

Potential contributions from ISIMIP to the EU-wide climate risk assessment (EUCRA)

EU-wide climate risk assessment (EUCRA)

EUCRA and EU policy context

- Mandated by [2021 EU Strategy on Adaptation to Climate Change](#)
- Links to [EU Mission: Adaptation to Climate Change](#)

EUCRA framing

- **Objective:** Help identifying adaptation-related **policy priorities** for next European Commission
- **Timing:** First ‘fast-track’ assessment (EUCRA-2024) to be published before summer 2024
- **Products:** **EEA report** and accompanying products (i.e. **interactive data viewers**)

My attendance at ISIMIP-PROCLIAS workshop

1. **ISIMIP data:** Explore potential relevance of ISIMIP data for EUCRA
2. **ISIMIP viewer:** Explore opportunities for building an interactive ISIMIP viewer
3. **EUCRA authors:** Explore interest of PIK experts in becoming EUCRA authors

EUCRA: Institutional context

Governance

- **Steering Group:** European Commission (DG CLIMA) and EEA
- **Interservice Group:** Relevant Commission services
- **Stakeholder Group:** Selected (trans-)national stakeholders
- **Scientific Advisory Group:** EEA Scientific Committee, IPCC lead authors, etc.

Implementation

- **EEA** (overall coordination by Hans-Martin Füßel)
- **ETC/CA** ([European Topic Centre on climate change adaptation and LULUCF](#); consortium of 16 organisations under separate contract with EEA)
- **Further leading European institutions** (subcontracted by ETC/CA)
- **JRC** and **C3S** (requested)

EUCRA: Information sources

General approach

- IPCC AR6 risk concept
- Mixture of quantitative and qualitative approaches
- Review-type assessment (due to limited time available)
- Quantitative information relies strongly on existing or foreseen information sources

Relevant information sources (tentative)

- [European Climate Data Explorer](#) (EEA & C3S; to be updated and extended)
- [EEA web report *Europe's changing climate hazards*](#) (to be updated and extended)
- [IPCC AR6 WG I report](#) (including [IPCC WGI Interactive Atlas](#))
- [IPCC AR6 WG II report](#) (including Chapter [Europe](#) and [Global to Regional Atlas](#))
- [C3S European State of the Climate Reports](#) (expanded scope?)
- [JRC PESETA IV project](#) and follow-up (European Climate Risk Regional Assessment; ECCRA)
- [JRC DRKMC Risk Data Hub](#)
- [Overview of natural and man-made disaster risks the European Union may face](#) (DG ECHO)
- [Inter-sectoral Impact Model Intercomparison project \(ISIMIP\)](#) (to be determined)

EUCRA: Potential relevance of ISIMIP data

Characteristics of ISIMIP data

- Global climate impact projections based on multi-model ensembles for many sectors
- Variables and indices selected by leading modellers (and other experts/stakeholders?)

Potential relevance for EUCRA and other EEA activities

- Quantitative input to the climate risk assessment in various thematic/sectoral chapters
- Allow EUCRA audience to explore potential climate impacts interactively at higher resolution (analogous to the [European Climate Data Explorer](#), developed jointly with C3S)
- Potential relevance for further EU activities (e.g. the [EU Mission: Adaptation to Climate Change](#))

Open questions related to an ISIMIP viewer (for Europe)

- Selection of ISIMIP results that are relevant and understandable for European policymakers
- Proper explanation of the model projections and their caveats to non-expert users
- Technical hosting and user support for ISIMIP viewer for Europe
- Re-usability of (limited) ISIMIP-EUCRA viewer for other audiences

Your feedback requested

General interest in interactive ISIMIP viewer

- Do you consider an interactive viewer for displaying (selected) ISIMIP data as useful?
- Which experts and stakeholders could benefit from an ISIMIP viewer, and how?
- Which functionalities do you consider essential for an ISIMIP viewer?

