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CLUSTER OF EXCELLENCE
CLIMATE, CLIMATIC CHANGE,
AND SOCIETY (CLICCS)

Map of shared concepts

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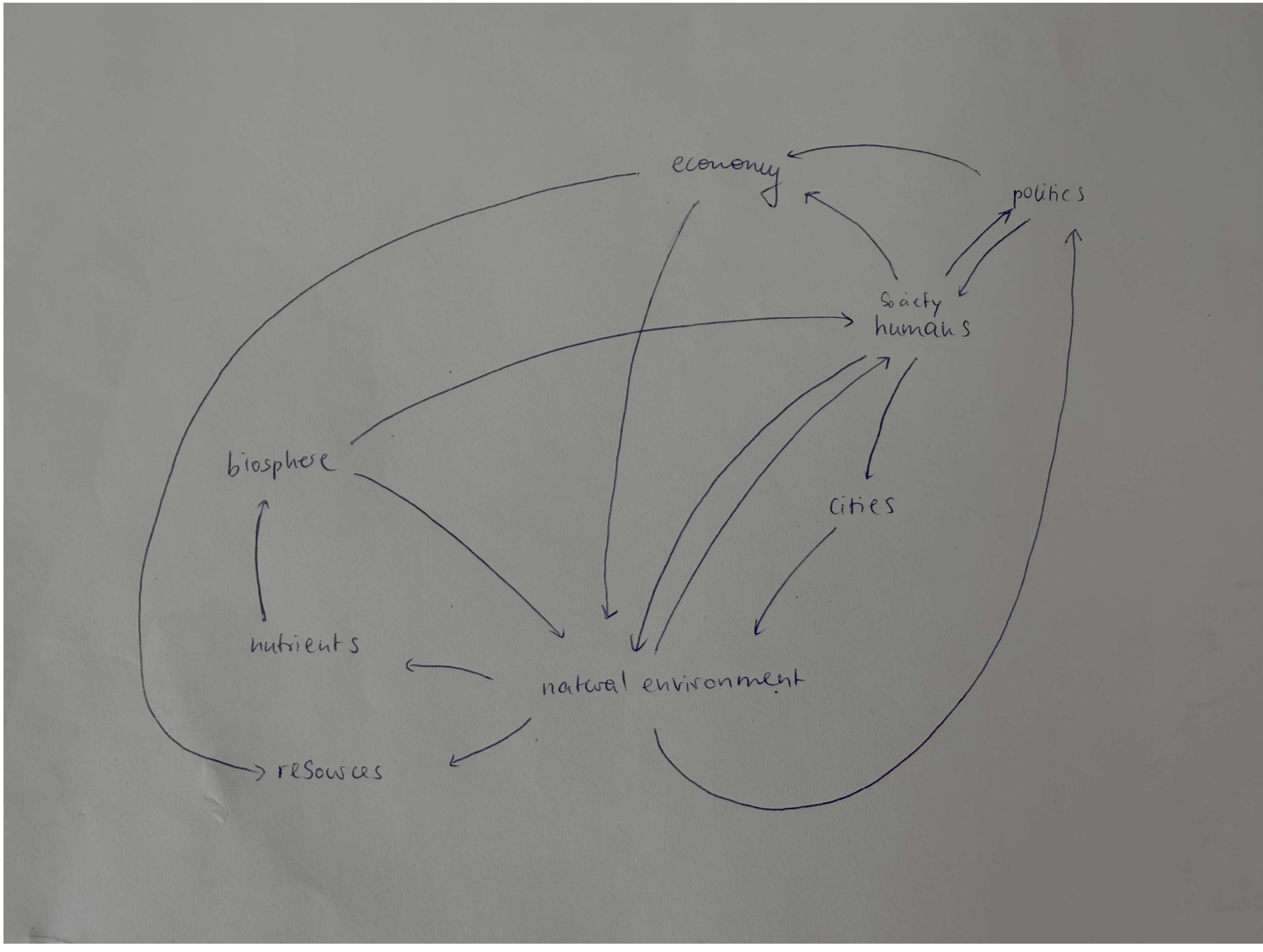

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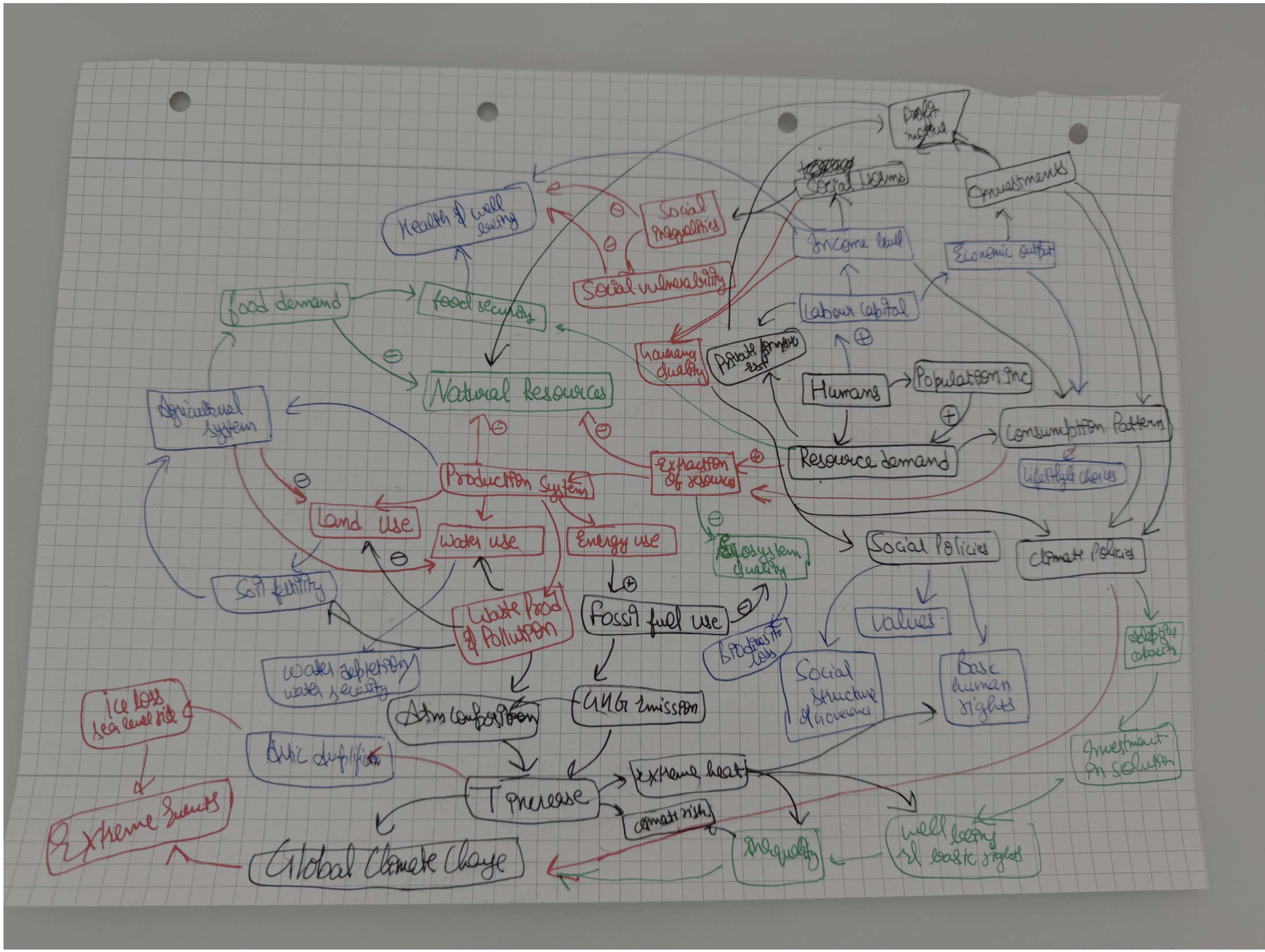

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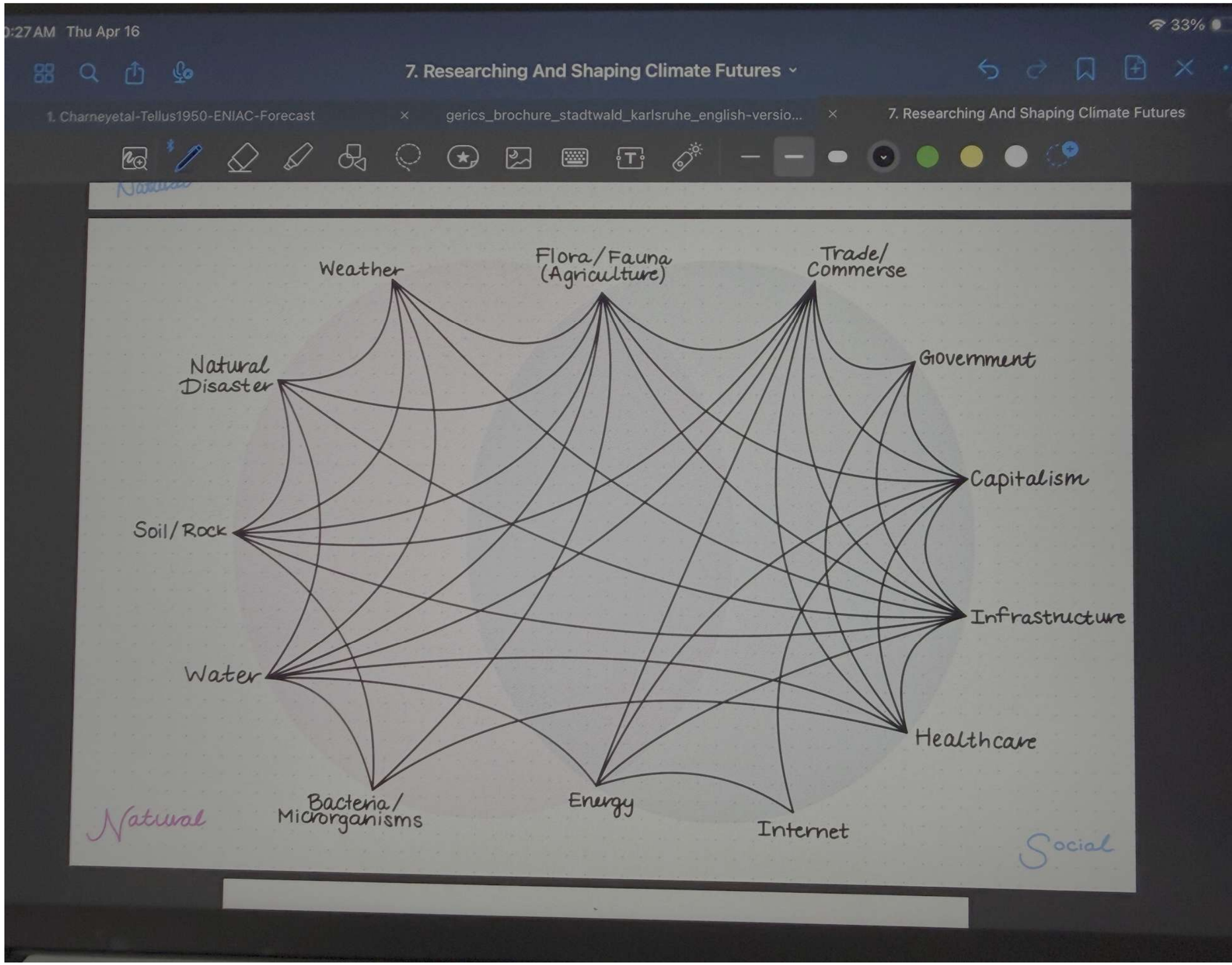

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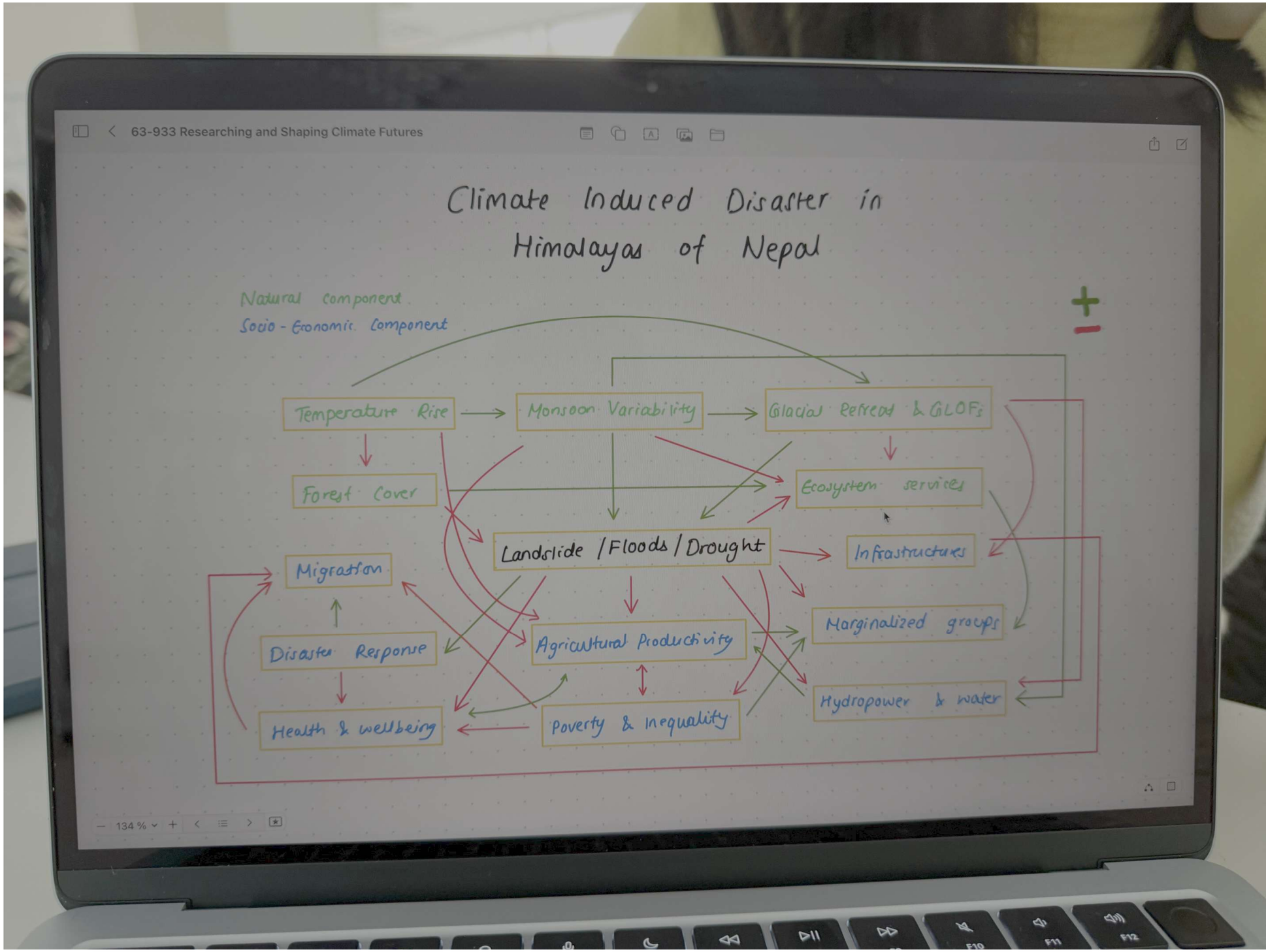

