Quick Start Guide

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What is Strata?

Strata is an open-access climate security analytics platform to support practitioners and policymakers in identifying and monitoring environmental and climate stresses potentially driving threats to peace and security.

What insights does Strata provide?

Strata visualises climate and environmental security hotspots. The main outputs of Strata are climate security hotspot maps visualised as a risk heatmap, together with diagrams and tables to support interpretation of climate-related security risks. These are hotspots where climate and environmental stress overlap with human security stresses and socioeconomic vulnerabilities, potentially driving maladaptation, displacement, or conflict.

In an accessible manner, Strata offers a science-based and data-driven overview of climate and security insights. The hotspots highlight both locations and the climate-security components where to focus attention. However, users should interpret these insights based on their own expertise and/or knowledge gathered from local networks through complementary research. While Strata provides a first-level data-driven outlook to climate security risks, it is necessary that users contextualise such insights through qualitative political analysis in relation to the area-specific pathways between stresses, vulnerabilities, and impacts.

Who can use Strata?

Strata can be used by a wide range of decision-makers and practitioners interested in data-driven insights to inform security and climate risk management. Users include peace and security actors that want to incorporate environmental and climate components into their work, as well as environmental and climate practitioners that aim to implement a conflict-sensitive approach in conflict-affected and fragile regions.

For example, practitioners focusing on climate change adaptation or natural resource management who aim to understand dynamics of violent events to ensure their programmes do not exacerbate pre-existing grievances, or political analysts seeking to ensure peacebuilding initiatives take environmental stresses into account.

What for?

Strata allows analysts, decision makers and practitioners to access and use climate security data in their daily work, including to raise awareness of converging risks, to design and prioritise policy and programming responses, and to monitor and evaluate interventions. Thereby, Strata can be used to inform programmes and interventions in the fields of climate change adaptation, natural resources management, disaster risk reduction, resilience-building, peace operations, and peacebuilding.

How does Strata calculate climate security hotspots?

Strata aggregates spatial data for climate, environmental, and human security stress indicators. It combines these with data on population exposure and socioeconomic vulnerability to produce hotspot maps that highlight where these stresses overlap and where they coincide with populations vulnerable to these stresses. The combination of data layers is based on the convergence of evidence approach. With this approach, each indicator is assigned a threshold value, above which the indicator is considered to be "red flagged", i.e., at a "level of concern". The hotspot map shows the sum of all the red flags across the chosen indicators, weighted by the population exposure and vulnerability. The hotspots are also complemented with diagrams that disaggregate the stress into the indicators of concern.

How do I work with Strata?

There are two versions of Strata available: (1) an open-access dashboard, which provides rapid visualisations of "hotspots" (www.open.unepstrata.org), and (2) a builder tool, which allows for tailored analytics through customisation of workflows in terms of indicators, time periods and thresholds (www.app.unepstrata.org).

The two versions have similar components. Both feature a map interface and an interactive dashboard. The builder version, in addition, has a feature to customise analytical workflows. The components are showcased below using the builder version.

The open dashboard can be accessed without an account, while registration is needed for the builder tool.

