RIR Dashboard

Release 1.0

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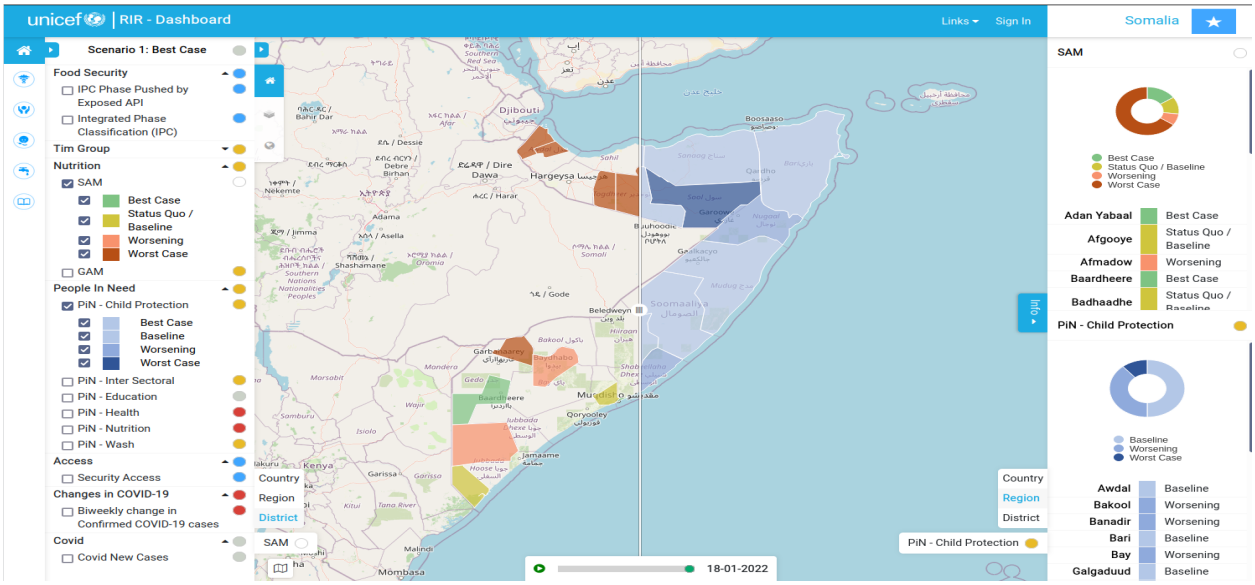
CONTENTS:

Welcome to the Risk Informed Response (RIR) Platform!



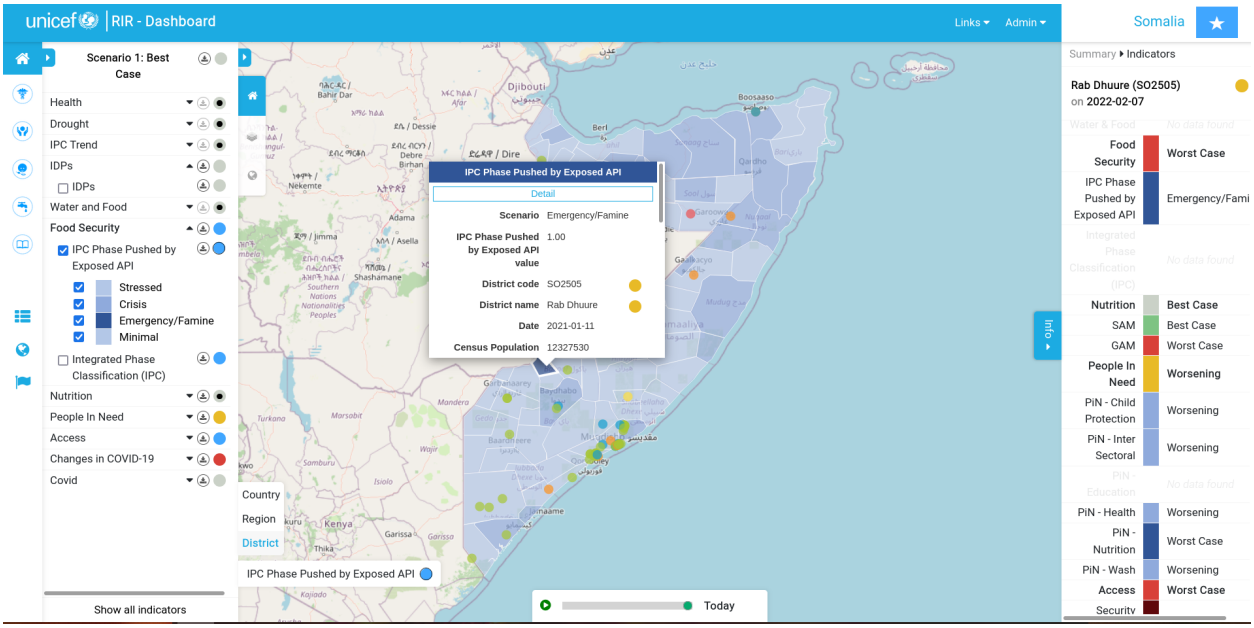
The RIR Platform is a tool for humanitarian workers to plan for and mitigate against risk. The platform is Open Source and can be shared and reused for your own purposes under the terms of our license.

CHAPTER

ONE

INTRODUCTION

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 statuse for each risk indicator
- **programme 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**

1.2 Disclaimer

1.3 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.

1.4 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!

1.5 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/osgs repository.

1.5.1 Developers

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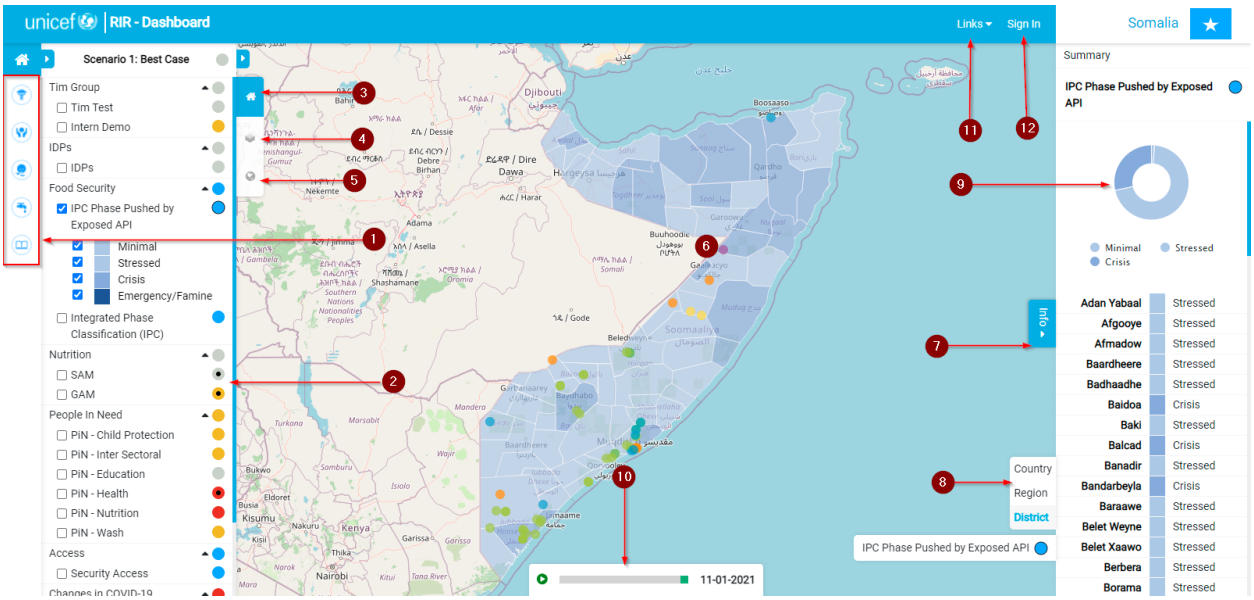
CHAPTER