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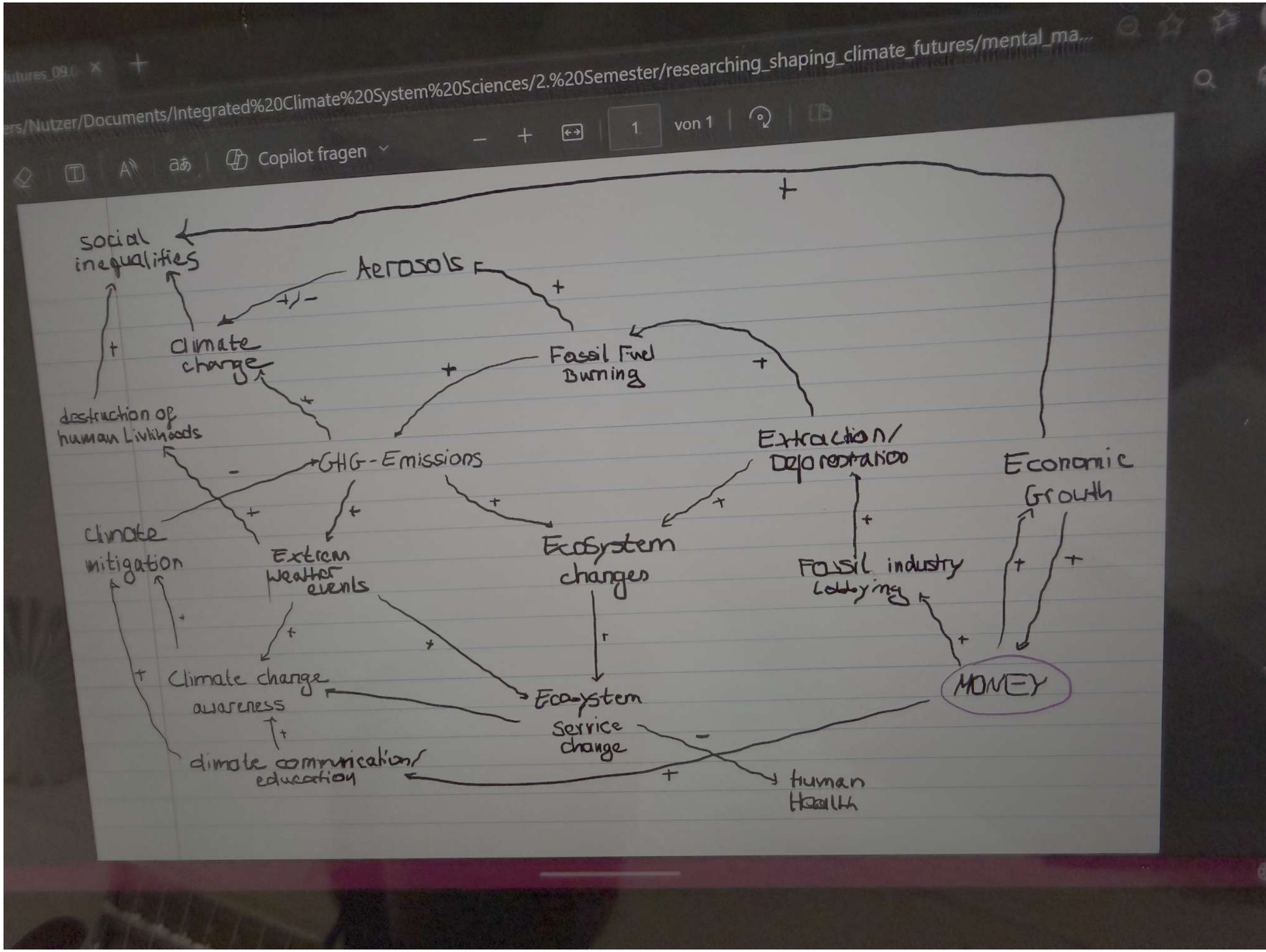

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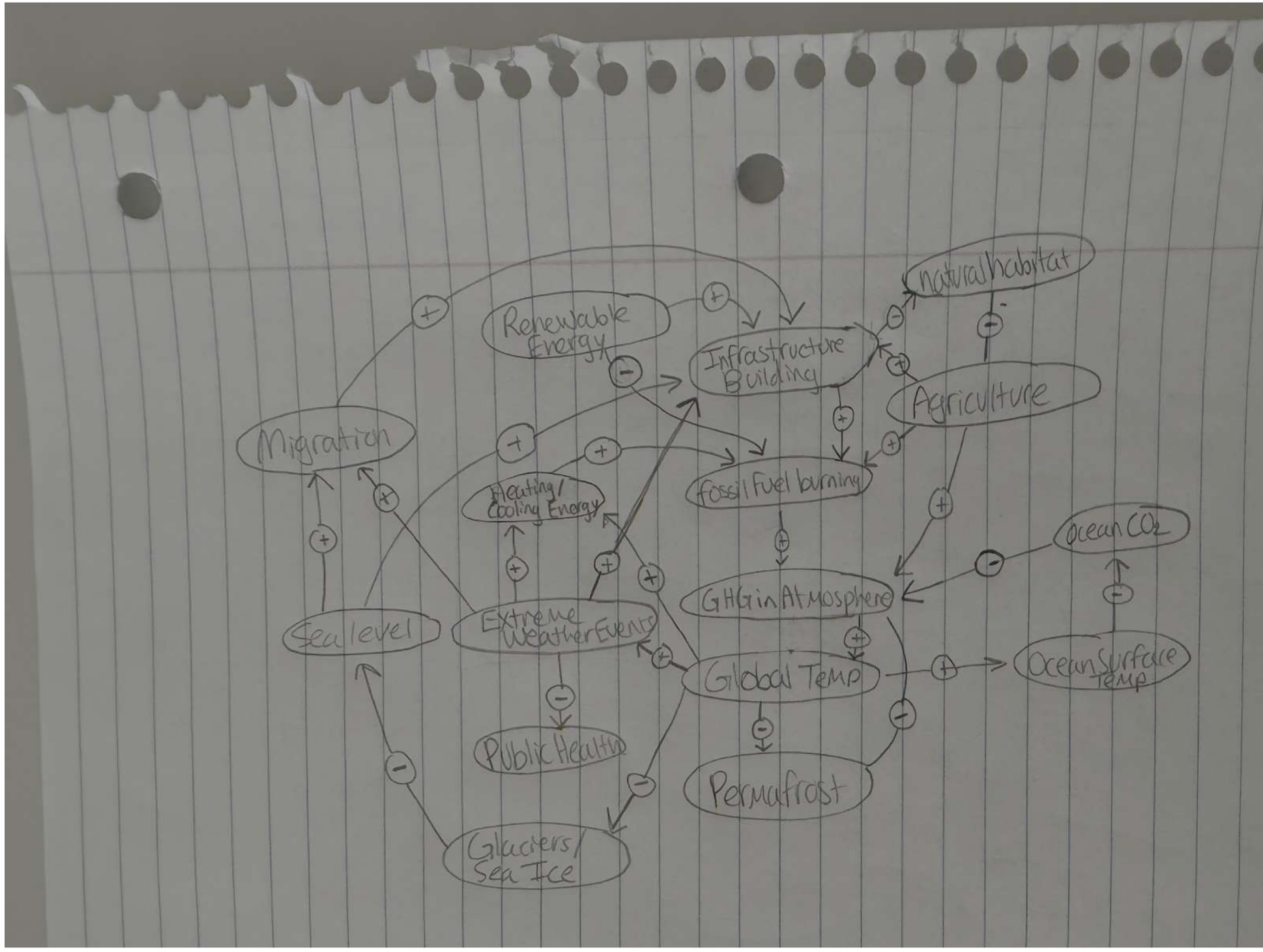

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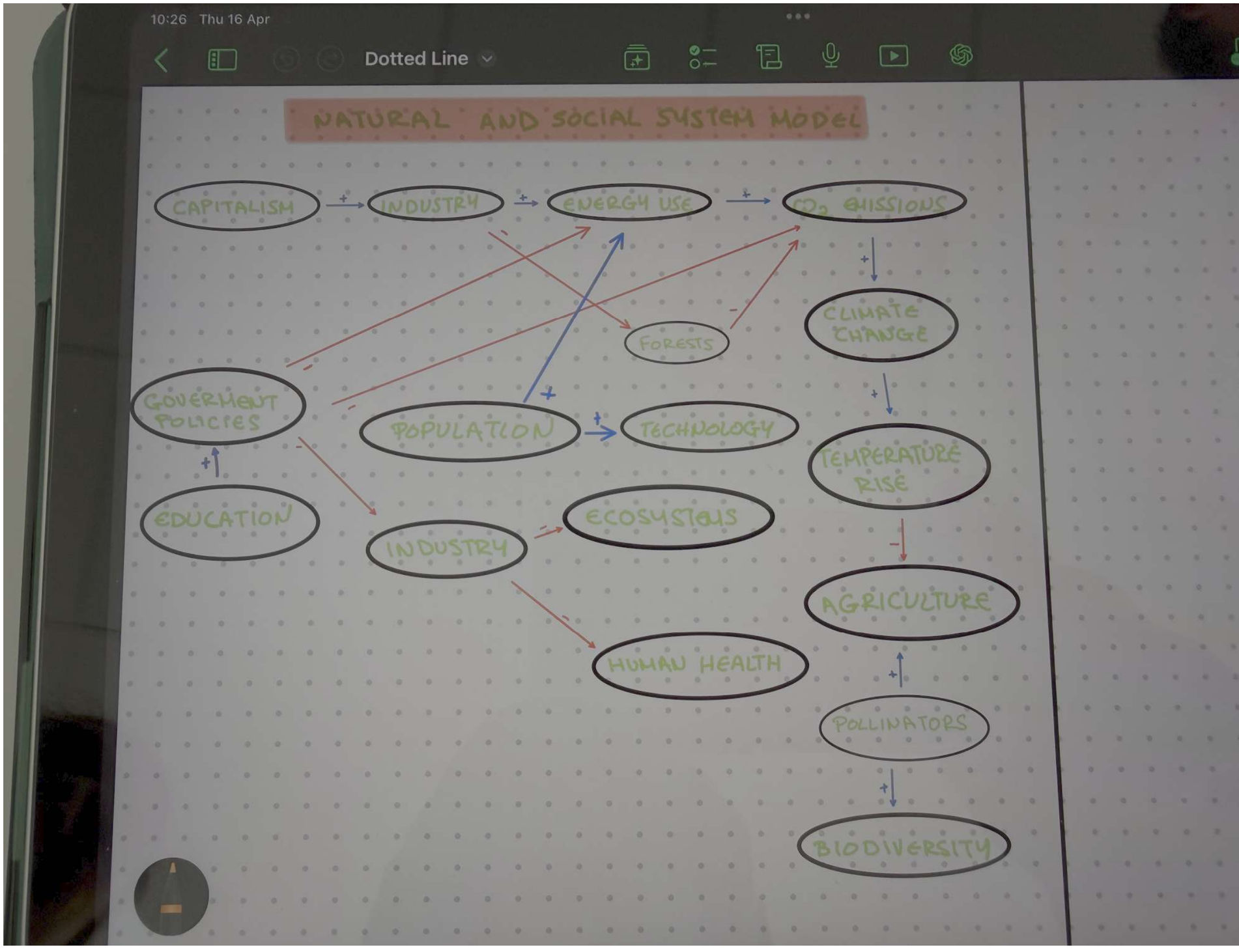

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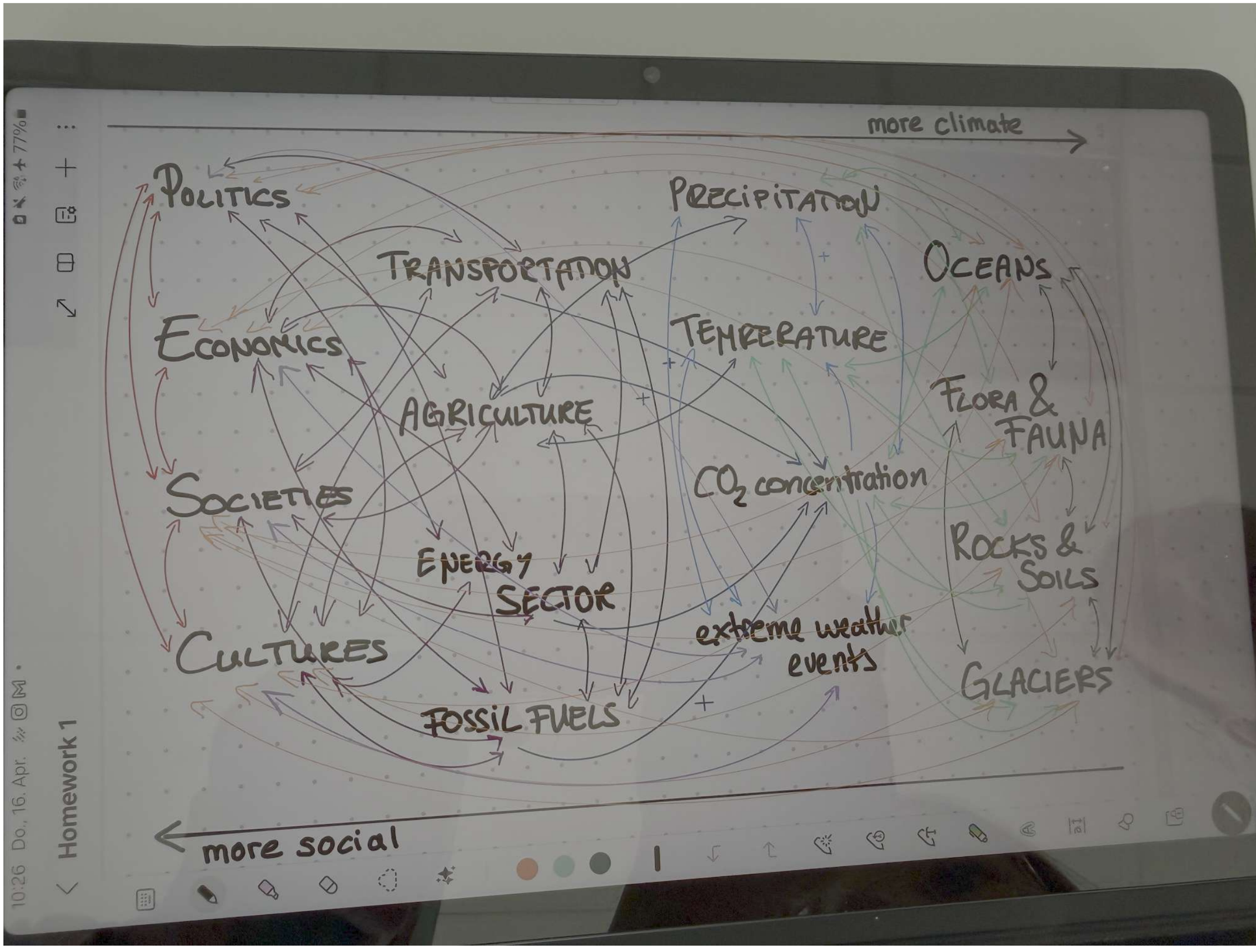

