Utrecht University

How people perceive the risk of an AMOC tipping-point collapse

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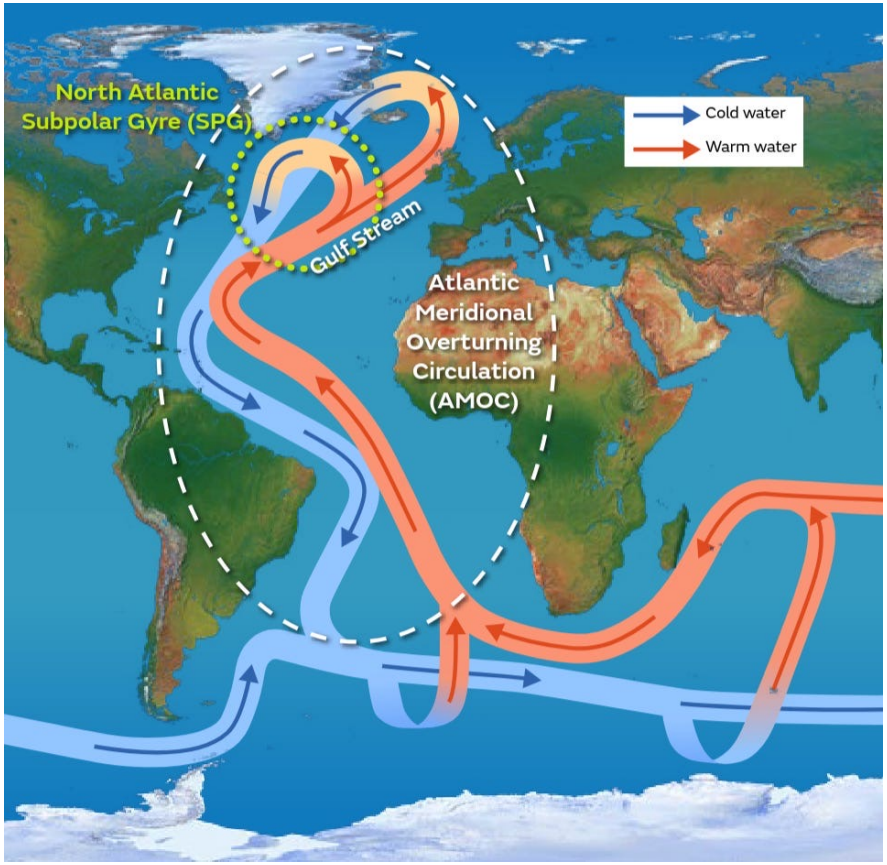
Copernicus Institute of Sustainable Development

What is the AMOC?

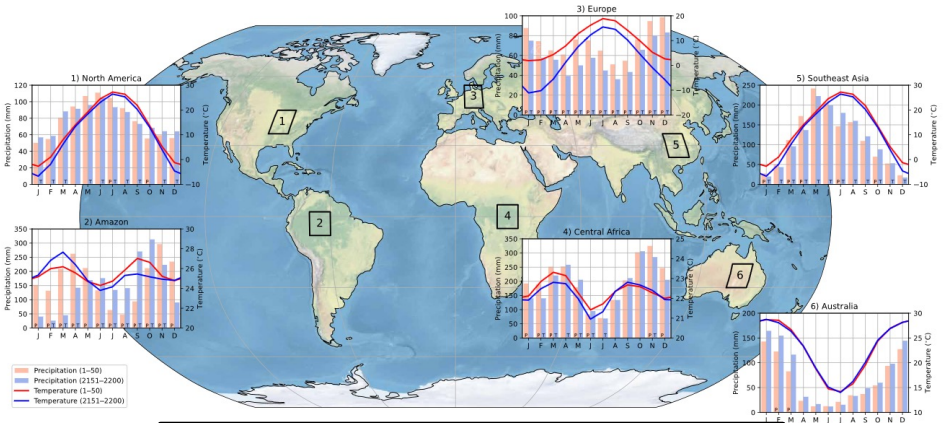


Met. office, 2025

Universiteit Utrecht

Physical impacts

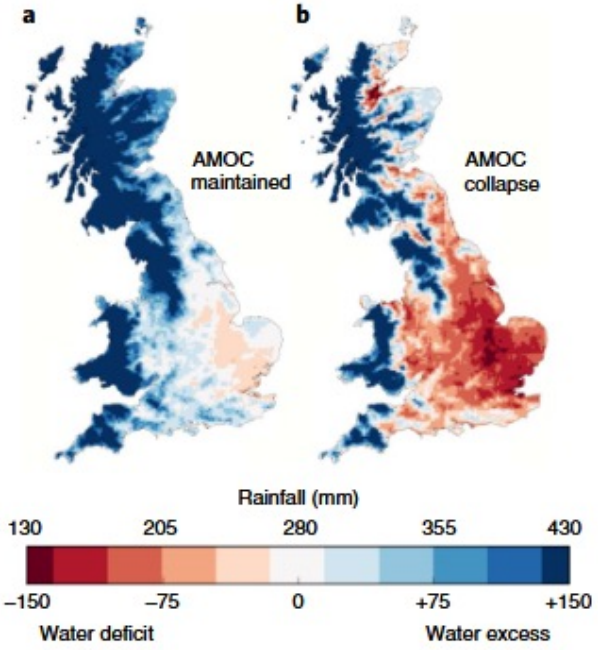
- Methodologically robust
- Mechanistically detailed
- Spatially global