TWO

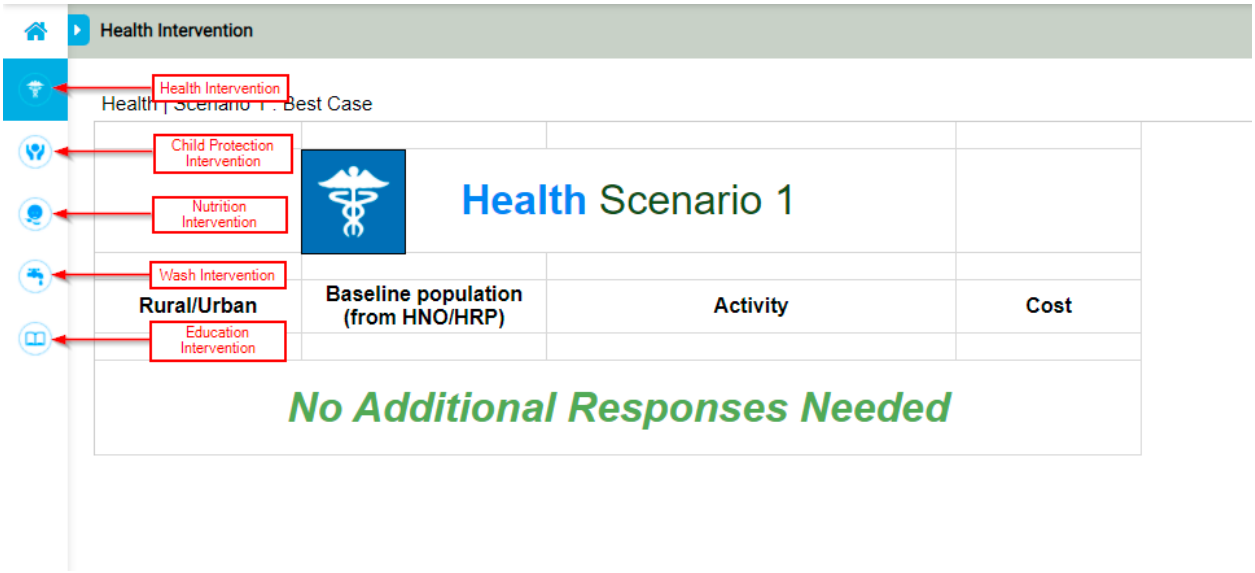
RIR USER DOCUMENTATION

2.1 Platform Tour

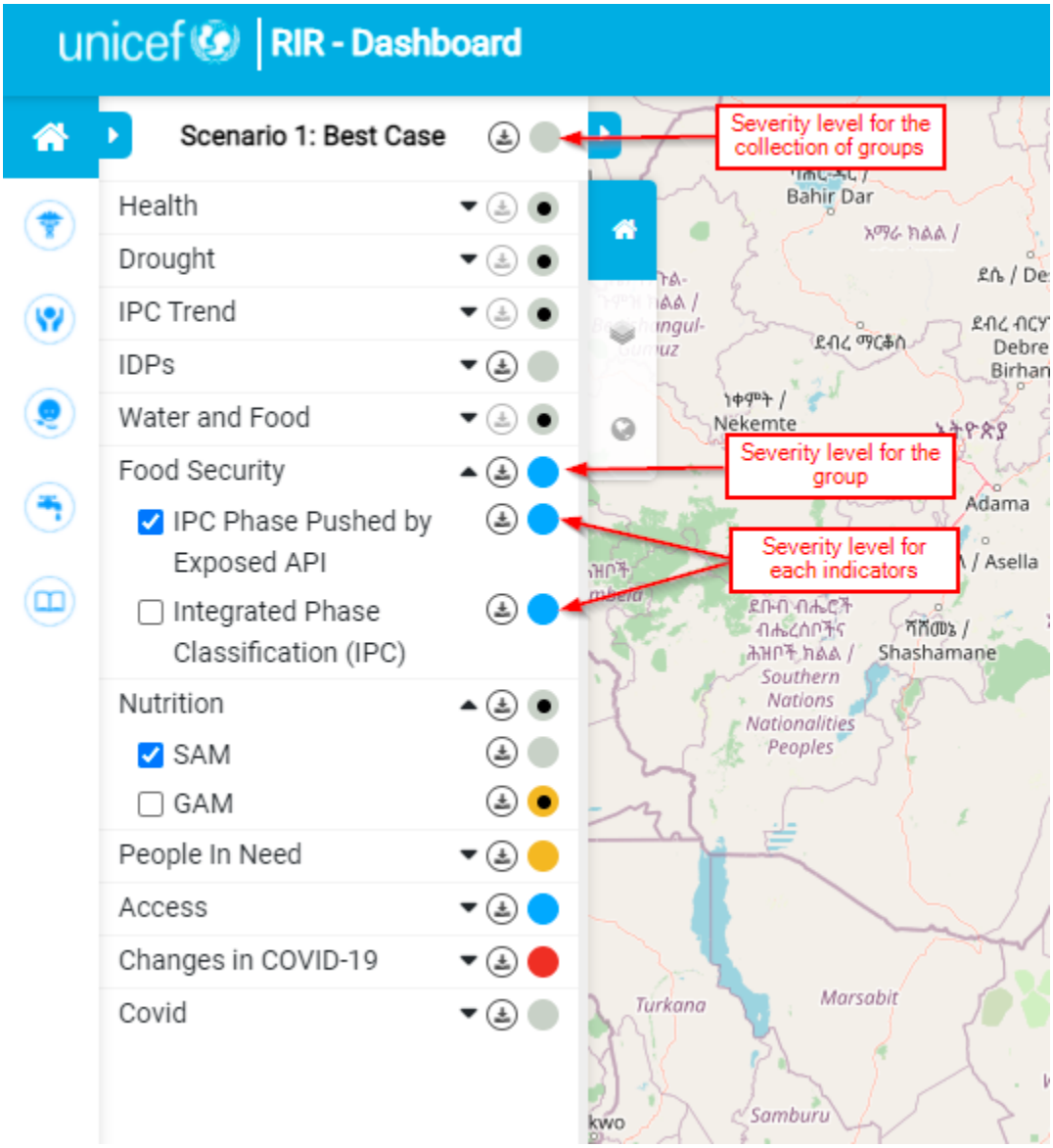
The RIR platform is situational Awareness platform to monitor health, child protection, nutrition wash and education in a geographic region. To fully understand the platform and the information you can obtain from it, you need to understand how it works.



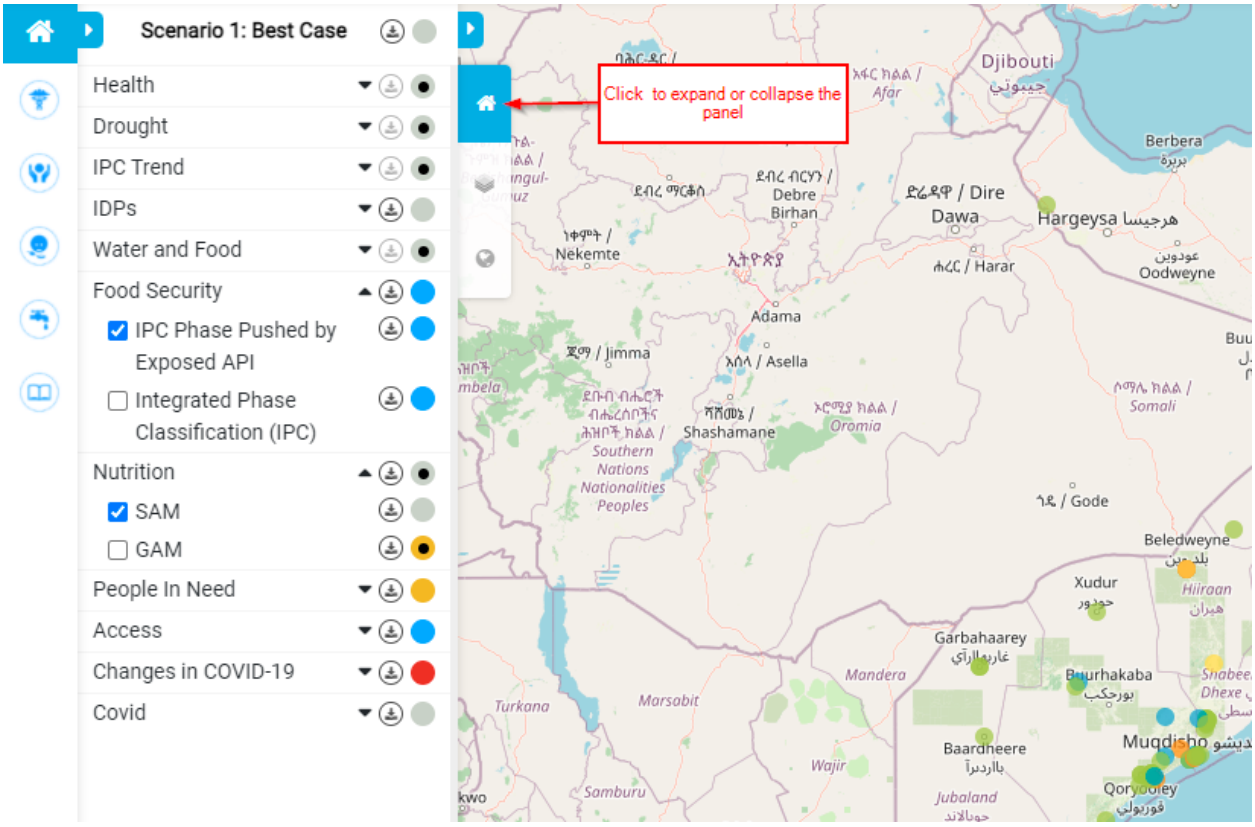
1. **Programme Interventions Panel**: This group of buttons is used to navigate through the key areas of factors or indicators that the RIR platform accounts for. If you have admin status, more icons will be available within the panel, we will explore these additional buttons at a later stage. Each button 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.



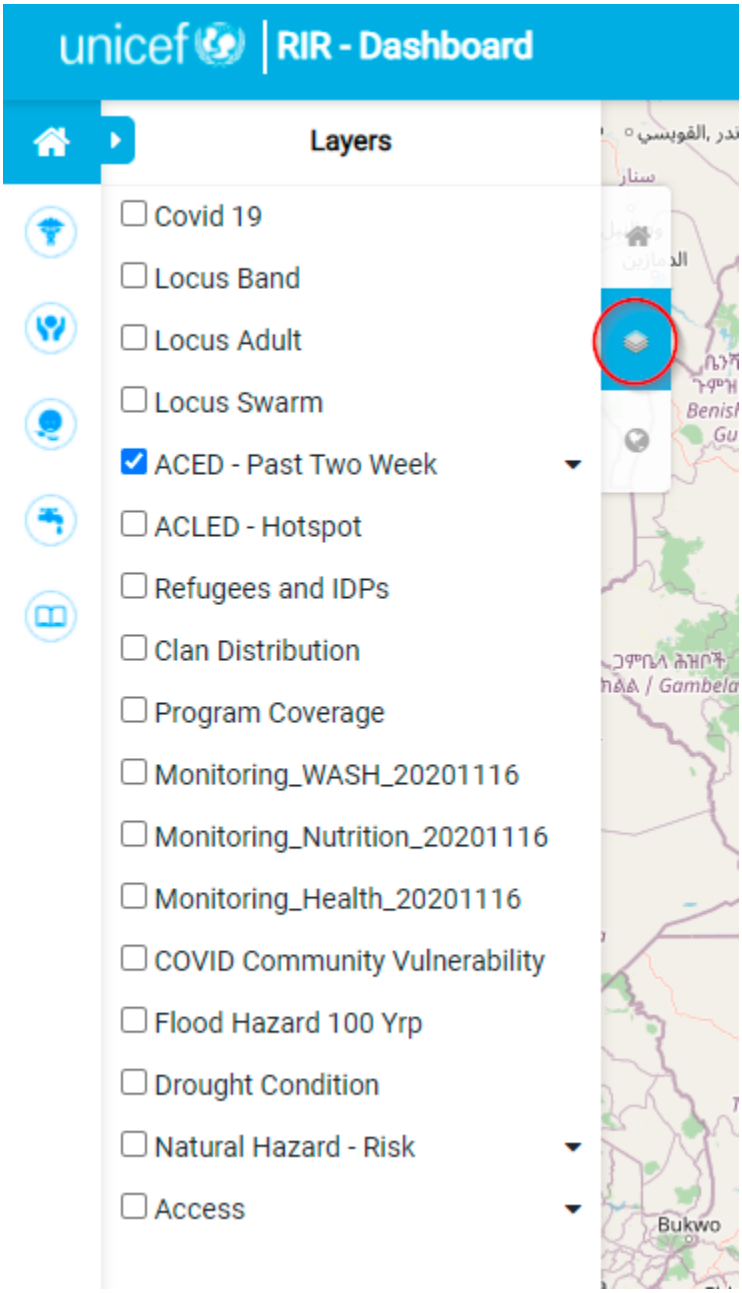
1. **The Indicator Panel**: This panel contains a list of indicators that relate to the factors accounted for by the platform. The coloured circles next to each indicator show the current severity level for that indicator within the specific geographic region. The indicators are arranged in groups that 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.



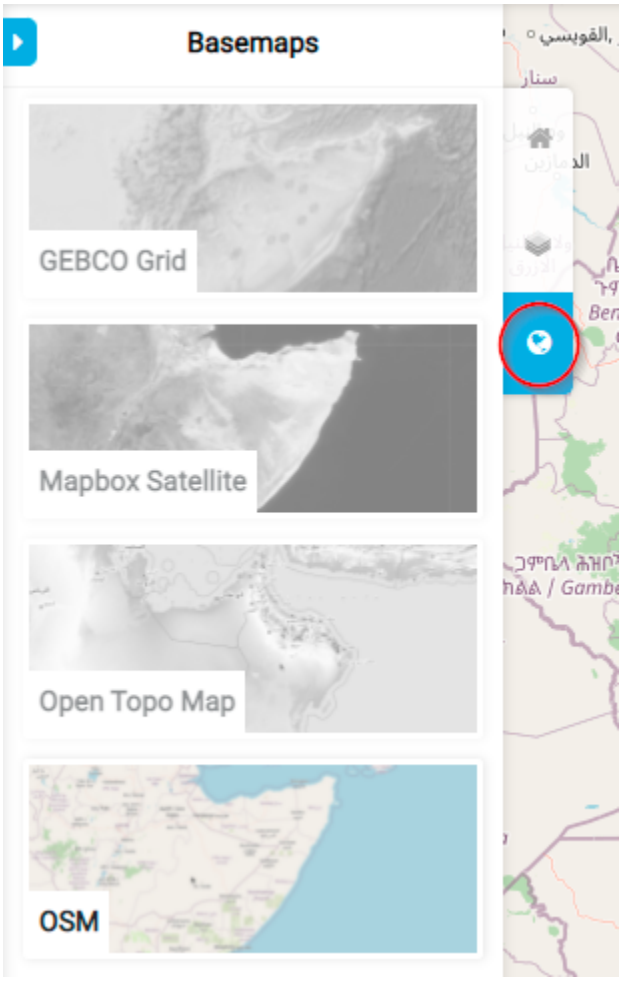
1. **The Indicator Icon**: This button expands and collapses the indicator panel as illustrated in the image below.



1. **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.