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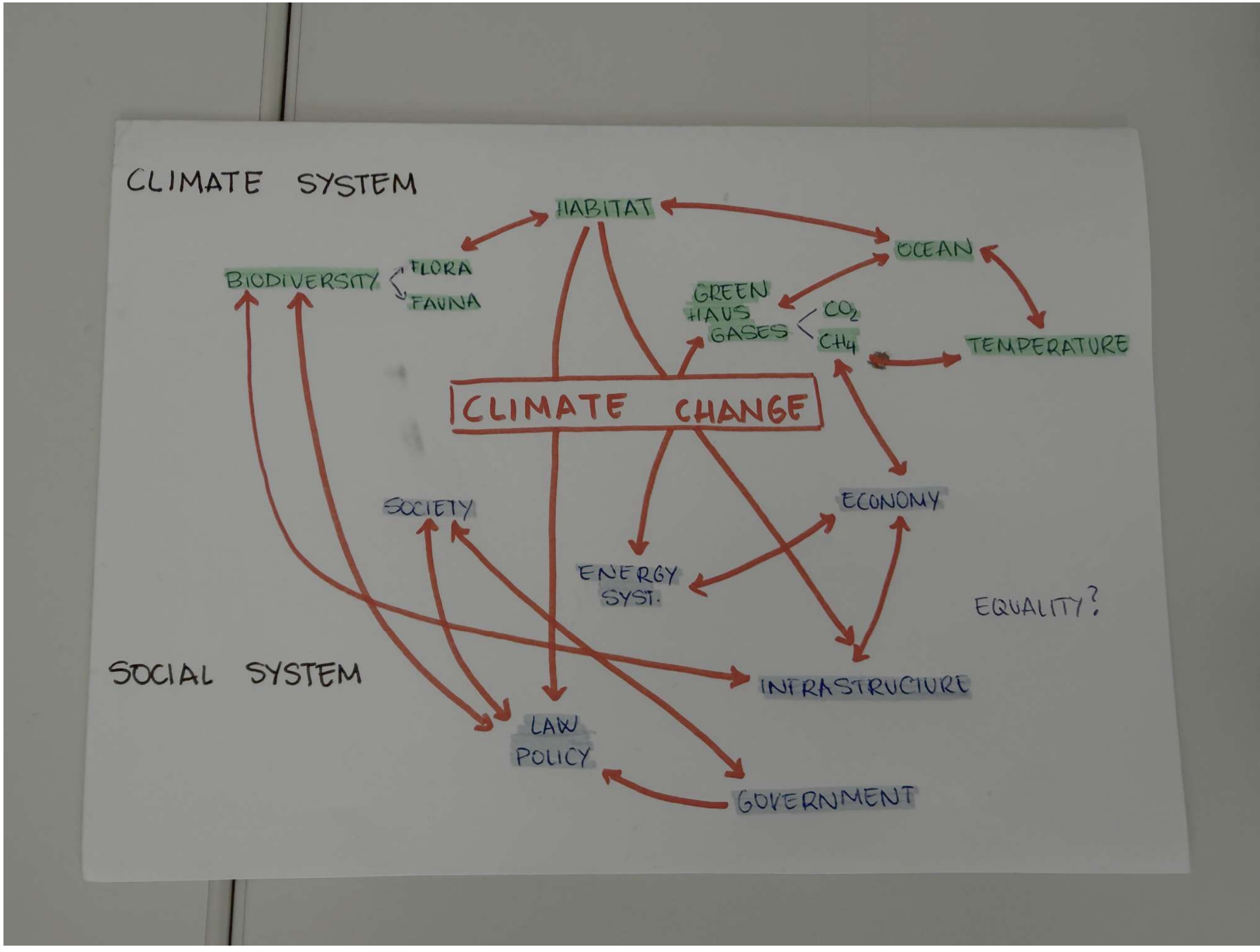

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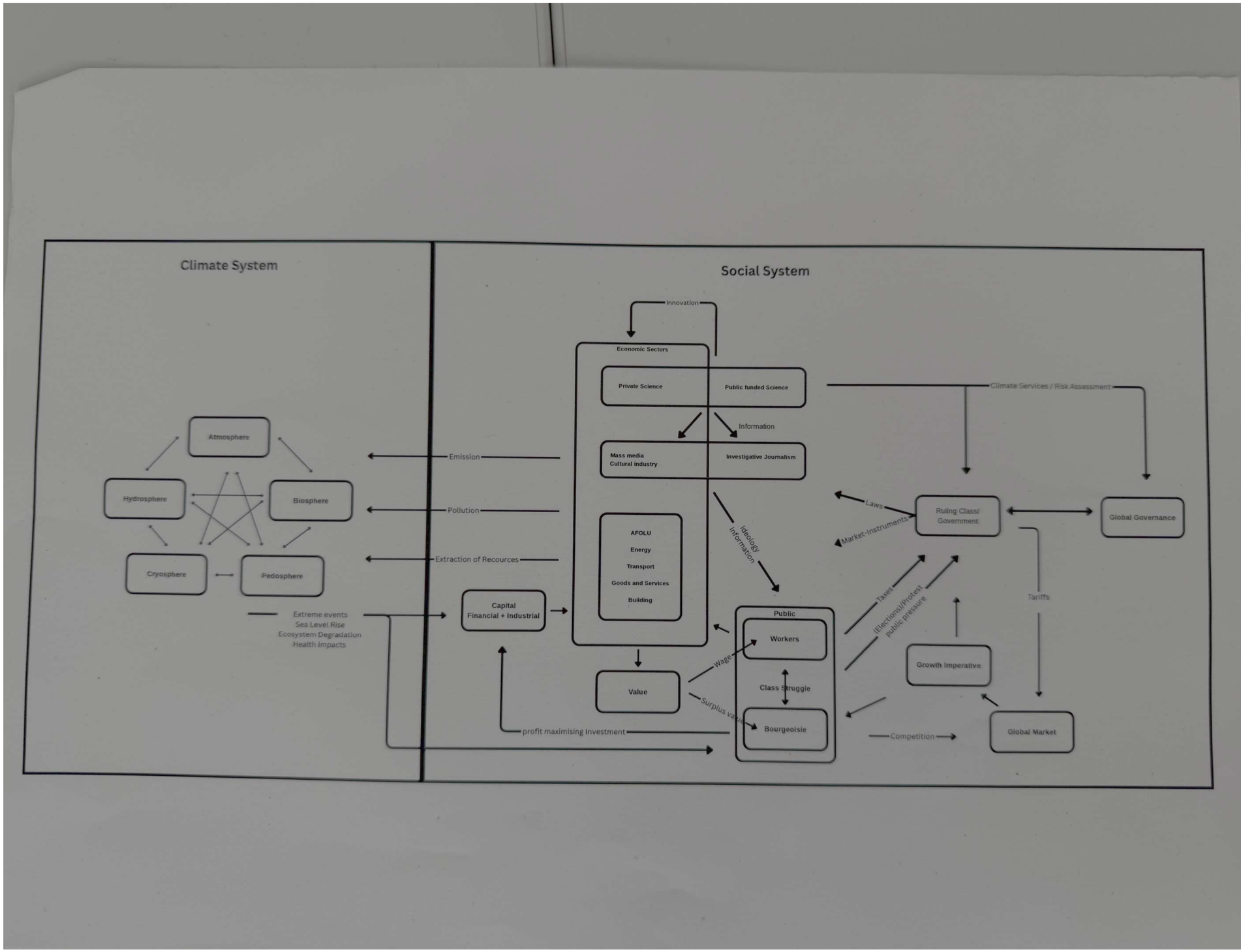

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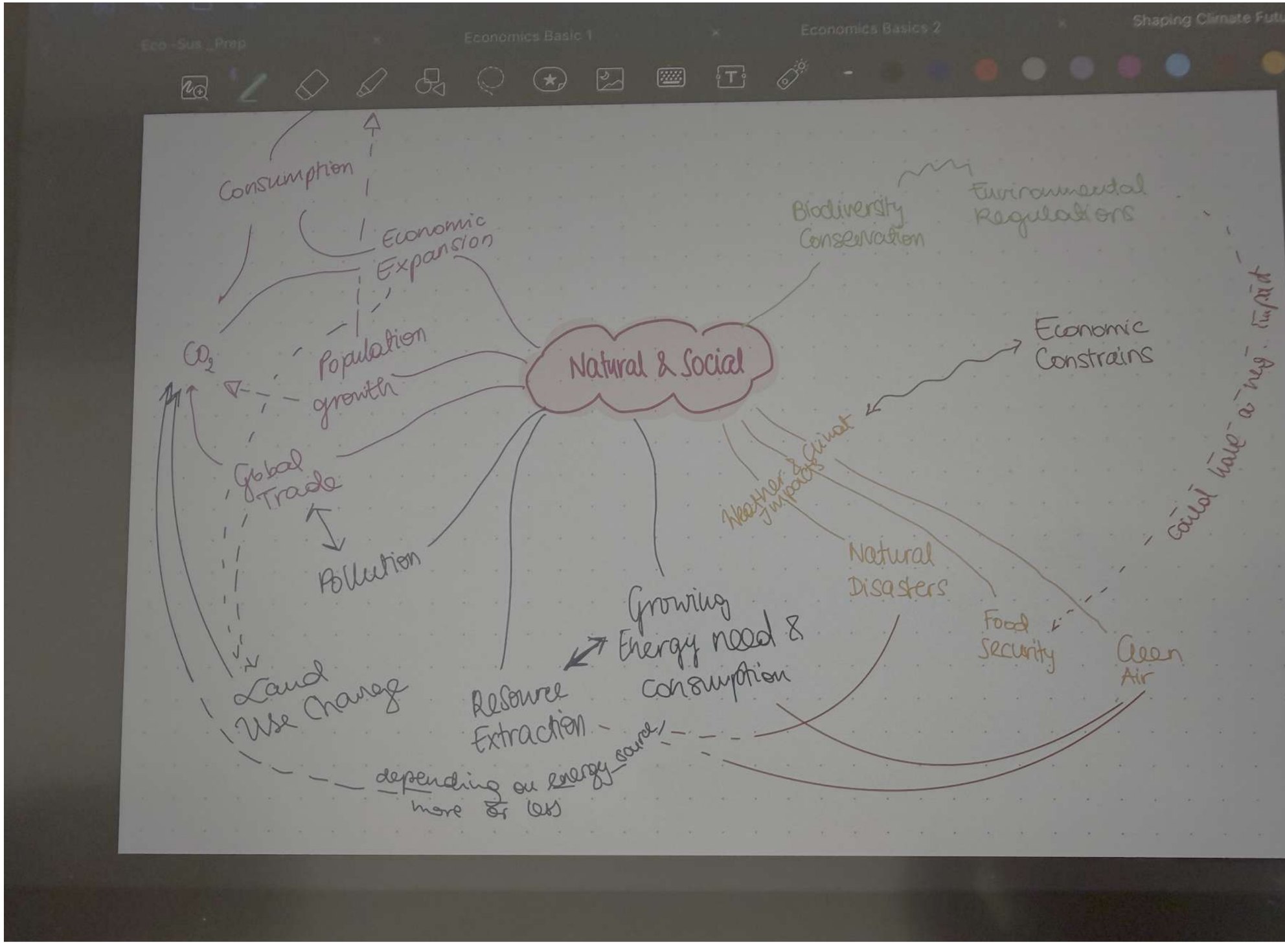

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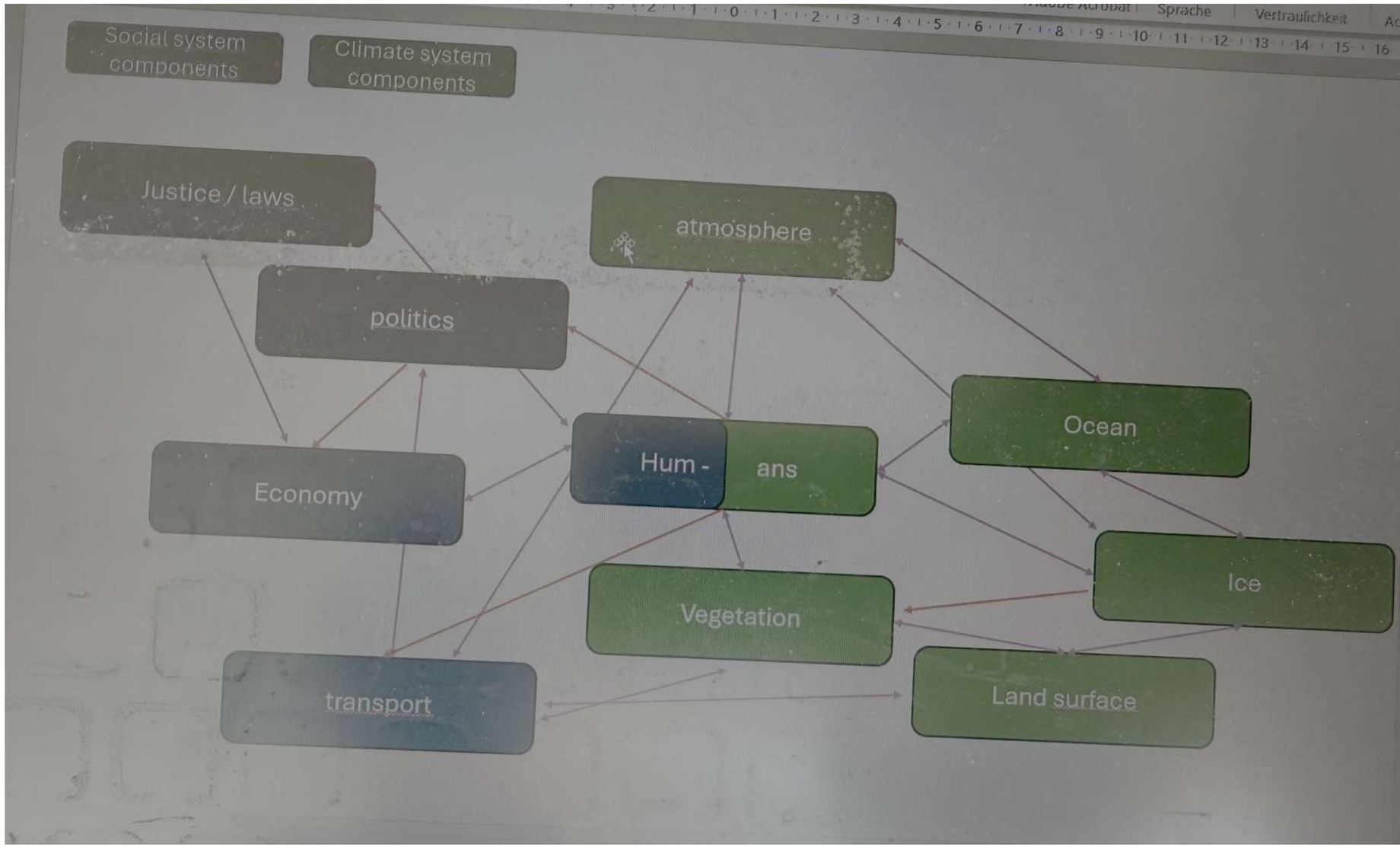