Personal interest in helping to utilize ISIMIP results for EUCRA

- **Tasks:**
 - Help selecting variables for ISIMIP viewer (for EUCRA)
 - Document and explain selected variables for non-expert users
 - Contribute to relevant EUCRA chapter
- **Incentives:**
 - Helping that ISIMIP results are used for actual decision-making in Europe
 - Acknowledged as author in EUCRA report
 - Subcontracting to your employer possible (in principle)
- **Would you be interested** in contributing ISIMIP results for EUCRA?

Thank you!

Contact:

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EUCRA: Content and scope

Draft structure:

- **Executive summary**
- Introduction
- Changes in Europe's climate and other risk drivers
- **Key climate risks for Europe**
- Priorities for action
- Annex: Observed and projected changes in Europe's climate

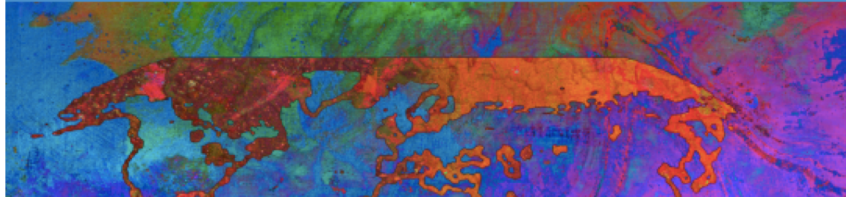
+ **Accompanying interactive viewers**

- Risks for biodiversity and ecosystems
- Risks for food and biomaterials supply
- Risks for the built environment
- Risks for human health and wellbeing
- Risks for economic service sectors
- Risks for EU outermost regions
- Cross-sectoral climate risks
- Aggregated economic and financial risks
- International cascading risks
- Worst-case scenarios

EUCRA: interactive “data” viewer – IPCC WGI experience

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Climate Change 2021 The Physical Science Basis



SUMMARY FOR POLICYMAKERS (SPM)

TECHNICAL SUMMARY (TS)

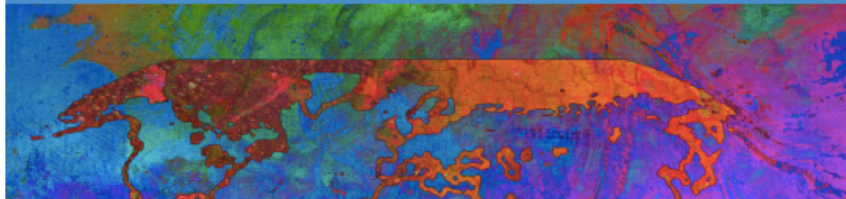
FULL REPORT

INTERACTIVE ATLAS

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Atmospheric:
Temperatures
Precipitation
Snowfall
Wind

derived indices

Oceanic
SST
Sea ice
pH
Sea Level Rise

Other
Ozone,
PM2.5,
population,
CO2 emissions

Annual max. temperature (TXx)
Days with tmax over 35°C / 40°C
Cooling Degree Days (CD)
Annual min. temperature (TNn)
Frost days (FD)
Heating Degree Days (HD)
Max. 1-day precipitation (RX1day)
Consecutive Dry Days (CDD)
Stand. Precipitation Index (SPI)

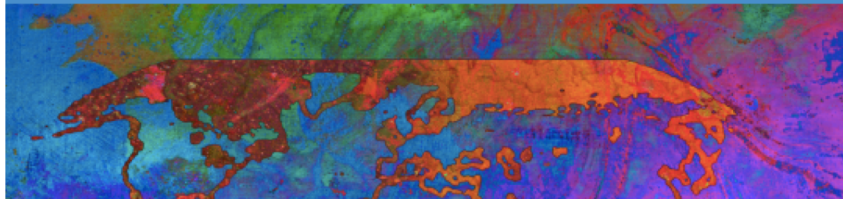
W5E5 for observations and bias adjustment (ISIMIP method)



