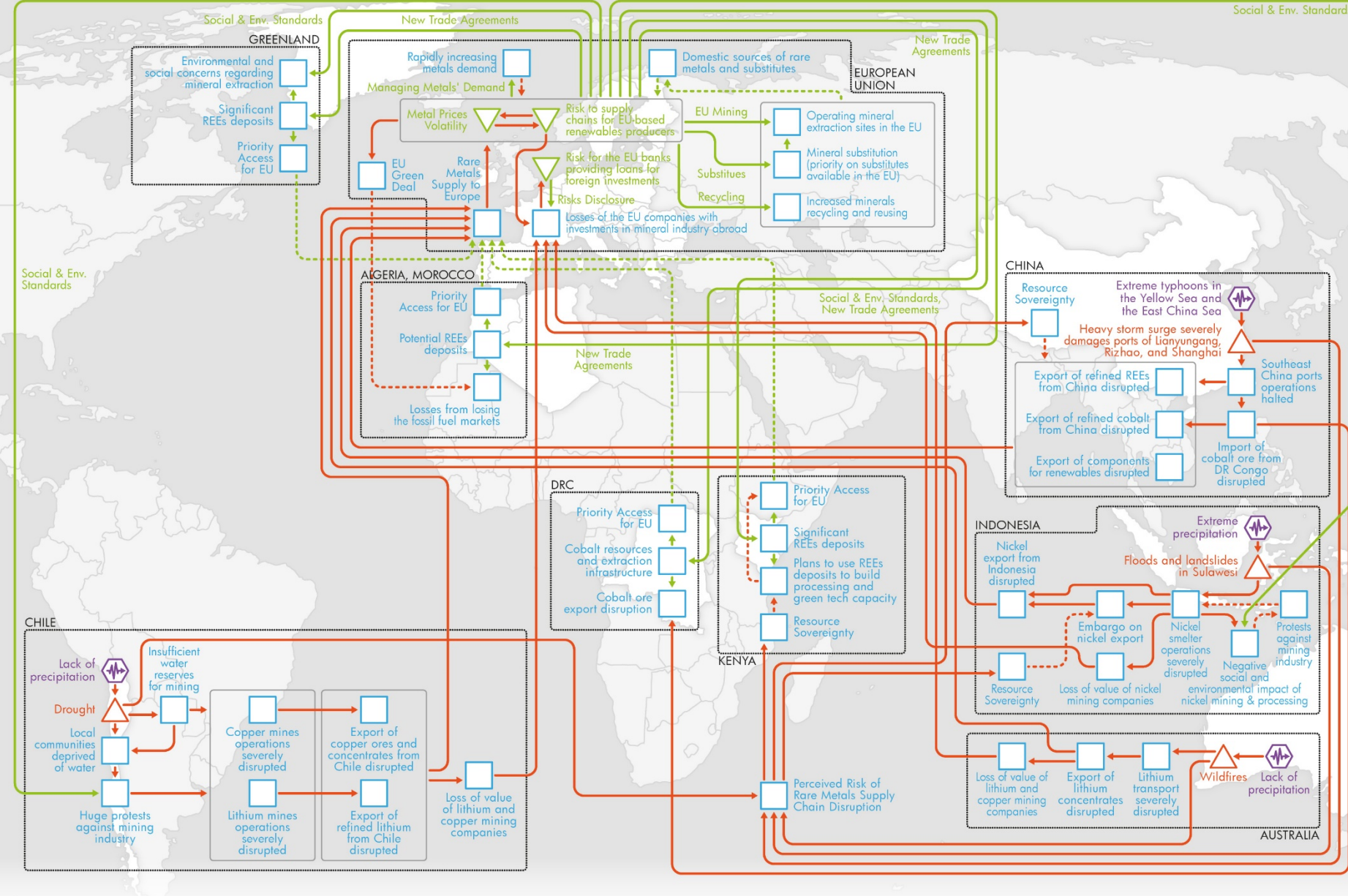
Climate impacts on EU Foreign, Security & Development Policy



Climate impacts on EU Foreign, Security & Development Policy



Full picture of cascading links for Policy Simulation with stakeholders



Weather shock
 Slow onset
 Initial impact
 System component
 Recipient risk
 Transmission of impact
 Direct response
 Indirect response

Virtual conference center. New online simulation platform for stakeholder engagement

Belgium: Department of Foreign Policy

RESERVE

PRIVATE MEETING

ARCTIC TRADE ROUTE DEBATE

RESERVE

NORTH AFRICA FOOD CRISIS

PRIVATE MEETING

WORKING GROUP: TRADE

WORKING GROUP: FINANCE

WORKING GROUP: FOREIGN POLICY

PLenary ROOM

SOCIAL ROOM

CHAT **E-MAIL 3**

Belgium: Department of Transport

How should we proceed with the negotiations?

