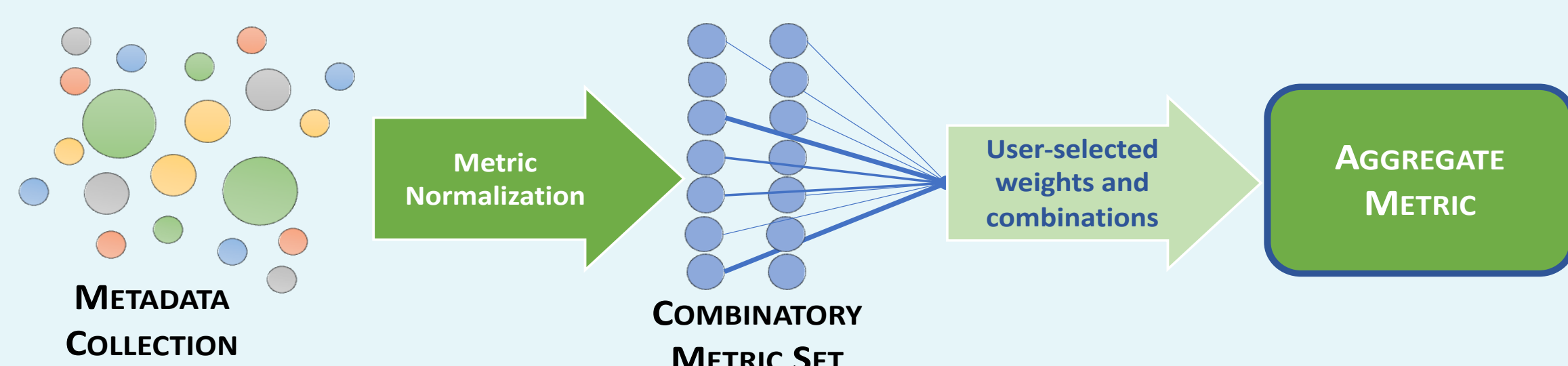


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Current Platform Capabilities

- All data is downloadable: users can do their own data analysis, such as analyzing intersections of water stress and cropland area.
- Maps are downloadable, providing visualization tools to a broad audience.
- Flexible “backend” design provides use-inspired augments to platform database.

Flexible, open-science, open-source platform:

Platform Link:
mst.mit.edu



Github Link:
<https://github.com/cypr essf/climate-risk-map>



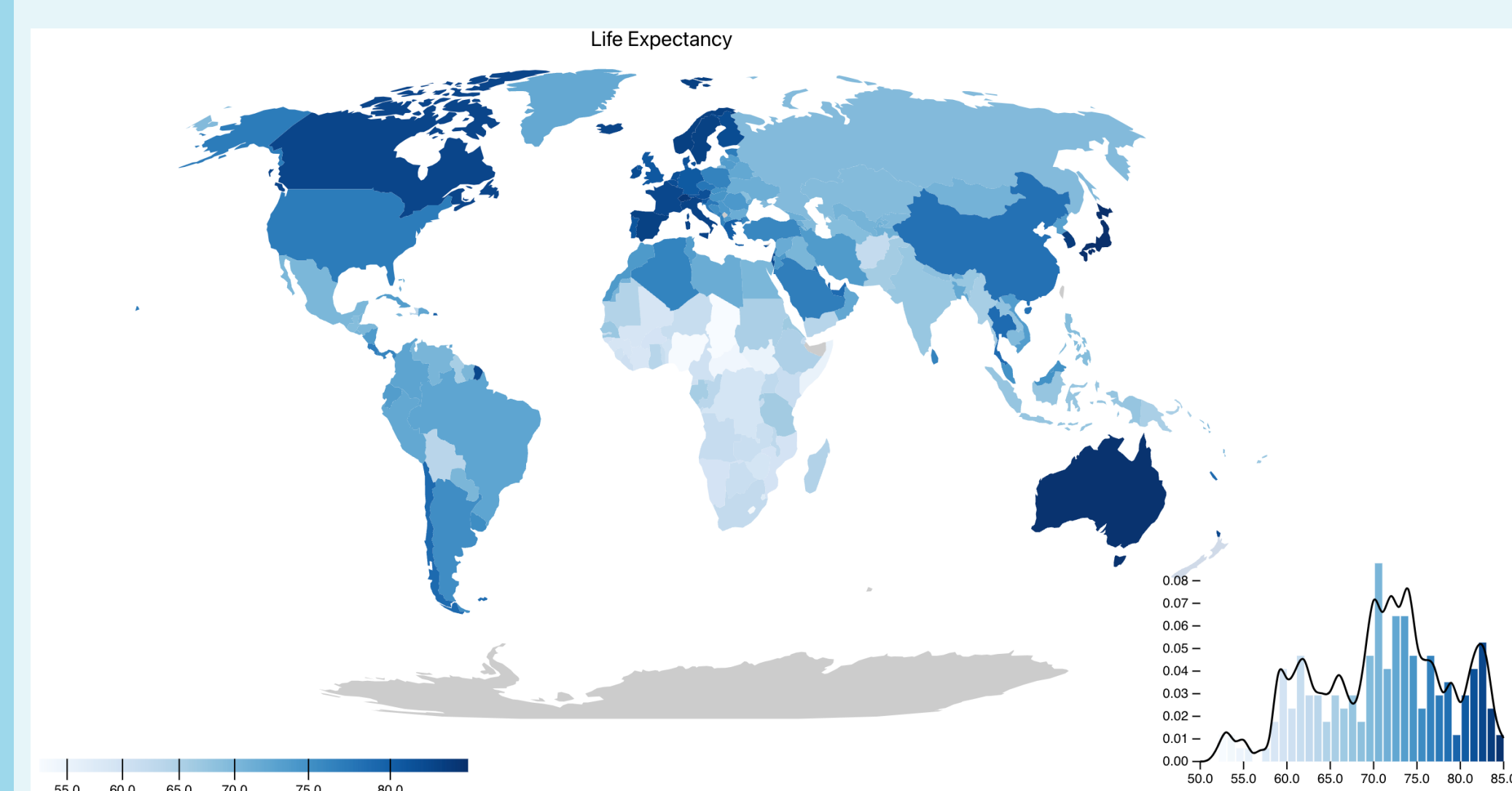
Reference:

Schlosser, C.A., C. Frankenfeld, S. Eastham, X. Gao, A. Gurgel, A. McCluskey, J. Morris, S. Orzach, K. Rouge, S. Paltsev and J. Reilly (2022): Assessing Compounding Risks Across Multiple Systems and Sectors: A Socio-Environmental Systems Risk-Triage Approach. *Front. Clim.*, 24 April 2023 Sec. Climate Risk Management Volume 5 - 2023 | <https://doi.org/10.3389/fclim.2023.1100600>

Global

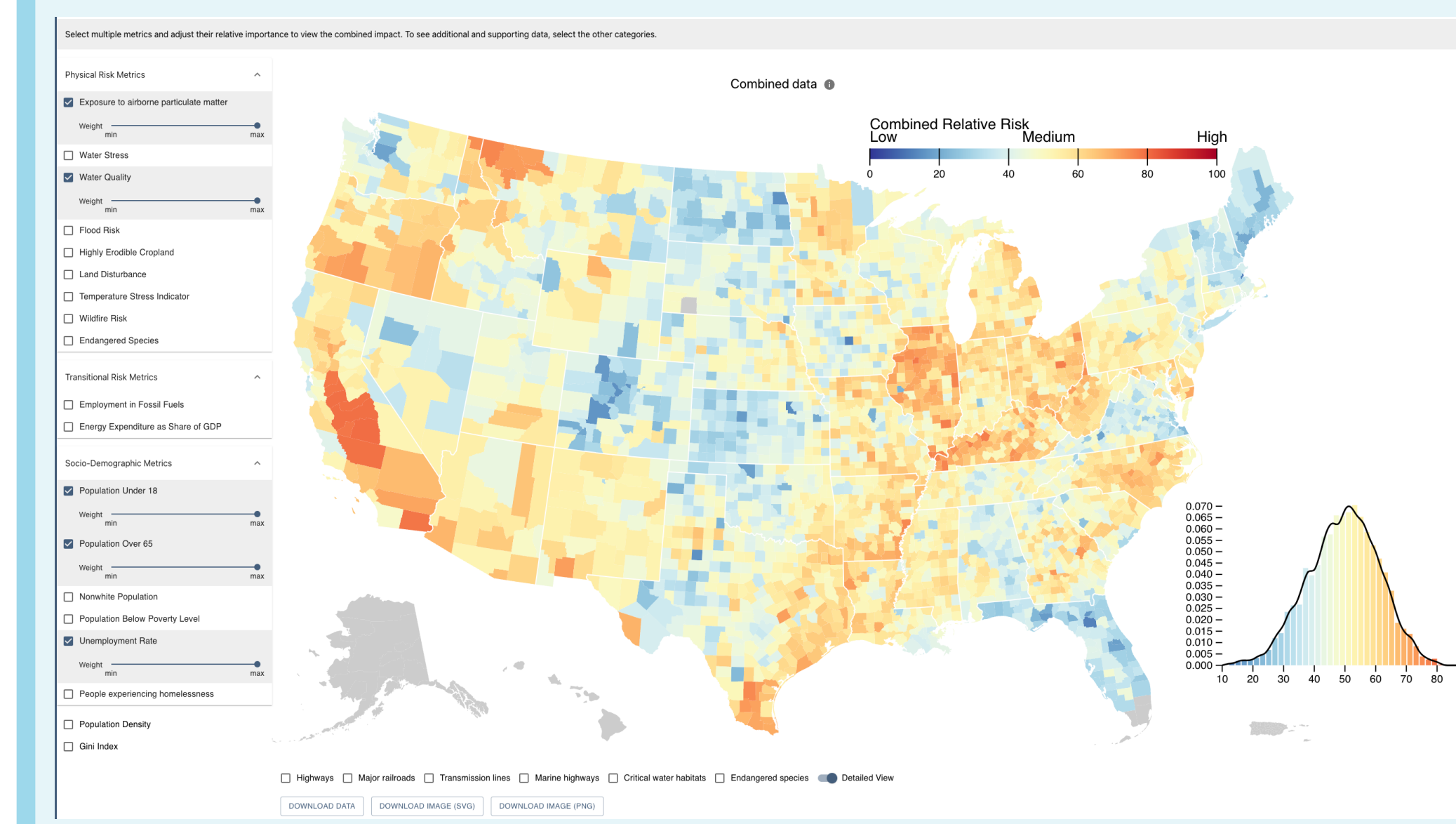
STRESS has global data for metrics including:

- GDP per capita
- % of population with electricity access
- Life expectancy
- Education Levels
- PM2.5 Air Pollution
- Biodiversity (red list index)
- Carbon emissions
- More to come!



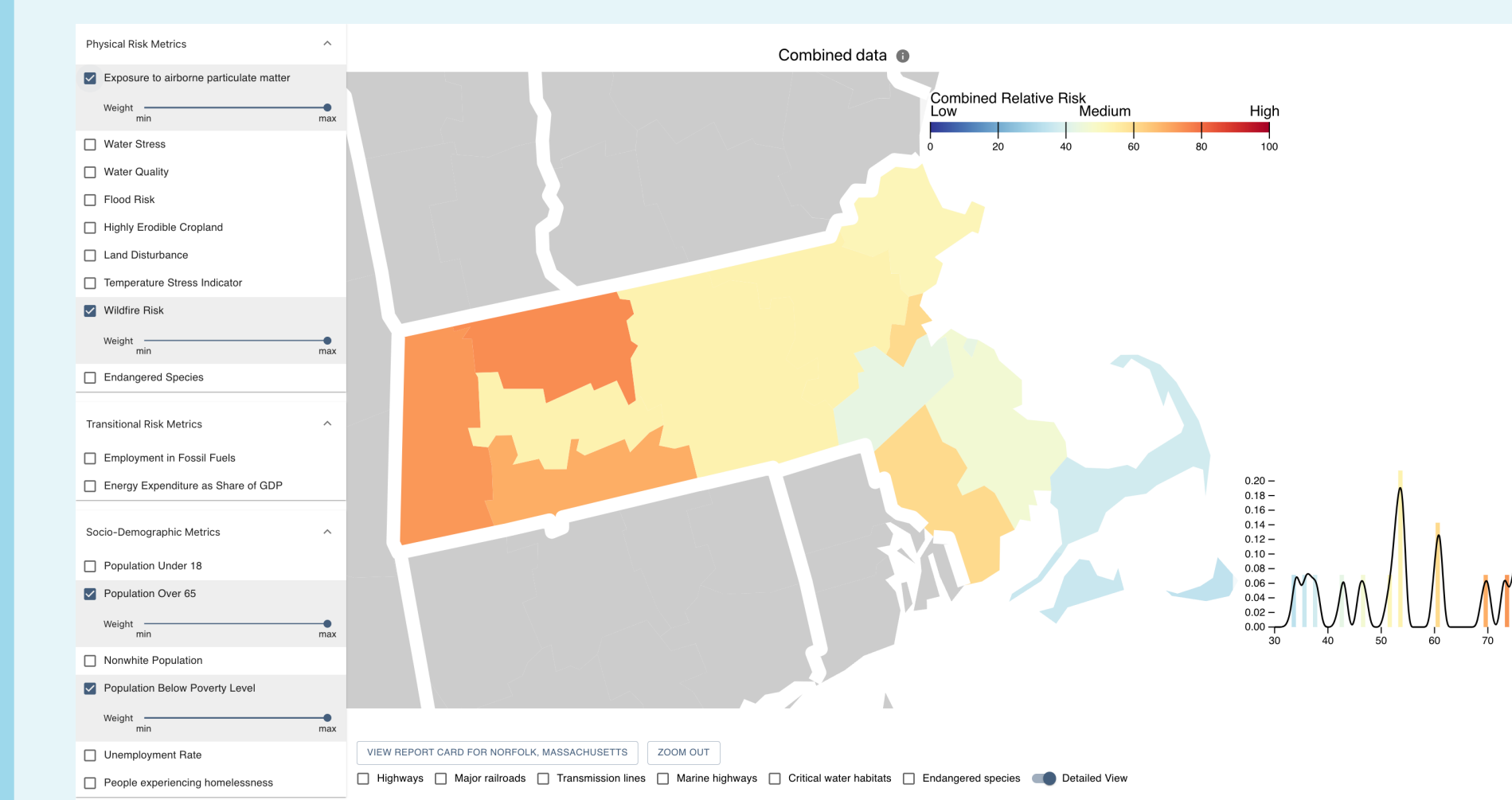
National

- Over 100 variables collected, constructed, and quality-controlled that convey conditions of water-land-energy resources, economics, climate, demographics, air quality, health.
