The GeoSight Handbook

Insights from Spatial Data.

UNICEF
2022

Contents

Home 3

Contributing 3

For Users 4

Introduction 4

Overview 5

Map Interactions 12

Indicators 14

Layers 17

User Tutorial 20

Disclaimer 41

Credits 42

License 43

For Administrators 44

Administrator Tutorial 44

Reference Layers 59

For Developers 64

Setup 64

Installation 65

Configuration 76

1 Home

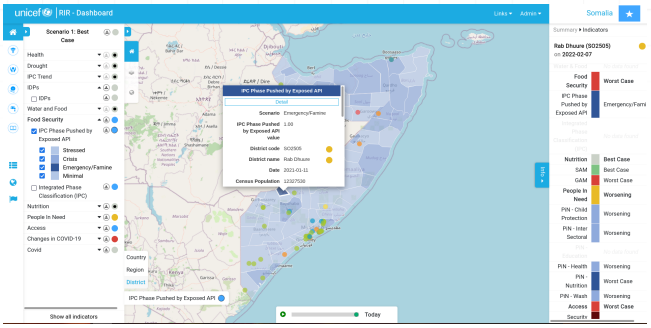
1.1 Contributing

Please visit our GitHub Repository and file issues, add pull requests etc. We will communicate with you through the issue tracker. If you would like to contract us to add features or provide commercial support, please context us at via email at info@kartoza.com - we look forward to hearing from you!

1 For Users

1.1 Introduction

1.1.1 What is the Risk Informed Response platform?



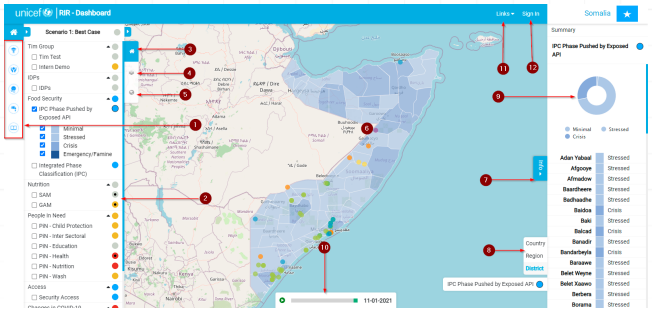
The platform provides a way to understand risk modalities across different geographic contexts. Some key features include:

- **Traffic light** system to show an at a glance status for each risk indicator
- **Program intervention** system which shows the traffic light status across different programmes such as health, security etc.
- Side-by-side comparison of risk factors (indicators) using a **map swiping** tool
- **Indicators** - risk factors which can be harvested form external sources and displayed in the map and dashboard
- **Interactive map** - click, drag, drill down into information on the map and open corresponding dashboards and details
- **Harvesters** that can automatically update indicators from different data sources such as web API's
- a complete and **user friendly administration** environment to manage the system
- Role based **user management**

1.1 Overview

The GeoSight platform is a situational awareness platform to monitor multiple factors including: health, child protection, nutrition, wash (water, sanitation and hygiene) and education in a geographic region.

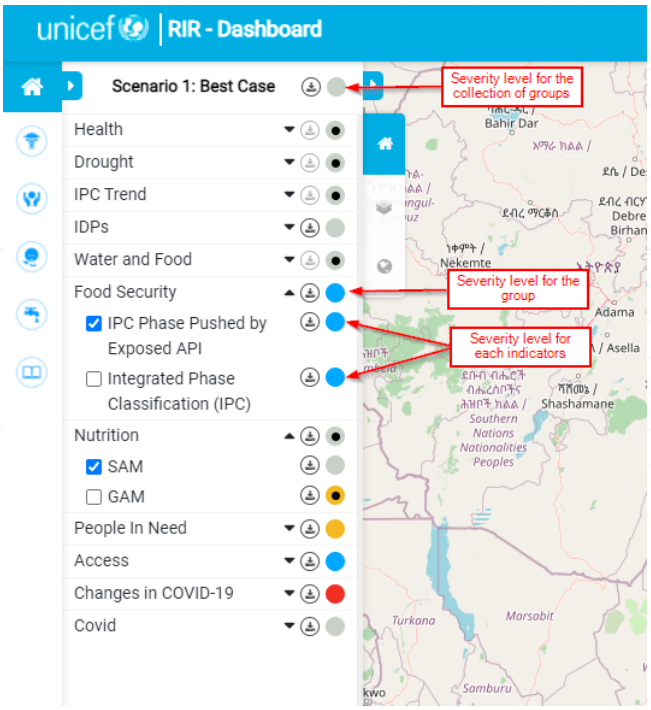
To fully understand the platform and the information you can obtain from it, you need to understand how it works.



1.1.1 1. Programme Interventions Panel

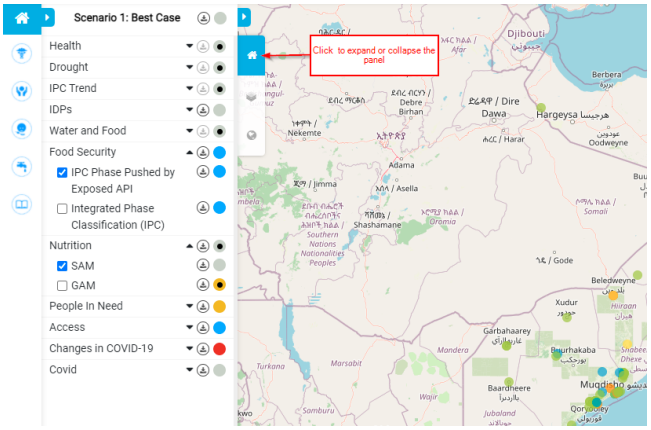
This group of buttons is used to navigate through the key areas of factors or indicators that the RIR platform accounts for. If you have admin status, more icons will be available within the panel, we will explore these additional buttons at a later stage. Each button will take you to a page as seen in the image below which will give you the intervention status of the geographic region for that specific factor. The factors in order from top to bottom are; education, child protection, nutrition, wash, and education. To return to the dashboard, "click" on the 'Context Analysis' icon which is represented as a little home symbol.

1.1.2 2. The Indicator Panel



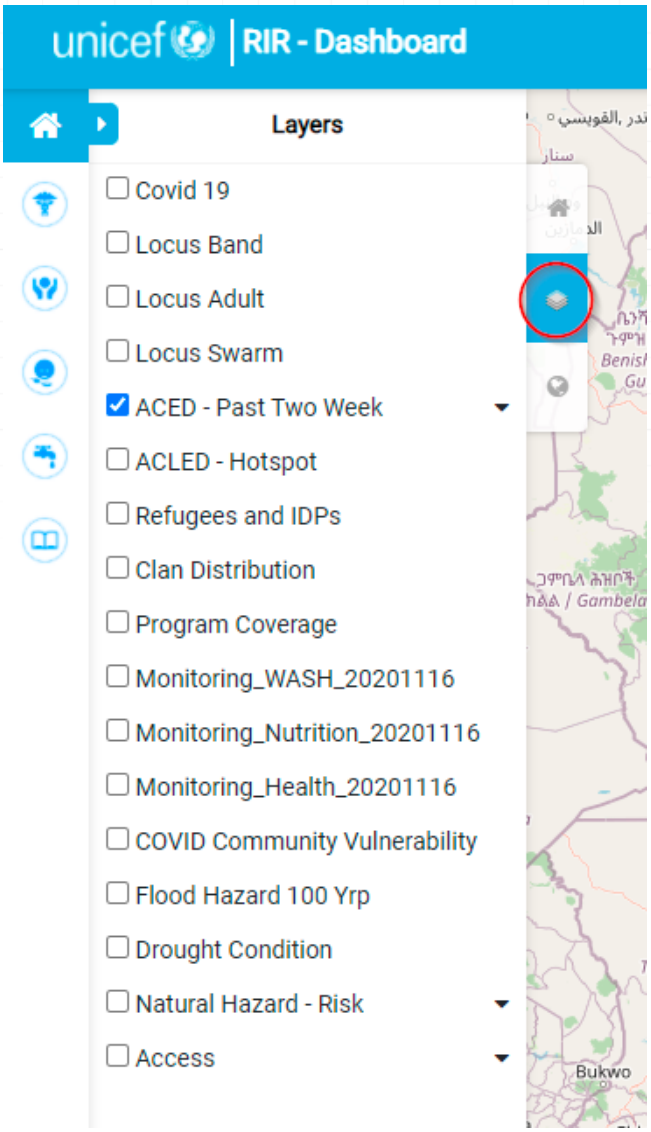
This panel contains a list of indicators that relate to the factors accounted for by the platform. The coloured circles next to each indicator show the current severity level for that indicator within the specific geographic region. The indicators are arranged in groups that have an overall severity level for that group next to the group name. The entire collection of indicators is also given an overall status which is displayed at the top of the list. An in-depth tour of the indicators and how they work will follow.

1.1.3 3. The Indicator Icon



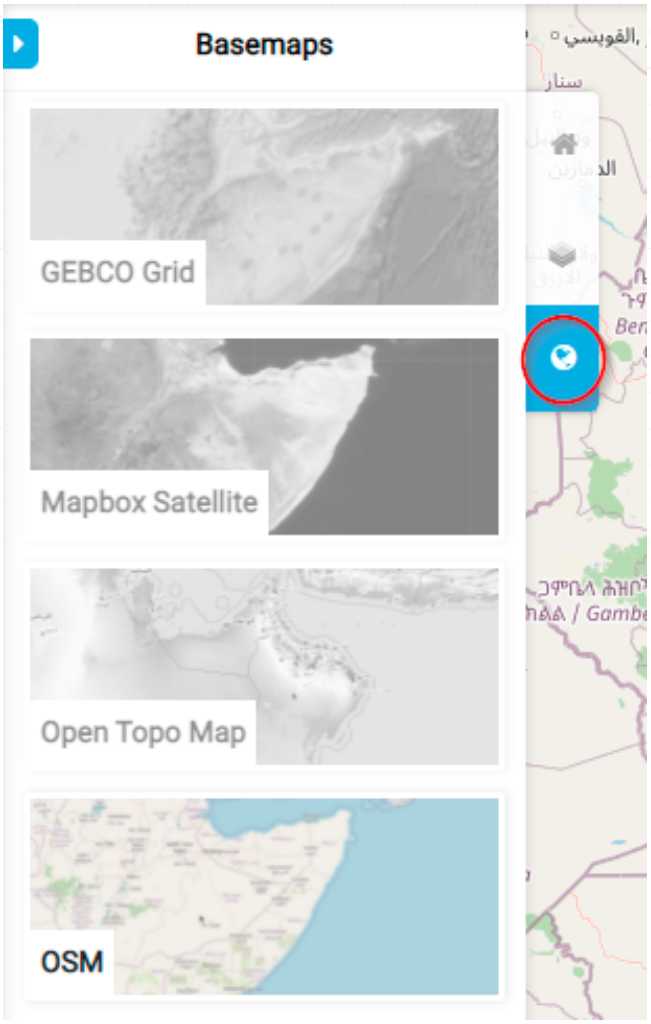
This button expands and collapses the indicator panel if the button is in blue as illustrated in the image below.

1.1.4 4. The Layers Icon



By clicking on this icon, you expand the 'Layers Panel'. This panel is where you can select or deselect the layers you want to be visible on the map canvas. The layers that you have visible should coincide with the information you are trying to obtain from the platform.

1.1.5 5. The Basemap Icon

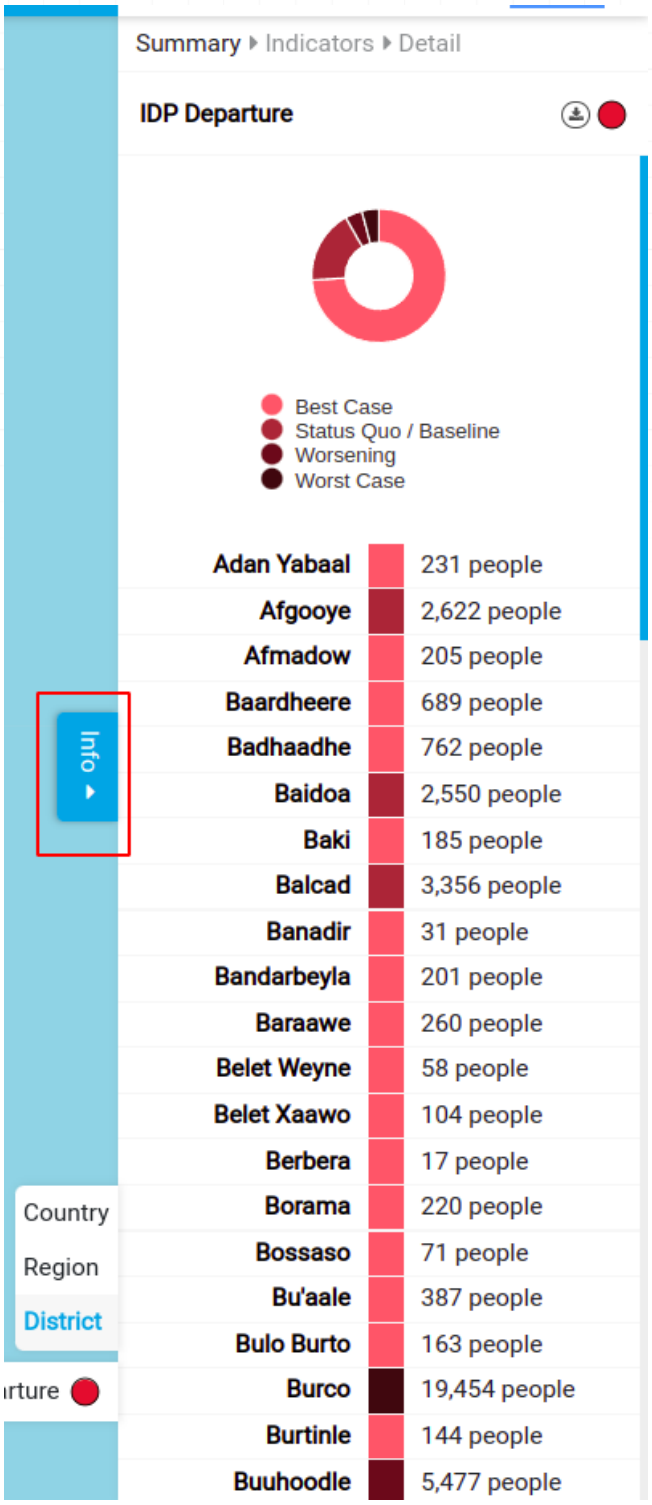


To expand or collapse the basemap panel, "click" on this icon. When expanded, you will be able to choose which basemap you would like to be displayed on your canvas extent.

1.1.6 6. Map

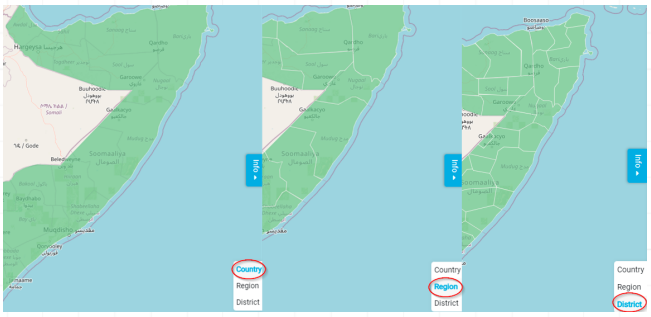
The map displays a geographic area based on the instance being used. In this case, it’s Somalia. The information that is displayed on the map is determined by the layers that are selected as well the factors that have been selected within the 'Indicator Panel'. A complete guide of the map and accompanying interactions will be available in a document to follow.

1.1.7 7. The Info Button



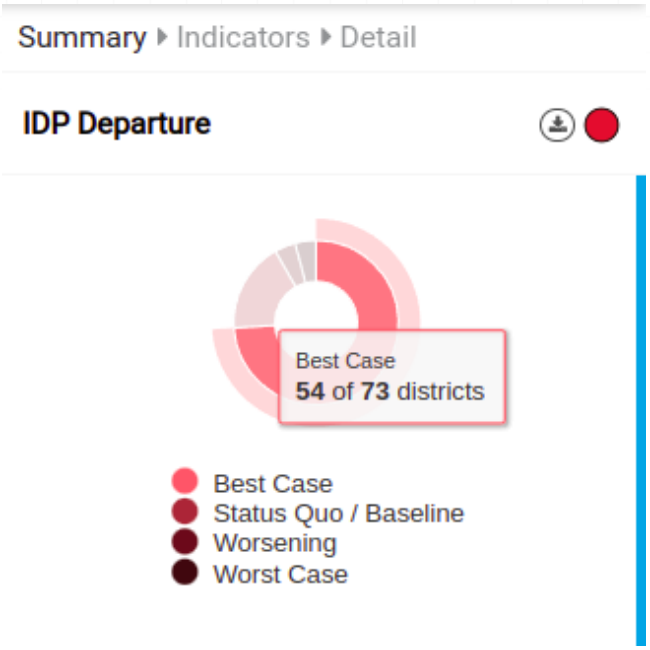
The 'Info Button' expands a panel that contains a summary of the severity of the selected indicators in different locations within the geographic area. It also has an 'Indicators' option to select which illustrates the severity of all the factors for a specific location within the geographic area, this location can be selected by using your mouse and simply "clicking" on the area of interest.

1.1.8 8. Geography Level Panel



This panel allows you to view the area of interest at a country, region, and district geography level.

1.1.9 9. Graphical Representation



This pie chart illustrates the severities of the selected indicators for the whole geographical area or instance. This chart gives you the cumulative total of each severity out of the total number of regions or districts (depending on your settings in the geography level panel). To find out how many regions or districts fall within a specific severity level, "run" your mouse over that area of the pie chart.

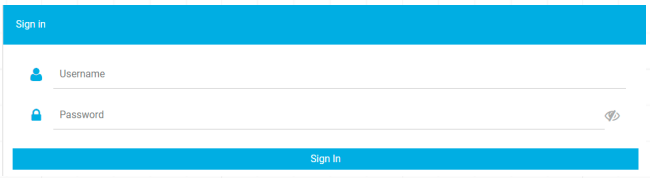
1.1.10 10. Timelapse Bar

The 'Timelapse Bar' will show you the severity of the selected indicators over some time. As the map and the 'Info Panel' change, the corresponding date for that data will be displayed within the bar. To initiate the time-lapse, "click" on the "play" button.

1.1.11 11. Links Button

If you "click" on the "links" button, a dropdown menu appears. These are the various links to the different servers that the RIR platform connects to.

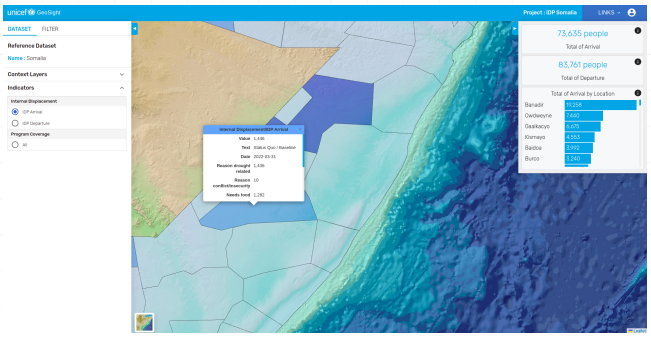
1.1.12 12. Sign in Button



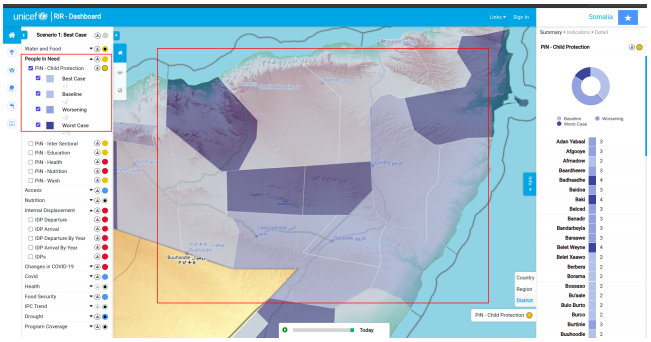
To sign in to your account, "click" on this button. There is no registration option which means that in order to sign in, an account needs to be created for you by someone with the necessary permissions.

1.1 Map Interactions

The GeoSight map interaction tools give an interactive map experience. Users are able to zoom and pan to areas of interest and display information information in just a few clicks.



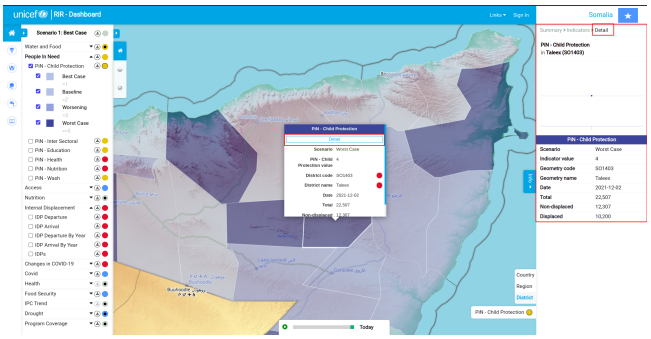
1.1.1 Zoom In and Out



Zooming into an area on the map is useful to show a specific area of interest and to see more detail.

To Zoom in or out on the map canvas either scroll your mouse up and down or use Ctrl+shift+click and drag an square around the area you wish to zoom in on.

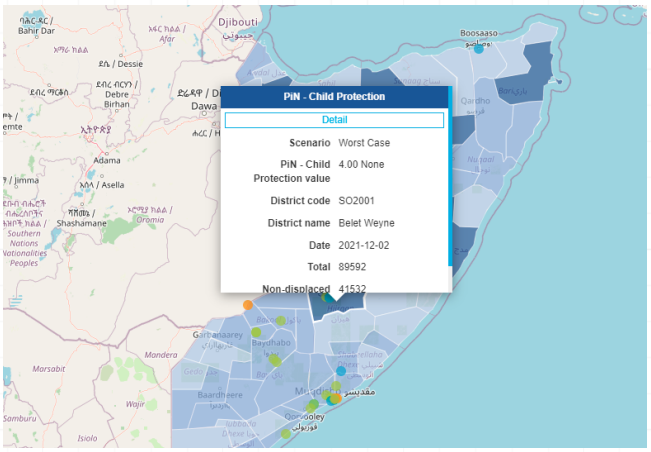
1.1.2 Move Around the Map



Navigating or panning around the map is useful to focus on specific areas of interest.

To pan, `click` the mouse on the map canvas and while holding the click drag the map to the desired area of interest.

