The RECEIPT Storyline Visualizer

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climatestorylines.eu
RECEIPT_eu

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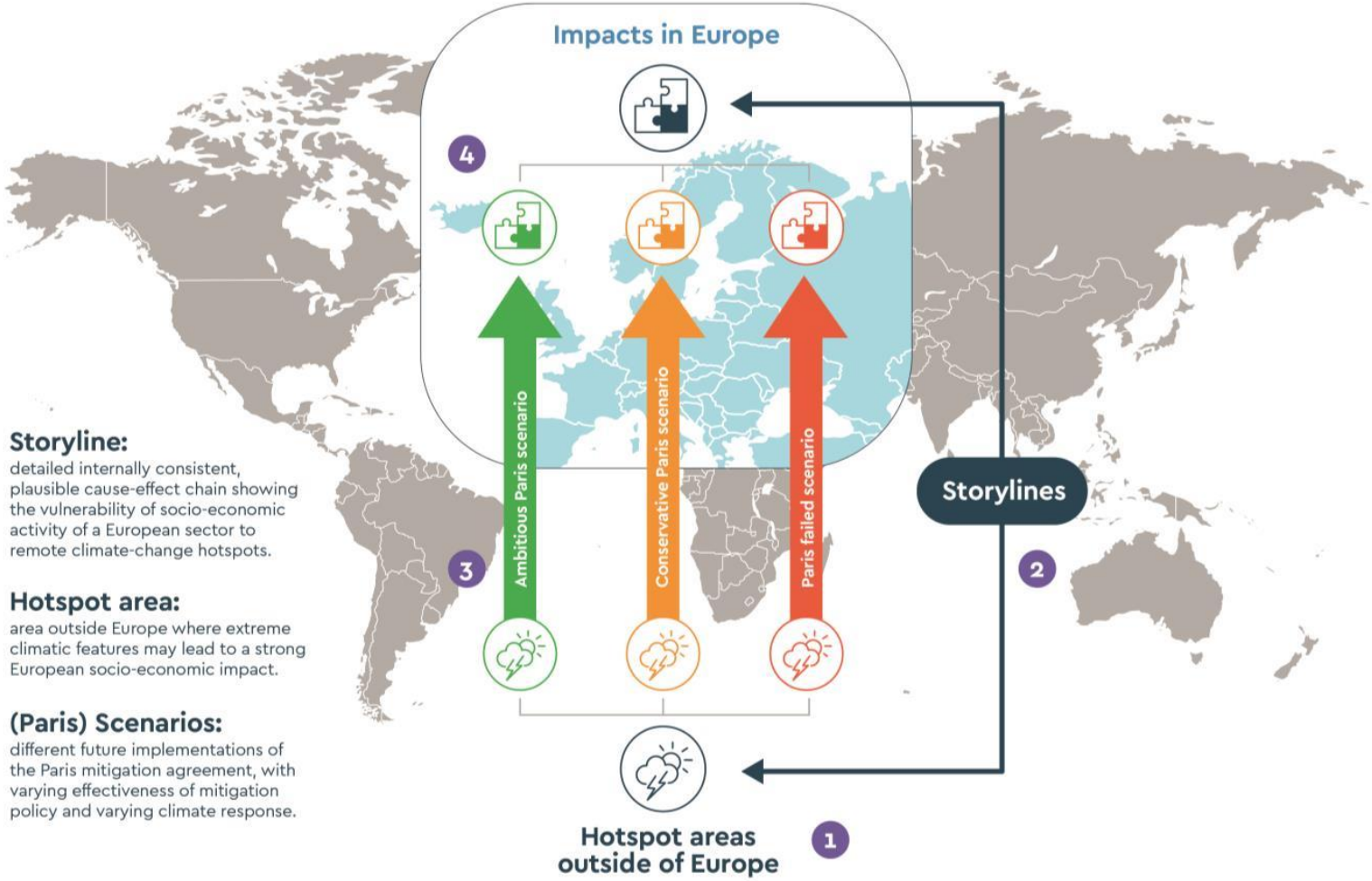
RECEIPT in a nutshell



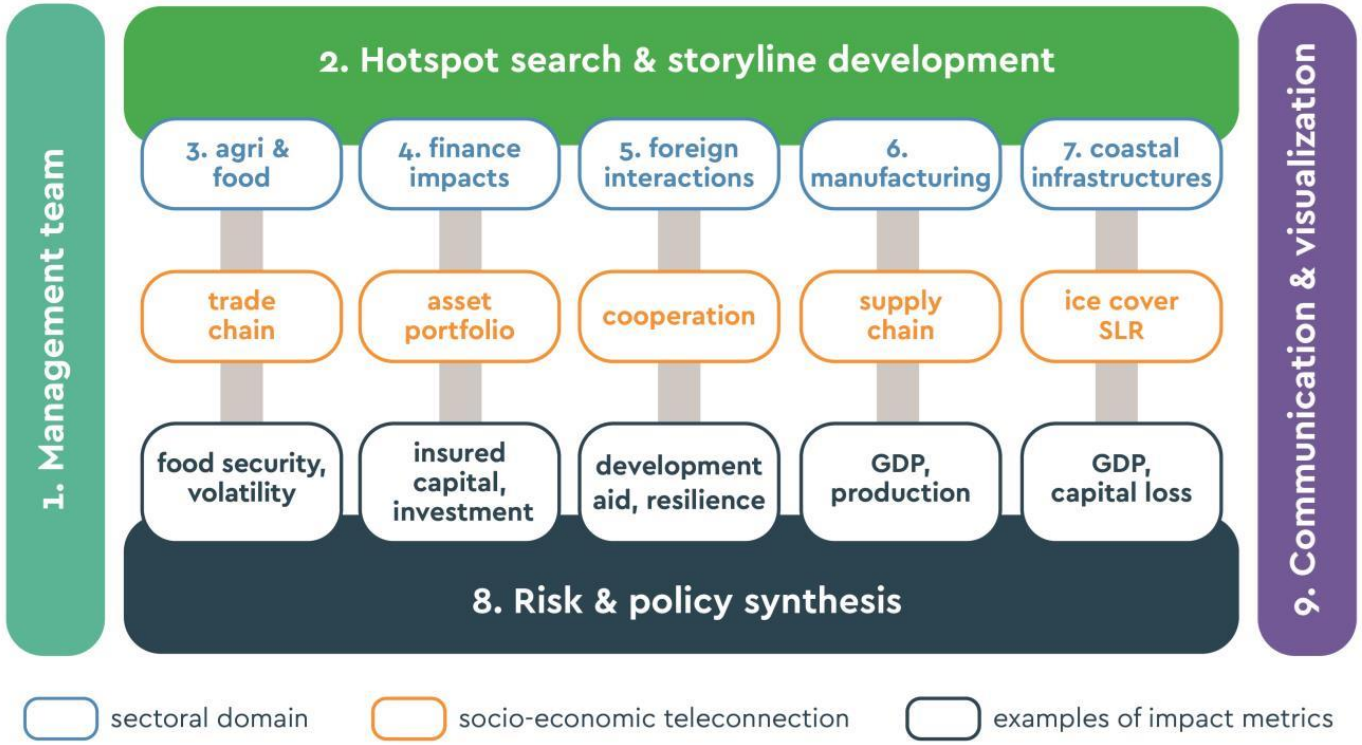
The storyline method

Storylines = translating historical events to counterfactual futures

- Builds upon climate projection framework (RCP's and SSP's).
- Physically plausible translation.
- Incorporate future policies.
- Detailed impacts and cascading events
- Tangible result to **communicate**

RECEIPT storyline framework

1. Choose a scope
2. Describe remote climate impacts
3. Substantiate transmission to EU sectors
4. Describe EU impact
5. Describe climate scanarios
6. Describe socio-economic scenarios
7. Compare projected impacts & conclude