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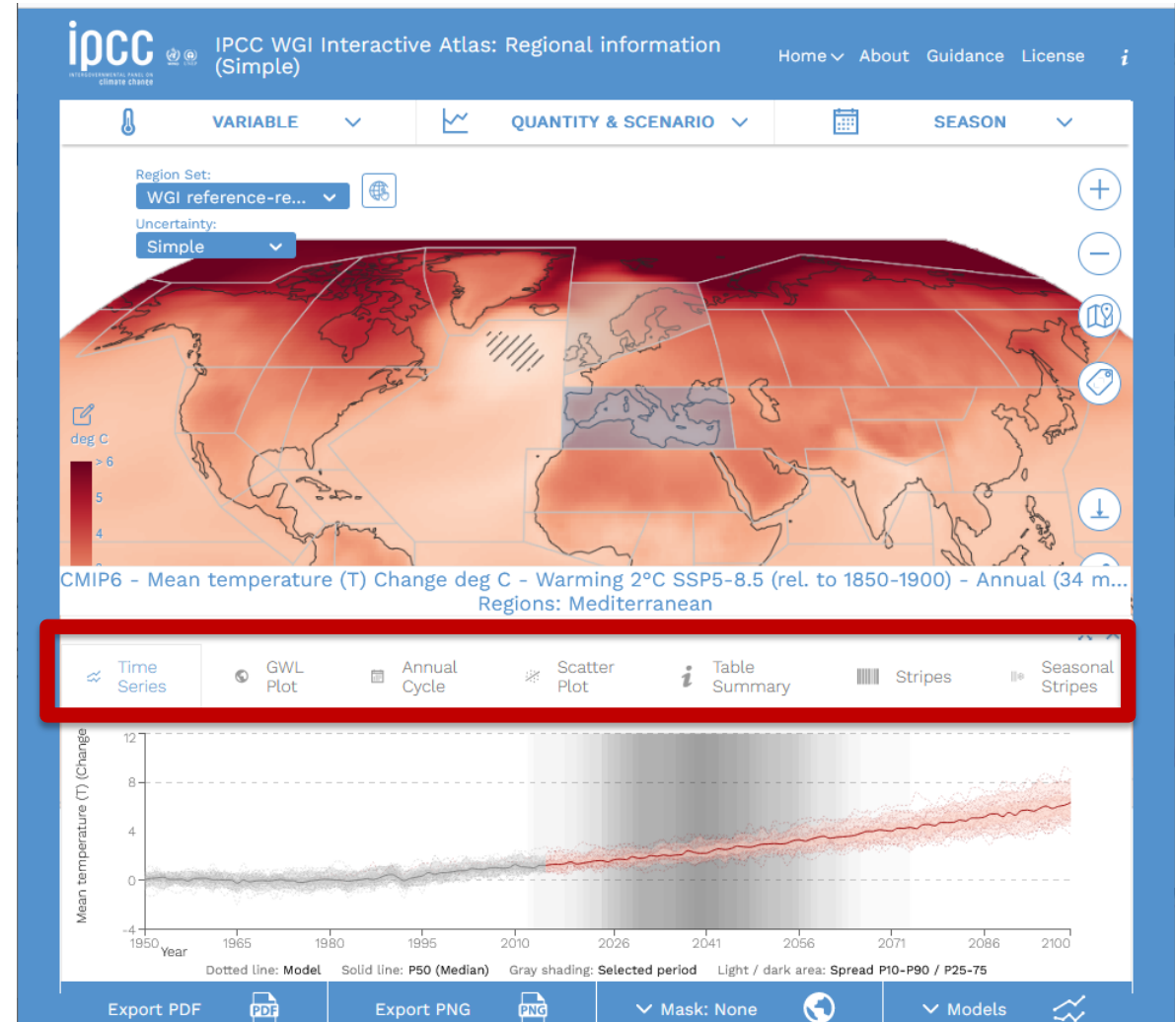