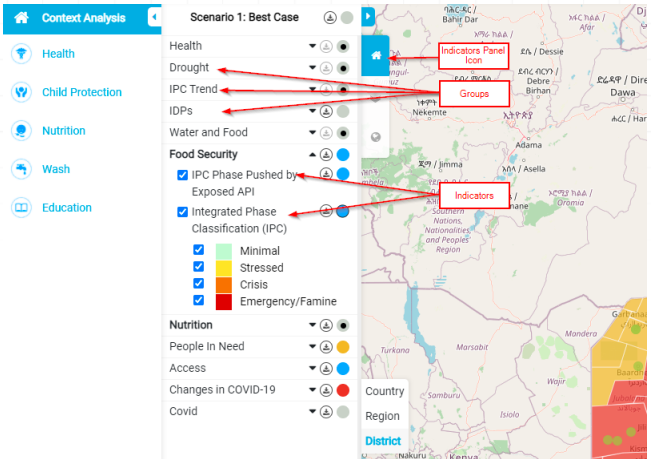
1.1.3 Information Display Window



To gain information on a specific area within the map, "click" on that area with your mouse. By clicking on an area, a popup window with information related to your selected layers for that area will be displayed on the screen. This action will also change the info window in the ‘Summary Tab' to the ‘Indicators Tab'. You can also view more details by "clicking" on ‘details’ in the popup window. This will also change the info window’s tab to the ‘Details Tab'.

1.1 Indicators

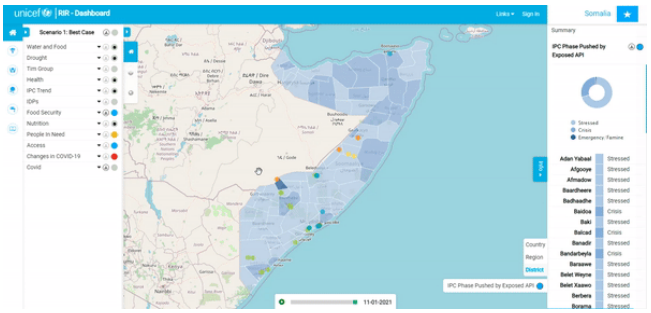
The RIR dashboard displays various indicators and their corresponding severity levels in the indicator panel. This panel can be accessed under the indicators tab which is visible when the user has selected the context analysis icon which is located above the Programme interventions bar. Each indicator falls under a group. The severity levels refer to how good or bad the case is for that factor within the instance. This ranges from worst-case scenario to best-case scenario. The case of the scenario will indicate if that region or state needs additional response or intervention.



1.1.1 Indicators

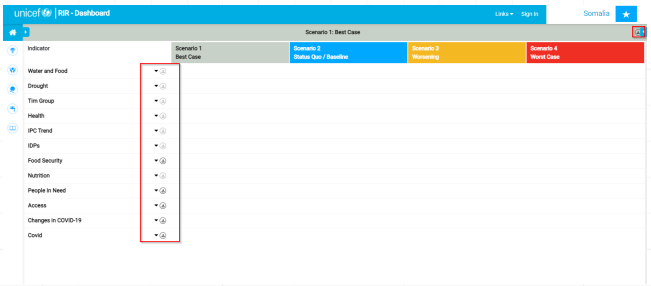
The indicators in the panel are divided into groups. Each group has a drop-down arrow and contains a subset of indicators inside. This allows you to activate data for each group or allows you to be more specific and select data to be displayed from an indicator within the group. To display activate data from a group or an indicator "check" their checkboxes which will show with a tick. Groups can be expanded or collapsed by "clicking" on the triangle next to the name of the group. If there is a little black dot in the coloured circle next to the group or indicator, a custom dashboard will open when that circle is clicked.

1.1.2 Traffic Light



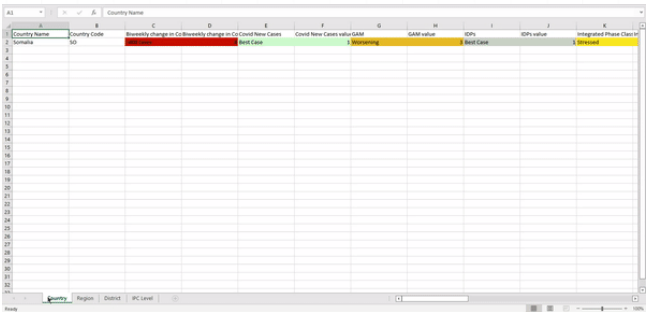
To view the traffic lights, "expand" the indicators panel by "clicking" on the arrow for ‘full screen’ as indicated in the clip below. This will open the full indicator information page and allow you to look at the severity level for each indicator. To view each subsection in each group, "expand" the indicator group. The severity levels displayed are for the entire instance, in this case, they show the indicators and their corresponding severities for Somalia.

1.1.3 Download Data

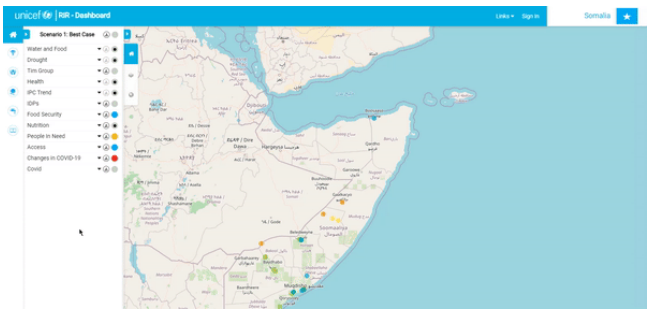


If you would like to download data for each group, indicator or even for the whole instance, there are various methods to do so. There is a download option (round icon with a download arrow in it) next to each indicator and group on the 'Indicator panel' as well as on the 'Traffic Light' screen. The option to download data for the entire instance is in the top right corner of the screen. The data will download in the form of an Excel spreadsheet.

Downloading data will provide you with country, region, district and IPC level data for the geographic location under observation.



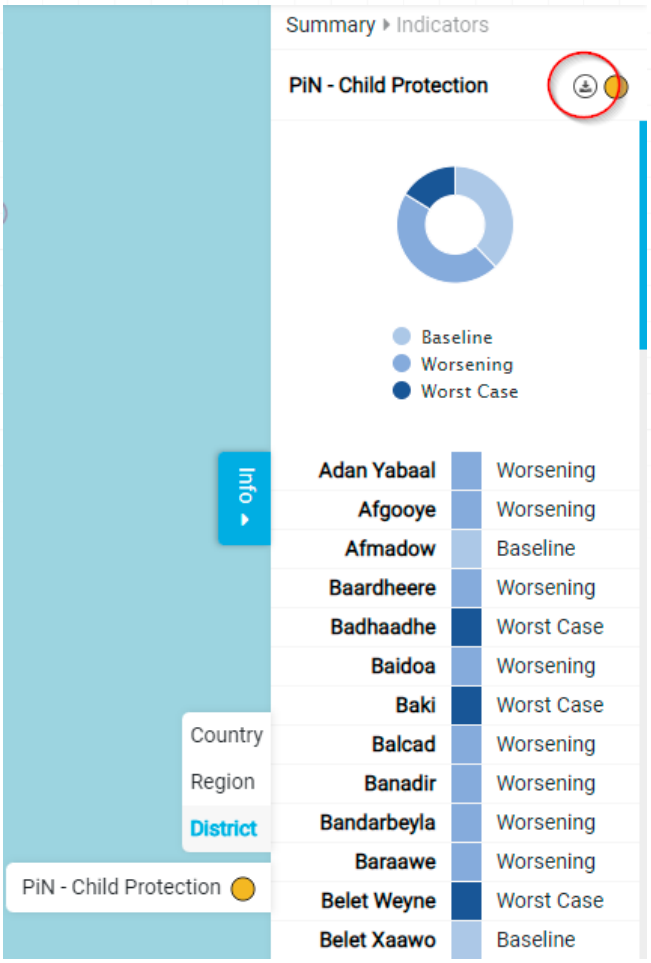
1.1.4 Info Panel



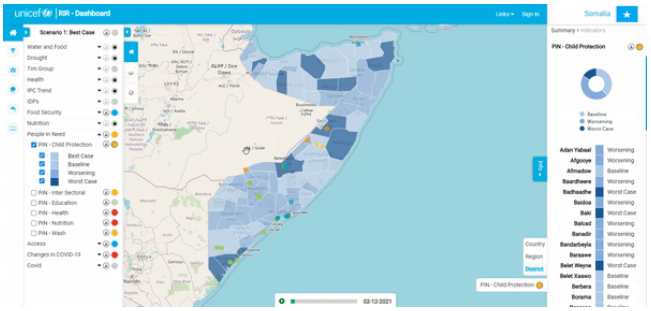
The Information panel is located on the right-hand side of the screen. It’s only visible when an indicator is selected in the indicator panel.

The panel shows the severity case of the selected indicator in each region or district (depending on what has been selected). It also has a graphical representation in the form of a pie chart that displays how many areas within the instance fall within each severity case. By "hovering" your mouse over the pie chart, you can see these values in a pop-up label. You can also download the data for that specific indicator in the info panel.

The download icon is circled in red in the image below.



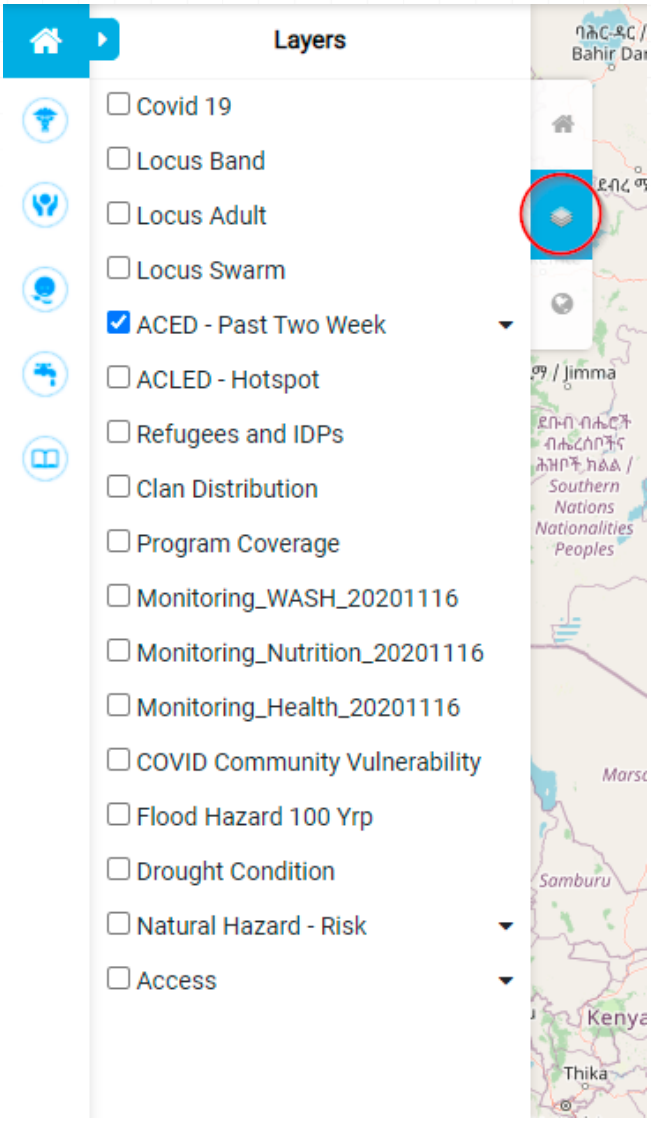
To view the severity levels of each indicator for a specific location, "click" on a region or district on the map. This should create a pop-up window on the screen as previously discussed in the 'Map Interactions' document. It should also create a tab in the 'Info Panel' called 'Indicators'.



1.1 Layers

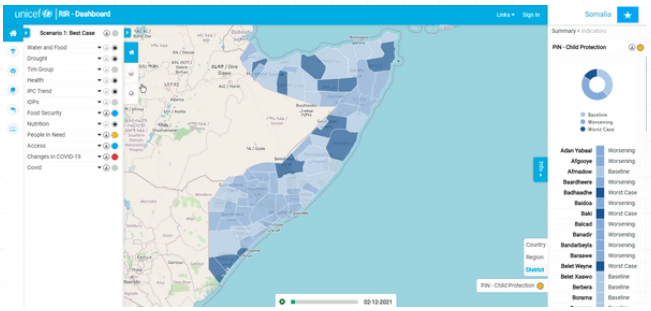
A layer represents geographic data that can be represented on a map as either a point, line, polygon or pixel value from and image. The Layers in the dashboard are grouped into themes for example, access which includes layers like ports and roads. Examples of map layers also include political boundaries, Covid hotspots, schools or even orthophoto imagery. Each layer is a visual representation of a dataset.

1.1.1 Context Layers

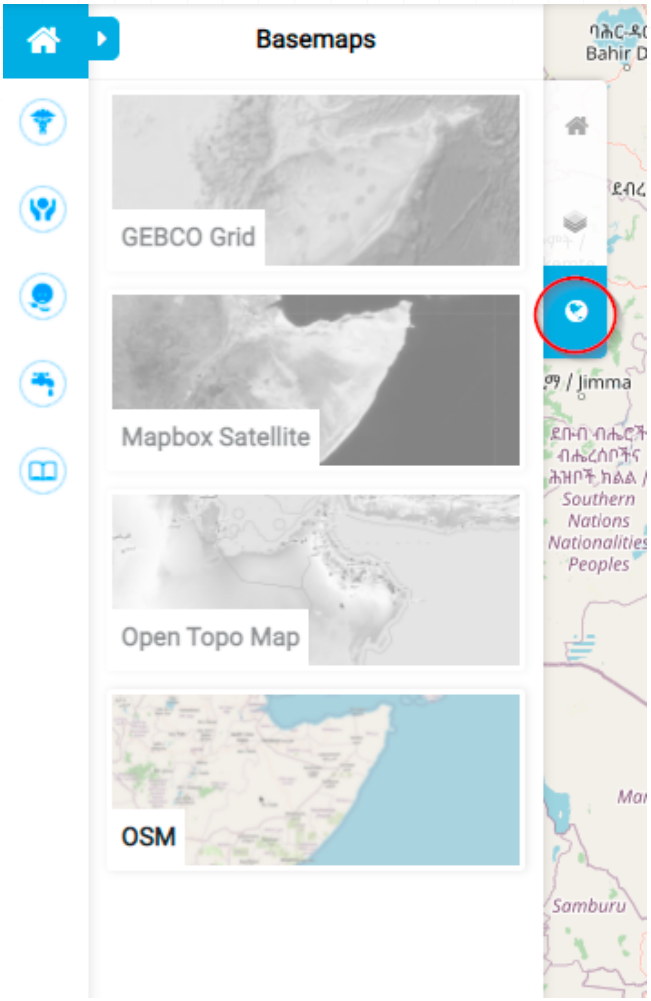


Underneath the indicators tab is the layers tab. By clicking on this, you open a display of different layers that you can activate to be displayed on the map canvas.

The Layers show on the map canvas above the indicators. If the layer activated is a polygon layer, you won't be able to see which indicators are active underneath and therefore need to switch between layers and indicators.

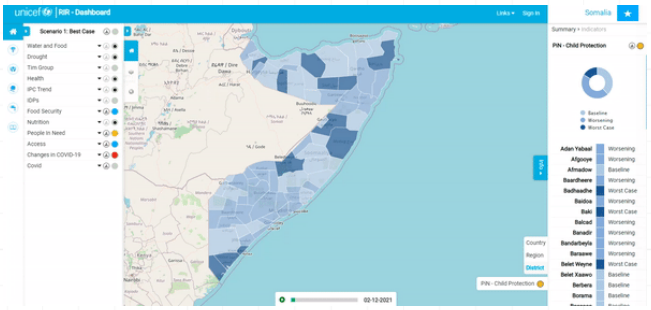


1.1.2 Basemap



A basemap provides background detail necessary to orient the location of the map as well as other geographic phenomena such as topography or boundaries for example. Additionally, basemaps contribute to the aesthetic of a map. Below the context layers tab is the Basemap tab. If you click on this tab, a selection of various basemaps will be displayed for you as the user to choose from.

The default basemap that's on the map canvas is OSM which is 'open street map'. There is also a GEBCO grid basemap which is a global terrain model for ocean and land, a mapbox satellite basemap and an open topo basemap which is rendered from OSM and SRTM data.


RIR - Dashboard
Scenario 1: Best Case
Somalia
PiN - Child Protection
Baseline
Worsening
Worst Case
Country
Region
District
02-12-2021

1.1 User Tutorial

👩‍💻 The Geosight platform is a situational awareness platform to monitor health, child protection, nutrition, water, sanitation, hygiene, and education in a geographic region. It provides powerful but simple geospatial data analysis tools to provide insights about the situation on the ground. In this section will explain how the Geosight platform works using simple examples and workflows that an everyday platform user would use.

1.1.1 Working with this documentation

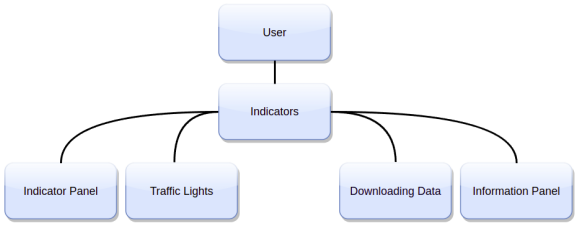
Whenever you see a phrase in **bold**, it refers to a link or button on the user interface that you can interact with.

1.1.1.1 Important Links

- Geosight Platform
- Geosight Full Documentation

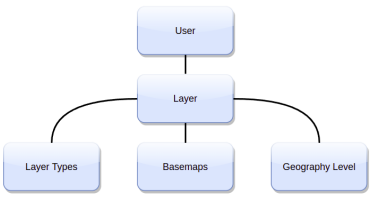
1.1.1.2 Session Outline

1. Access the platform
2. **Documentation** and **Links**
3. **Projects**
4. **Sign in**
5. The Dashboard tour:
6. **The Context Analysis Button**
7. **Programme Interventions Panel**
8. **The Indicator Panel**
9. **Hiding and showing panels**
10. **The Traffic Light**
11. **The Information Panel**
12. **Downloading Data button**



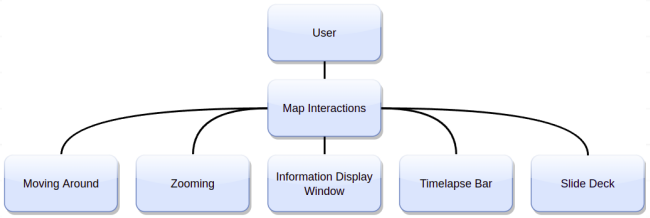
(See also Indicators).

13. Layers
14. The **Context Layers Icon**
15. The **Basemap Icon**
16. **Geography Level Panel**



(see also Layers). We will look at these layer related topics:

17. Map Interactions
18. **Panning** moving around the map
19. **Zooming** in and out
20. The **Information Display Window**
21. **The Map Slider** (eg. to compare people in need of 'Child Protection' vs. 'Child Protection Program Coverage')
22. **Timelapse Bar**(eg. IDP arrival over time)



(see also Map Interactions)

1. More on the **Information Panel**
2. **Graphical Representation**
3. Questions

You can find more self-study content in the full system documentation here: Platform Tour).

1.1.2 Tutorial

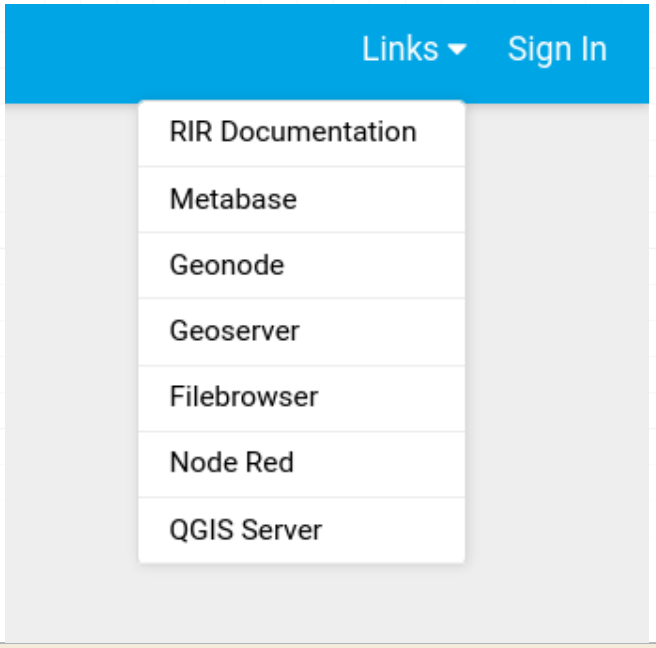
1.1.2.1 Accessing the platform

You can access the platform here: https://staging.Geosight.kartoza.com:

> **Note:**
>
> 📒 **Note** this link will change in the future. We will advise all users of the system when that happens.

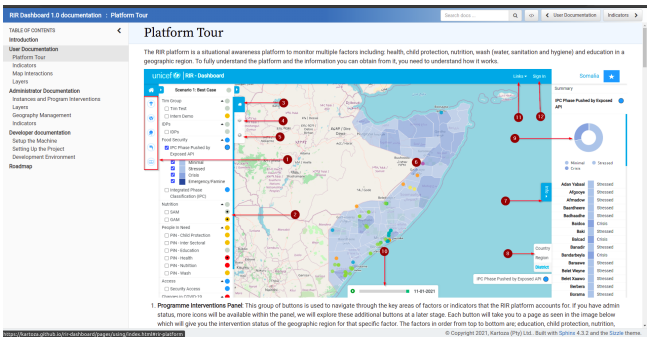
1.1.2.2 Documentation

🧑‍🏫 On the top right-hand side of the landing screen, there is a drop-down menu for **Links** and a link to a sign-in page. The **Links** drop-down menu is a quick way to access the documentation for using the platform and the different data and resources associated with the platform (which are not covered in this tutorial).



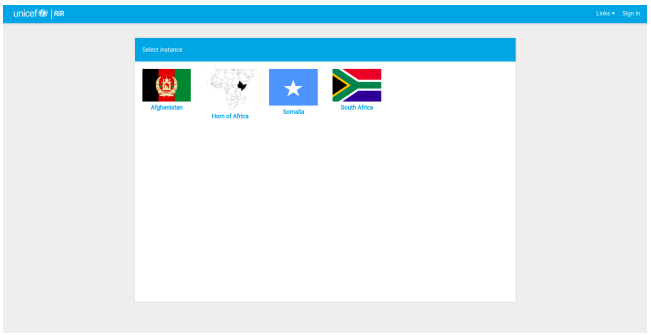
Note:

Instructor note: Briefly show the documentation and how to navigate it.



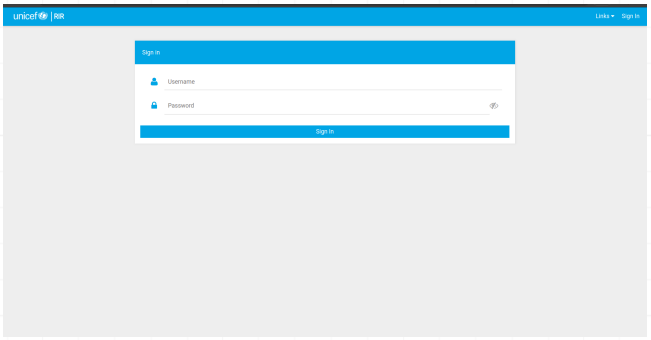
1.1.2.3 Instances

On the landing page, you will see several **instances**. An **Instance** is a configured dashboard for a specific region or country. We will use the **Somalia instance** for the examples in this tutorial.

