CHATHAM HOUSE

HM Government

China Prosperity Fund
Energy and Low Carbon Economy Programme

Climate Risks: greater than the sum of the parts

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RISK=

HAZARD

Climate change slow-onset issues (e.g. gradual drying)
Changing weather, especially extremes
Spatial synchrony through teleconnections (e.g. jet stream)
Tipping points
Climate change on ecology

X

EXPOSURE

Will you get flooded?

How much does national/institutional/ financial security rely on goods from overseas that could be disrupted by hazards?

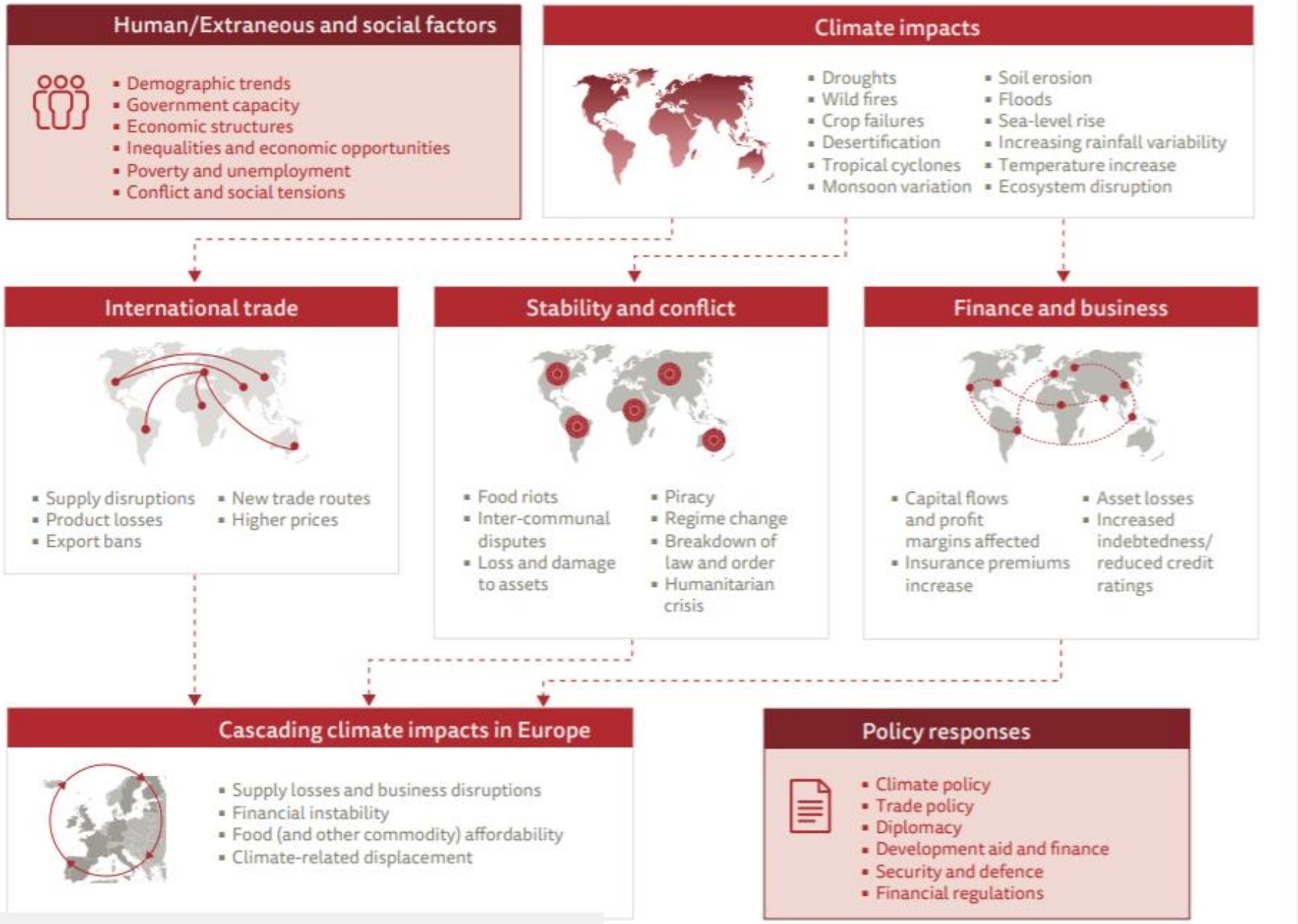
X

VULNERAB-ILITY

Do you have flood defences?

Are systems efficient but fragile (e.g. just-in-time)?