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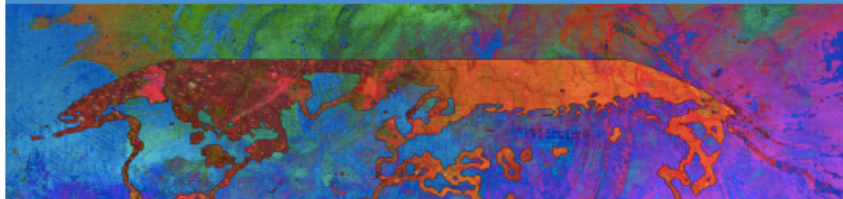
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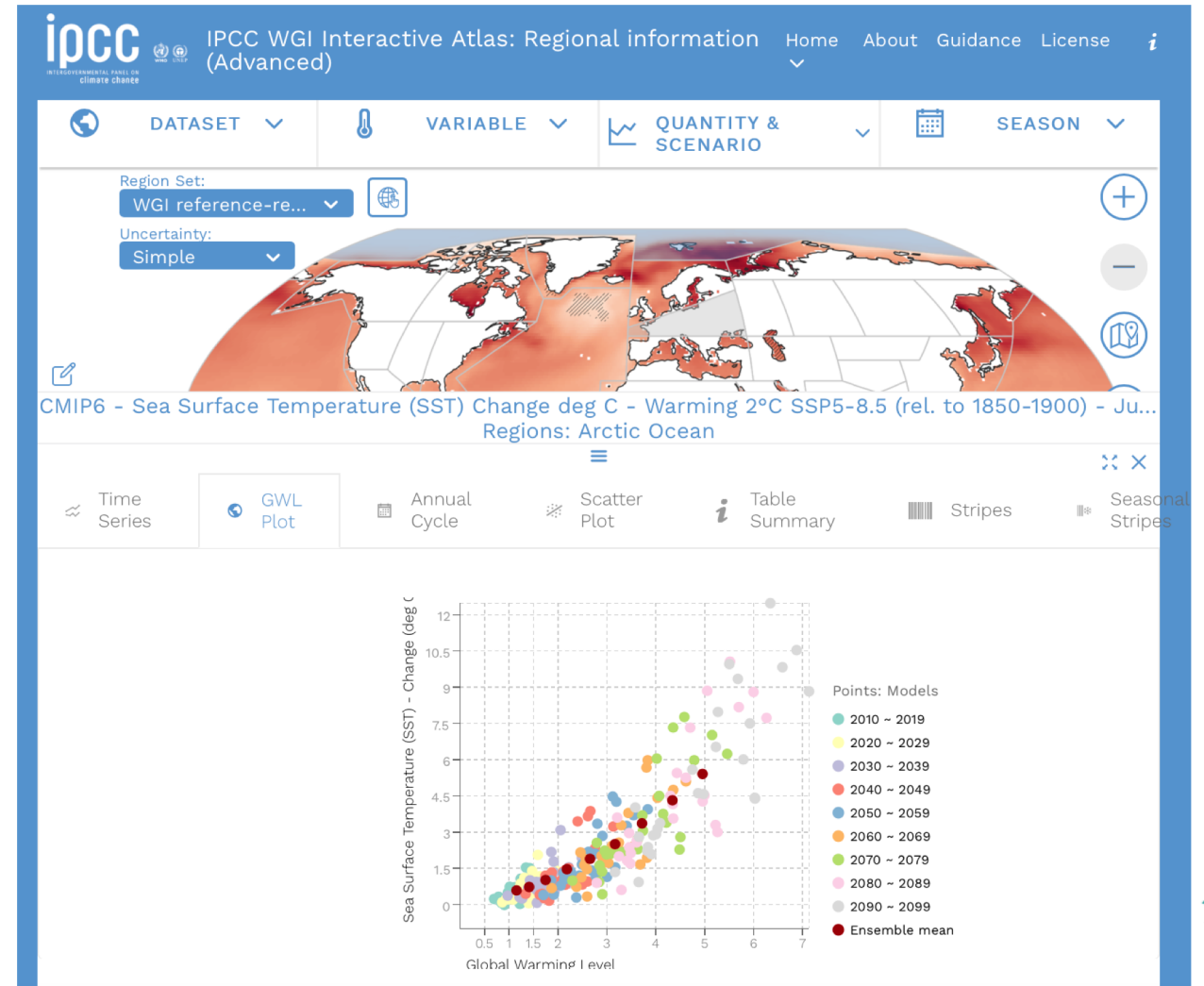