Map interface

The **map interface** shows the hotspots map as calculated according to the default settings. Users can increase the transparency of the hotspots with the sliders of the "layer" button on the right. That way, the base map becomes more visible for easy navigation and identification of the region of interest. With the map button on the top left, users can choose among a set of different base maps, such as terrain maps and high-resolution satellite images. From the map interface, move to the dashboard by clicking its button on the top right, or open the builder tool by toggling the arrows on the left of the map.
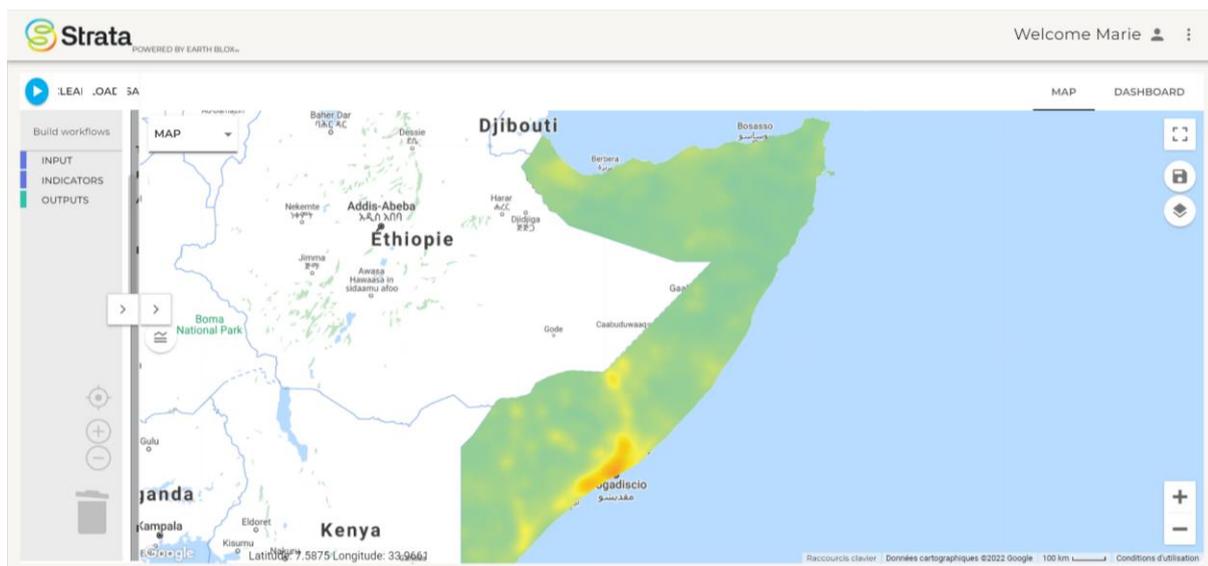
Interactive dashboard