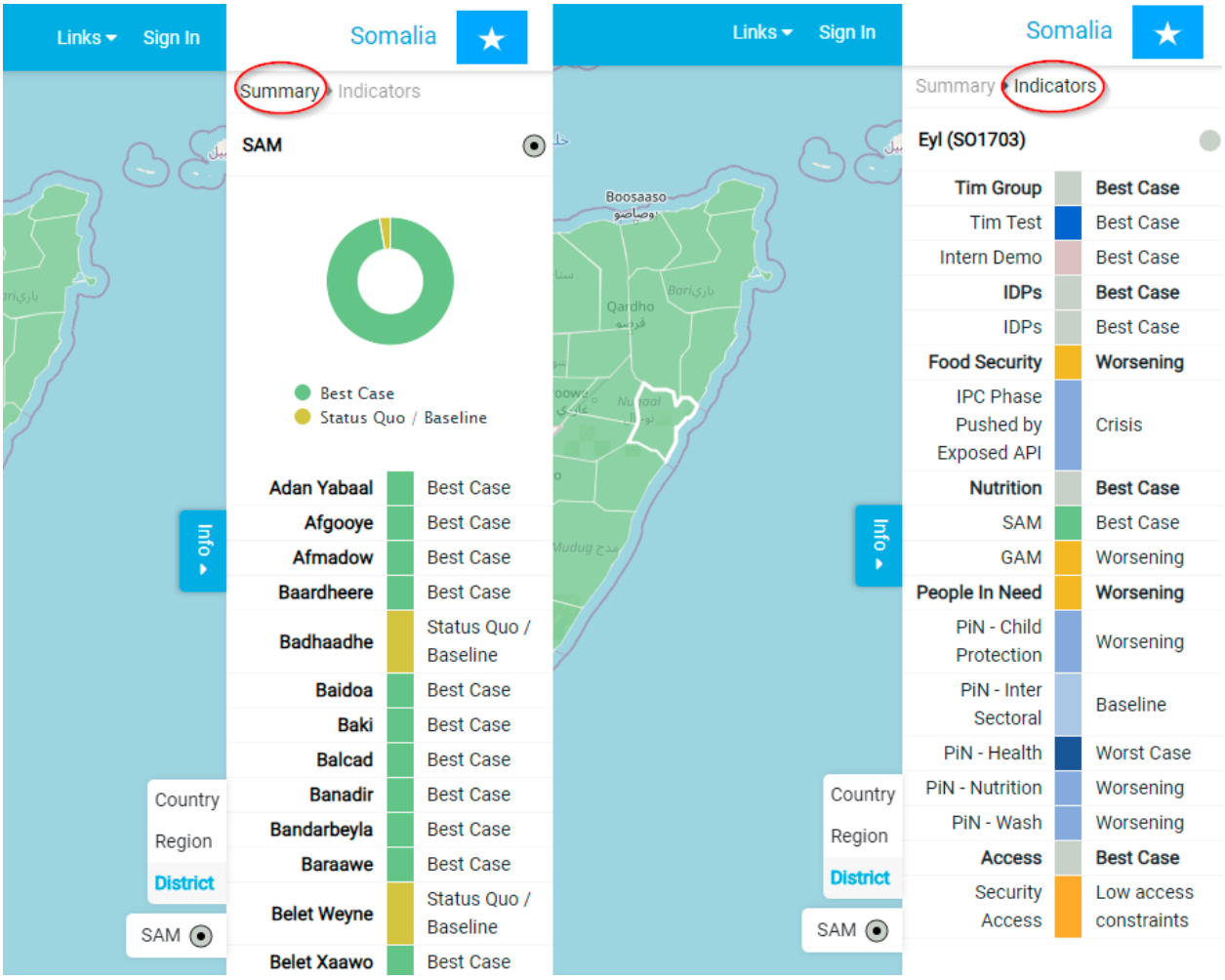


1. **The Basemap Icon**: To expand or collapse the basemap panel, "click" on this icon. When expanded, you will be able to choose which basemap you would like to be displayed on your canvas extent.

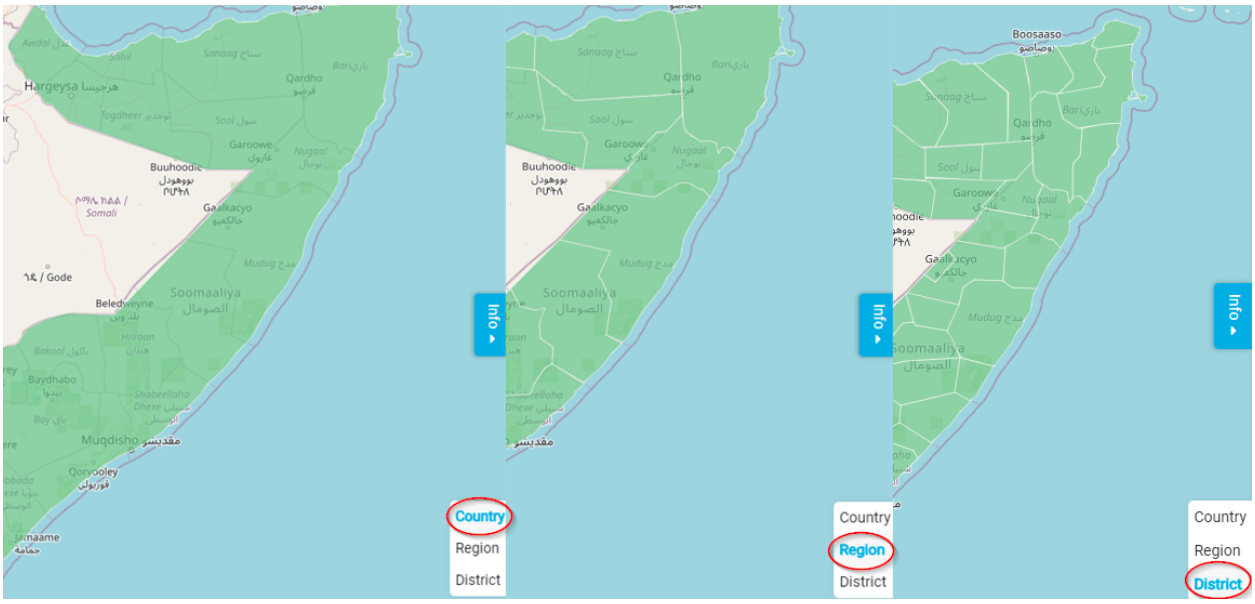


1. **Map**: The map displays a geographic area based on the instant being used. In this case, it's Somalia. The information that is displayed on the map is determined by the layers that are selected as well the factors that have been selected within the 'Indicator Panel'. A complete guide of the map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

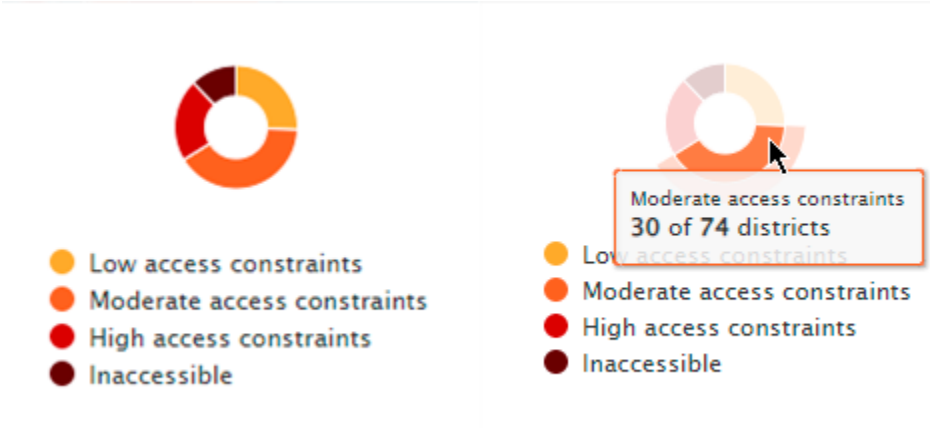
1. **The Info Button**: The 'Info Button' expands a panel that contains a summary of the severity of the selected indicators in different locations within the geographic area. It also has an 'Indicators' option to select which illustrates the severity of all the factors for a specific location within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



1. **Geography Level Panel**: This panel allows you to view the area of interest at a country, region, and district geography level.

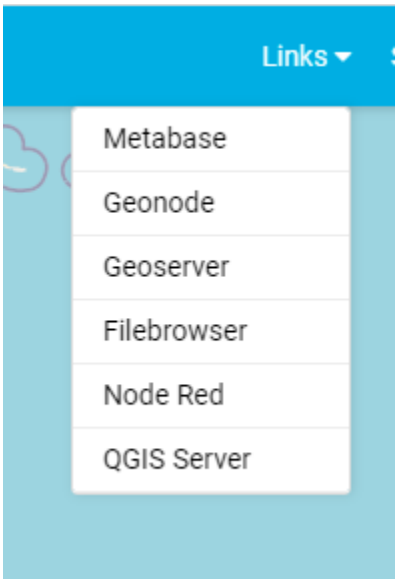


1. **Graphical Representation**: This pie chart illustrates the severities of the selected indicators for the whole geographical area or instant. This chart gives you the cumulative total of each severity out of the total number of regions or districts (depending on your settings in the geography level 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.

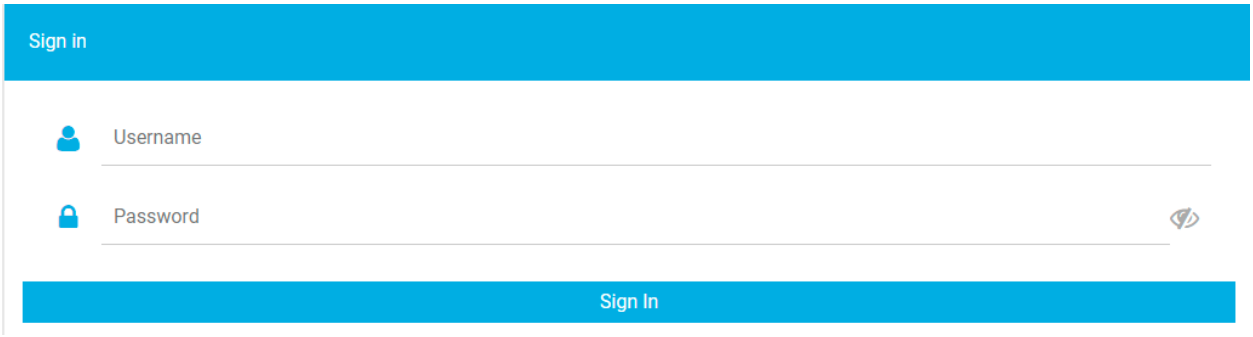


1. **Timelapse Bar**: The 'Timelapse Bar' will show you the severity of the selected indicators over some time. As the map and the 'Info Panel' change, the corresponding date for that data will be displayed within the bar. To initiate the time-lapse, "click" on the "play" button.

1. **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.