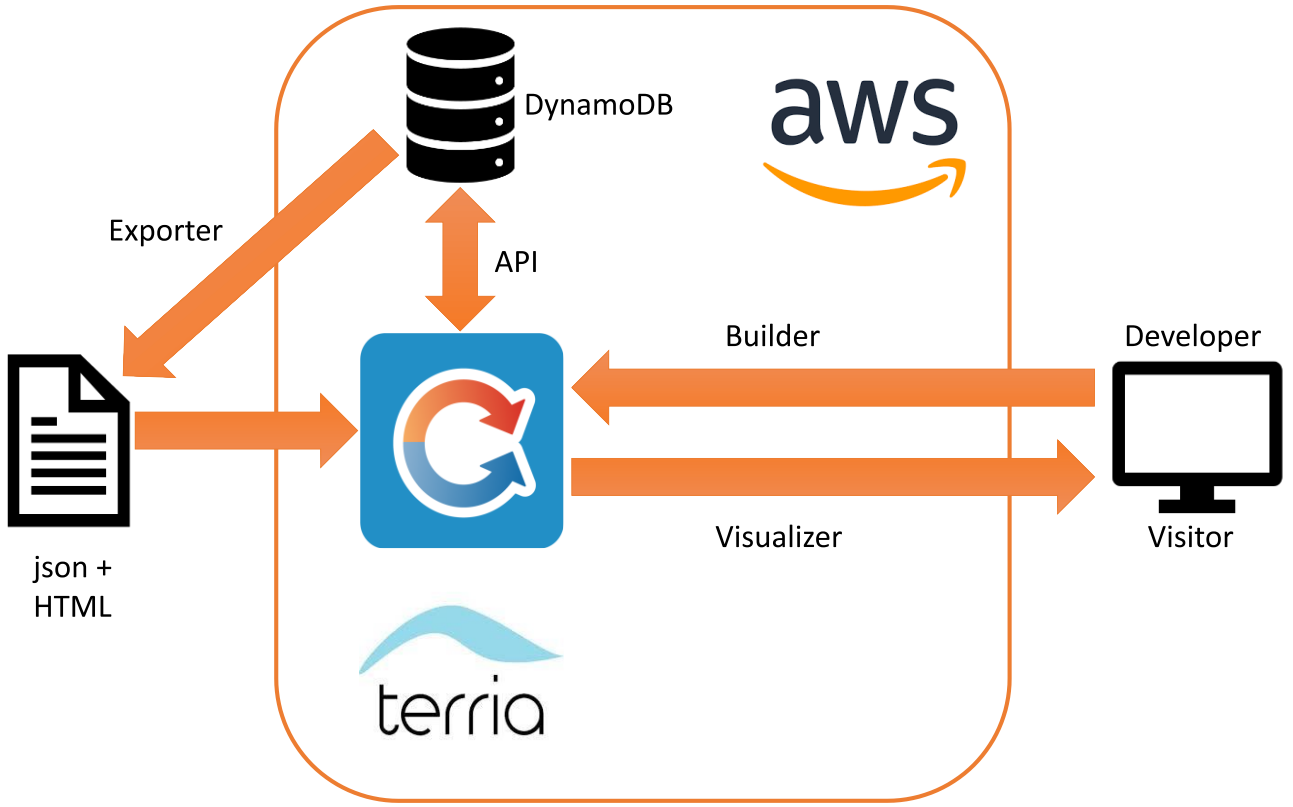
The storyline visualizer

Expected users (ordered)

1. *Informed* stakeholders (policy advisors, NGO's, insurance sector, infrastructure organizations, etc.)
2. Peer researchers
3. General public

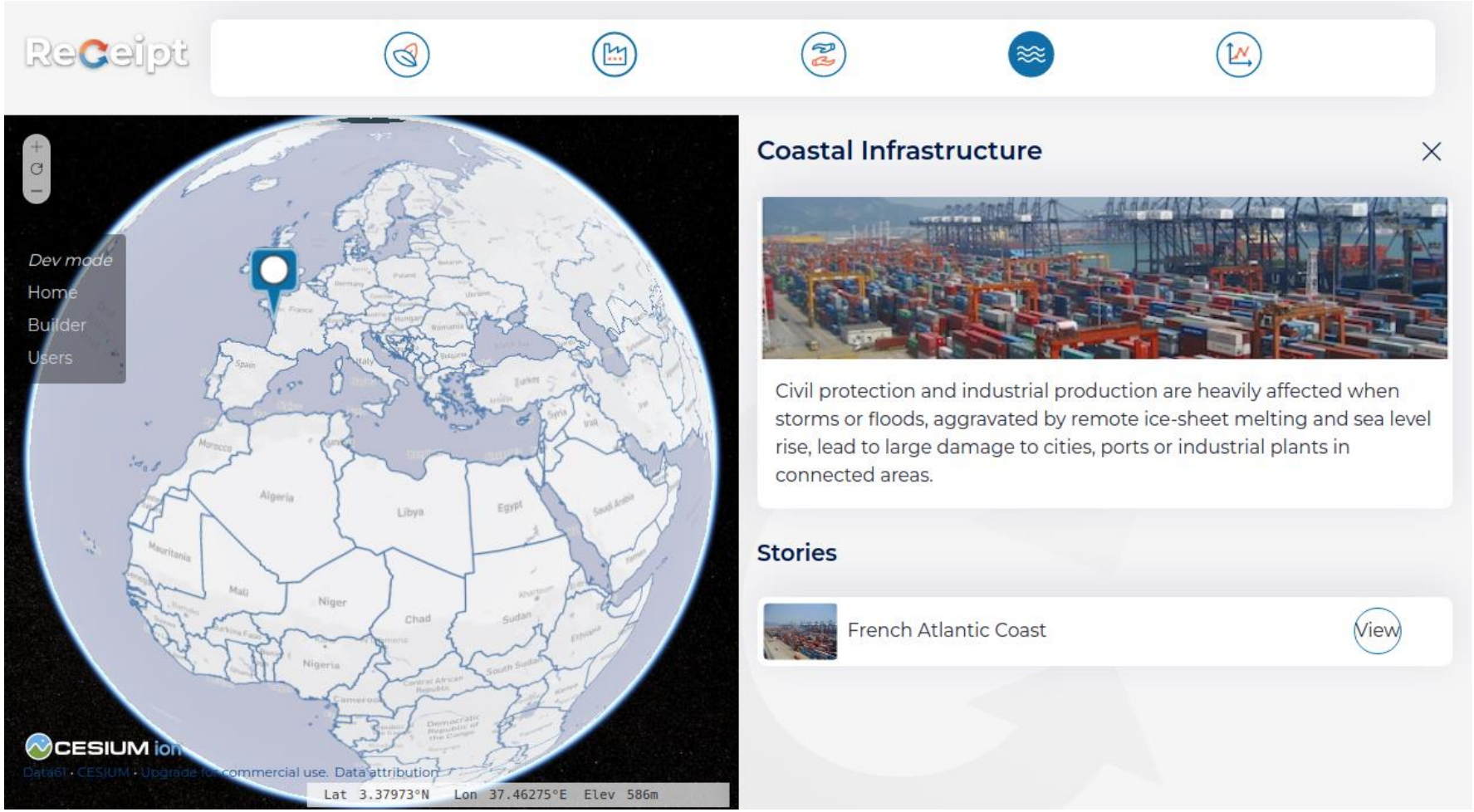
Requirements

- Generally accessible (online)
- Catalogue of storylines developed within RECEIPT
- Interactive.
- Informative and correct, but more concise than a science paper.
- Visually appealing, smooth user experience. Mainly designed for laptop screen size.
- Sustainable design.
- Open data policy.



