

UNICEF Children Climate Hazard and Exposure Database

Overview

Climate displacement workshop

Nov 2025, Hrayr Wannis, UNICEF ESARO Data and Research Manager

Use Cases for Global Children Hazard Database

Children Climate Risk Index (CCRI)

- To update global CCRI with [cross-country ranking \(maybe 2026\)](#)

Government support and UNICEF Country Programme Planning

- To provide tailored technical support to [national governments](#) for policy development, particularly NDCs
- To support [data-driven targeting](#), sector-specific and hot-spot analysis to support child-sensitive approach to adaptation
- Potentially can also be included in CLAC, Sit-An and other country specific needs

Intergovernmental Collaboration

- To influence key UNFCCC workstreams, embedding data on children into global frameworks and commitments

UNICEF Strategic Plan

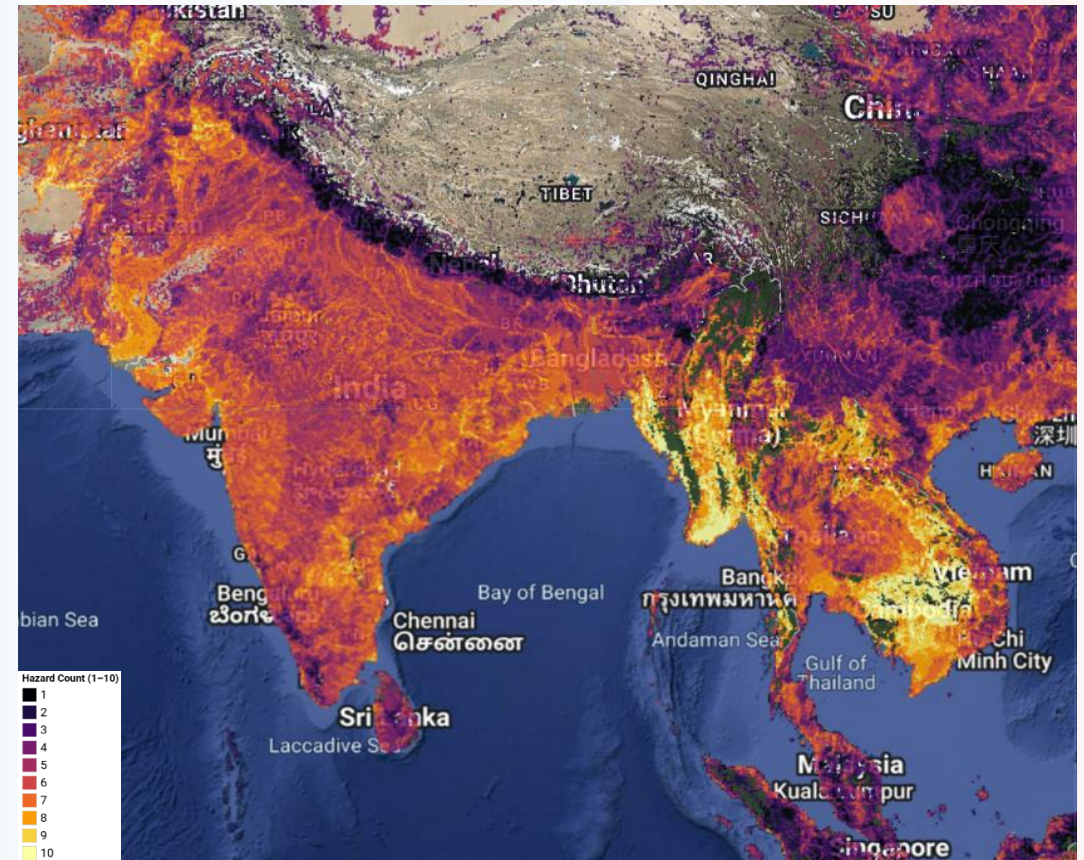
- To provide [baseline estimates](#) for number of children exposed to multiple hazards
- To guide [resource allocation](#) for climate, environment and DRR

Emergency Preparedness

- To provide [preparedness planning](#) estimates for individual and multiple hazards at sub-national level

Climate Financing

- To support applications for [climate financing](#) such as GCF



included only for illustrative purposes

Introducing the Global Children Hazard Database

Standardization and harmonization for consistent use of hazard data across UNICEF;

Global Coverage and Standardization

The database will cover all countries and regions and include children's exposure to individual and multiple hazards that can be aggregated at sub-national, national, regional and global levels and derived from open-source providers

Comprehensive high-resolution Data

The database will include a range of standard hazards – predominantly climate and environmental indicators but also geophysical hazards and conflicts at the highest resolution available

Improved Access

The database will provide improved and easy accessibility for country and regional offices, host governments and all stakeholders to support informed decision-making in diverse formats.

Hazard	Available To be added	No open, global data available at present
Climate	<ul style="list-style-type: none">• Riverine Flood• Coastal Flood• Tropical Storm• Agricultural Drought• Meteorological Drought• Heatwaves• Fires• Dust and Sand Storm	<ul style="list-style-type: none">• Pluvial Flood• Rainfall induced Landslides
Climate-sensitive	<ul style="list-style-type: none">• Vector borne diseases: Malaria• Air Pollution	<ul style="list-style-type: none">• Vector borne: Zika, Dengue, Vibrio, West Nile...• Water borne: Cholera, ...
Environment	<ul style="list-style-type: none">• Water Stress	<ul style="list-style-type: none">• Water Pollution• Land Pollution
Geophysical	<ul style="list-style-type: none">• Earthquakes• Volcanoes	<ul style="list-style-type: none">• Earthquake induced landslides
Other	<ul style="list-style-type: none">• Conflict	

Global Children Hazard Exposure

Children exposure to each hazard is estimated by overlaying the hazard layers with a new high resolution global U18 children population data from Worldpop (100m x 100m)

Riverine flood hazard exposure:

Absolute number of children estimated to be exposed to riverine floods globally

Data Source EU Joint Research Center

Release Year 2024

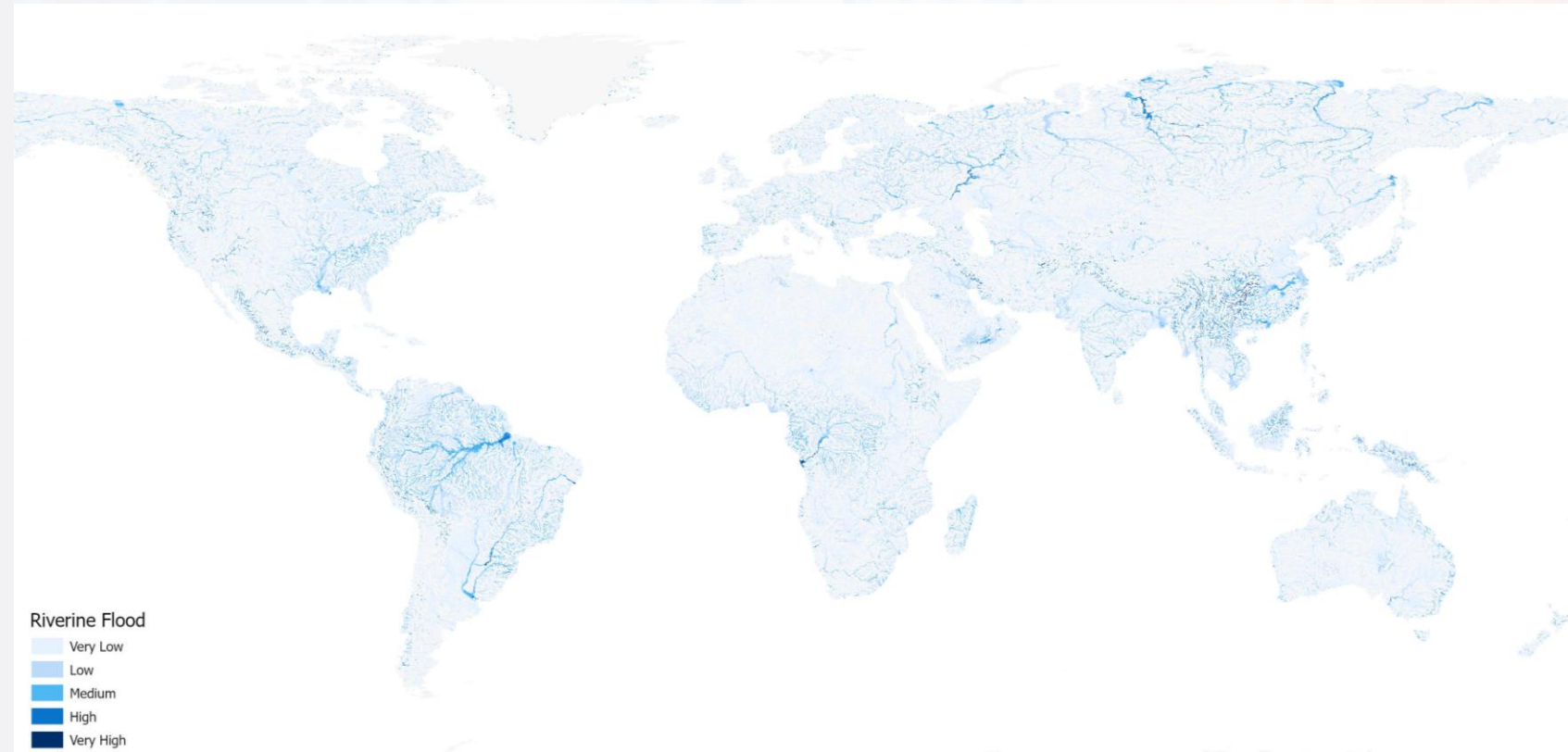
Resolution 90m

Threshold > 1 cm depth

Return Period 100 year (1% chance of the event happening in any given year and highly likely within a child's lifetime)

Update Frequency Probabilistic models do not require frequent update, but higher resolution expected in 2027

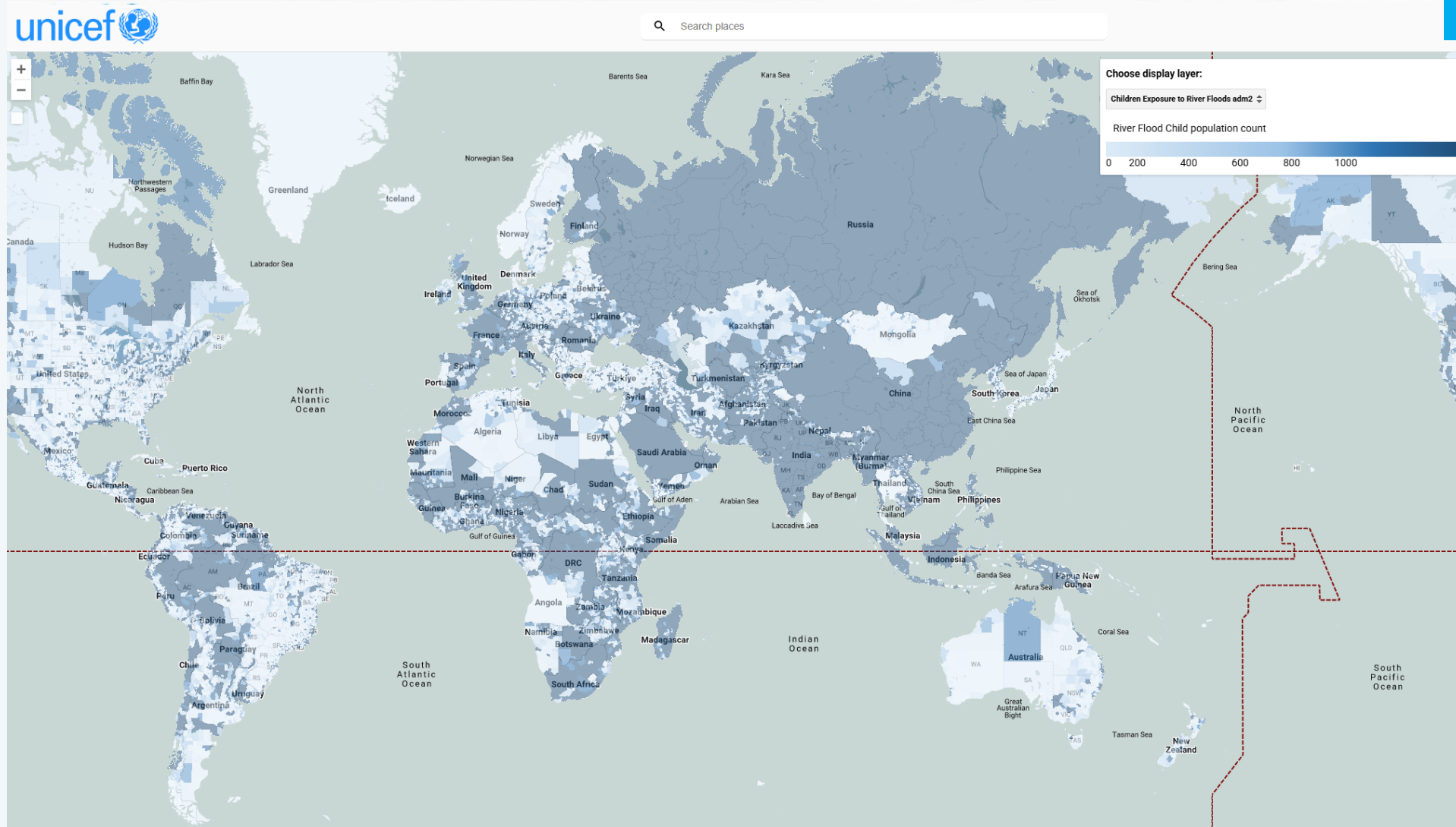
Limitations Global models could under-represent flooding along small river streams



Results are not final, included only for illustrative purposes and under embargo for external sharing

