SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

SADC ICT OBSERVATORY
WEB PORTAL AND DATABASE SYSTEM

User Manual

June 2023

Southern African Development Community (SADC)

SADC ICT Observatory
Web Portal and Database System

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Document Information

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TABLE OF CONTENTS

List of Figures

ABBREVIATIONS AND ACRONYMS

Acronym	Description
CRASA	Communication Regulators' Association of Southern Africa
CVC	Centralized Version Control
ITU	International Telecommunication Union
MICT	Ministry responsible for ICT
NRA	National Regulatory Authority
NSO	National Statistics Office
SADC	Southern African Development Community
SAPOA	Southern African Postal Operators Association
SATA	Southern African Telecommunications Association
SPO ICT	Senior Programme Officer ICT
UAT	User Acceptance Test
WCMG	Web Content Management Guideline

1. INTRODUCTION

The SADC ICT Observatory is one of the flagship projects from the Digital SADC 2027[1], the ICT Chapter of the SADC Regional Infrastructure Development Master Plan (RIDMP) whose objective is to become the central point of reference for reliable, accurate and up-to-date collection and dissemination of ICT indicators, measurement, benchmarking, and reports both for decision making as well as to determine the best interventions for the region.

To achieve these objectives, SADC's ICT Observatory Web Portal and Database was developed with the main aim of facilitating secure online data entry, information access, validation and reporting by Member States and stakeholders for visibility and decision-making as well as provide a comprehensive view of the SADC ICT sector

This manual focuses on how to use the SADC ICT Observatory Web Portal and Database System to manage ICT indicators data, ensure data quality and publishing of data for use by the public and stakeholders.

Overview of the platform

The platform is an ICT Observatory Web Portal and Database System which is structured around two main components: the Frontend and the Backend.

- The Frontend is the publicly accessible side of the database where data on various ICT Observatory indicators can be found. Here you can view the dashboards that contains charts for data that have been published as well as query the database to view and download data in multiple formats.
- The Backend is where data is managed. It provides features to enter, validate, and publish data. Data that are published in the Backend can then be viewed publicly in the Frontend.

The SADC ICT Observatory Web Portal and Database System can be accessed through the domain name: https://ictobservatory.sadc.int.

Users and Permissions

Users will have different permissions and access levels depending on their roles. This will help to ensure consistency and accuracy of data that is entered into the system and shared. The roles include:

Super Users: This user has unrestricted access to all commands, files, directories, and resources. Super Users can

- **Manage Users:** create, activate and deactivate user accounts. In addition, they can assign roles and permissions to users.
- **Manage Groups:** can create and assign permissions to groups.

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[1]https://www.sadc.int/document/regional-infrastructure-development-master-plan-ict-sector-plan-2012

- **Administration:** overall administration of the system including managing Reporting Periods, Member States, Organisations, Focus Areas, Indicators, Charts, and Publishing/Unpublishing data

Member State Representatives: Member State Representatives can view all published data. They will also be able to enter indicator data for their own Member State through the data entry form in the Backend section of the portal. Member State Representatives will not have the permissions to publish data as this will be done by the SADC Secretariat following review of any new or updated data.

SADC Secretariat: SADC Secretariat will be able to create Focus Areas, Indicators etc. In addition, these users can also review and validate any new or updated data that have been submitted by Member State or Organisation representatives. These users can also approve or request amendments for submitted data, before publishing for all to view.

Organisations / Implementing Agencies:

Groups

There are four types of groups that authenticated users can belong to. These are Admins, SADC, Member States and Organisations. Permissions for each user is set at the group stage. Details on Groups and Group management can be found in the System Administration section of this manual.

Structure of Web-Portal: Frontend and Backend:

The Web-Portal is structured to have a public and private (authenticated access)

Frontend:

The Frontend of the web-portal does not require authentication and is visible to the public at large. The frontend can be accessed without having to log in through the https://ictobservatory.sadc.int.

