



Local government adaptation action to climate change

Global shift after the Paris Agreement 2009-2024

Group project structure, preliminary analytical expectations and results

Web of Science corpus

2009 to 2024

Before and after Paris

UFBA, Salvador | April 2026
João Paulo, Melissa, Tainá and Eduardo

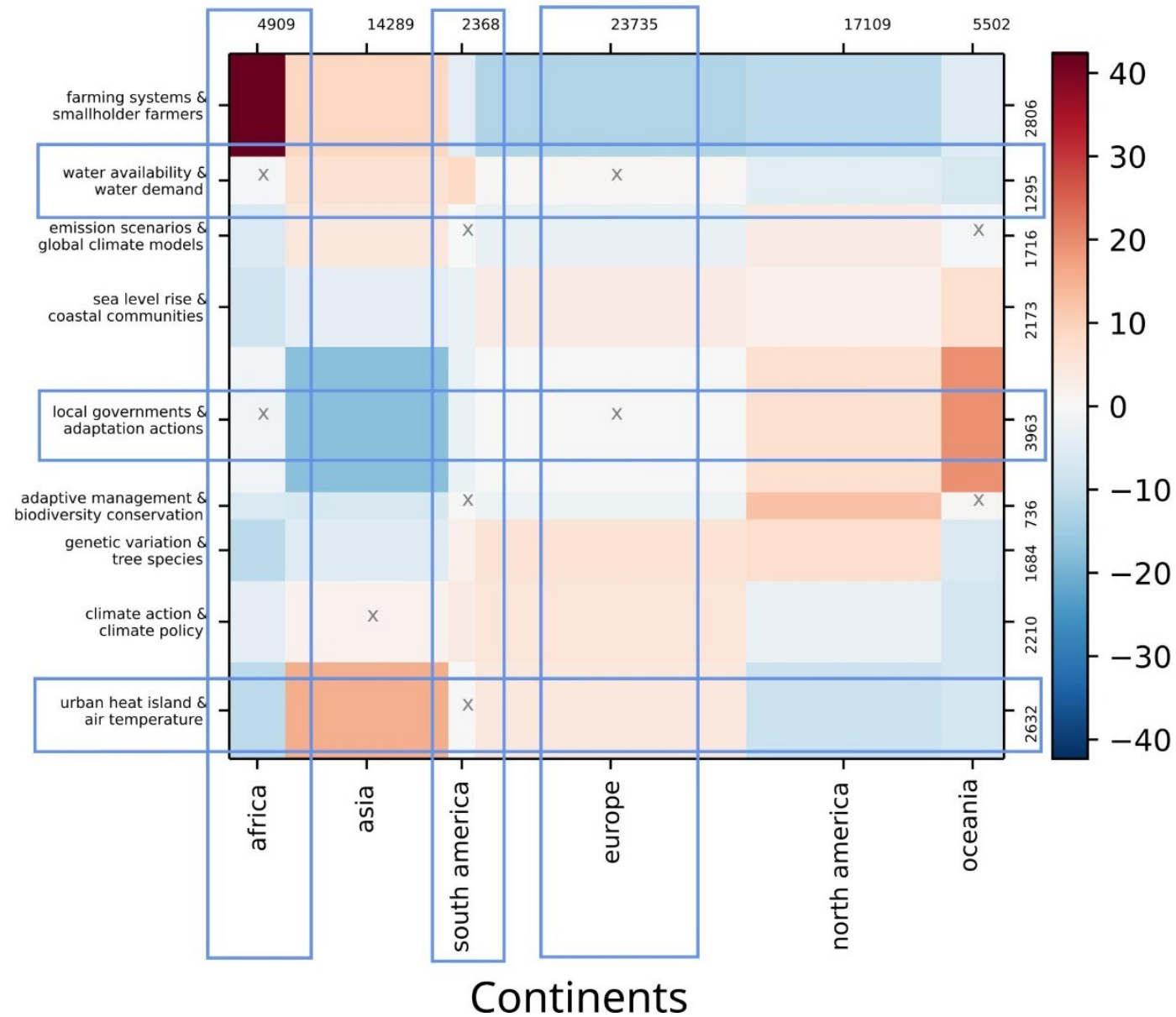


Continents' specializations on climate change adaptation

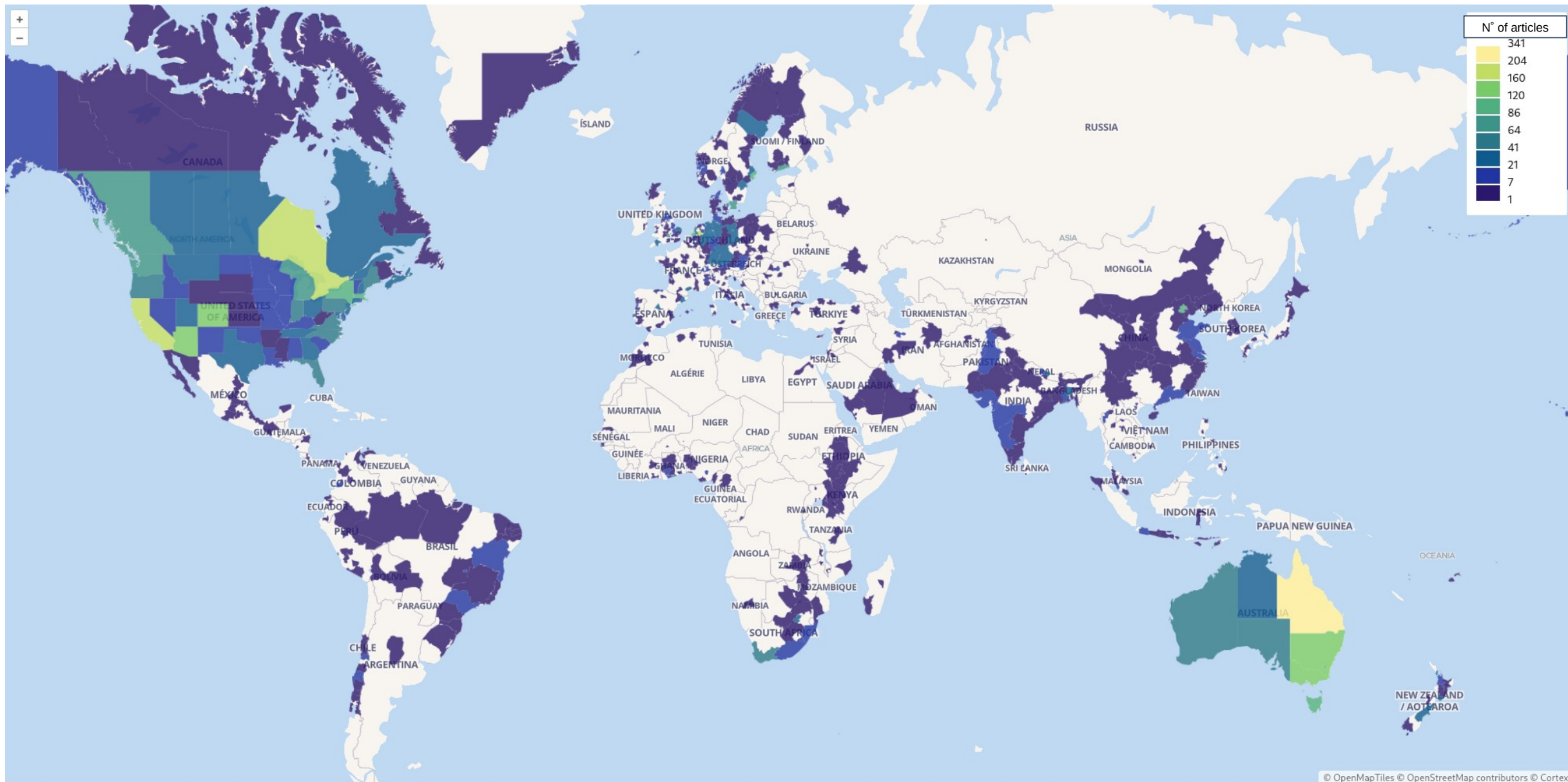
(Continents' authors' affiliations – 2001 - 2024)

chi2 score: 347.4 (sign. with p-value 5.41e-51)

Semantic clusters



Geographic distribution of research on local government adaptation actions



Corpus -> Data Parsing -> Geocoding -> Geospatial Exploration

Tuvalu minister stands in sea to film COP26 speech to show climate change

By Reuters

November 9, 2021 7:25 AM GMT-3 · Updated November 9, 2021



CANBERRA, Nov 8 (Reuters) - Tuvalu's foreign minister has given a speech to the United Nations climate conference in Glasgow standing knee-deep in seawater to show how his low-lying Pacific island nation is on the front line of climate change.