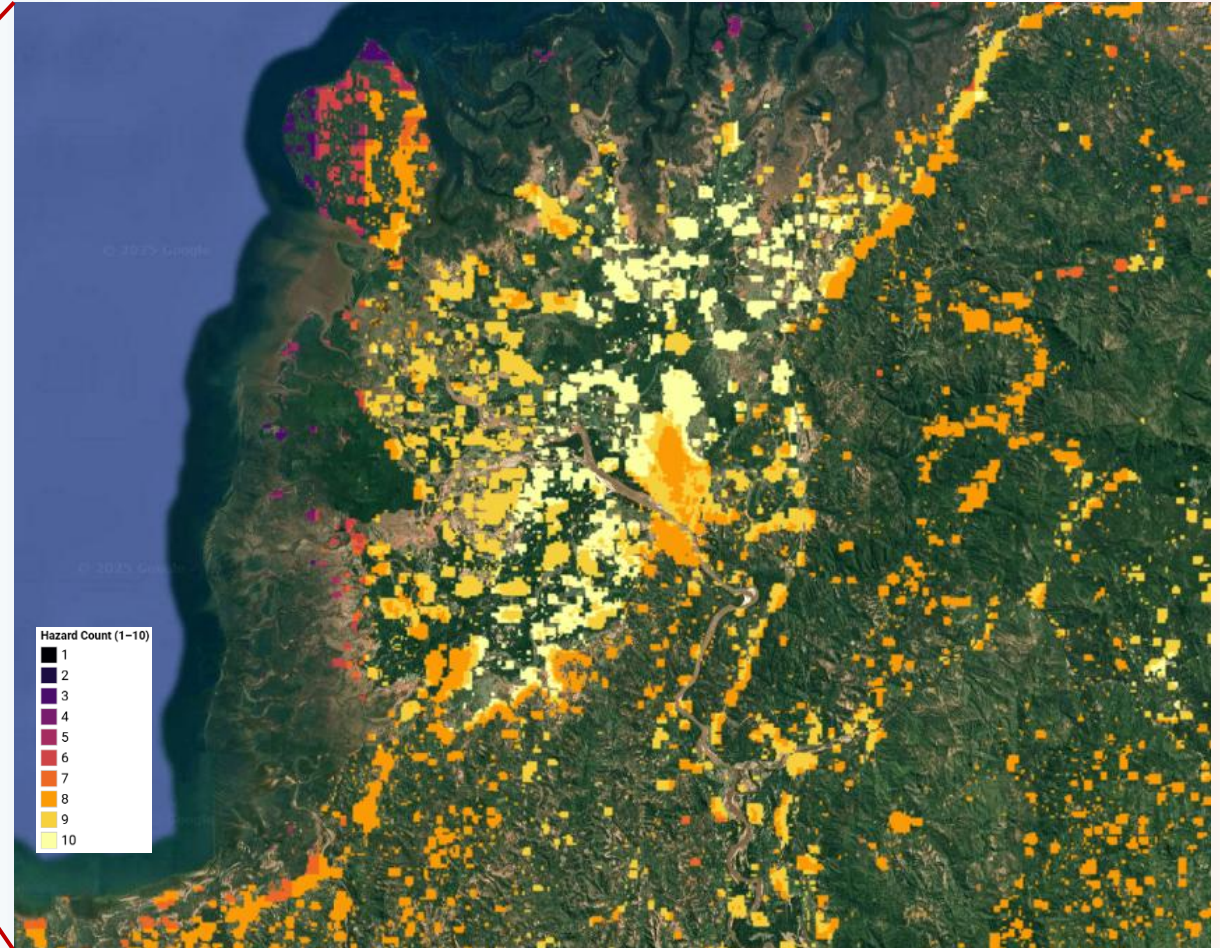
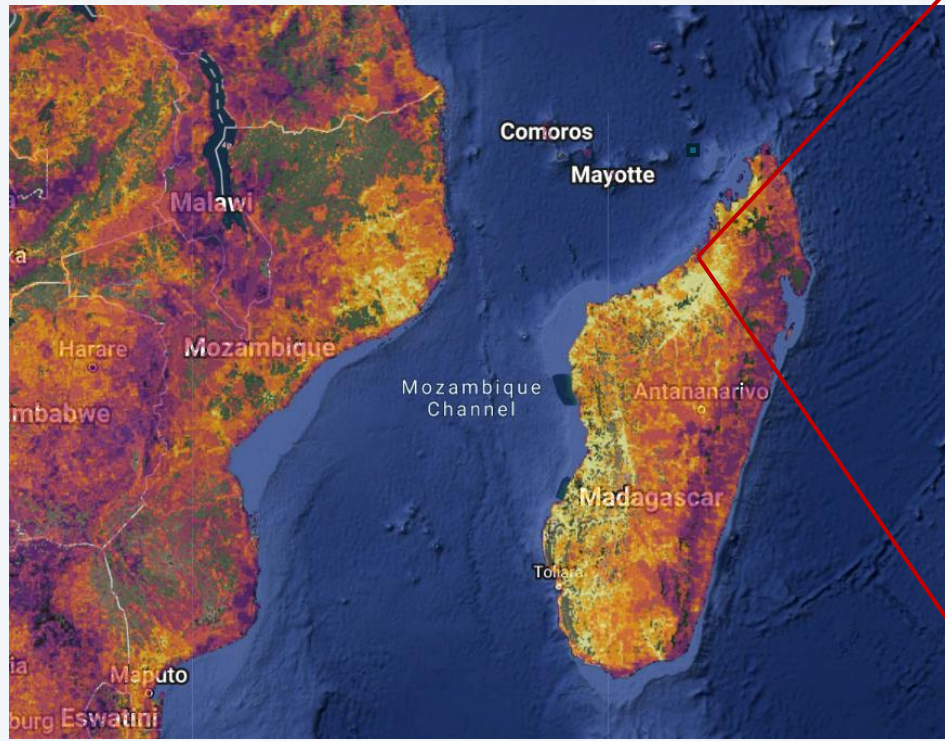
Global Children Hazard Exposure

Estimates can be aggregated at different levels: sub-national, national, regional and global levels



High Resolution Multi-Hazard Count

Children are exposed to multiple, overlapping hazards – which could further exacerbate their existing vulnerabilities. The new database provides [hazard count](#) at [grid](#) level and can be aggregated at [sub-national](#), [national](#), [regional](#) and [global](#) levels.



Results are not final, included only for illustrative purposes and under embargo for external sharing

Leveraging Technology to improve Climate Data Literacy, Access and Adoption

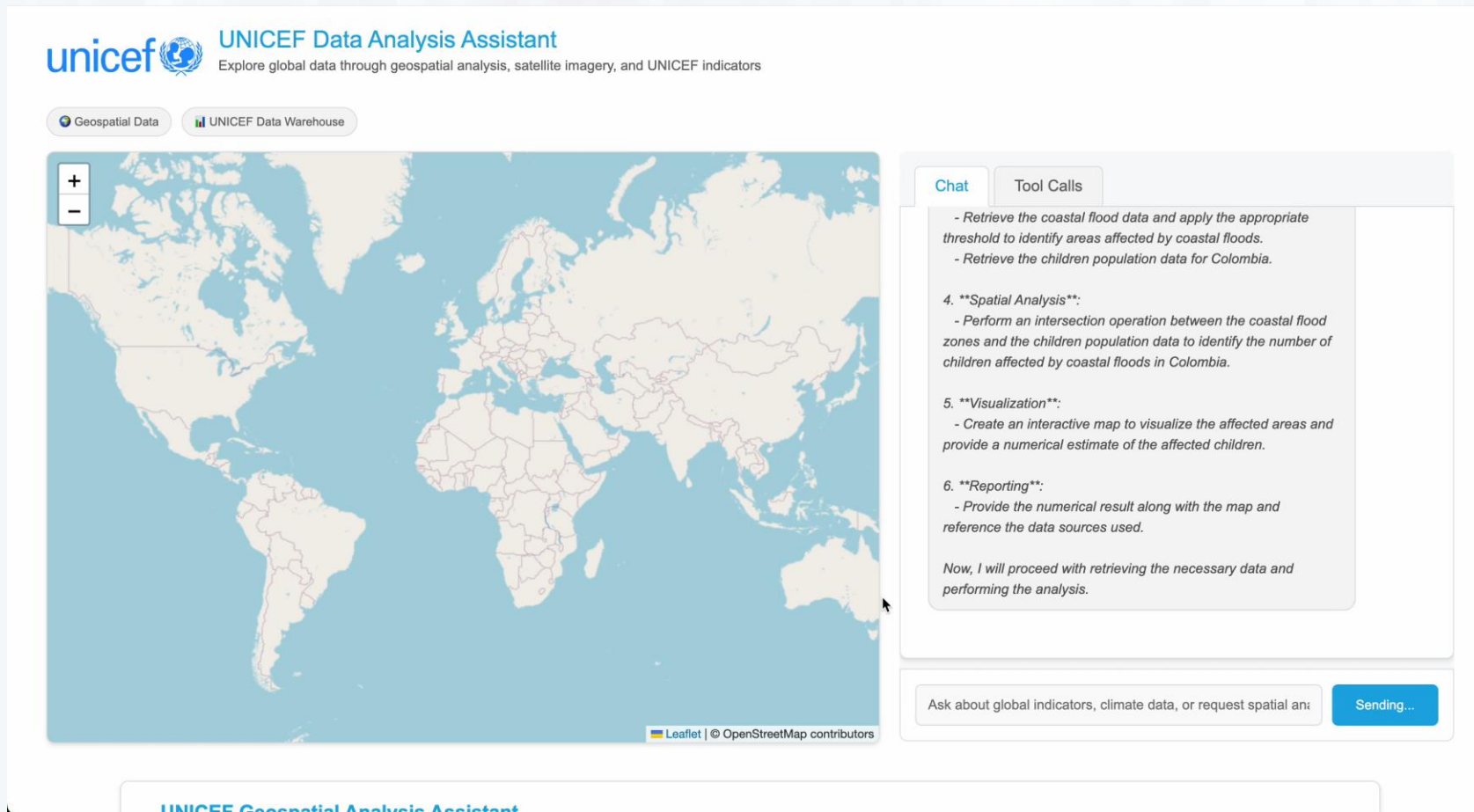
- Geo-Generative AI solutions have shown immense potential in querying complex climate data using simple natural language
 - The team has successfully tested an openAI model to query large geospatial dataset
 - Experimental solution is currently being expanded for complex questions combining multiple datasets
- Take advantage of cloud-based data storage and big-data processing
- Establish automated data pipelines to connected external data with internal users
 - Geospatial analysis linked to internal geospatial platform, Geosights




Introducing Geosphere – Interactive AI tool

A [Geo-AI tool](#) is currently being tested to enable easy access to query the underlying database using natural language, especially [for non-technical users](#)

Prompt: How many children are exposed to coastal flooding in Colombia?



The screenshot displays the UNICEF Data Analysis Assistant interface. At the top, the UNICEF logo and the title "UNICEF Data Analysis Assistant" are visible, along with the tagline "Explore global data through geospatial analysis, satellite imagery, and UNICEF indicators". Below this, there are two tabs: "Geospatial Data" and "UNICEF Data Warehouse". The main area on the left features a world map with a zoom control (plus and minus buttons). The right side contains a chat window with two tabs: "Chat" and "Tool Calls". The "Tool Calls" tab is active, showing a detailed breakdown of the AI's processing of the prompt "How many children are exposed to coastal flooding in Colombia?". The breakdown includes steps for retrieving coastal flood data, children population data, performing a spatial analysis (intersection operation), creating an interactive map, and providing a numerical result. At the bottom of the chat window, there is a text input field with the placeholder "Ask about global indicators, climate data, or request spatial analysis" and a blue "Sending..." button.

unicef  **UNICEF Data Analysis Assistant**
Explore global data through geospatial analysis, satellite imagery, and UNICEF indicators

Geospatial Data UNICEF Data Warehouse

Chat Tool Calls

- Retrieve the coastal flood data and apply the appropriate threshold to identify areas affected by coastal floods.
- Retrieve the children population data for Colombia.

4. **Spatial Analysis**:

- Perform an intersection operation between the coastal flood zones and the children population data to identify the number of children affected by coastal floods in Colombia.

5. **Visualization**:

- Create an interactive map to visualize the affected areas and provide a numerical estimate of the affected children.

6. **Reporting**:

- Provide the numerical result along with the map and reference the data sources used.

Now, I will proceed with retrieving the necessary data and performing the analysis.

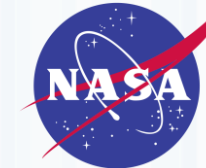
Ask about global indicators, climate data, or request spatial analysis Sending...

UNICEF Geospatial Analysis Assistant

Results are not final, included only for illustrative purposes and under embargo for external sharing

External Hazard Data Advisory Group

Voluntary external group has been established with experts from various fields, including climate science, data analysis, Earth observation and geospatial technology.



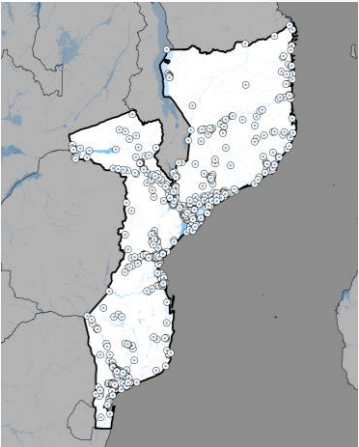
Mozambique

Flood Hazard Exposure

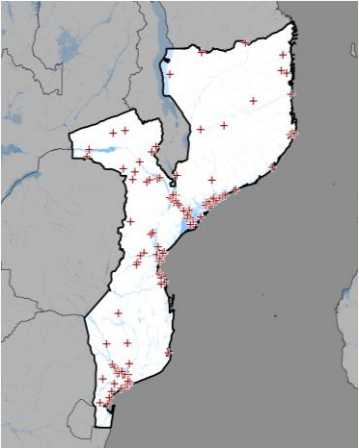
~883,000 children estimated to be exposed to riverine floods

<sub-national analysis to be included>

Data Source	EU Joint Research Center
Release Year	2024
Resolution	90m
Threshold	> 1 cm depth
Return Period	100 year (1% chance of the event happening in any given year and highly likely within a child’s lifetime)
Update Frequency	Probabilistic models do not require frequent update, but higher resolution expected in 2027
Limitations	Global models could under-represent flooding along small river streams.