Van Westen et al., 2024

Societal impacts

- Scarce and rarely quantified
- Concentrated in the GN
- Sector-specific



Ritchie et al., 2020

Beyond Tipping Points: An integrative Synthesis of the Socio-Economic Impacts of AMOC Weakening

1

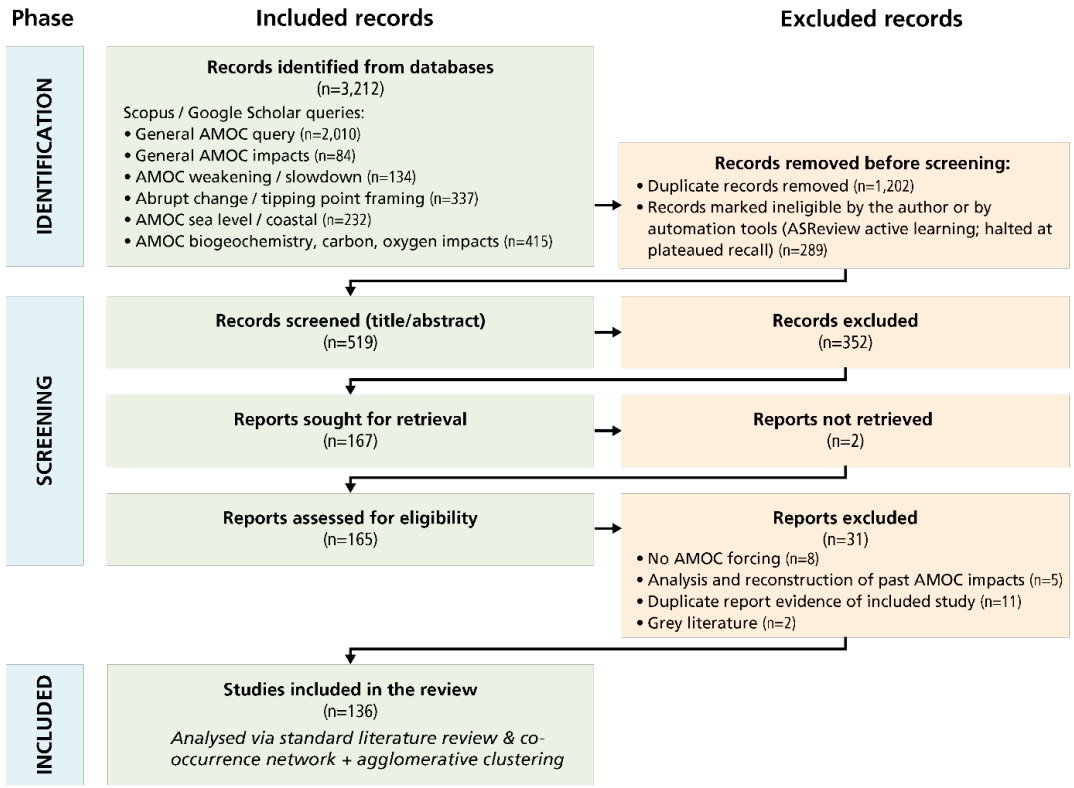
Systematic Literature Review

- *PRISMA-2020 based pipeline*
- *136 studies*
- *Notion Database for impact classification*

2

Clustering analysis

- *Co-occurrence network*
- *Unsupervised agglomerative clustering*



Tseliou et al., in prep

Beyond Tipping Points: An integrative Synthesis of the Socio-Economic Impacts of AMOC Weakening

3

Impact chains development

- *Focus on systems highlighted in the clustering analysis*
- *Developed impact chains from physical to societal impacts*