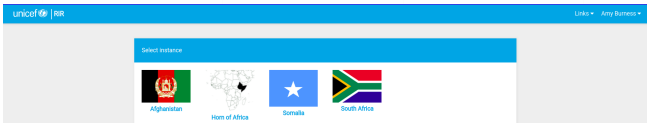


1.1.2.4 Signing In

👩‍🏫 Return to the Geosight platform, click on the **Sign In** link, and a page will open where you can add in your user name and password. Your credentials are created for you by an administrator and may not be necessary. As a web user, you will still be able to interact with the platform without a login.

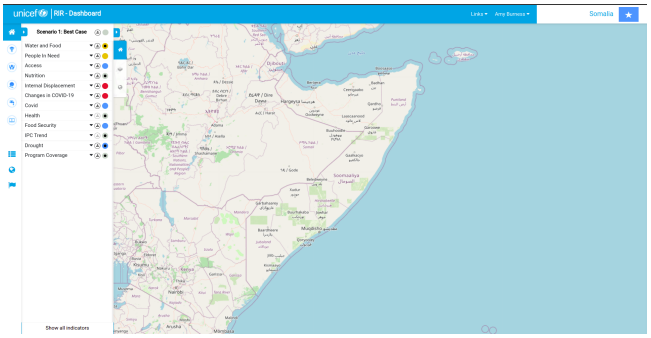


👩‍🏫 **Sign In** is only important to access specific workflows. Some data and workflows may only be available to named users who are signed into the platform. Once you are signed in to the platform, your name will appear on the top right, and depending on your admin privileges, there will be a drop-down with the option to log out and reach the admin page if you are an administrator.

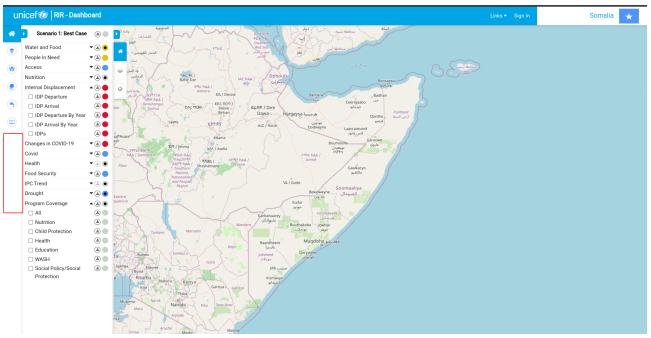


1.1.2.5 The Somalia Dashboard

👩‍🏫 Click on the **instance** labeled Somalia, and the dashboard will load and open.



👩‍🏫 You will see I am still signed in, and there are three options available to me on the bottom left. If I sign out, these buttons will disappear because web users do not have access to some functionality. For this tour, a web user status will work.

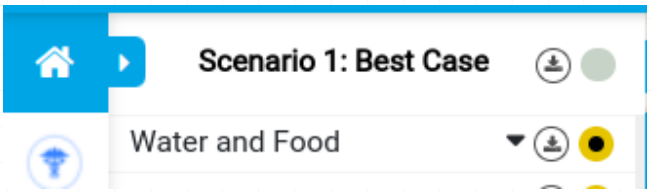


1.1.3 Dashboard Tour

👩‍🏫 Let's tour the dashboard together. We will start from left to right across the screen, showing what each button and panel does with a few simple examples.

1.1.3.1 The Context Analysis Button

👩‍🏫 At the top left of the screen, you will see the **Context Analysis Button**. This button gives access to the **Indicator Panel** it is selected, and the is panel open by default.

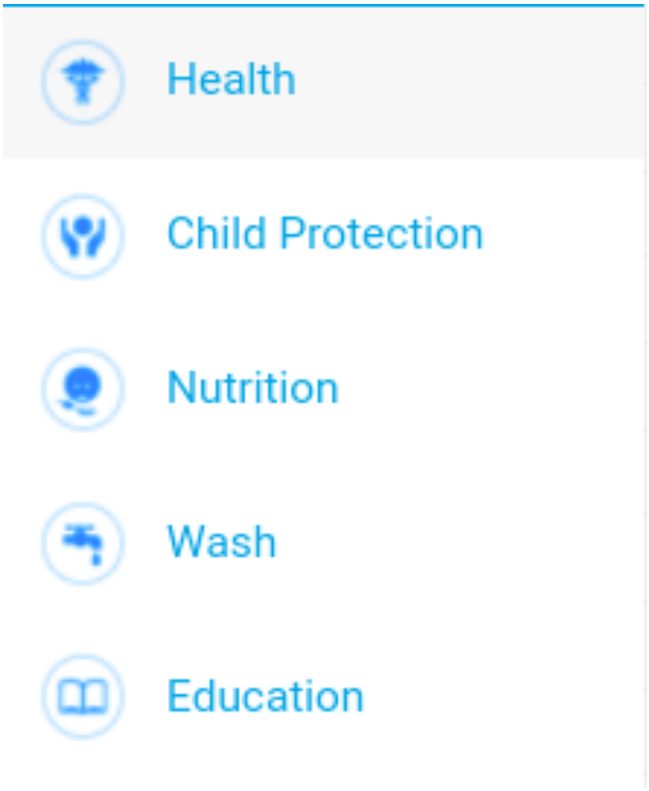


👩‍🏫 Below the **Context Analysis Button** is the **Programme Interventions Panel**. It contains a set of buttons that allow access to key risk response indicators.

👩‍🏫 Click on the arrow next to the house symbol, the tabs will extend and be labeled so you can see what each symbol means, Health, Child Protection, Nutrition, Wash, and Education.

👩‍🏫 For example, the second button-down with a picture of the caduceus/ medical symbol indicates **Health**. Once opened the panel shows a report on the status of or degree to which the intervention for that factor is helping and other information like costing.

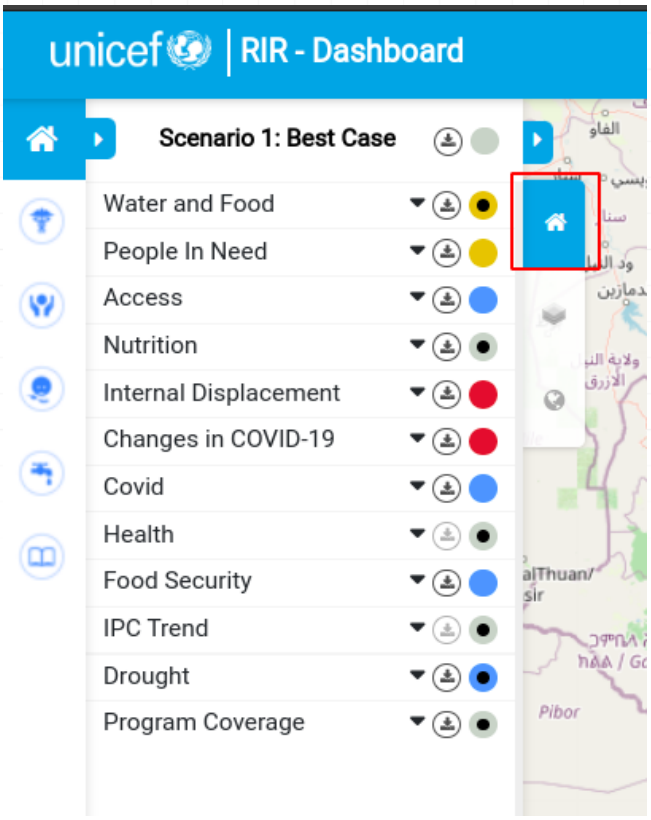
👩‍🏫 Click on each button to see the information for each factor.



1.1.3.2 The Indicator Panel

👩‍🏫 Click back on the **Context Analysis Button** and observe the **Indicator Panel**.

👩‍🏫 This panel contains a list of **indicators** (special layers) that relate to the main factors of interest on the platform like health and nutrition. Indicators are special layers in Geosight that are linked to the situation in the region. Indicators are used to show the situation in the region. For example, in Somalia, there are indicators for the Children in need of protection **PIN- Child Protection** that we will practically explore below. The panel is expanded by default but can be collapsed if you click on the tab labeled with a house on the right side of the panel. Collapsing the pannel can allow you to observe the map better.



🧑‍🏫 Click on the triangle next to the label **People In Need**.

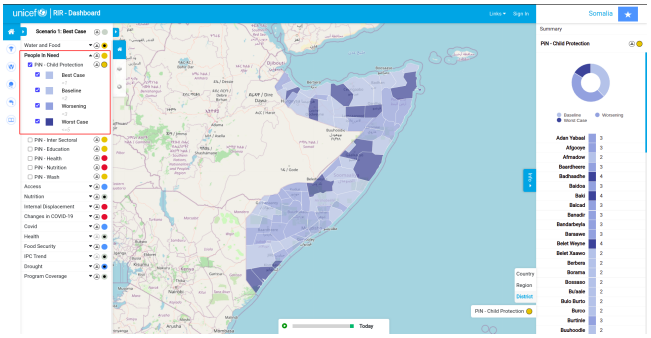
🧑‍🏫 This opens a drop-down menu showing all the data on different groups of people that require assistance from government or other organizations.

🧑‍🏫 Select the box next to **PIN- Child Protection**.

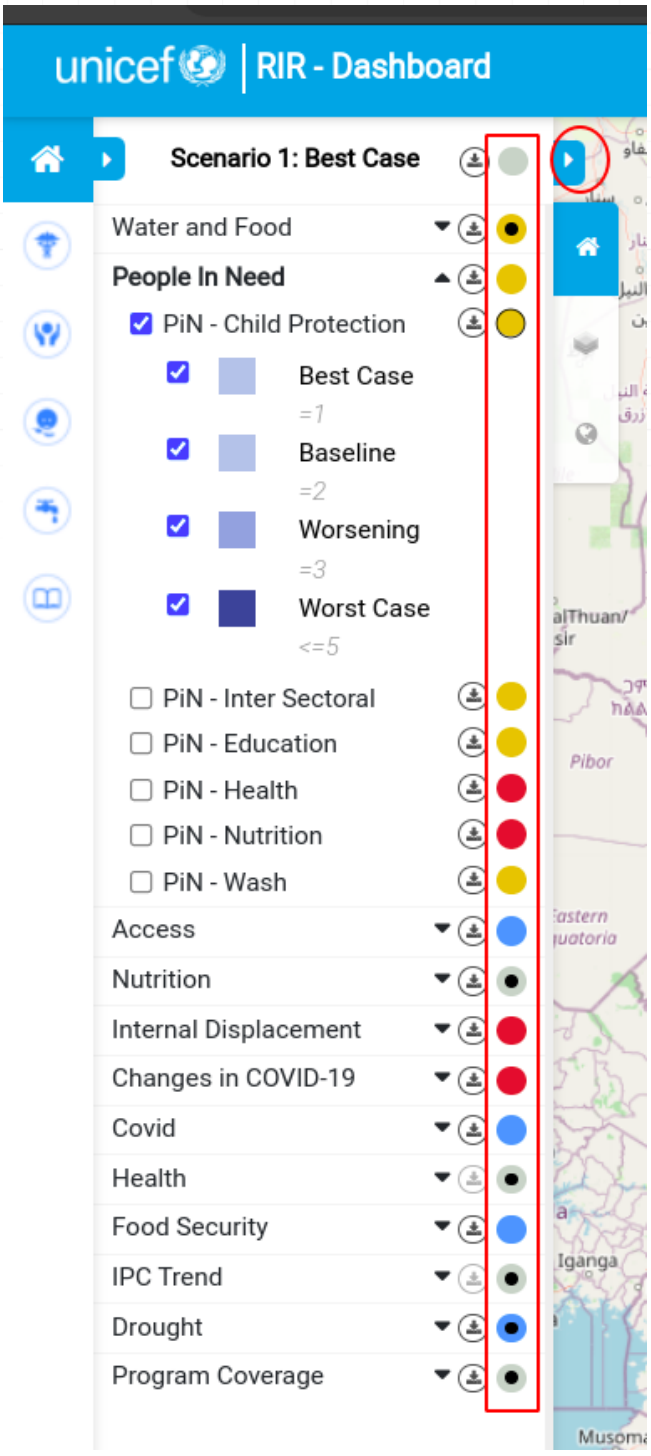
🧑‍🏫 A tick will appear in the check box and you will see a layer appear on the map. The map shows areas in darkening blue shades that indicate a decrease in child protection per region. You can select only one sub-layer (e.g. best-case or worst-case) of the **indicator** layer by ticking or un-ticking the **checkboxes** next to each of the cases.

🧑‍🏫 Click and unclick the different case options (see how the map changes). Ensure all of the **PIN- Child Protection** sub-Layers are ticked to continue with the tutorial.

🧑‍🏫 An **Information panel** will also open on the right-hand side of the screen when an **indicator** is selected. We will go through the **Information Panel** in more detail shortly.



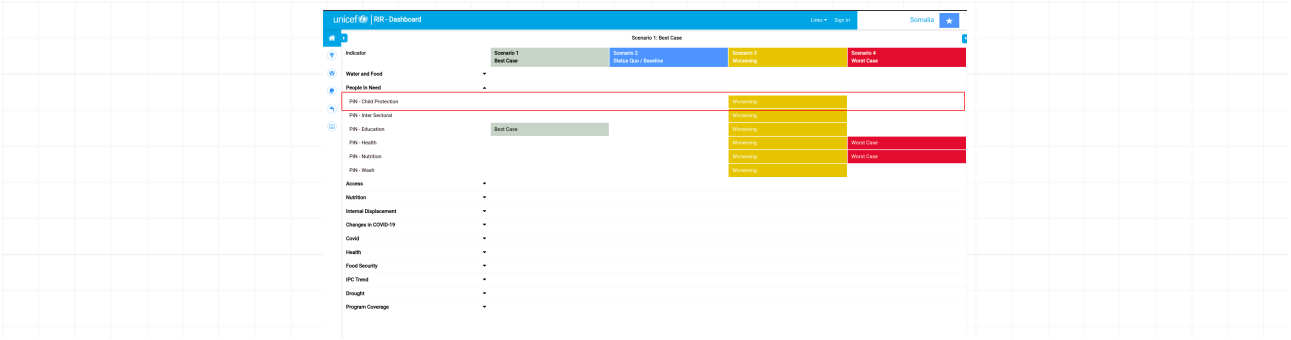
🧑‍🏫 The coloured circles next to each **indicator** show the current severity level for that indicator. Blue is the best case, yellow mid, and red is the worst case. The case scenario will indicate if that region or state needs additional responses or interventions to reduce risk.



1.1.3.3 The Traffic Light

🧑‍🏫 You can access what we call traffic lights for the indicators by clicking on the arrow in the top right of the **Indicator panel**. This will expand the information on the severity level, for example, you can see that for our selected layer of **PIN- Child Protection** overall in Somalia the situation is worsening for children hence the yellow color. Several regions need additional responses or support to protect vulnerable children. Click the triangle (now on the top right) again to see the map again.

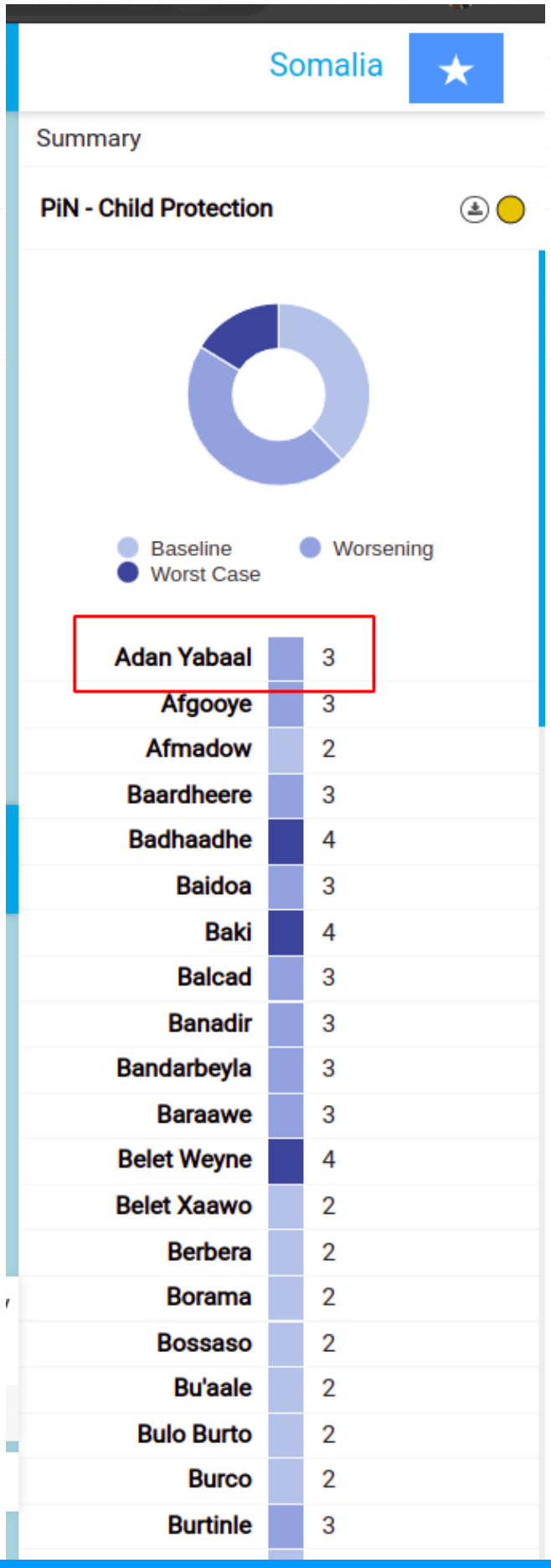
🧑‍🏫 Click on the arrow in the top right of the **Indicator panel**



1.1.3.4 The Information Panel

🧑‍🏫 On the right-hand side of the map area, the **Information Panel** shows a summary of the severity case of the indicator selected for each region or district. For example in Adan Yabaal Child protection has a value of 3. You will also see an interactive **pie chart** infographic summarising all the data in the layer.

🧑‍🏫 Hover your mouse over the **pie chart** and observe the labels and number of districts in Worsening and Worst Case scenarios.


Somalia
Summary
PiN - Child Protection
Baseline
Worsening
Worst Case
Adan Yabaal 3
Afgooye 3
Afmadow 2
Baardheere 3
Badhaadhe 4
Baidoa 3
Baki 4
Balcad 3
Banadir 3
Bandarbeyla 3
Baraawe 3
Belet Weyne 4
Belet Xaawo 2
Berbera 2
Borama 2
Bossaso 2
Bu'aale 2
Bulo Burto 2
Burco 2
Burtinle 3

👩‍🏫 If you click on the region name like Adan Yabaal in the **Information Panel** the platform will show which region it is on the map with an information window.

👩‍🏫 Click on Adan Yabaal (the text) in the **Information Panel** under the pie chart.

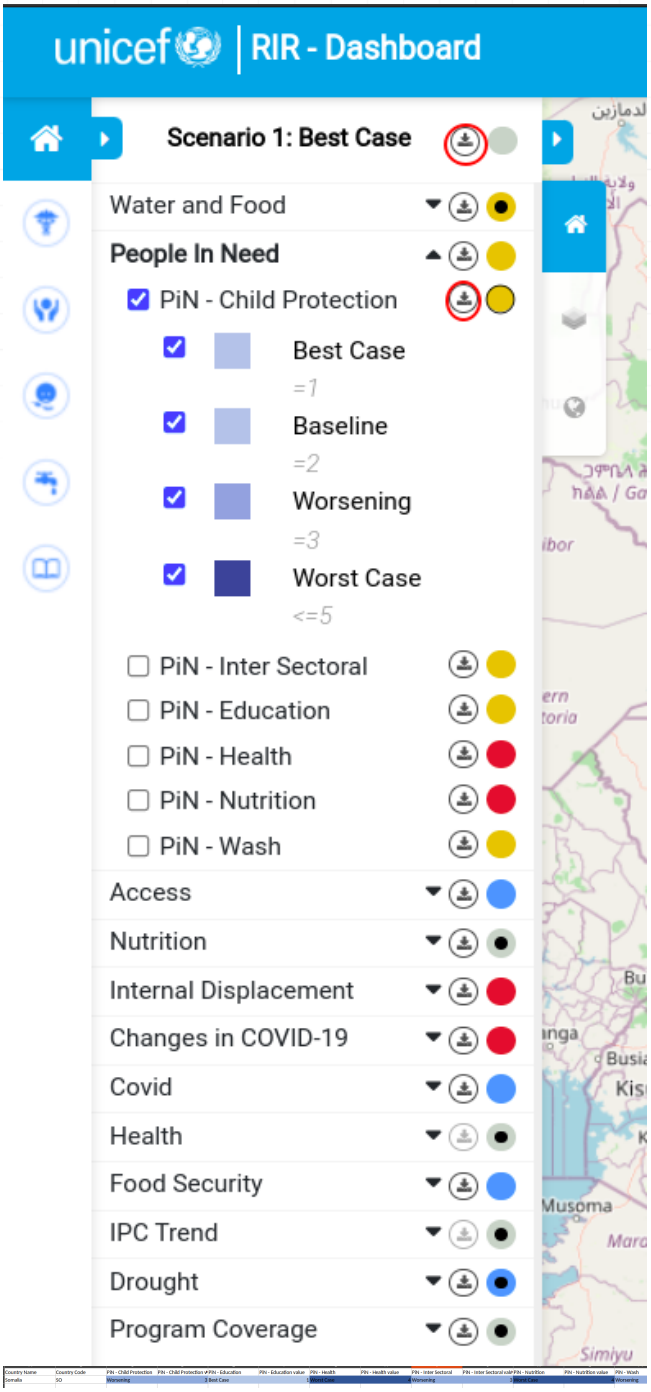
👩‍🏫 Once a single district is selected, the **Information Panel** will show all the indicators for that specified region and the severity of the situation for each indicator using different traffic light colors. You can click on each indicator for more detail like Child protection and you will see more information and a simple infographic. We will look at the **Information Panel** with different data further on in this tutorial and show how the simple infographic in the detail section can show changes over time if the data has such information.

👩‍🏫 Click on **PiN-Child Protection** (the text) in the **Information Panel** and observe the information and simple Infographic and hover your mouse over it.

1.1.3.5 Downloading Data Button

🧑‍🏫 You can download any data of interest by clicking on the round symbol with the download arrow in it (**download button**) next to each indicator in the **Indicator Panel** for the selected indicator. You can get all the data for the instance if you click **the download button** at the top of the **Information Panel**. This will give you a spreadsheet of the information that you can use outside of the platform.

👨‍💻 Click on the **download button** next to **People In Need** and observe the downloaded spreadsheet on your computer. Note the data is also colour-coded in the spreadsheet as per the platform.



1.1.4 Layers

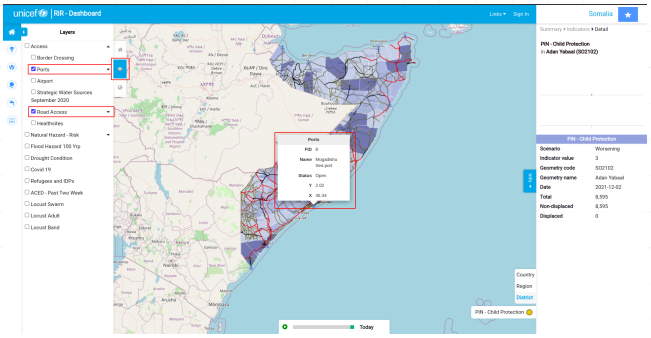
👩‍🏫 Let's explore the layers available to visualize and give context to the indicators on the map.