Total Schools Exposed: ~920
Out of a total ~13,000



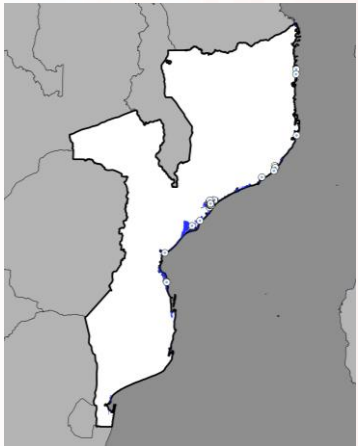
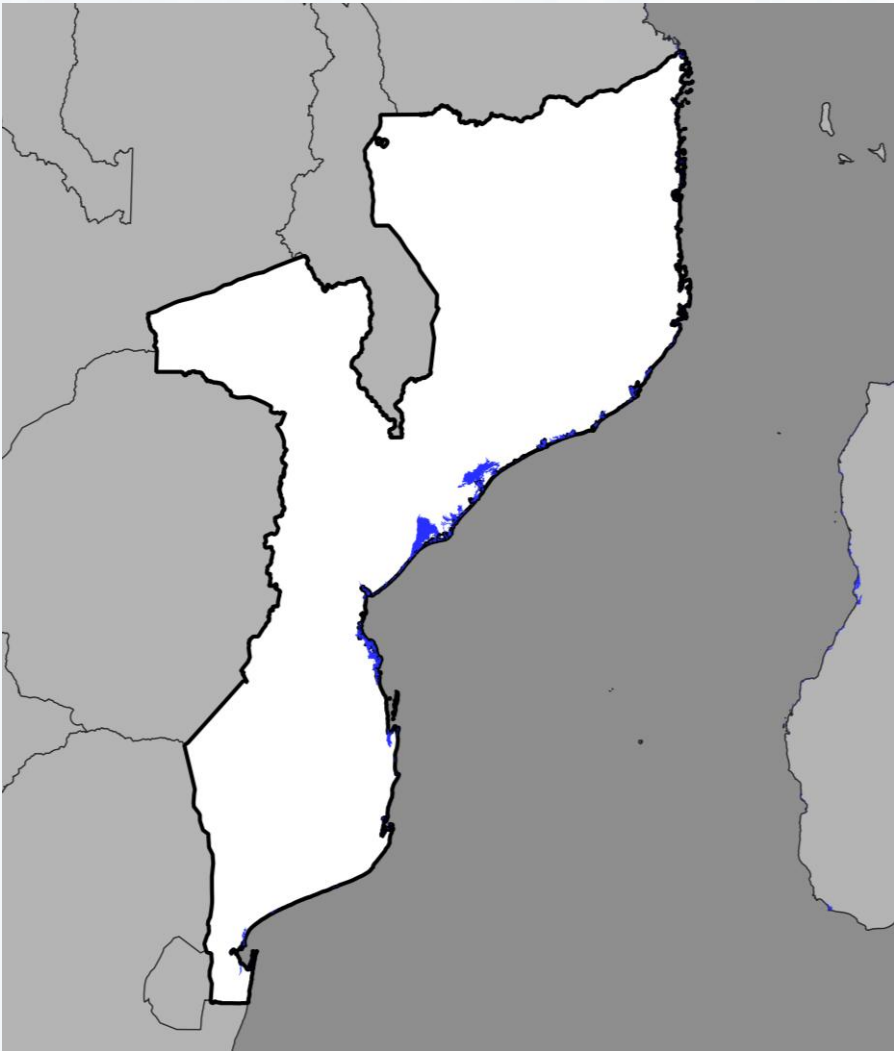
Total Hospitals Exposed: ~130
Out of a total ~1600

Coastal Flood Hazard Exposure

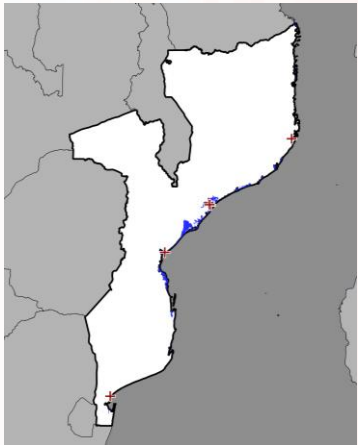
~73,000 children estimated to be exposed to coastal floods.

<sub-national analysis to be included>

Data Source	EU Joint Research Center
Release Year	2024
Resolution	90m
Threshold	> 1 cm depth
Return Period	100 year (1% chance of the event happening in any given year and highly likely within a child’s lifetime)
Update Frequency	Probabilistic models do not require frequent update, but higher resolution expected in 2027
Limitations	Coastal floods are binary and does not have depth information



Total Schools Exposed: 37
Out of a total ~13,000



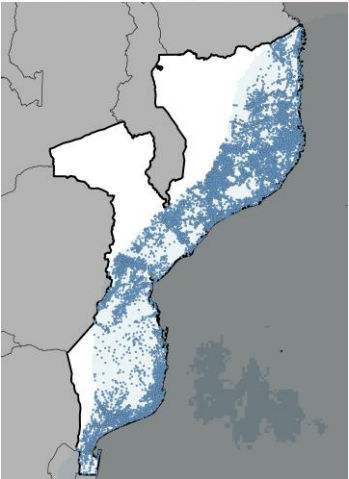
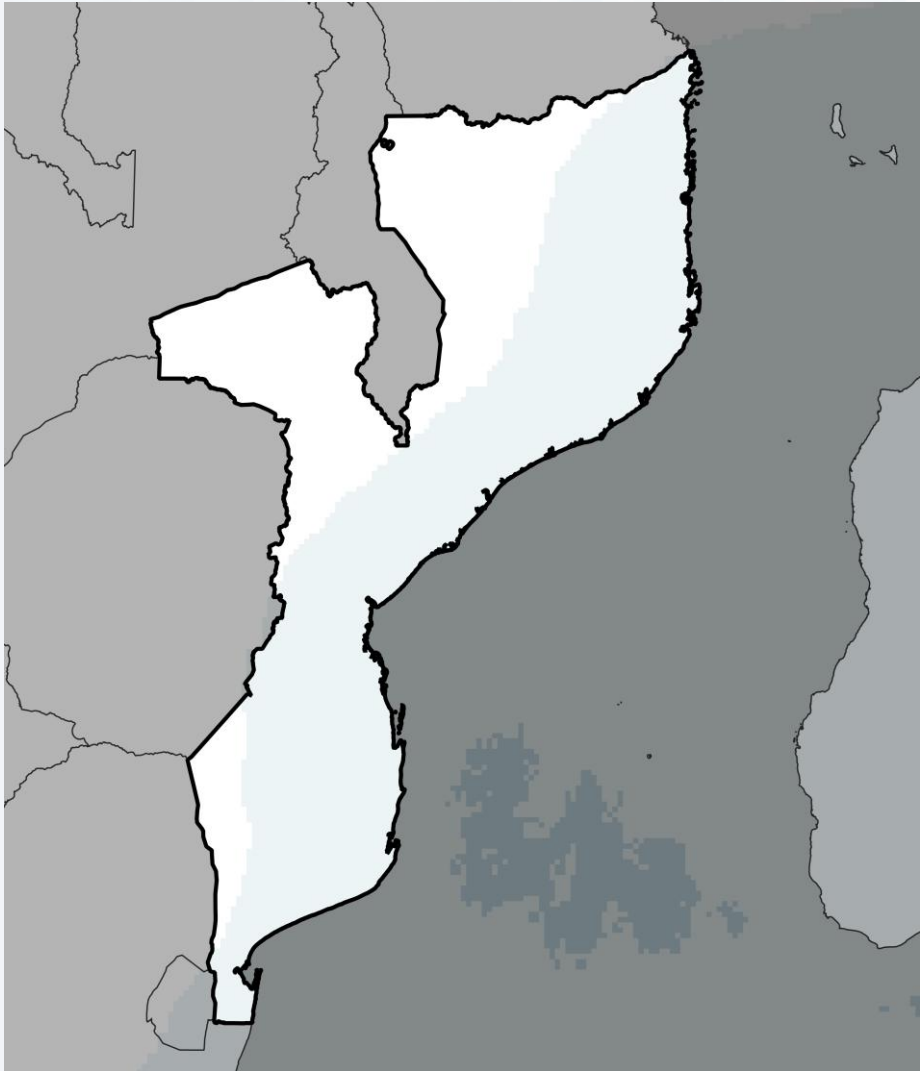
Total Hospitals Exposed: 6
Out of a total ~1600

Tropical Storm Exposure Analysis

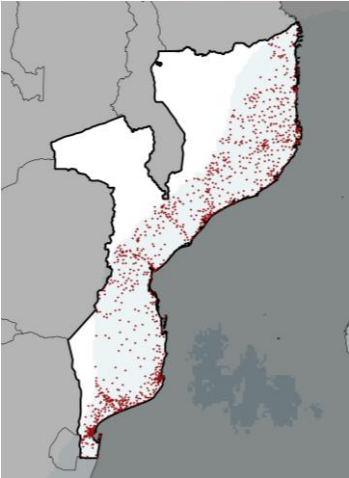
~12.4 million children estimated to be living in areas where Tropical Storm cases have been reported – throughout the country.

<sub-national analysis to be included>

Data Source	UNEP GIRI
Release Year	2024
Resolution	10km
Threshold	> 63 km/hr
Return Period	100 year
Update Frequency	Probabilistic models do not require frequent update, and no new release expected in the next two years.
Limitations	Historical data used differs from one region to another and could impact the final model results.



Total Schools Exposed: ~8,500
Out of a total ~13,000



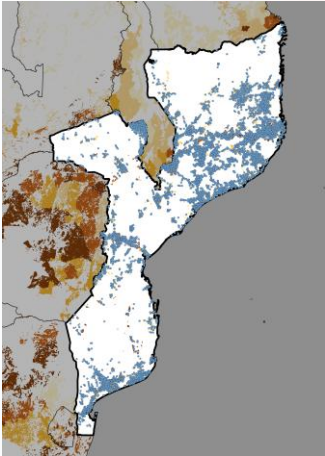
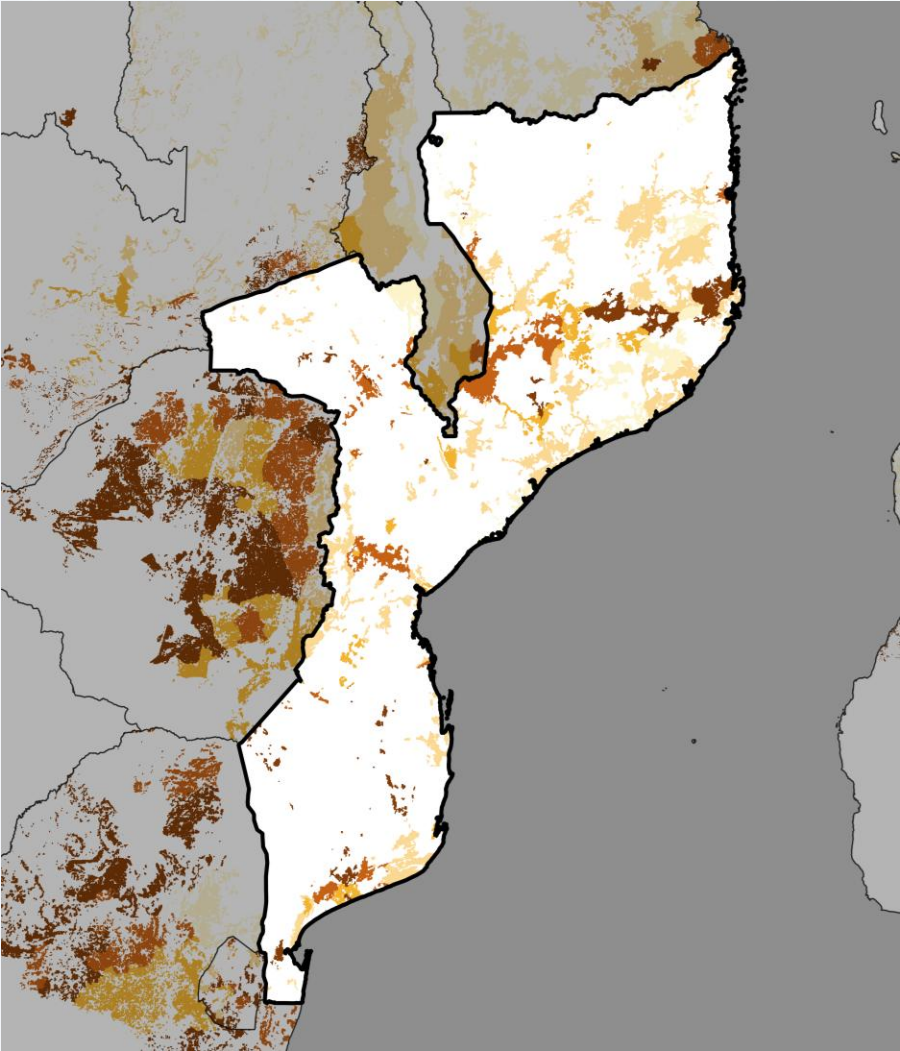
Total Hospitals Exposed: ~1,200
Out of a total ~1600

Drought Exposure Analysis

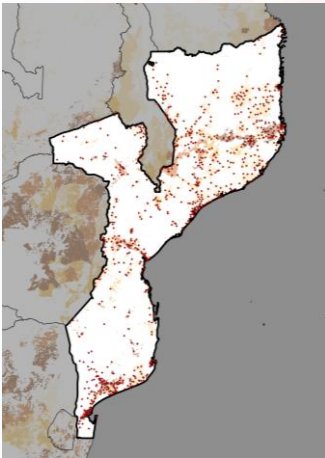
~10.4 million children exposed to agricultural droughts.

<sub-national analysis to be included>

Data Source	UN FAO
Release Year	2024
Resolution	90m
Threshold	30% cropland affected
Return period	100 year (internally generated from long term observation data)
Update Frequency	10 days
Limitations	Children living closer to cropland are captured and model does not include children living in other areas who depend on the food production leading to under-estimation of actual exposure



Total Schools Exposed: ~7,100
Out of a total ~13,000



Total Hospitals Exposed: ~970
Out of a total ~1600

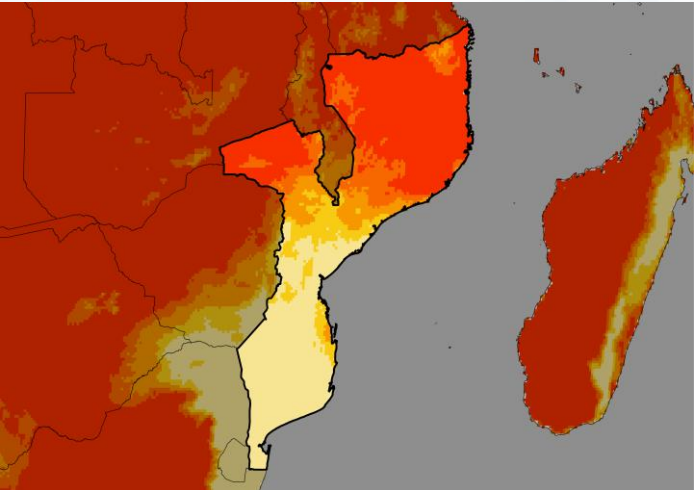
Heatwave Exposure Analysis

~12.4 million children estimated to be exposed to different dimensions of heatwaves (frequency, duration and severity)

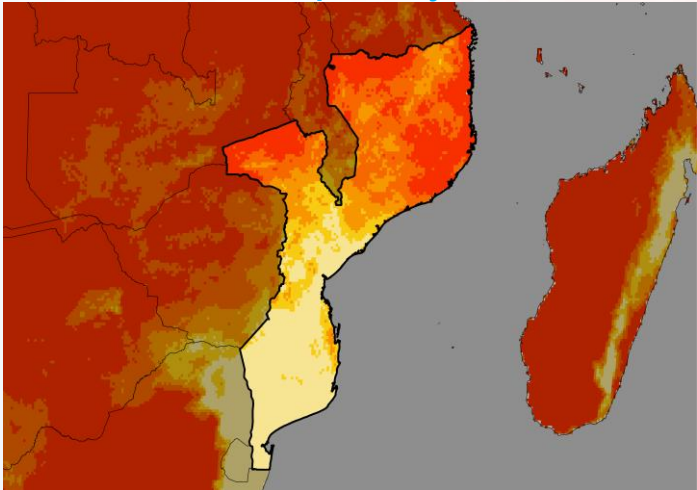
~6.1 million children estimated to be exposed to extreme heat.