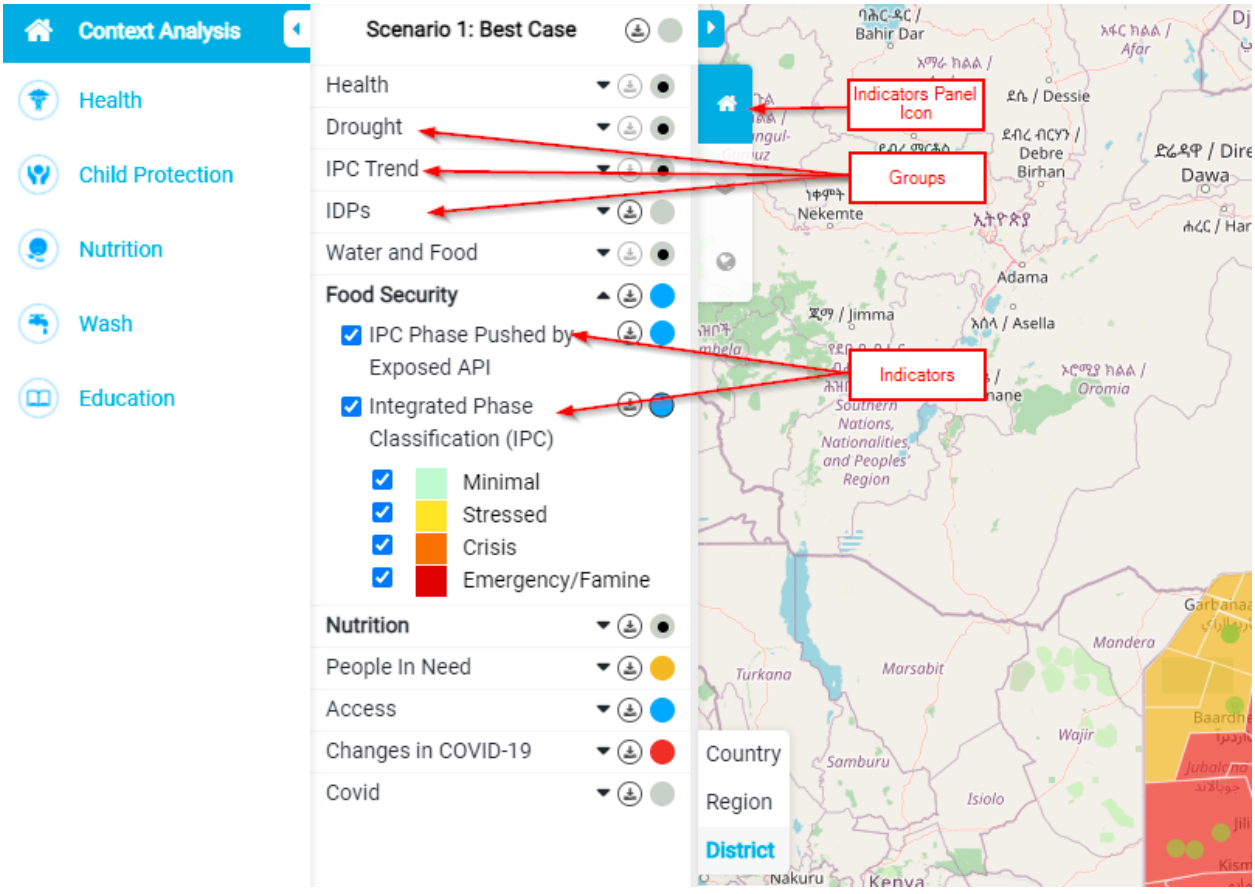


1. **Sign in Button**: To sign in to your account, "click" on this button. There is no registration option which means that in order to sign in, an account needs to be created for you by someone with the necessary permissions.



2.2 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 health, child protection, nutrition, wash and education. The severity levels refer to how good or bad the case is for that factor within the instant. 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.



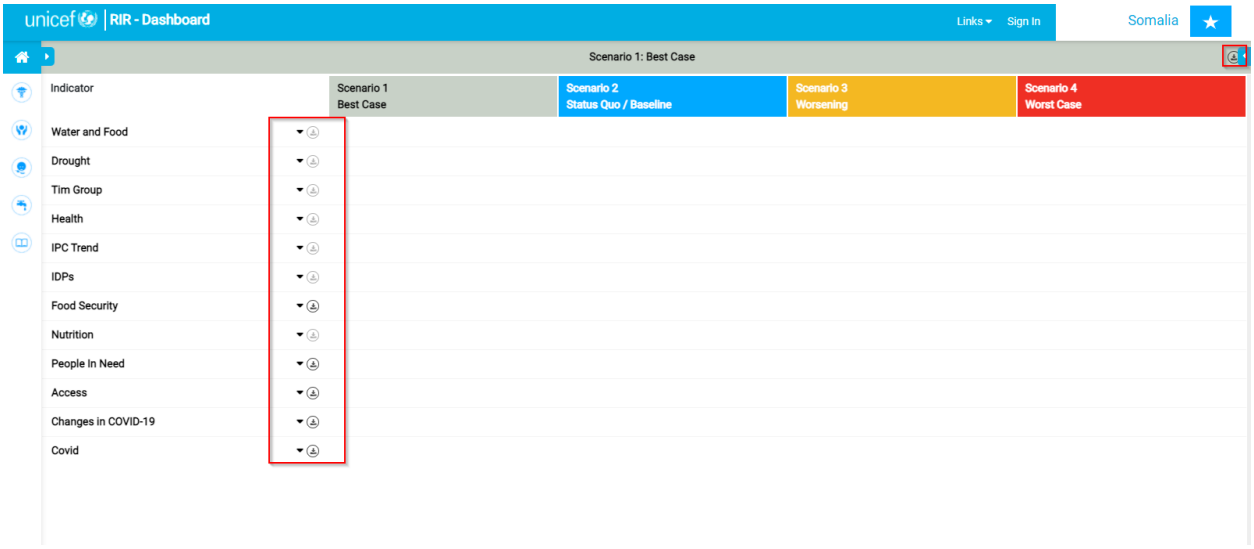
To show the data for specific indicators on the map, select the box of the corresponding indicator by "clicking" on it. To stop showing the data of that indicator, deselect the box by "clicking" on it again.

1. **Indicators**: The indicators in the panel are divided up into groups. Each group has a drop-down arrow and

contains 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. 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 group or indicator is activated. These custom dashboards require admin permissions to access.

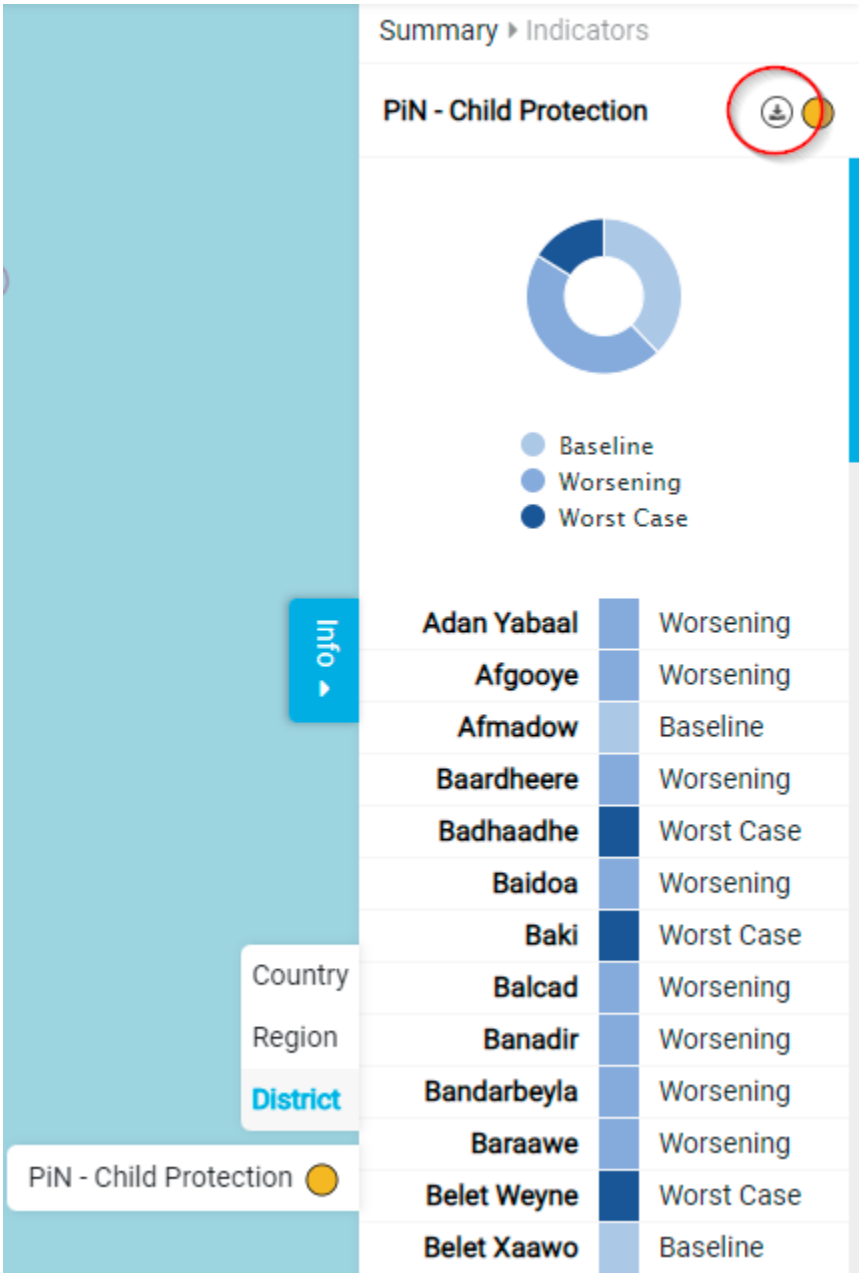
1. **Traffic Lights**: To view the traffic lights, "expand" the indicators panel by "clicking" on the arrow for 'full screen' as indicated in the clip below. This will change your screen completely and allow you to look at the severity level for each indicator. To view each subsection in each group, "expand" the indicator group. The severity levels displayed are for the entire instant, in this case, they show the indicators and their corresponding severities for Somalia.

1. **Downloading Data**: If you would like to download data for each group, indicator or even for the whole instant, there are various methods to do so. There is a download option next to each indicator and group on the 'Indicator panel' as well as on the 'Traffic Light' screen and the option to download data for the entire instant is on the top right corner of the screen. The data will download in the form of an excel spreadsheet. Downloading data for the entire instant will provide you with country, region, district and IPC level data for the geographic location under observation.



1. **The Info Panel**:The Information panel is located on the righthand side of the screen. It's only visible when an indicator is selected in the indicator panel.

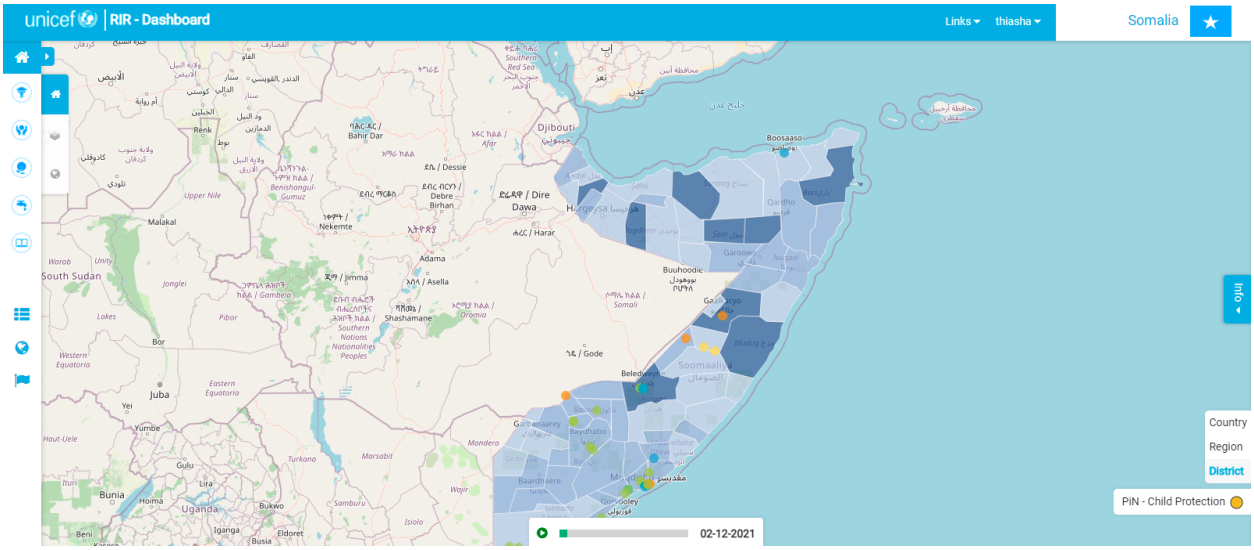
The panel shows the severity case of the selected indicator in each region or district (depending on what has been selected). It also has a graphical representation in the form of a pie chart that displays how many areas within the instant fall within each severity case. By "dragging" your mouse over the pie chart, you can see these values. 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'.