The **interactive dashboard** provides a deep dive into the output displayed in the map interface using additional maps, graphs, and tables. Different data layers contributing to the overall hotspot map may be selected and visualised on the map separately. By clicking on the maps or charts, further information is displayed, such as the numeric value of indicators. .
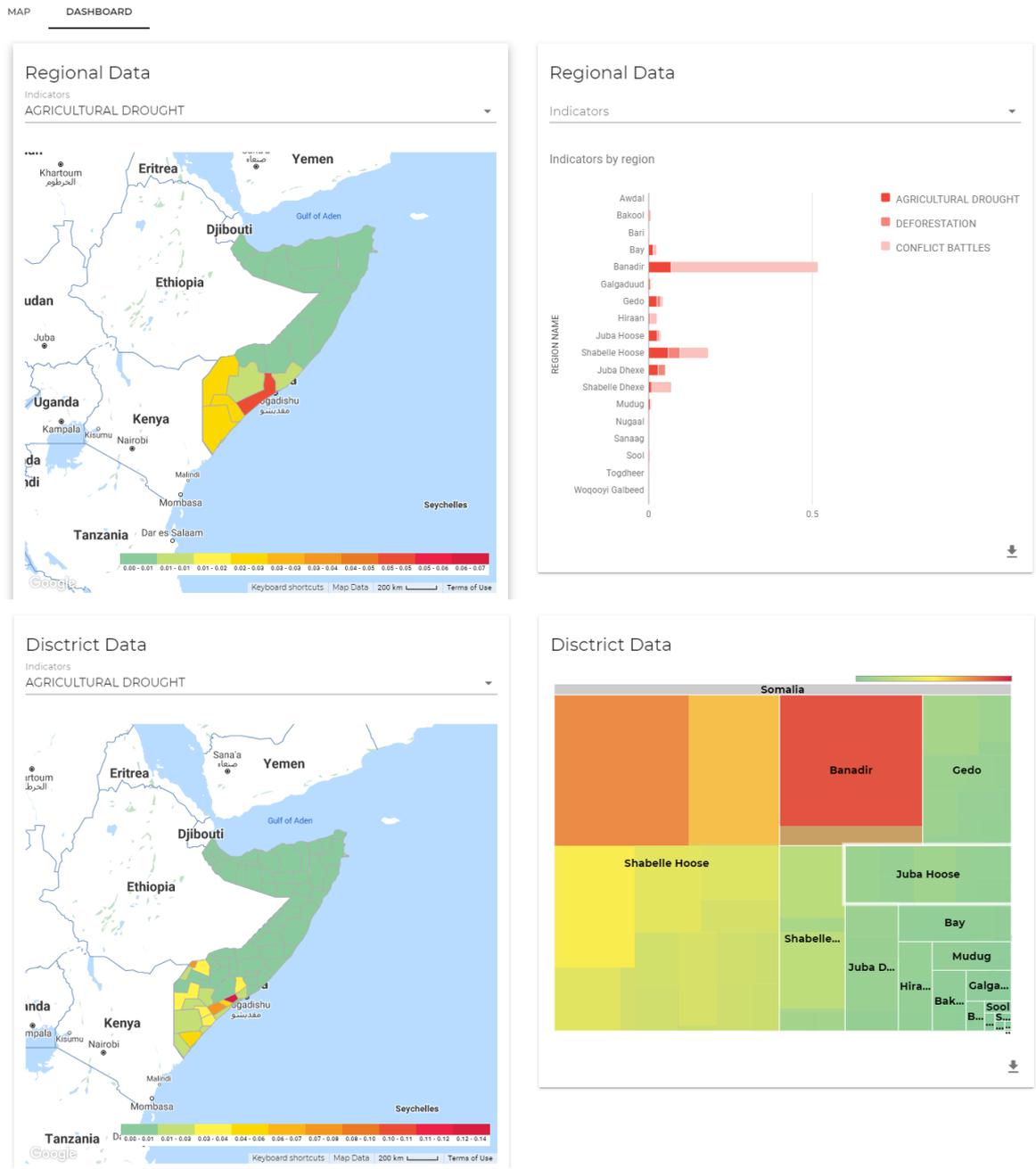
Builder tool

The **builder tool** enables users to create a custom workflow used to create the hotspot maps. The workflow is presented by coloured blocks, each of which performs a different function or action within the overall hotspot calculation, such as customising indicators, calculating the exposure of populations, and visualising according to the chosen the type of map output. When "snapped" together, they form a workflow containing several actions. When the blue "run" button is pressed, the workflow is enacted, and all the calculation steps are performed on the selected data. The workflow can be customised by dragging and dropping other blocks from the menu (on the left-hand side) or by modifying the choices within the individual blocks. Users can also set the data range here: time period, and area.