Shaped by political, economic and social factors (and also the ***perception*** of the hazard)



Cascading climate impacts: a new factor in European policy-making

Credit: CASCADES H2020 project

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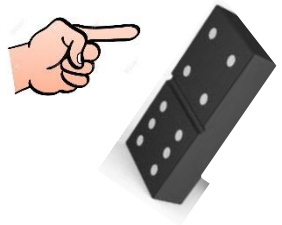
Risks:

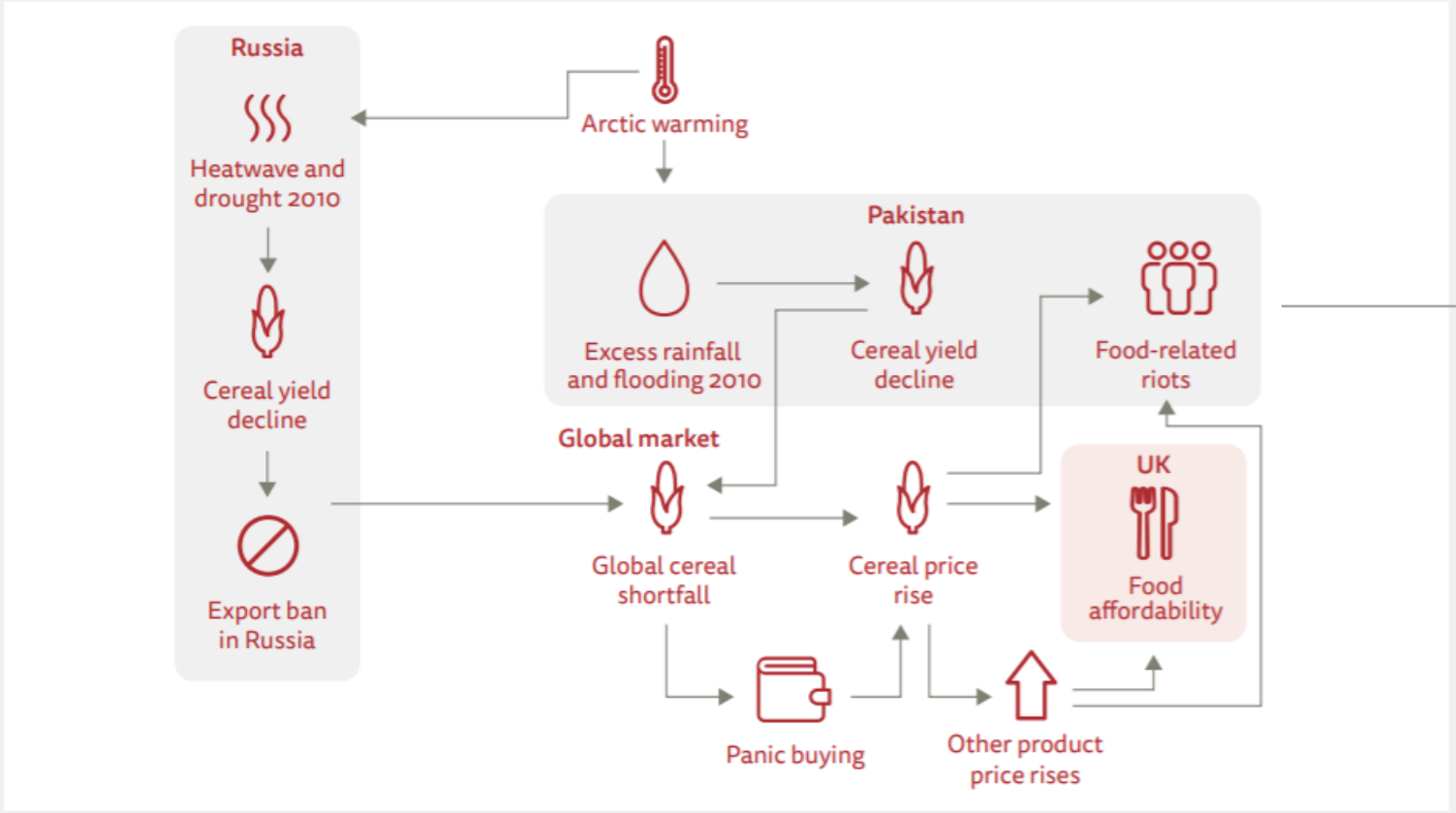


cascade

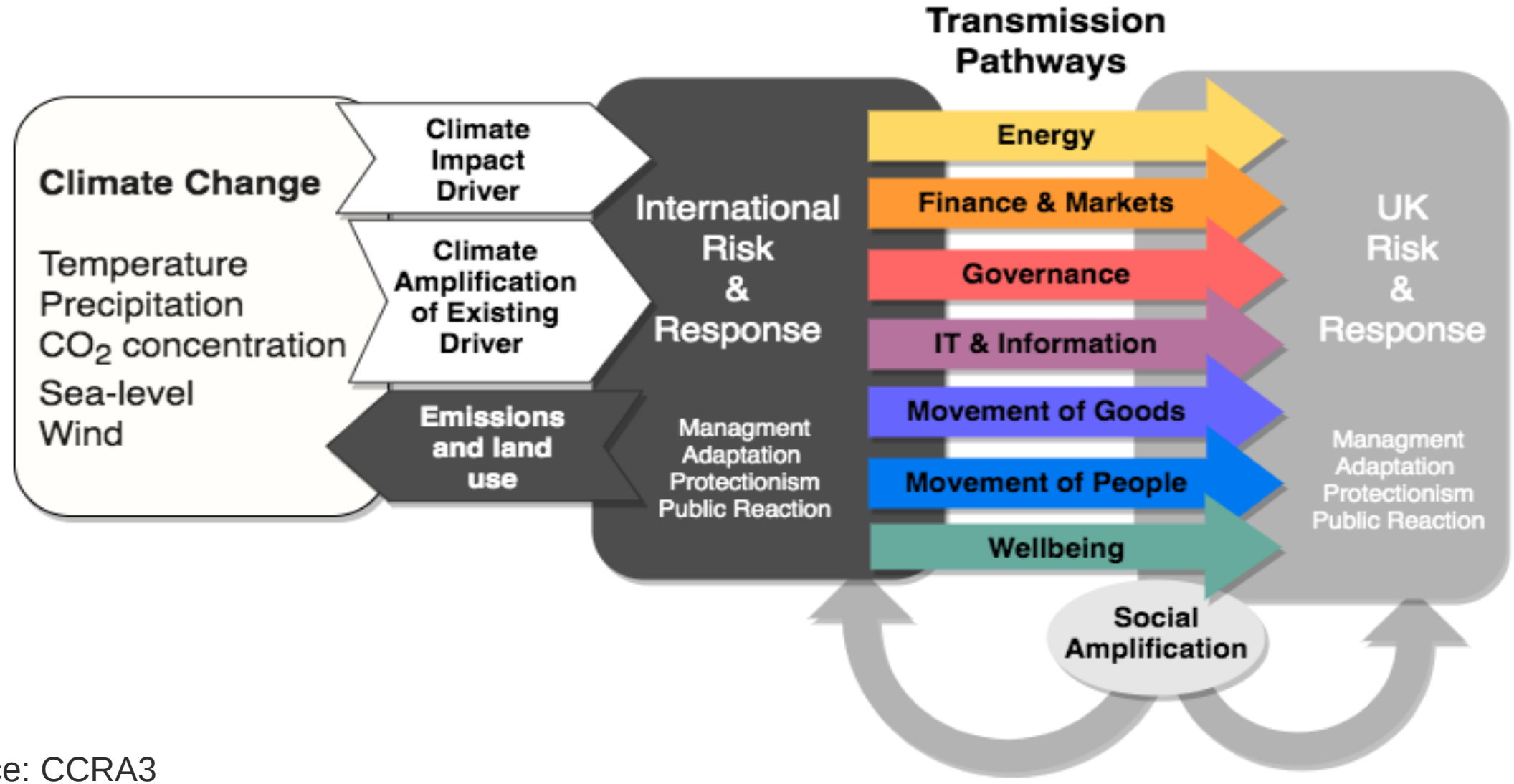
Systemic risk

Risk cascade (example from CCRA2): supply shock

Figure 1. An example of cross-border impacts: drought and food prices[5]



- Destabilisation of fragile economies (Arab Spring, Syria)
- Movement of people into the EU
- Rise of nationalism



Source: CCRA3

Risk cascades

The disruption caused by the risk cascade is typically orders of magnitude greater than the direct costs of the original hazard

RISK=

HAZARD
X
EXPOSURE
X
VULNERABILITY

Extremes are getting more extreme
(damaging weather, pests and diseases etc)

Lack of action on climate change means
more of the world exposed to adverse effects

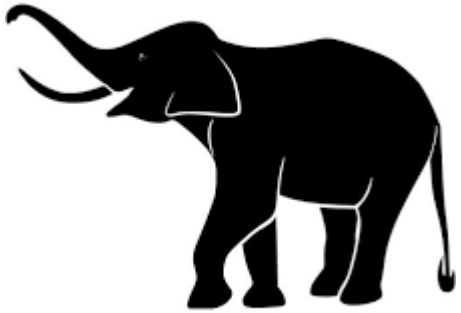
World becoming more fragile (inter-connected across space, sectors and time).
International architecture of cooperation (rules based systems) undermined
Geopolitical changes and disruptions
Polarising societies and attitudes
Impacts (like COVID-19) disrupt efforts to mitigate &/or exacerbates impacts

The metaphorical zoo of future instability

e.g. *food disruption*: drought, flood, heatwave affecting one or more production areas; pests and diseases; disruption on port or transport infrastructure; disruption on centralised processing facilities; problems with labour caused by climate hazards (diseases, movement, instability) etc etc etc

Turbulent
Uncertain
Novel
Ambiguous

Black swan: rare, high-impact events



If there are 1000 potential black swan events, each at 1/1000 probability, then something is ***very*** likely to happen

Conclusions

- The world is increasingly TUNA and shocks are likely to increase in frequency and severity
- Risk cascades leading to systemic risks likely to be more common
- These may not come from “extreme events” but also from climate’s impact via “ecological rewiring”
- Climate risks in Asia may come from elsewhere
- The cascading risks can be economically much greater than direct risks

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Thank you!

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