Data Source	EU Copernicus and ECMWF
Release Year	2024
Resolution	10km
Return Period	100 year
Update Frequency	Hourly
Limitations	Lower resolution could lead to over- or under-estimation of exposure; Heat stress is not considered directly within this exposure analysis

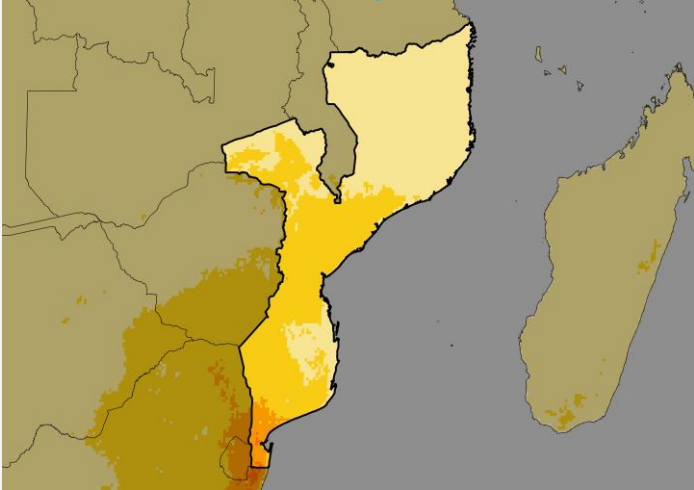
Heatwave Duration



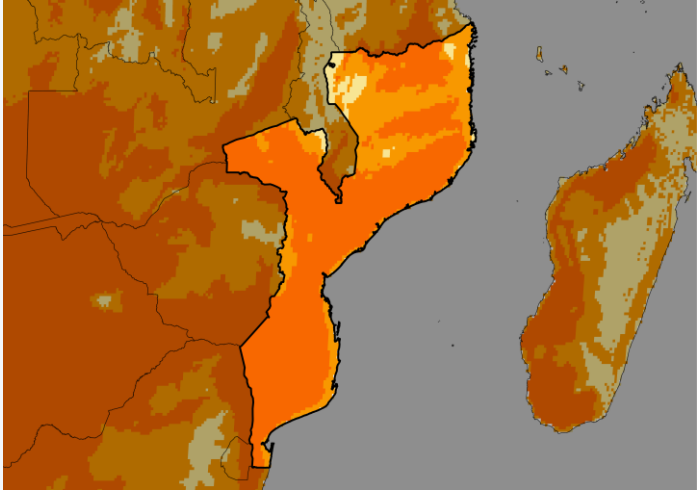
Heatwave Frequency



Heatwave Severity



Extreme Heat



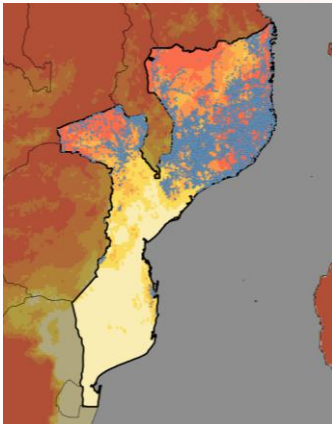
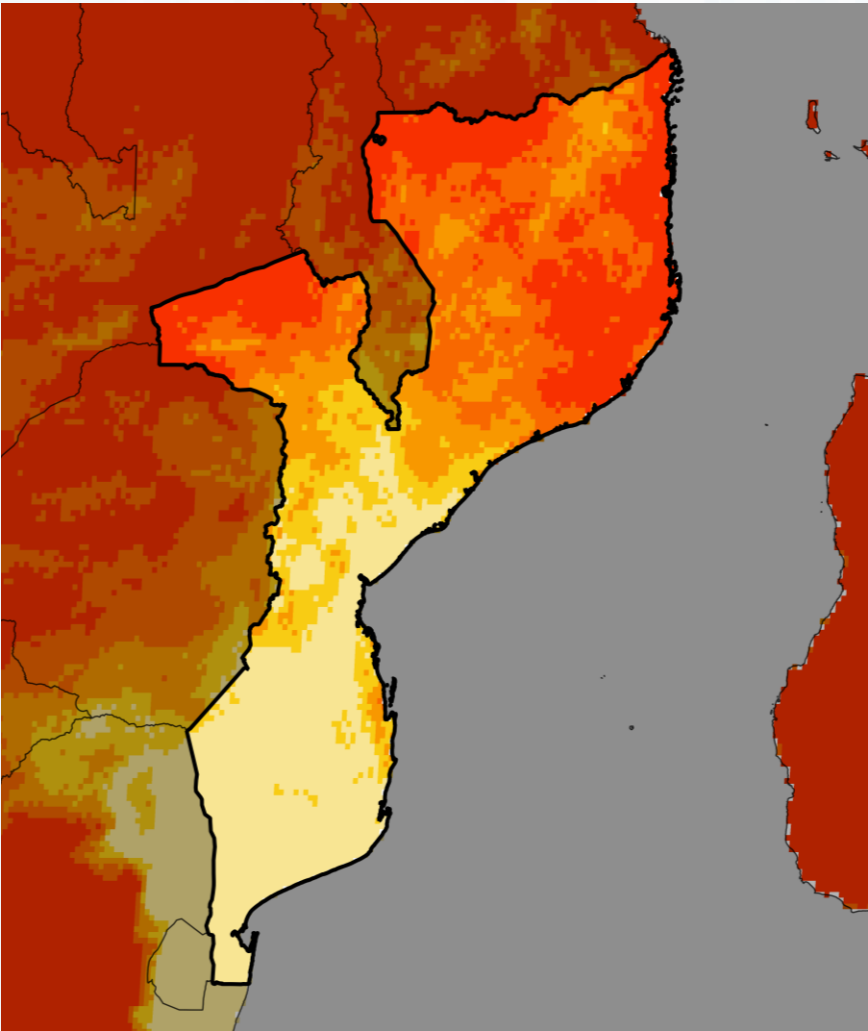
Results are not final and pending CO level data validation; Under embargo for external public use until CCRR release;

Heatwave Exposure Analysis

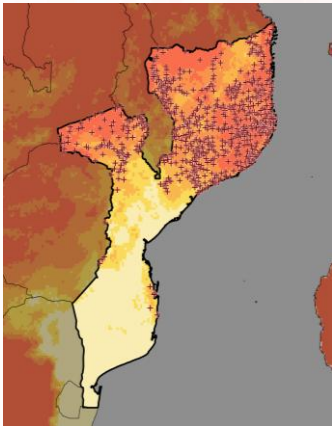
The threshold of exposure of heatwave frequency is over 15 heatwaves per year

Data Source	EU Copernicus and ECMWF
Release Year	2024
Resolution	10km
Return Period	100 year
Update Frequency	Hourly
Limitations	Lower resolution could lead to over- or under-estimation of exposure; Heat stress is not considered directly within this exposure analysis

Heatwave Frequency



Total Schools Exposed: ~7,800
Out of a total ~13,000



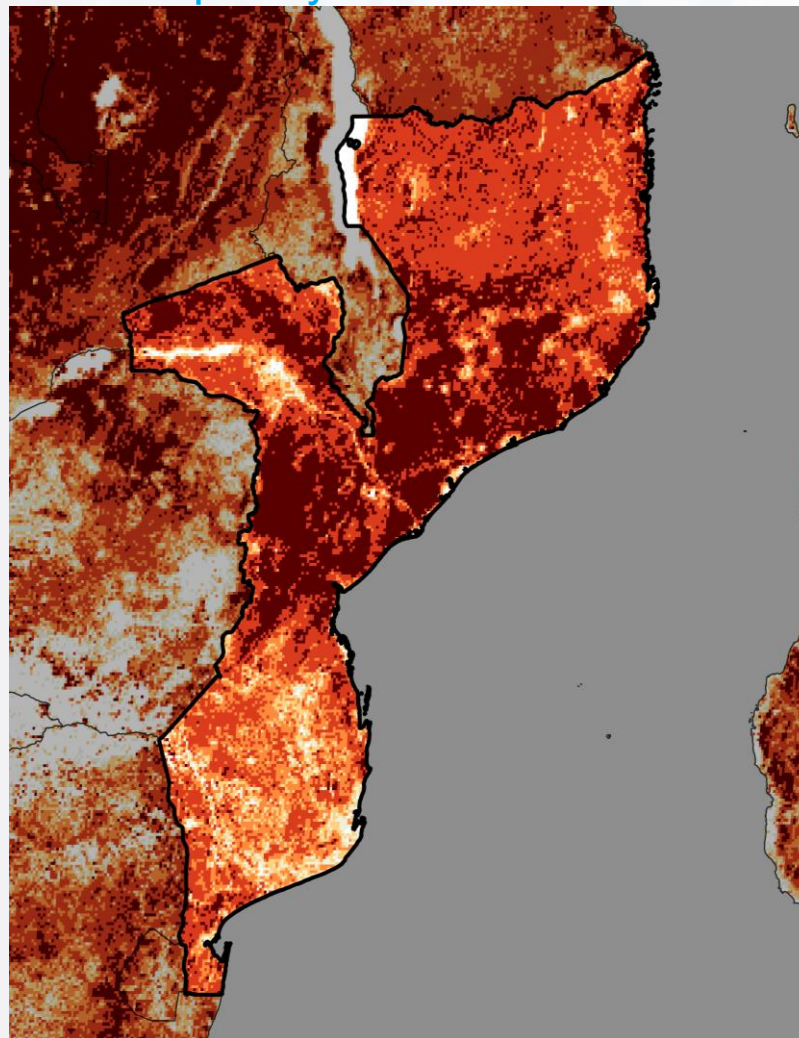
Total Hospitals Exposed: ~810
Out of a total ~1600

Fire Exposure Analysis

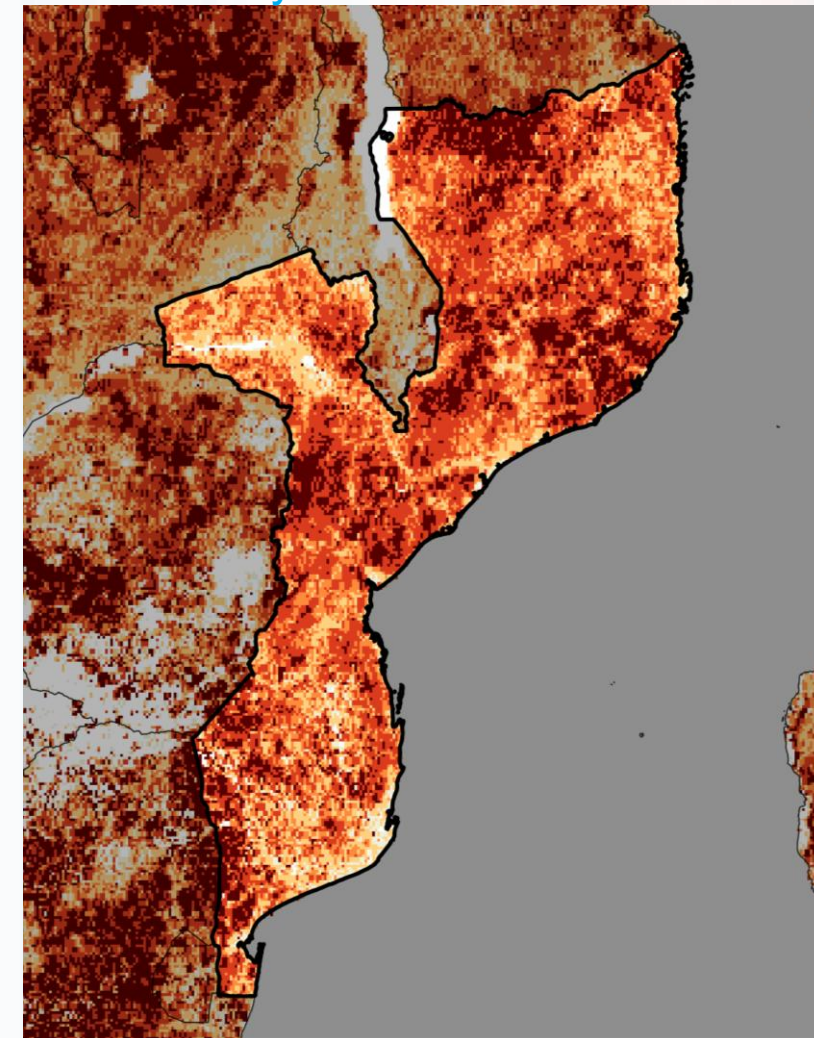
~6.4 million children estimated to be exposed to different dimensions of fire (frequency and intensity)

Data Source	NASA FIRMS
Release Year	2024
Resolution	250m
Threshold	> Mean
Time Period	2001-2023
Update Frequency	Daily
Limitations	Frequency and intensity are proxies due to the lack of high-resolution global hazard data for Fire Weather Index (FWI) and does not include all areas susceptible to fires

Fire Frequency



Fire Intensity

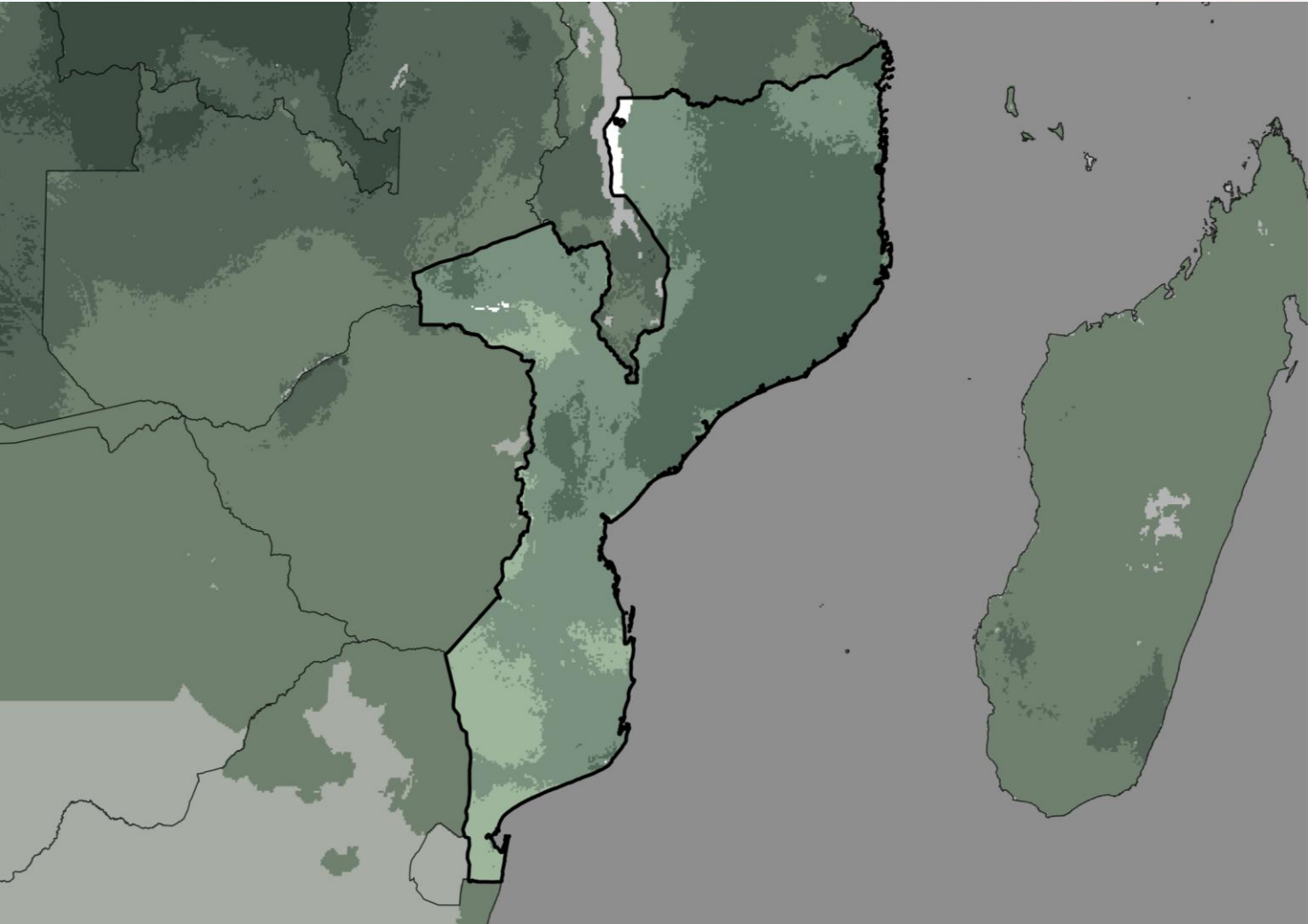


Vector borne Disease Exposure Analysis

17.2 million or all children estimated to be living in areas where Malaria PF cases have been reported – throughout the country.