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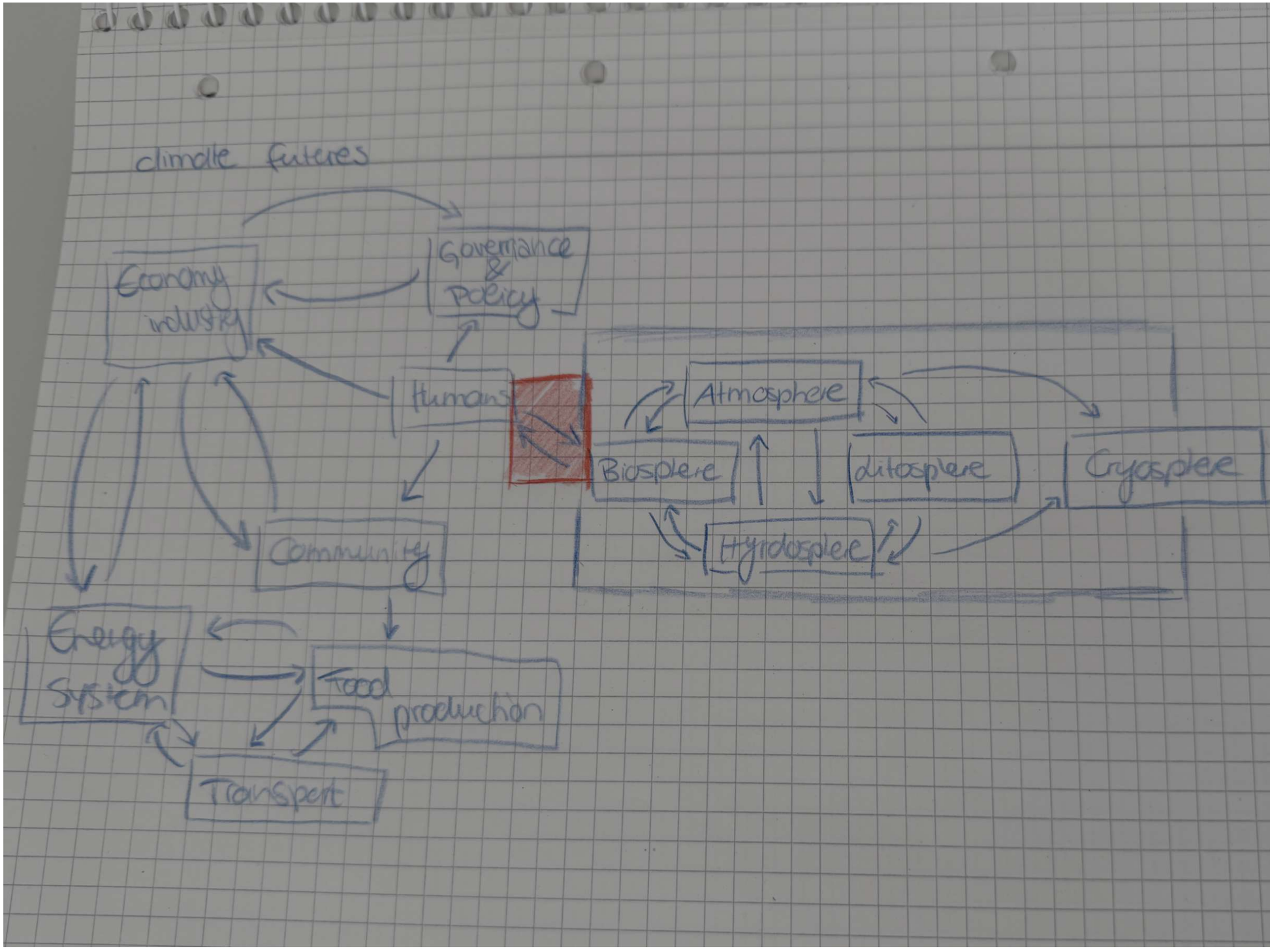

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Similarities
- Economic growth, energy need, consumption,
- Human / social impact on natural systems

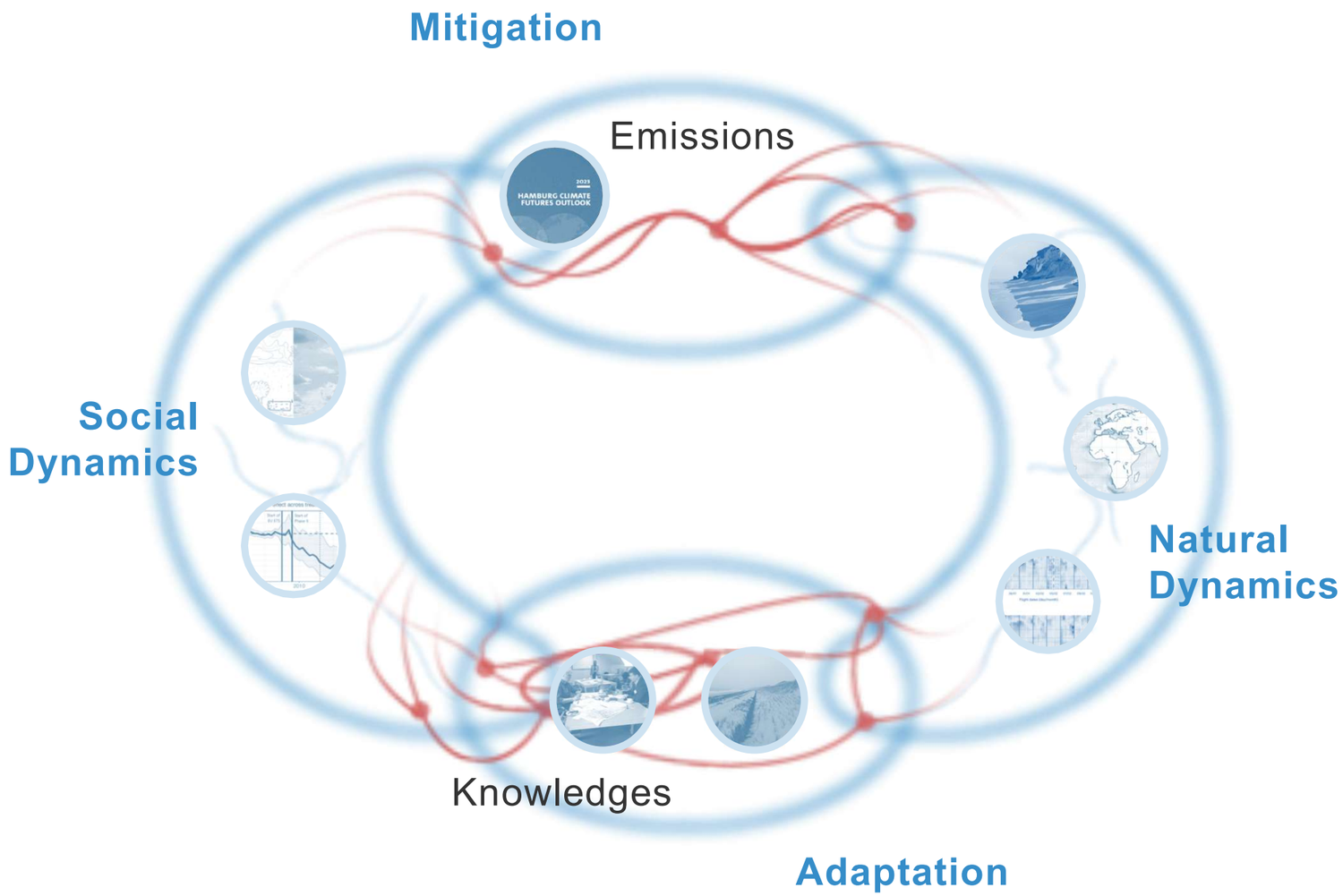
Differences
- Differences in definitions
- Differences in relationships
- Differences in level of detail / scapes

Difficulties
- Where or if to put humans into the picture as singular element
- Adding capitalism as singular element
- Where to add culture and religion?

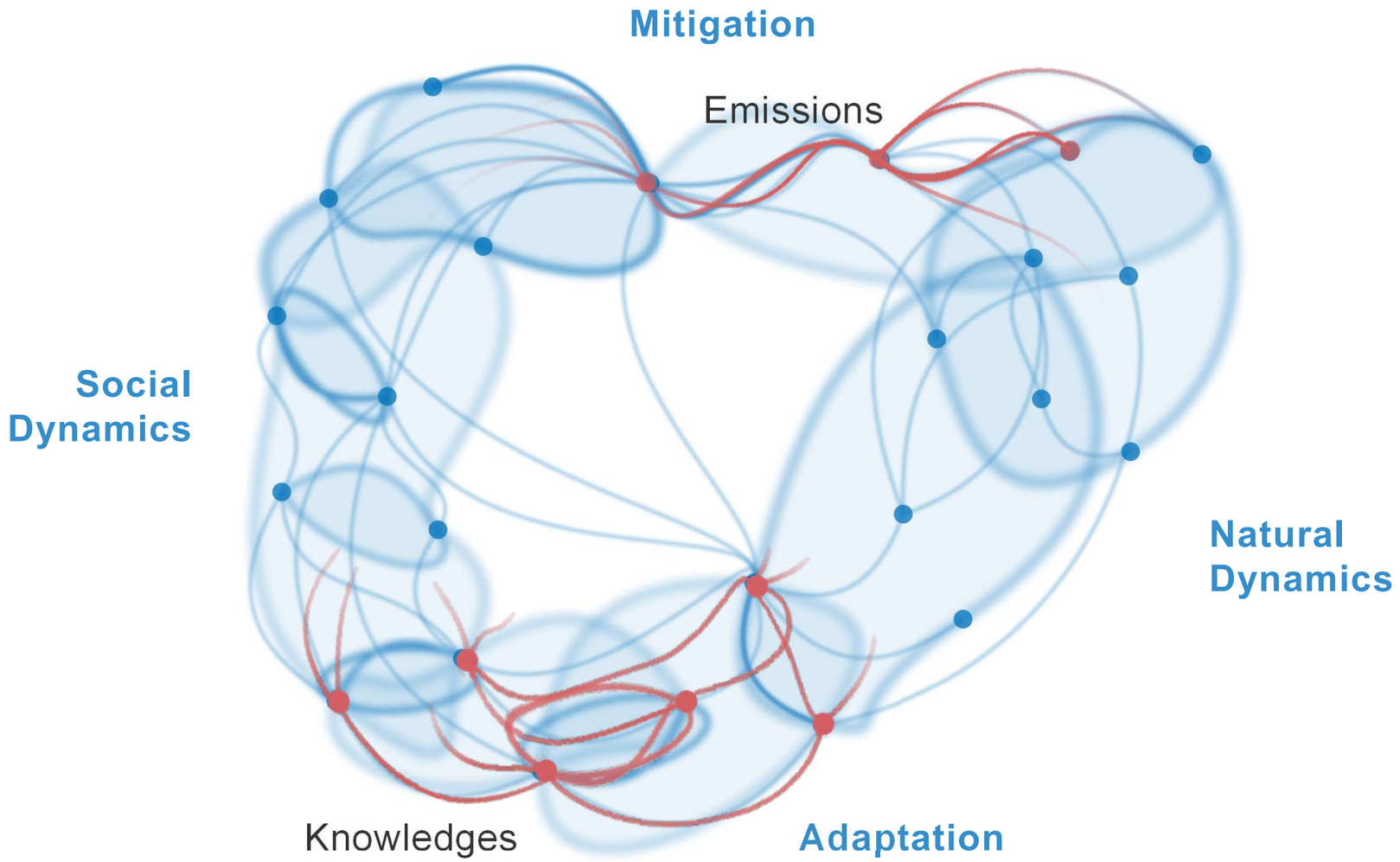
Often overlooked issues
- Personal sphere, familie, narratives (some had culture), complexity of social relationships
- Individual position within the image

CLICCS II:
Our new integrating approach

- Extends our conceptualization of interactions between social and climate systems.
- Develops a model of two couplings between social and natural dynamics: via emissions and knowledges.
- Focuses on drivers that hinder or enable the realization of desired climate futures.