Here, you can view the Dashboard filtered by year (Figure 1: Dashboard) as well as query and view data (Figure 2: Query Data) using multiple criteria. (see General Manual #2: Using the Frontend for more).
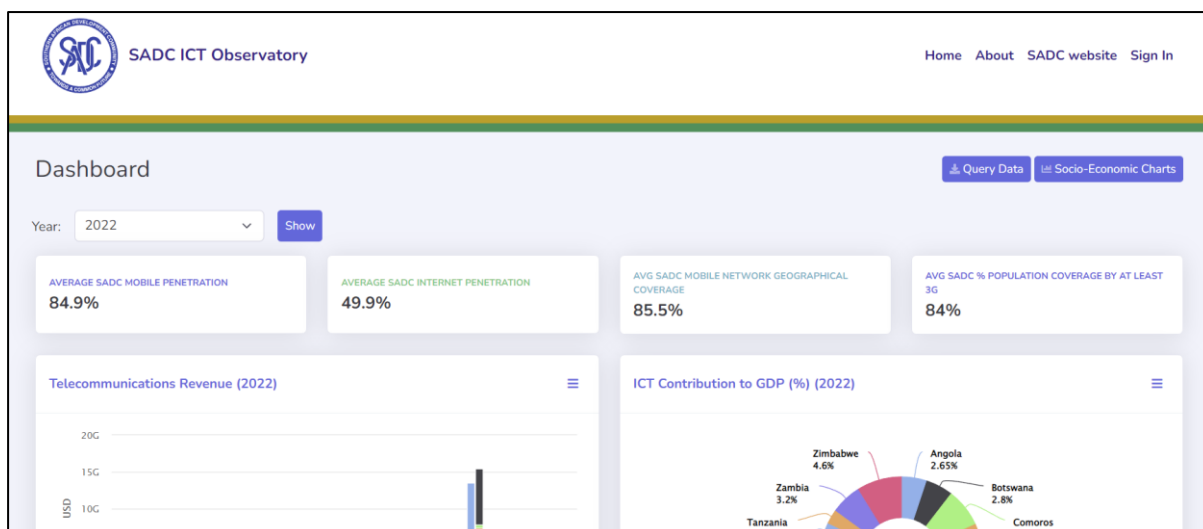
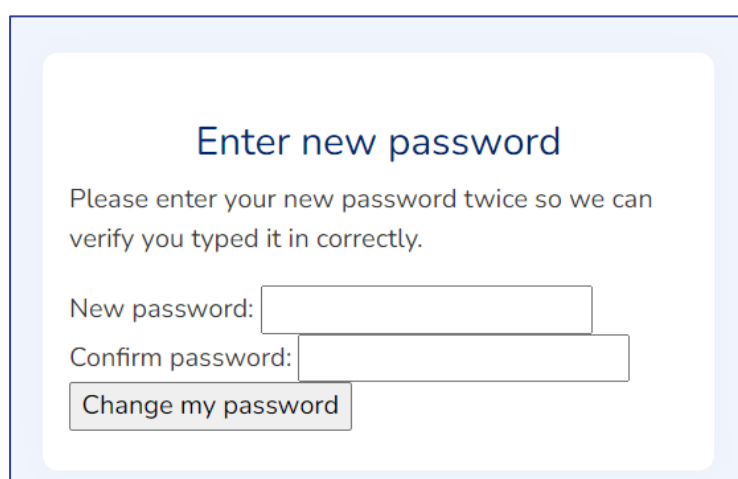Figure 1: Dashboard

Figure 2: Query Data

Backend:

The Backend of the web-portal contains data management items that are accessible only by authenticated users. User accounts are created and assigned roles by the Super User/System Administrator. Once a user account is created for a particular user, the user will receive a password setting instruction through email with a link that redirects to the password setting page (see General Manual #1: Logging into the portal for more).

2. GENERAL MANUAL #1: LOGGING INTO THE PORTAL

Before you will be able to log into the portal, the Administrator of the portal will create an account for you using your email address and you'll need to set your password as per the instructions listed below.