Open Dashboard

The Open Dashboard provides an interactive dashboard for a wider audience, and a map interface, but without access to all of the customisable features of the Builder Tool. Some predefined scenarios are available instead. They are chosen from the dropdown menu under 'Configure hotspot calculation' on the top right – the data having been analysed in advance. This dashboard also allows a deep dive into the output displayed in the map interface using additional maps, graphs, and tables. Different data layers contributing to the overall hotspot map may be selected and visualised on the map separately. By clicking on the maps or charts, further information is displayed, such as the numeric value of indicators
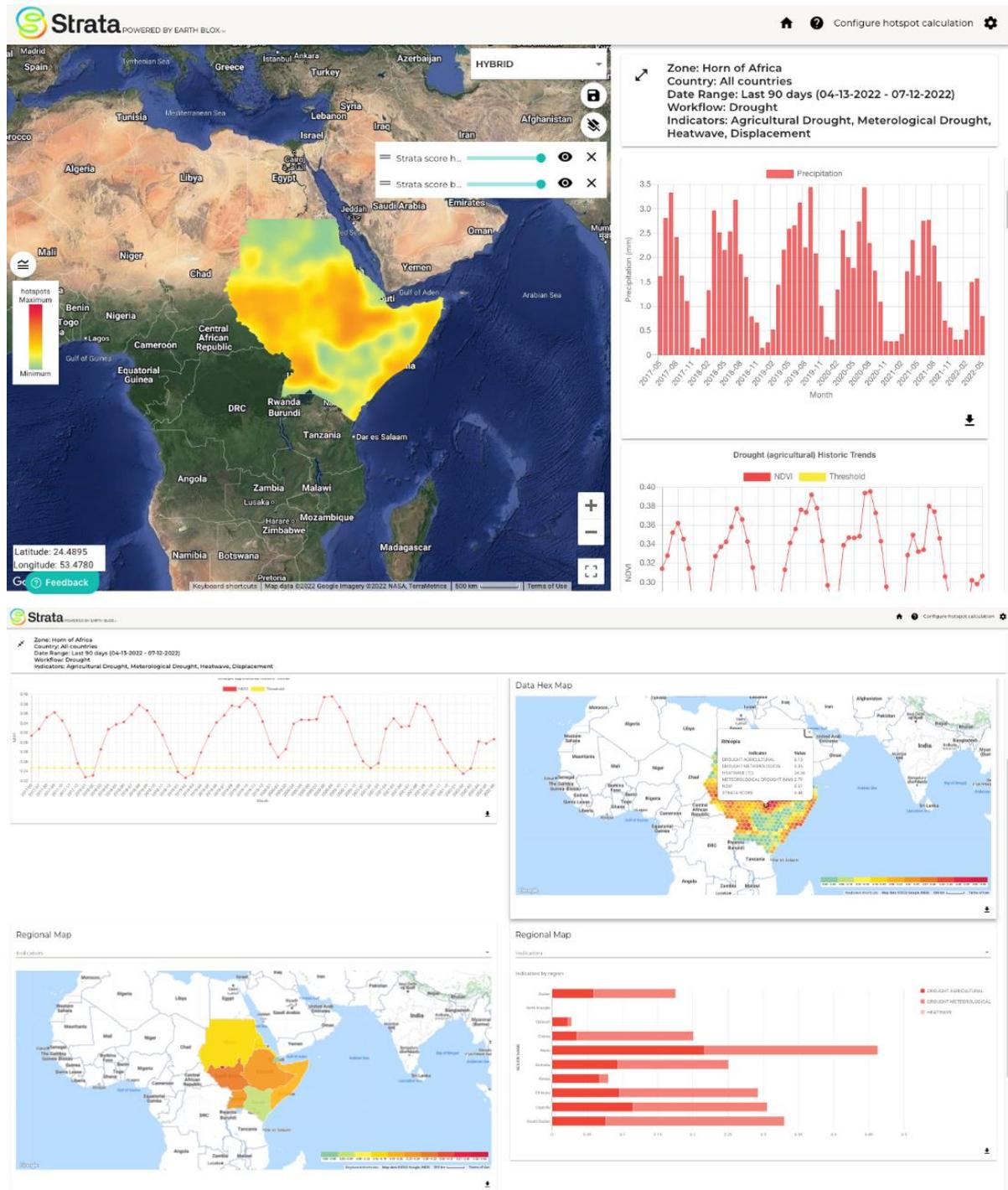
How do I customise the indicators and thresholds?