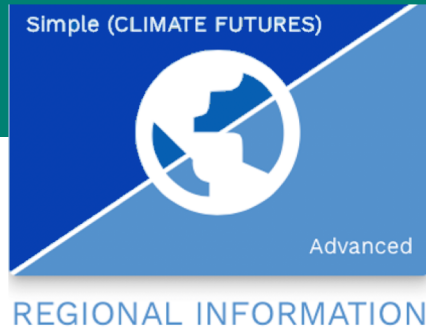
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INTERACTIVE ATLAS





Simple interface (CLIMATE FUTURES)

Projected changes for

Global Warming Levels: relative to 1850-1900
1.5°C, 2°C, 3°C, 4°C

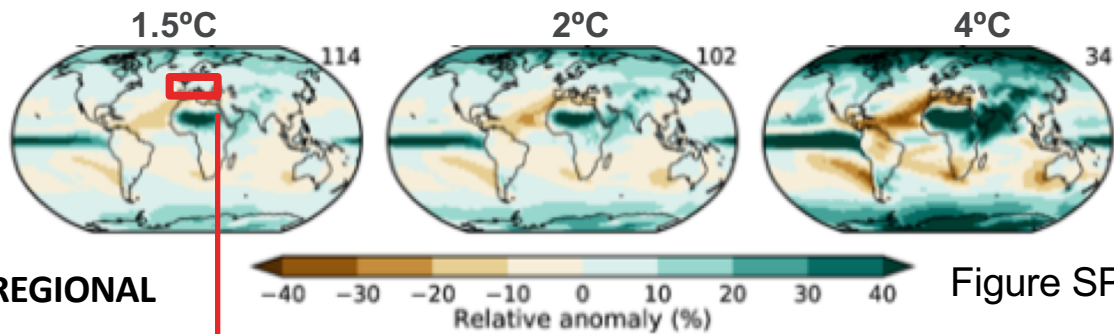
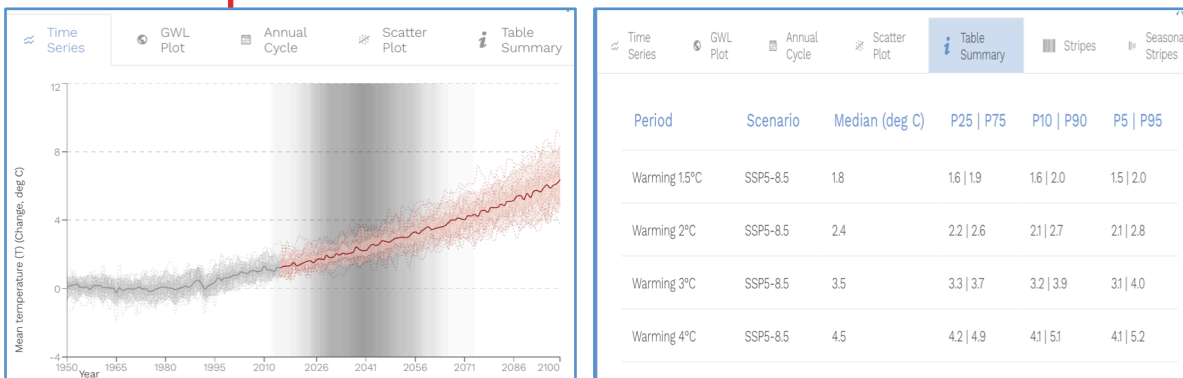
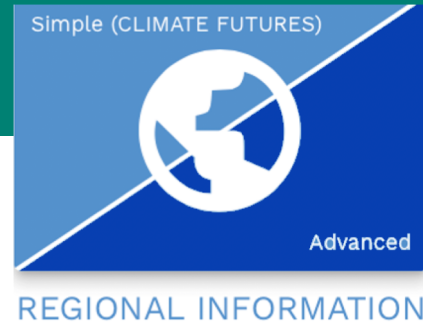