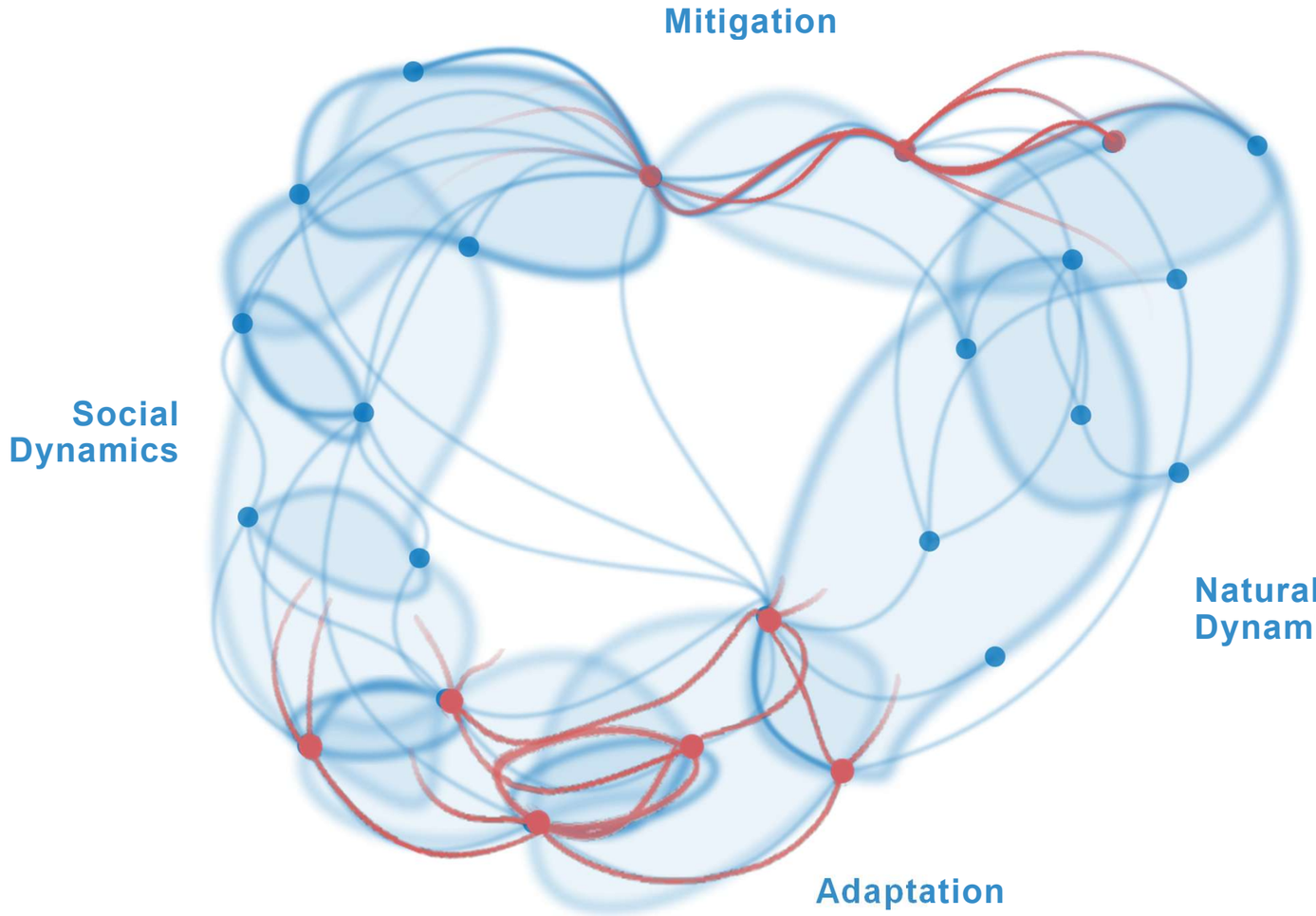


CLICCS II
Our new conceptual map



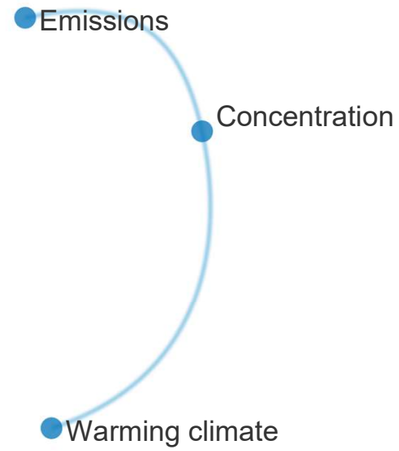
CLICCS II
Our new conceptual map

How did we get to our new conceptual map?



Emissions and concentration

The emissions of greenhouse gases, predominantly driven by human activities, increase their concentration in the atmosphere, resulting – through the greenhouse effect – in a warming climate.

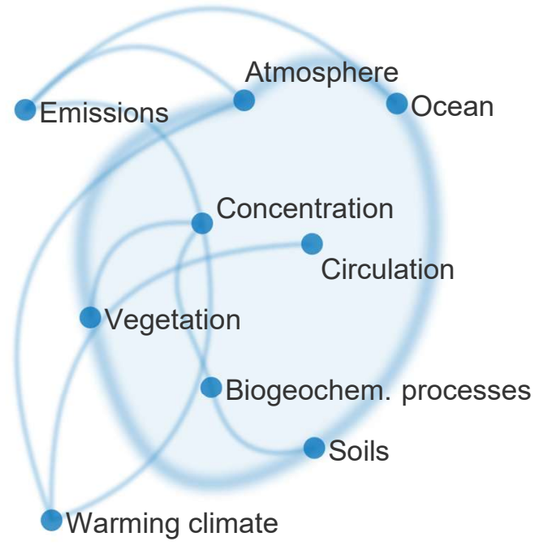


Atmosphere, ocean and land

The warming climate has an impact on the circulation of oceans and the atmosphere.

Changes in concentration and climate alter land properties and hence biophysical and biogeochemical land-atmosphere interactions.

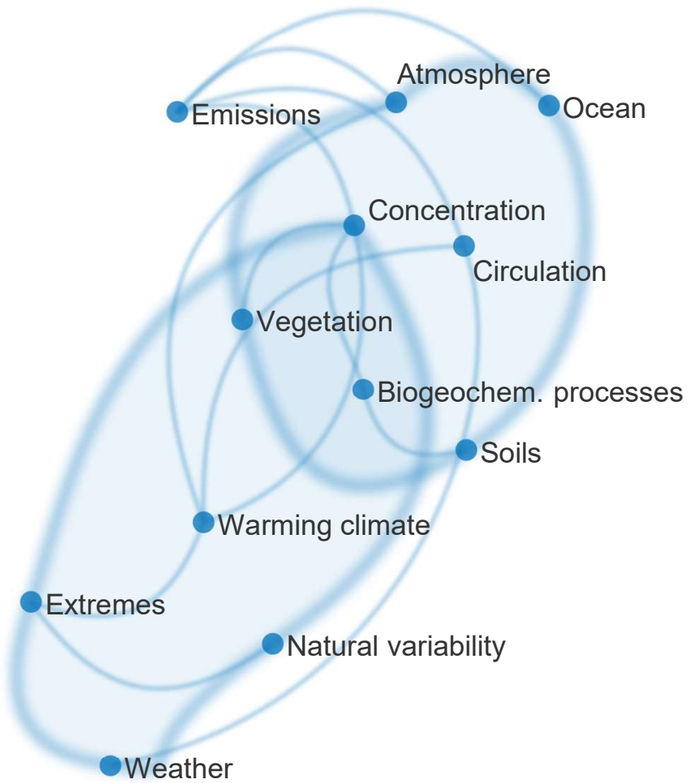
Ocean and land store significant amounts of anthropogenic carbon dioxide dampening the increase in concentration.



Warming climate and variability

The warming climate leads to changes in precipitation and other weather phenomena.

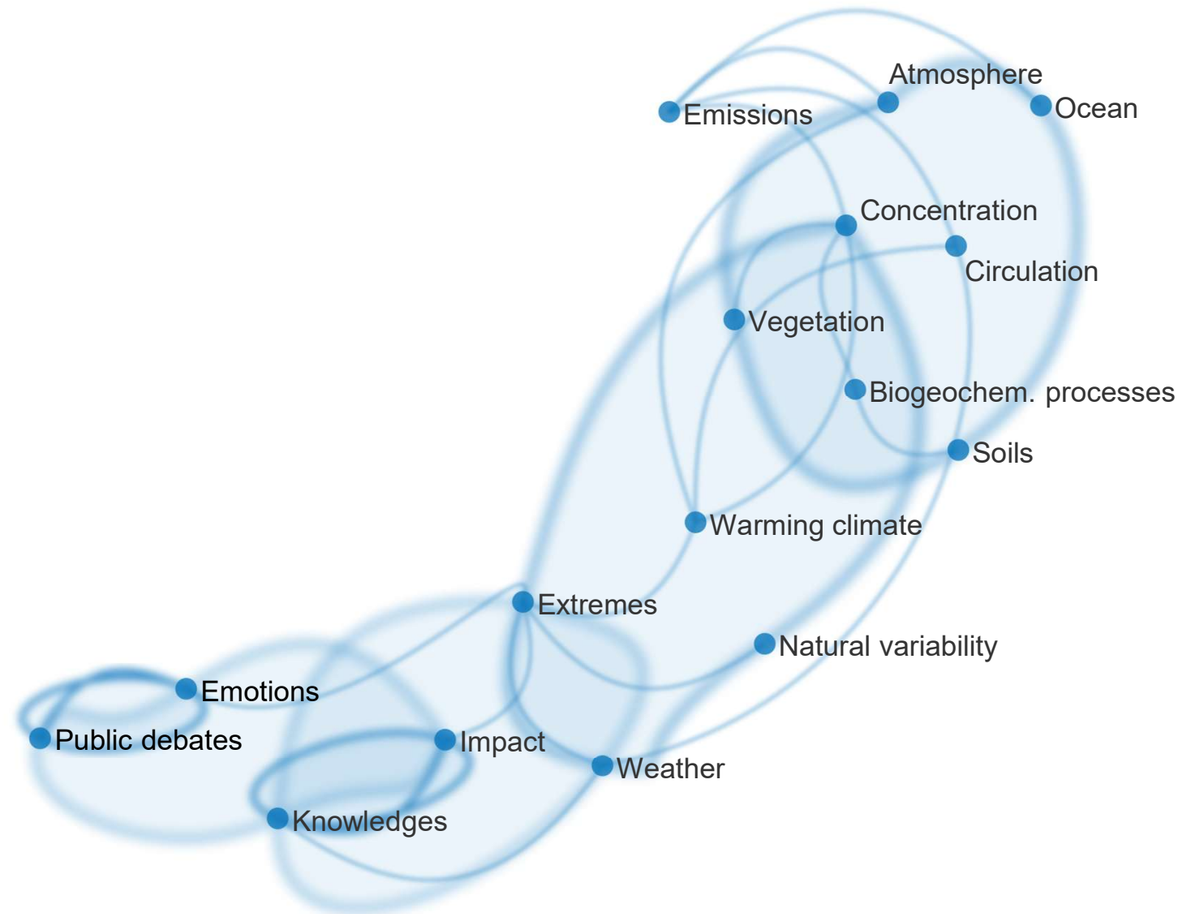
Extreme events like droughts, heavy rainfall, heat waves and floods occur more often and will be more intense in a warming climate.



Knowledges and public debates

Societal knowledge about the climate system, the effects of emissions and the impacts of a warming climate evolves rapidly.

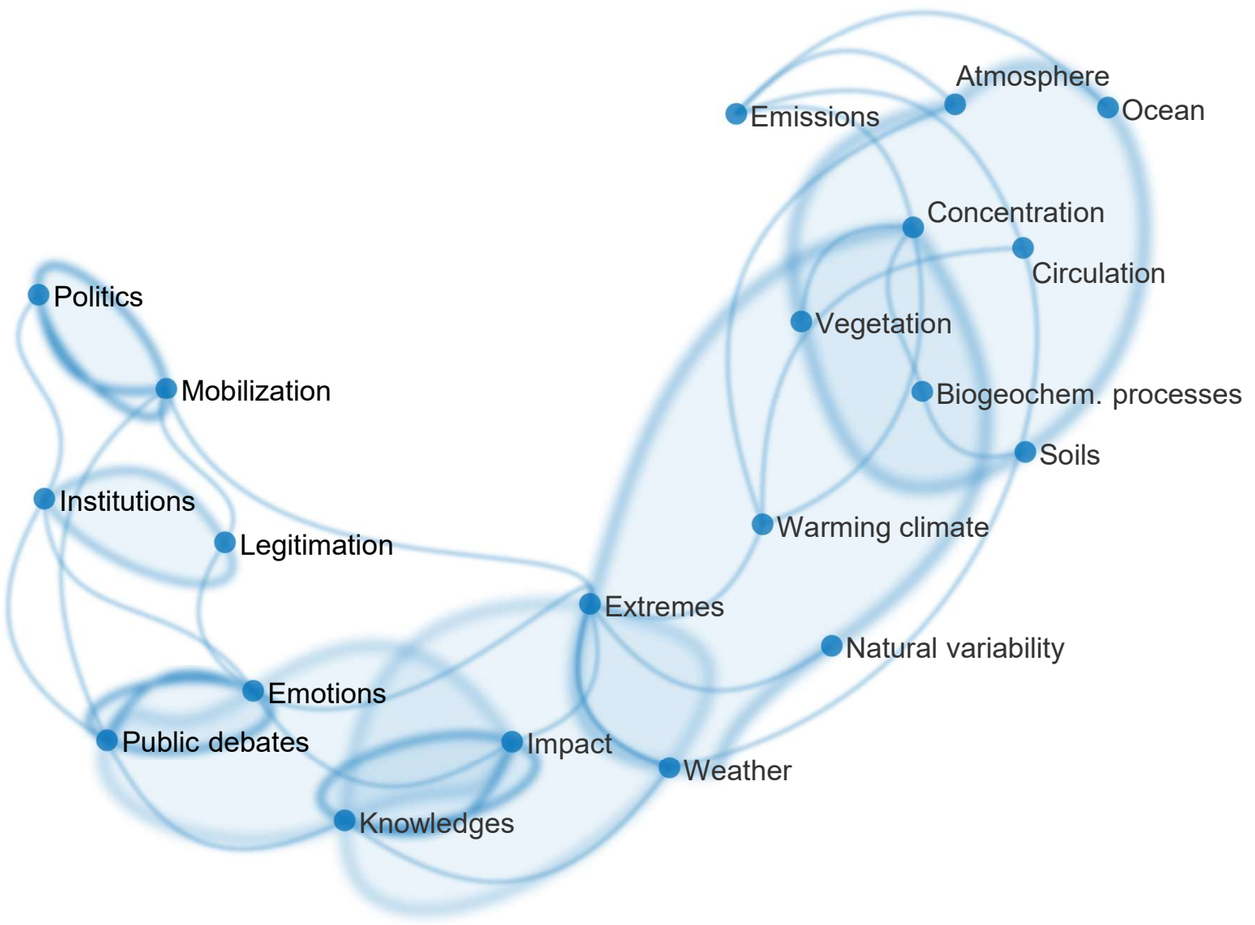
Extreme events foster emotional reactions and revive public discourse on climate change.



Institutions and politics

Societal discourse stabilizes or changes institutionalized societal knowledge and the legitimacy of some actors to act.