Storyline navigation

https://www.climateimpactstories.eu



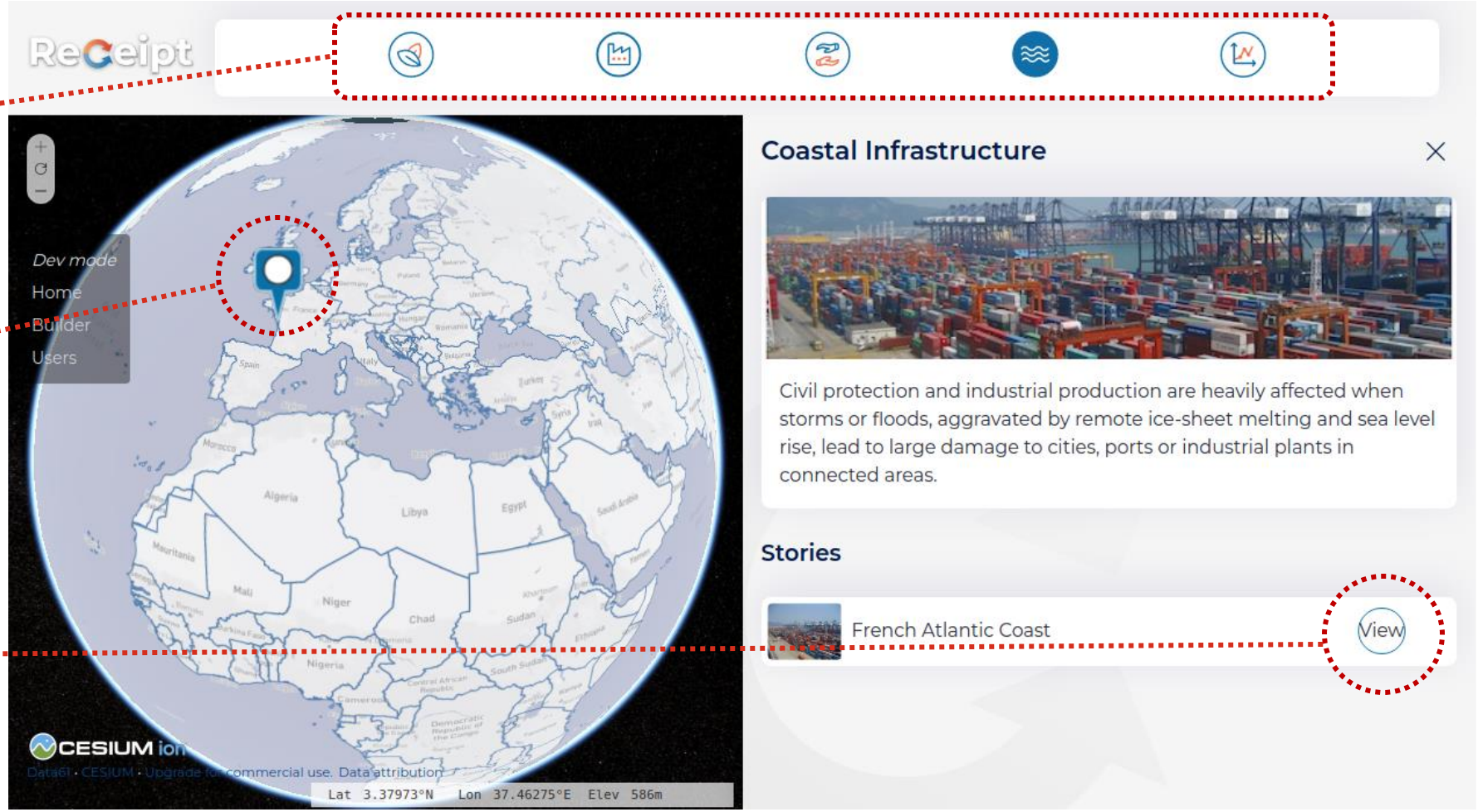
Storyline navigation

https://www.climateimpactstories.eu

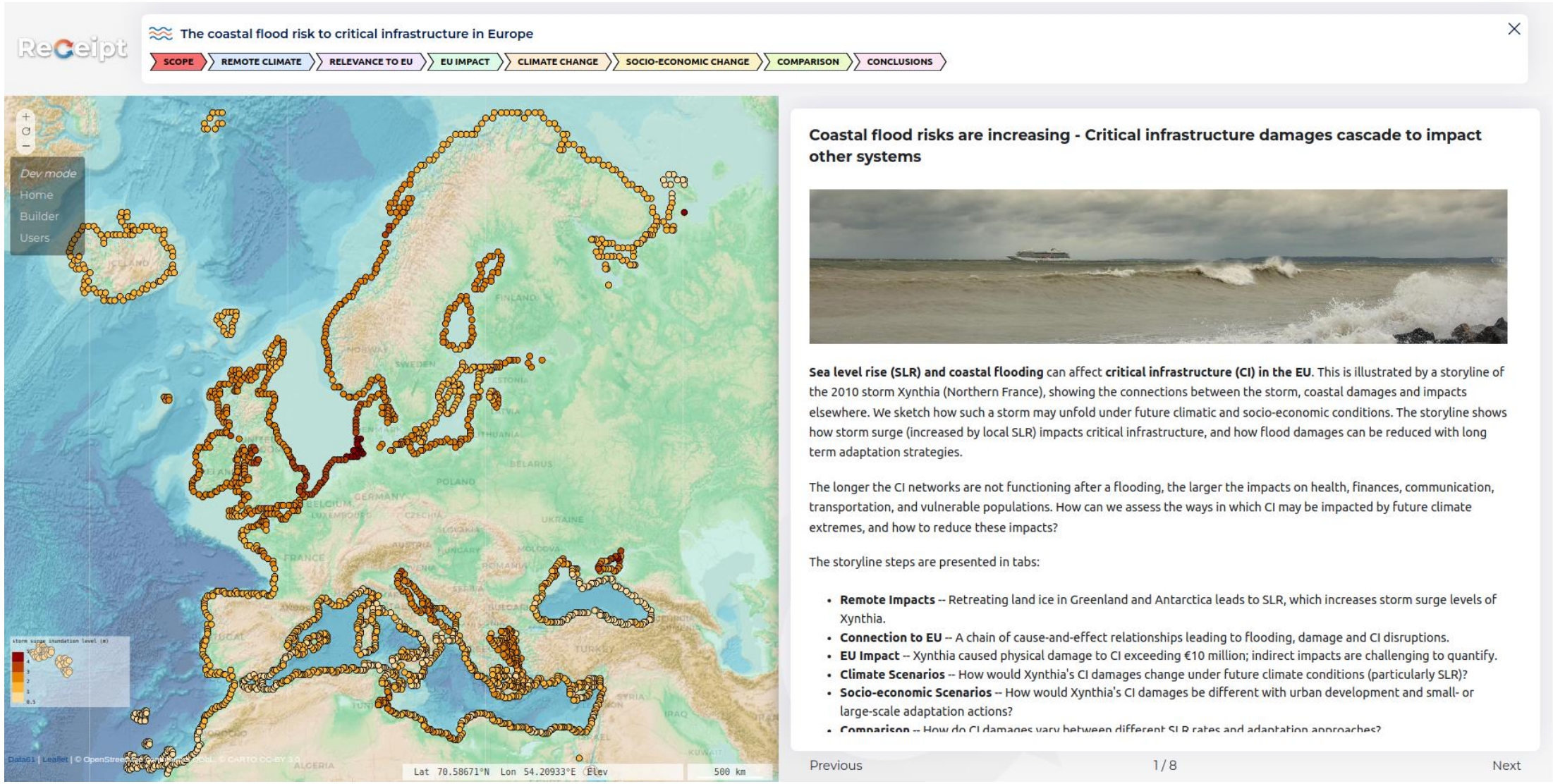
Sector browser

Hotspot location

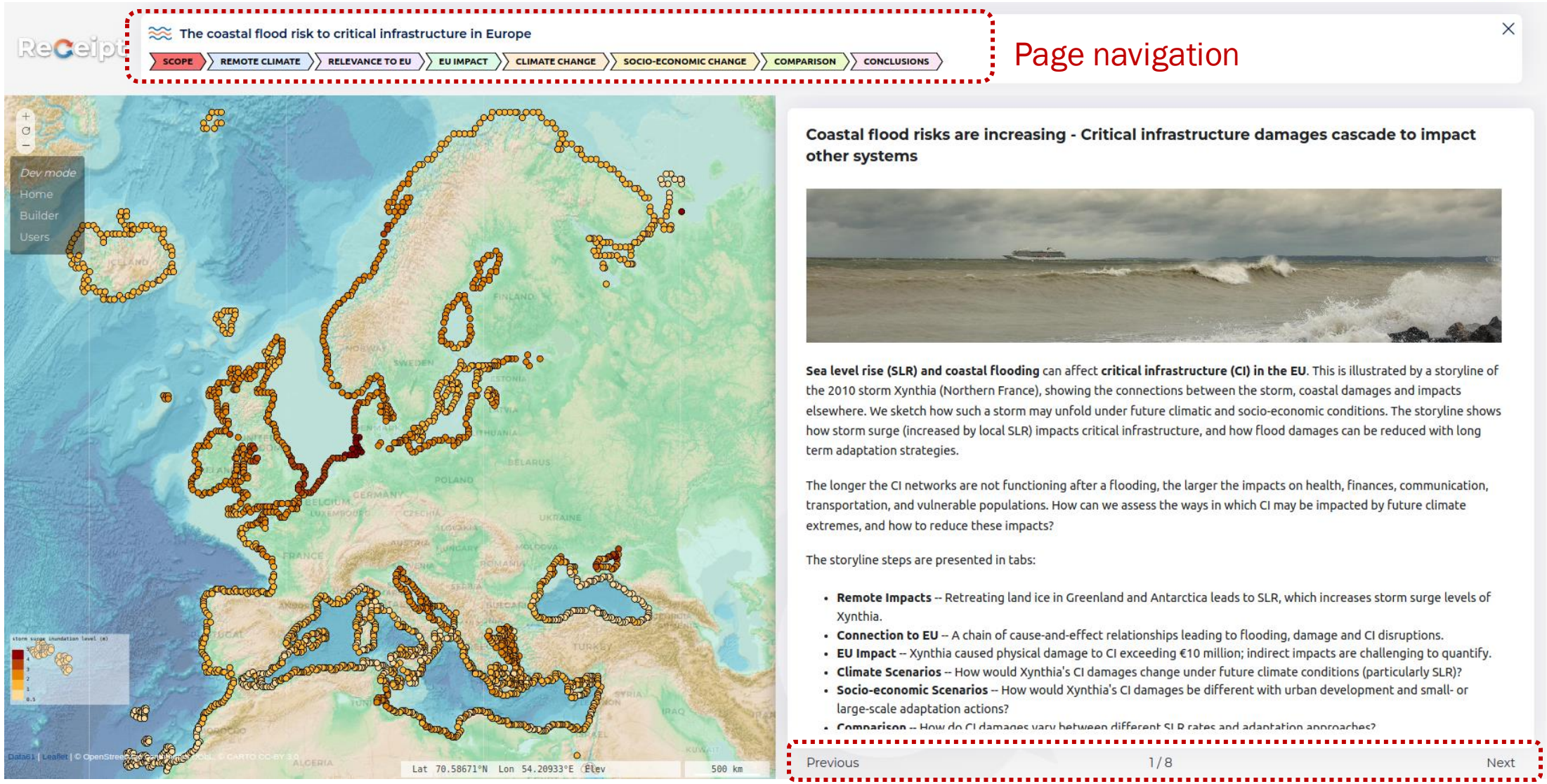
Enter storyline!



Storyline pages



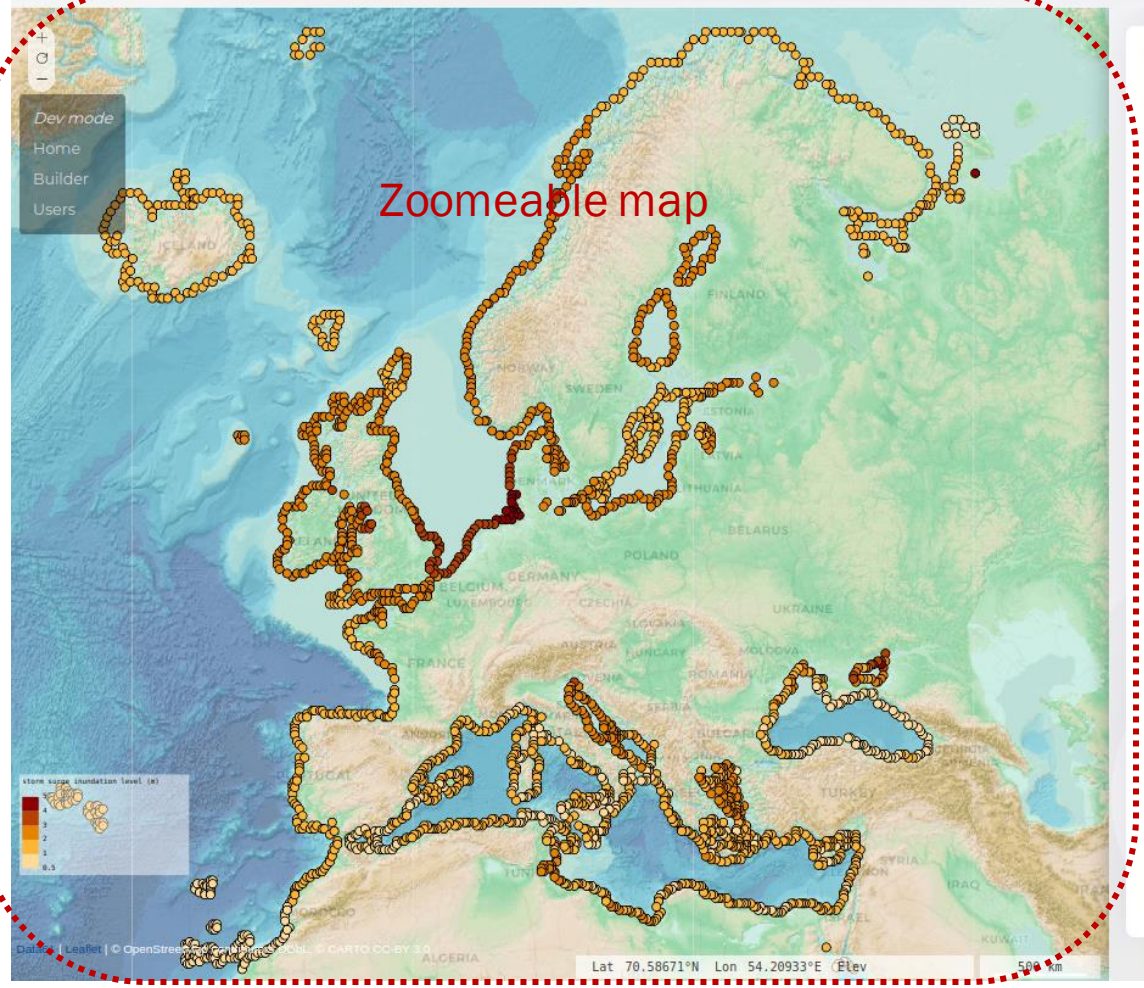
Storyline pages



Storyline pages

The coastal flood risk to critical infrastructure in Europe

SCOPE | REMOTE CLIMATE | RELEVANCE TO EU | EU IMPACT | CLIMATE CHANGE | SOCIO-ECONOMIC CHANGE | COMPARISON | CONCLUSIONS



Coastal flood risks are increasing - Critical infrastructure damages cascade to impact other systems

Sea level rise (SLR) and coastal flooding can affect **critical infrastructure (CI) in the EU**. This is illustrated by a storyline of the 2010 storm Xynthia (Northern France), showing the connections between the storm, coastal damages and impacts elsewhere. We sketch how such a storm may unfold under future climatic and socio-economic conditions. The storyline shows how storm surge (increased by local SLR) impacts critical infrastructure, and how flood damages can be reduced with long term adaptation strategies.