2.3 Map Interactions

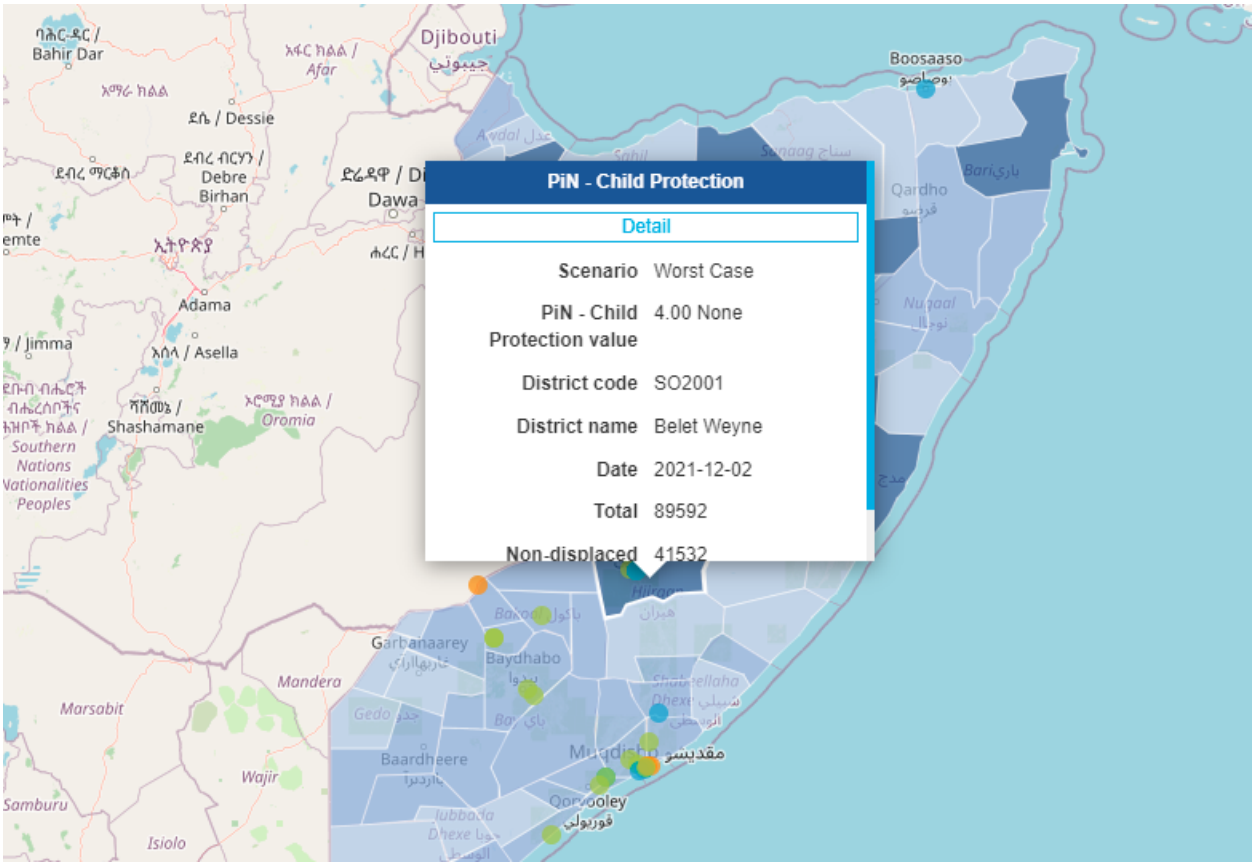
This document covers how you can interact with the map displayed in the RIR dashboard and how the user can navigate around to perform different functions and obtain different information.



1. **Moving Around the Map**: To "pan" around the map, you need to "click" down with your mouse and "drag" the map around. The map will continue to pan for as long as the mouse is clicked in. To make the map stop moving, "release" your mouse.

1. **Zooming In and Out**: There are two ways to zoom in and out. The first is that you can use your scroll on their mouse to zoom in and out. This is the easier of the two methods. The second method can be used when you are looking to zoom into a specific area. This method requires the user to "click" "shift" and then "drag" a square around the area they would like to focus in on. If you are using a scroll pad and not a mouse, you can zoom out by bringing your fingers together on your trackpad and zoom out by moving them away from each other on your trackpad.

1. **Information Display Window**: To gain instant 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. **The Slide Deck**: If you have two factors selected to display on the map at the same time, you will see the name and severity levels on the bottom right and left of the screen. To move between the two sets of data "drag" the vertical line, that extends from the top of the screen to the bottom, left to right. This feature allows the user to analyse more than one indicator at a time without having to deselect and select another factor.

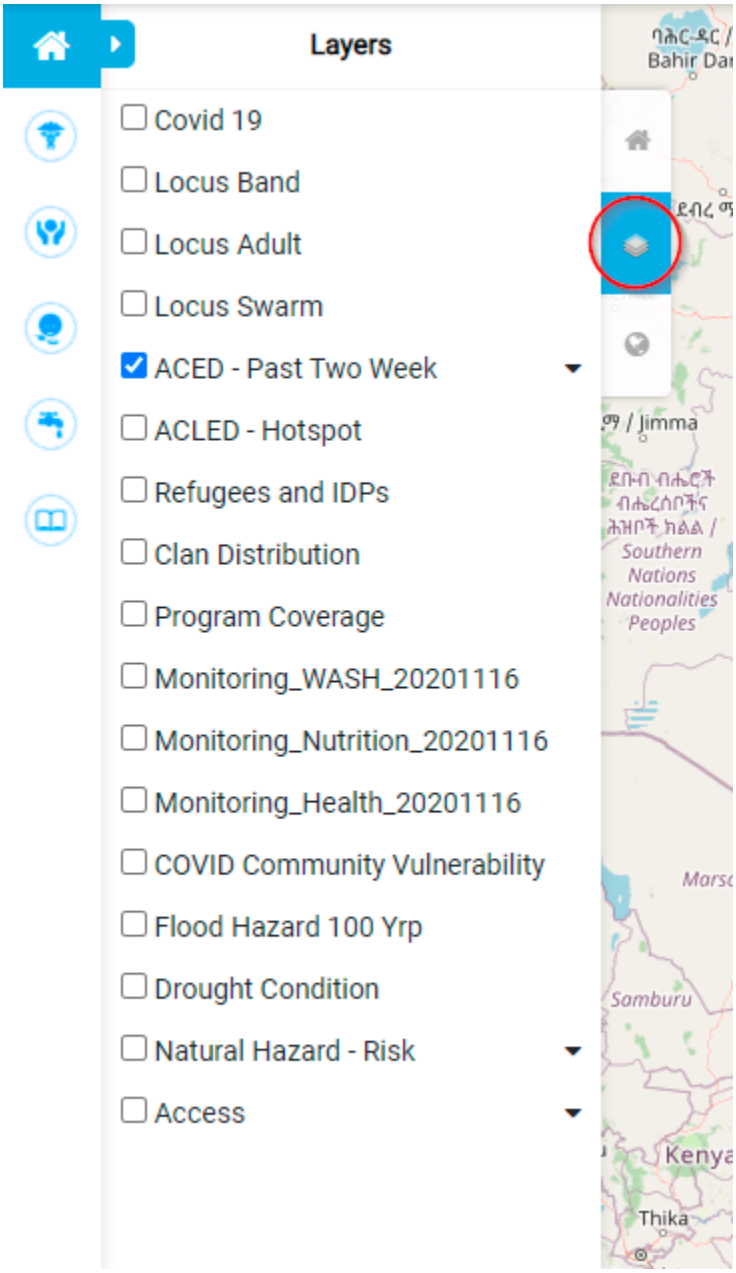
By clicking on the little map icon at the bottom left of the screen, you can change the slide deck function from vertical to horizontal.

1. **Time-lapse Bar**: The Timelapse Bar will show you the severity of the selected indicator over a period of 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. "Click" "stop" to end it.

2.4 Layers

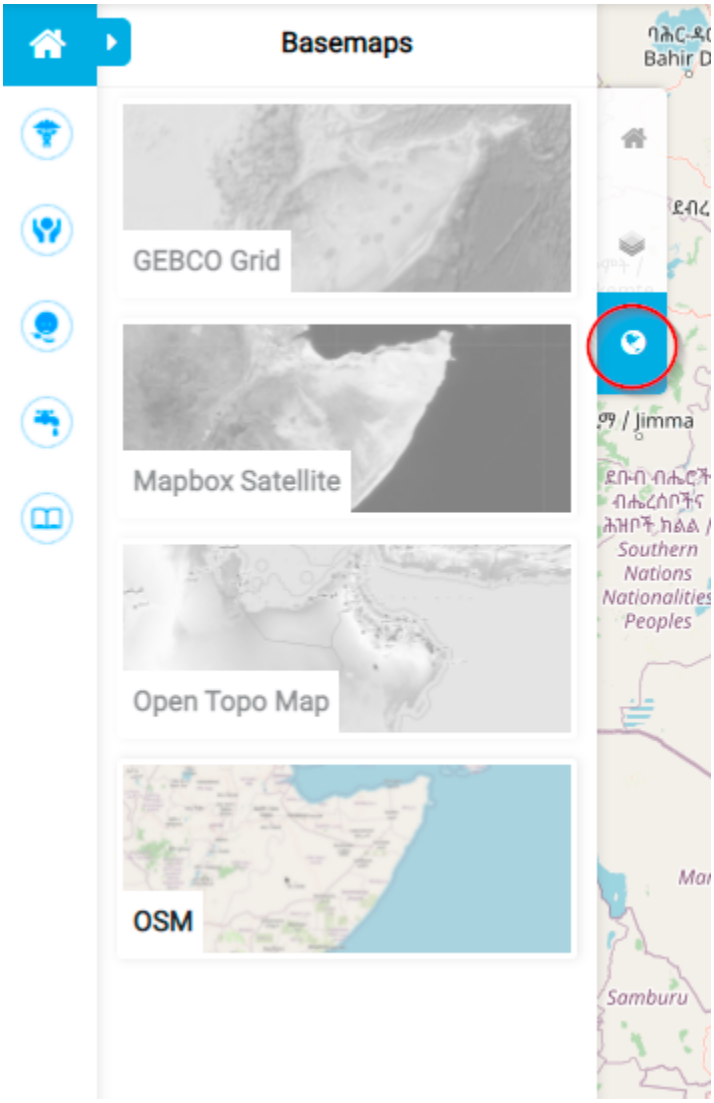
A layer represents geographic data that can be represented on a map as either a point, line, or polygon. A layer could be a particular theme of data. Examples of map layers could include roads, political boundaries, Covid hotspots, schools or even orthophoto imagery. Each layer is a visual representation of a dataset.

1. **Layers Tab**: 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. **Basemap Tab**: 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 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.