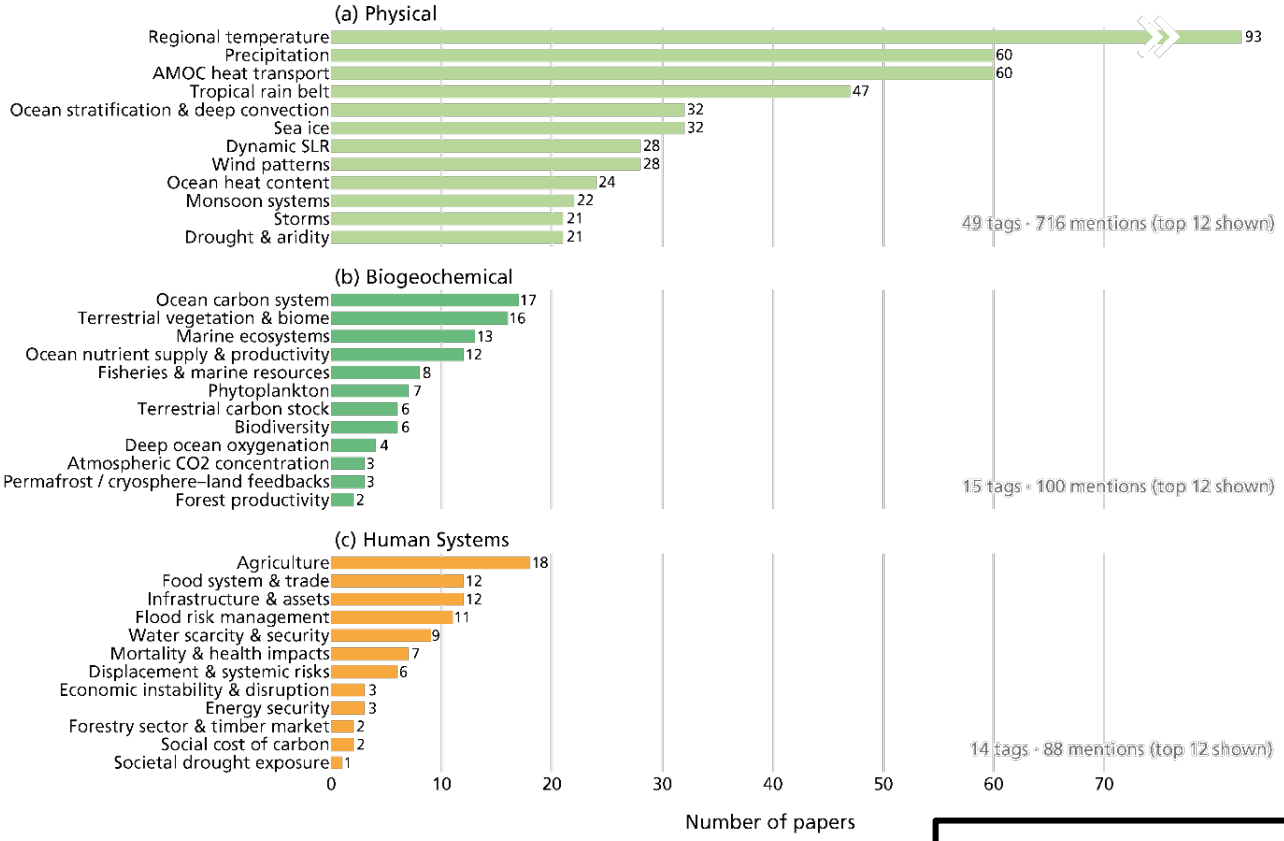
4

Expert workshop

- *Individual reflection: Questionnaire based evaluation of SLR*
- *Collective reflection: serious game on impact chains*

Tseliou et al., in prep

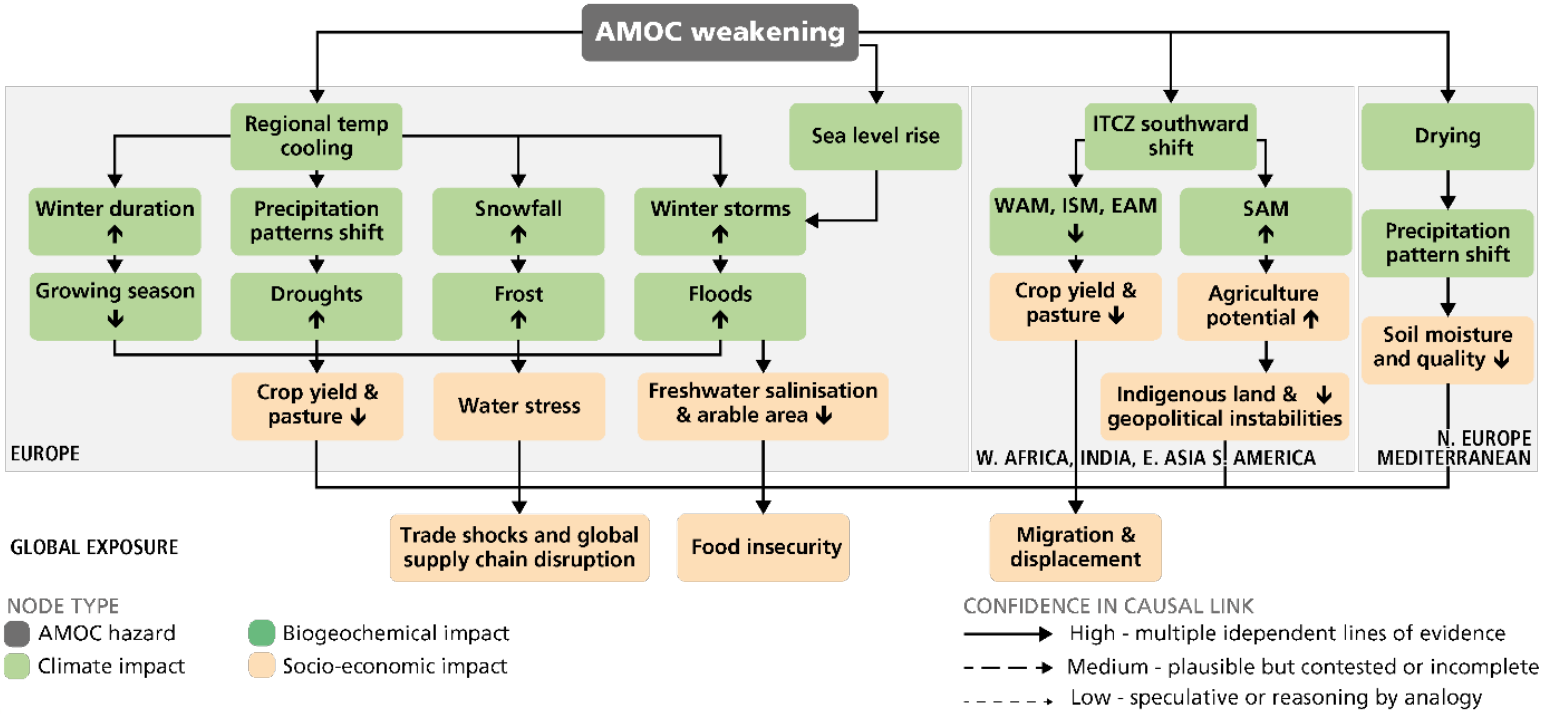
Physical papers dominate the academic literature