- Infrastructure overlays: Highways, railways, waterways, transmission lines, critical habitats, endangered species
- Combinatory metrics: across physical, socioeconomic, and demographic conditions

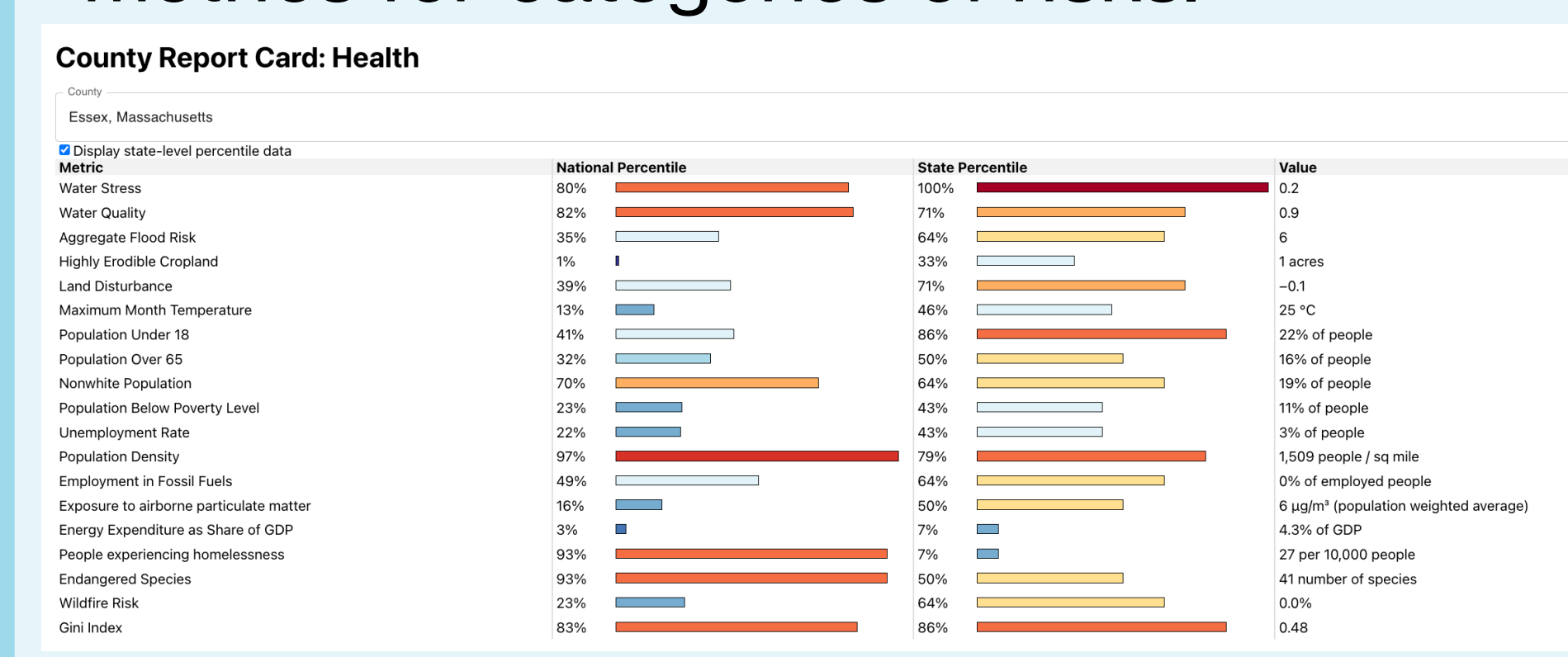


State/Local

Clicking on a county creates a state-based close-up. This re-ranks integrated risks within the state.



County-level report cards provide national percentile, state percentile, and raw metrics for categories of risks.