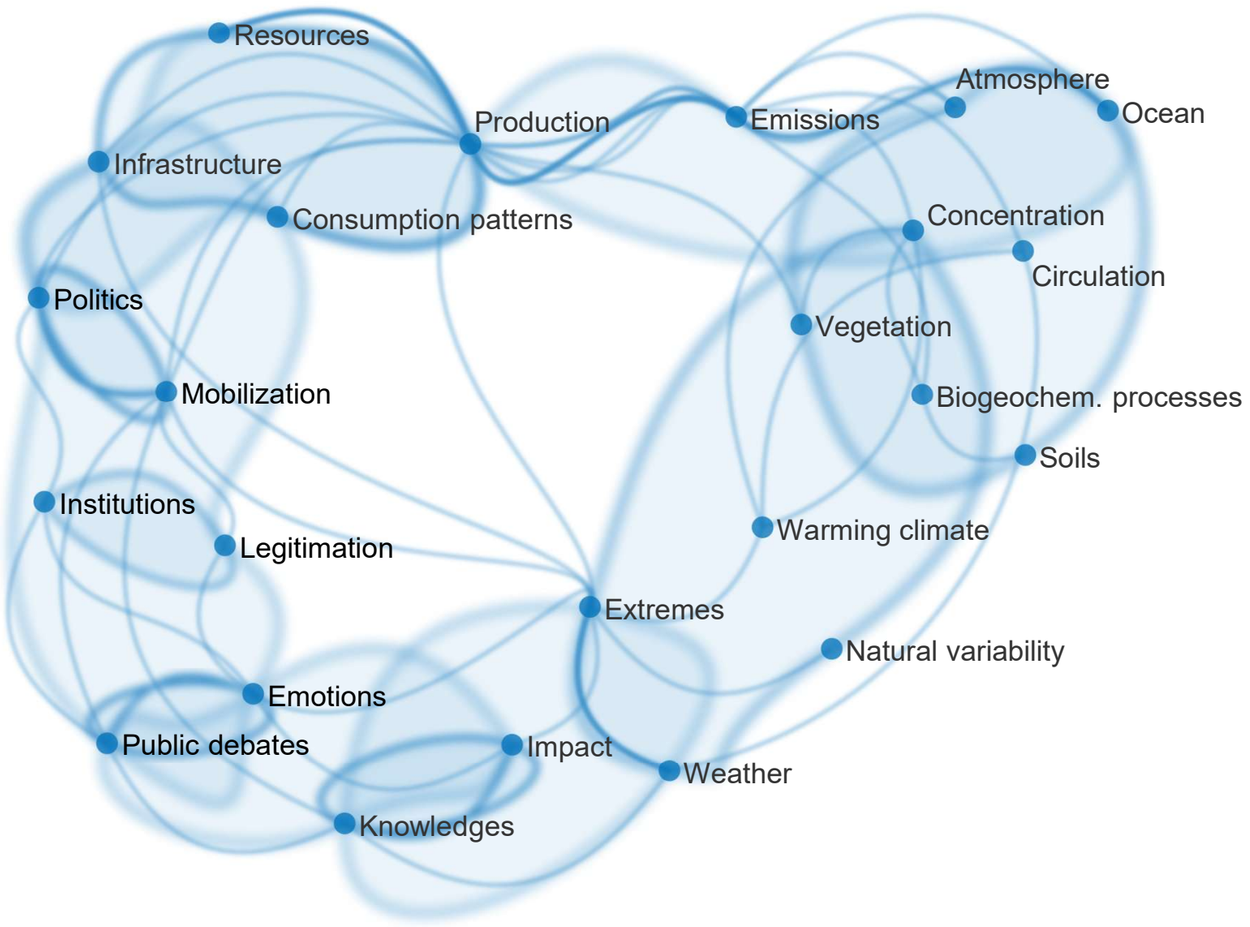
Both affect climate activities and development, codification and application of policy instruments.



Consumption and production

Policy instruments and climate activity try to influence the allocation of resources, consumption patterns, and the construction and use of infrastructures.

Together, they affect the production of goods and services which generate greenhouse gas emissions.



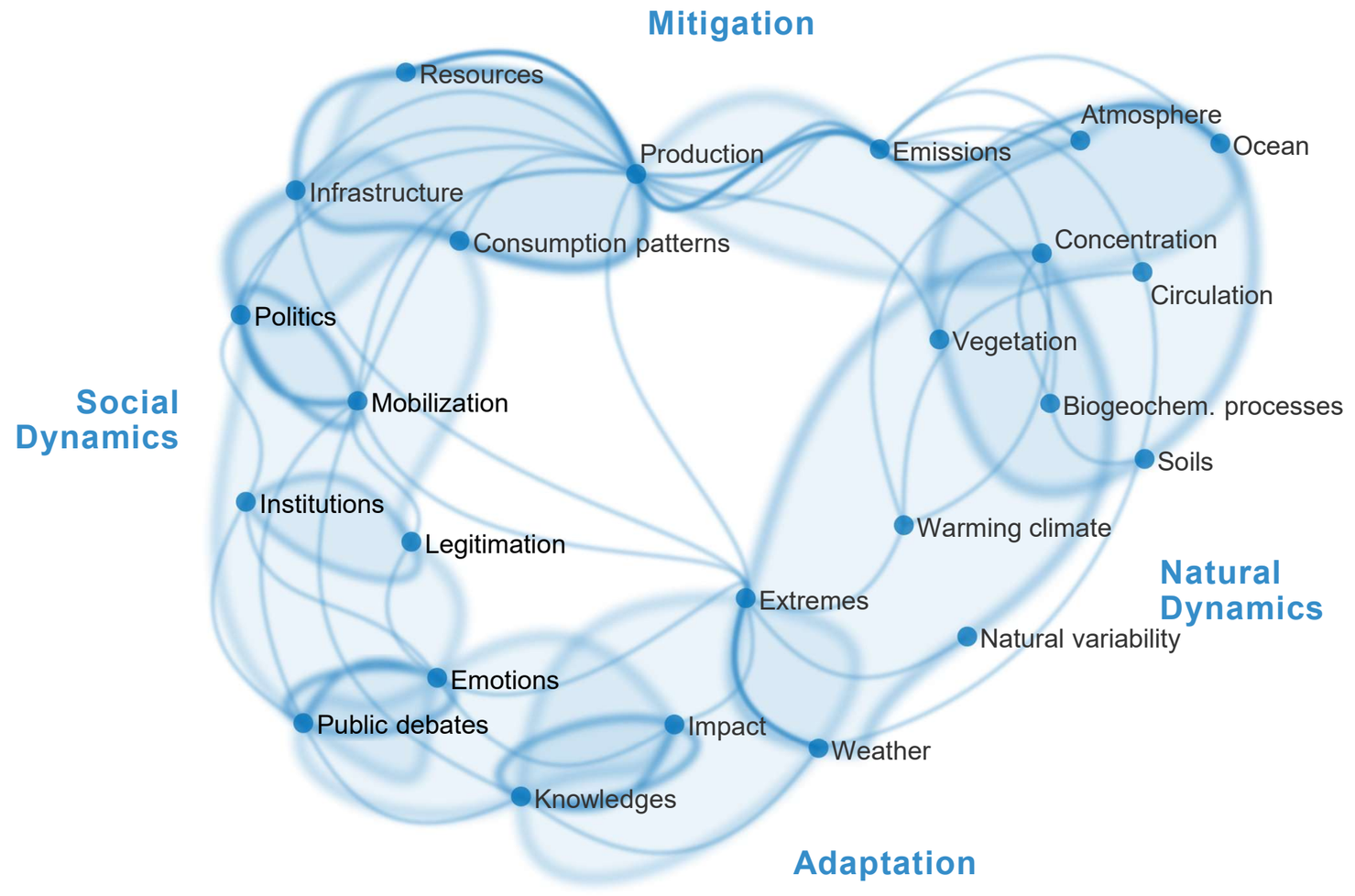
Conceptual map as a foundation for CLICCS II

Social dynamics:
Contestation and realization of climate futures

Mitigation:
Plausibility of climate futures under decarbonization

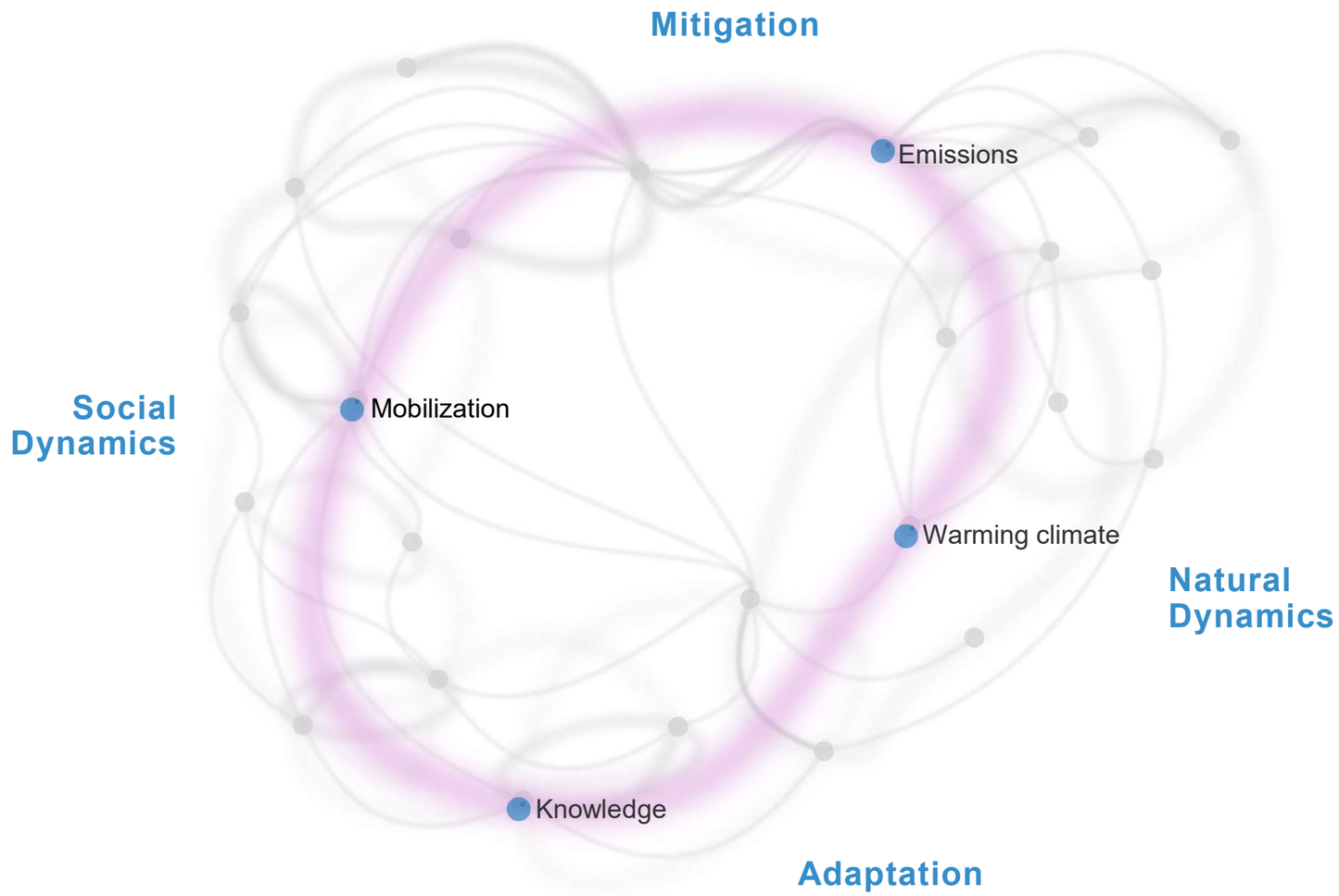
Natural dynamics:
Stability and surprises in future climates

Adaptation:
Craft knowledges to prepare for volatile future climates



Simplified activists' approach

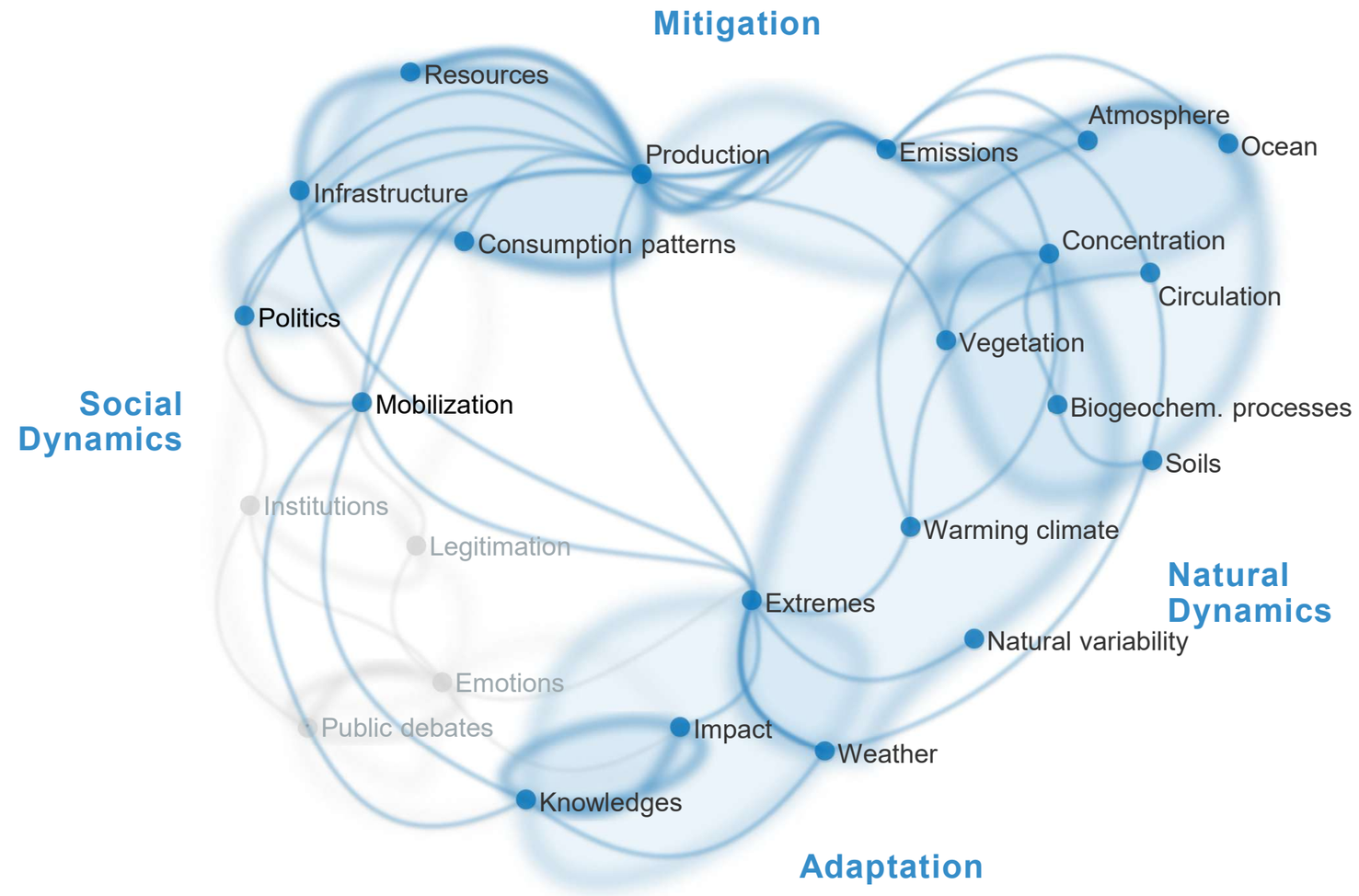
Some climate activists use a narrative involving only a few concepts: The scientific knowledge that humankind produces emissions which result in a warming climate should mobilize climate action.