1.1.4.1 Context Layers

👩‍🏫 The **context layers** can be accessed by clicking on the button with 3 overlapping squares on it. There will be a list of options to choose from. Context layers are shown on the map to provide a sense of the conditions in the region. They can cover any topic - for example, security, food security, infrastructure, etc. Context layers do not have indicator data attached, they are a visual aid in the dashboard map. Let's Select 'Access' We can now see all the roads, airports, and other access indicators/features. If you click on the drop-down triangle you can choose exactly

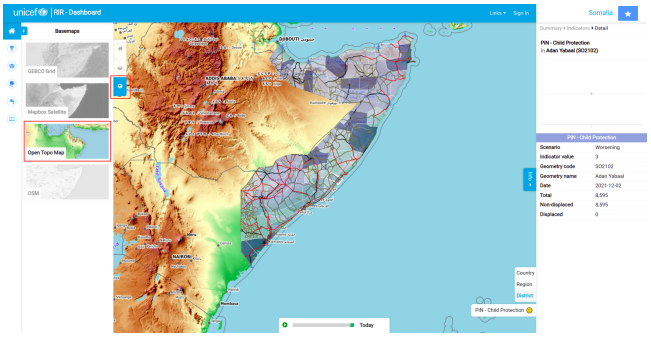
what features you want to see and Turn off everything except roads and ports by checking and unchecking the feature boxes. If you click on a point on the map like a port you will be given information about that specific point in an **Information Window**.

👩‍🏫 Click on the context layers button, select access layers select only roads and ports. Click on a port and see the information window.



1.1.4.2 Base Maps

👩‍🏫 You can also change the base map behind the data if you click on the world icon in the panel. The default is an OpenStreetMap canvas. There is also a GEBCO grid base map which is a global terrain model for ocean and land, a Mapbox satellite base map, and an open topo base map which is rendered from OSM and SRTM data.



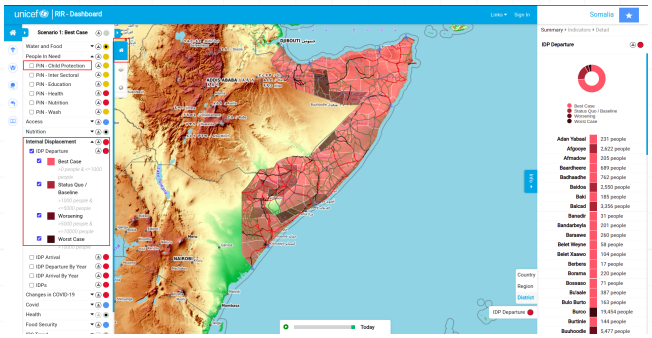
👩‍🏫 For example, it may be useful to have a topographic map to visualize geographic features like mountains and rivers that could impede people's movement into areas if you are reviewing the internal displacement of people.

👩‍🏫 - turn on the Open **Topo Map** base map

- Navigate back to the indicator panel
- Uncheck the child protection layer.
- Click the drop-down for **Internal Displacement**
- select the **IDP Departure layer**

👩‍🏫 You can now see some of the topographic features underneath the departures layer. You may observe that several areas with high departure rates are in the northern desert area. Thus drought may be affecting the people in these areas. Let's take it a step further and go to the contest layers again drop down the **Natural Hazard** option and check on the **Drought Priority Areas**. You can see that many of the drought priority areas are in the northern desert area we can see on the context topo map.

👩‍🏫 Navigate to the context layers and check on the **Drought Priority Areas**.

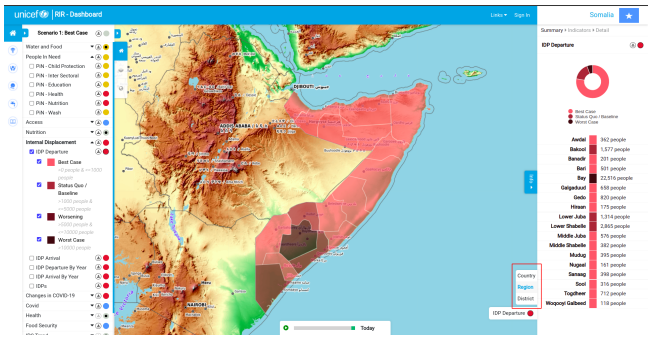


1.1.4.3 Geography Level

🧑‍🏫 Finally, while we have the IDP data handy you can change the **Geography Level** of the indicators. By specifying country, region, or district in the menu on the bottom right of the map canvas. Geography levels express the hierarchy between administrative boundaries. For example, in Somalia, we have the country boundary subdivided into regions, which are in turn subdivided into districts. Geosight uses these geography levels to provide a sense of the conditions in the region.

🧑‍🏫 - Turn off the **Acess layers** and the **Drought Priority Areas** by going to the layers and unchecking them so that we can see the regions better

- On the menu at the bottom right of the page select Region and you will see that the geographic level of the areas changes.
- click on Country and see what happens.



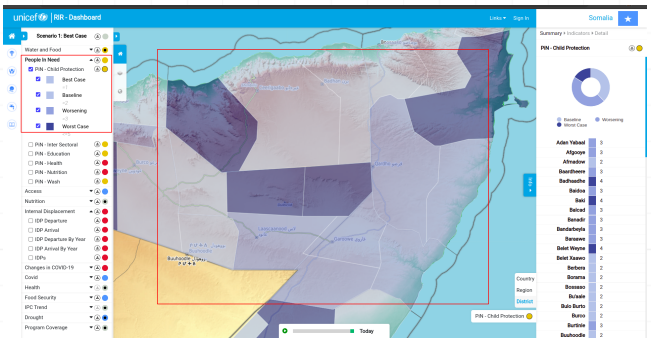
1.1.5 Map Interactions

🧑‍🏫 Let's now get into interacting with the Map. Activate the child protection indicator again and deactivate departures.

🧑‍🏫 Check on the **PIN- Child Protection** and check off the **IDP Departure layer**

1.1.5.1 Zooming

🧑‍🏫 Zoom into and out of the map by using the scroll wheel on your mouse or you can click your mouse, hold down shift and draw a square around the area you wish to zoom in to.



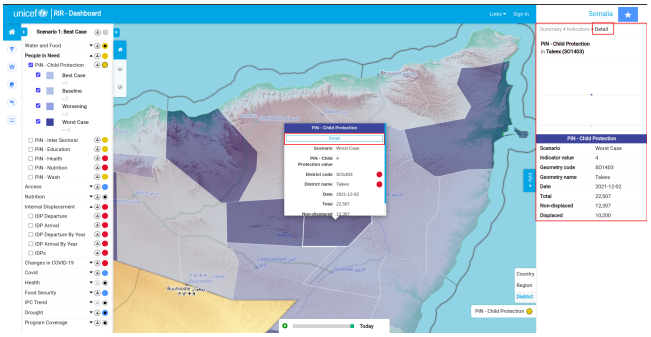
1.1.5.2 Panning

To pan on the map click on the map and drag it around.

1.1.5.3 Information Window

Once you have zoomed and panned to an area of interest click on it and you will see an information window as we saw earlier. For more information click on the detail button and information will be shown in the **Information Panel** on the right. Click off the window to get out.

👨‍🏫 Zoom in, Pan, and click on a region of interest.

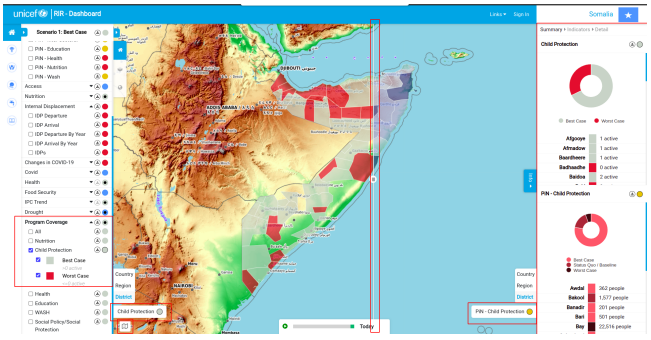


1.1.5.4 The Slider

👩‍🏫 You can choose two indicators for comparison on the map. For example, while child protection is selected let's see where there is program coverage for child protection in Somalia.

Under the **Program Coverage** indicator select the **Child Protection** option. You will see a slider appear and the layer names represented on each side on the bottom left and right of the screen. If you click on the middle toggle and drag you can see that in several of the regions in the north with the worst-case scenario for child protection there are no active programs to combat the issue depicted in red. These would be ideal candidates to fund child-relief projects in.

👨‍🏫 Check on the **Child Protection** indicator layer and drag the slider across the map.

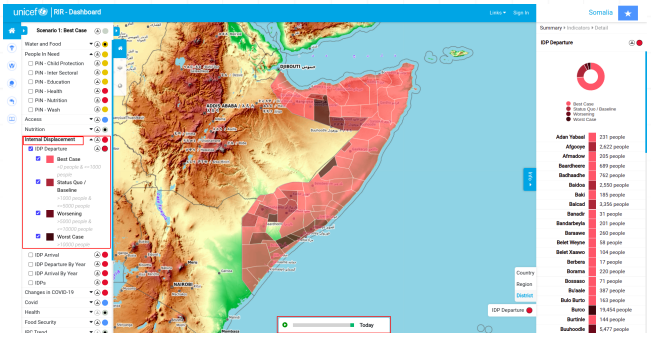


👩‍🏫 You can make the sliding horizontal by clicking the map button at the bottom right of the map canvas.

1.1.5.5 Timelapse Bar

There is a **Timelapse Bar** that can show changes in data over time located at the bottom center of the screen or map area. A great example of this is the internal displacement of people. Turn off the child protection indicators and activate the IDP layer for departures. You can see where indicators are selected because the tab heading will be bolded. Click the play button on the time bar and you will see the changes in what region people are leaving over time.

👩‍🏫 Check the box on the **IDP Departure layer** and any other layers off. Click on the green play button on the timelapse bar.



👩‍🏫 People will leave due to conflict, drought, and other reasons. This is also interesting to compare to IDP arrivals using the slide bar to see where people are leaving and what regions they are going to who may need extra financial and technical support.

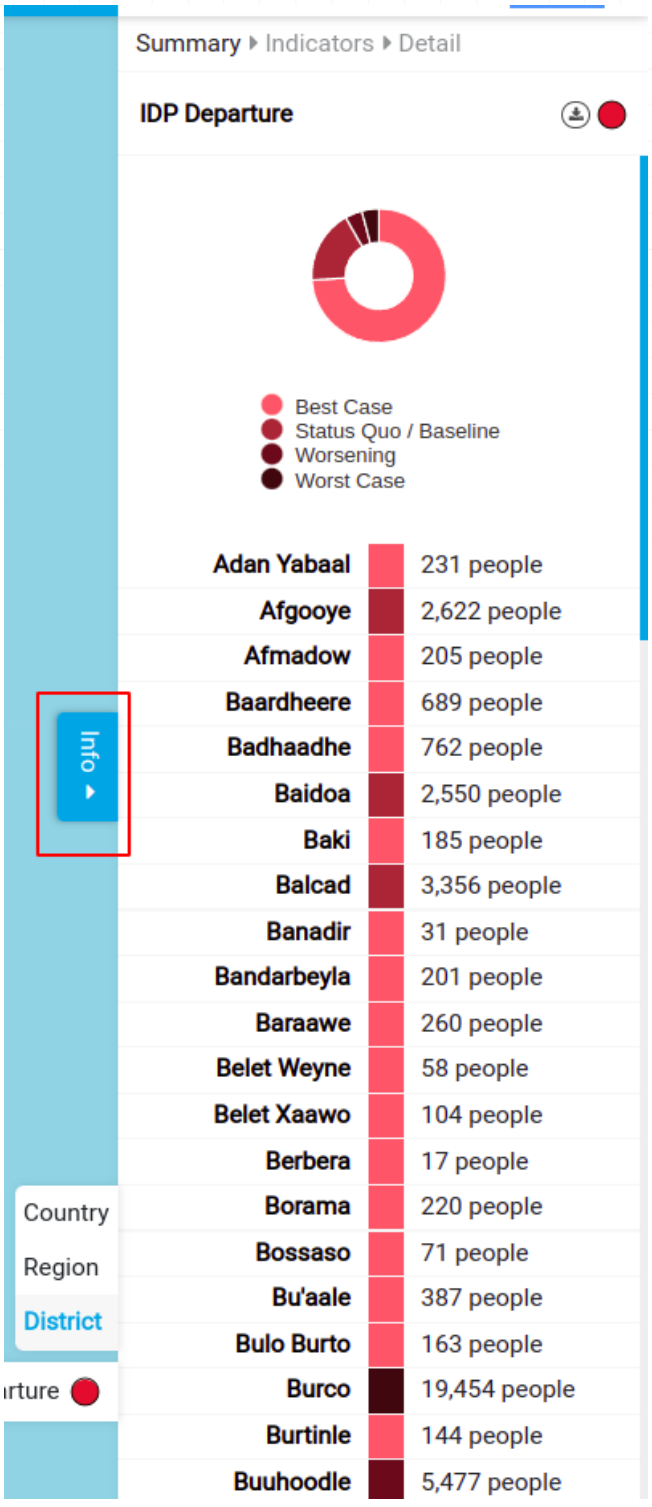
👩‍🏫 Check the box on the **IDP Arrivals layer** and use the slider to compare the two layers.

Timelapse

1.1.6 More on the Information Panel

👩‍🏫 While the **IDP Departures** is open, let's look at the last options and functionalities on the **Information Panel**. If the **Information Panel** is minimized or you want to minimize it. Click on the blue Info button that looks like a tab on the right-side panel to maximize and minimize it.

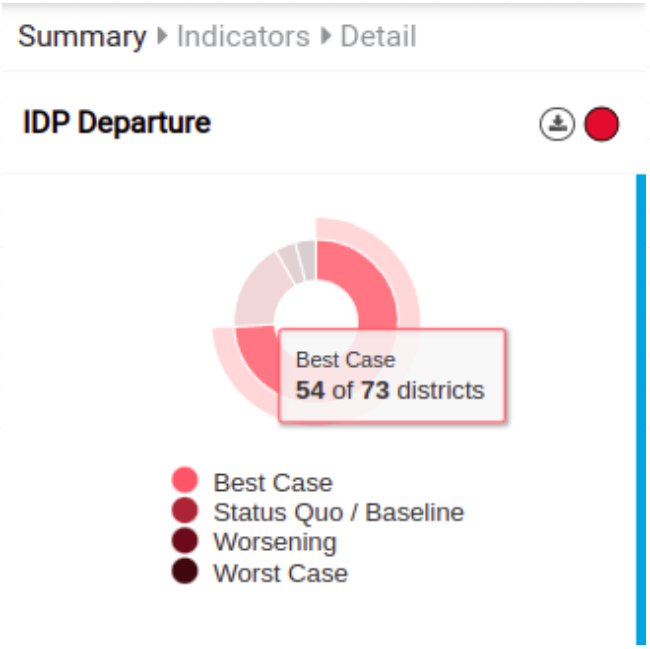
Inside the information panel, there is a summary of all the region/or districts and for example how many people departed that area because we are looking at the departures layer.



1.1.6.1 Graphical Representation

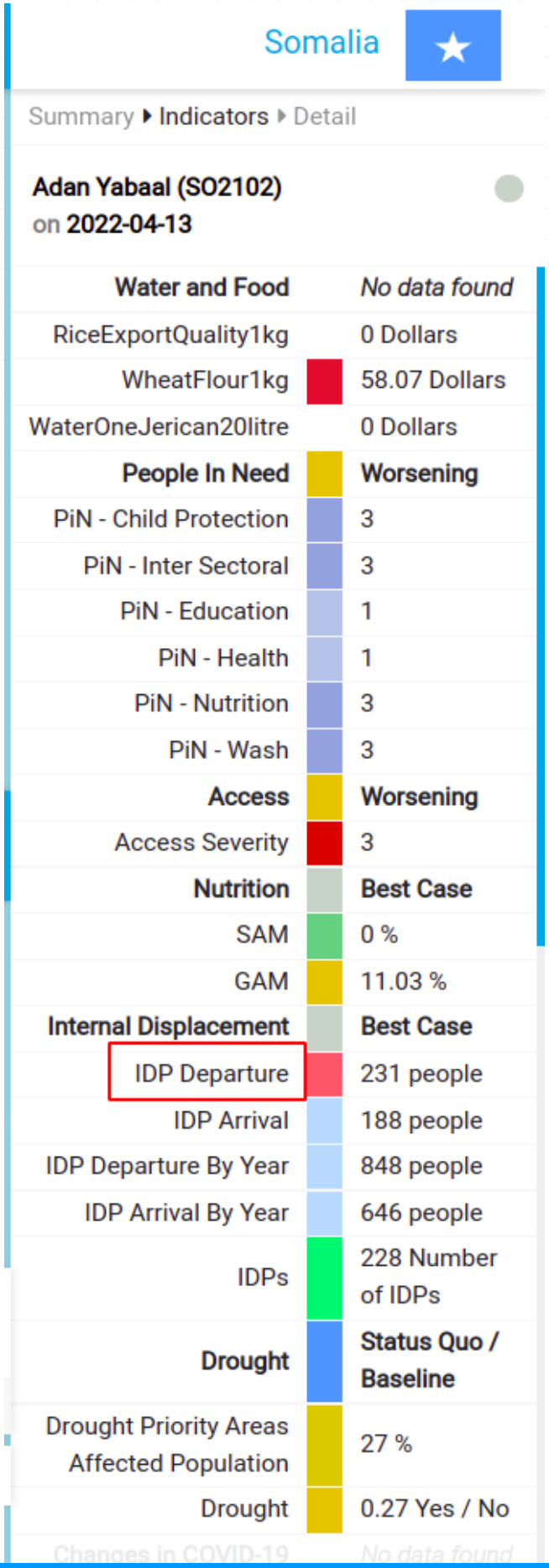
The graphical representation of the scenarios in this case a **pie chart** showing the proportion of best-case regions to worst-case and the status quo. You can hover your mouse over the chart and interact with it. For example, it will show that the best case is the reality for 54 out of the 73 districts in a pop-up label.

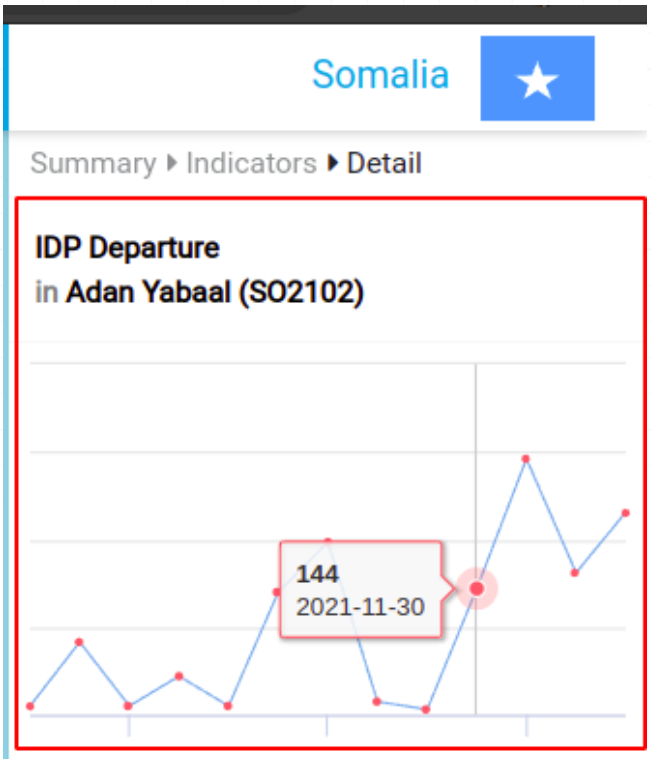
Hover your mouse over the pie chart and observe the labels and number of districts in different scenarios.



👩‍🏫 Further click on the name Adan Yabaal and in the Indicators select **IDP departure**. This will open the details panel where you can see a line graph showing the change over time for the Adan Yabaal district as well as other pertinent information.

👩‍🏫 Click on Adan Yabaal (the text) in the **Information Panel** under the pie chart, click on **IDP Departures** (the text) and observe and hover your mouse over the line chart.


Somalia
Summary ▸ Indicators ▸ Detail
Adan Yabaal (SO2102)
on 2022-04-13
Water and Food
No data found
RiceExportQuality1kg
0 Dollars
WheatFlour1kg
58.07 Dollars
WaterOneJerican20litre
0 Dollars
People In Need
Worsening
PiN - Child Protection
3
PiN - Inter Sectoral
3
PiN - Education
1
PiN - Health
1
PiN - Nutrition
3
PiN - Wash
3
Access
Worsening
Access Severity
3
Nutrition
Best Case
SAM
0 %
GAM
11.03 %
Internal Displacement
Best Case
IDP Departure
231 people
IDP Arrival
188 people
IDP Departure By Year
848 people
IDP Arrival By Year
646 people
IDPs
228 Number of IDPs
Drought
Status Quo / Baseline
Drought Priority Areas Affected Population
27 %
Drought
0.27 Yes / No
Changes in COVID-19
No data found



IDP Departure	
Scenario	Best Case
Indicator value	144
Geometry code	SO2102
Geometry name	Adan Yabaal
Date	2021-11-30
Reason : Drought related	126
Reason : Conflict/Insecurity	18
Needs : Water	56
Needs : Food	44
Needs : Livelihood Support	19
Needs : Shelter	18
Needs : Health	7

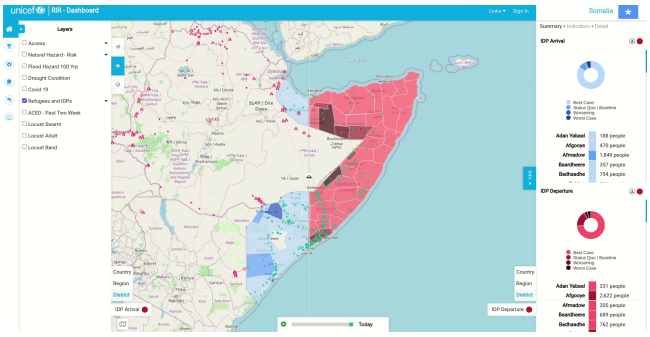
1.1.7 Bringing it all together

👩‍🏫 With your knowledge of the Geosight dashboard try an analysis where we look at what districts people are departing from and what districts they are arriving to.

- Make the context map OpenStreetMap
- Add the context layer Refugees and IDPs
- activate both the arrivals and departures indicator layers
- click on different districts and observe the detail in the information panel
- slide the slider to see if neighboring districts accept departing people, thus having higher arrivals than previously observed (see the linear graphs to compare).

Answer the following questions:

- what regions have the highest number of departures?
- What regions have the highest number of arrivals?
- what region has had the most changes in departures over time?



1.1 Disclaimer

The software provided by this project is provided 'as is'. All information provided within the platform should be independently verified before using as the basis for action. Kartoza and the contributors and developers of this platform take no responsibility for any loss of revenue, life, physical harm or any other adverse outcome that may occur as a result of the use of this platform.