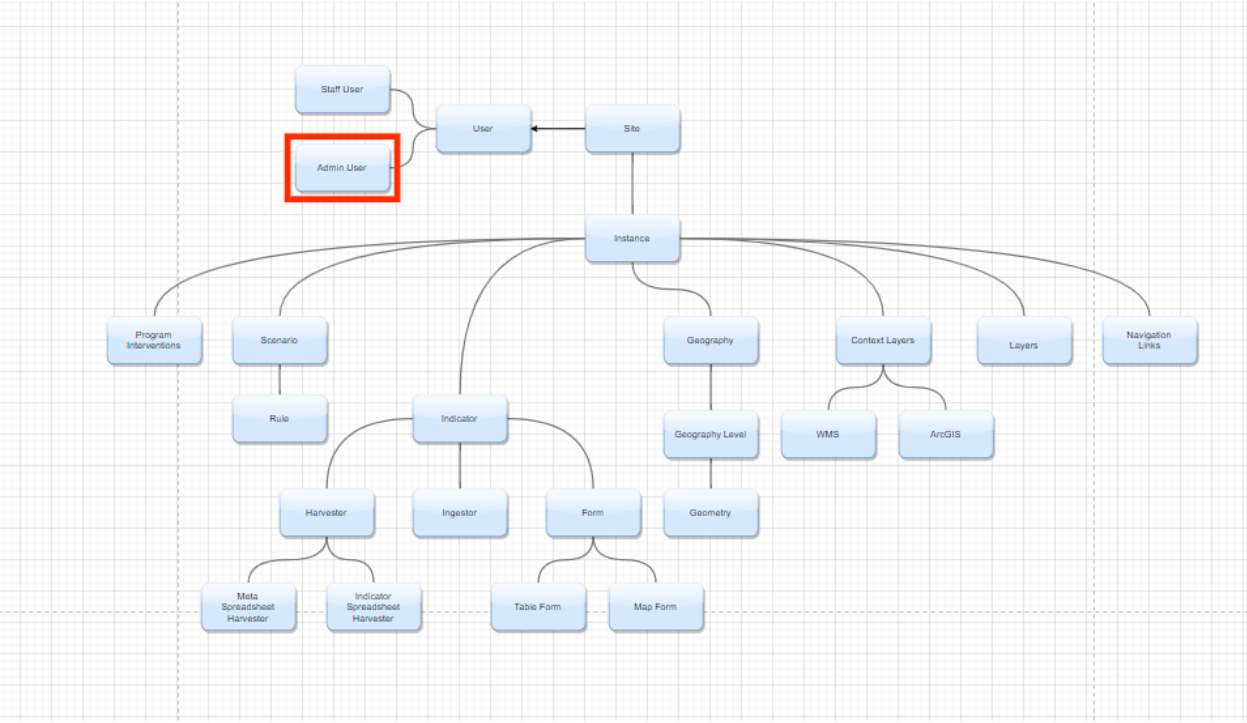
1. **Geography level panel**: This panel allows you to view the area of interest at a country, region, and district level. In the animated image below, you will see that as you change the geography level, the data in the info tab will also change to correspond with it.

CHAPTER

THREE

RIR ADMINISTRATOR DOCUMENTATION

3.1 Instances and Program Interventions

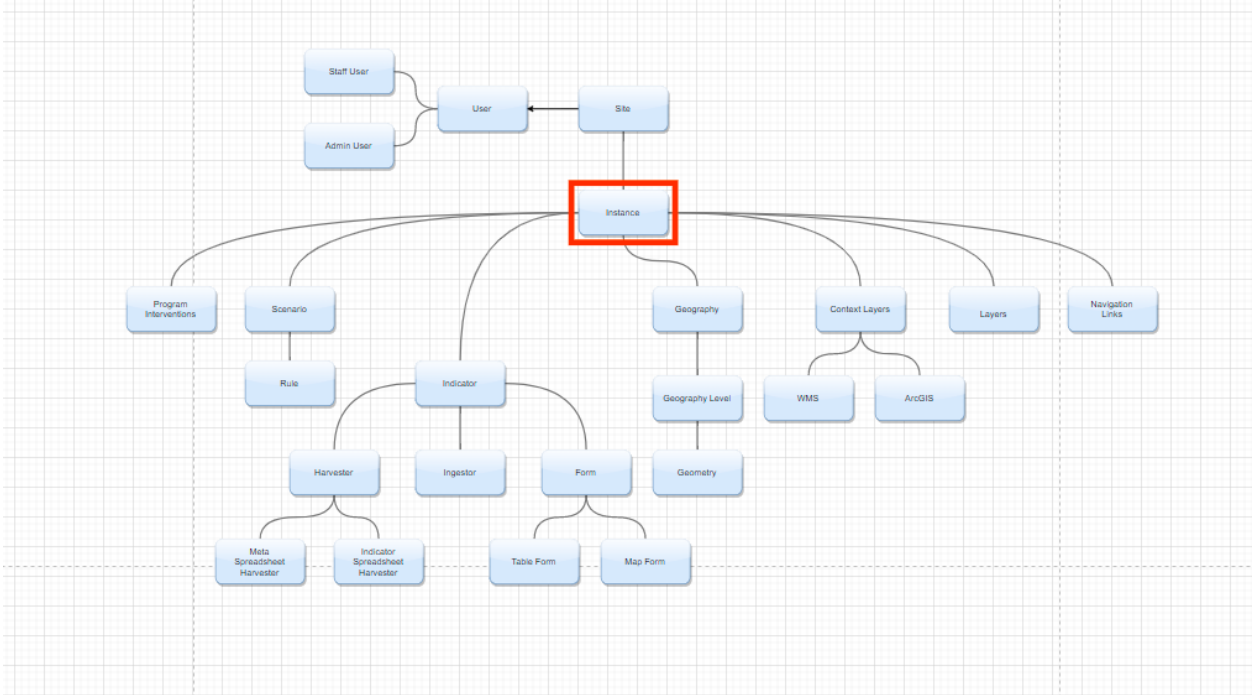


1. **Signing In**: In the top right-hand corner of the screen is the sign-in button. Here, you will sign in using your admin username and password. This process is the same for a staff user or an admin user.

1. **Users and Permissions**:

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'.

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.

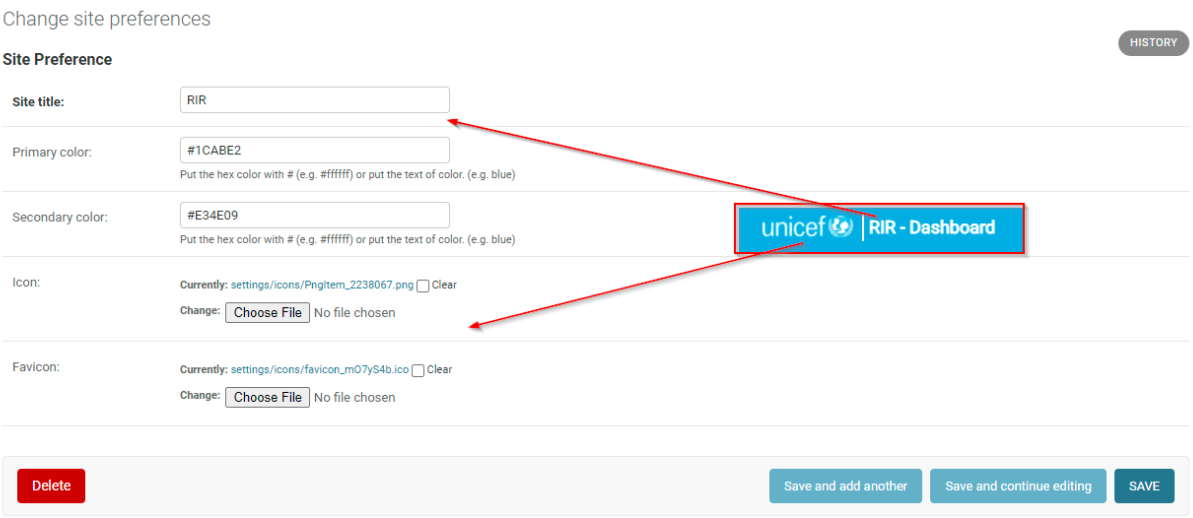


1. **Creating an instance**: Once you've signed in, you'll be redirected back to the home page which contains the various instances that you can select. To create a new Instance, select the dropdown arrow next to your username and "click" on 'Django Admin'. Once you're on the 'Site Administration' page, "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'.

1. **Adding or Changing Icons**:

If there is an *instance* with no image available or you would like to change the current icon, follow these steps: start by selecting 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'. "Select" the instance you would like to change and then "insert" the files for the 'Icon' and 'White Icon' of your choice. Once you're happy with your selections, "click" 'Save'.

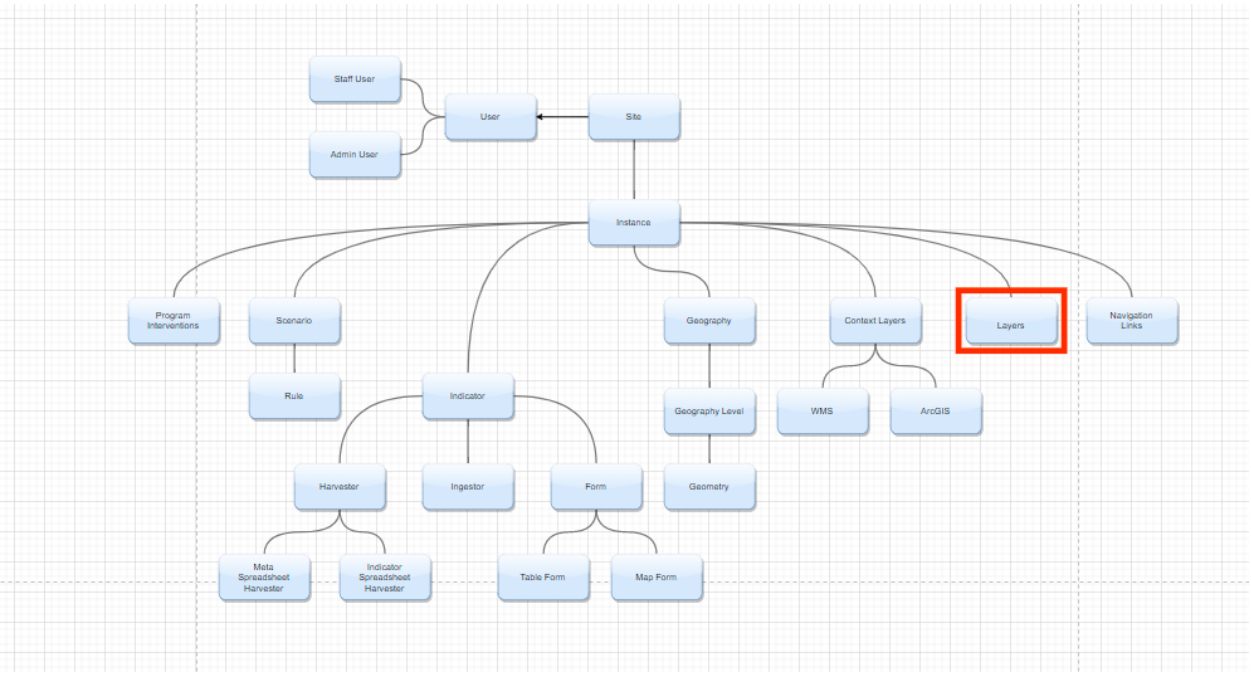
To change or add icons to the **RIR dashboard panel** at the top of the screen, you will need to go to the 'Site Administration page. Under the group 'Core', you will see 'Site Preferences'. "Click" on this option and then you will be redirected to a new page, "select" 'Site Preferences' again. Here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



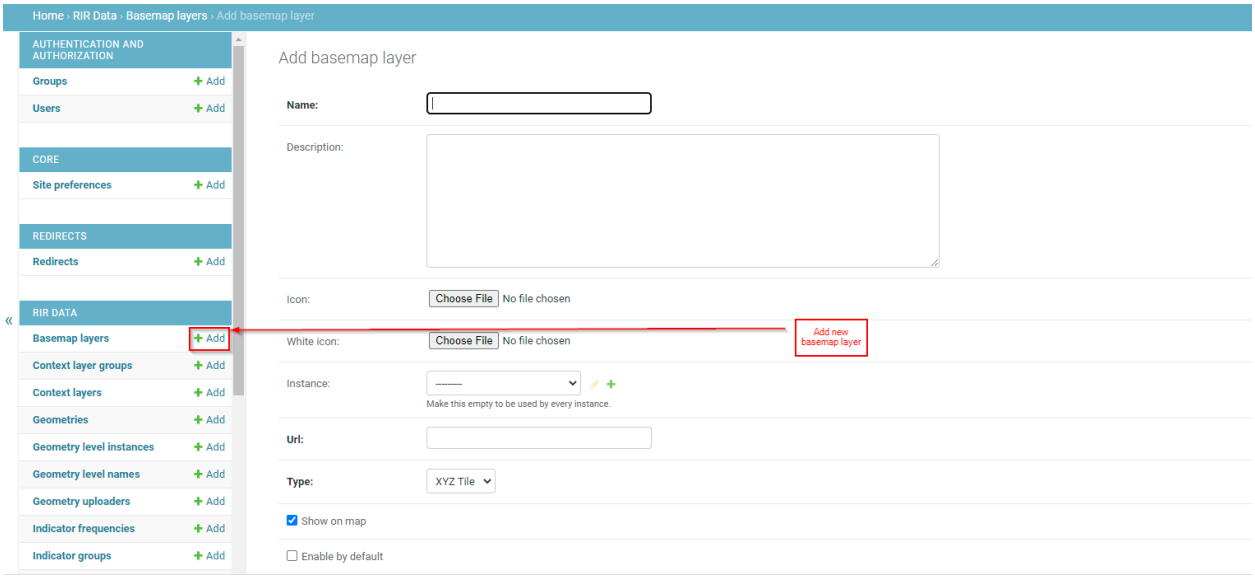
Program Intervention

The process of changing or adding the **'Program Interventions'** icons is similar to what we have been doing previously, except for this time once we are on the 'Site Administration' page, "select" 'Programs'. You will now have the option of choosing a specific program intervention. "Click" on the one you want to edit. You can add or change the title, description, or icons. "Select" 'Save' once you are happy with your edits.