Technocratic idea

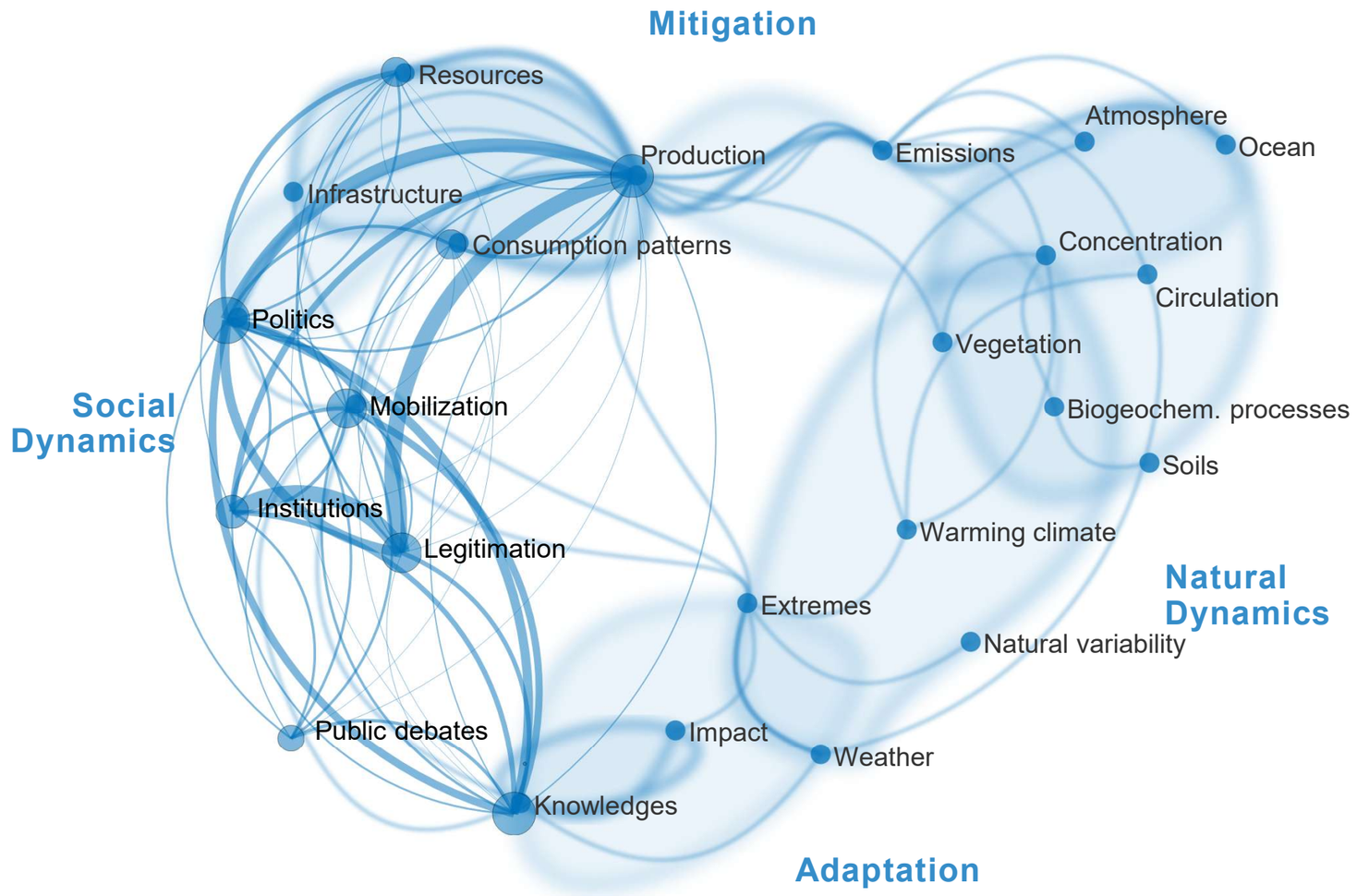
Some argue, that we need natural sciences to understand a warming climate and technical/economical solutions for climate mitigation and adaptation.

In such an approach, discourse, emotions, institutions and legitimation are ignored. Policy instruments are proposed and applied without prior public discourse.



Social plausibility assessment framework

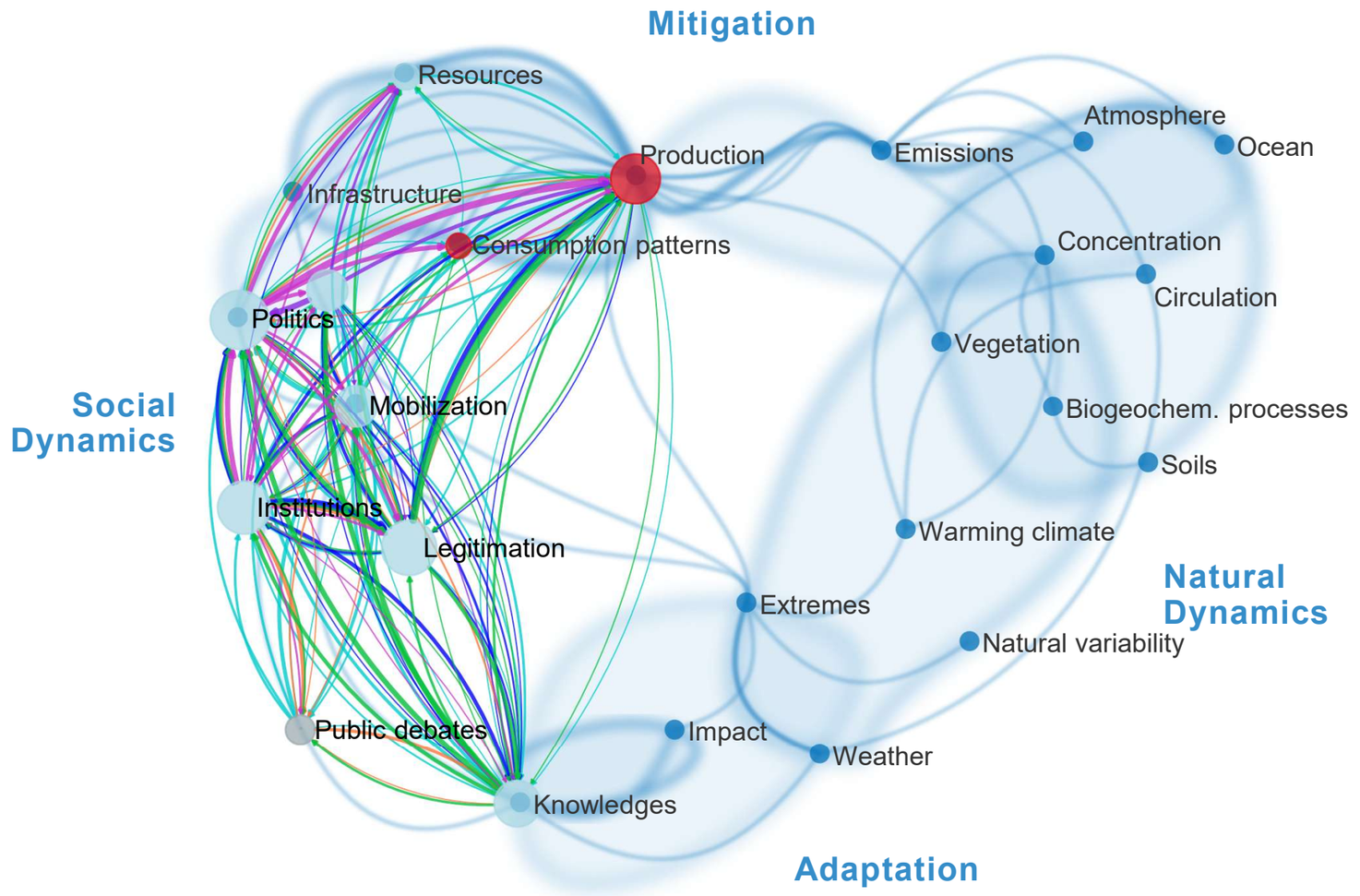
With the social plausibility assessment framework, we developed an approach to fill a gap between knowledge production and the production of emissions.



Social plausibility assessment framework

With the social plausibility assessment framework, we developed an approach to fill a gap between knowledge production and the production of emissions.

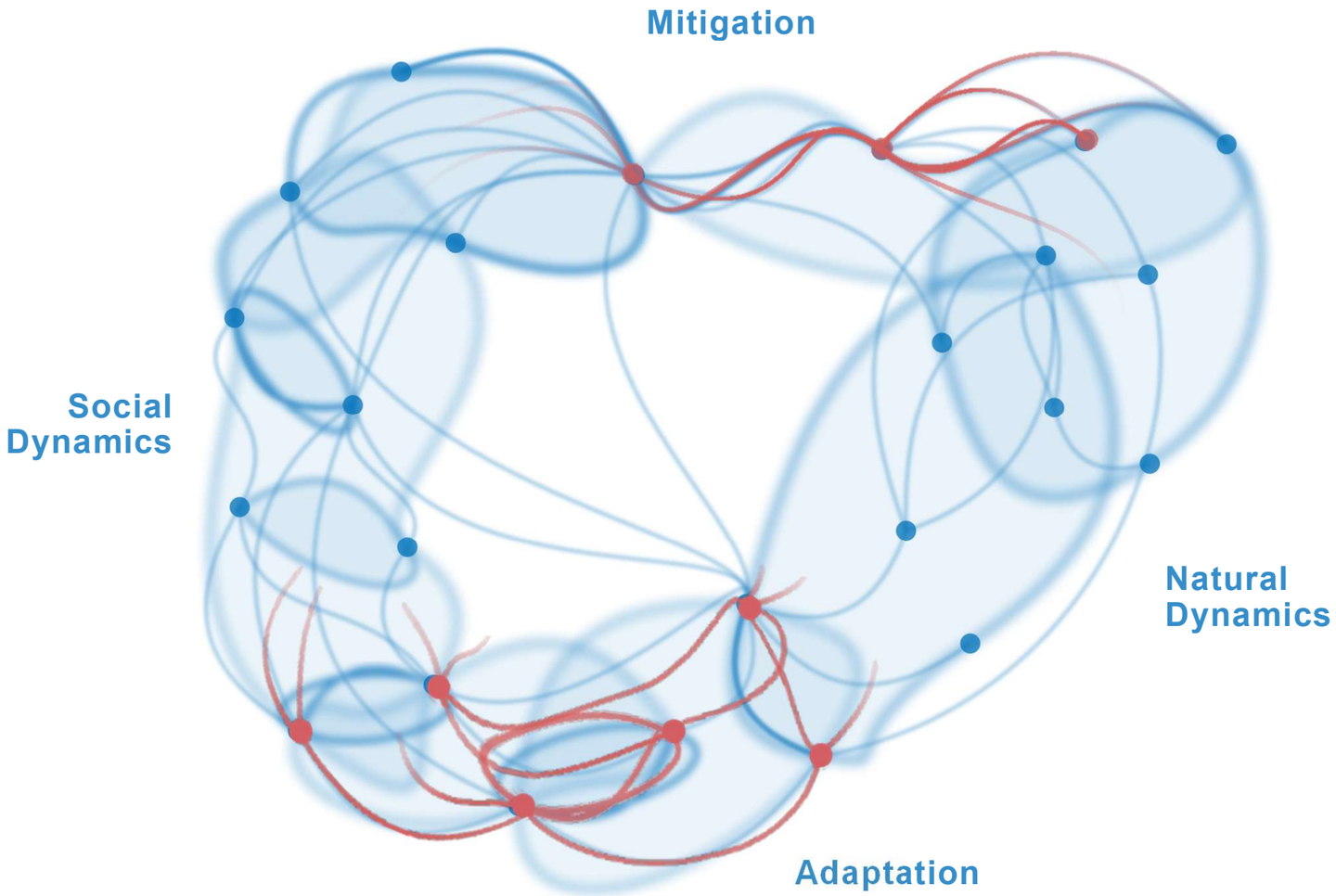
We observe a stepwise transformation of knowledges into expectations and policies which influence infrastructure, financial resources, consumption patterns, and production processes.