Each indicator block allows users to choose an indicator from the drop-down menu. Users can add or remove indicators by dragging and dropping blocks, or by selecting different indicators from the drop-down menu. The choice of indicators, and their default threshold (that determines the red flag), have been selected based on user-workshops and literature review. Indicator selection is an iterative process and new indicators are regularly reviewed and added to the platform. Thresholds can be adjusted by selecting "advanced options" on a particular indicator block. Before using advanced options, we recommend reading the section on indicators and thresholds in the User Guidebook since each indicator threshold is uniquely defined.
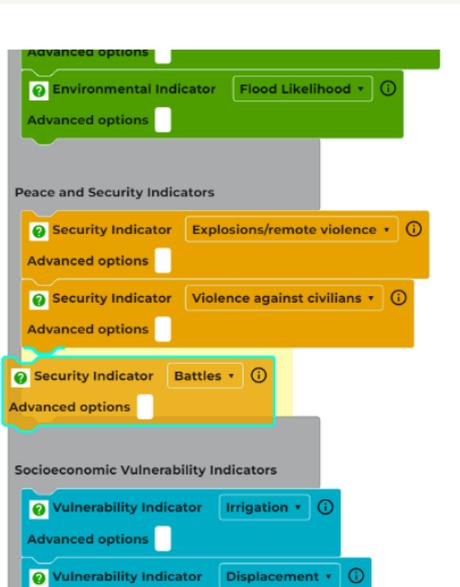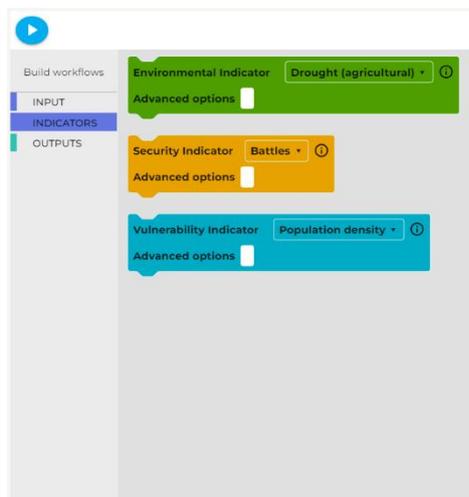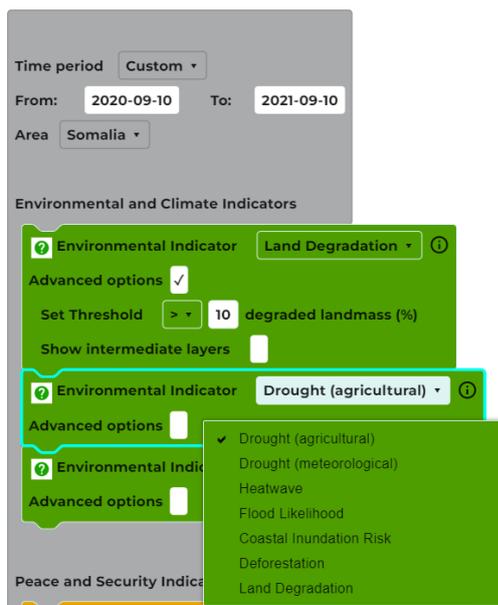
What does a hotspot mean?

Strata uses current, or "most recently available", observations or estimates. In this sense, it provides situational awareness, rather than prediction or "now-casting". Strata's hotspots draw attention to areas where several indicators may be at a level of concern in the same geographic location, combined with how exposed and vulnerable the population is in that area. Strata is neither a modelling tool, nor does it calculate risk probabilities.

The update frequency of different indicators may vary considerably depending on the availability of data. Some datasets are updated daily while others have not been updated in several years. Information on how often each dataset is updated can be found in the 'Overview Document of Indicators and Datasets' and the date of the most recent for each indicator is shown on the platform. Historical conditions and future trends may be investigated by appropriate choice of the time period.

Strata's hotspots highlight locations which users may want to examine in more detail but cannot provide all the information a user may need for a full climate security assessment. Users should integrate the understanding gained from these data-driven maps with their own qualitative contextual knowledge. Complementary kowledge of potential pathways between stresses, vulnerabilities, and impacts, -- whether it is the user's own expertise, gathered from local networks or through complementary research -- is required to correctly interpret the visualised hotspots.

Where can I get more help?

The first place to get help on individual blocks and features of the Strata platform is by hovering the mouse over them. This will show a "tooltip" with some information on the function. When advanced options are selected, further tooltips become available. For more detailed help and examples of how to use Strata, consult the 'User Guidebook'. For more scientific details about the chosen approach, the underlying theory, and indicators, consult the 'academic article' (forthcoming).