1. Research problem and working hypothesis



Research question

How did scientific production on climate change adaptation frame local government action in Europe and Oceania before and after the Paris Agreement?

Working hypothesis

After 2015, the vocabulary is expected to move from a diagnosis of climate risk toward implementation, adaptation governance, planning and resilience. Europe is expected to appear closer to institutional and local government terms. Oceania is expected to appear closer to territorial vulnerability, coastal exposure, sea level rise and island communities.

Analytical contrast

Europe is not treated as the main territory at risk. It is treated as a stronger research and governance reference. Oceania is treated as a critical empirical case because island states and coastal communities concentrate the territorial urgency of climate adaptation.

2. Corpus and empirical scope



Corpus

Web of Science scientific papers on climate change adaptation and local government adaptation actions. File used in Cortext: wos 2009 2024 local governments adaptation actions.db. Size: 139.36 MB.

Temporal cut

Before Paris Agreement: 2009 to 2015. After Paris Agreement: 2016 to 2024. The cut is not a causal test. It is used as a historical marker for the global institutionalization of adaptation.

Geographical cut

Main comparison: Europe versus Oceania. Secondary attention to countries, affiliations and terms related to islands, coastal communities and sea level rise.

3. Methodological sequence in Cortext



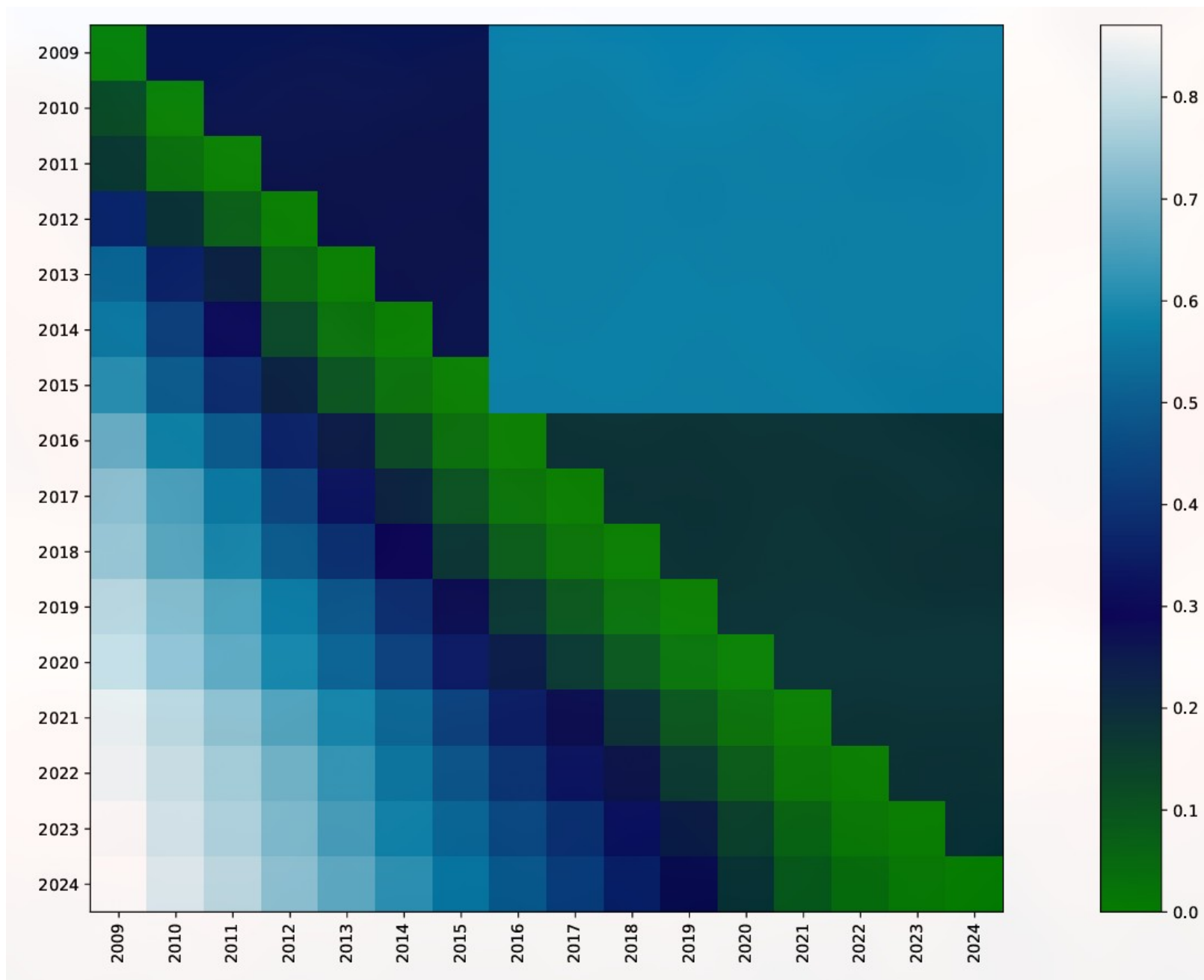
Interpretation rule

The outputs describe patterns inside the scientific corpus. They do not measure whether governments were effective in the real world. The presentation should therefore use terms such as “suggests”, “is associated with”, “appears closer to” and “is more frequent in”.

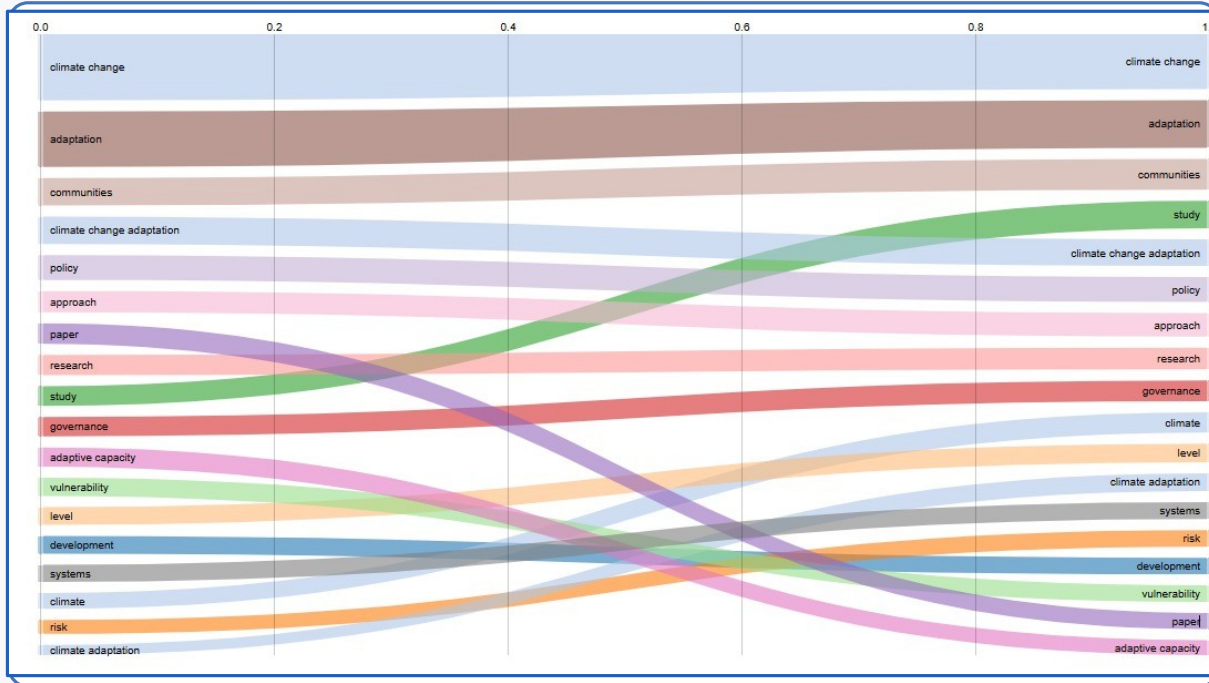
Expected storyline

Paris Agreement as institutional marker. Europe as governance and local government vocabulary. Oceania as vulnerability, islands and sea level rise. The final result is a socio semantic comparison, not a policy impact evaluation.

Period Detector Script evi



5. Vocabulary shift before and after Paris



Main pattern

Before and after the Paris Agreement, the corpus remains centered on the terms *climate change* and *adaptation*. After 2015, however, the vocabulary appears to give relatively more space to terms such as *governance*, *communities* and *climate adaptation*, suggesting a shift from problem description toward policy response and implementation.

