



Open Source Climate Adaptation Decision Support Tools

GWF 2023 | May 4 | Geo4SDGs

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Locana

Agenda

1 Climate + Geospatial

2 Project Examples

3 Looking Forward



Climate + Geospatial

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Climate + Geospatial



Maps + location intelligence can help solve pressing infrastructure, sustainability, social, and business challenges

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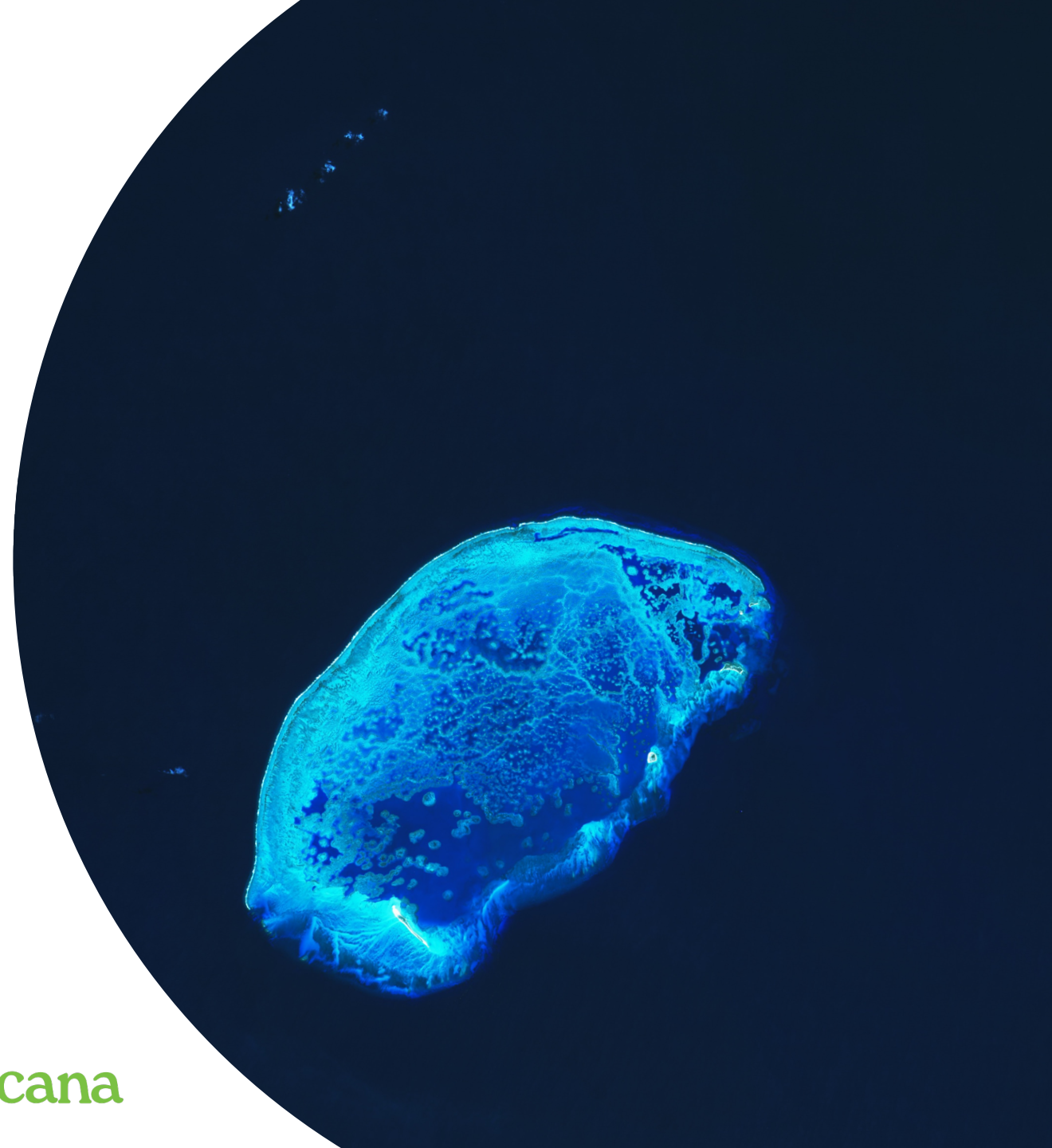
Climate + Geospatial



Geospatial data and tech will continue to play a vital + central role in identifying responses to the array of climate related challenges



Open source climate tools foster education + collaboration, and allow users the agency to make data driven decisions



Climate + Geospatial

How will climate affect where I am and what I care about?



Assess how climate is affecting agricultural commodities



Evaluate specific risks/exposure by location with increasing granularity and emphasis on local impacts