1.1 Credits

The Risk Informed Response platform has been developed by Kartoza under funding from Unicef. You can find the source code for this software at our kartoza/rir-dashboard repository.

1.1.1 Developers

Tim Sutton	Irwan Fathurrahman
	
Tim Sutton (System Architect)	Irwan Fathurrahman (Sevior Developer)
timlinux@github	meomancer@github

1.1.2 Document Writers

Amy Burness	Thiasha Vythilingam
	
Junior GIS Technician and Cartographer	GIS Intern
amyburness@github	ThiashaV@github

1.1 License

This software is open source, published under the GNU Affero General Public License v3.0. See the LICENSE for complete details about what rights and restrictions are associated with this license.

1 For Administrators

1.1 Administrator Tutorial

1.1.1 Introduction

🧑‍🏫 The RIR (Risk Informed Response) platform is a situational awareness platform to monitor health, child protection, nutrition, wash, and education in a geographic region. This tutorial shows you how to manage the platform as an administrator.

1.1.1.1 Working with this documentation

Whenever you see a phrase in **bold**, it refers to a link or button on the user interface that you can interact with.

1.1.1.2 Important Links

- RIR Platform
- RIR Full Documentation

> 👩‍🔧 **Note:**
>
> 📒 **Note:** You can find all the **sample data** used in this tutorial here

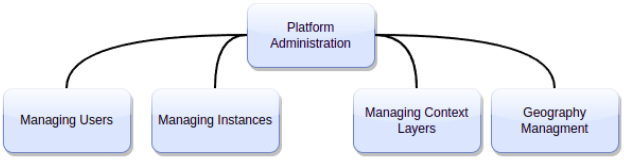
1.1.2 Session Outline

🧑‍🏫 This session is divided into two parts:

1. **Part 1:** General Platform Administration covering
    - User Management: Creating and editing user profiles.
    - Managing Instances: Creating new and editing preexisting instances.
    - Managing Context Layers: Adding layers from services such as ArcGIS online, GeoNode or GeoServer to create a context layer in the platform.
    - Geography management: Adding geography levels to your instance.
2. **Part 2:** Indicator Administration covering
    - Indicator management: Adding indicators to the dashboard.
    - Forms: used to manually capture indicator data by filling in forms.
    - Ingestors: Used to manually import data by uploading spreadsheets.
    - Harvesters: Automatic agents which fetch data and add it to indicators on a regular basis.

1.1.3 Part 1: General Platform Administration

Here is an overview of the general platform administration.



Note:

📒 **Note**: The following sections all require admin user permissions.

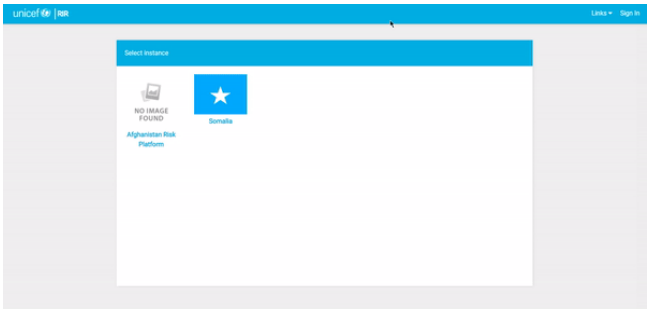
There are two key activity areas for administering the RIR platform.

1. Django admin
2. RIR Platform admin

Django admin is used for more technical activities and provides a more generic user interface. The RIR Platform admin area is integrated into the frontend of the site and can be used to manage instances, geographies and indicators.

1.1.3.1 Signing In

👩‍💻 Before you can administer the platform, you need to sign in with a user with administrator rights. In the top right-hand corner of the screen is the **Sign In** button. Here, you will sign in using your admin username and password. This process is the same for a regular user and an admin user.

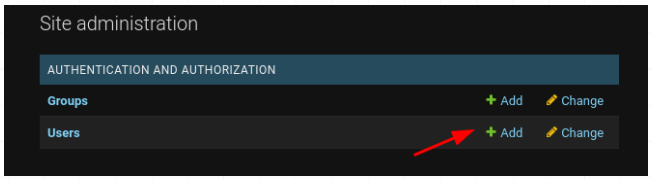


1.1.3.2 Users and Permissions

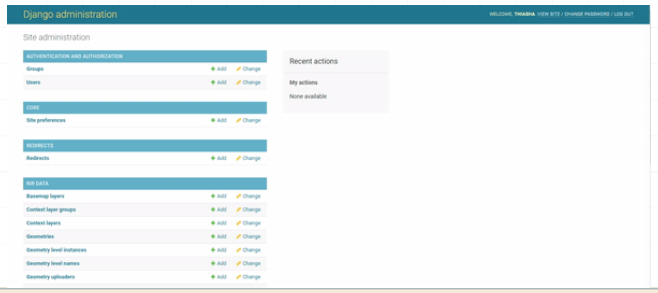
Note:

💡 This activity will use the django admin interface.

Next, we will look at how to manage users. Go to site administration by clicking **Admin -> Django Admin**. Click on **+Add** in the same row as 'Users'.



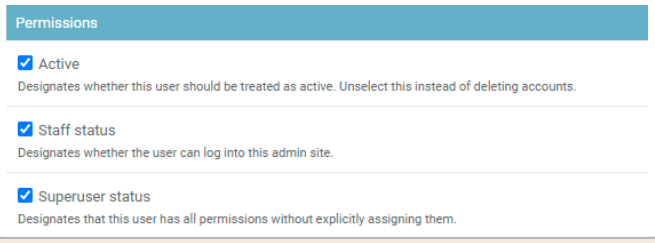
You can now create a profile for someone by adding a username and password. Once you have created the user profile, click **Save**.



Note:

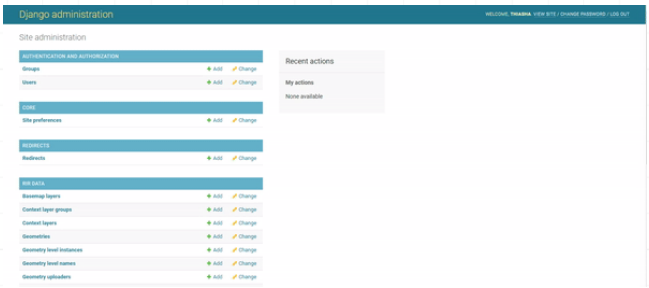
📝 **Note:** In future the platform will be upgraded to support single sign-on with your Microsoft Teams credentials or similar oauth provider.

Once you have created the user account, pressing save will let you edit the personal information for the new user, as well as select or deselect their permission status. Remember to **Save** your changes.



Note:

📒 **Note**: If you want to make a user an admin user so that they can carry out the activities described in this tutorial, you should assign them to the **Staff** group, the **Super User** group and the **Active** box should be checked.

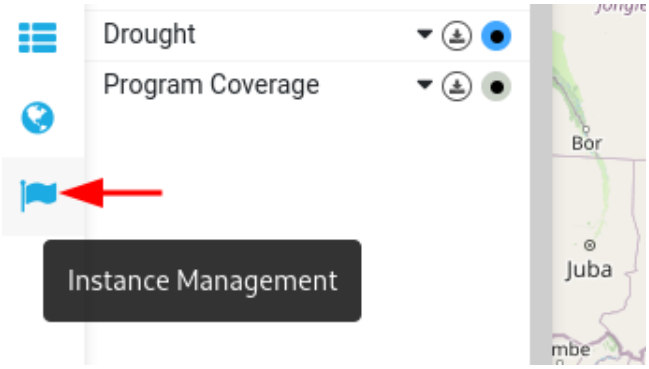


1.1.3.3 Creating an instance

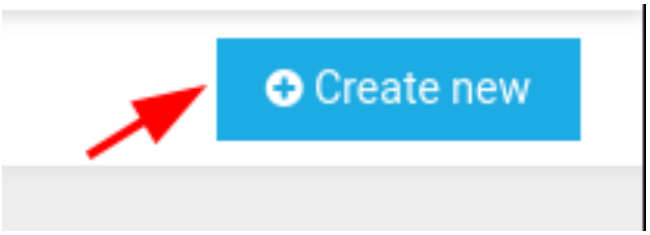
Note:

💡 This activity will use the RIR admin interface.

👩‍⚖️ Make sure you are signed in as an admin user. Open any existing instance, then click on the instance manager icon on the left of the screen.

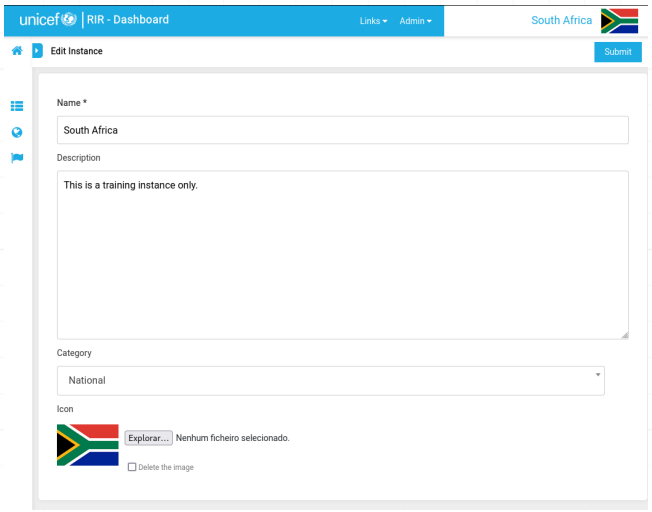


To create a new instance, click on the Create Instance button at the top right of the screen.



On the instance form. add the name of the new instance that you would like to create, a description, as well as the icon file. The icon file in most cases would be the flag of the country for the instance. Once you have added all of the information, click **Save**.

For this tutorial, we will create a demonstrator instance for South Africa:

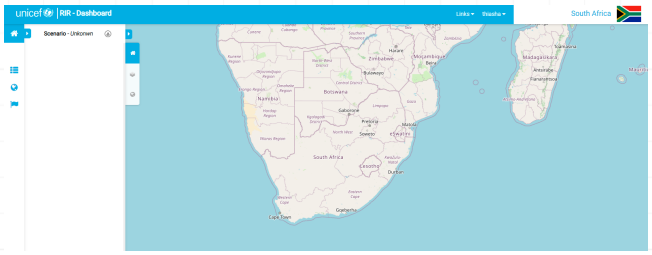


The flag we used in this exercise is available here:

Note:

Note: You can find all the **sample data** used in this tutorial (including this flag image) here.

Once your new instance is created, you will be able to open it from the instance chooser. It will appear very empty, like this:



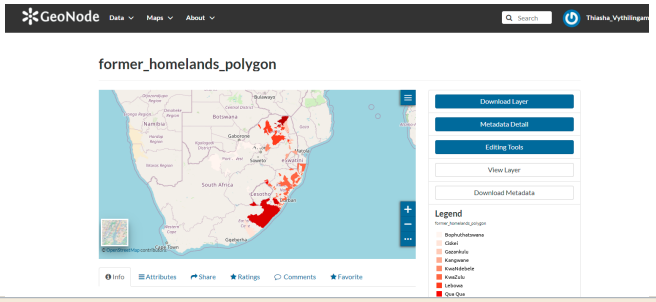
1.1.3.4 Adding a new Context layer

> **Note:**
>
> 💡 This activity will use the django admin interface.

👩‍🏫 In this section we will explain how to create and manage context layers. What is a context layer? Context layers are shown on the map to provide a sense of the conditions in the region. They can cover any topic - for example, security, food security, infrastructure, etc. Context layers **do not** have indicator data attached, they are a visual aid in the dashboard map. Context layers are normally hosted on another server e.g. ArcGIS Online, GeoServer, and GeoNode all provide ways to publish context layers.

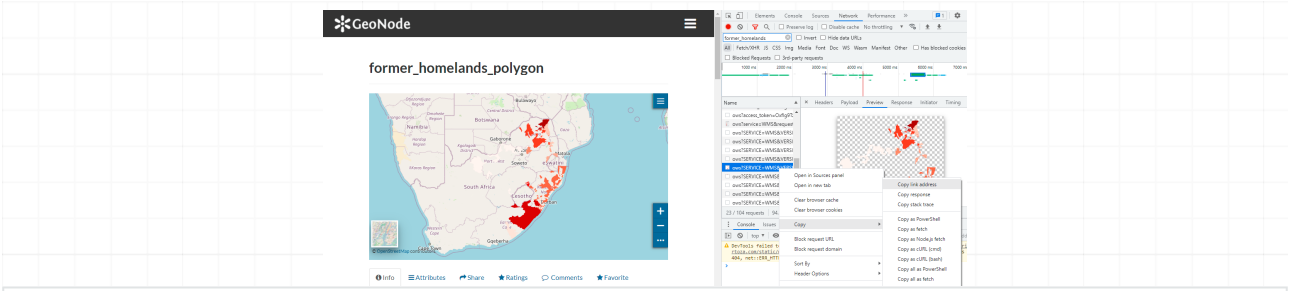
> **Note:**
>
> **Note:** For more information about context layers see the user tutorial on this topic.

To add a context layer to the RIR instance, you will need a link to an online layer. For this exercise will be adding a context layer from geonode showing homelands:



> **Note:**
>
> 👨‍🏫 The process for finding the link to an online layer so it can be used as a context layer differs per platform the layer is hosted on. For Geonode layers we need to open the layer in Geonode, right-click on the browser page, click on inspect, and then select network. Hard refresh your screen and look through the URL links until you see the layer URL.

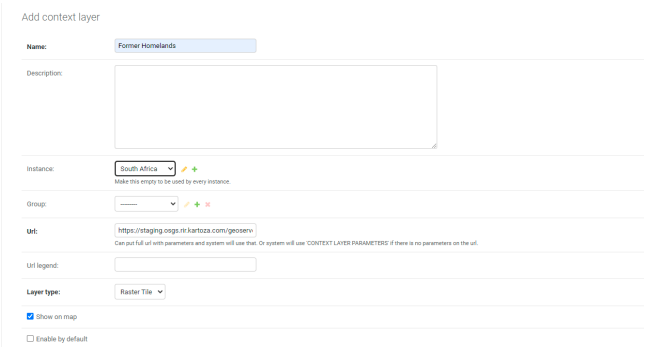
For our example, we will use the URL below. Please copy it:



👩‍💻 Code:

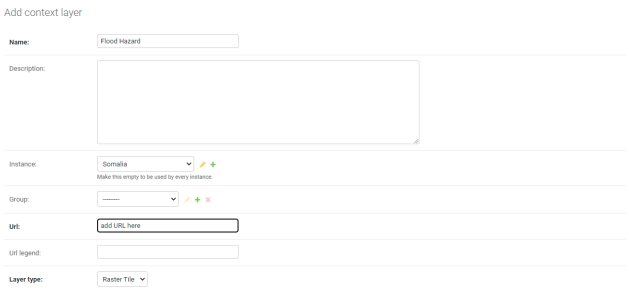
```
https://staging.osgs.rir.kartoza.com/geoserver/ows?access_token=SWMqWx64T5dOsNwPD72o4uIbtZ7FIA&LA
```

👨‍💻 Now we can create the context layer in the RIR platform. Click on your account menu in the top right corner of the RIR platform and open **Django Admin**. Click on **+Add** on the Context Layers line. Select the instance you would like to add the context layer to.

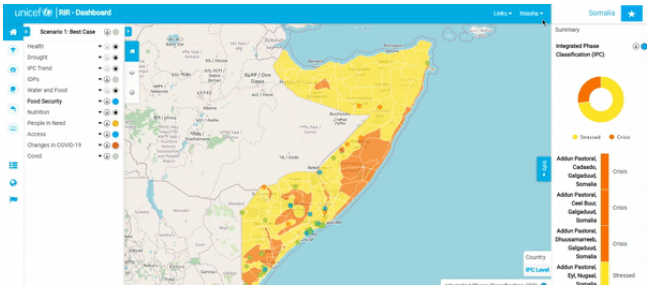


We will use the instance that we have just created, South Africa. Paste the URL that you copied above into the URL box.

Enter the information in the form as shown in the images below and save the form once you are happy with it.



Click on **View Site** to see your new layer. You will be able to see your new layer in the **Context Layers** panel.



1.1.3.5 Geography Management

Adding a Geography level

> 👩‍🔧 **Note:**
>
> 💡 This activity will use the django admin interface.

👩‍🏫 Geography levels express the hierarchy between administrative boundaries. For example in South Africa we have the national boundary subdivided into provinces, which are in turn subdivided into districts, then municipalities. RIR uses these geography levels to provide a way to group the information from the indicators into administrative units.

> 👩‍🔧 **Note:**
>
> ⚠ Geography levels are shared globally across all RIR instances, so be careful when adding, deleting or renaming a level that you do not impact other users.

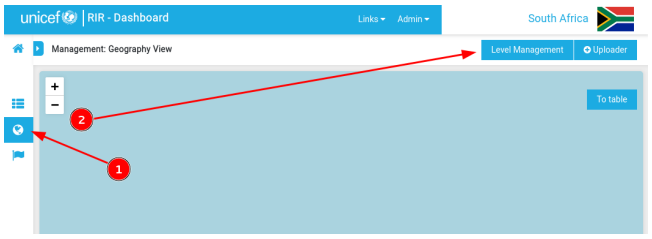
👩‍🏫 Let's start in **Site Administration**. Scroll down to **Geometry Level Instances** and click **+Add**. Set the name and description to your geography level - in our case we will use 'Province' (do not re-add the Province level instance if it already exists). Geometry levels are heirarchical and follow the political organisation of countries. For example 'Country', 'Province', 'District' etc.

Establishing the hierarchy

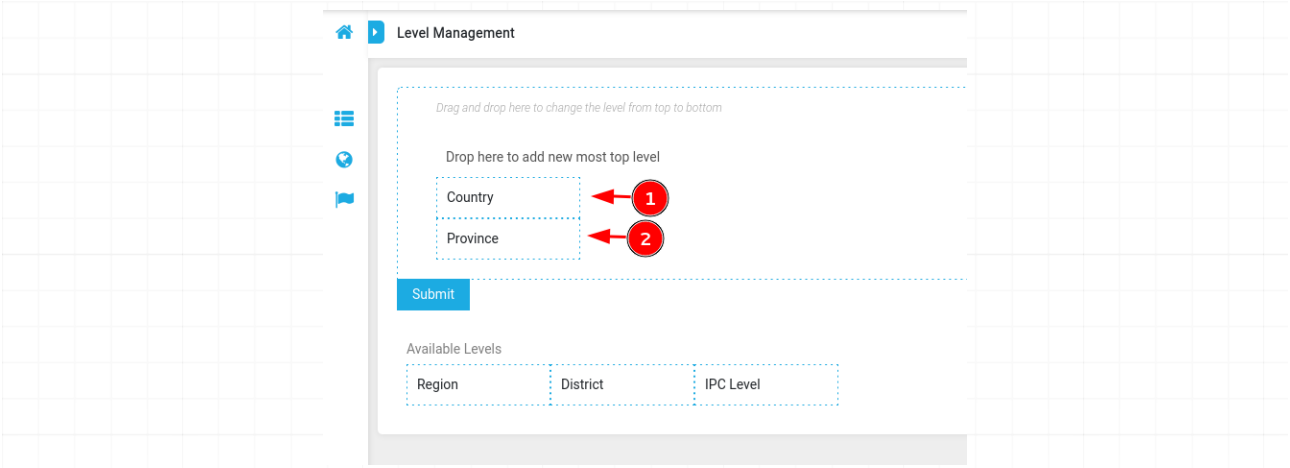
> 👩‍🔧 **Note:**
>
> 💡 This activity will use the RIR admin interface.

Geography levels are heirarchical and follow the political organisation of countries. For example 'Country', 'Province', 'District' etc. We need to explicitly tell the system which levels are the parent and child of each other.

To do this we use the Geography Level Management tool. Click on the **Geography Management** button on the left of the screen. Then click on the Geography Level Management button.



Now drag and drop the levels you want to establish the hierarchy between.



Having done this, the system will 'know' that provinces fall under the country boundary.

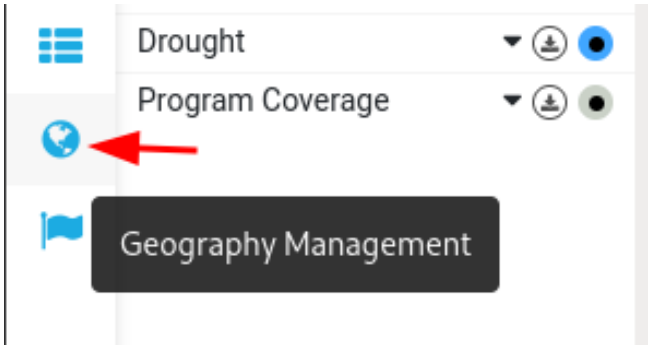
Press the **Submit** button to save the changes.

Uploading Geography Boundaries

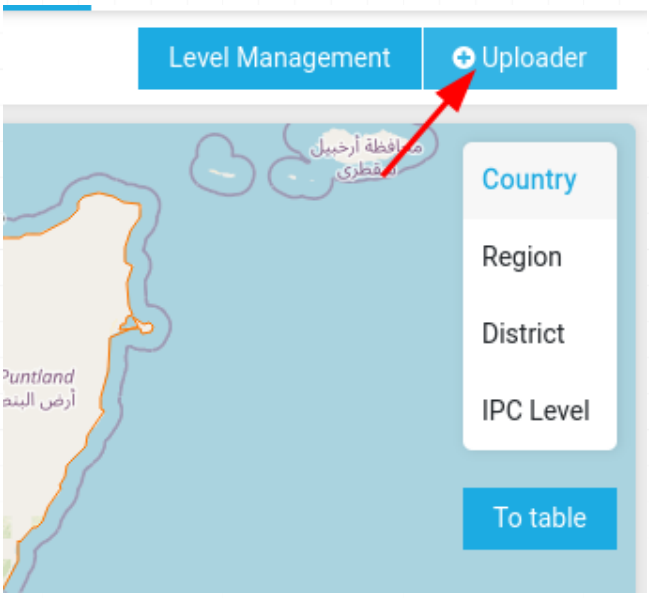
> **Note:**
>
> This activity will use the RIR admin interface.

Go back to the main page of your instance. Below the **Program Interventions** panel are three icons; **Indicator Management**, **Geography Management**, and **Instance Management**.

Click on the **Geography Management** icon.



You will be redirected to the geography view map page, and you will see that in the top right corner there is an **+uploader** button.