Figure SPM.5

REGIONAL

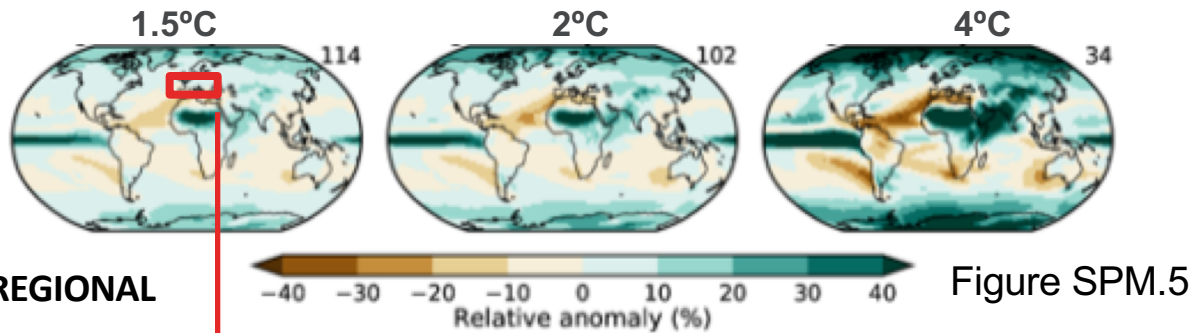


Decision makers, media, teaching, ...

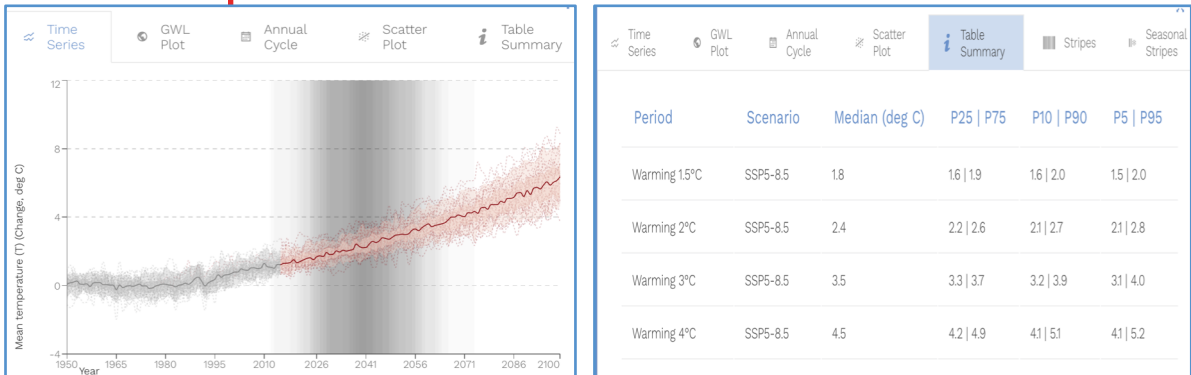


Simple interface (CLIMATE FUTURES)

**Projected changes for
Global Warming Levels:**
1.5°C, 2°C, 3°C, 4°C **relative to 1850-1900**



REGIONAL



Decision makers, media, teaching, ...

Advanced interface Further options and choices

**Projected changes for
Global Warming Levels:**
1.5°C, 2°C, 3°C, 4°C

Periods across scenarios:
near (2021-2040), mid, long

relative to different baselines
1995-2014, 1850-1900, 1981-2010, ...

Observed trends and paleo

modern periods: 1961-2015, 1980-2015
paleo periods: Mid-Pliocene, Last interglacial,
Last glacial maximum, Mid-Holocene

Scientists, practitioners, ...