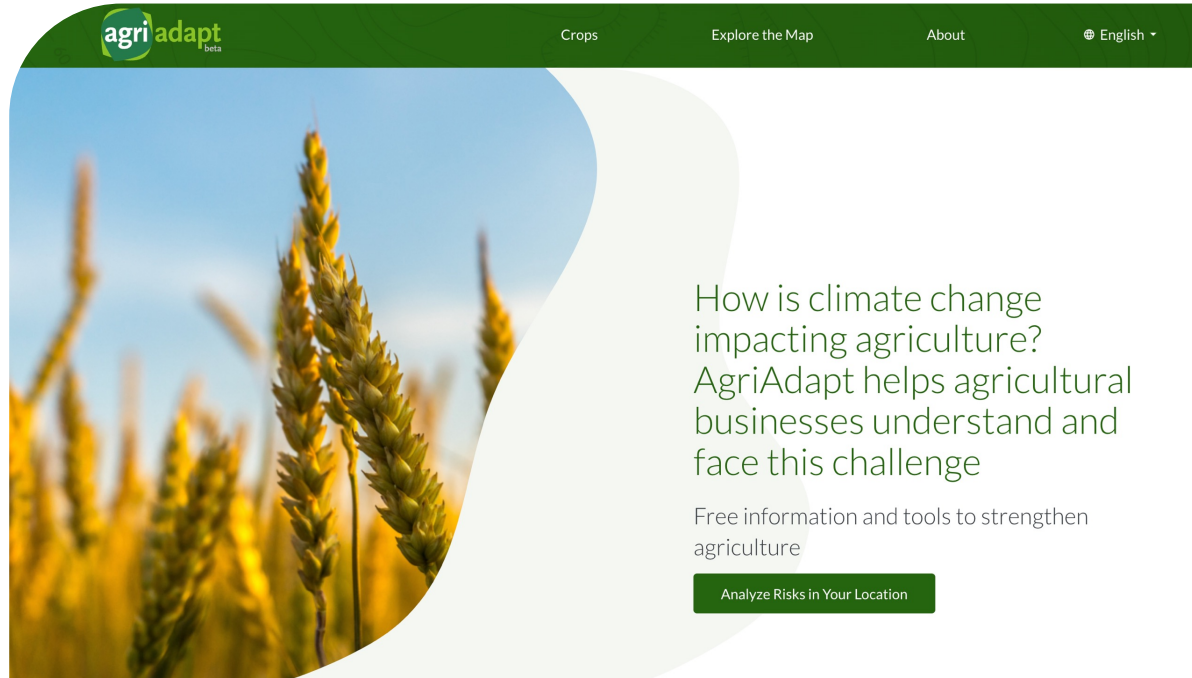
Identify potential solutions



Project Examples

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AgriAdapt



Open-source tool to highlight climate risks across certain agricultural value chains

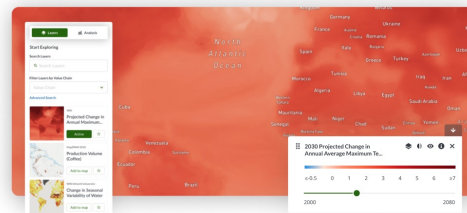
Integrate climate risk and resilience into plans and operations

agriadapt.org

Reliable, verified information to make better decisions in agriculture

We deliver free climate information to inform decisions for agriculture businesses – small and large – to adapt in the face of climate change.

[Explore the Map](#)



The value chain of each crop faces unique risks

Learn more about how climate change affects various crops

Coffee

[Explore the Coffee Value Chain](#)

Cotton

[Explore the Cotton Value Chain](#)

Rice

[Explore the Rice Value Chain](#)

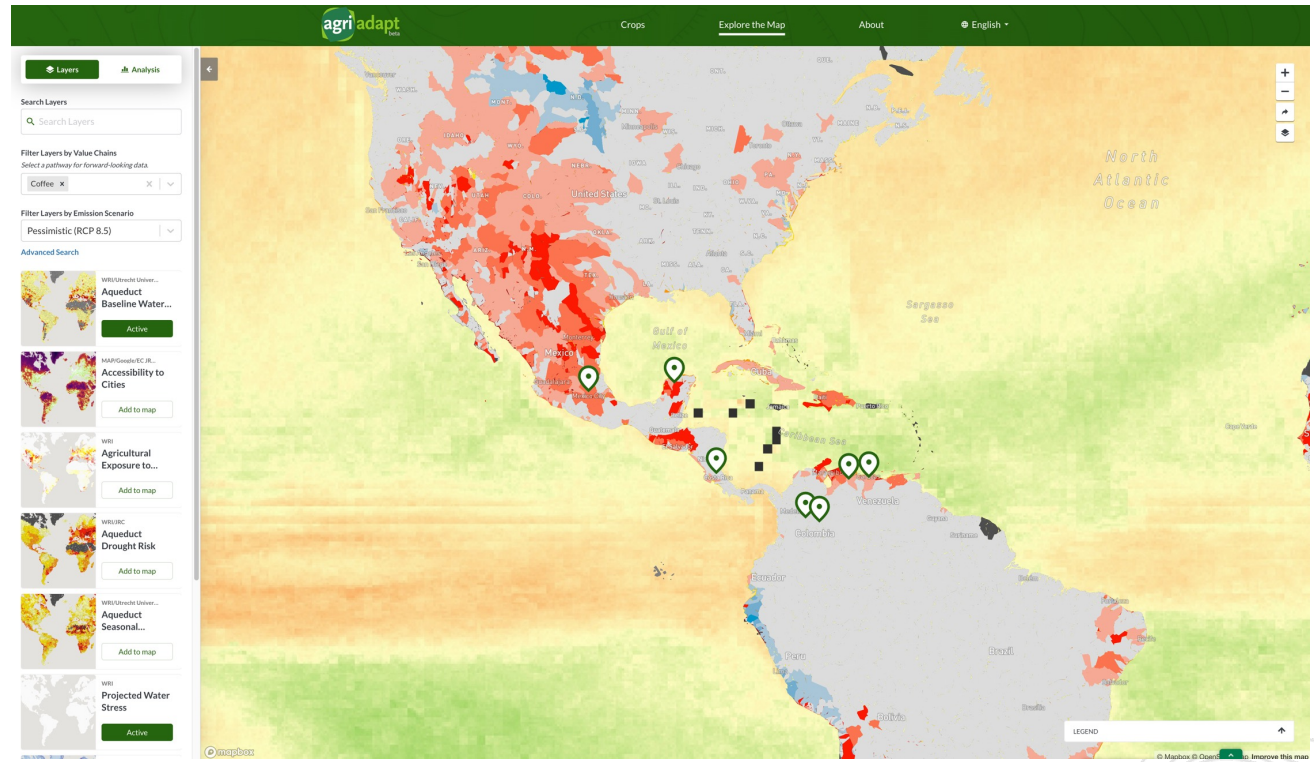
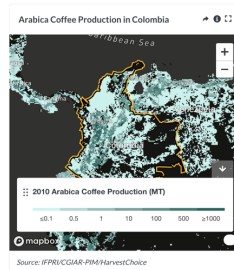
How Does Climate Change Affect the Coffee Value Chain?

The production of coffee is affected by different climate threats along its value chain. Click on the buttons below to find information about how climate change affects each link of the value chain:



Production Volume

Explore our data visualizations to better understand where the main coffee growing regions in Colombia are and how much coffee is currently produced.