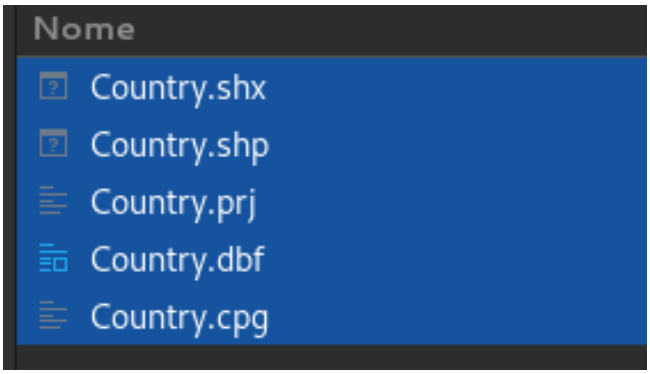


Select this button and start filling in the form. We will create two new geographies: Country and Provices using the tutorial data supplied below:

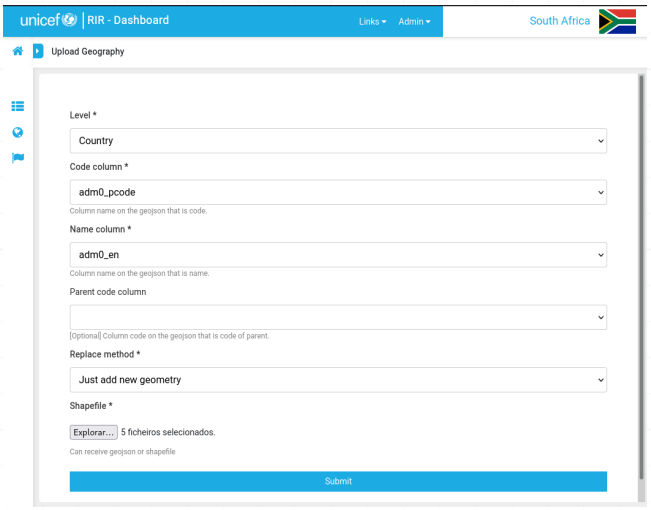
> 🤷 **Note:**
>
> 📒 **Note:** You can find all the sample data used in this tutorial here: Data

The geography boundary should be provided in either Esri Shapefile format or as a geojson file.

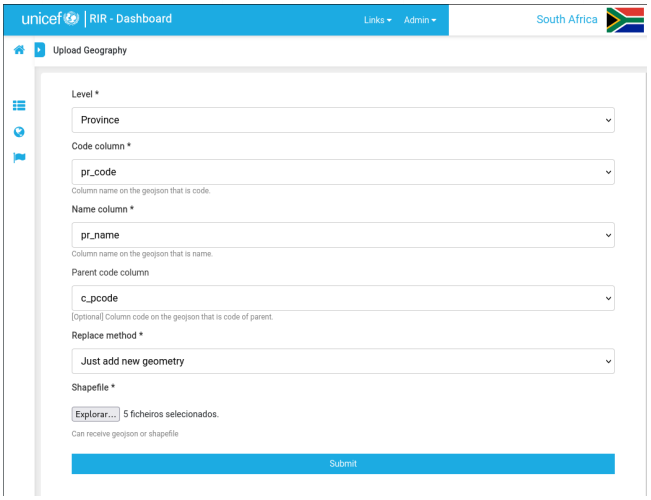
Add the country layer first. Start by clicking the **files** button at the bottom of the form and then select *all of the shapefile layers.



Now complete the rest of the details as per the screenshot below. Note that the country geography does not need a parent, but we need the code for a country level. In this case, the country is ZA (under 'adm0_pcode').

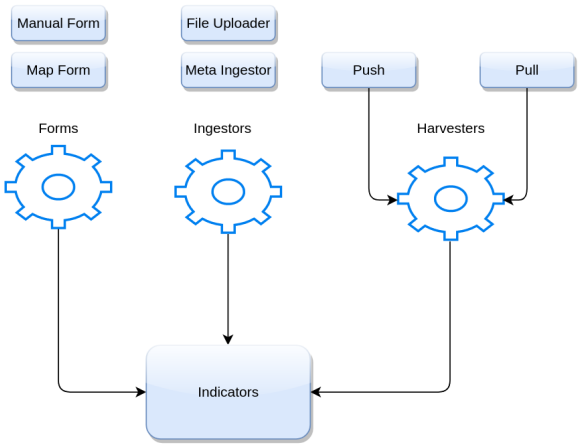


For a province level, the code column is 'pr_code', the name column is 'pr_name', and the parent code column is 'c_pcode'.



1.1.4 Part 2: Managing Indicators

Here is an overview of what we will cover in this section:

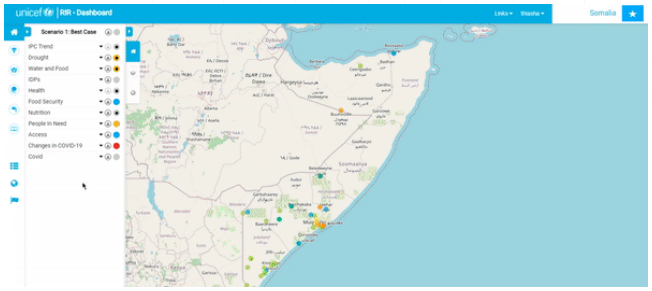


1.1.4.1 Adding a New Indicator

👩‍🏫 Indicators are special layers in RIR that are linked to the situation in the region. Indicators are used to show the situation in the region. For example, in South Africa, there are indicators for the number of people living in poverty, the number of people living in extreme poverty, the number of people living in extreme poverty, and the number of people living in extreme poverty and the number of people living in extreme poverty and the number of people living in extreme poverty.

👨‍🏫 To add an indicator, click on **Indicator Management** on the main platform page for the instance and go to **Create New**. Fill in the necessary information about the indicator you would like to create.

👩‍🏫 Once you have filled out the form, scroll down to **Scenario Rules** and add the parameters to match the indicator. you can also change the color for each rule by clicking on the color block. Click **Submit** once you are happy with the added information and scenario rules. If you add a dashboard link, you will see a black dot in the center of the circle that represents the scenario case on that indicator in the Program Interventions panel. By clicking on the black dot, you will be redirected to the dashboard link.



👩‍🏫 Once we have created an indicator, we need to populate it with data. There are three ways to do this.

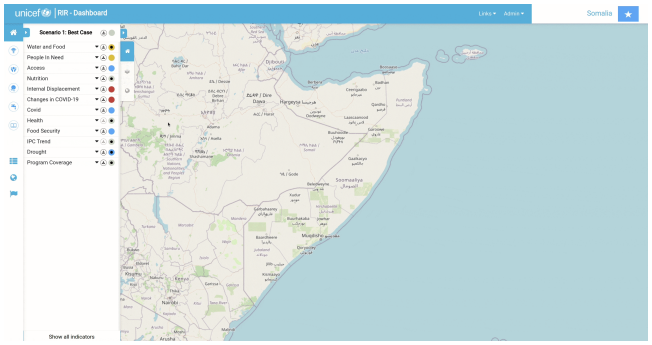
1. We can manually add the data using the value manager form or map.
2. We can use an ingestor to import data from a spreadsheet.
3. We can use a harvester to automatically fetch the data from an online resource.

1.1.4.2 Value Manager Form

👩‍🏫 The value manager form is a table with cells and rows, one row per administrative boundary, and one cell per indicator.

👨‍🏫 Let's look at how to use the Value Manager Form. To access this form, go to **Indicator Management** and scroll to the indicator that you would like to add data to. On the right-hand side of the indicator's name, there will be a small **Settings** symbol. Click on **Settings** for the desired indicator and then click on **Value Manager Form**. You will be redirected to a form that gives you all the geographic locations within the instance and spaces to add values.

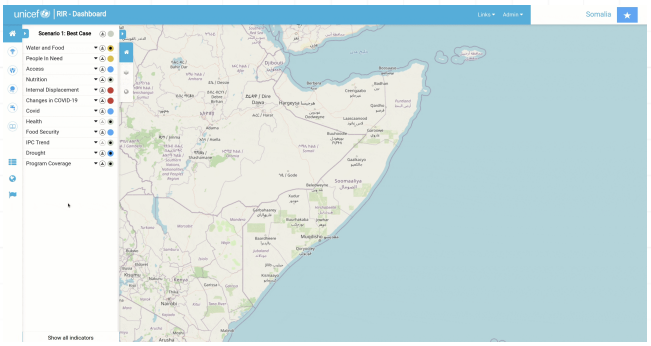
👩‍🏫 You can also add a file to fill in the data by clicking **Use File to Refill Form**. To check how to do it, check section Spreadsheet Uploader.



1.1.4.3 Value Manager Map

👩‍🏫 The value manager map allows you to add data by directly clicking on the region of the map that you would like to add data to.

👨‍🏫 The second way to add data to an indicator is through the Value Manager Map option. Go to **Indicator Management** and scroll to the indicator that you would like to add data to. On the right-hand side of the indicator's name, there will be a small Settings symbol. Click on **Settings** for the desired indicator and then "click" on **Value Manager Map**. This will take you back to the map canvas. Now you will be able to click on any geographic location within the instance and a popup window will appear which will allow you to fill in value data for that location.



1.1.4.4 Ingestors

👩‍🏫 The function of an ingestor is to manually populate data for an ingestor.

There are three modalities for ingestors:

1. Spreadsheet uploader (for single indicators)
2. Meta Ingestor (for populating multiple indicators)
3. Push API (advanced, allows you to create programmes that push their data to an indicator)

We describe the workflow for each of these ingestors below.

Spreadsheet Uploader

👨‍🏫 Spreadsheet uploader is used for upload data of an indicator using one file. It is using Value Manager Form without input value one by one.

We are going to use `TrainingData/IngestorData/sa-population.xls` .

👨‍🏫 For this example, we are going to use **population** indicator. Before starts, we need to create the indicator first. (Check Adding a New Indicator section)

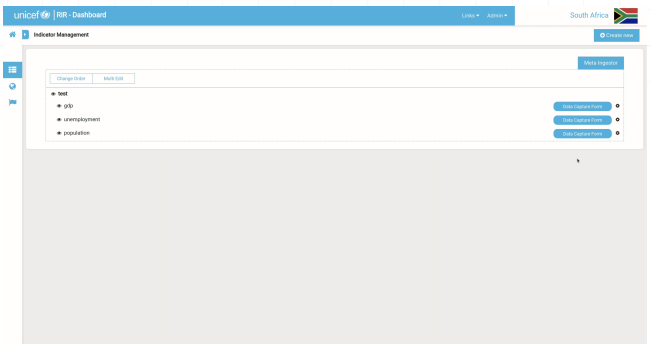
👩‍🏫 Go to **Indicator Management** and scroll to the indicator that you would like to add data to. On the right-hand side of the indicator's name, there will be a small **Settings** symbol. Click on **Settings** for the desired indicator and then click on **Value Manager Form**.

👨‍🏫 Click Use File to Refill Form and the popup will show. After that select other inputs.

> 👷‍♀️ **Note:**
>
> 📒 **Note:** Always select administrative code to Choose area code column.

💁 After everything selected, click import, and the form will be autofilled.

> 👩‍🔧 **Note:**
>
> 📒 **Note:** If it is still empty, check the administrative code that you have on spreadsheet and the forms. Always use administrative code on the speadsheet value. On the form, the code is in brackets.



Meta Ingestor Uploader

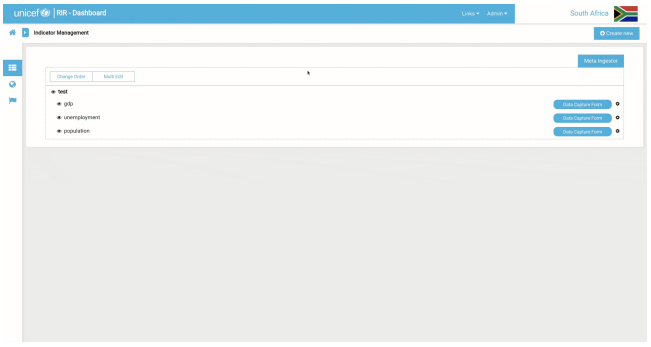
💁 We are going to create a Meta Ingestor. The goal for this ingestor is for uploading data for multiple indicator for one file. We are going to use TrainingData/IngestorData/sa-gdp_unemployment.xls. In there, there are **gdp** and **unemployment** columns that we need to save the data for **gdp** and **unemployment** indicator. Before starts, we need to create those indicators first. (Check Adding a New Indicator section)

💁 To start the meta ingestor, go to **Indicator Management** and in the top right-hand corner of the page, there will be a **Meta Ingestor** option that you will need to click.

💁 Select the file in TrainingData/IngestorData/sa-gdp_unemployment.xls from the sample data and the other inputs will be activate.

💁 Select Sheet name and Row number: header (It is row 1).

💁 Select Column name: administration code, and select other Column name inputs (The indicator name) with the header on the Excel that reflects the indicator data. Then **Submit** your work, and wait until it says done.

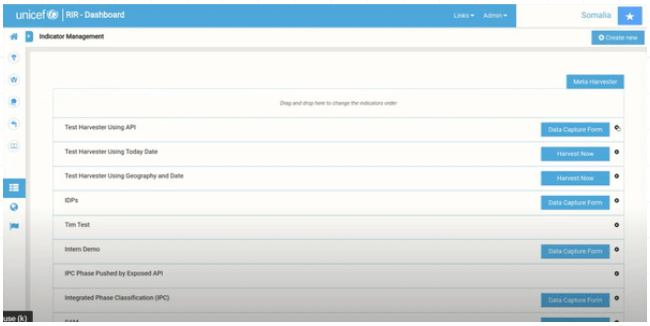


API Ingestor

> 👩‍🔧 **Note:**
>
> Note: This is for advanced users only.

👨‍🏫 To start, click on **Create Harvester** as you will also do for the harvester options. Change the type of harvester to **Harvested using exposed API by external client**. Add necessary notes and submit.

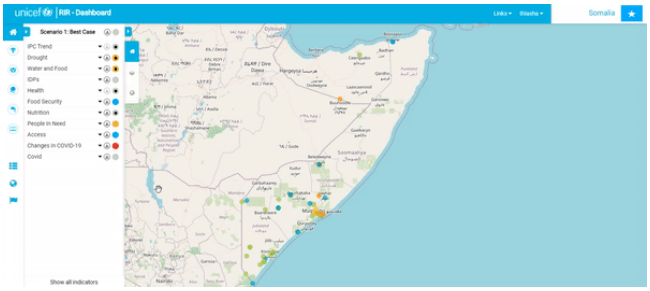
You will now be presented with an 'API URL' and a 'Token' that has been received from an external source. You now need to "push" the data from outside to the RIR dashboard. "Open" the API platform that you use to build and use API's. We used Postman. "Copy" over the URL and token to push the data to the RIR dashboard.



1.1.4.5 Harvesters

👨‍🏫 Harvesters are fully automated software routines that periodically fetch data from third party sources and populate indicators.

👨‍🏫 Go to **Indicator Management** and if you haven't already created the indicator you want to work with, start by doing that. Once the necessary indicator exists,click on the little **Settings** icon on the right-hand side of the indicator name. Select the **Create Harvester** option. Pick the type of harvester you would like to create from the drop-down Harvester (you will be presented with three options: 'API With Geography Using Today's Date'; 'API With Geography And Date'; and 'Harvested Using Exposed API By External Client'). The first two options are for the harvester and the third one is for the ingestor. For the 'API With Geography Using Today's Date' and 'API With Geography And Date' options, fill in the Attributes portion of the form and then a popup window with a list of keys will appear; **drag** the green labels to their corresponding criteria. Select **Harvest Now**. You can scroll down to the log to see if your harvest is running in the background. Go to **Indicator Management** and click on the little settings icon that you just created a harvester for and select **Value Manager Map** to view your progress.



1.1 Reference Layers

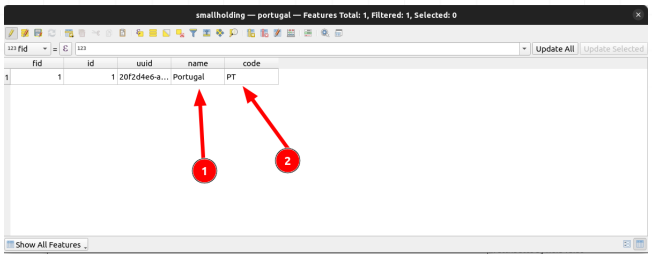
Geosight integrates with Georepo to provision vector tiles for administrative boundaries into the dashboards we display.

1.1.1 Data Preparation

We will prepare two admin levels here.

1.1.1.1 Admin Level 0

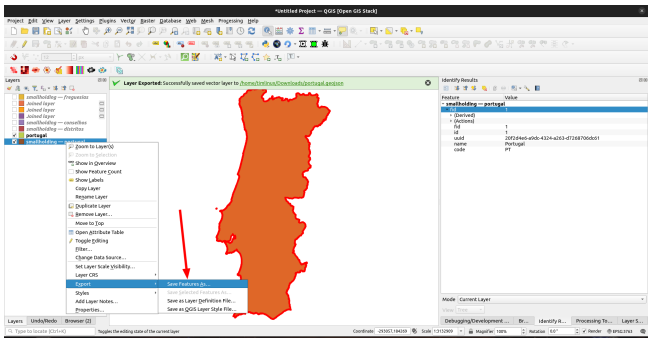
First prepare your data table. Here is an example country table:



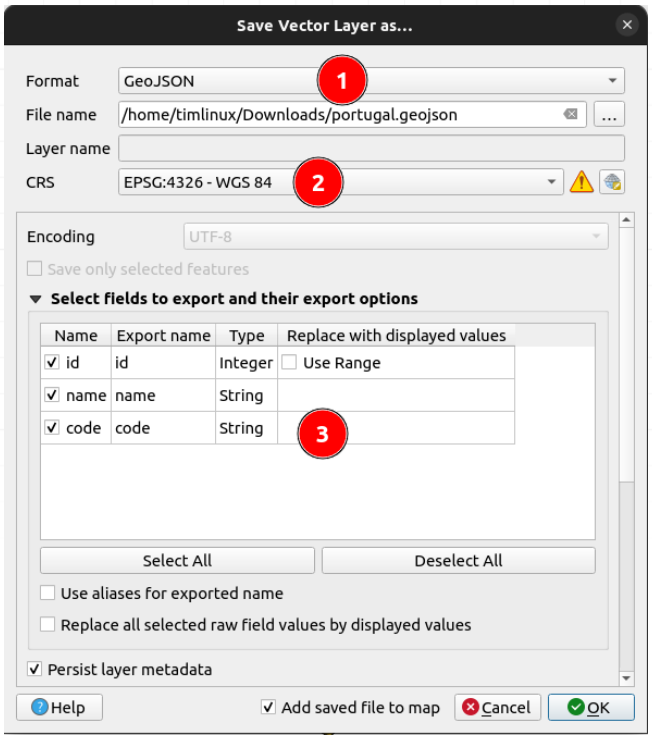
Each table should have at minimum a name column (1) and a pcode column (2). A pcode is just a unique short abbreviation of the area name. The pcode only needs to be unique within the dataset, not gloablly.

The lower order tables need to reference the parent areas to which they belong.

Once your table is prepared, use the QGIS layer context menu to export the layer:



Then export the layer, ensuring at least the name and pcode columns are included in the GeoJSON export:

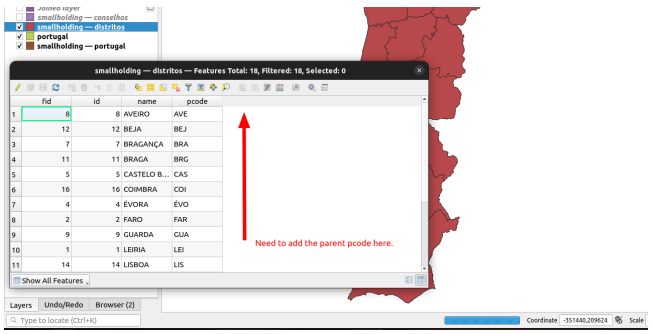


Make sure you set:

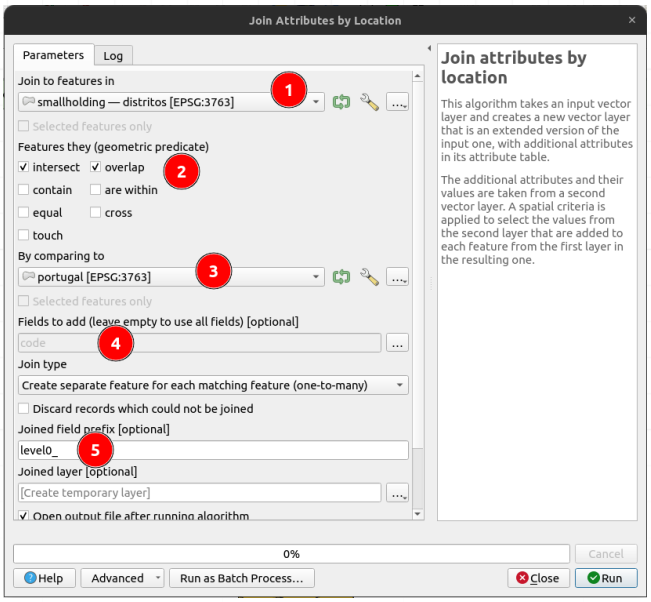
1. The output format to GeoJSON
2. The output CRS to EPSG:4326
3. Select the PCODE in the list of attributes to be exported

1.1.1.2 Admin Level 1

In this layer we need to have names and pcodes for each district. We will also need to add a colum containing the pcode of the parent (Level 0) layer so that we can establish the relationship between the layers.



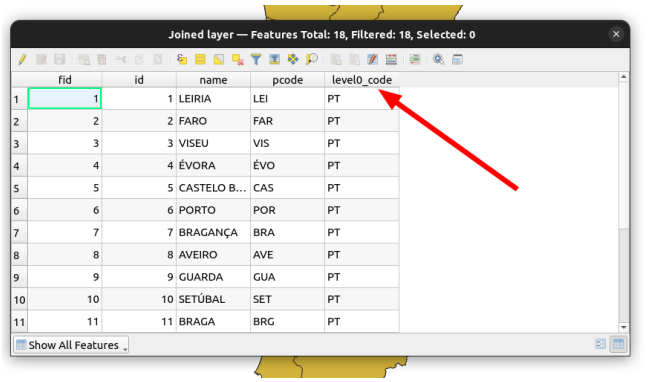
In QGIS we can use the processing tool `Join attributes by location` to add the Level 0 pcode to the Level 1 layer.



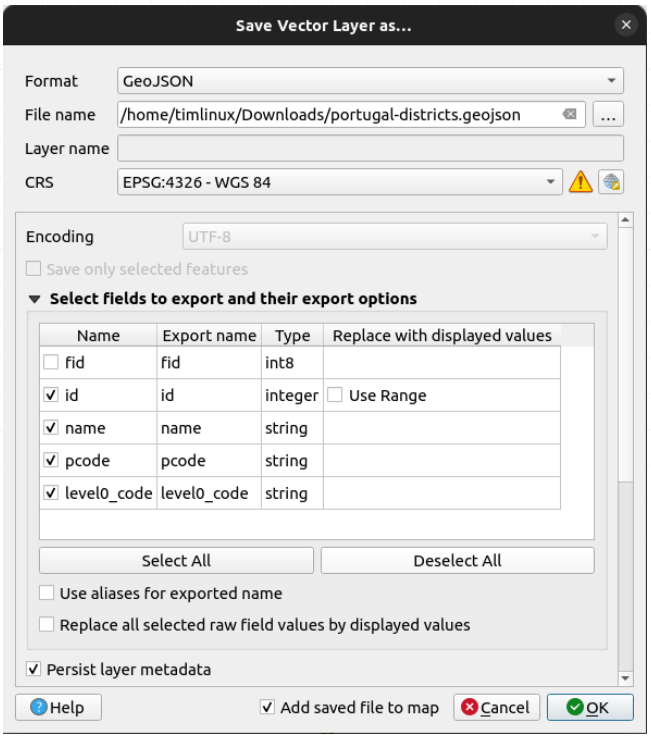
Note the following options that are set here:

1. The level 1 layer that needs to have a country level pcode added to it.
2. The spatial predicate to use. Usually `intersect` and `overlap` would be used here.
3. The upper level layer to join to (Level 0 in this case).
4. Fields to add - usually just the pcode of the layer being joined to.
5. Prefix for the joined field. Adding the level as a prefix will help.