Data Source	Malaria Atlas Project
Release Year	2024
Resolution	5 km
Threshold	> 1 person
Time period	2012-2022 annual average
Update Frequency	Yearly
Limitations	Estimates are based on reported cases and does not include children living in areas that are potentially susceptible to Malaria

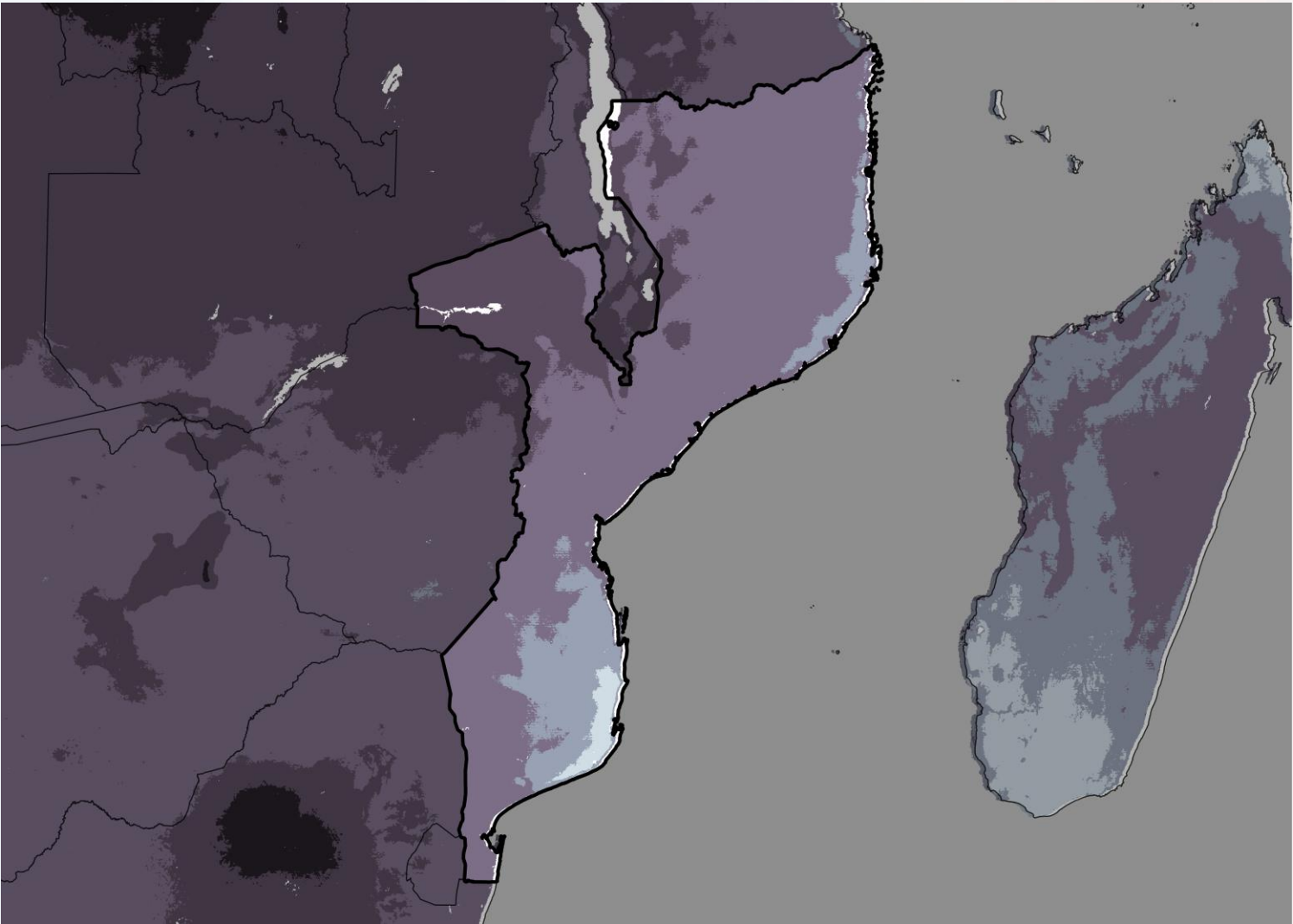
Malaria PF



Air Pollution Exposure Analysis

16 million or almost all children estimated to be living in areas with detectable air pollutants (particulate matter 2.5)

Data Source	ACAG
Release Year	2024
Resolution	1 km
Threshold	> 5 AQG
Time period	2013-2022 annual average
Update Frequency	Monthly
Limitations	On-the-ground air quality monitoring stations are few and far between in many regions of the world, particularly in low- and middle-income countries which could affect the results and hence the exposure analysis



Thank you.



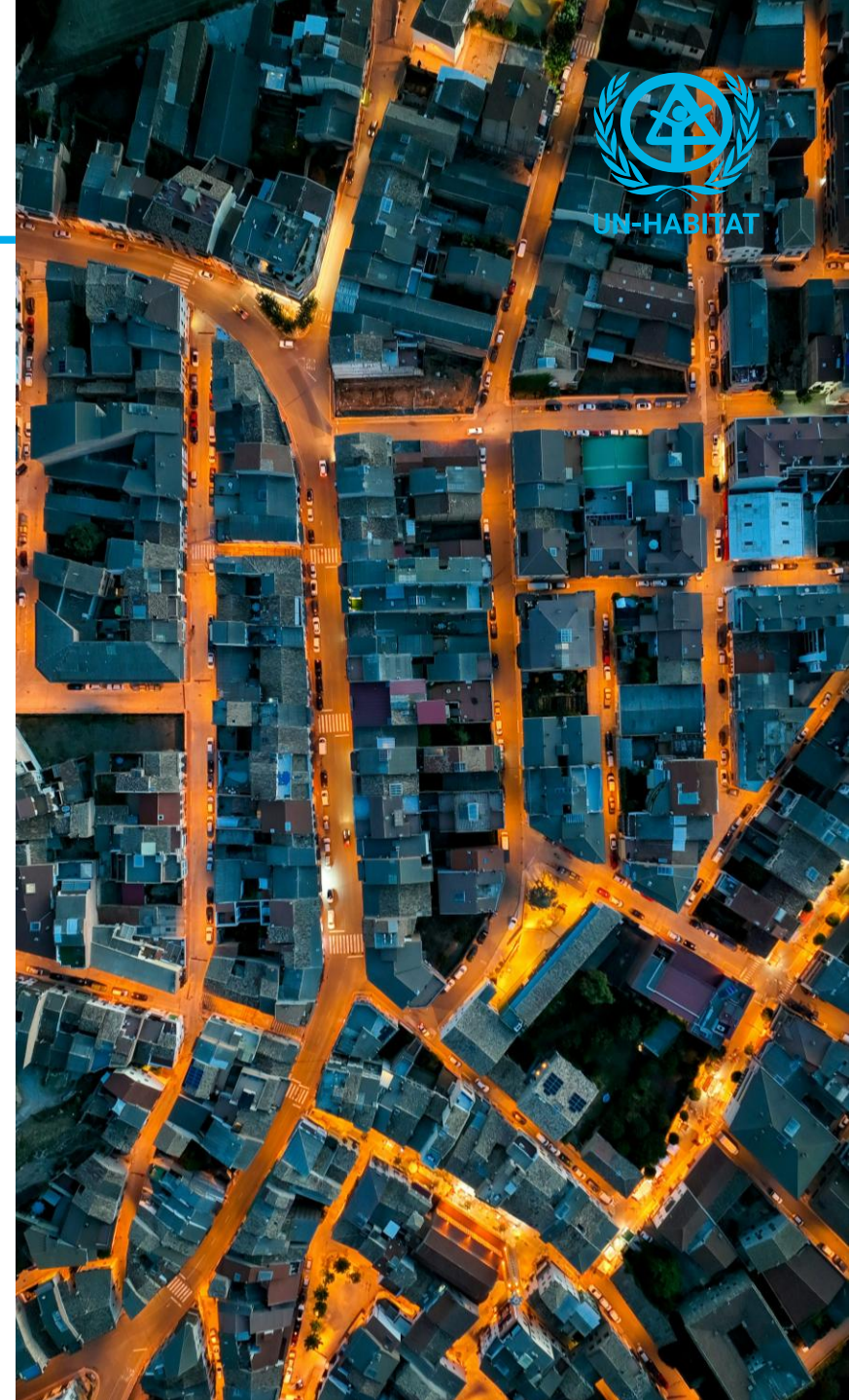
Human rights based approach to housing - Climate change and displacement

4 Nov 2025



Talking points

- 1. Global harmonized frameworks and definitions**
- 2. Updates: the Open-Ended Intergovernmental Expert Working Group on Adequate Housing for All**
- 3. Global Urban Data Coalition: Framework and Ways to engage**
- 4. Roadmap to WUF13**



It all starts home but with the right data at the right
time...

Housing and urban indicators progress markers



The New Urban Agenda



Resolution on Adequate Housing For All

- Seven principles: Habitation, Location, Cultural Adequacy, Tenure Security, Affordability, Accessibility
- The goal is to build and promote a participatory and inclusive vision of housing tending to **social cohesion** and a **better quality of life**, with which all inhabitants can feel identified.
- New concepts of **adequate housing** – building on typologies of housing – social housing, emergency housing, market enabled housing, public-private sector partnership housing, self-aided housing, etc..

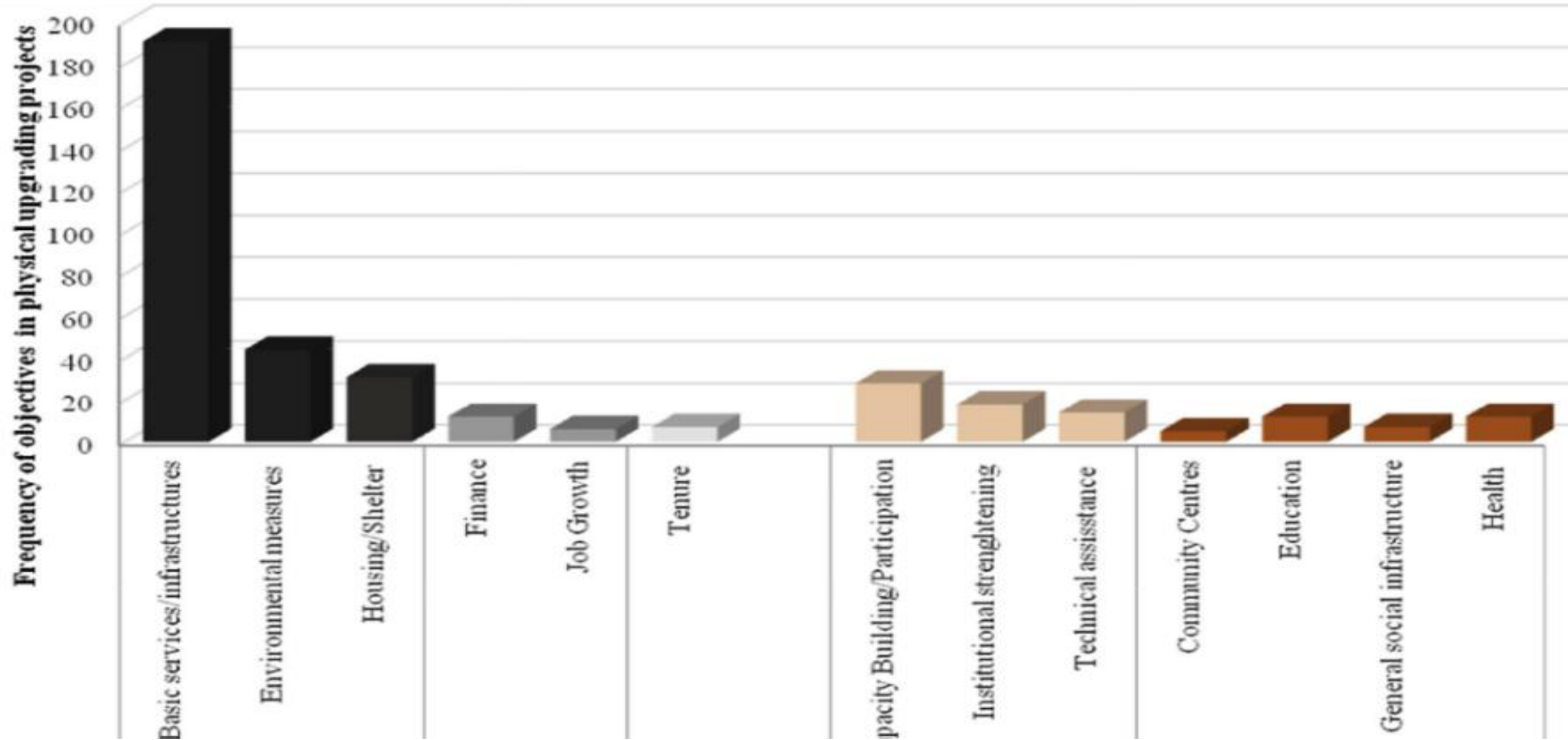
Climate Impact		Land Governance Issue	Human Rights Implicated
Sea-Level Rise Flooding Storm surges Erosion Salination of land/water	➡	Loss of land Impact on drinking water Damage to coastal infrastructure and buildings Loss of arable land	Self-determination [ICCPR; ICESCR, 1] Water [CEDAW, 14, ICRC 24] Adequate housing [ICESCR, 12] Property [UDHR, 17]
Temperature increase Drought Reduced water supply	➡	Food and water insecurity Impact on agriculture, forestry and fisheries. Depletion of agricultural soils	Life [ICCPR, 6] Means of subsistence [ICESCR, 1] Adequate standard of living [ICESCR, 12]
Extreme weather events Cyclones, floods, Storm surges Landslides	➡	Displacement Contaminated water Damage to infrastructure Damage to arable lands Property damage	Life [ICCPR, 6] Water [CEDAW, 14, ICRC 24] Means of subsistence [ICESCR, 1] Adequate standard of living [ICESCR, 12] Property [UDHR, 17]