Layers

Analysis

Tenjo, Cundinamarca, 250207, Colombia

Puerto López, Meta, 502007, Colombia

Add a Location

Layer Analysis Table

Name	2040 Projected Change in Water...	1960 to 2014 Baseline Water...	2040 RCP 8.5 Projected Chang...
Autopista México - ...	2x increase	Extremely High (>8...	0.98x
Tekax, Yucatán, 979...	2.8x or greater incr...	High (40-80%)	1.04x
Calle San Pedro Tur...	1.4x increase	Low - Medium (10-2...	1.06x
Esteller, Portuguesa...	Near normal	Medium - High (20...	0.91x
Urdaneta, Aragua, 2...	1.4x increase	High (40-80%)	0.96x
Tenjo, Cundinamar...	Near normal	Low - Medium (10-2...	1.30x
Puerto López, Meta...	Near normal	Low (<10%)	1.11x
Resolution	Varies	Hydrological sub-ba...	0.25°



2040 Projected Change in Water Stress (SSP3 RCP 8.5)

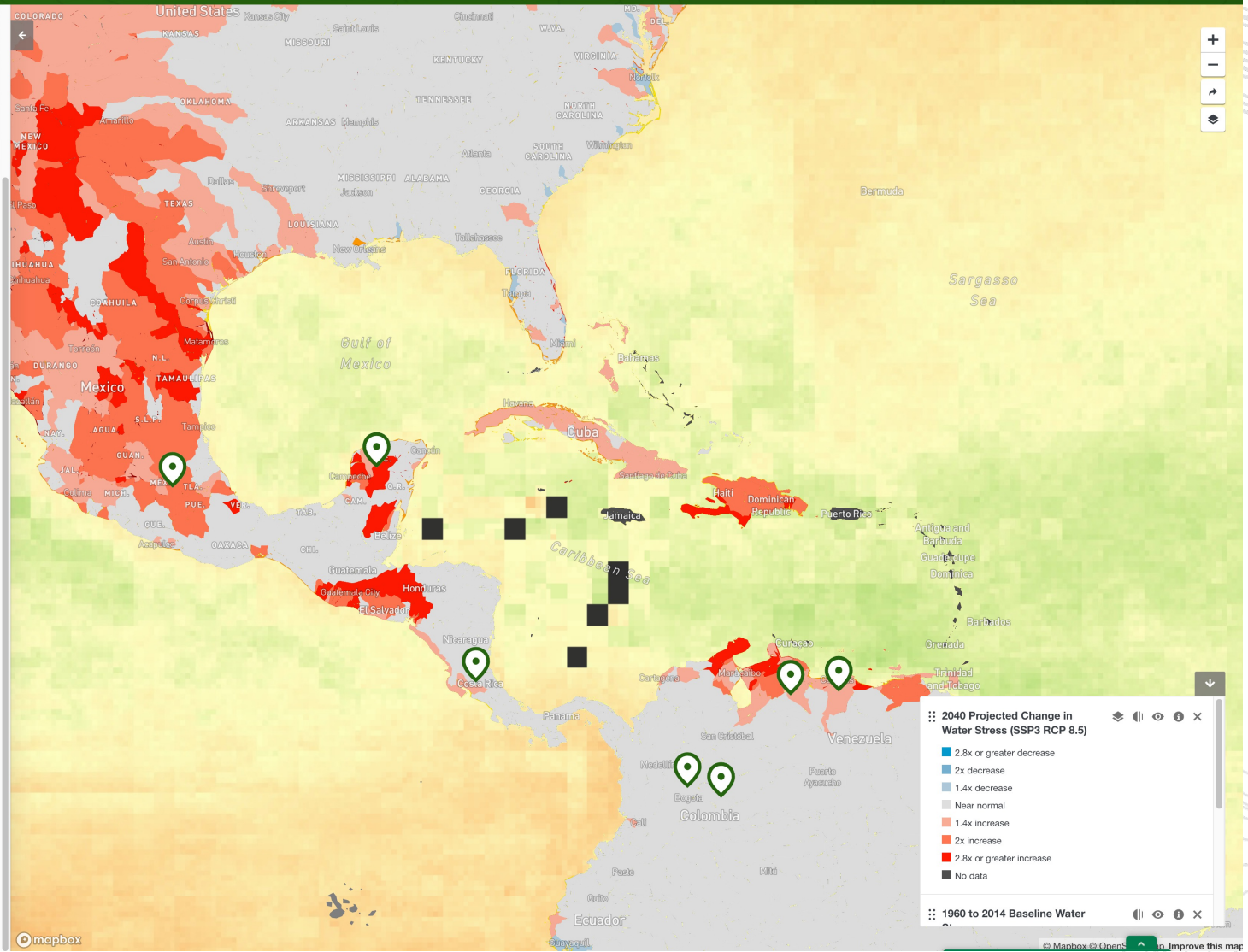


1960 to 2014 Baseline Water Stress

1.05x

Average

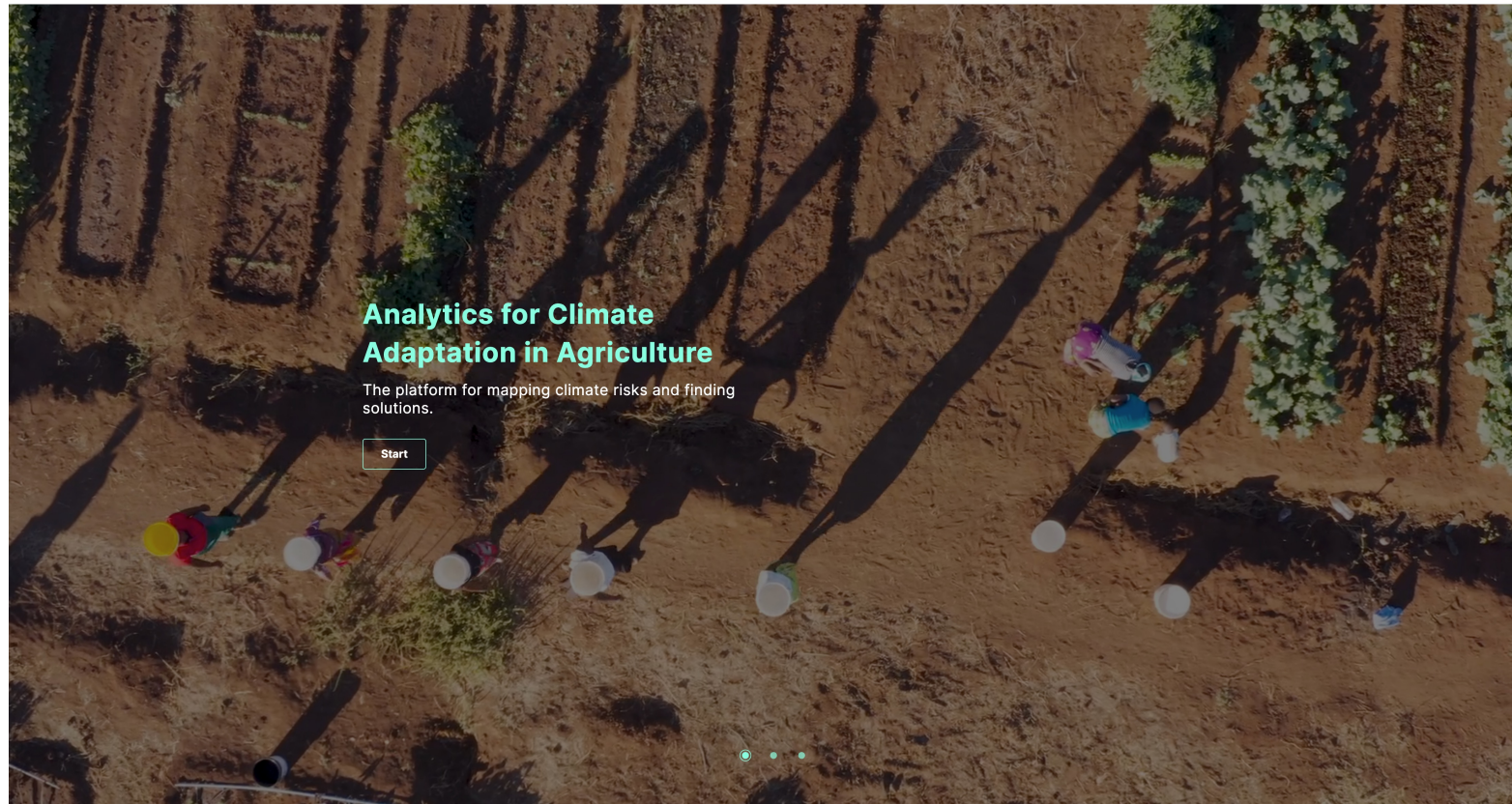