Tseliou et al., in prep

AMOC weakening reaches agriculture through many pathways and cascades into food, trade, and migration

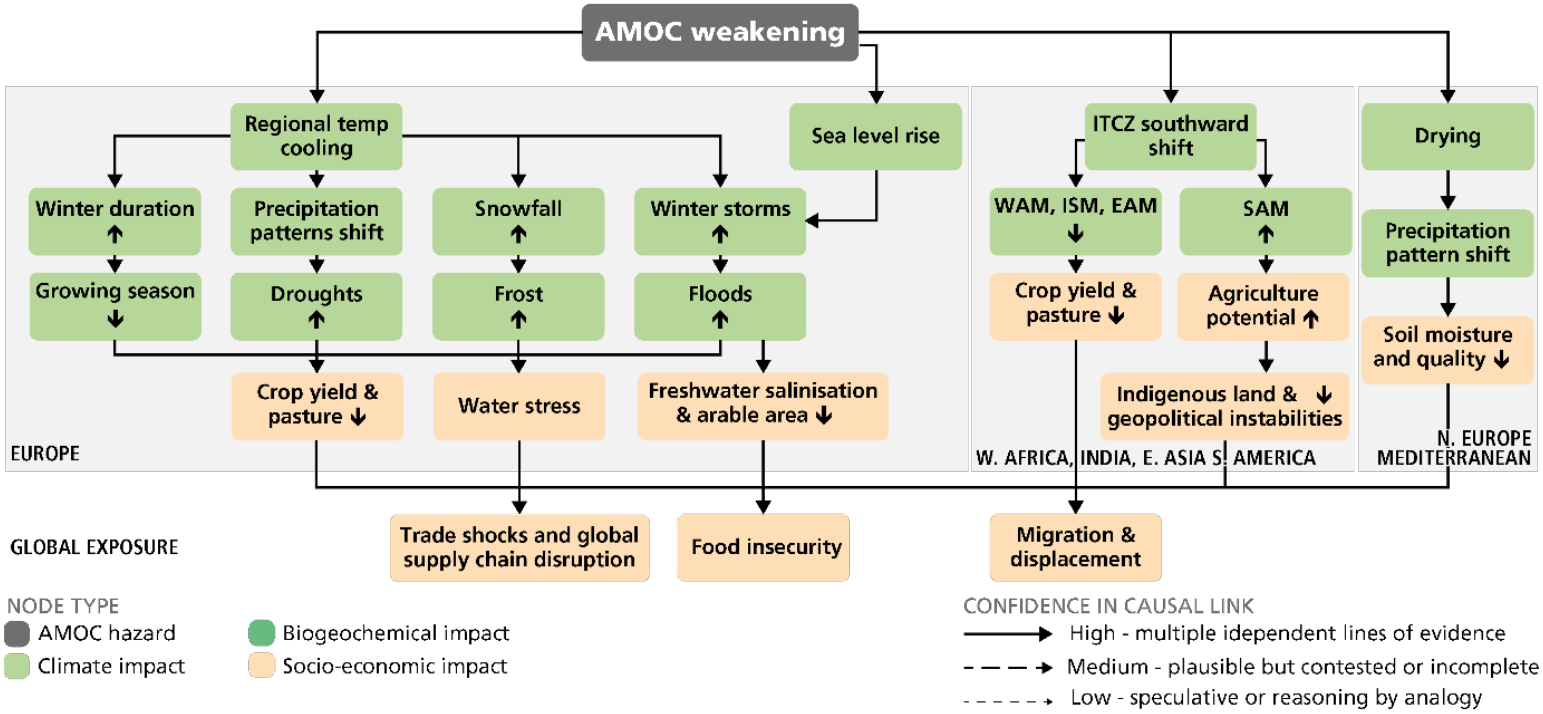
Figure 4.1: Impact chains linking AMOC weakening to agriculture system impacts.



Tseliou et al., in prep

Blind spots? Health, Migration, Pesticides, Livestock, Infrastucture

Figure 4.1: Impact chains linking AMOC weakening to agriculture system impacts.



Tseliou et al., in prep

Preliminary conclusions

- Societal evidence is too thin for policy
- Infrastucture, agriculture, energy and fisheries dominate the societal impact stories
- Health and migration are barely assessed but are important according to experts
- Possible cascades and links between systems remain elusive but are important according to experts

Tseliou et al., in prep

How about the newspapers?