Target 11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

Access to water	Access to sanitation	Structural quality of housing		Overcrowding	Security of Tenure
Inadequate drinking supply	Inadequate sanitation	Location	Permanency of structure	Overcrowding	Security of Tenure..... Forced eviction

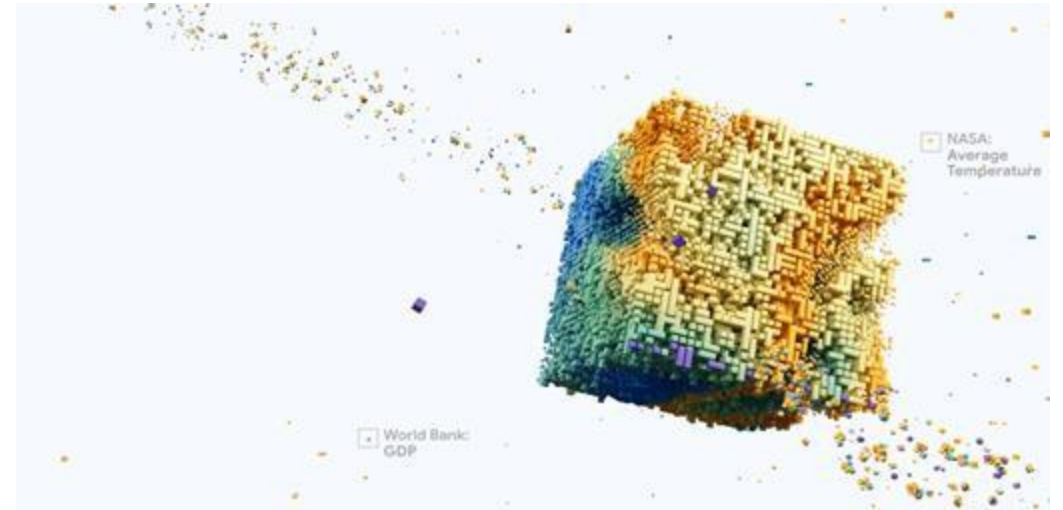
The missing picture: the temporary nature of slums

PSUP : A comparative between basic services, location & tenure



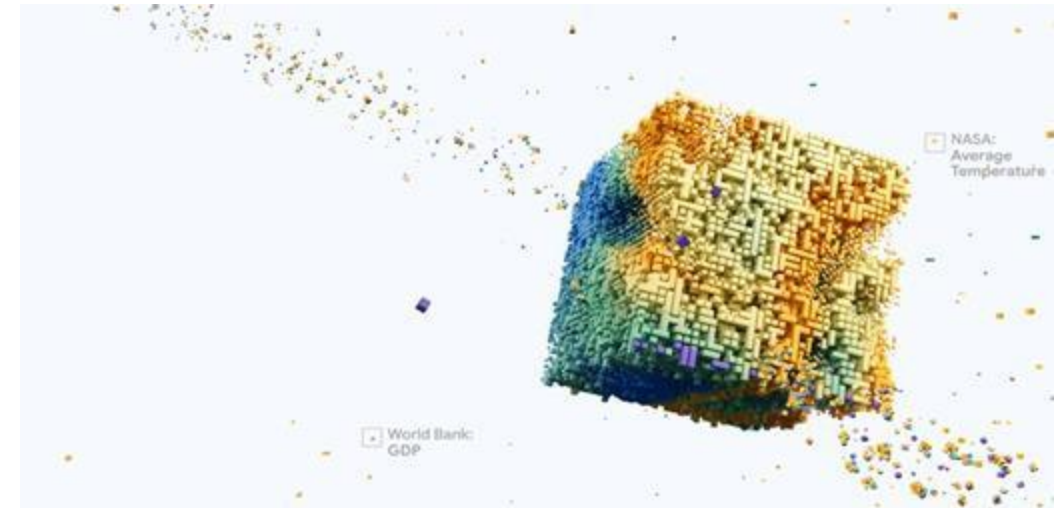
Best practices learnt over the years

- **First**, we must prioritize participatory data collection.
- Traditional data-gathering methods often overlook marginalized groups, including refugees and migrants.
- Involve conducting surveys, focus groups, or community mapping exercises that include refugees and migrants themselves.



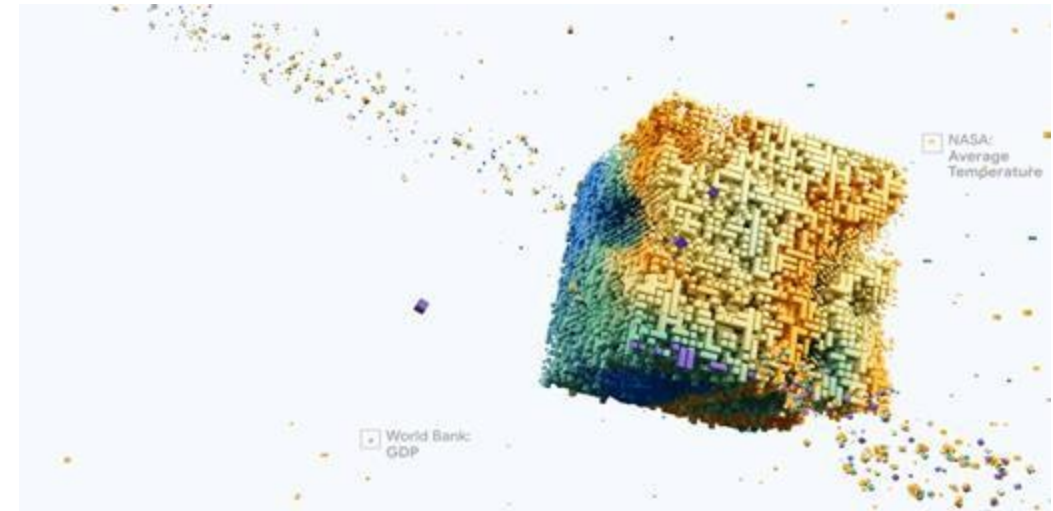
Best practices learnt over the years

- **Second**, we should utilize a multi-dimensional framework for data analysis. Urban Inclusion Marker Tools must go beyond mere demographic statistics.
- They should encompass a wide range of social, economic, and environmental indicators. E.g we can evaluate access to essential services like housing, healthcare, education, and employment opportunities for refugees and migrants.



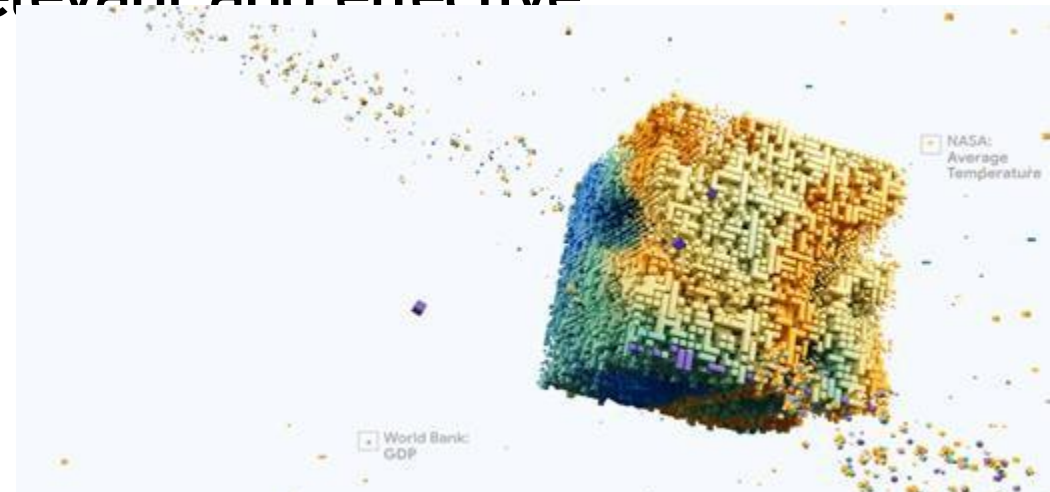
Best practices learnt over the years

- **Third**, collaboration is key. It is crucial to foster partnerships between governmental agencies, non-governmental organizations, community-based organizations, and the private sector.
- A collaborative approach not only broadens the scope of input but also builds a sense of shared responsibility for the inclusion of refugees and migrants.



Best practices learnt over the years

- Fourth, we must ensure that our urban policies and data collection strategies are flexible and adaptable. The needs of refugees and migrants are not static; they evolve over time as circumstances change.
- Therefore, our Urban Inclusion Marker Tools must be designed to allow for regular updates and feedback loops.
- This responsiveness allows communities to stay attuned to the changing dynamics and ensures that policies remain relevant and effective.



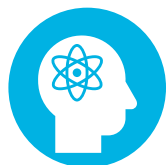
Open-ended Intergovernmental Expert Working group on Adequate Housing for All



Established by the UN Habitat Assembly in 2023



One key task: propose framework for measuring adequate housing



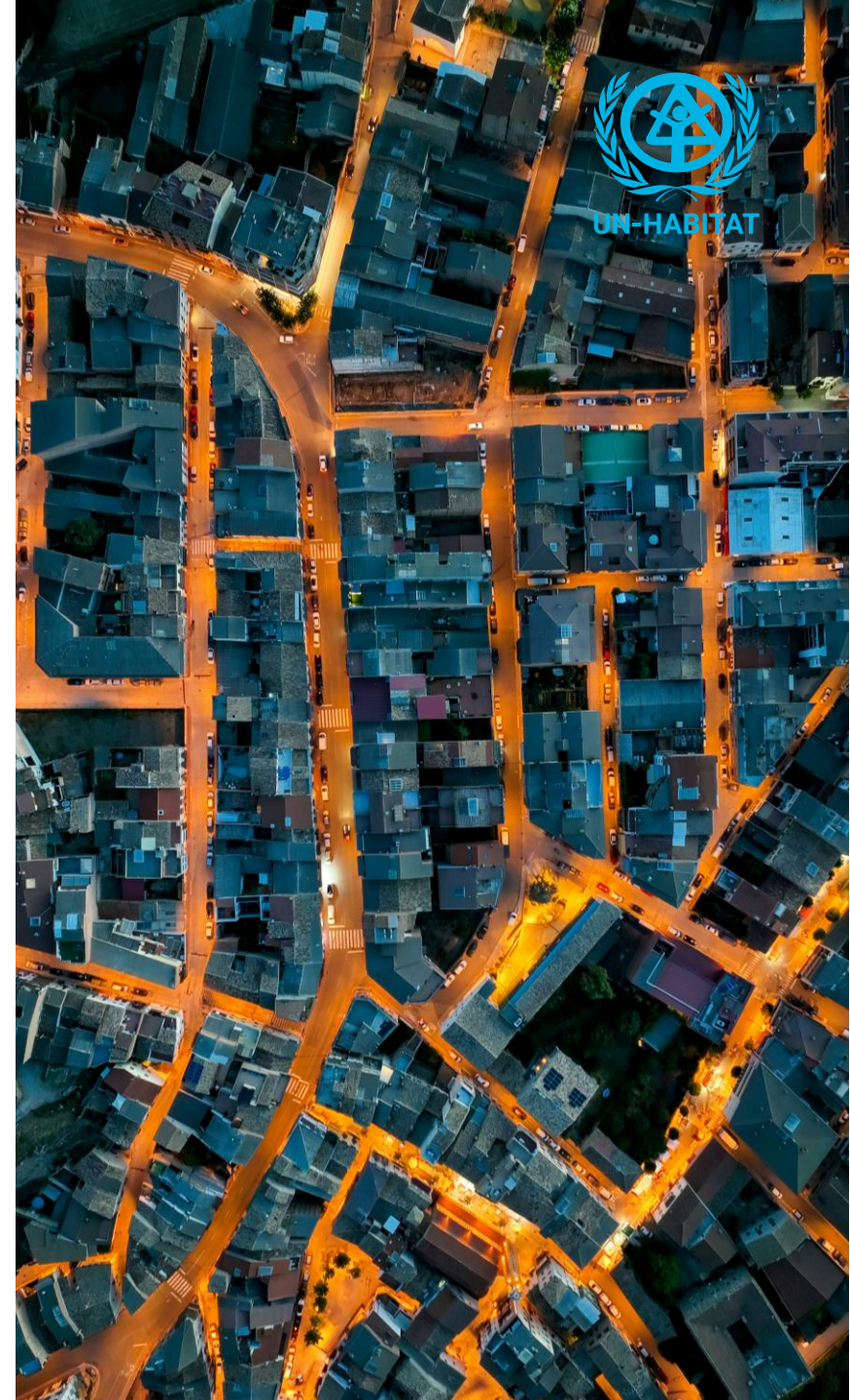
2025 Intersessional meetings: definitions of informal settlements & homelessness; monitoring framework



2nd session in October 2025

3

Global Urban Data Coalition: Framework and Ways to engage



Three key data challenges



Lack of common definitions



Limited capacity for data collection



Limited access to usable data

Objectives – Global Urban Data Coalition

Connect actors



Sustain collaboration



Map initiatives



Launch joint projects





UN-HABITAT

Thank you!

A blue arrow pointing horizontally to the right, positioned below the 'Thank you!' text.