2040 RCP 8.5 Projected Change in Extreme Precipitation Days



Agriculture Adaptation Atlas

AGRICULTURE
ADAPTATION ATLAS

Risks and Solutions Explore Layers Data



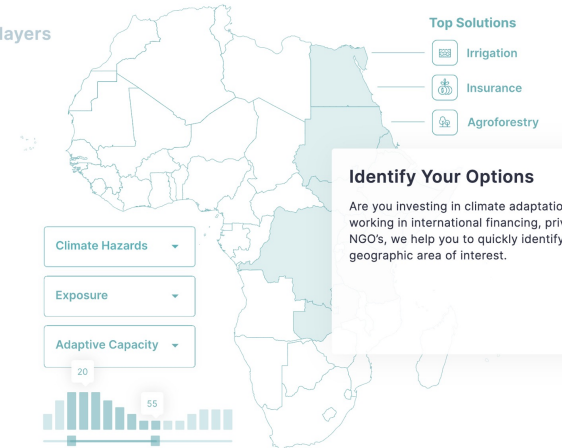
How We Help

Risks & Solutions

- Explore layers
- Data

Top Solutions

- Irrigation
- Insurance
- Agroforestry



Identify Your Options

Are you investing in climate adaptation in agriculture? Whether working in international financing, private equity, local government, or NGOs, we help you to quickly identify interventions targeted to your geographic area of interest.

adaptationatlas.cgiar.org

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Identify Risks & Solutions

Map climate stress, filter it by different agricultural contexts, and find recommended solutions

Geography

Region or Country

Region

- Central Africa
- Eastern Africa
- Southern Africa
- Sub-Saharan Africa
- Western Africa