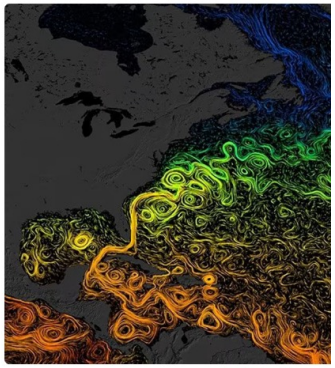
CNN Climate Solutions Weather • Watch Listen Sign

CLIMATE • 3 MIN READ

A vital system of Atlantic Ocean currents is weakening and closer to collapse than thought, new studies find

APR 16, 2026

By Laura Paddison



Visualization of ocean cur
where orange and yellow
Center)

Menu nrc Upgrade Mijn nieuws Podcasts Digitale krant

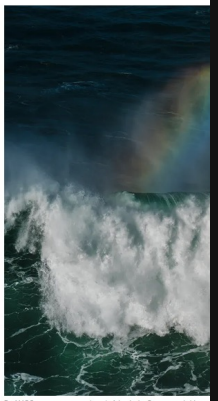
NIEUWS

Het warme water in de oceaan houdt eerder op met stromen

Klimaat Utrechtse onderzoekers hebben berekend dat de AMOC, de zeestroming die warm water door de Atlantische Oceaan naar West-Europa voert, mogelijk deze eeuw al instort.

Marit Verbeek
28 augustus 2025 • Leestijd 2 minuten

Luister Geef cadeau



De AMOC voert warm water door de Atlantische Oceaan, zoals hier na

The New York Times

In the Atlantic Ocean, Subtle Shifts Hint at Dramatic Dangers

The warming atmosphere is causing an arm of the powerful Gulf Stream to weaken, some scientists fear.

By MOISES VELASQUEZ-MANOFF
and JEREMY WHITE

How about the newspapers?

"Overall, Dutch journalistic media often accurately convey the core concepts of AMOC-related scientific research papers, but place strong emphasis on societal consequences and opportunities of an AMOC collapse."

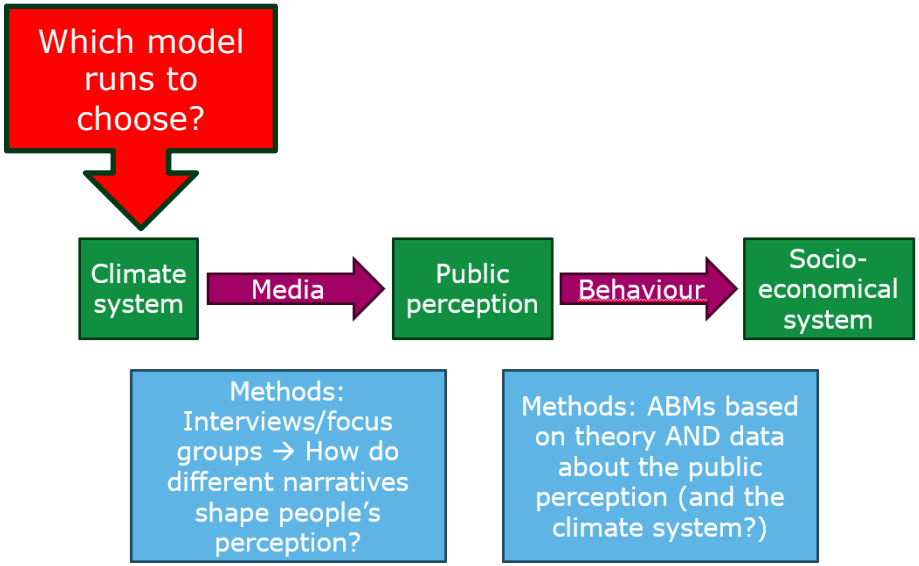
Te Koppele & van Sebille, 2026

Project idea

Methods: Interviews/focus groups → How do different narratives shape people's perception?

Methods: ABMs based on theory AND data about the public perception (and the climate system?)