Setting your password (First time users)

When an account is created for you, you will receive an email with a link asking you to set your password for your account at SADC ICT Observatory. Clicking on the link will take you a web page so that you can set your password.

> ## Password requirements
>
> SADC's Password Policy states that a strong password should be created for each account using SADC's systems. Below are the password setting requirements.
>
> **Length:** a minimum of 12 characters
>
> **Combination of characters:** alpha-numeric characters with a minimum of one uppercase letter, one lowercase, one numeric character and one special character.

Logging into the system

Once you've set your password, you can log into the system by clicking on the Login button at the top right part of the portal's landing page.
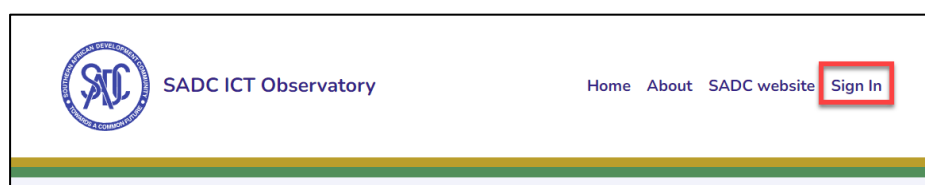
Use the email address associated with your password to log in.

Note that logging in from the Frontend will take you directly to the Backend of the platform. Once logged in, you can easily move from the Frontend to the Backend.

## Moving between the Frontend and Backend

Once you are logged in, you will have access to all features in the Frontend plus access to the Backend. The Backend permissions will depend on the type of user permission you have been assigned.

If you are in the Backend and want to go to the Frontend, simply click on the Frontend button in the left-hand pane of the screen.

If you are in the Frontend and want to go to the Backend, simply click on either the Backend button or the welcome button which you can find in the top right section of the front page and click on the backend button from the menu (see below).
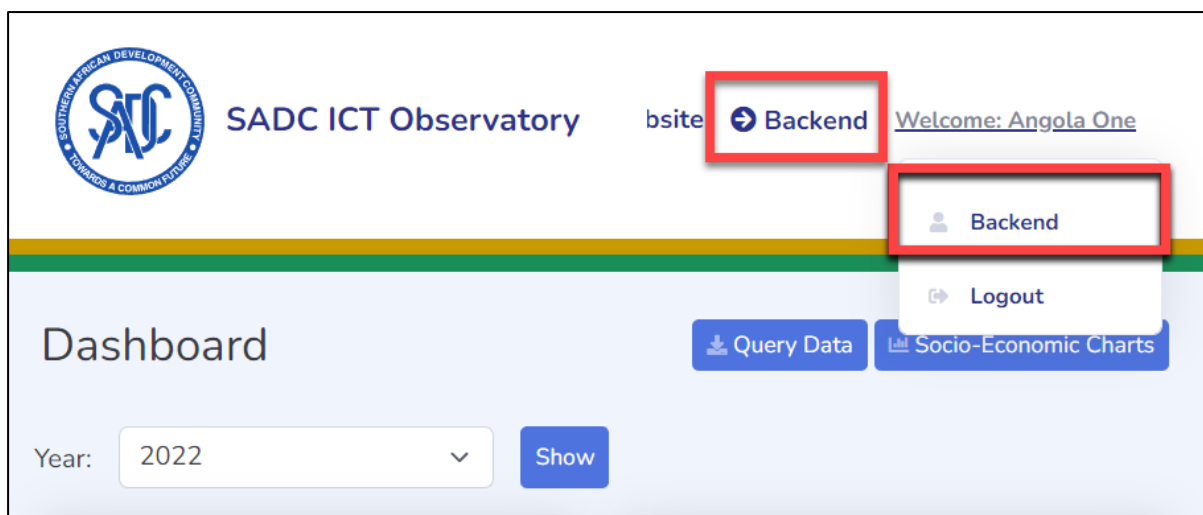
To log out, simply click on the Logout button that can be found when you click on your username on the top right section of both the Frontend and Backend
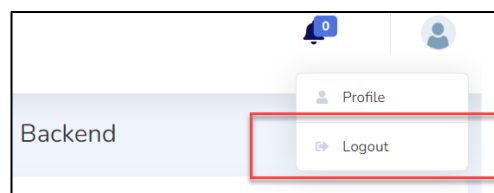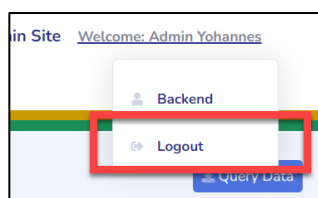
3. GENERAL MANUAL #2: USING THE FRONTEND