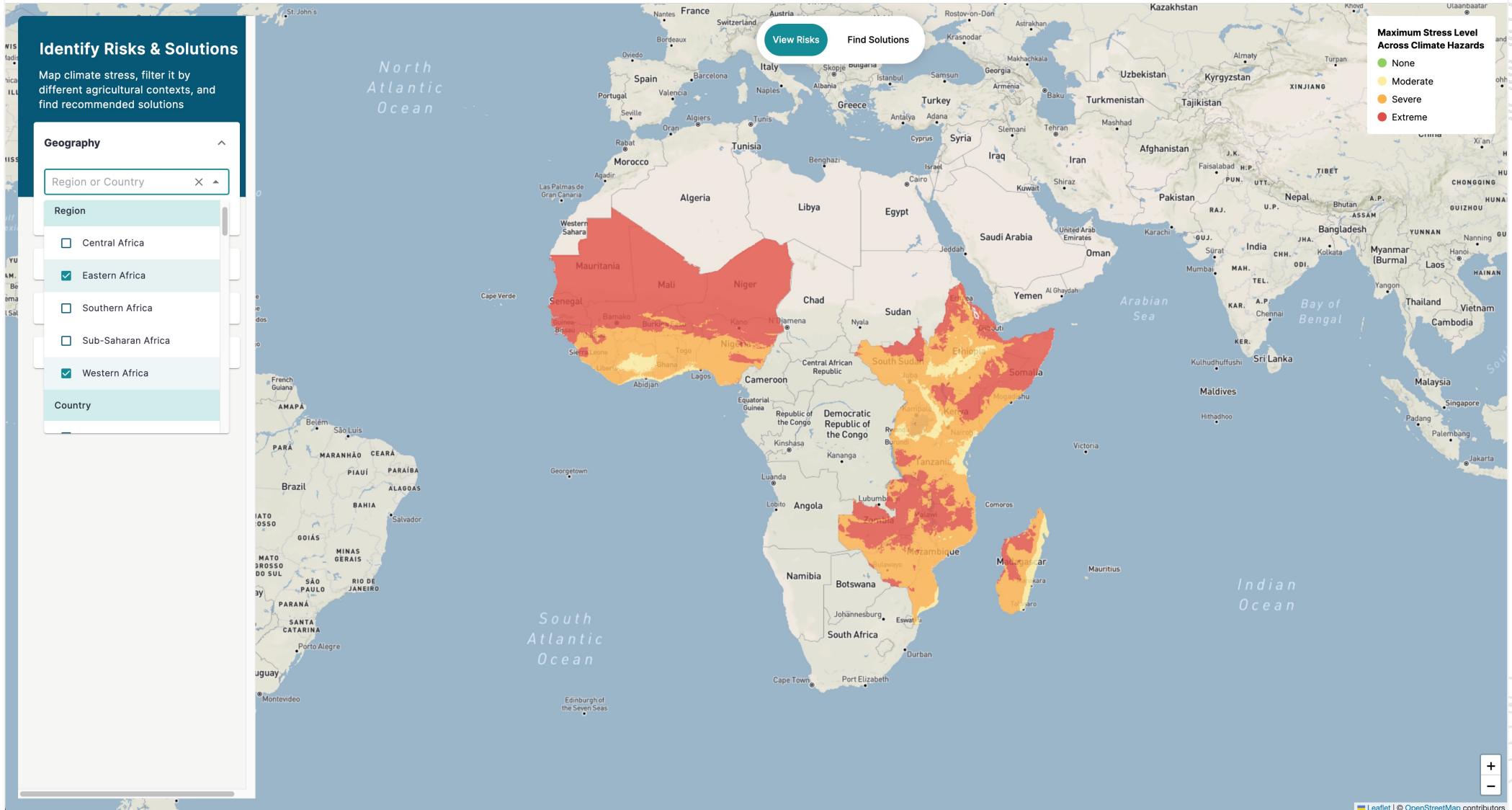
Country

View Risks

Find Solutions

Maximum Stress Level Across Climate Hazards

- None
- Moderate
- Severe
- Extreme



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Identify Risks & Solutions

Map climate stress, filter it by different agricultural contexts, and find recommended solutions

Geography

Region or Country

Western Africa X Eastern Africa X

Climate Hazards

Heat

Heat Stress Generic Crop

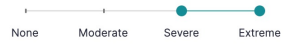
Stress Level:



Drought

Soil Water Stress

Stress Level:



Flooding

None

Over Period:

- Baseline
- 2030
- 2050

Under Scenario:

- RCP 4.5
- RCP 8.5

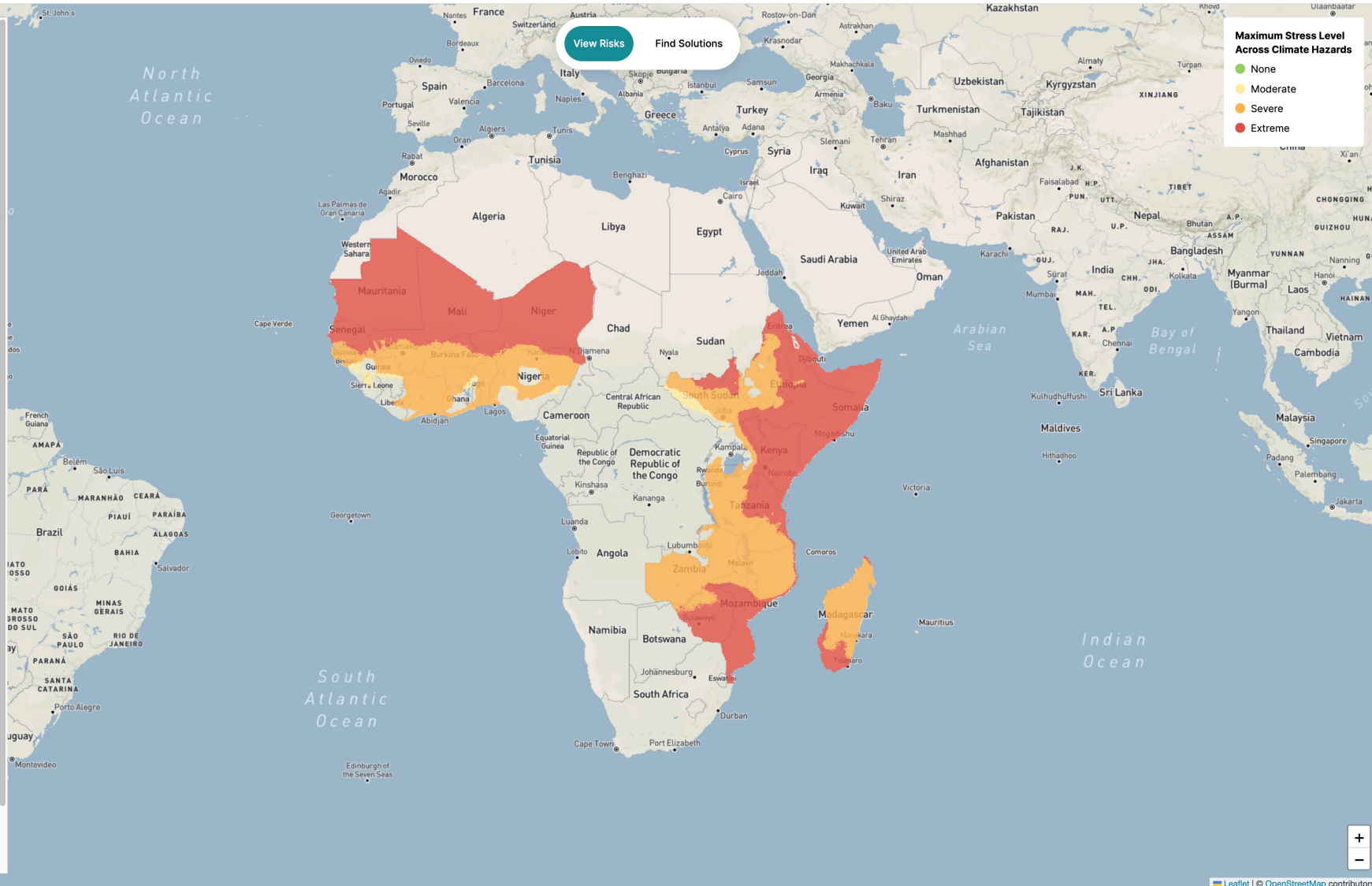
Exposure

View Risks

Find Solutions

Maximum Stress Level Across Climate Hazards

- None
- Moderate
- Severe
- Extreme



Identify Risks & Solutions

Map climate stress, filter it by different agricultural contexts, and find recommended solutions

Geography

Region or Country

Western Africa X Eastern Africa X

Climate Hazards

Exposure

Crop

Root and Tuber

Economic yield: \$/ha

450 > 962

Livestock

None

Population

None

Farm Size (maximum ha):