After generating the joined layer, you should have something like this:



As in Level 0, you should export the layer as GeoJSON.

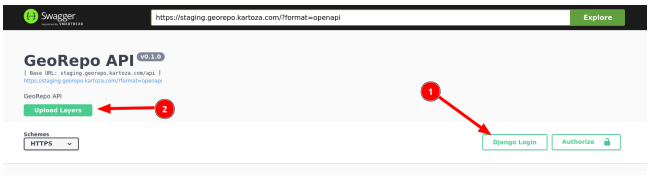


1.1.2 Uploading the layers

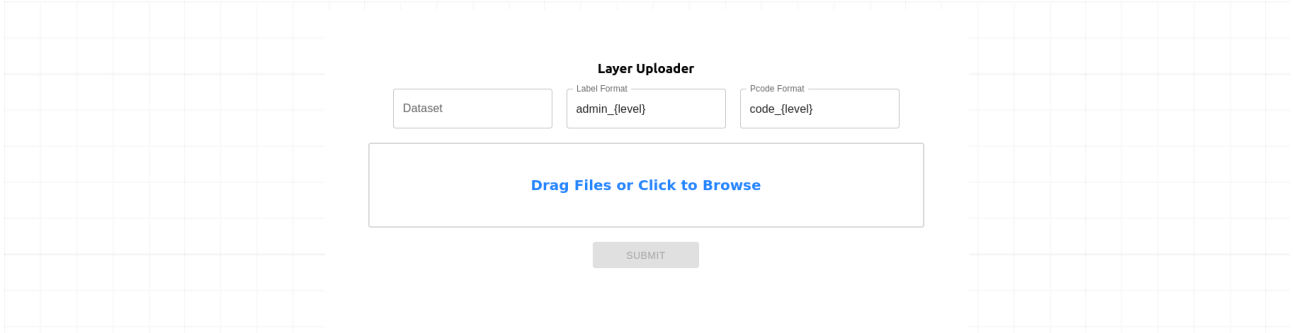
Now we are going to upload the layer to GeoRepo. First you need to go to the site which is currently here:

https://staging.georepo.kartoza.com

> **Note:**
>
> This link will change when we enter into production.



First log in to the Georepo platform (1). If you do not have an account there, you need to first contact the site administrators to ask for access. Once you are logged in, use the upload button (2) to upload your boundaries as a GeoJSON dataset.



You can upload layers in a heirarchy using the uploader - you need to link the different levels with the layer and pcode level options. This is most easily explained via a short example:

> 🤷 **Note:**
>
> This user interface is in very early development, it will change and become more user friendly as we build the platform.

1 For Developers

1.1 Setup

This document covers how you can set up the project, for production and development environment setup.

1.1 Installation

1.1.1 Preparation

1.1.1.1 Dependencies installation

The project provide **make** command that making setup process easier. To install make on your machine or virtual box server, do:

Code:

```
sudo apt install make
```

Project has recipe that you can use to run the project in one command. This recipe needs docker-compose to be able to use it. To install it, do:

Code:

```
sudo apt install docker-compose
apt install ca-certificates curl gnup lsb-release
```

1.1.1.2 Docker installation

The project needs docker to be able to run it. To install it, please follow below instruction.

Code:

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrir
```

On the next prompt line:

Code:

```
echo \
"deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg]
$(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
```

Run apt update:

Code:

```
sudo apt-get update
```

This will install docker

Code:

```
sudo apt-get install  docker-ce-cli containerd.io
```

This will check if installation of docker was successful

Code:

```
sudo docker version
```

And it should return like this

Code:

```
Client: Docker Engine - Community
 Version:           20.10.9
 API version:       1.41
 Go version:        go1.16.8
 Git commit:        c2ea9bc
 Built:             Mon Oct  4 16:08:29 2021
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true
```

Manage docker as non-root

This will ensure that the docker can be executed without sudo.

Code:

```
sudo systemctl daemon-reload
sudo systemctl start docker
sudo usermod -a -G $USER
sudo systemctl enable docker
```

Verify that you can run docker commands without sudo.

Code:

```
docker run hello-world
```

For more information how to install docker, please visit Install Docker Engine

1.1.1 Project Setup

1.1.1.1 Clone GeoSight repository

This will clone the GeoSight repository to your machine

👩‍💻 Code:

```
git clone https://github.com/unicef-drp/GeoSight
```

1.1.1.2 Set up the project

This will set up the GeoSight project on your machine

👩‍💻 Code:

```
cd GeoSight
cd deployment
cp docker-compose.override.template.yml docker-compose.override.yml
cp .template.env .env
cd ..
make up
```

Wait until everything is done.

After everything is done, open up a web browser and go to http://127.0.0.1/ and the dashboard will open:

By Default, we can use the admin credential:

👩‍💻 Code:

```
username : admin
password : admin
```

1.1.1.3 Set up different environment

To set up different environment, for example the Default credential, or the port of server, open **deployment/.env**. You can check the description below for each of variable.

👩‍💻 Code:

```
COMPOSE_PROJECT_NAME=geosight
NGINX_TAG=0.0.1  -> Change this for different nginx image
DJANGO_TAG=0.0.1 -> Change this for different django image
DJANGO_DEV_TAG=0.0.1 -> Change this for different django dev image

# Environments
DJANGO_SETTINGS_MODULE=core.settings.prod -> Change this to use different django config file
ADMIN_USERNAME=admin -> Default admin username
ADMIN_PASSWORD=admin -> Default admin password
ADMIN_EMAIL=admin@example.com -> Default admin email
INITIAL_FIXTURES=True
HTTP_PORT=80 -> Change the port of nginx

# Database Environment
DATABASE_NAME=django -> Default database name
DATABASE_USERNAME=docker -> Default database username
DATABASE_PASSWORD=docker -> Default database password
DATABASE_HOST=db -> Default database host. Change this if you use cloud database or any new docke
RABBITMQ_HOST=rabbitmq