UNEP's Disasters and Conflicts Branch

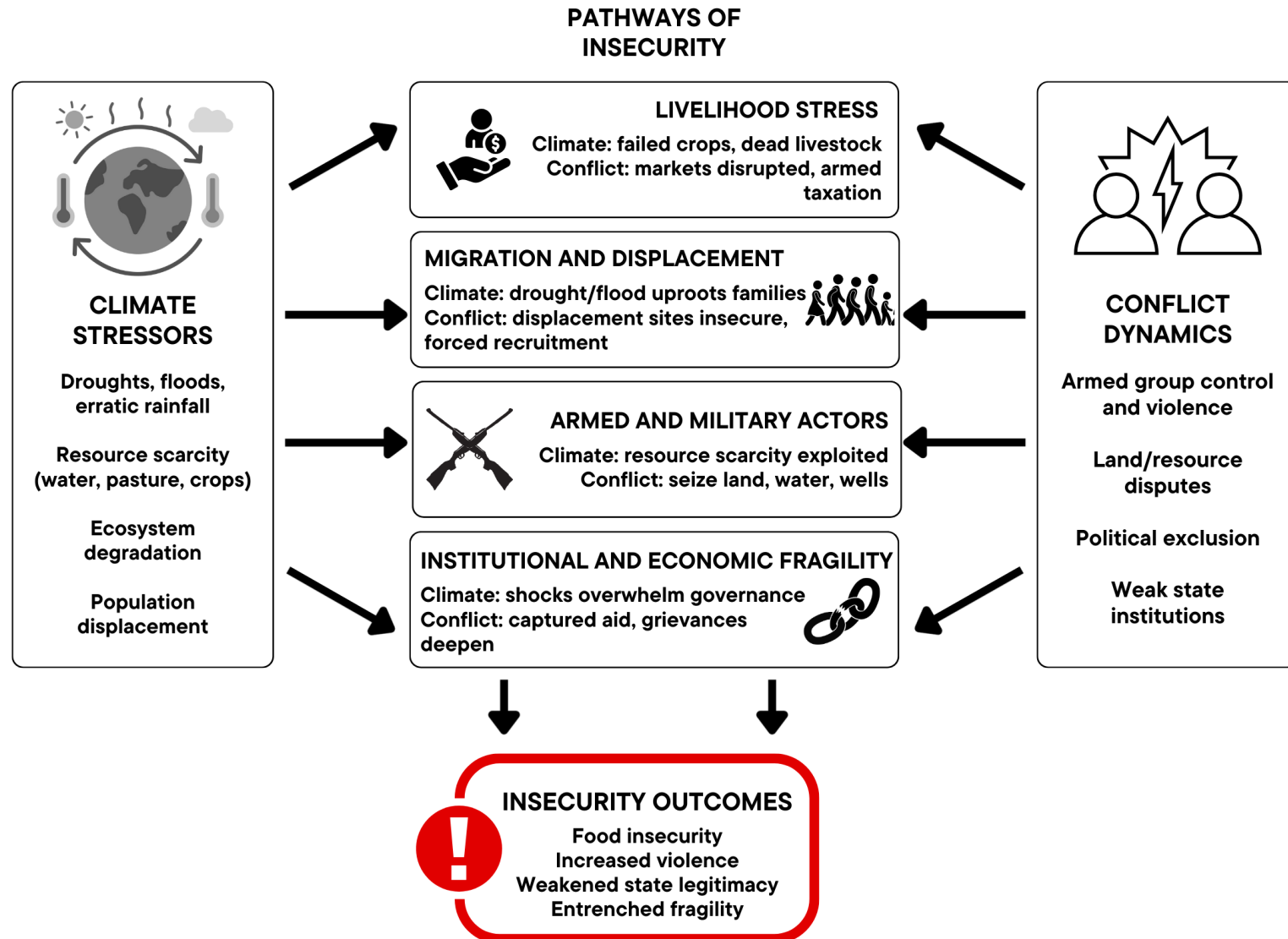
Natalie Hubackova and Avery Fiftal

Climate, Peace and Security in Somalia

Looking at climate risk, climate-conflict hot spotting, and projects working to address climate security interlinkages



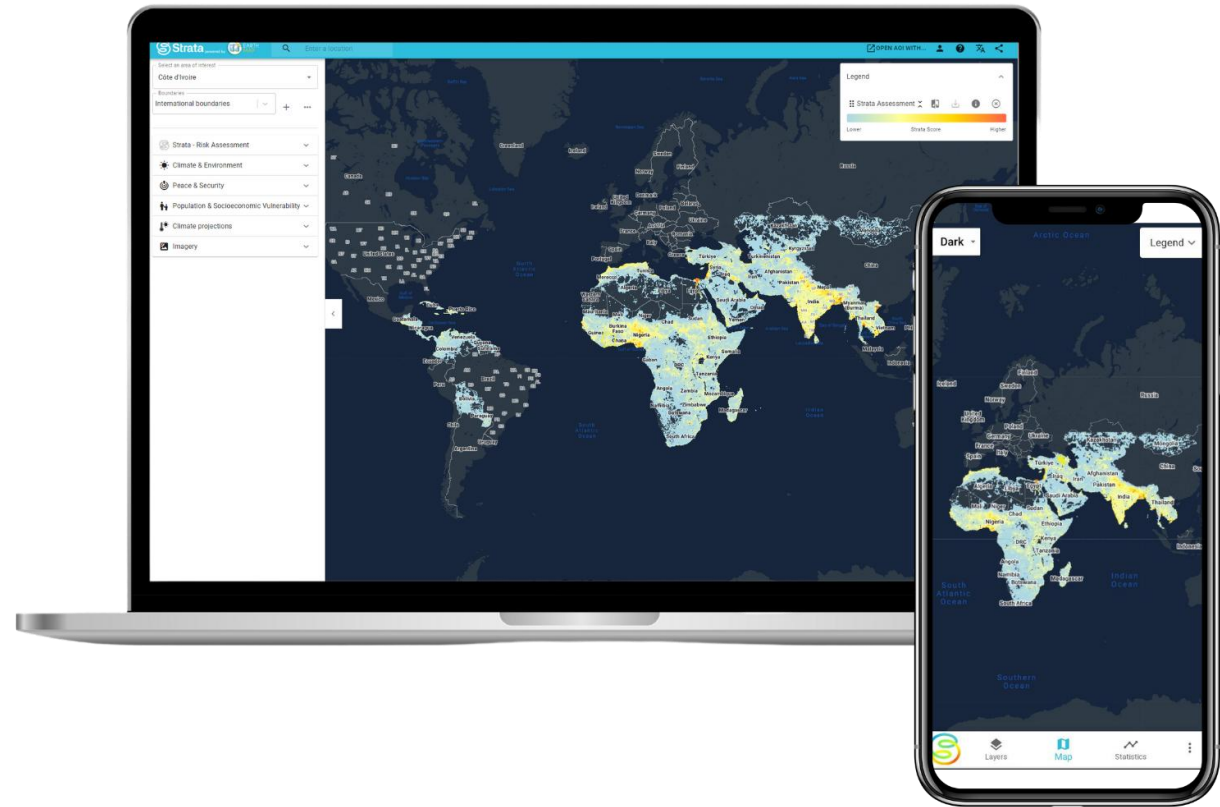
CLIMATE SECURITY IN SOMALIA



WHAT IS STRATA?

A web-based geospatial data platform that identifies and tracks where environmental, climate, and security stresses converge with socio-economic vulnerabilities and instability.

It has hotspot maps, easy-to-read area statistics and reports, making this data accessible.



26
**Indicators &
data sets**

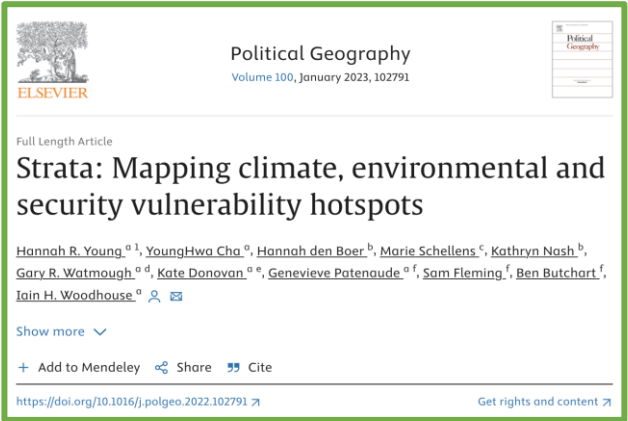
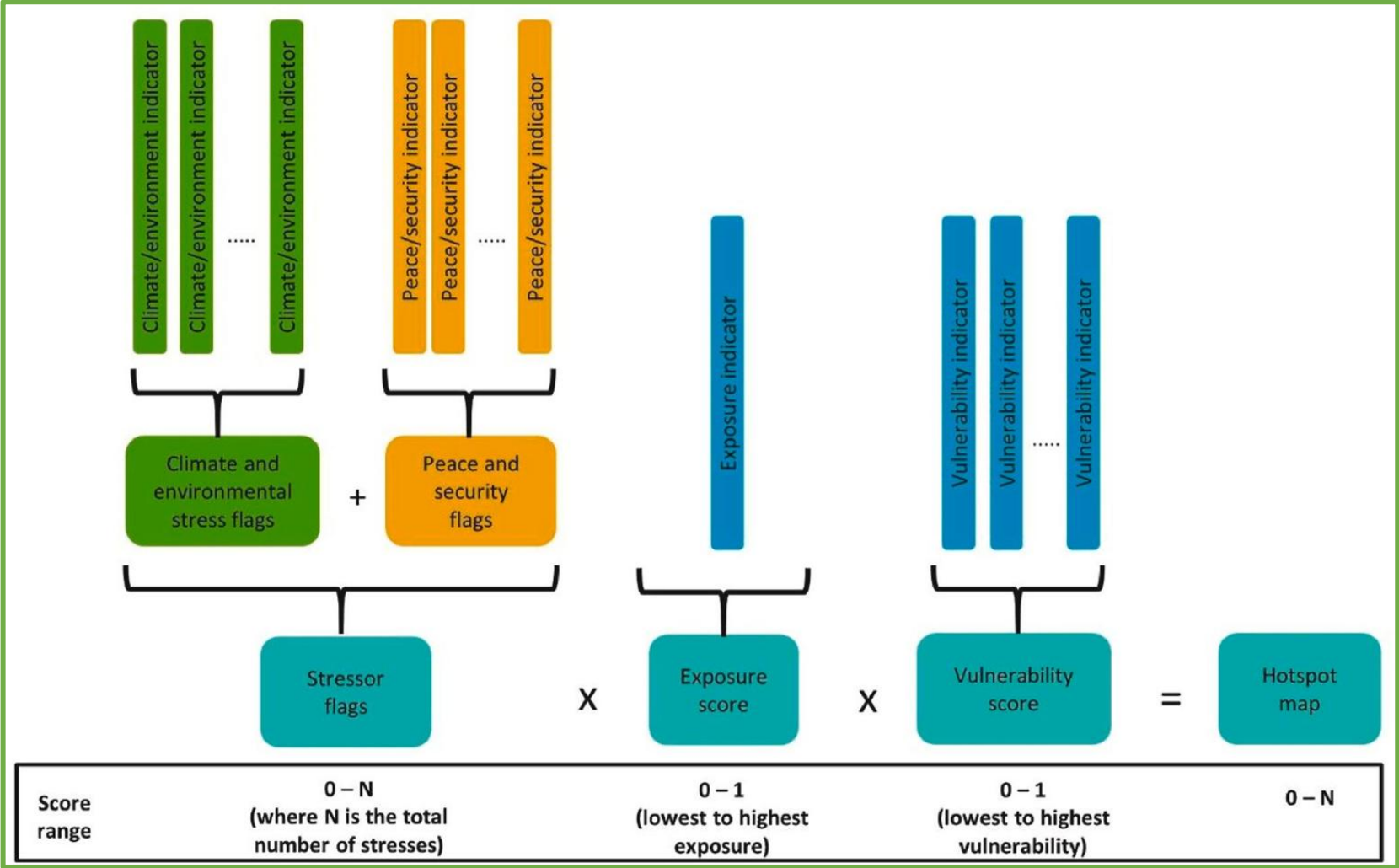
82
Countries

2
**Climate
scenarios**

1
**Hotspot
map**

METHODOLOGY OVERVIEW.

Strata uses
convergence
of evidence to
identify
hotspots.



STRATA INDICATORS.

Environment and Climate.

Drought (meteorological)	<i>Copernicus ERA5</i>
Drought (agricultural)	<i>LP DAAC USGS MODIS NDVI</i>
Heatwave	<i>Copernicus ERA5</i>
Flood likelihood	<i>Aqueduct Floods</i>
Coastal inundation	<i>CGIAR SRTM</i>
Deforestation	<i>Hansen Global Forest Change</i>
Land degradation	<i>Trends Earth SDG Indicator</i>

STRATA INDICATORS.

Climate Projections.

Temperatures projection	<i>NASA NEX-GDDP</i>
Precipitation projection	<i>NASA NEX-GDDP</i>
Risk of flooding projection	<i>NASA NEX-GDDP</i>

Peace and Security.

Violence against civilians	<i>ACLED</i>
Remote violence/explosions	<i>ACLED</i>
Protests	<i>ACLED</i>
Riots	<i>ACLED</i>
Battles	<i>ACLED</i>

STRATA INDICATORS.

Socio-economic Vulnerability.

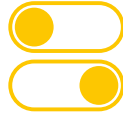
Exposed population	<i>WorldPop</i>
Elderly	<i>WorldPop</i>
Children	<i>WorldPop</i>
Female	<i>WorldPop</i>
Urban expansion	<i>WorldPop, ESA Landcover</i>
Pop growth	<i>WorldPop</i>
Nighttime light	<i>VIIRS Nighttime Light</i>
Travel time to urban/health	<i>Malaria Atlas Project</i>
Freshwater proxy	<i>WRI Aqueduct</i>
Irrigation	<i>FAO Aquastat</i>
Food security	<i>FEWS NET</i>

FEATURES & OUTPUTS.



Choose location

A region, country, locality or your own area of interest



Select layer(s)

Choose the most relevant data and/or the hotspot map



Identify stress

with the hotspot map gathering climate, environment and socio-economic data



Climate projections

layers provide additional insight on potentially changing climates



Inspect pixels

to find out which risks and stresses are the highest at an exact location



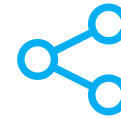
Basemaps

enable a more personalised approach to mapping and context viewing



View solutions

from the Nature Based Solutions for Peace Catalogue as a guide for action

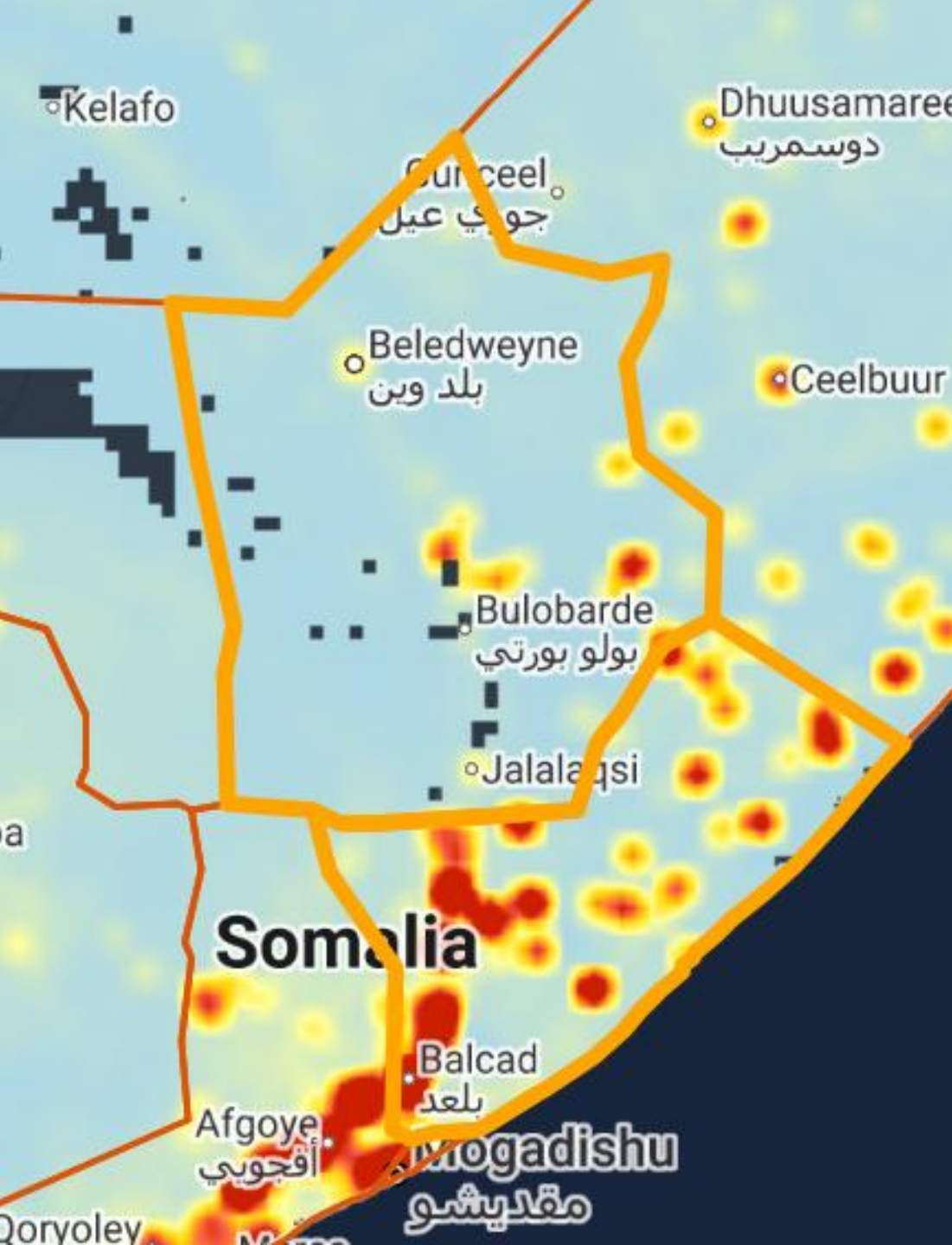


Export & share

the insights easily with a link or as an image

LIMITATIONS.