Analytical point

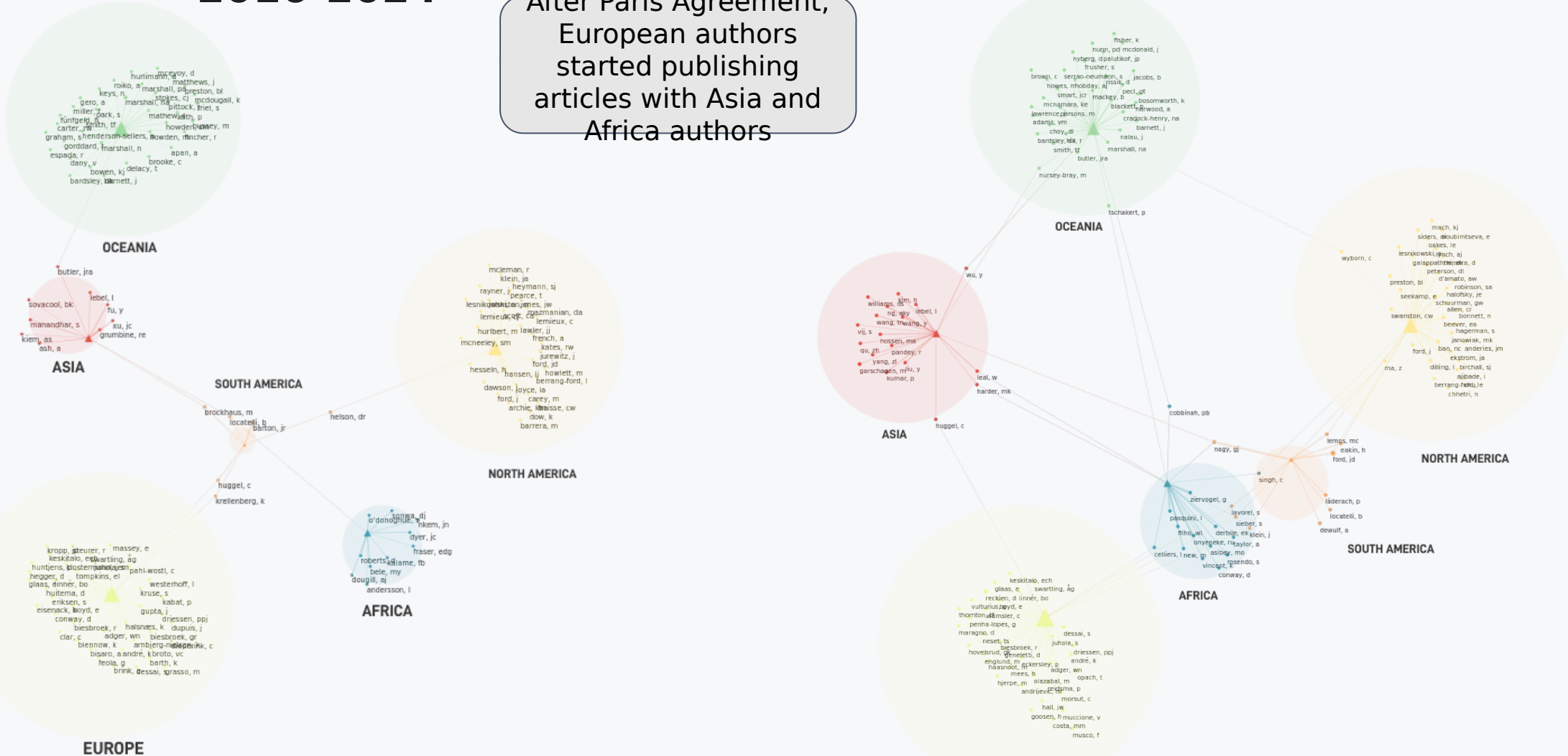
This figure does not measure whether climate change became “more severe” after Paris. It shows how the language of the scientific corpus changed over time. The main result is a semantic transition: risk and vulnerability remain relevant, but the post-Paris period seems more strongly associated with governance, local action and adaptation-oriented responses.