Let's stick to our principles.

Belgium: Department of Finance

But can we do that and find a common ground with others?

Let's see how the things will work out.

Belgium: Department of Transport

This can be difficult but we'll manage.

type your message...

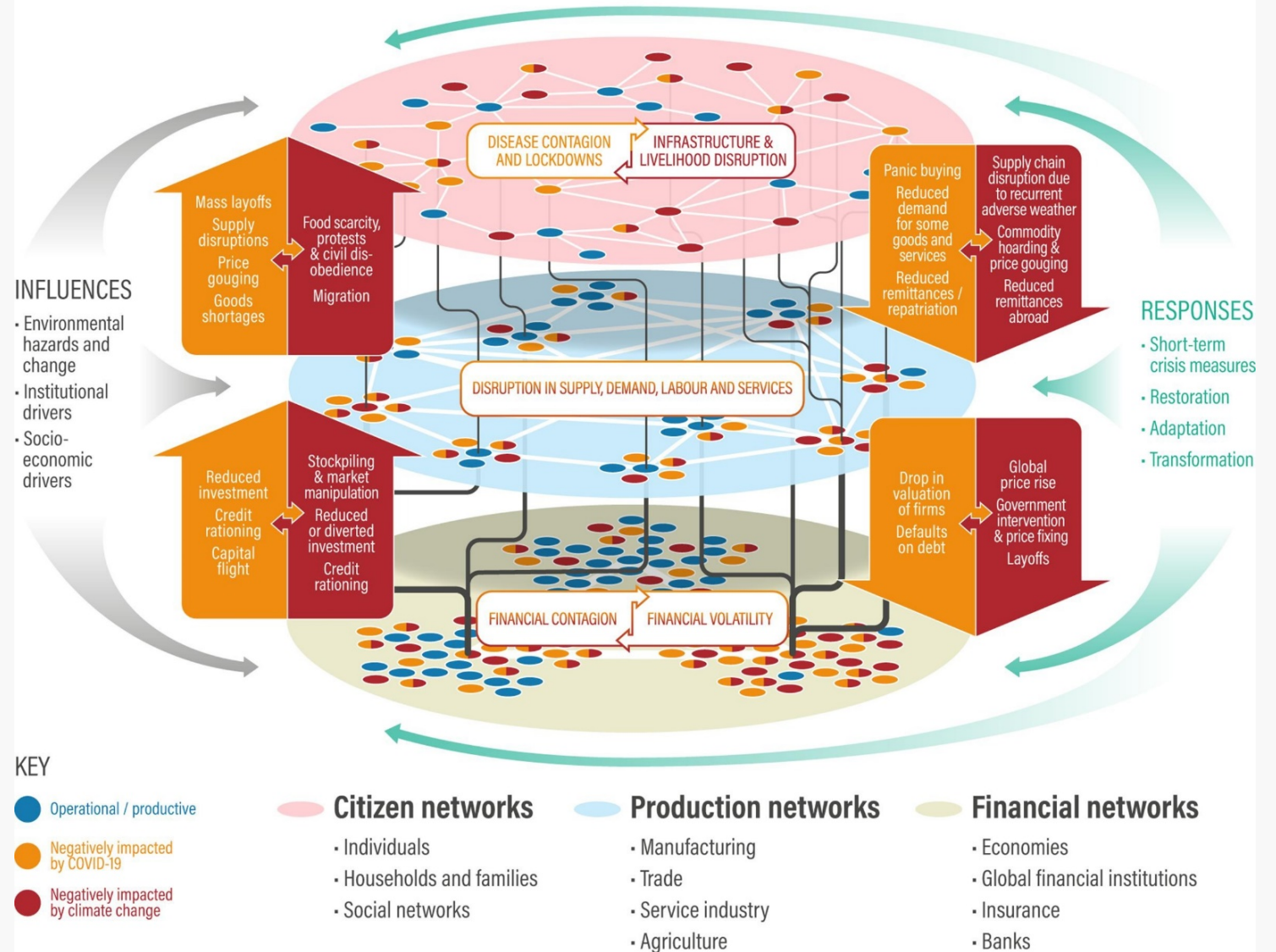
SEND

LATEST NEWS LIVE 24 EUROWIRE **BREAKING NEWS - CLICK TO ENTER** **BREAKING NEWS - CLICK TO ENT 2**

Interconnected cascading crises of COVID-19 and illustrative climate change impacts



Lessons from COVID-19 for managing transboundary climate risks



Potential Policy Recommendations: Soy imports

e) Response transmission targets



Co-invest in climate resilient soy production and climate resilient supply chain logistics via ODA (e.g. EuropeAid), climate adaptation finance (e.g. EU contributions to e.g. Green Climate Fund)

Cooperate in multilateral forums (e.g. WTO) to reduce the volatility in the soy market to future shocks

EU Common Agricultural Policy / Farm to Fork Strategy of EU Green Deal → lessen European dependence on soy imports

Incentivise or encourage Europe-based private companies to disclose (e.g. via national financial reporting requirements, or international voluntary initiatives like the Task Force on Climate-related Financial Disclosure) and manage climate-related supply chain risks



Find out more about us!

Web: cascades.eu

Email: info@cascades.eu

Twitter: [@CASCADES_EU](https://twitter.com/CASCADES_EU)



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Key videos and papers

- Short CASCADES Intro video (Conceptual Framework):
<https://www.cascades.eu/multimedia/cascades-conceptual-framework-of-cascading-climate-impacts/> (youtube direct link:
<https://www.youtube.com/watch?v=AHXS3hzpMM0>)
- Long CASCADES Conceptual Framework video: <https://www.youtube.com/watch?v=oK8O5hSwwZ0&t=1s>