0 to 2ha

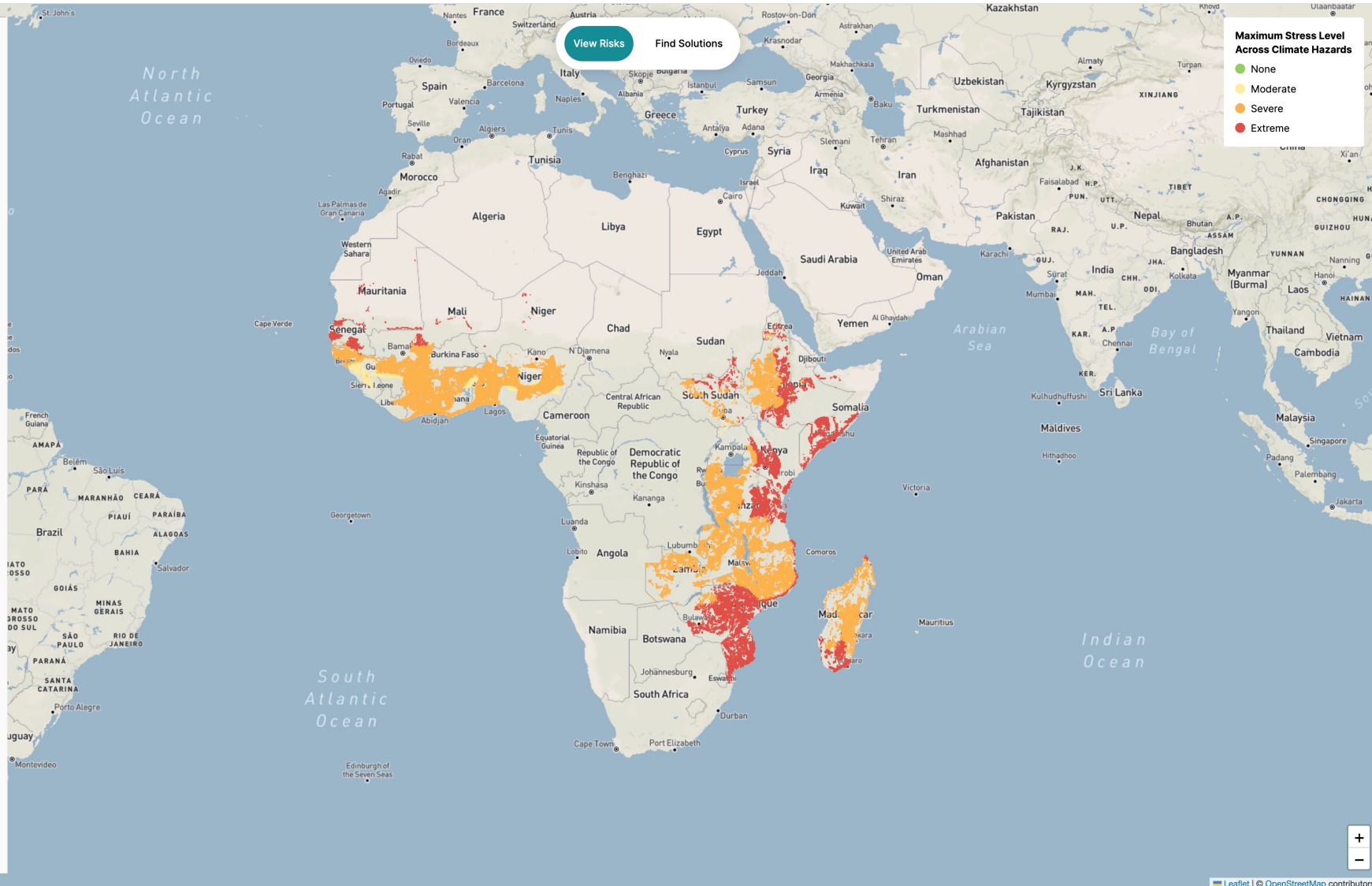
Adaptive Capacity

View Risks

Find Solutions

Maximum Stress Level Across Climate Hazards

- None
- Moderate
- Severe
- Extreme



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Identify Risks & Solutions

Map climate stress, filter it by different agricultural contexts, and find recommended solutions

Geography

Region or Country

Western Africa X Eastern Africa X

Climate Hazards

Exposure

Adaptive Capacity

Select

Market Access

Travel Time to Cities (Minutes)