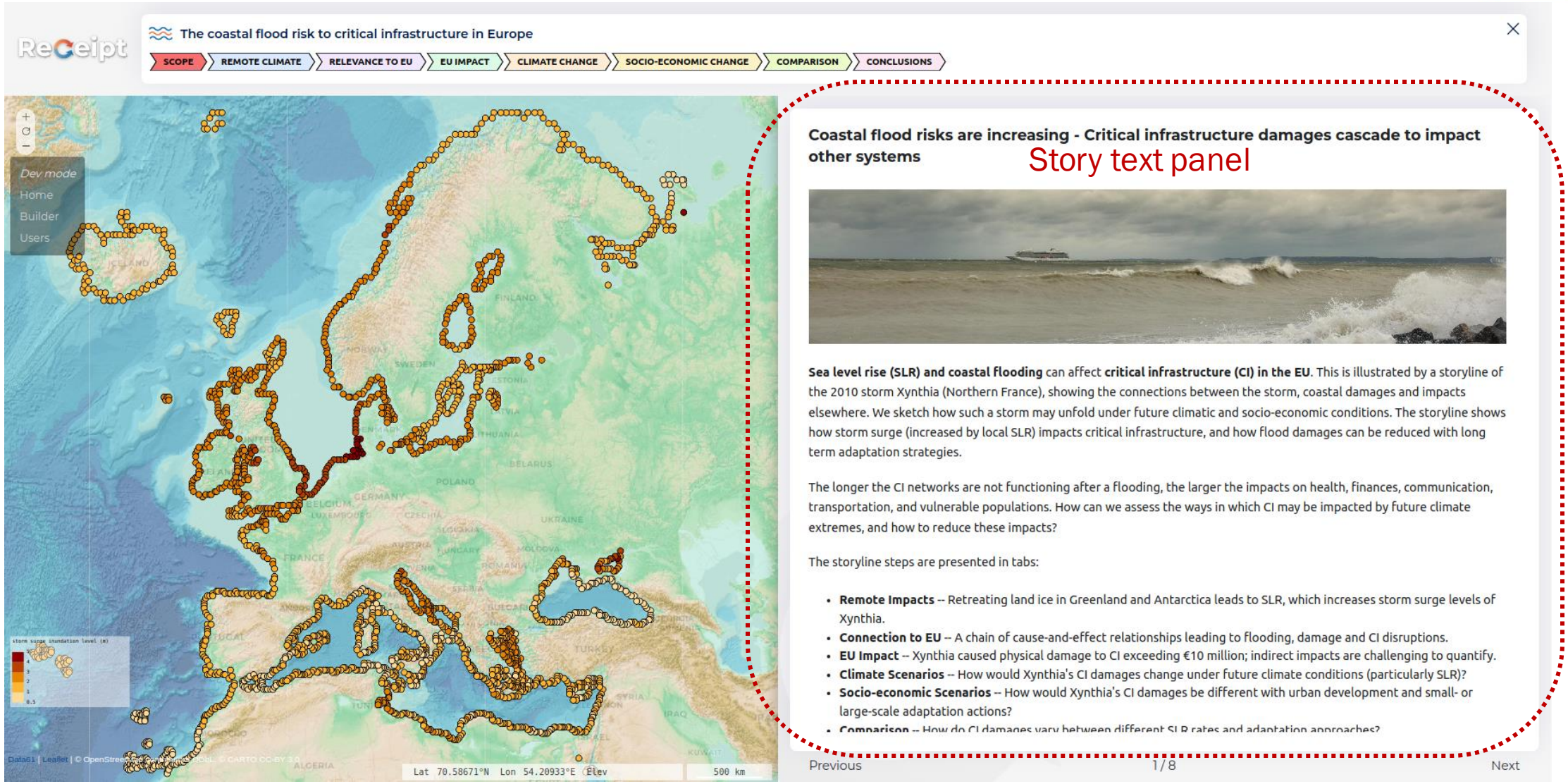
The longer the CI networks are not functioning after a flooding, the larger the impacts on health, finances, communication, transportation, and vulnerable populations. How can we assess the ways in which CI may be impacted by future climate extremes, and how to reduce these impacts?

The storyline steps are presented in tabs:

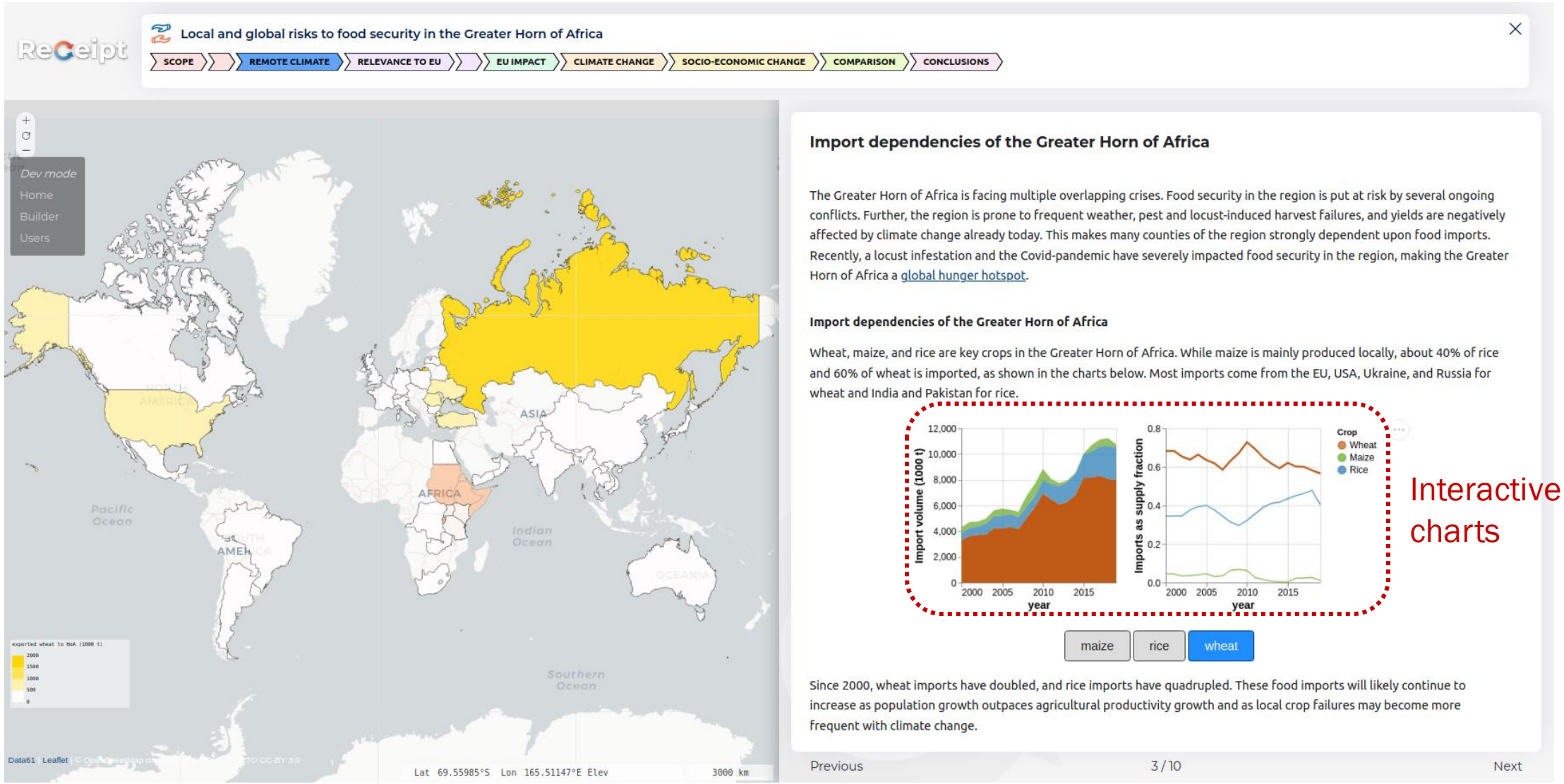
- **Remote Impacts** -- Retreating land ice in Greenland and Antarctica leads to SLR, which increases storm surge levels of Xynthia.
- **Connection to EU** -- A chain of cause-and-effect relationships leading to flooding, damage and CI disruptions.
- **EU Impact** -- Xynthia caused physical damage to CI exceeding €10 million; indirect impacts are challenging to quantify.
- **Climate Scenarios** -- How would Xynthia's CI damages change under future climate conditions (particularly SLR)?
- **Socio-economic Scenarios** -- How would Xynthia's CI damages be different with urban development and small- or large-scale adaptation actions?
- **Comparison** -- How do CI damages vary between different SLR rates and adaptation approaches?