Ongoing and Future Work

Whole Platform Usability:

Although the platform was built to identify hotspots for further climate modelling, STRESS can also be a public science tool.

- Update data and source descriptions for all metrics to provide non-technical descriptions of metrics and why they matter.
- Improve user interface for increased ease-of-use and to highlight features such as report cards.
 - Potentially create a video tutorial

Scientific Goals:

- Utilize the risk integration features to identify risk hotspots in the U.S. and undertake additional modelling.
- Provide a use-inspired, open science platform to explore compounding risks from global to regional scales.

Global Goals:

- Develop global platform to combine metrics
- Provide country-level report cards
- Projections of future risks: predicted rainfall and temperature changes through 2100 based on MIT Integrated Global Systems scenarios

State/Local Community Engagement Goals

STRESS may be a valuable tool for local planners and policy-makers to easily access data and identify risks. We aim to:

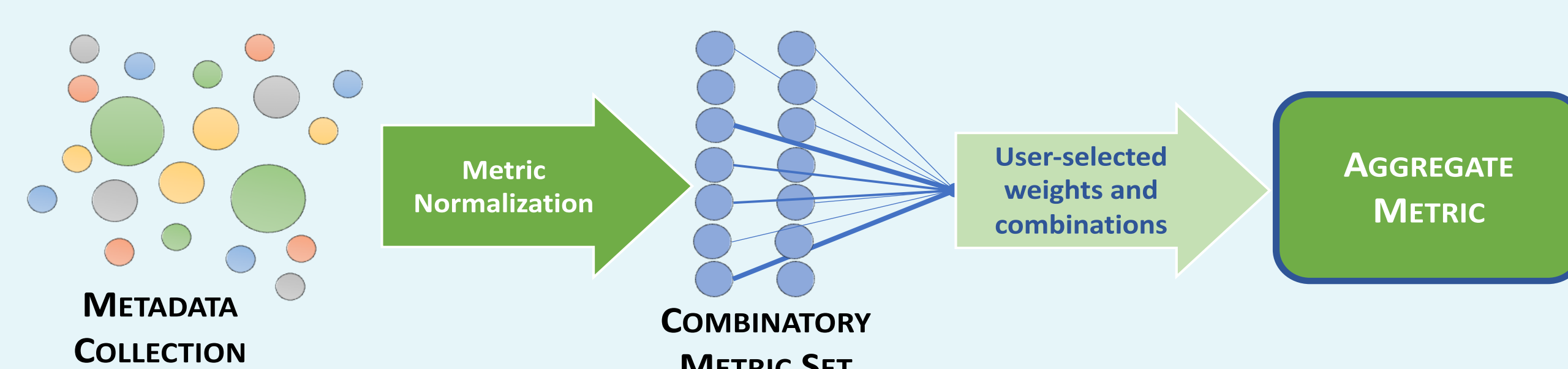
- Build connections with local Massachusetts groups, including community foundations and planning councils, who use data in municipal planning and policy-making.
- Potentially update STRESS to include subcounty level data across Massachusetts
- Broaden the range of metrics to include data that matters to communities, such as education levels and racial inequities.

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State/Local Goals - Community Engagement:

STRESS may be a valuable tool for local planning and policy-making

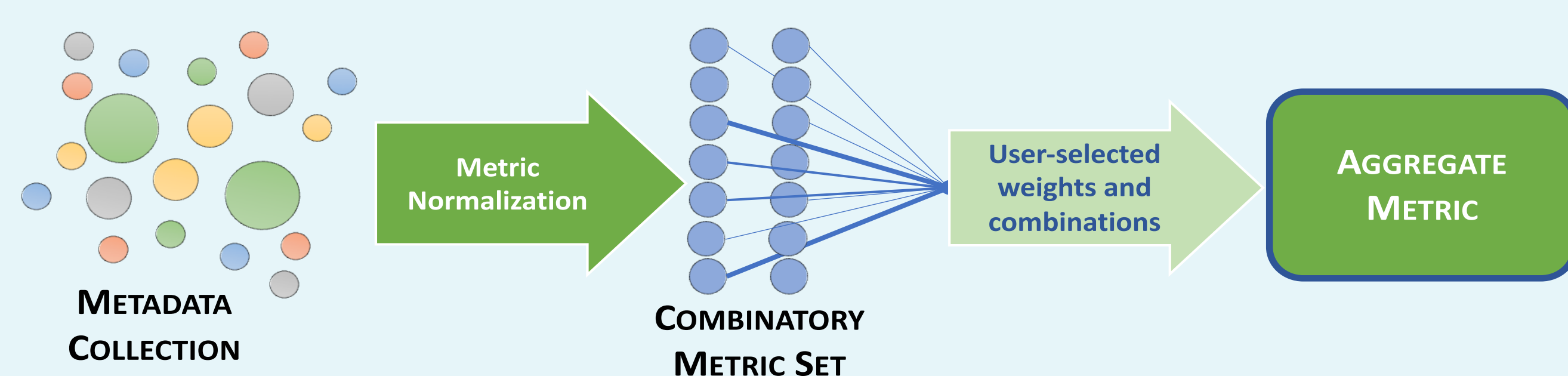
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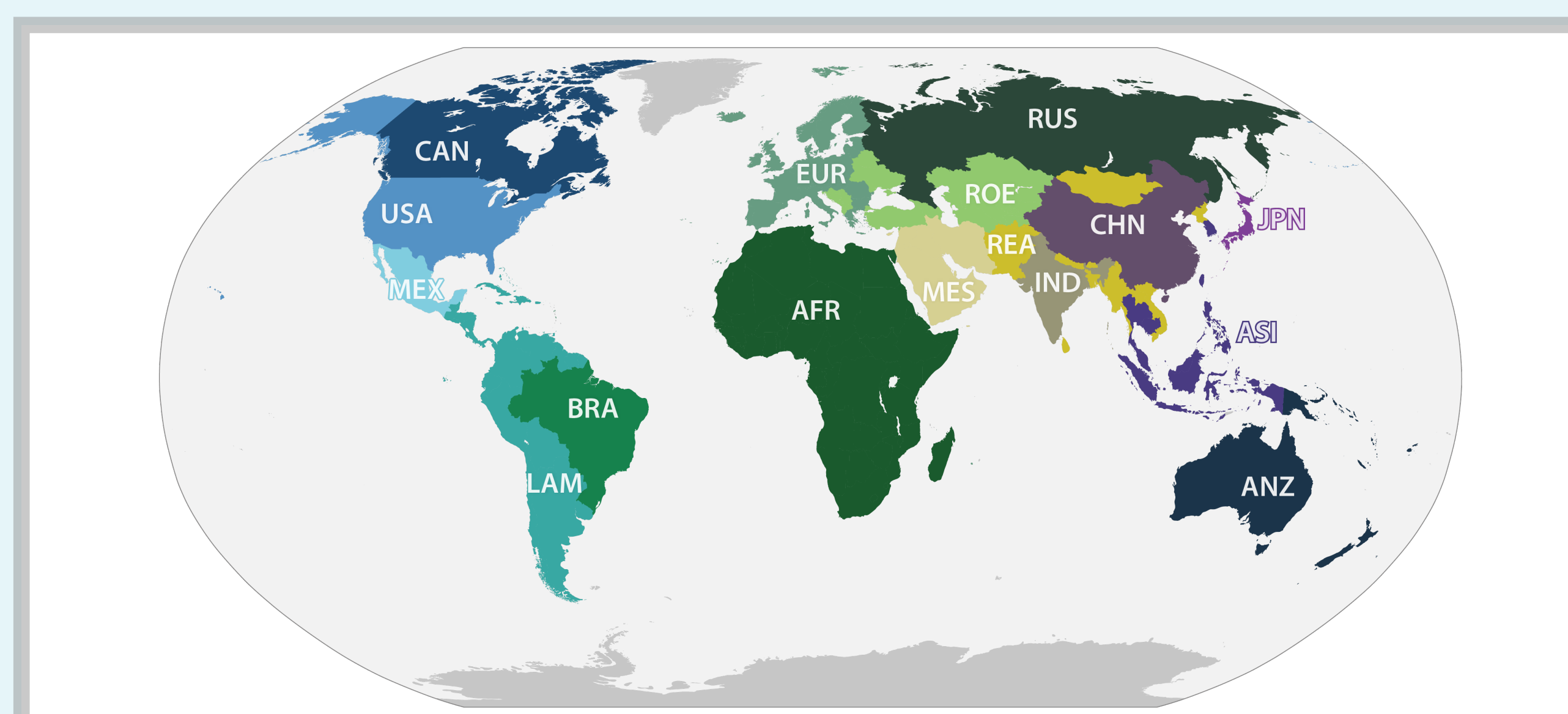
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Layout

- Always keep your **Information Hierarchy** in mind.
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Sub-category Header