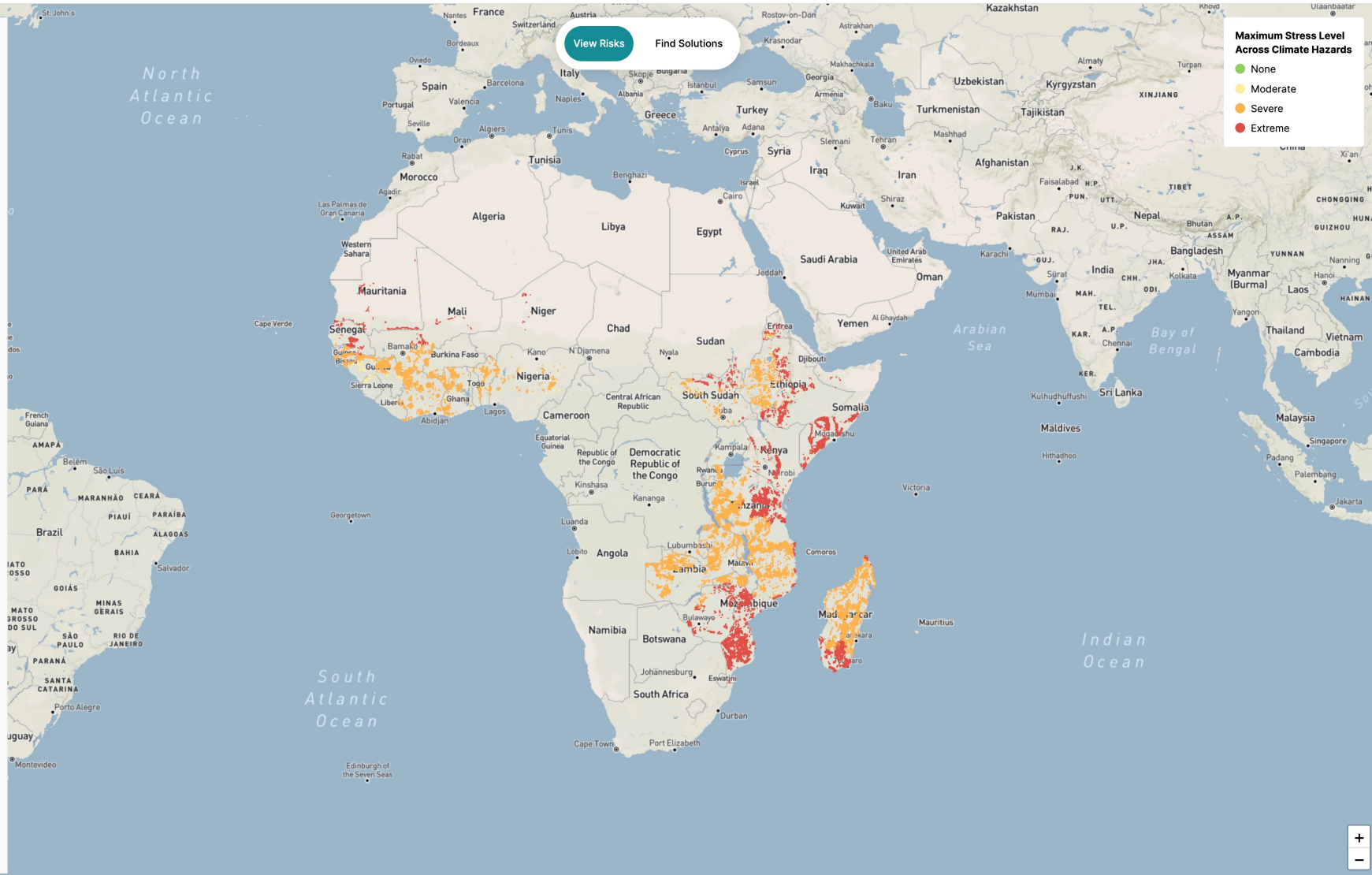
120 > 687

View Risks

Find Solutions

Maximum Stress Level Across Climate Hazards

- None
- Moderate
- Severe
- Extreme



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View Risks Find Solutions

Adaptation Solutions

Sort the solutions based on their impact for your settings.

Sort by:

Recommended: High - Low

Organic Fertilizers top rated

Farm yard manure, compost, chicken litter, guano.

Works Best Under

no heat no drought no flood

Understand the Impact

Yield: positive | Women's Time: negative

GHGs: uncertain | Profit: positive

Show More

Mulch top rated

Plant residue, straw, crop biomass.

Works Best Under

severe heat severe drought no flood

Understand the Impact

Yield: positive | Women's Time: positive

GHGs: positive | Profit: no data

Show More

Agroforestry top rated

Alley cropping, home gardens, parklands, hedgerows, multistrata, silvopasture.

Works Best Under

extreme heat severe drought severe flood

Understand the Impact

Yield: positive | Women's Time: negative

GHGs: positive | Profit: uncertain

Show More

Digital Advisories

Digital agriculture, precision agriculture.

Works Best Under

extreme heat extreme drought extreme flood

Understand the Impact

Yield: positive | Women's Time: positive

GHGs: no data | Profit: no data

Show More

Climate Information

Early warning systems, weather services, climate information services.

Works Best Under

extreme heat extreme drought extreme flood

Understand the Impact

Yield: uncertain | Women's Time: no data

GHGs: no data | Profit: no data

Inorganic Fertilizers

Chemical fertilizers, NPK, urea, micronutrients.

Works Best Under

no heat no drought no flood

Understand the Impact

Yield: positive | Women's Time: uncertain

GHGs: negative | Profit: positive

Water Harvesting

Planting basins, zai pits, tied ridges, contour ridges.

Works Best Under

moderate heat extreme drought severe flood

Understand the Impact

Yield: uncertain | Women's Time: negative

GHGs: no data | Profit: positive

Intercropping

Mixed, row, strip, relay, alley, trap, and push-pull cropping.

Works Best Under

severe heat severe drought severe flood

Understand the Impact

Yield: positive | Women's Time: uncertain

GHGs: negative | Profit: uncertain

Agroforestry

Close X

Alley cropping, home gardens, parklands, hedgerows, multistrata, silvopasture.