Previous 1 / 8 Next

Storyline pages

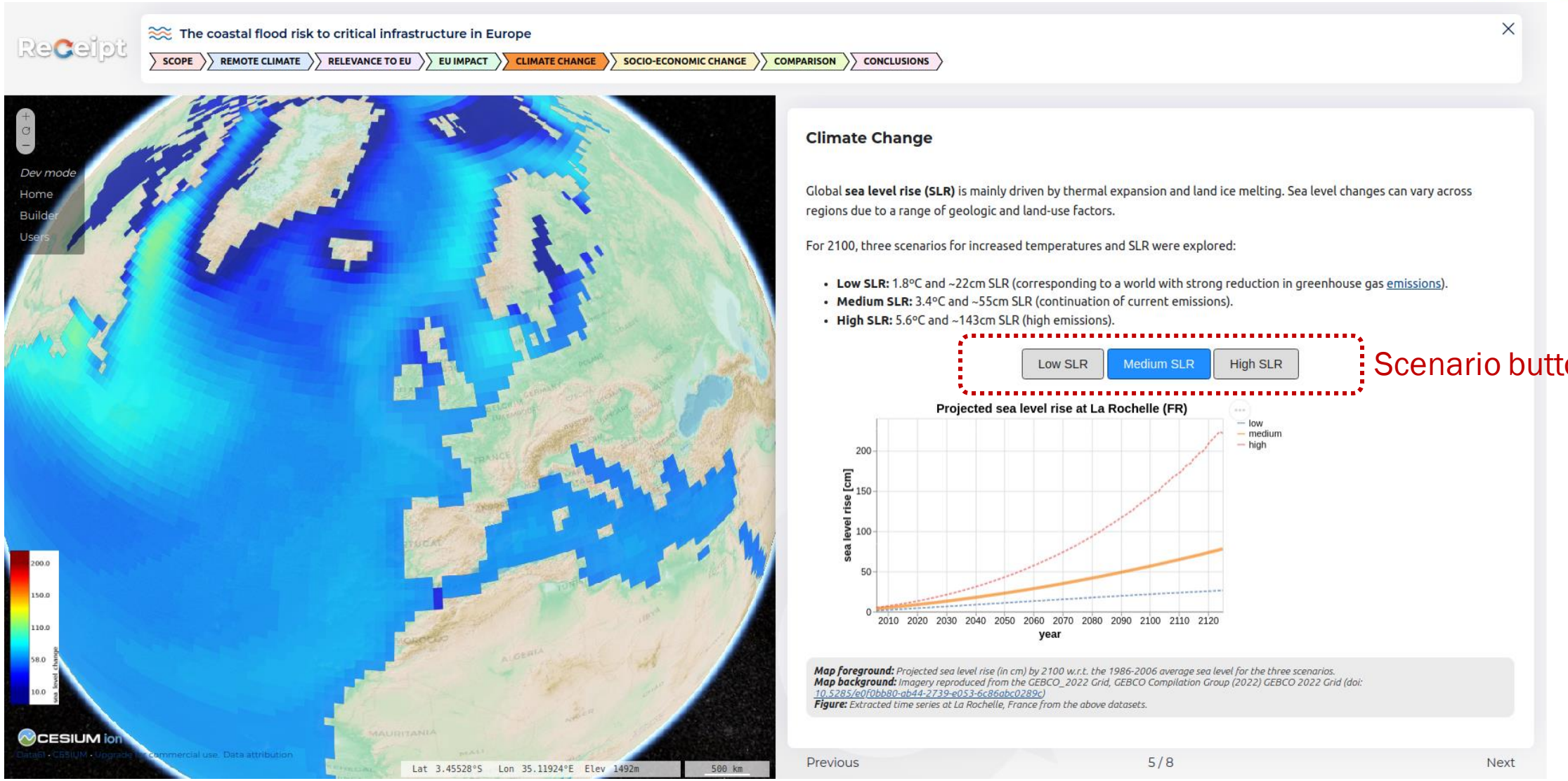


Storyline features



Interactive charts

Storyline features



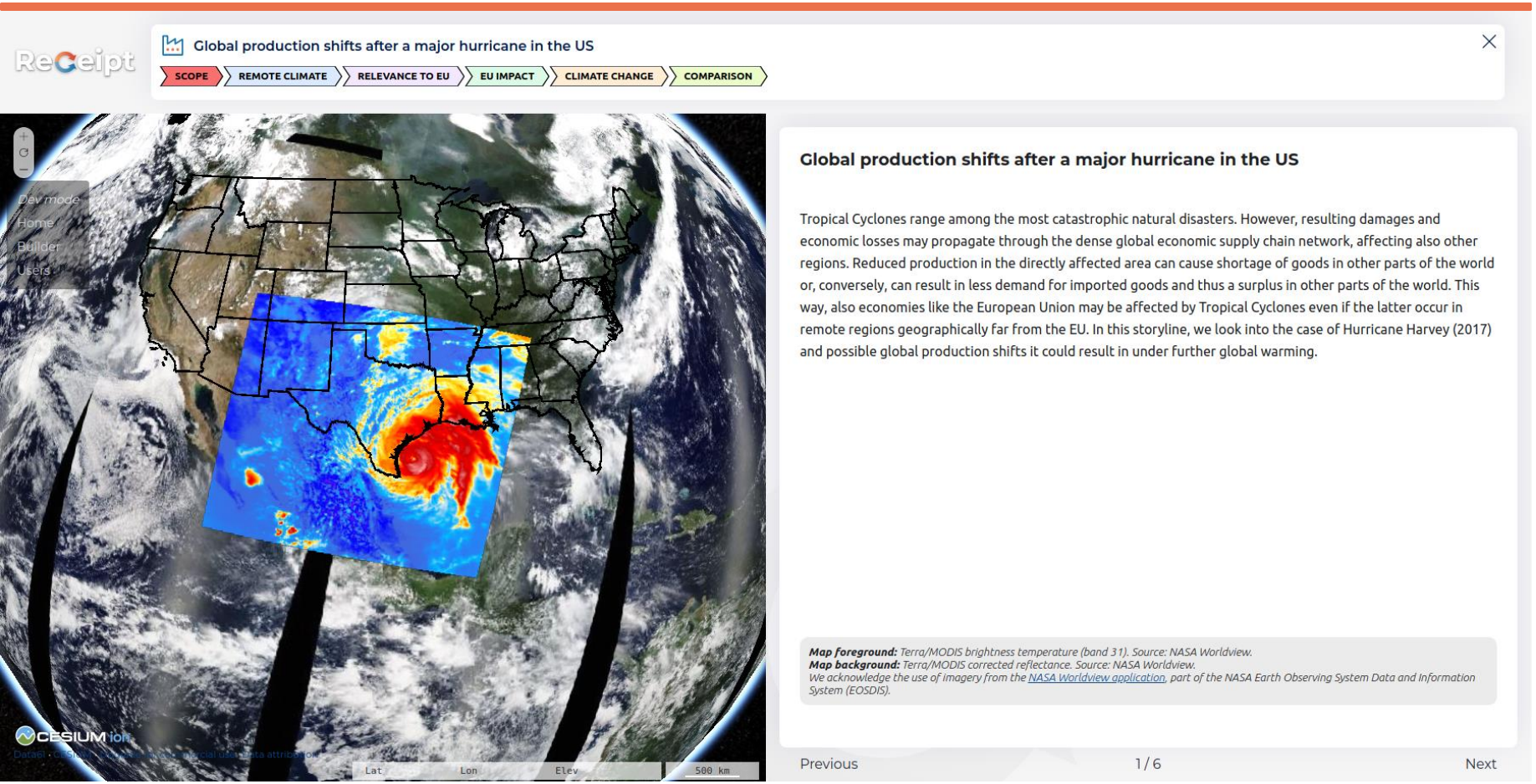
Scenario buttons

Storylines: Food Security (C. Otto, P. Kubiczek, J. Schewe)

- How will multi-breadbasket failures impact food supply to the HOA region?
- What could happen when global food crises coincide with local harvest failures?
- How do gobal export restrictions affect the HOA food supply?

https://www.climateimpactstories.eu/#/sector/internationalCooperationAndDevelopment/story/5/page/0