As can be seen from the figure below, the Frontend of the portal has multiple features. There are navigation and login buttons on the top-right section ①, year filter dropdown box ②, Query Data button that will redirect you to the query page ③, the charts section that contains 16 selected charts ④, and link to additional dashboard that contains charts related to socio-economic indicators ⑤. Each of these sections will be described in detail in the upcoming sections.
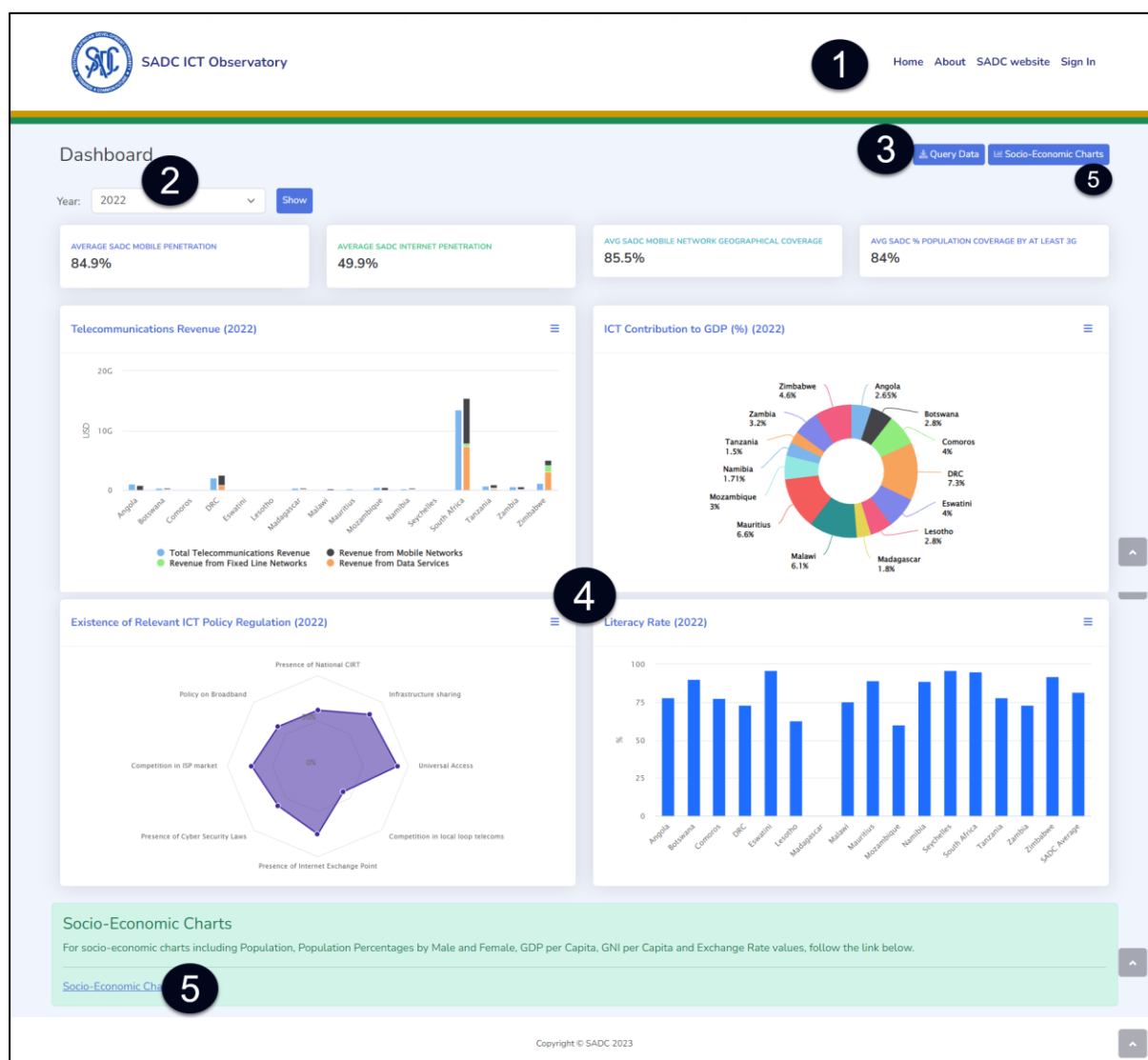
Figure 3: Frontend