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Sub-header

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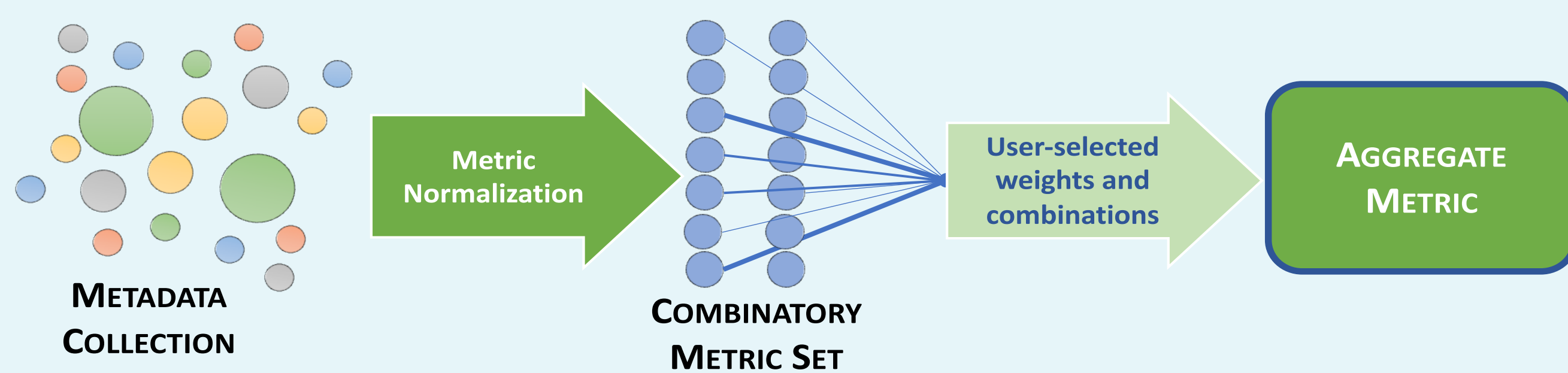
Integrated Metrics: Exposure to airborne particulate matter, Water Stress, Water Quality, Flood Risk, Highly Erodible Cropland, Land Disturbance, Temperature Stress, Wildfire Risk, Endangered Species, Employment in Fossil Fuels, Energy Expenditure as Share of GDP, Socio-Demographic Metrics, Population Under 18,