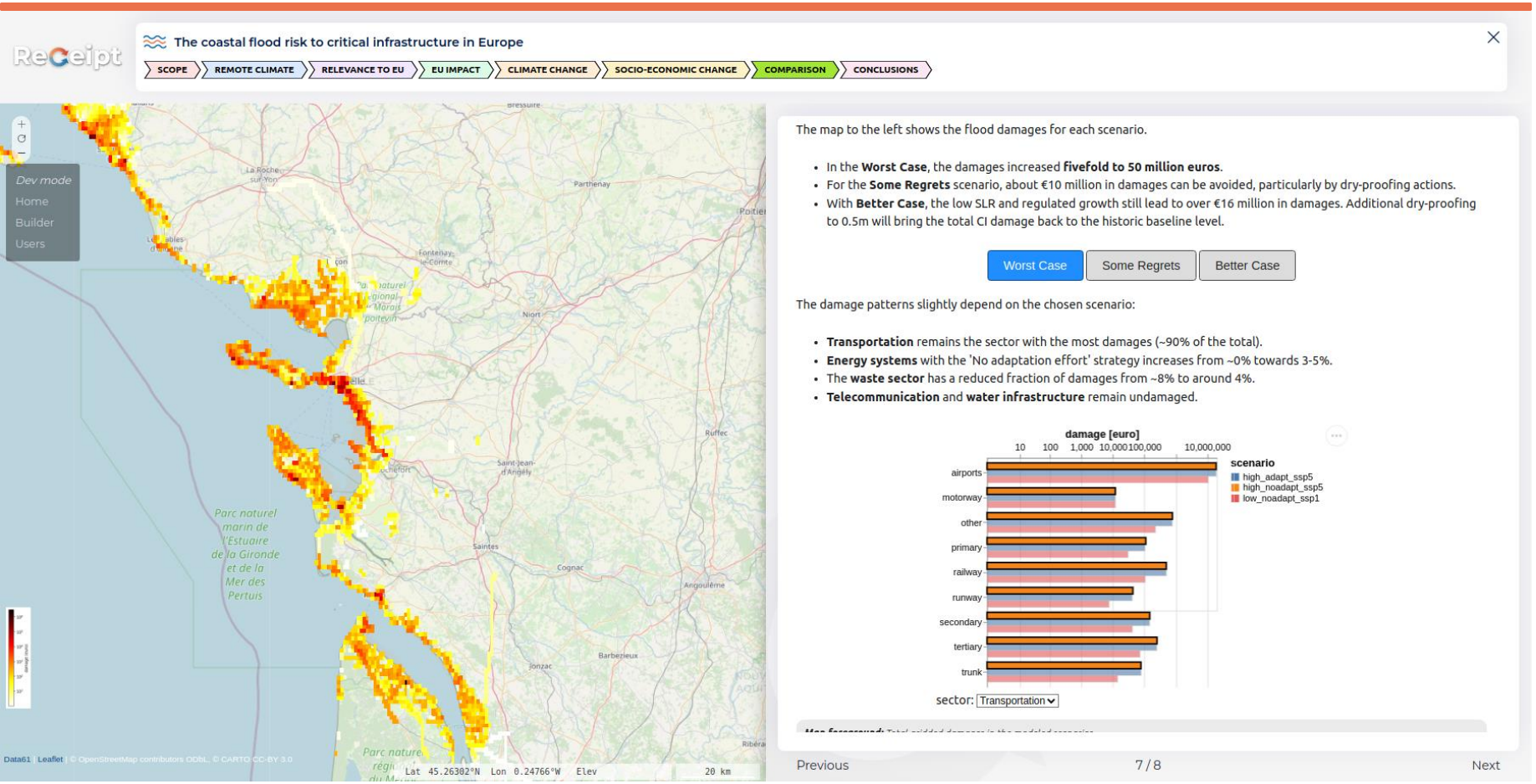
Storylines: Future hurricane Harvey (R. Middelanis)



- How will future massive hurricanes hitting the US gulf coast impact local industrial production?
- How do resulting shifts in manufacturing chains affect European industry?

https://www.climateimpactstories.eu/#/sector/manufacturing/story/7/page/0

Storylines: Future storm Xynthia (E. Koks)

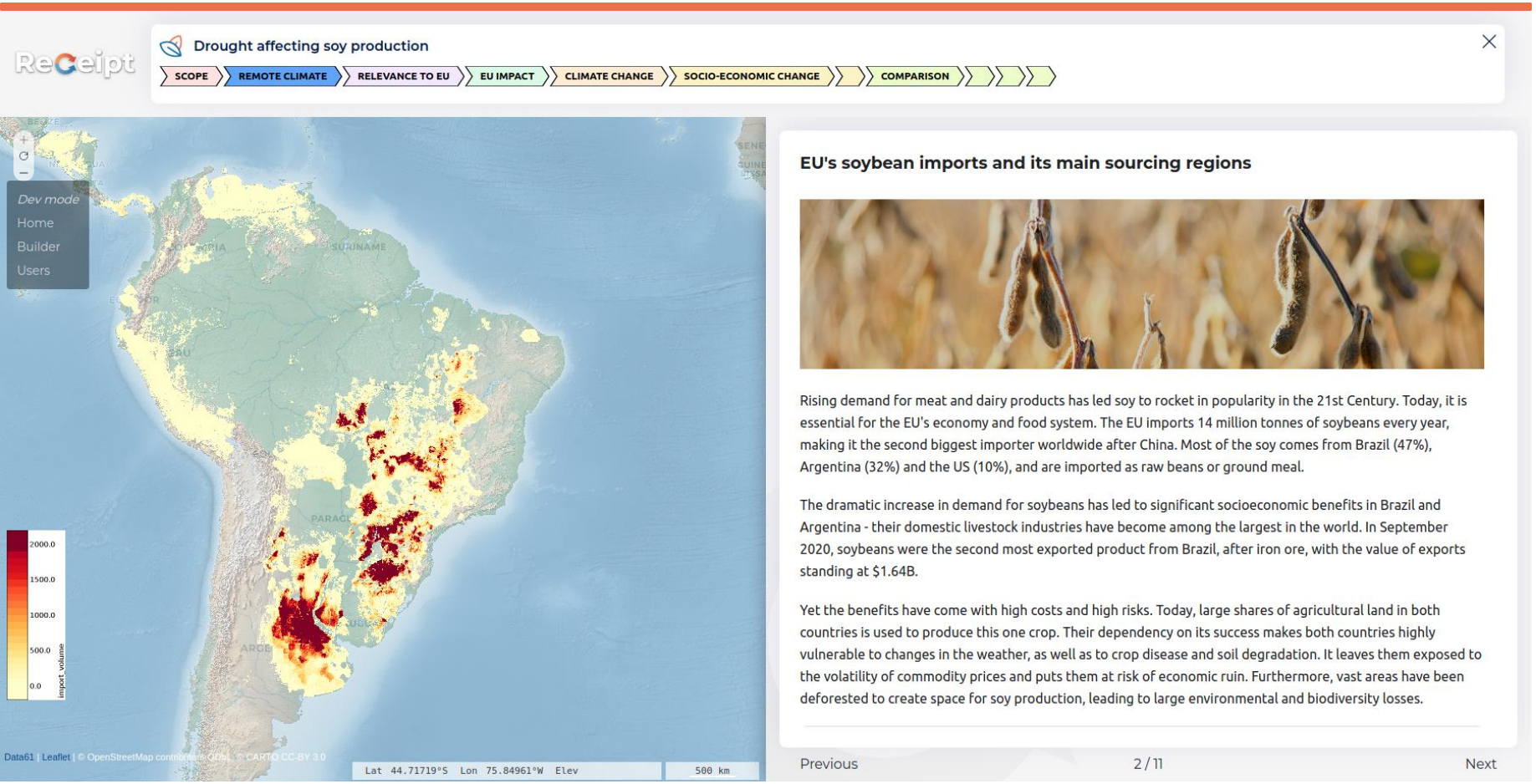


- How will sea level rise increase the hazard of storm surges at the French atlantic coast?
- How do SSP's translate to damages to critical infrastructure?
- How can improved coastal defenses mitigate effects?

https://www.climateimpactstories.eu/#/sector/coastalInfrastructure/story/6/page/0