Co-Authors: after vs before Paris Agreement

2001-2015

2016-2024

After Paris Agreement,
European authors
started publishing
articles with Asia and
Africa authors



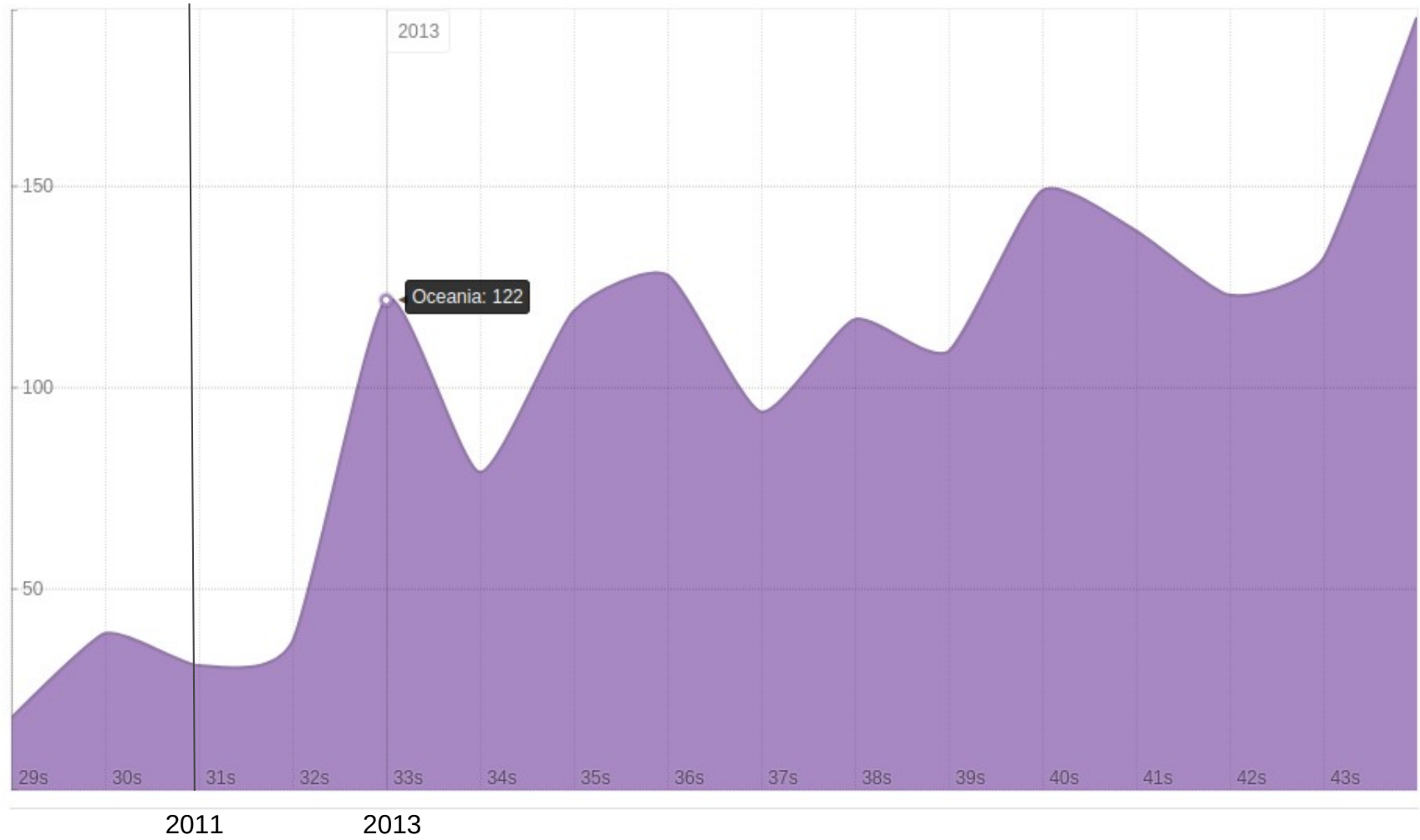
Field Evolution

- ✓ South America
- ✓ Africa
- ✓ Oceania
- ✓ Asia
- ✓ North America
- ✓ Europe



- stack
- stream
- pct
- value
- cardinal
- linear
- step

Smoothing

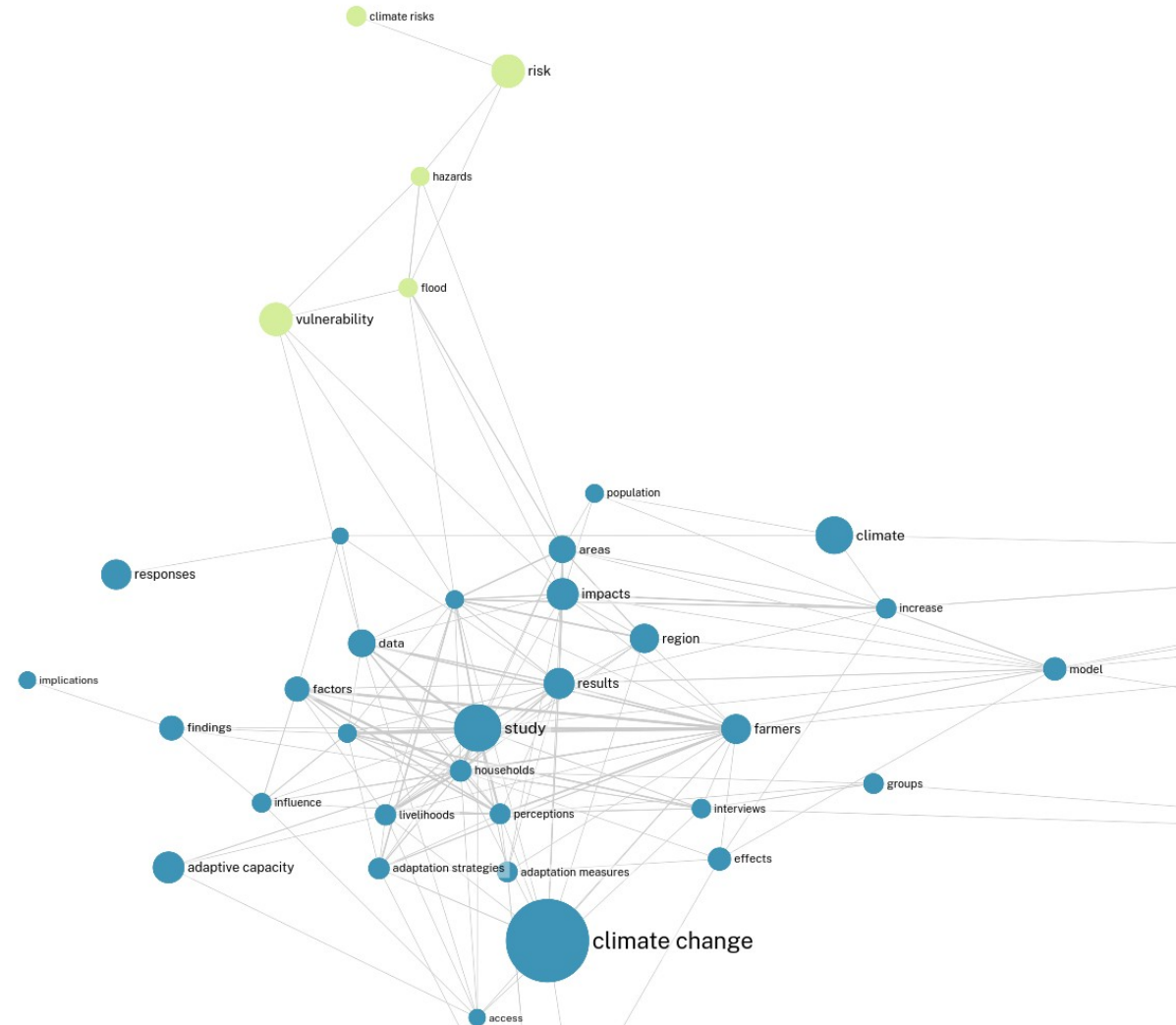


| Drowning

Australian flood makes its first victim

By State Agency 02/01/2011 at 09:36

6. Network of Terms



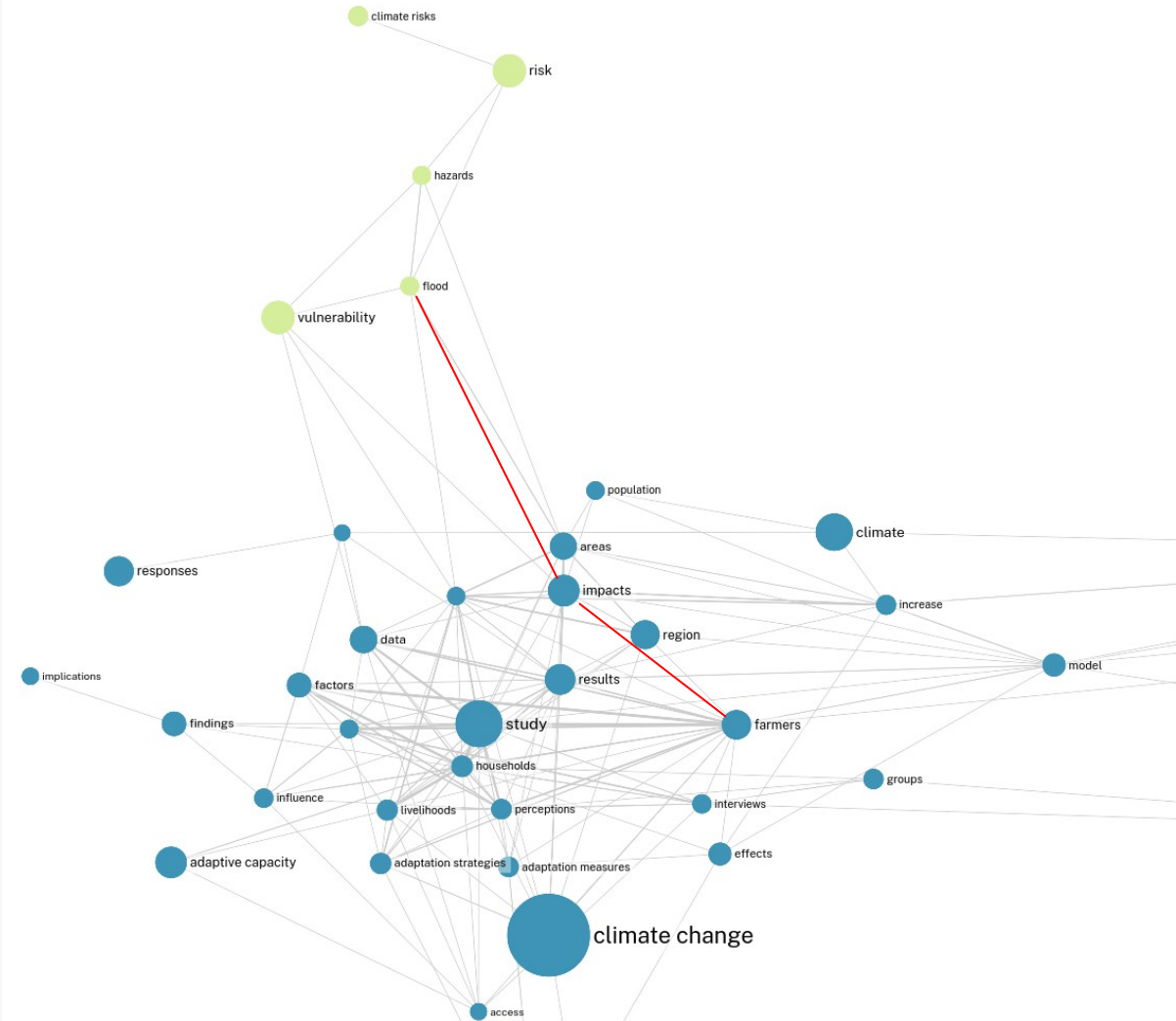
Main reading from the network

The network places *climate change* at the center and connects it to terms such as *impacts*, *farmers*, *households*, *adaptation strategies*, *adaptive capacity* and *vulnerability*. This suggests that the literature does not treat adaptation only as an environmental issue, but also as a social and territorial process involving local actors and concrete responses.