- Global datasets only available for 82 countries
- Different sources of data = different methodologies/standards
- Data is not always from the current or latest year
- Some datasets are at higher resolution than others
- Strata is not a predictive tool
- Strata does not imply correlations or cascading impacts
- Sub-national boundaries not available for all countries on official UN maps

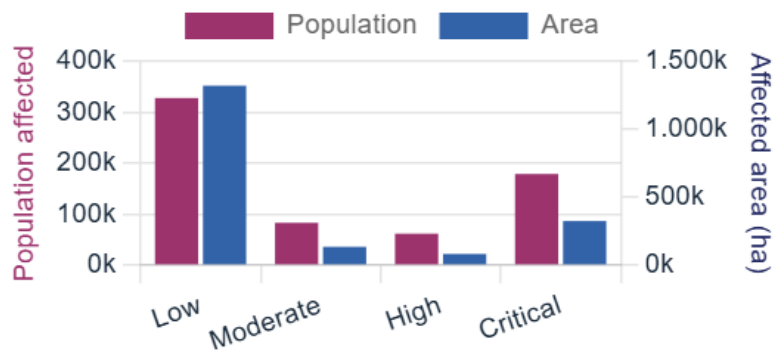


Using STRATA

Focusing on the conflict-affected state of Hirshabelle

Shabelle

Severity of Conditions ⓘ



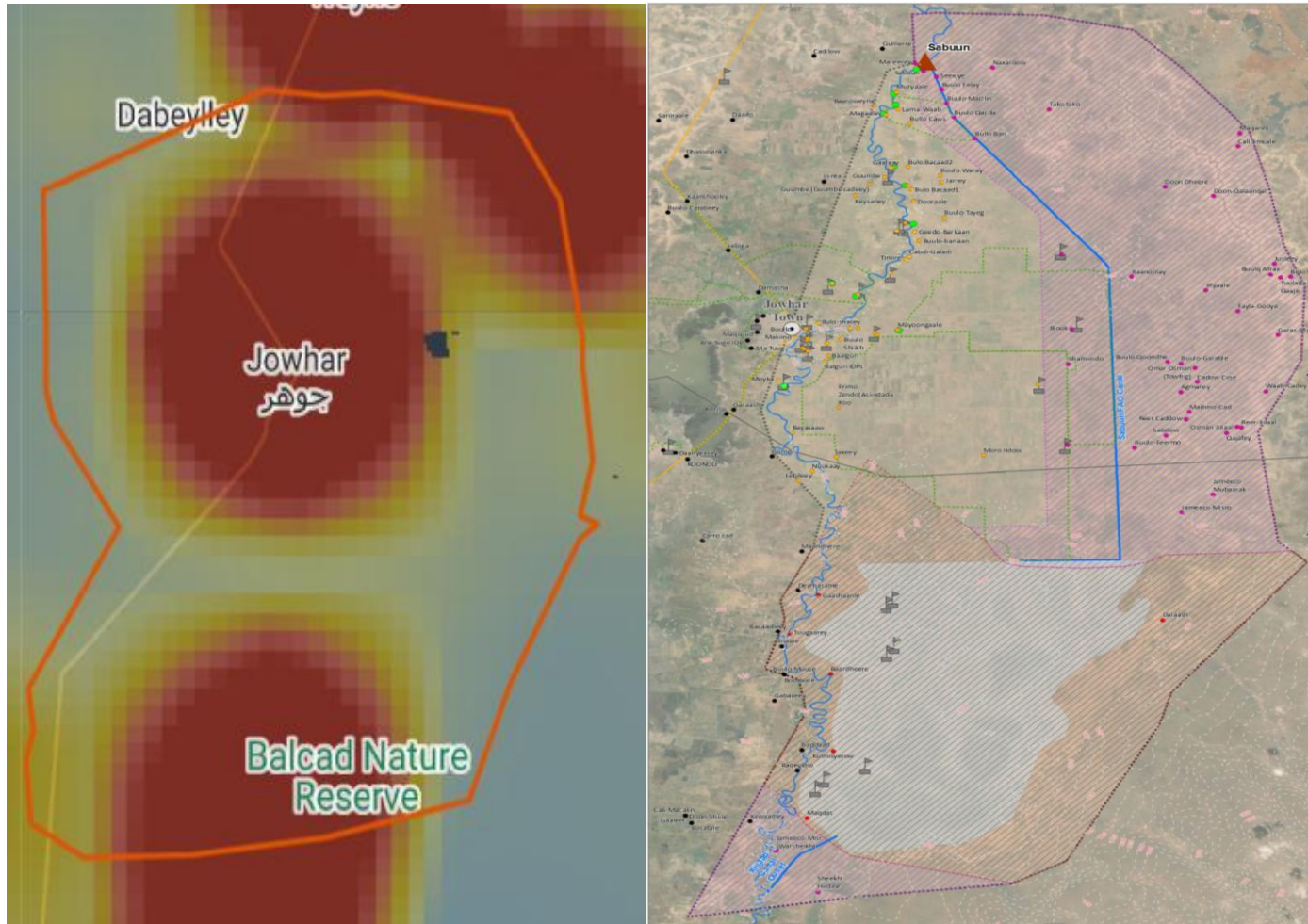
Conflicts (last 12 months):
 175 Battles
 103 Explosions/Remote violence
 3 Protests
 16 Violence Against Civilians

Climate & Environment

Agricultural Stress ⓘ	51% area 39% pop. ⓘ
Coastal Inundation ⓘ	2% area 1% pop. ⓘ
Degraded land ⓘ	4% area 5% pop. ⓘ

- We see climate security hotspots across Hirshabelle, primarily along the Shabelle river.
- The data presented by STRATA highlights population and area affected.
- An example of some of the indicators you can access on STRATA.

How we use STRATA for targeting areas for project implementation – JOSP



- STRATA analysis identified Hirshabelle as one of Somalia's highest-risk convergence zones: climate stress + fragile livelihoods + governance pressures.
- Combined hotspot data with ground knowledge from the Shabelle basin - local flood histories, the already existing Jowhar Storage water system, land-use change, reported conflicts, and displacement patterns.
- This data guided the selection of the project area.

Jowhar Offstream Storage Programme (JOSP)

Building resilience along the Shabelle River Basin

Joint UN-Government program led by the Federal Government of Somalia, with UNEP, FAO, IOM, UN-Habitat, UNIDO, and WVI.

Objective is to rehabilitate and manage the Jowhar Offstream Storage water system to:

- Reduce flood and drought risk and related displacement.
- Strengthen water security for communities along the Shabelle River.

UNEP leads on **hydrological modeling, climate risk analysis, and ecosystem management frameworks**, all built into institutional capacity building to ensure long-term sustainability.



Early Warning, Crisis Modifier, and Anticipatory Action in the JOSP Area

Early Warning

- 90% of households in Beledweyne and 68% in Jowhar receive flood alerts via radio or SMS.
- Trusted, wide coverage supports anticipatory action.

Crisis Modifier: Flexible funding within JOSP enabling rapid response to floods – activated twice.

- 4,600+ households reached.
- Funds disbursed via cash-for-work and unconditional cash transfers.
- 44 river breakages, 39 canals, 24 wells rehabilitated.

Anticipatory Action: Early alerts trigger community preparedness and coordination.

- 60 committee members trained.
- 12,000 people reached with preparedness messages.

Jowhar Offstream Storage Programme (JOSP)

Building resilience along the Shabelle River Basin

Joint UN-Government program led by the Federal Government of Somalia, with UNEP, FAO, IOM, UN-Habitat, UNIDO, and WVI.

Objective: rehabilitate and manage the Jowhar Offstream Storage system to reduce flood and drought risk, and related displacement, and strengthen water security for communities along the Shabelle River.

Operates through projects that address infrastructure, ecosystem and soil restoration, livelihoods, youth engagement, durable solutions, and institutional capacity-building.

UNEP leads work on hydrological modeling, climate risk analysis, and ecosystem management frameworks, all built into institutional capacity building to ensure long-term sustainability.



Early Warning, Crisis Modifier, and Anticipatory Action in the JOSP Area

- Early Warning (EW): 90% of households in Beledweyne and 68% in Jowhar receive flood alerts via radio or SMS, showing strong information access and trust. Crisis Modifier (CM): A flexible mechanism within JOSP allowing rapid activation of emergency response during floods (e.g., El Niño 2024–25). Reached 4,600+ households across two activations. Rehabilitated 39 irrigation canals, 24 shallow wells, and 44 river breakages. USD 700k disbursed via cash-for-work and unconditional cash transfers. Anticipatory Action: Uses early warning to trigger community-based preparedness and coordination — including DRR committees and water management groups. 60 committee members trained, reaching 12,000 people with hygiene and flood-preparedness messages. Why it matters: These



Building Somalia's Climate-Risk Data Foundations

Generating the Data Baselines and Government Capacity for Climate Adaptation

- **Hydrology:** UNEP-DHI model of the Shabelle Basin with two climate scenarios.
- **Ecosystems:** MoECC biodiversity baseline for Jowhar-Balcad to measure habitat recovery. Working to link to citizen scientists.
- **Soil and Land:** UNEP studies on soil health, carbon, and land productivity pre- and post-rehabilitation.
- Data integrated into **an Environmental Monitoring System led by MoECC.**

Turning Data into an Enabling Environment for Climate Finance

Science and data as the foundation for climate finance and reduced displacement risk.

- Unified **climate-risk, hydrology, and ecosystem data** underpin evidence-based adaptation proposals.
- Builds **institutional capacity** within ministries to plan and monitor climate-resilient investments and access vertical funds.
- Positions Somalia for **vertical fund pipeline projects** on water resilience, nature-based solutions, and ecosystem restoration.
- JOSP working to show how **data systems translate into bankable, climate-security investments**.

Environmental Data for Recovery in Conflict-Affected Areas

UNEA Resolution 6/12: Mandate and Why it matters

Mandate:

- Adopted at UNEA-6 (2024) to strengthen UNEP's support for environmental recovery in areas affected by armed conflict
- Tasks UNEP to:
 - Provide environmental assistance and recovery support
 - Develop **technical guidance for data collection on environmental damage**

Why it matters:

- Armed conflict often leads to pollution, deforestation, and loss of livelihoods, **compounding climate vulnerability and driving forced displacement**
- **Reliable environmental data** and coordinated recovery support are essential to enable affected countries to **rebuild sustainably and avoid long-term degradation**



Environmental Data for Recovery in Conflict-Affected Areas

Field-Level Technical Assistance



- **Gaza**
 - UNEP conducted **rapid assessments using remote sensing** and UN partner data
 - Co-led debris management with UNDP
 - Over **21,000 tons of debris cleared, reopening access roads for humanitarian aid** and piloting recycling projects benefiting 200,000+ people
- **Ukraine**
 - Conducted rapid environmental assessments after the Kakhovka Dam breach revealing **large-scale ecosystem collapse and sediment contamination**
 - Launched asbestos management and pollution-mapping programmes
- **Sudan**
 - Updated **assessments on environmental damage in Khartoum** and planned remote assessments in Aj Jazirah State.
 - Identified **contamination from destroyed facilities, water pollution, debris accumulation, and deforestation** threatening food security
- These interventions **address immediate environmental risks while building national capacity** for long-term recovery and resilience.

Environmental Data for Recovery in Conflict-Affected Areas

Technical Guidance: Introduction

- As part of Resolution 6/12, we are developing **Technical Guidance on Environmental Data Collection in Conflict-Affected Areas**
 - Led by UNEP and the **NICOLE Foundation**, with support from **ERM** and global partners (Zoï, PAX, CEOBS, NASA Lifelines, HOT, Oregon State University, UC Berkeley, etc.)
 - Addresses the **lack of standardized methods for documenting environmental damage in conflict settings**
 - **Aims to empower** national authorities, responders, and civil society to collect, analyze, and share data for evidence-based recovery
 - Designed for a broad user base from governments and NGOs to local communities
- **Objectives and Impact:**
 - Establish a **globally recognized approach to environmental data collection in conflict zones**
 - Improve decision-making, prioritize remediation, and **guide recovery**
 - Enable creation of national databases and wider adoption of science-based assessment methods

Environmental Data for Recovery in Conflict-Affected Areas

Technical Guidance: First Phase

- The first phase focused on **stakeholder engagement and user design**
 - Consultations gathered input from experts across NGOs, governments, academia, and donors — identifying both challenges and emerging opportunities
- **Key challenges:** Data inaccessibility, lack of field capacity, and security restrictions
- **Opportunities:** Satellite imagery, drones, citizen-science, and AI/geospatial analysis
- **User design features:**
 - Three-tiered structure tailored for:
 - **Decision-makers:** Overview of risks and priorities
 - **Technical experts:** Detailed methodologies and tools
 - **Community users:** Practical, simplified guidance for data collection and safety
- Includes a decision-support matrix matching tools and methods to conflict phase, environmental media, and site access
- Supported by a digital tool (mobile and web) to guide users interactively and recommend the best data approach for their context

Environmental Data for Recovery in Conflict-Affected Areas

Technical Guidance: Way Forward

- **Validation and testing:** Pilot the technical guidance in selected countries and refine it through field experience
- **Capacity-building:** Train national and local actors to apply the methods safely and effectively
- **Partnerships and funding:** Expand collaboration across the UN system, donors, and local institutions
- **Integration:** Embed environmental data into peacebuilding, reconstruction, and displacement planning

Takeway message

- Recovery after conflict must restore both people and the planet
- **Reliable environmental data is the foundation** for safe return, reconstruction, and sustainable livelihoods
- UNEP's work under Resolution 6/12 bridges environmental recovery and human recovery ensuring that **no one is left behind when rebuilding from crisis**
- **UNEA-7 event on Data for Recovery 4th December**



Thank you



avery.fital@un.org
natalie.hubackova@un.org

United Nations Avenue, Gigiri
PO Box 30552 – 00100 GPO Nairobi, Kenya

www.unep.org