Storylines: Drought affecting soy yields

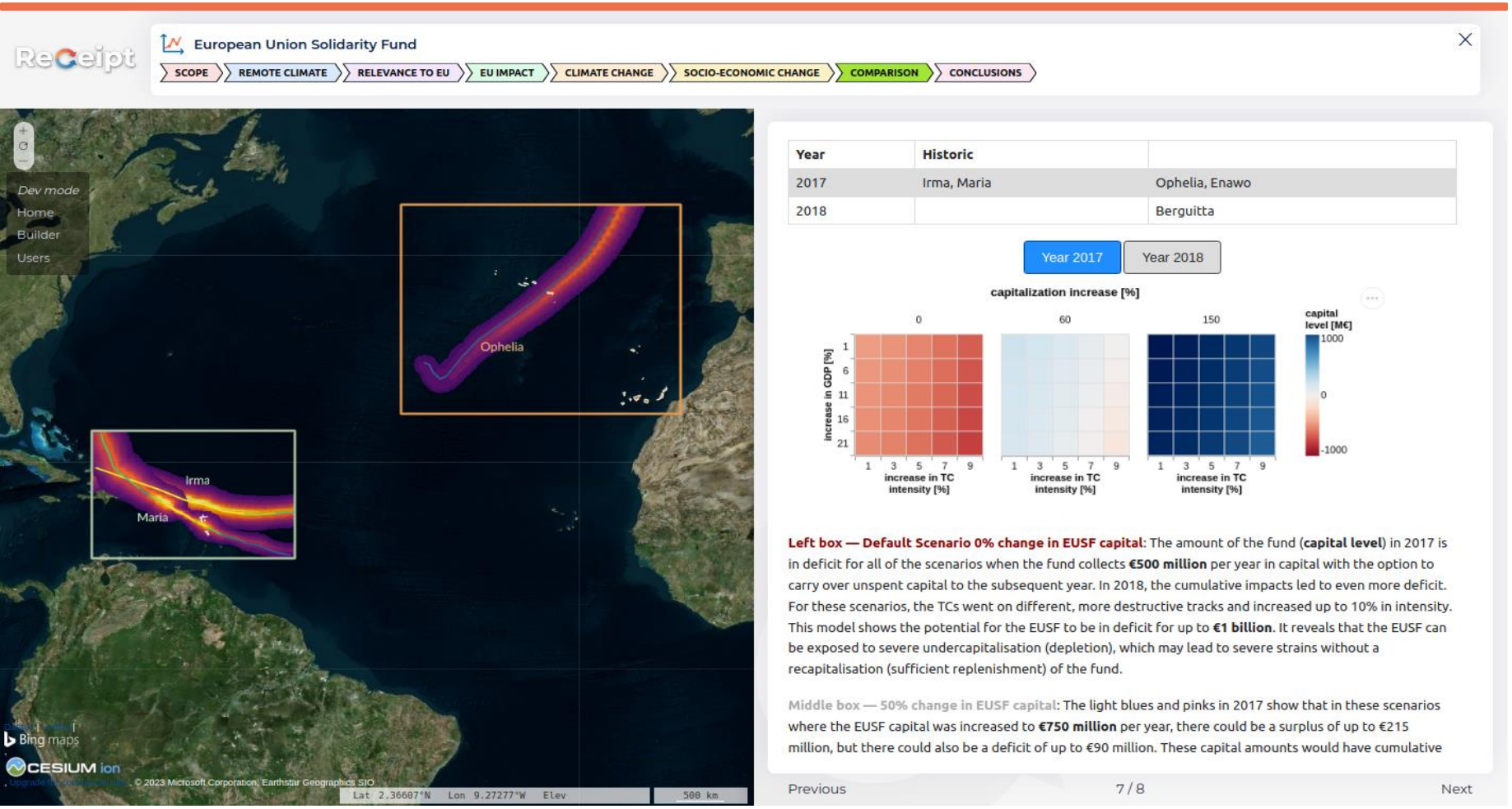
(E. Ercin, E. Boere, H. Moreno Goulart)



- How will future droughts impact the yield of soy in the americas?
- How do resulting price increase affect European feedstock and consumption?
- How does EU import policy affect the impact?

https://www.climateimpactstories.eu/#/sector/agriculture/story/9/page/0

Storylines: EU solidarity fund (A. Ciullo)



- Can future hurricanes hitting the EU overseas territories deplete the EU solidarity fund?
- How do GDP growth and recapitalization affect the fund stability?

https://www.climateimpactstories.eu/#/sector/finance/story/8/page/6

Lessons learned

- TerriaJS is a nice framework, but also limited and too geospatial data-oriented. Often, data manipulation is still needed.
- AWS seems too intricate for our needs
- Storyline rewrite to 'popular text' is a challenge and requires many reviews.
- Storyline progression structure doesn't always fit, but is better than no structure at all. Connecting subsequent pages or displaying relevant map data can be a challenge.
- Target audience needs to be consulted in demo sessions to gather feedback.
- Agile development in a team works well for this project. Expect changing requirements for a GUI.

Questions

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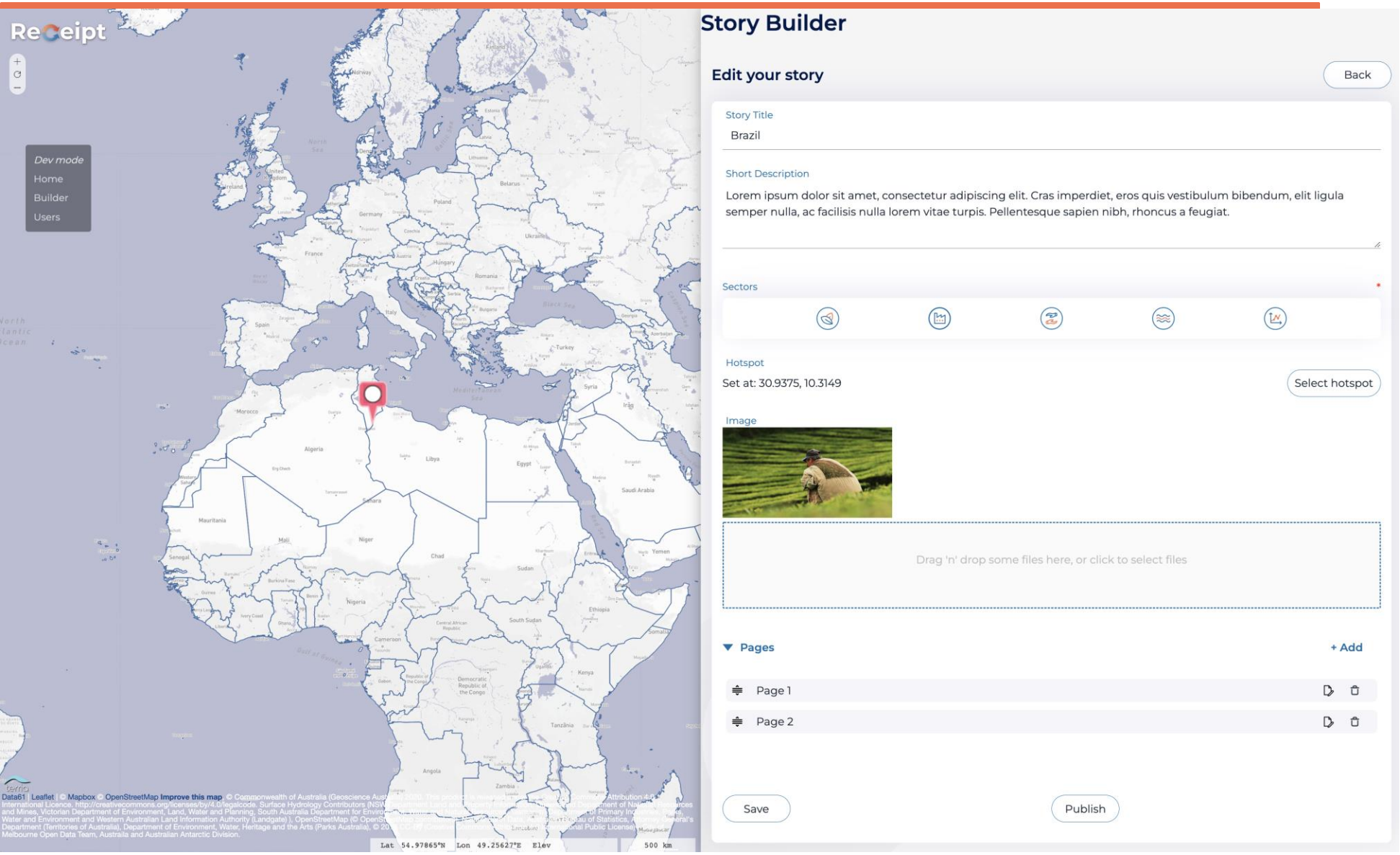
Backup slide: the storyline builder



- Online editor of storylines, open to 'trusted collaborators'.
- Alpha stage, missing key features, such as scenario buttons.
- Geospatial data must be hosted by external party