① Navigation Links

There are four navigational links on the top-right section of the Frontend. The *Home* page is a link to the main front page, *About* button will take you to the About section of the web-portal, *SADC Web Site* will redirect you to the main SADC web site (www.sadc.int), clicking on the *Login* button will open up the login page for authenticating users.

② Year Filter

Users can change the data displayed in the charts and score card section by changing the Year through the Year dropdown filter. By default, the Year shows the latest published year's data.
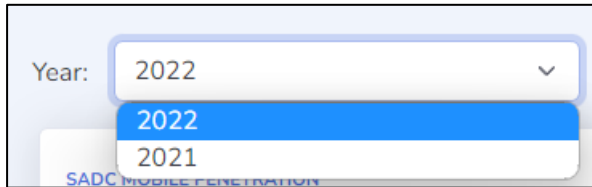
Figure 4: Year dropdown filter

③ Query Data

The Query Data button will redirect you to the Query Data page as shown below.
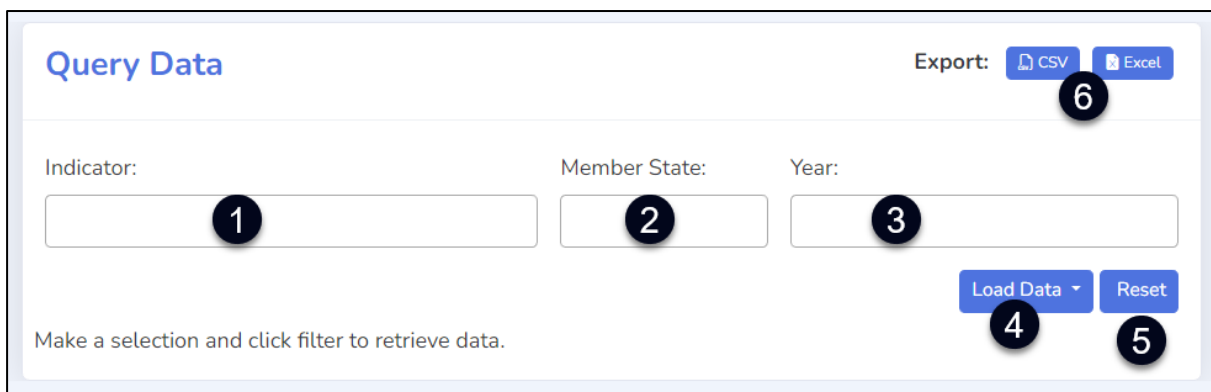
On this page, there are three dropdown boxes that enables you to filter data, once you select the desired Indicators ①, Member States ② and Year ③, you can click on the Filter ④ button to load results. You can load results for USD adjusted data (for currency data) or data in local currency. The Reset ⑤ button will reset all selections made. You can Export ⑥ the data using the CSV and Excel buttons to export as CSV and Excel Workbook respectively.
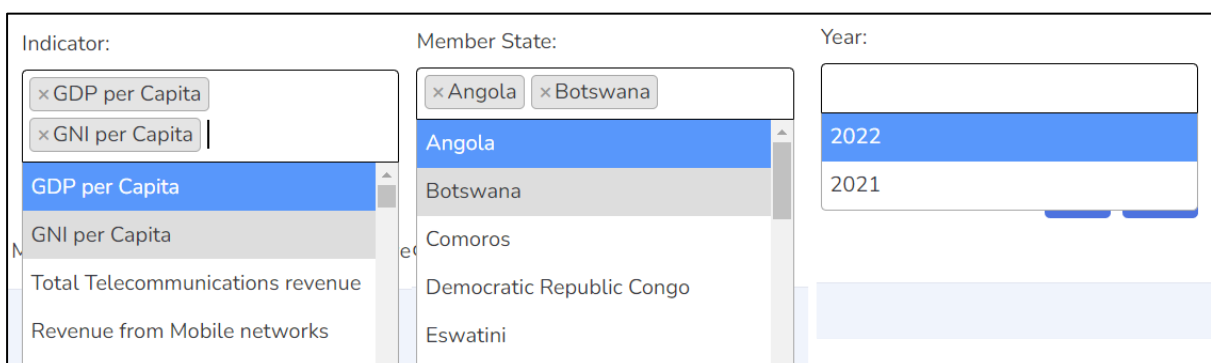
Figure 5: Making selections