Considerations



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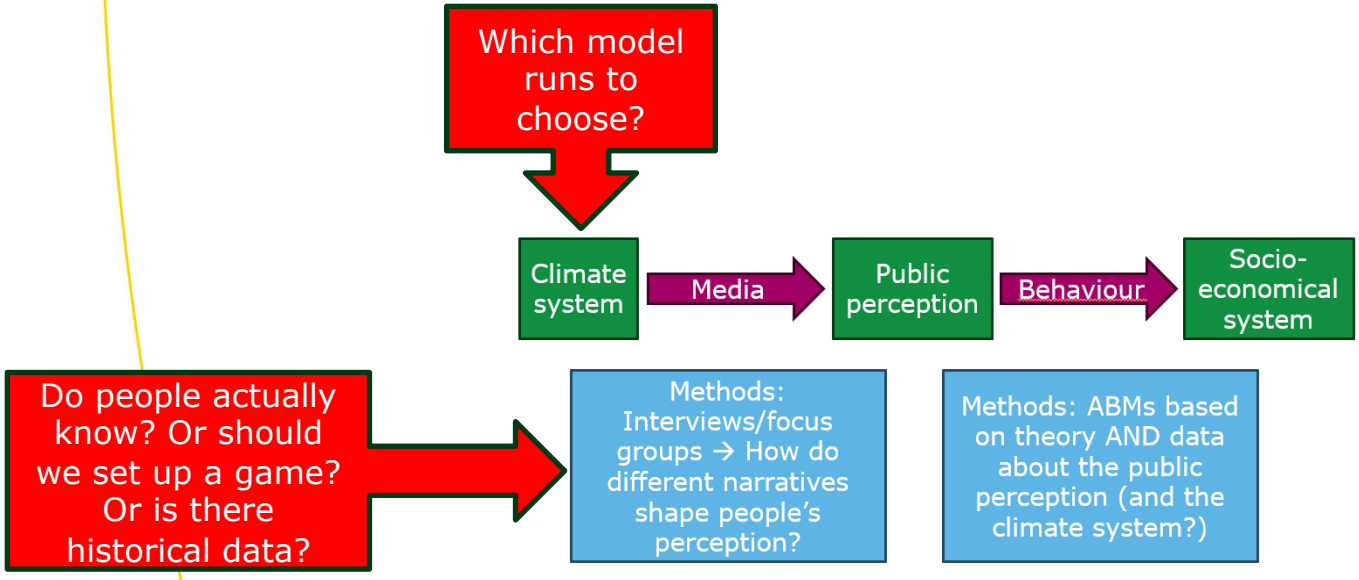

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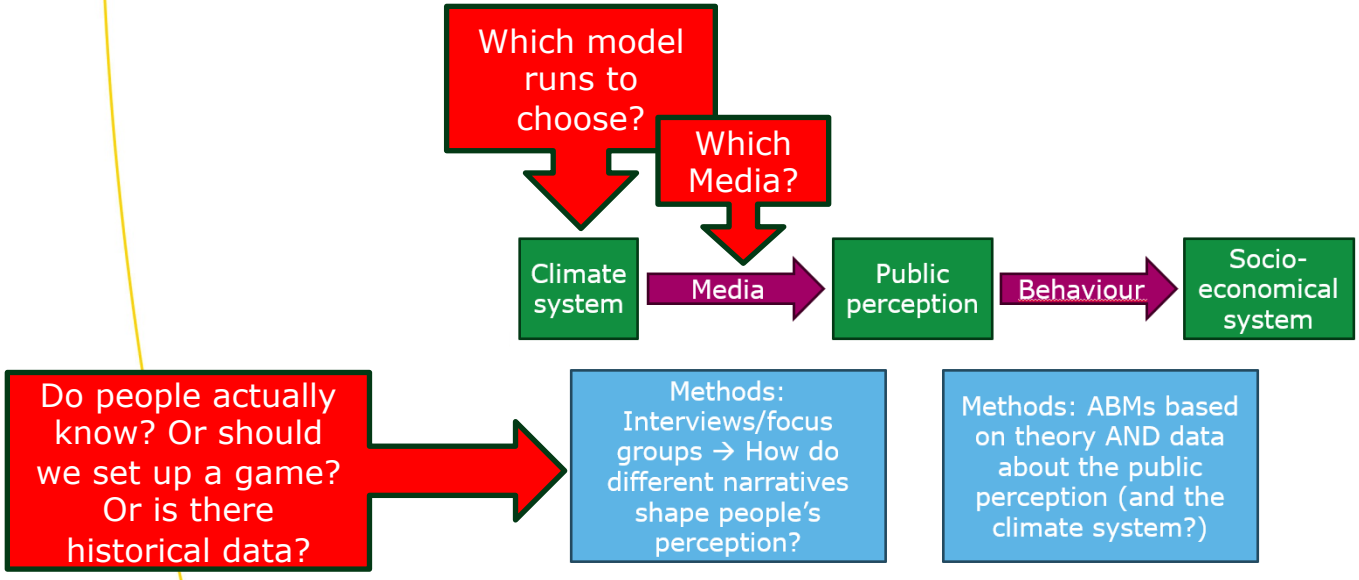