CLICCS II
Our new research effort

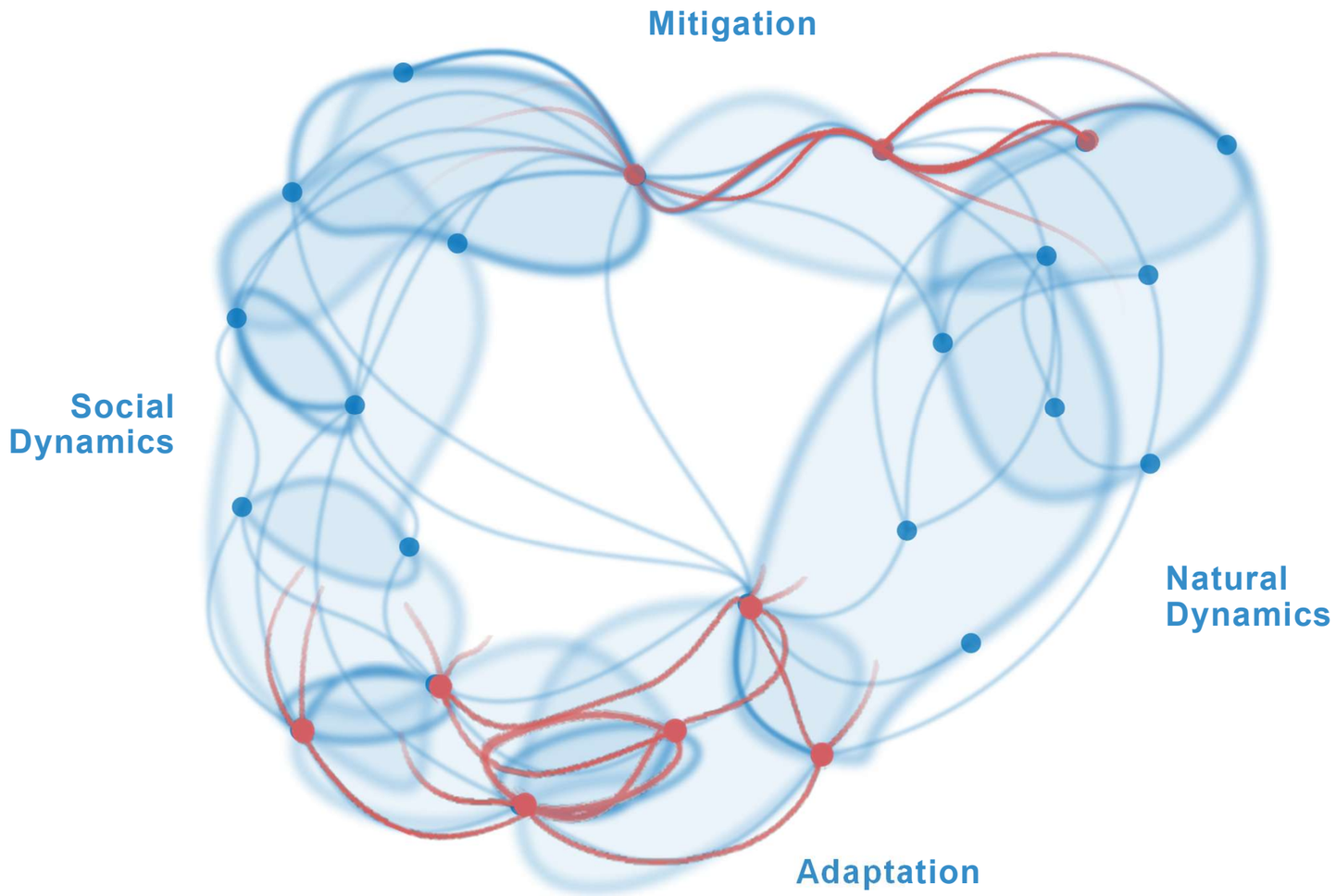
- Our conceptual map: Allows us – for the first time – to explore pathways to the realization of climate futures.
- Our experience, the breadth and depth of collaboration: Allows us to analyse a range of climate futures impossible anywhere else.
- The combination: Allows us to analyse competing climate futures, e.g. those pursued by different societal actors.

Allows us to pose a complex research question:



CLICCS II
research question

Which climate futures are plausible, and how can desired climate futures be realized?

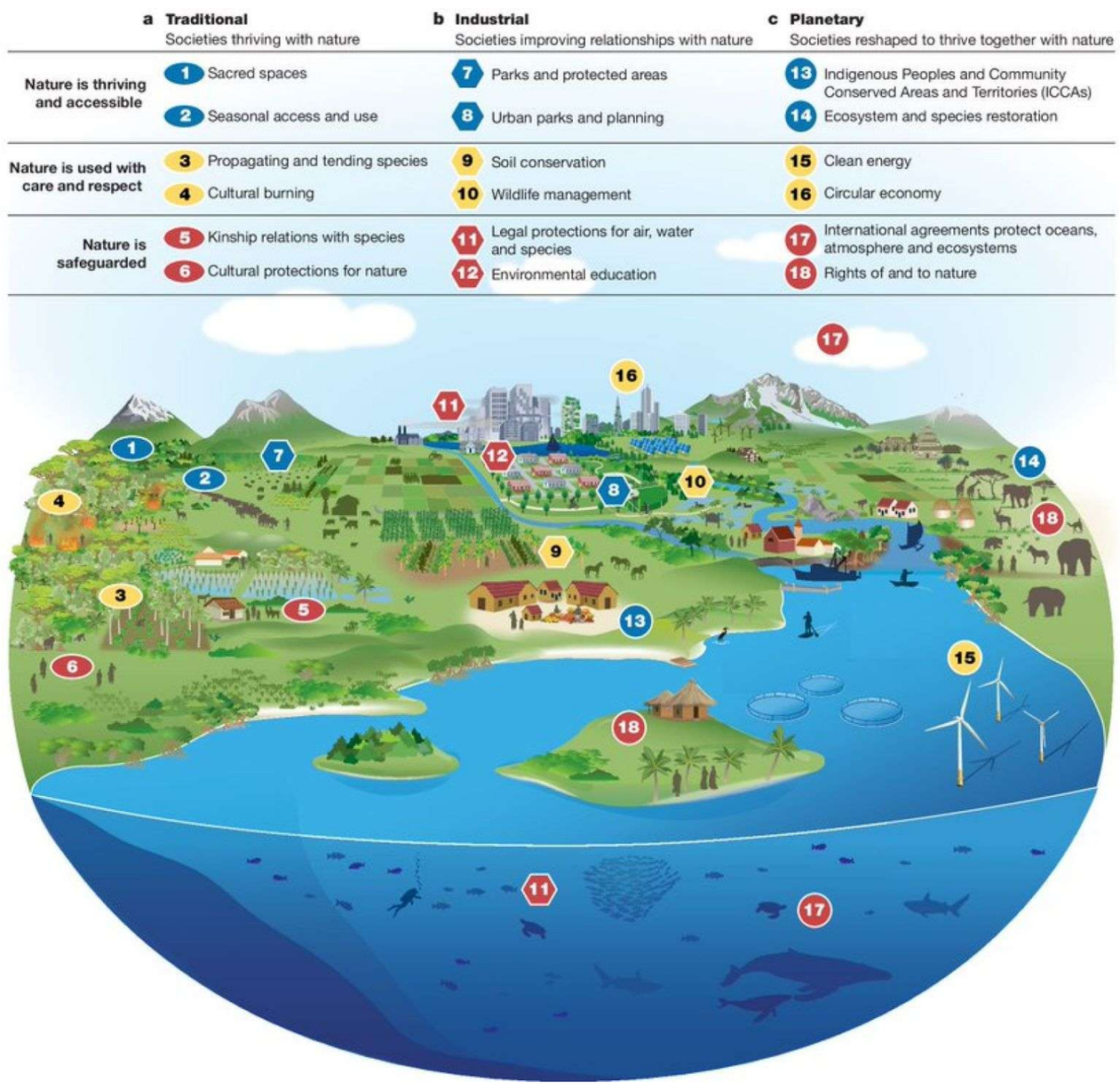


Discussion
Nature and society

Other publications locate society as part of the physical world.

We highlight the decoupling of society from nature.

In doing so, we deviate from romantic ideas of humans being part of nature.



https://hdr.undp.org/content/new-nature-paper-proposes-bold-framework-reimagine-human-nature-relationship

Discussion
Science

Knowledge generation

- **No agreement on ontological assumptions**
- At least partial **incommensurability** of underlying theoretical assumptions
- **Variety of epistemological** approaches needed

Knowledge integration

- Under conditions of incommensurability, **knowledge cannot be integrated by standard methods** of aggregating a growing body of data and papers
- **Integrating knowledge** via social organization and processes of inter- and transdisciplinary research

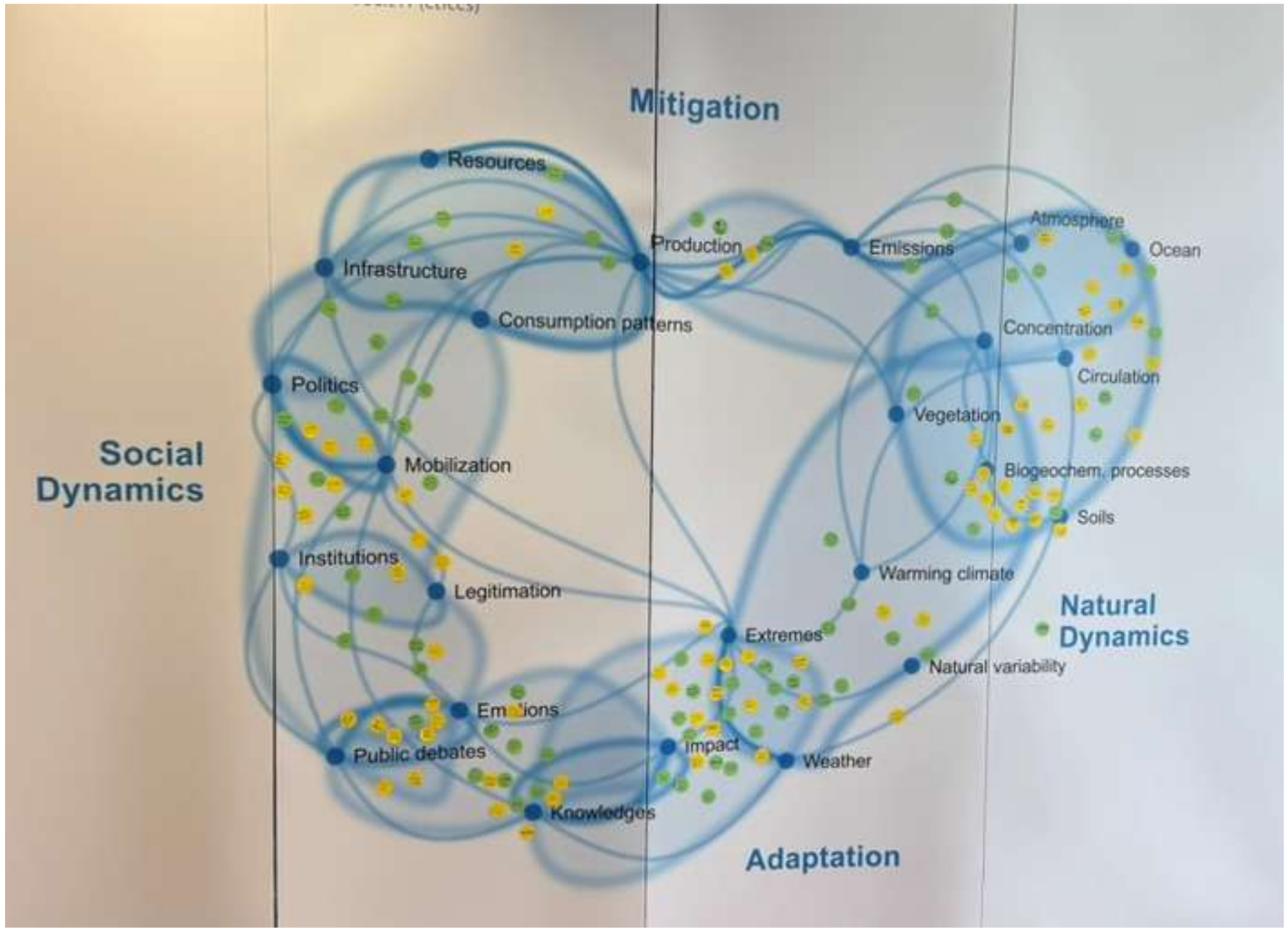
Discussion
Systems theory and historical institutionalism

Our approach is inspired by partly contrasting theoretical ideas:

- **System dynamics** as a tool to communicate complexity
- Recognizing **Nicals Luhmann's ideas of social systems** with their own codes
- Introducing the idea of Charles Tilly from historical institutional depicting the possibility of areas influencing other areas across their diverse codes via **resources for contestation**

Positioning of researchers

On the CLICCS II Kick-Off, we asked CLICCS members to position their own research with a yellow sticker and an area of interest with a green sticker.



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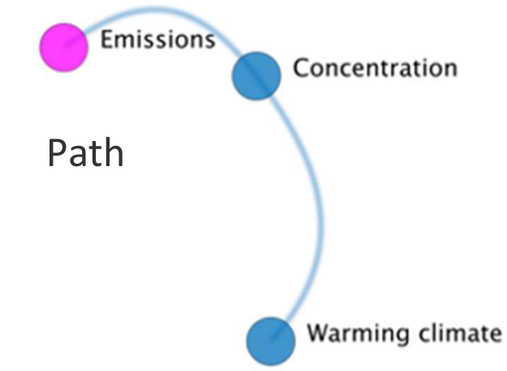
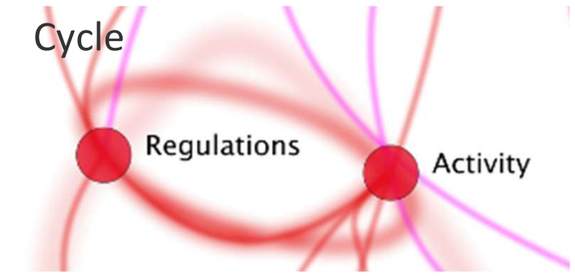
Thank you very much!

Relationality

We distinguish four types of relationality in the visualization:

- **Connection:** A connection links two concepts with each other.
- **Path:** A path connects two or more concepts with each other.
- **Cycle:** A path that ends and it starting point, is a circle.
- **Bundle:** 0... N paths can be combined to a bundle.

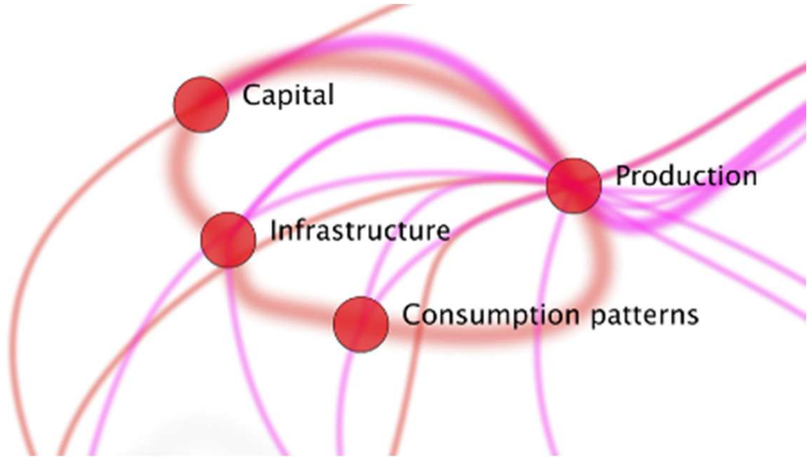




Types of nodes

- Nodes can be either **concepts**, **projects** or groups of **actors**.
- This enables us to create visualizations with varying complexity:
  - Only concepts
  - Concepts and projects
  - Concepts and groups of actors

without projects



with projects