Analytical relevance

This network helps identify the semantic structure of the corpus before moving to the continental comparison. It highlights the main bridge between climate risk and adaptation practice, which is useful for interpreting why Europe tends to be associated with governance and implementation, while Oceania appears more closely linked to exposure, coastal vulnerability and community-based adaptation.

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8. Key findings and limitations

Finding 1: vocabulary

After 2015, the corpus is expected to show a stronger vocabulary of implementation, governance, planning and resilience, while risk and vulnerability remain central.

Finding 2: geography

Europe should appear closer to institutional and local government adaptation terms. Oceania should appear closer to sea level rise, coastal exposure, islands and vulnerability.

Finding 3: knowledge production

The map may reveal an asymmetry between the places affected by climate risks and the places where scientific research is institutionally concentrated.

Limitations

Cortext identifies semantic, temporal and geographical patterns in the corpus. It does not evaluate the real effectiveness of local government policies, nor does it measure physical sea level change or policy implementation outcomes.

Next steps

Run Epic Epoch with a keyword or extracted terms field. Produce a continent by term comparison. Generate an affiliation map. Replace the placeholders with final figures and keep the interpretation cautious.

Closing sentence

The Paris Agreement appears as a useful historical marker for observing a shift in the scientific vocabulary of adaptation: from climate risk toward governance and implementation, with Europe and Oceania occupying distinct positions in the corpus.

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