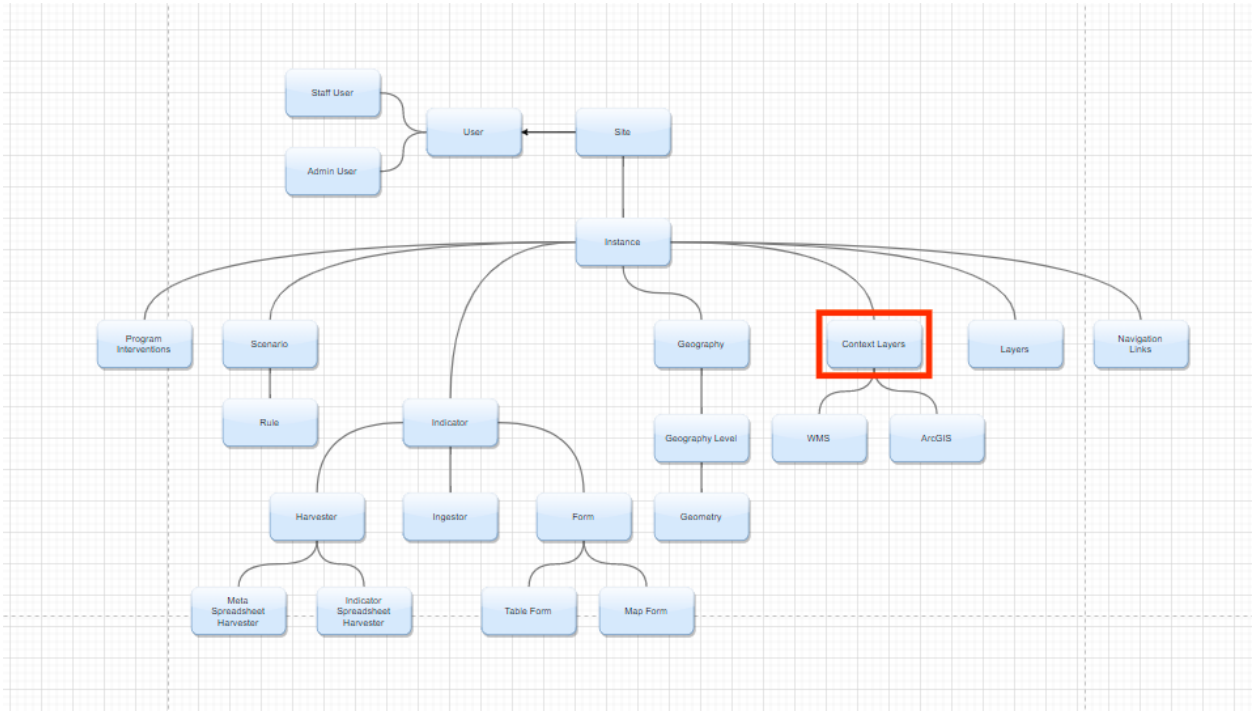
3.2 Layers



1. **Adding a Basemap Layer**: To add a 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 instant 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 Another Basemap Layer Parameter'.

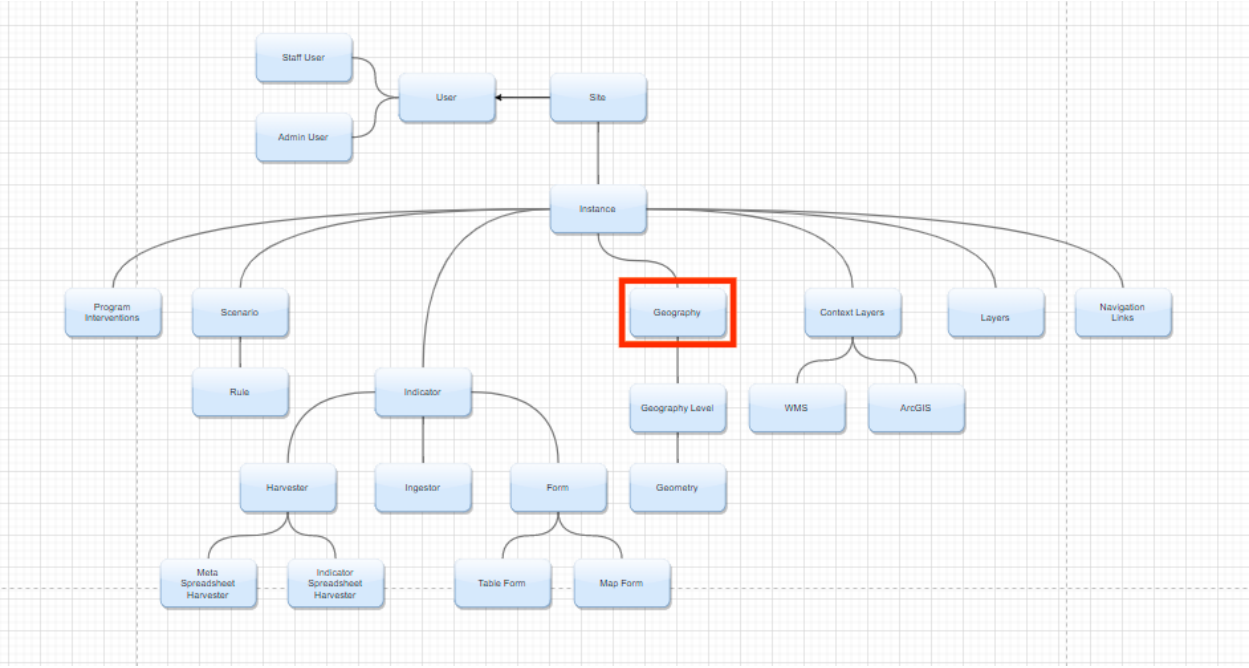


1. **Adding a new Context layer**

"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 veiw 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.

3.3 Geography Management



1. **Geography Level Arrangement**: 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 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 to your desired location.

1. **Adding a Geography level**: Let’s start in ‘Site Administration’. “Scroll” down to ‘Geometry Level names’ and “select” ‘+Add’. “Add” the name and description of the geometry level you want to add and save your work.

Next, go to ‘Geometry Level Instance’, and “select” ‘+Add’. “Click” on the geometry level you added in the previous step and complete the form.

The last step is to go back to ‘Geography Level Management’, “refresh” your screen, “click” on ‘Level Management’ and then move your new geography level to where you want it to go.

CHAPTER

FOUR

RIR TECHNICAL DOCUMENTATION

4.1 Installation

4.1.1 Overview of process of installation of the RIR Dashboard

Process steps

The technical documentation consists of the following steps to install the RIR Dashboard

1. *Server preparation*
2. *Cloning the project folder*
3. *Setting up the server*
4. *Running project*
5. *Deploying changes*

4.1.2 Preparing the server

Basic Requirements

You should be running a linux ubuntu server on your machine or on a virtual box

Ensure that you have set your unique login username and unique password

Start the server and login

Install make dependency

This will install make on your machine or virtual box server

```
sudo apt install make       # version 4.2.1-1.2
```

Install docker-compose

This will install docker-compose on your machine or virtual box server

```
sudo apt install docker-compose
```

Run apt update

This will run apt update

```
sudo apt-get update
```

Run apt install

This will run apt install

```
apt install \
ca-certificates \
curl \
gnup \
lsb-release
```

Download docker

This will download docker

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

On the next prompt line:

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

Run apt update:

```
sudo apt-get update
```

Install docker

This will install docker

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

Check if installation was successful

This will check if installation of docker was successful

```
sudo docker run hello-world
```

Ensure that docker daemon is running on local host

This will ensure that the docker daemon is running

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

Restart the server

The docker daemon should be running now

4.1.3 Cloning the project folder from kartoza github repository

One step process to clone the project folder to your machine or virtual box

Clone rir-dashboard repository to your machine

This will clone the rir-dashboard repository to your machine or virtual box

```
git clone https://github.com/kartoza/rir-dashboard.git
```

4.1.4 Setting up the server

Steps for setting up server

Clone rir-dashboard repository to your machine

This will clone the rir-dashboard rpository to your machine or virtual box

```
git clone https://github.com/kartoza/rir-dashboard.git
```

Set up server

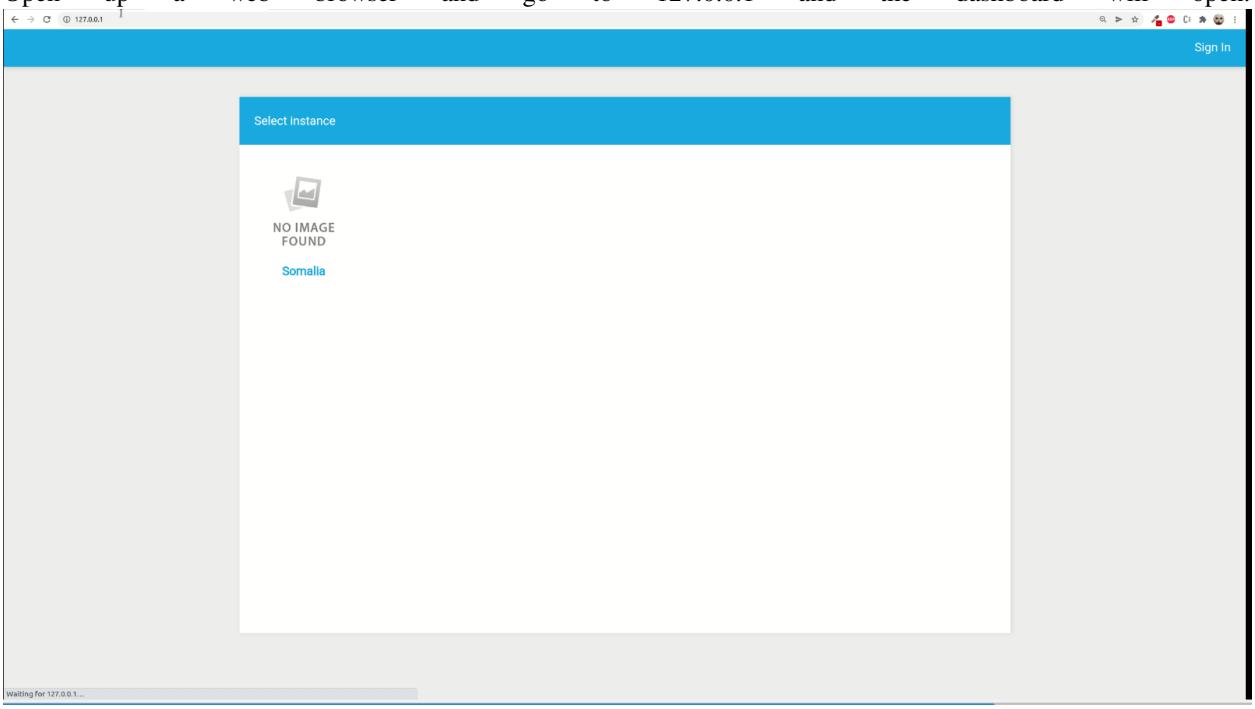
This will set up the rir-dashboard server on your machine or virtual box

```
cd rir-dashboard
cd deployment
cp docker-compose.override.template.yml docker-compose.override.yml
cp .template.env .env
cd ..
make up
docker ps
docker logs -f rir_dashboard_django
```