Works Best Under



Understand the Impact



Enablers

Access to Information Tenure Social Capital

Goes Well With

Mulch Organic Fertilizers Inorganic Fertilizers



Looking Forward

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Data



Authoritative, accurate,
meaningful data



Partner with end user

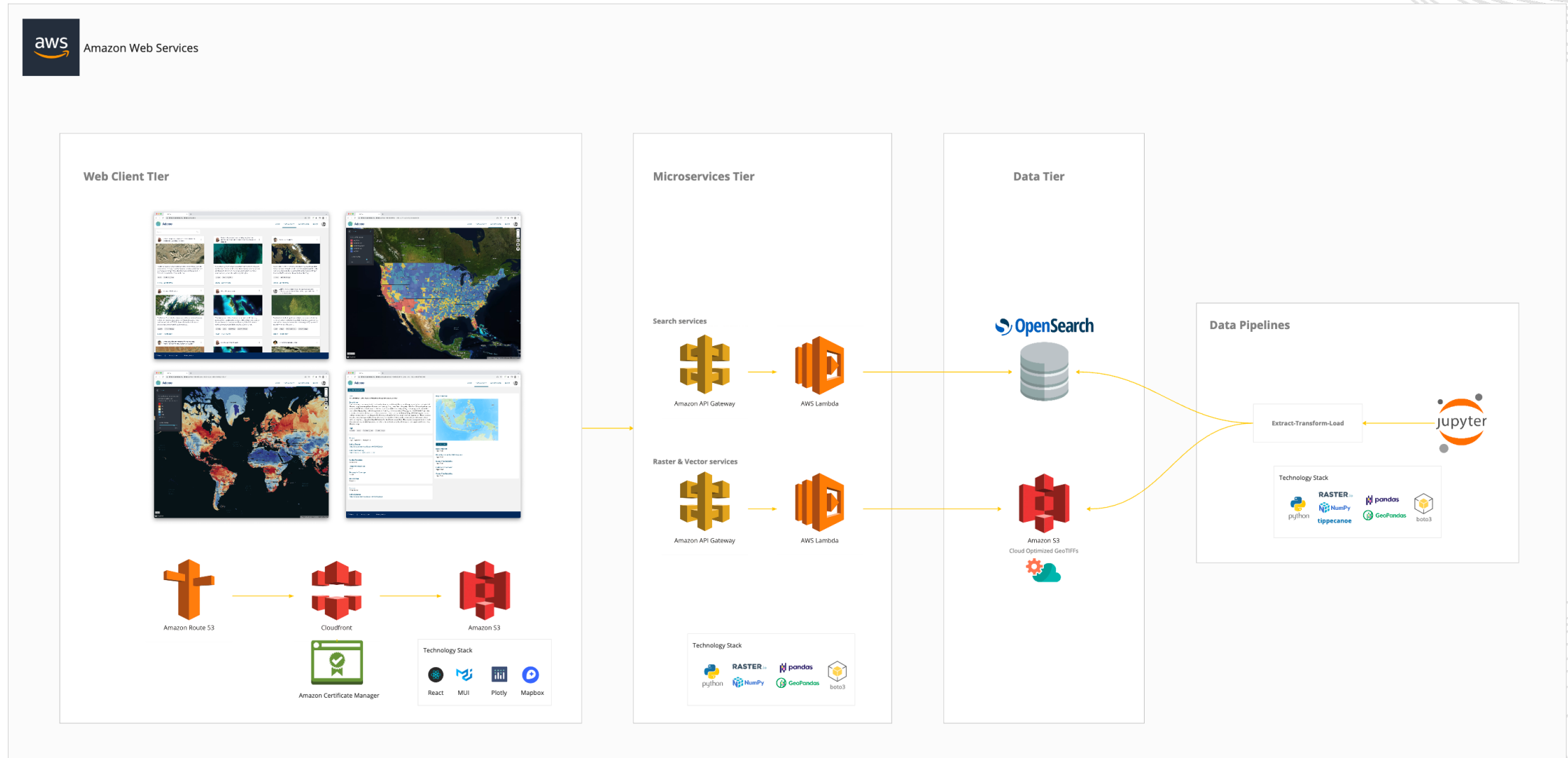


Narrative

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Architecture



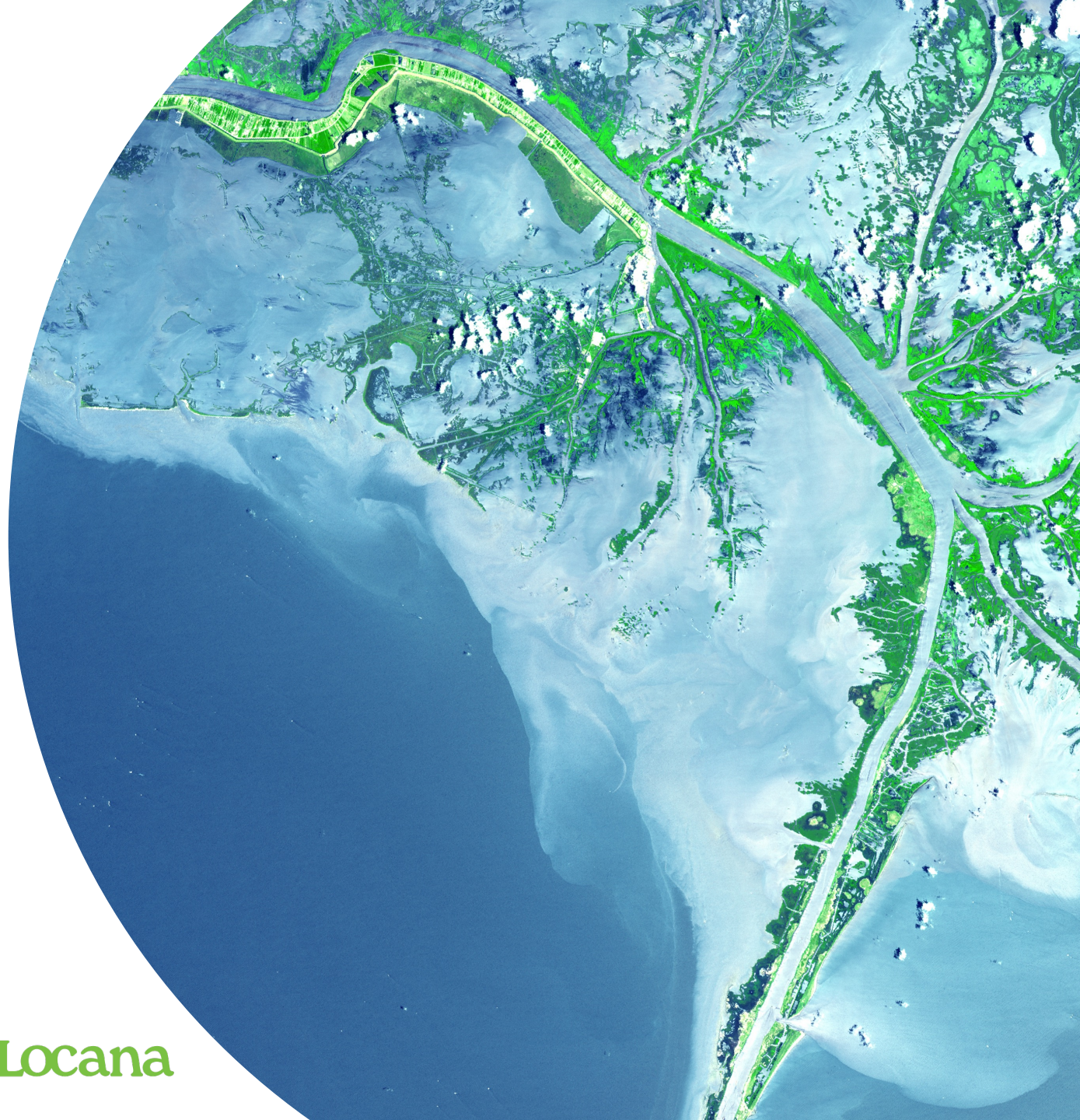
Looking Forward



How will climate affect where I am and what I care about?



Lower barrier of entry so people/orgs/businesses can make climate smart decisions?





Contact Us

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EVERYTHING LOCATION