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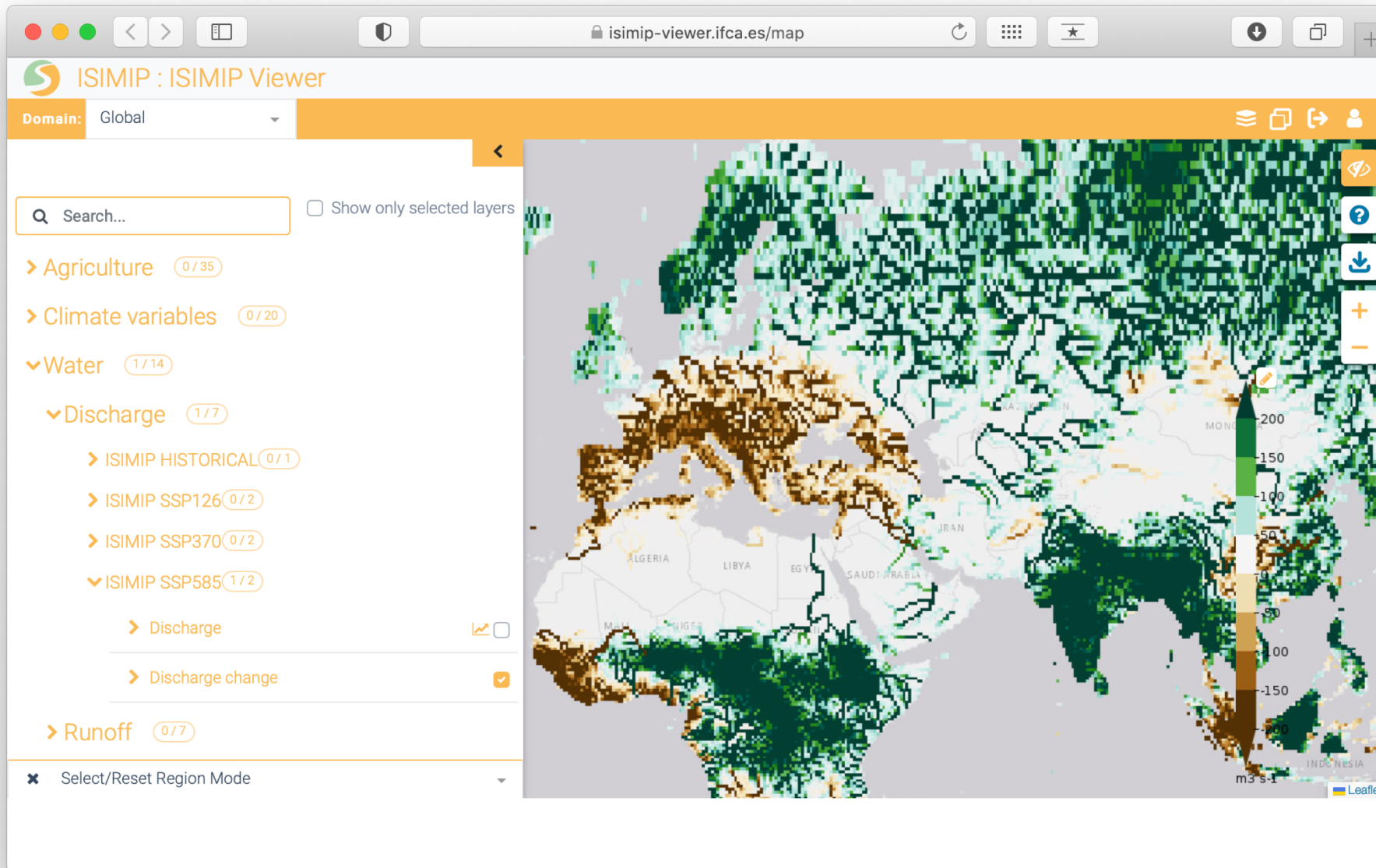
What would be required to build an Interactive Atlas?

Which sectors and variables?

Which dimensions?

Which visualization tools?

EUCRA: interactive “data” viewer – mockup



EUCRA: interactive “data” viewer – mockup