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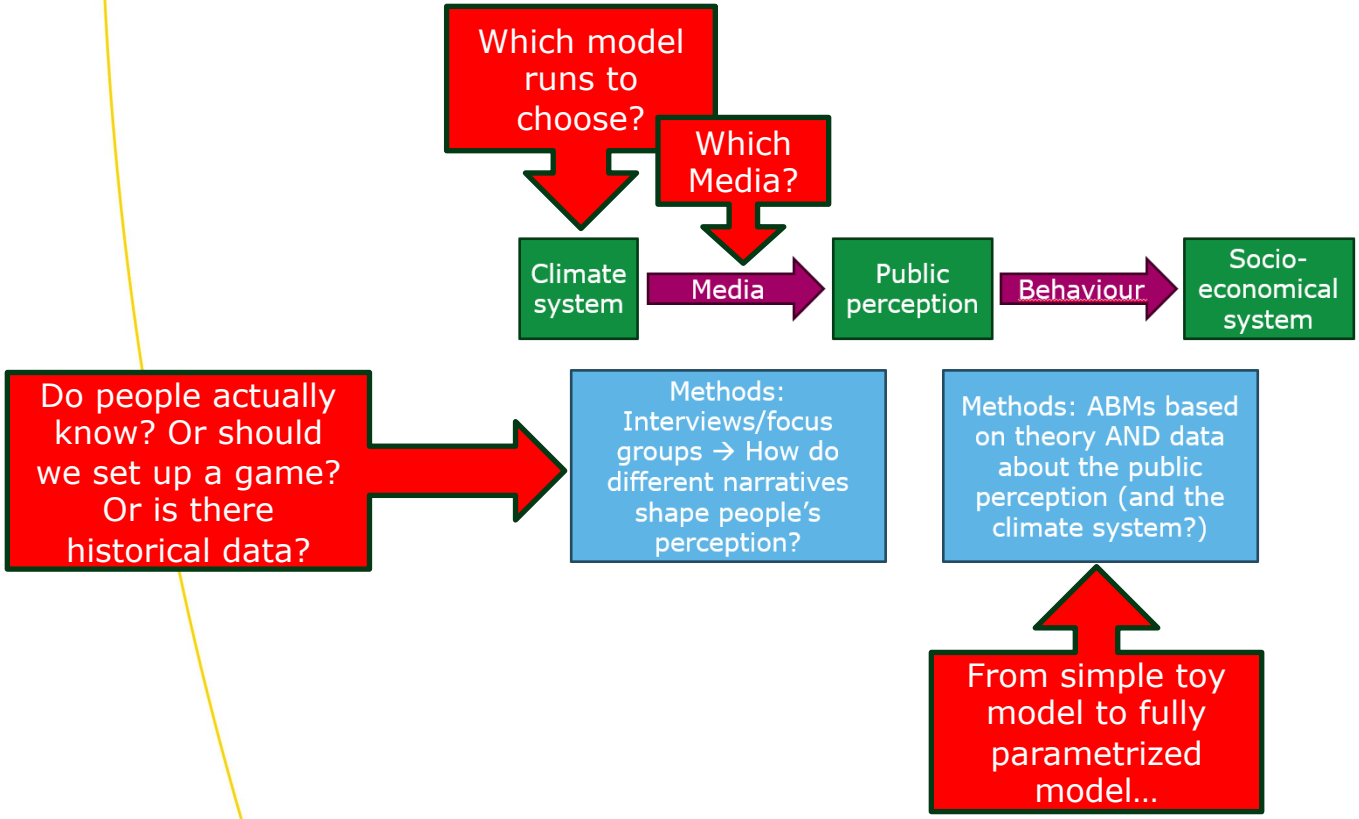