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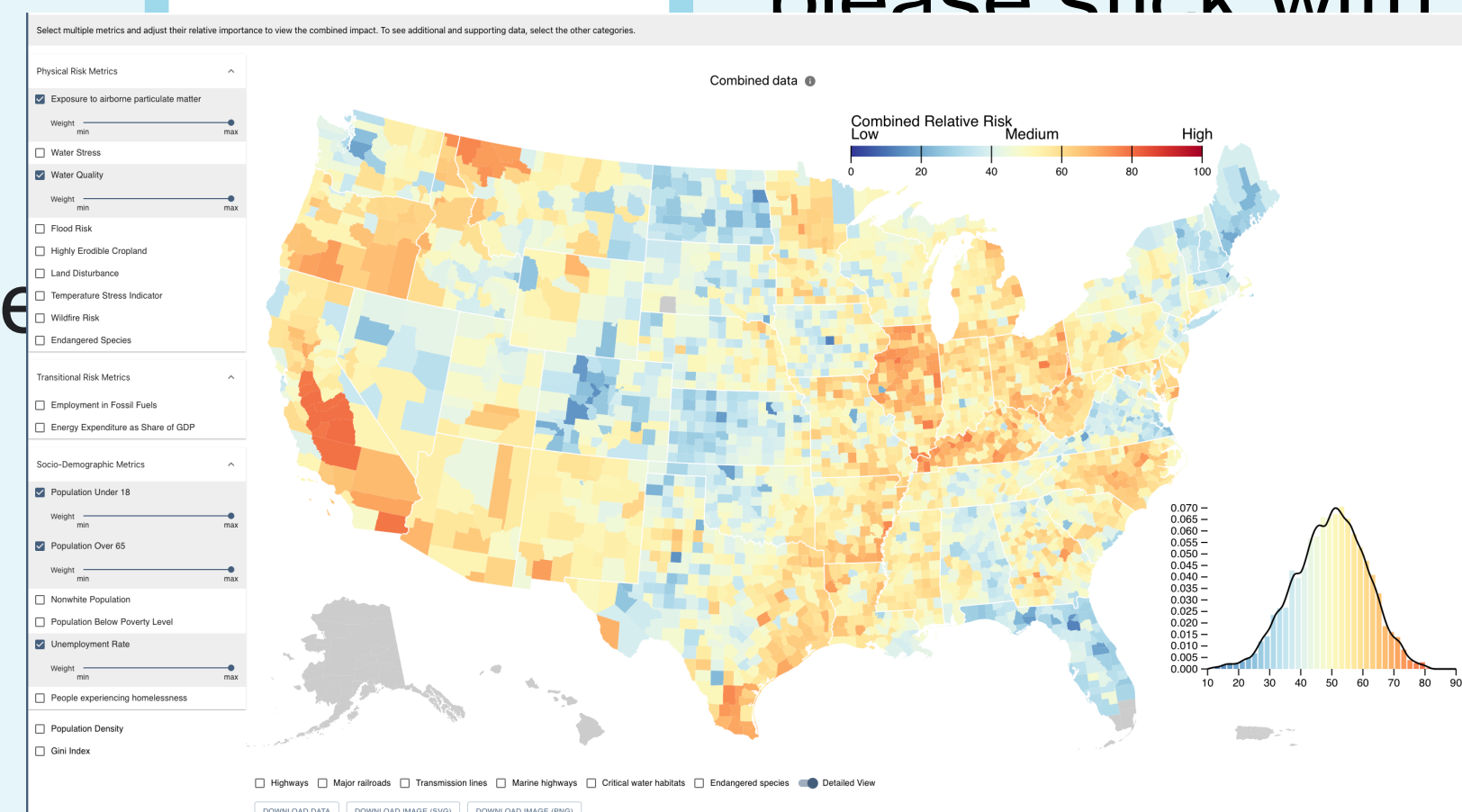
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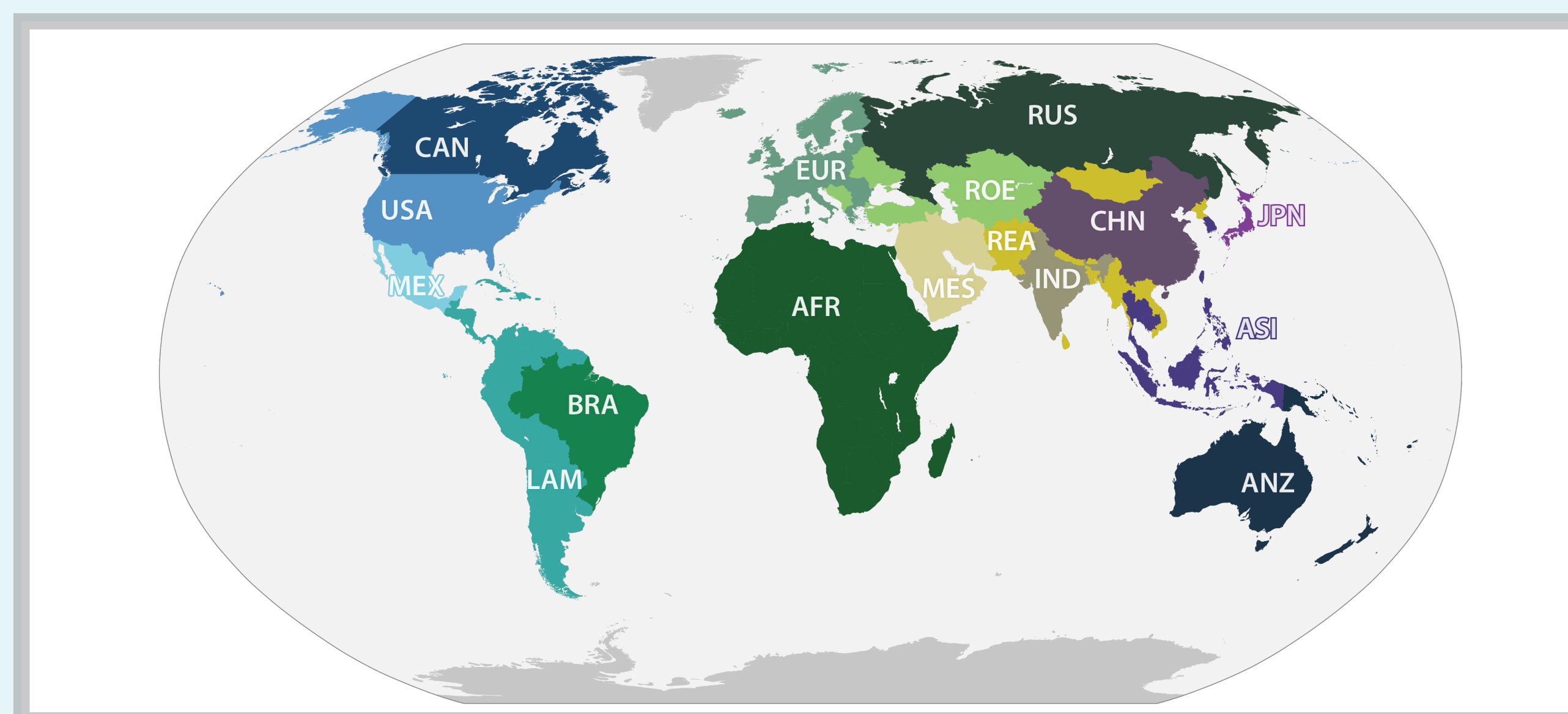
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