# Onedrive
PUID=1000
PGID=1000
```

After you change the desired variable and do `make up`. It will rerun the project with new environment.

1.1.1 Development setup

1.1.1.1 Development Environment

This section is for setup development, so we can develop the project and check the changes in runtime. The sections depend on what interpreter that you use

1.1.1.2 Using pycharm

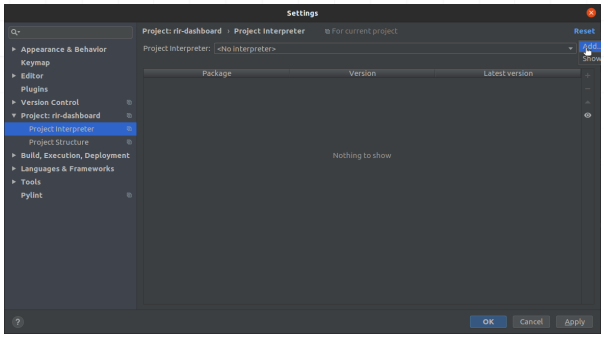
This section is for using pycharm.

Requirements:

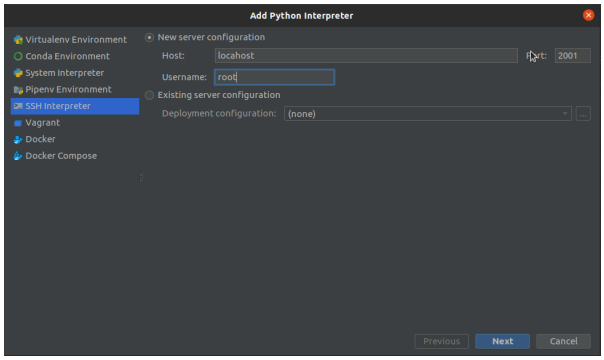
- Pycharm
- Finished **Setting up the project**

Setup interpreter

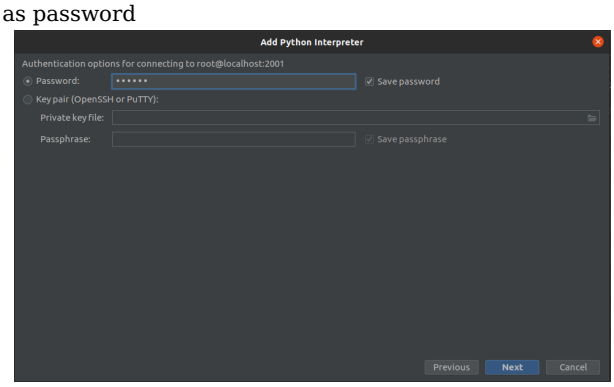
1. Go to file -> setting -> Project -> Project Interpreter -> click cog -> add



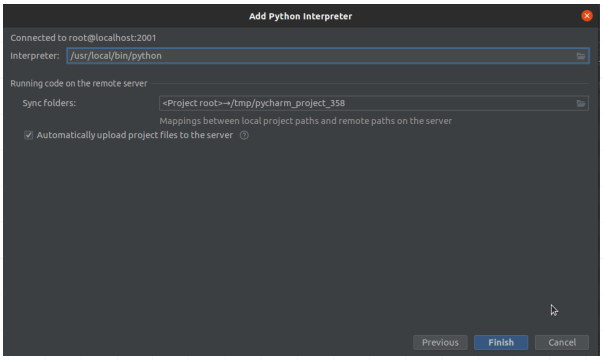
2. Go to ssh interpreter -> Fill the form like below



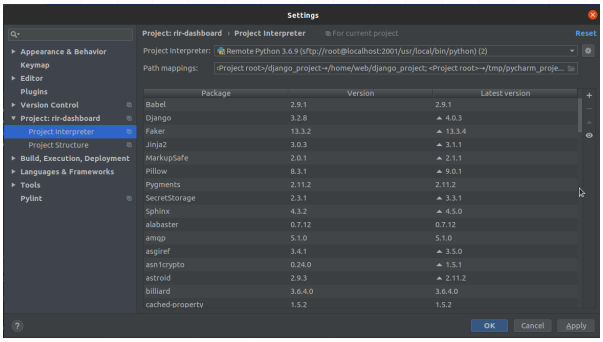
3. Click next and fill **docker** as password



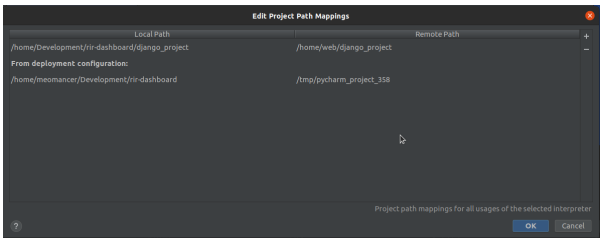
4. Click next and change interpreter like below and click finish



5. After finish, it will show all package like below.



6. In current page, click **path mappings**, click + button and put local path to where the project (django-project folder) and remote path is like below. and click oK.

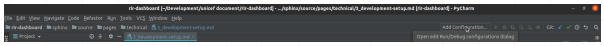


Now the interpreter is done. When we restart the machine, we need to do `make up` to run the project.

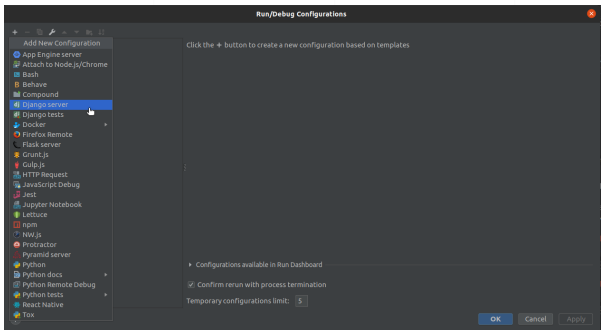
Setup run configuration

After the interpreter is done, we need configuration to run the project in development mode.

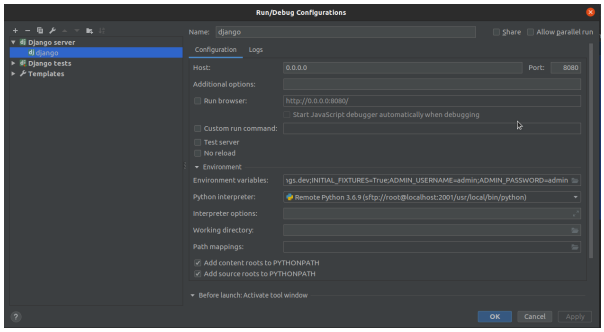
1. Click "Add configuration" like in the cursor in the image below. (top-right)



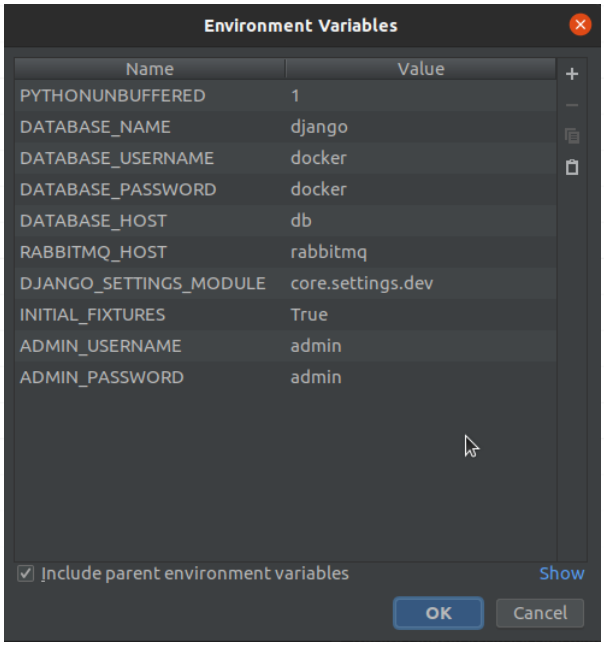
2. There will be a popup, and click +, then click **django server** like below



3. It will show the form and fill like below.

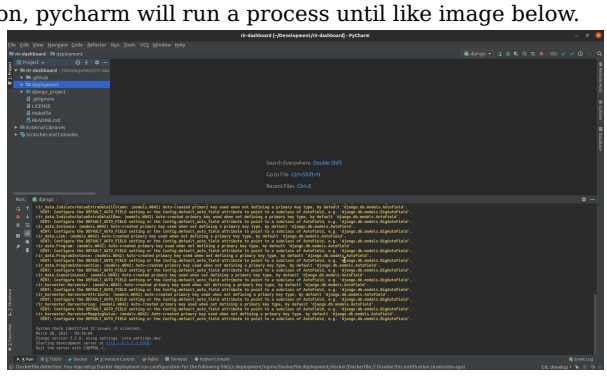


4. Don't click the OK yet, but click **Environment Variables** and add environments like below 9by clicking + button).



5. After that, click OK.
6. Now we need to run the server by clicking **go** button in below image.

7. When we click the **go** button, pycharm will run a process until like image below.



8. Now it is done. We can access the development server in http://localhost:2000/

This development mode is DEBUG mode, and also whenever we change the code, the site will also change in runtime.

For more information how to set up on pycharm, please visit Using a Docker Compose-Based Python Interpreter in PyCharm

1.1 Configuration

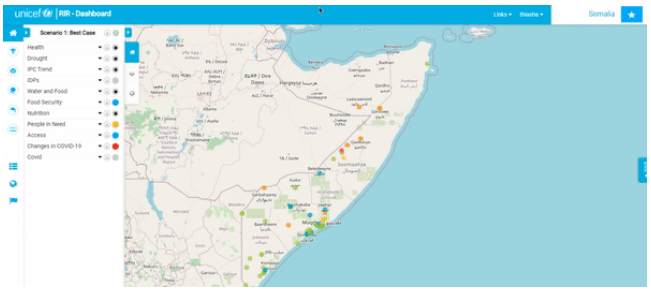
1.1.1 Geography Management

1.1.1.1 Adding a Geography level

Let's start in **Site Administration**. Scroll down to Geometry Level Instances and select **+Add**. Add the name and description to your instance. Go back to the main page of your instance. Below the Program Interventions panel are three icons; 'Indicator Management', 'Geography Management', and 'Instance Management'. Click on the **Geography Management** icon. You will be redirected to the 'Geography View' map page, and you will see that in the top right corner there is an **+uploader** button. Select this button and start filling in the form. The first thing you need to do is add the data for the geography level. Once the data is uploaded, you will be able to fill in the rest of the form. Please note that the country level does not have a parent level.

1.1.1.2 Geography Level Arrangement

Click on the **Geography Management** icon. You will be redirected to the 'Geography View' map page, and you will see that in the top right corner there is a button for **Level Management**. Select this button. Now you will be able to rearrange the geography level by clicking on a degree and dragging it to your desired location.

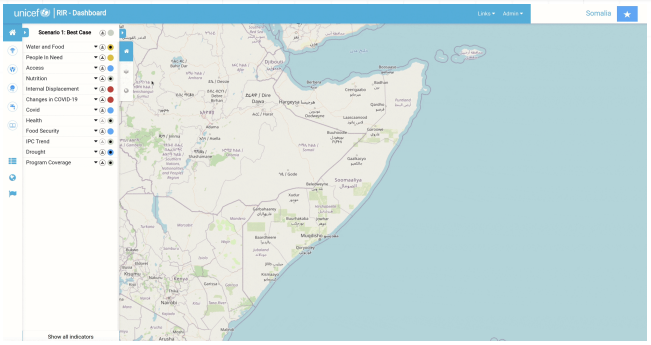


1.1.1 Indicator

1.1.1.1 Adding a New Indicator

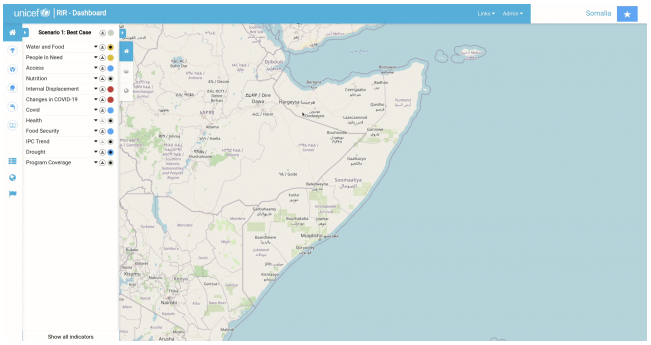
To add an indicator, click on **Indicator Management** and go to **Create New**. Fill in the necessary information about the indicator you would like to create. Once you have filled out the form, scroll down to Scenario Rules and add the parameters to match the indicator. you can also change the colour for each rule by clicking on the colour block. Click **Submit** once you are happy with the added information and scenario rules.

If you add a dashboard link, you will see a black dot in the centre of the circle that represents the scenario case on that indicator in the 'Program Interventions' panel. By clicking on the black dot, you will be redirected to the dashboard link.



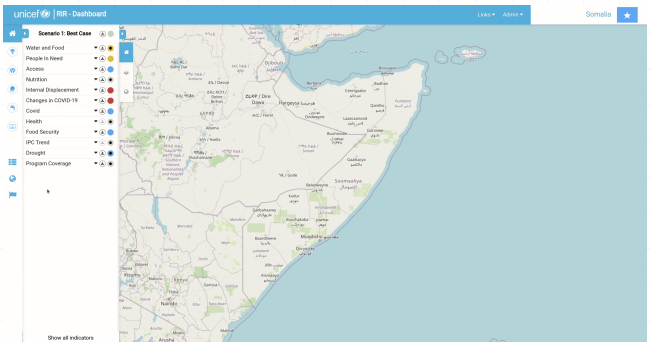
1.1.1.2 Add a New Indicator from Existing One

Sometimes we need to create multiple indicators with the same configurations with just different names. To do this, we can create a new indicator from the existing one.
To do that, go to **Indicator Management**, click the **cog** icon and click **Create from This**, and it will be redirected to the form with pre-configuration from the last selected indicator.



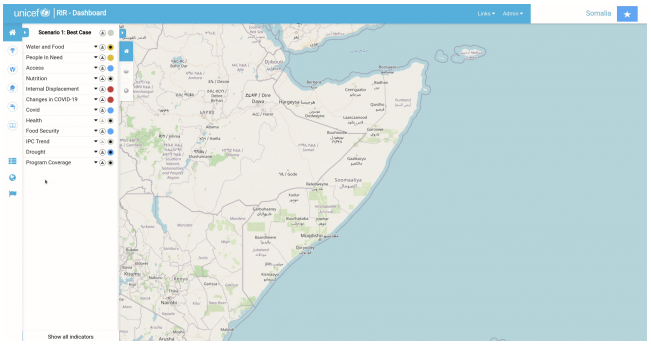
1.1.1.3 Edit Indicator

To edit the indicator, go to **Indicator Management**, click the **cog** icon and click **Edit**, and it will be redirected to the form where we can change the configuration of an indicator.



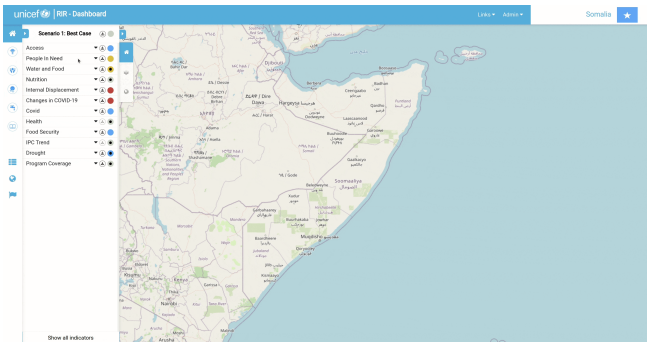
1.1.1.4 Edit Multiple Indicator

Sometimes we need to update multiple indicators because they have the same configurations. To do it, go to **Indicator Management**, and click the **Multi-Edit**. There will be a checkbox where we can check the indicators that we needed. After we check the indicators, click **Multi-Edit Form**, and it will be redirected to the form and fill some fields if they have the same configurations. To change a configuration, we need to check the checkbox before the input label, and the input will be turned on, and we can change the configuration value.



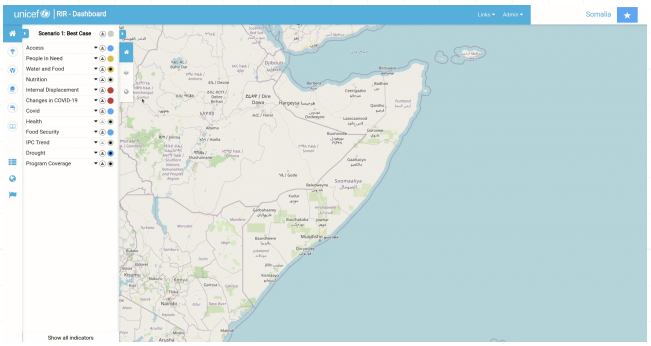
1.1.1.5 Show/hide Indicators

To show or hide the indicator on the dashboard, go to **Indicator Management**, and just turn it on/off by clicking the 'Eye' icon.



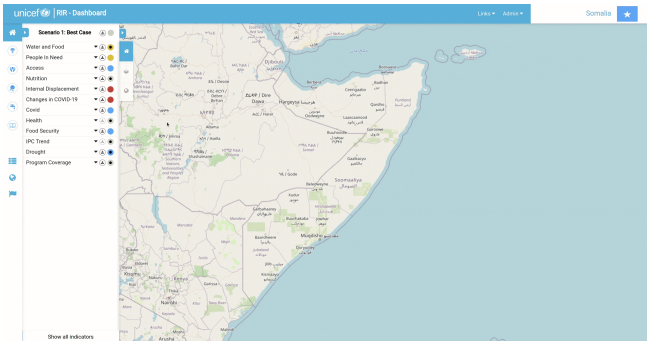
1.1.1.6 Change order indicator and group

In the dashboard, the indicators show in the ordered list and group. To change the orders and the group, go to **Indicator Management**, click **Change order** and drag and drop the group to the new order, or indicator to the new order or also to the new group.



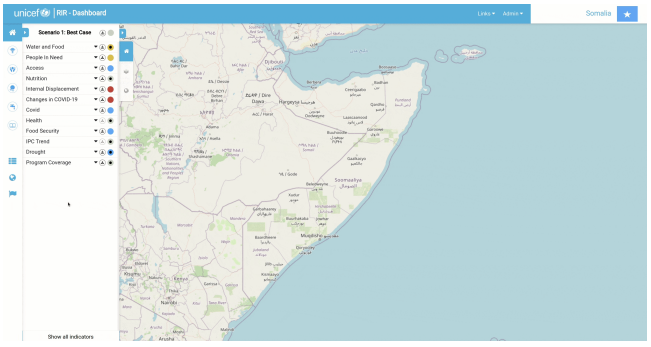
1.1.1.7 Value Manager Form

There are two ways to manually add data to indicators. The first is by using the 'Value Manager Form'. To access this form, go to **Indicator Management** and scroll to the indicator that you would like to add data. On the right-hand side of the indicator's name, there will be a small Settings symbol. Click on **Settings** for the desired indicator and then click on **Value Manager Form**. You will be redirected to a form that gives you all the geographic locations within the instance and spaces to add values. You can also add a file to fill in the data by clicking **Use File to Refill Form**



1.1.1.8 Value Manager Map

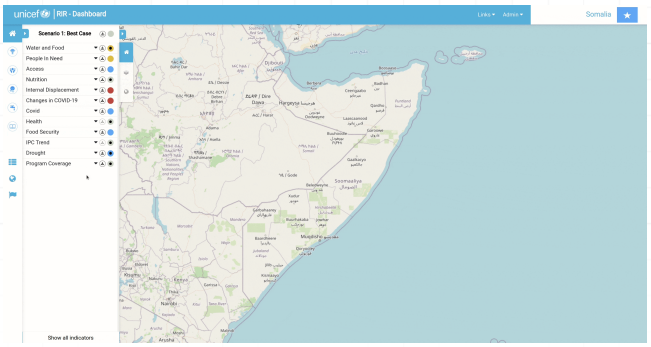
The second way to add data to an indicator is through the 'Value Manager Map' option. Go to **Indicator Management** and scroll to the indicator that you would like to add data. On the right-hand side of the indicator's name, there will be a small **Settings** symbol. Click on **Settings** for the desired indicator and then click on **Value Manager Map**. This will take you back to the map canvas. Now you will be able to click on any geographic location within the instance and a popup window will appear which will allow you to fill in value data for that location.



1.1.1.9 Harvesters

The process of creating a harvester is for the total automation fetching of data. Go to **Indicator Management** and if you haven't already created the indicator you want to work with, start by doing that. Once the necessary indicator exists, click on the little **Settings** icon on the right-hand side of the indicator name. Select the **Create Harvester** option. Pick the type of harvester you would like to create from the drop-down 'Harvester' (you will be presented with three options: 'API With Geography Using Today's Date'; 'API With Geography And Date'; and 'Harvested Using

Exposed API By External Client'). The first two options are for the harvester and the third one is for the ingestor. For the **API With Geography Using Today's Date** and **API With Geography And Date** options, fill in the Attributes portion of the form and then a popup window with a list of keys will appear; drag the green labels to their corresponding criteria. Double-check that in 'Geometry Mapping', 'From' matches 'To'. Select **Harvest Now**. You can scroll down to the log to see if your harvest is running in the background. Go to **Indicator Management** and click on the little settings icon that you just created a harvester for and select **Value Manager Map** to view your progress.

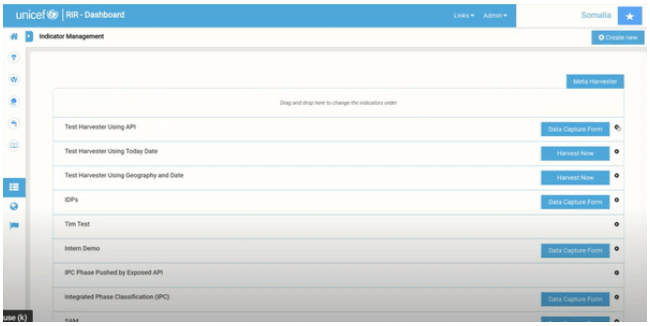


To create a 'Meta Harvester', go to **Indicator Management** and in the top right-hand corner of the page, there will be a **Meta Harvester** option that you will need to select. Fill in 'Sheet name', 'Column name: administration code', and add the appropriate file. **Submit** your work. Click **Report File** to view your work.

Harvester

1.1.1.10 Ingestors

The function of an ingestor is to manually upload data which is then automatically ingested or pushed from a remote side. To start, click on **Create Harvester** as you did for the harvester options. Change the type of harvester to **Harvested using exposed API by external client**. Add necessary notes and **submit**. You will now be presented with an 'API URL' and a 'Token' that has been received from an external source. You now need to push the data from outside to the RIR dashboard. Open the API platform that you use to build and use API's. We used Postman. Copy over the URL and token to push the data to the RIR dashboard.



1.1.1 Instances

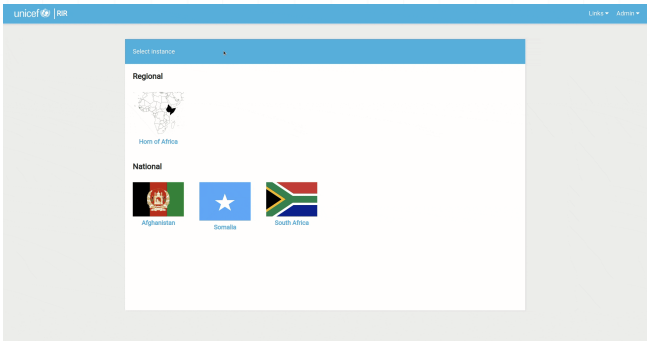
To access the dashboard, we need to have an instance.

1.1.1.1 Creating an instance

Once you've signed in, you'll be redirected back to the home page which contains the various instances that you can select.

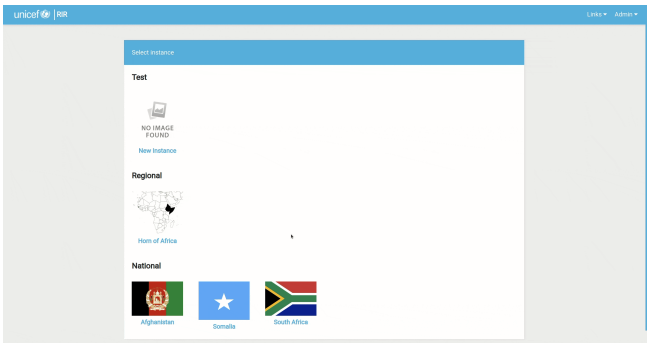
To create a new Instance, select the dropdown arrow next to your username and click on **Django Admin**. Once you're on the Site Administration page, scroll down until you find 'Instances'. Click on the **+Add** option on the right-hand side of the Instances row. Add the name of the new instance, a description as well as the icon files and then click **Save**.

You also can add it to a category. To do it, just select the category or add a new one by clicking the **plus** icon.



1.1.1.2 Change the order of categories

Sometimes we need to change the order of the categories. For example from before, we need to change the order of the 'Test' category to the bottom. To do it, go to the **Site Administration** page, and scroll down to Instance Categories. There will be an order column. Just change the number for the orders of category.



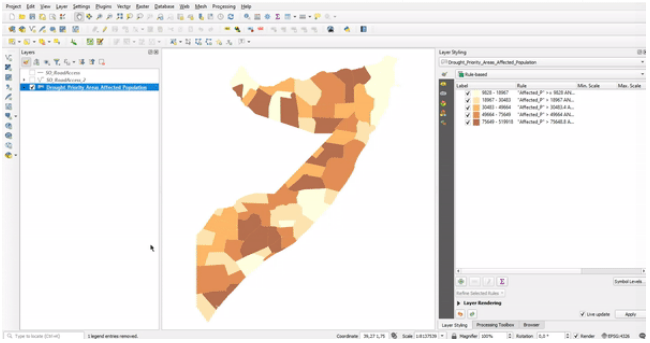
1.1.1 Layer

1.1.1.1 Creating new layer

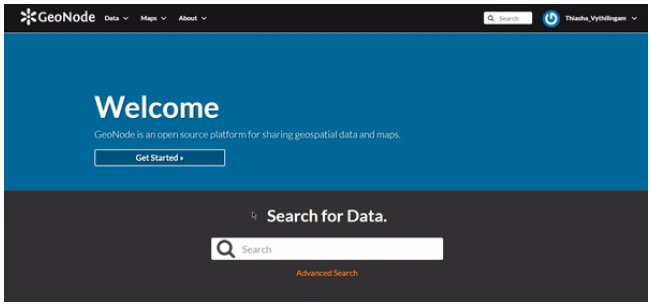
To add any type of layer to the dashboard, you need to push the data from an online server.

Using geonode

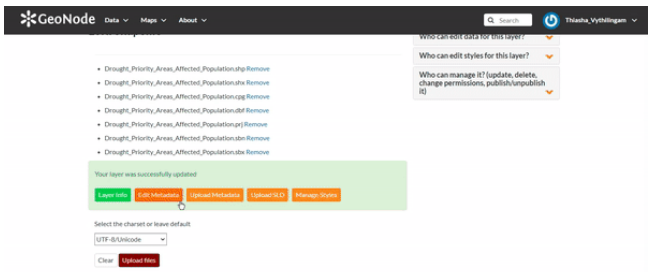
To do this you will first need to upload the data to GeoNode or GeoServer as well as a styled layer descriptor file (SLD). Let's start by creating the SLD in QGIS. Once you've opened QGIS or the mapping software of your choice, upload the data to your canvas as you would normally do. Once the layers are added, use the **Layer Styling** panel to create an appropriate style for the data. You want to follow the general theme of the layers that are already on the dashboard. Once you are happy with the style right-click on the layer and select **Properties**. Go to **Symbology** and click on the drop-down **Style** button. Select **Save Style**. Click on the **Save Style** drop-down option and select **As SLD Style File**. Click on the ellipse on the right-hand side of the File line to choose a place to save the SLD. Do this for each file you want to upload.



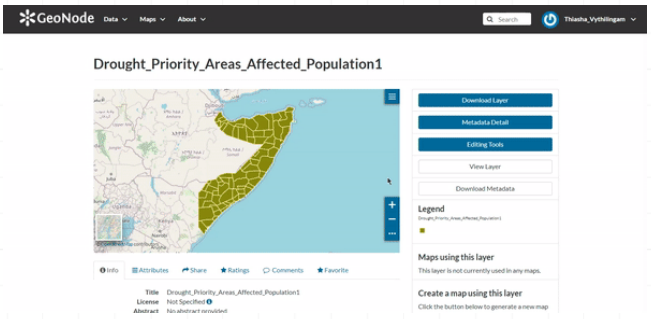
Now we're going to upload it to GeoNode. Log into your GeoNode or GeoServer account. Click on the **Data** dropdown. Select **Upload Layer**. Please note that you can only upload one layer at a time. Drop all the data for the layer into the grey box and select **Upload files**.



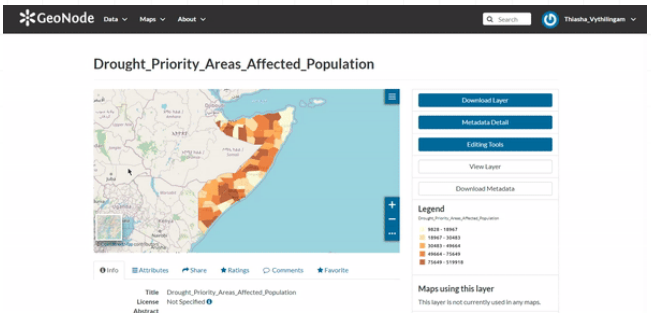
Once the data has been uploaded, click on **Edit Metadata**. Fill in as much of the metadata information as you have and then click **Return to Layer**.



Click on **Editing Tools**. Click on **Upload** under Styles. Choose your SLD file and then return to layer once again. In Editing tools you can also change the thumbnail for the layer by uploading a screenshot of the layer.



Right-click on the layer and Select **Inspect**. Select **Network** and hard refresh the page. Select the web address for a tile from the layer (usually the third option) but if you click on the address, you'll be able to see if it is the right one.

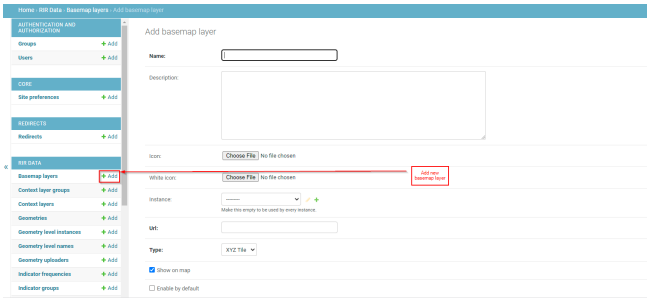


Copy the link address and paste it into a notepad and change all the words in full capital letters to lower case letters. Use this edited link address as the URL when adding a new layer.

This was how to upload a context layer but the process of pushing data and creating the SLD file would apply to manually add any layer to the dashboard.

1.1.1.2 Adding Basemap Layer

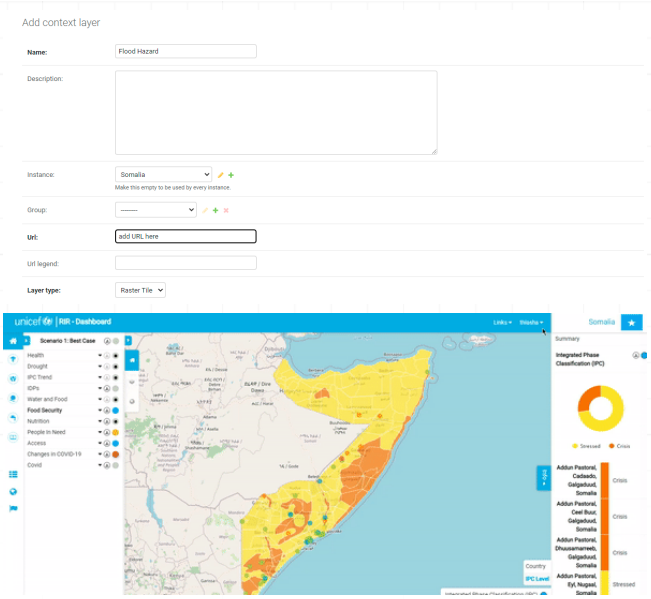
To add a background or basemap layer, click on **Django Admin** and go to the Site Administration page. Click on **+Add** in the Basemap Layers row. This will allow you to create a basemap by linking it to a URL as well as the instance you would like it to apply to.



You will also be able to add the parameters to the basemap by scrolling down to Basemap Layer Parameters and clicking on the green plus that says **Add**.

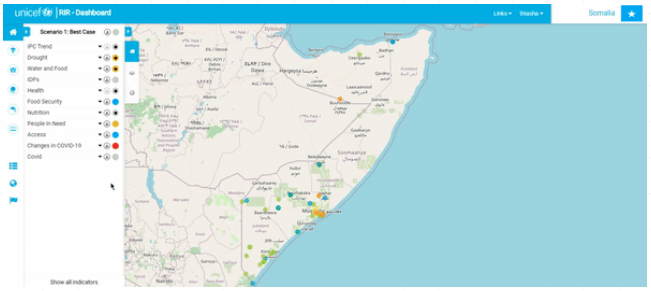
1.1.1.3 Adding a new Context layer

Click on the user dropdown menu and open **Django Admin**. Click on **+Add** on the Context layers line. Select the instance you would like to add the context layer to. We will use the existing Somalia instance and Flood Hazard layer as an example. The layer shows areas that are prone to flooding. Enter information in the input boxes as shown in the images below and save your data once you are happy with it. Click on view site to see your new layer. You will be able to see your new layer in the 'Layers' menu. There is also an option to add other parameters to this layer.


Add context layer
Name:
Flood Hazard
Description:
Instance:
Somalia
Make this empty to be used by every instance.
Group:
Url:
add URL here
Url legend:
Layer type:
Raster Tile
unicef
RSR - Dashboard
Scenario 1: Best Case
Health
Drought
IPC Trend
IDPs
Water and Food
Food Security
Nutrition
People In Need
Access
Changes in COVID-19
Covid
Somalia
Summary
Integrated Phase Classification (IPC)
Stressed
Crisis
Addun Pastoral, Cadaado, Galgaduud, Somalia
Addun Pastoral, Ceel Buur, Galgaduud, Somalia
Addun Pastoral, Dhuusamareeb, Galgaduud, Somalia
Addun Pastoral, Ely, Nugaal, Somalia
Country
IPC Level

1.1.1 Navigation Link

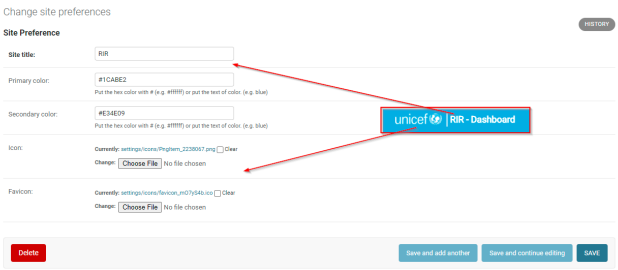
To add links to the RIR platform or a specific instant, go to **Django Admin** and click on **RIR data**. Select **Links** and fill out the necessary information. If you leave the instance option blank, the link will show in Navigation for all instances. If you select an instance, the link will only appear in Navigation for that instance.



1.1.1 Preferences

This document is about how to change preferences of the website. Mostly it is about how to change text and the theme.

1.1.1.1 Website Preferences



To change or add icons to the RIR dashboard panel at the top of the screen, you will need to go to the **Site Administration** page. Under the group **Core**, you will see **Site Preferences**. Click on this option, and then you will be redirected to a new page, select **Site Preferences** again. Here you will be able to change or edit the title as well as the icons. Save and refresh once you have made your edits.

Site title

This is used for the title of site on top navigation bar.

Primary color

:octicons-milestone-24: Default: #1CABE2

This color is used for the theme of the website. For example : navigation bar.

Secondary color

:octicons-milestone-24: Default: #E34E09

This color is used for the secondary theme of the website.

Icon

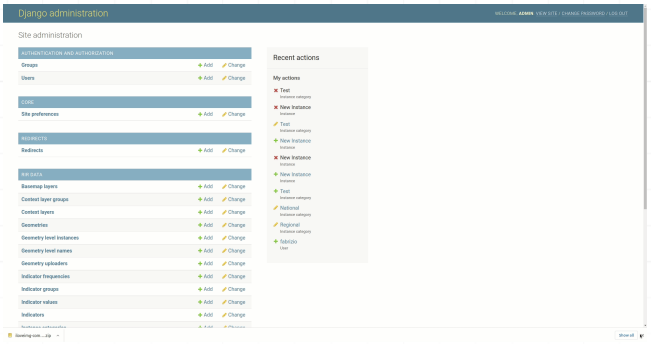
The image that is used for the website icon. Used on the navigation bar for example.

Favicon

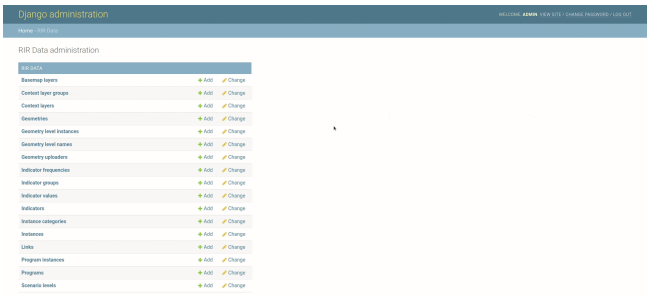
The image that is used for the favicon of the website. The image will be checked on the icon on the browser tab.

1.1.1 Program Interventions

After we change the scenario, we need to create a program, so we can create a program intervention. To add or edit a program, go to the **Site Administration** page, select **Program**. In the form, you can fill name, icon and white icon.



Now we need to add the program to an instance, so we can create an intervention for the program on the instance for a specific scenario. To do it, go to the **Site Administration** page, select **Program instances** and create a new or edit the existing one. It will ask about the instance and also the program. And also we need to add the program interventions that link to a specific scenario.



1.1.1 Scenario

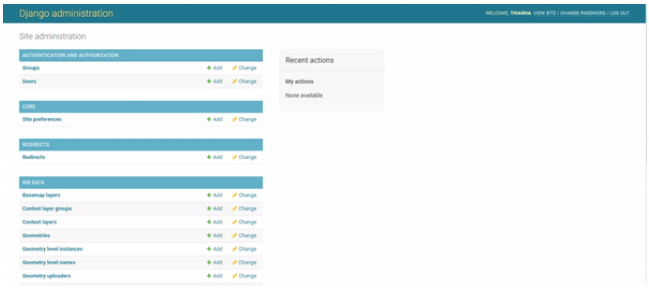
To add a scenario level or change a scenario level, go to ‘Django Admin‘ and click on **Scenario Level**. You can add or edit an existing one.

1.1.1 User Management

This section is used for managing the users for the website

1.1.1.1 User Creation

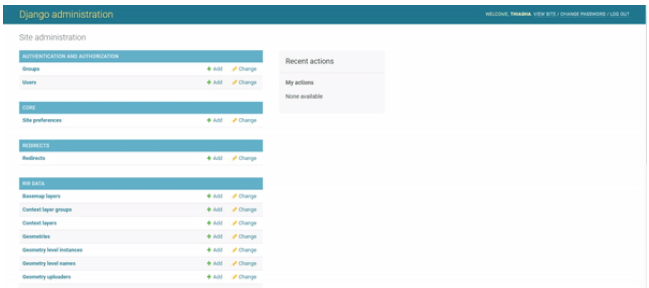
Go to **site administration**. Click on **+Add** in the same row as Users. You can now create a profile for someone by adding a username and password. Once you have created the user profile, click **Save**.



1.1.1.2 User Permissions

Once you have created the user account, go back to **Site Administration** and select the **user** option. Select the user you created, and then you can edit their personal information as well as select or deselect their ‘Permissions’. Remember to **Save** your changes.

You also can change the permission in user creations.



https://github.com/unicef-drp/GeoSight