- Policy Simulation Introduction (2020)
<https://www.cascades.eu/multimedia/strategic-simulation-trailer/>
- Policy Simulation Trailer 2021 Workshop:
<https://www.cascades.eu/multimedia/cascades-policy-simulation/> (youtube directlink: <https://www.youtube.com/watch?v=wTrOy6mEZWs>)
- COP26 CASCADES participation (watch back video's and find out more):
<https://www.cascades.eu/cascades-at-cop26-2/>
- Carter TR, M Benzie, E Campiglio, H Carlsen, S Fronzek, M Hildén, CPO Reyer, C West (2021) *A conceptual framework for cross-border impacts of climate change*. Global Environmental Change 69: 102307. <https://doi.org/10.1016/j.gloenvcha.2021.102307>
- Hildén M, G Lahn, TR Carter, RJT Klein, IM Otto, B Pohl, CPO Reyer, F Tondel (2020) *Cascading climate impacts: a new factor in European policy-making*. https://www.cascades.eu/?post_type=publication&p=114
- Lange S, J Volkholz, T Geiger, F Zhao, I Vega del Valle, T Veldkamp, CPO Reyer, L Warszawski, V Huber, J Jägermeyr, J Schewe, DN Bresch, M Büchner, J Chang, P Ciais, M Dury, K Emanuel, C Folberth, D Gerten, SN Gosling, N Hanasaki, AJ Henrot, T Hickler, Y Honda, A Ito, N Khabarov, W Liu, C Müller, K Nishina, S Ostberg, H Müller Schmied, SI Seneviratne, T Stacke, J Steinkamp, W Thiery, Y Wada, H Yang, M Yoshikawa, C Yue, K Frieler (2020) *Projecting Exposure to Extreme Climate Impact Events Across Six Event Categories and Three Spatial Scales*. Earth's Future <https://doi.org/10.1029/2020EF001616>
- West CD, E Stokeld, E Campiglio, S Croft, A Detges, A Duranovic, A von Jagow, Ł Jarzabek, C König, H Knaepen, P Magnuszewski, I Monasterolo, CPO Reyer (2021) *Europe's cross-border trade, human security and financial connections: A climate risk perspective*. Climate Risk Management 34:100382. <https://doi.org/10.1016/j.crm.2021.100382>