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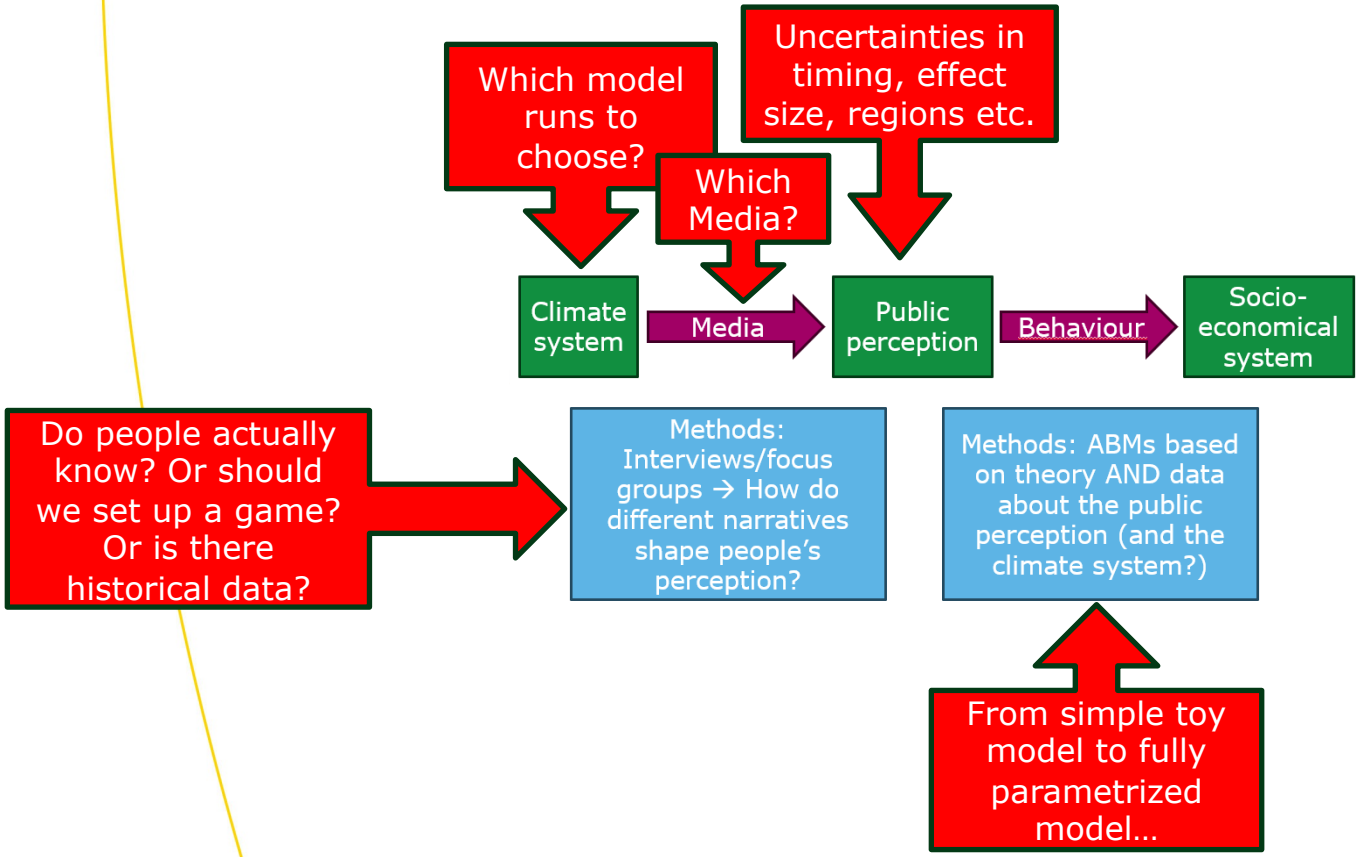
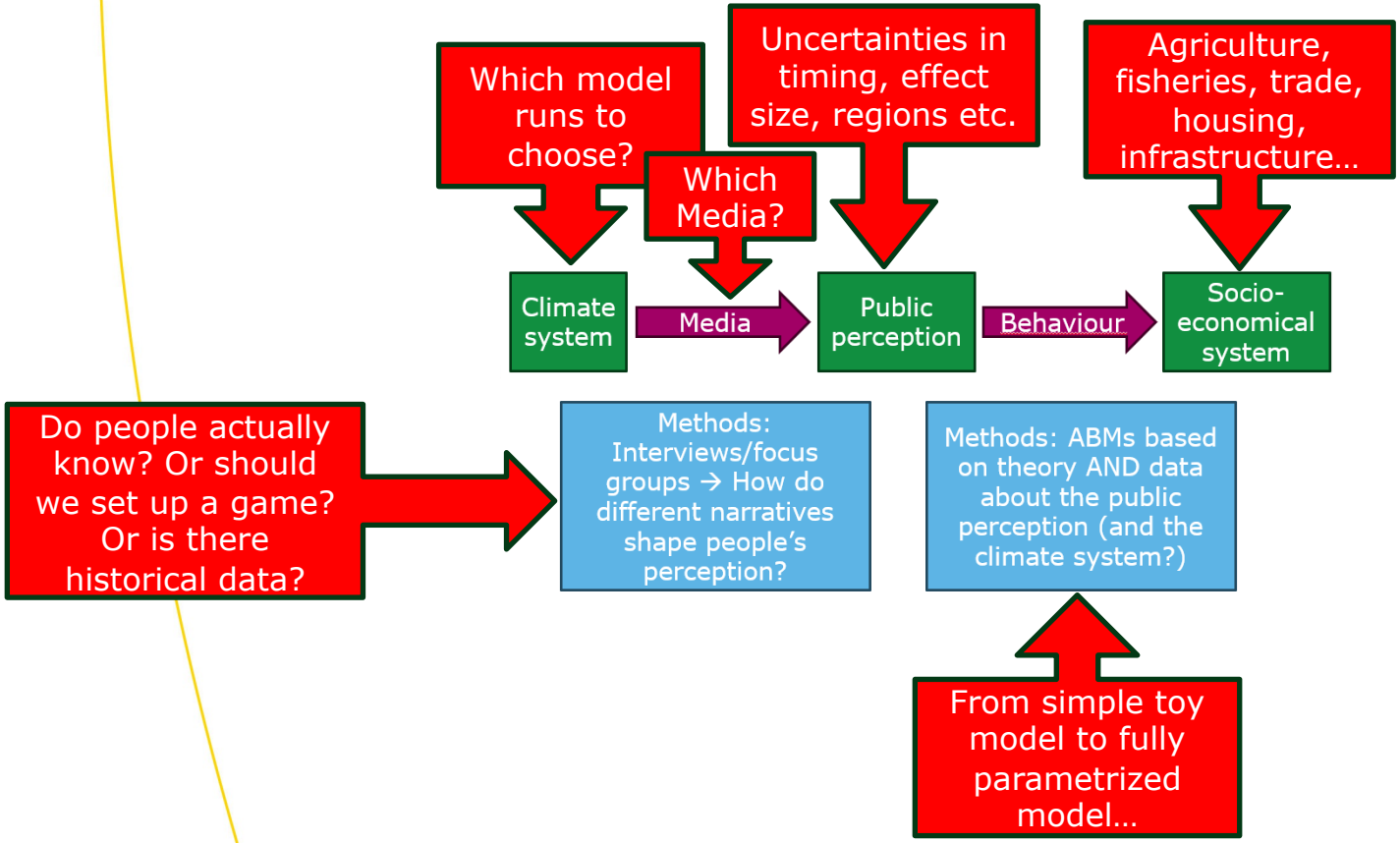
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