Open server if using a linux machine

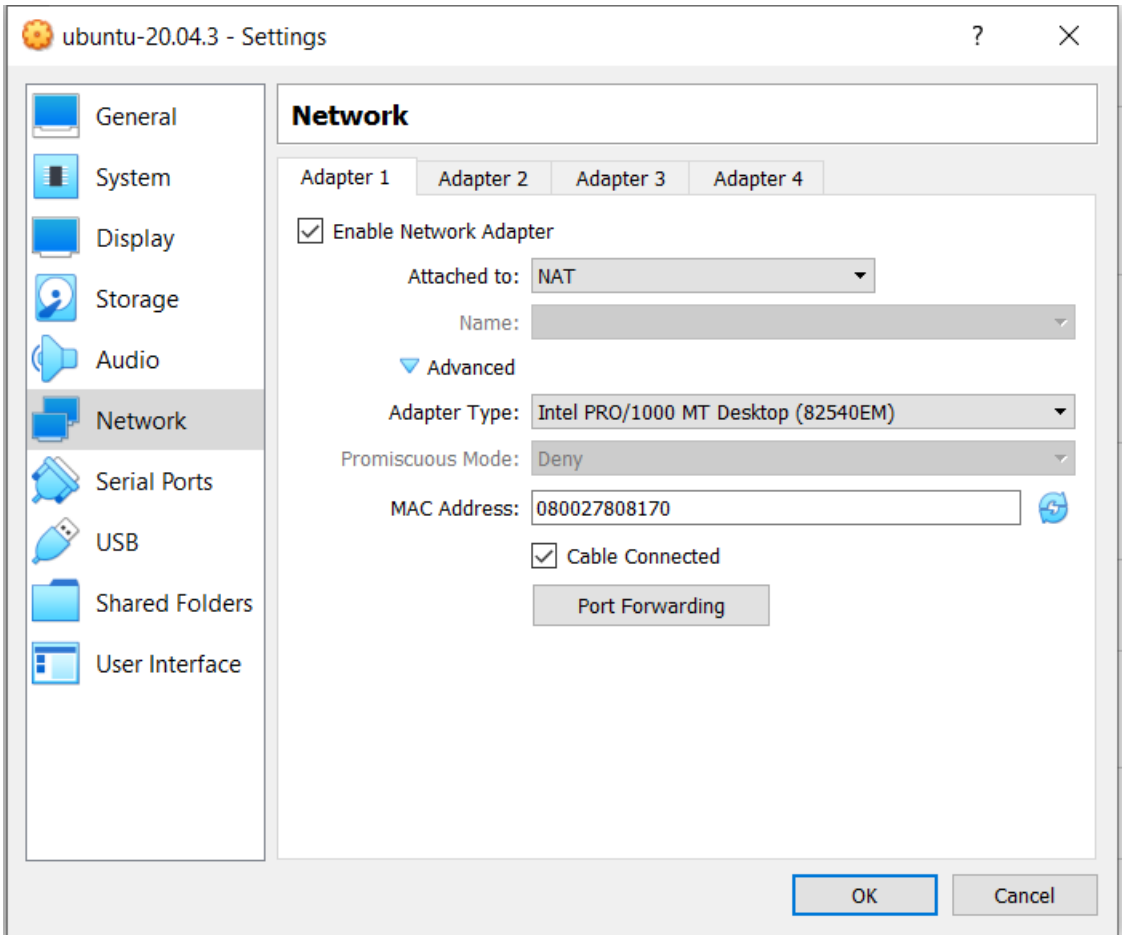
This will open the dashboard on a webpage:

Open up a web browser and go to 127.0.0.1 and the dashboard will open:

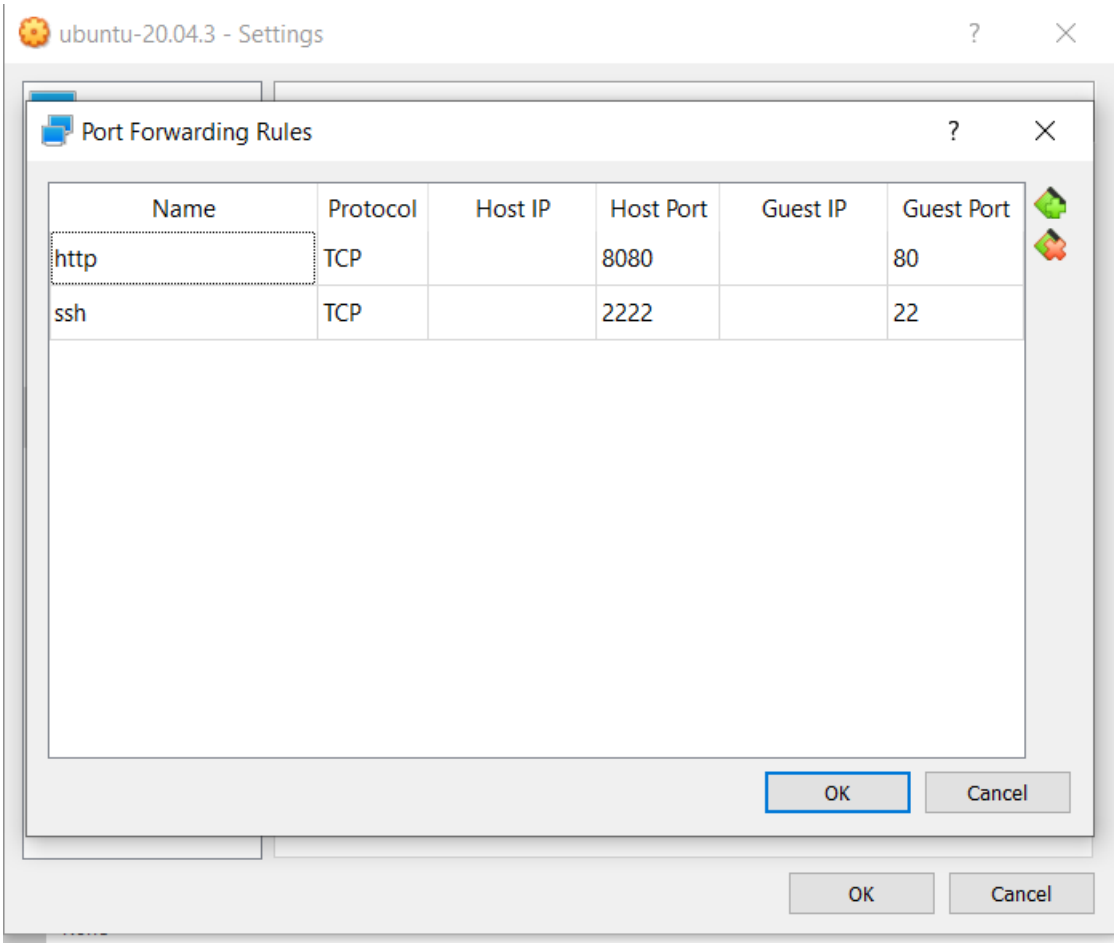


If using a virtual box

Open network settings of your virtual box



Click on port forwarding and add 2 new rules as indicated in the image below:



Click OK and close. Download PuTTY. Create a connection by following these directions, enter "localhost" as the host name, "SSH" as the protocol, and "2222" as the port.

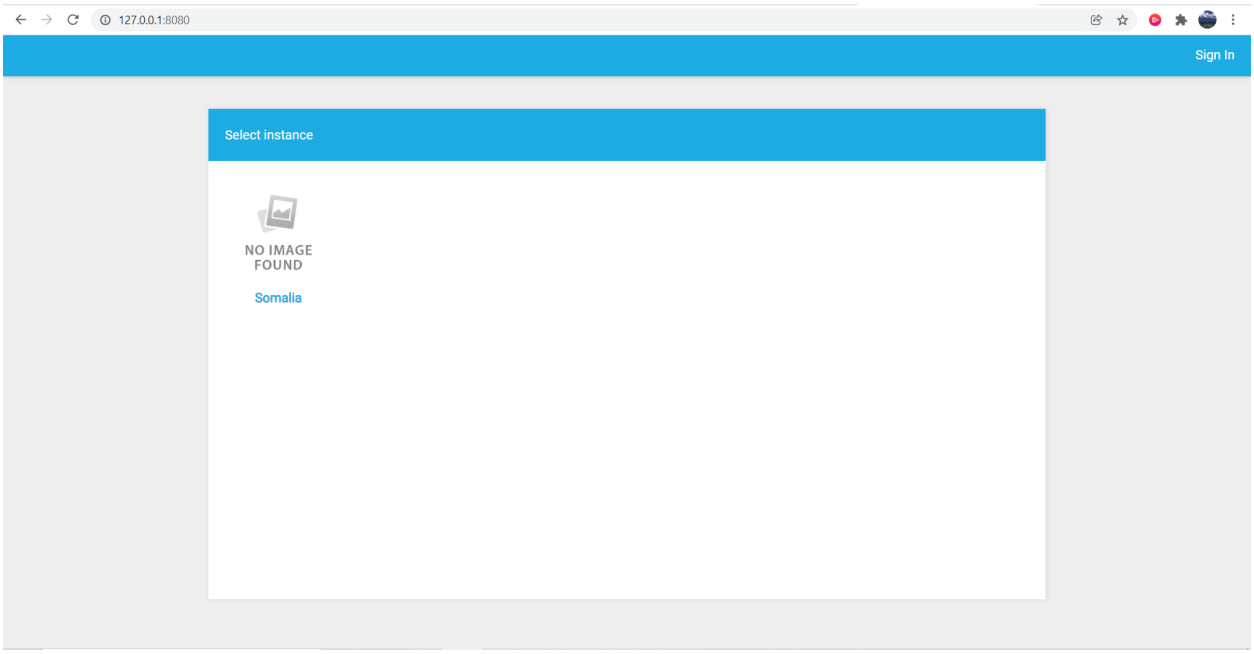
Once you have logged in on PuTTY enter this command below in the prompt:

```
ssh yourlogin@127.0.0.1 -p 22
```

(Make sure that you replace your username with "yourlogin")

When asked for your password, press enter three times and the prompt will display this message: Permission denied (publickey,password).

Open the RIR dashboard server using a web browser on your machine by going to 127.0.0.1:8080



4.1.5 Running the project

Steps for running the project

Signing in

Click on Sign in and for username and password type admin

Change your password on the Django admin page

Currently the dashboard is just a template and the working RIR Dashboard has not been setup yet

4.1.6 Deploying changes

How to deploy changes in runtime

Open project folder in Pycharm

CHAPTER

FIVE

RIR ROADMAP

Like most Open Source Software, this project is an ongoing work in progress.

This document outlines the various ongoing activities and critical changes expected to be introduced.

5.1 Future plans

- A data model for scenarios instead of pulling in google sheets or similar
- More ingestors for risk data
- Hazard data support with auto aggregation of risk factors such as population counts etc.
- Single sign on support

5.1.1 Considerations

The current *main* branch is under heavy development and should be considered unstable.