For each of the dropdown boxes, you can select either one or multiple data elements as can be seen in the figure above. Once you are happy with your selection, click on the Filter button to load the data (see Figure 6: Data loaded based on selected filters below)

Figure 6: Data loaded based on selected filters

Select All: For all filters, you can choose the Select All value to ensure all filters are included. For example, if you choose select all in the indicator selection dropdown, all the indicators will be included.

If you want to export the filtered data, click on either the CSV or Excel button to export and save the data to your computer as can be seen in the figure below. The naming of the file will be automatic based on the date and time of the request.
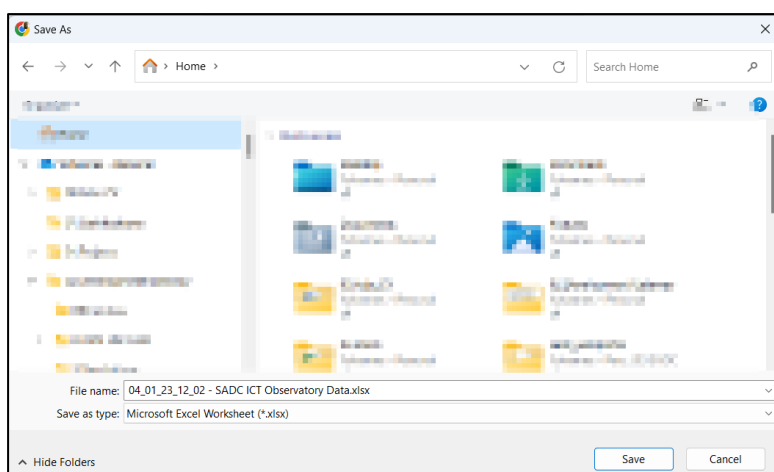
Figure 7: Saving the exported data

As can be seen below, the exported file will contain all the data that is loaded into the Query Data page.

④ Charts

The Charts section contains 16 charts arranged in an 8 by 2 matrix as well as four score cards. All charts have multiple features that let us view the chart in a full-screen view, download the chart and data in multiple formats, quick view of the data and interactive selection of indicators for multi-indicator charts. Below is a detailed look at these features.

Figure showing "Percentage of Population Covered by Mobile Network (2022)" bar chart with annotations: Chart title and selected Year, Options button, Legend and Interactive Selection.
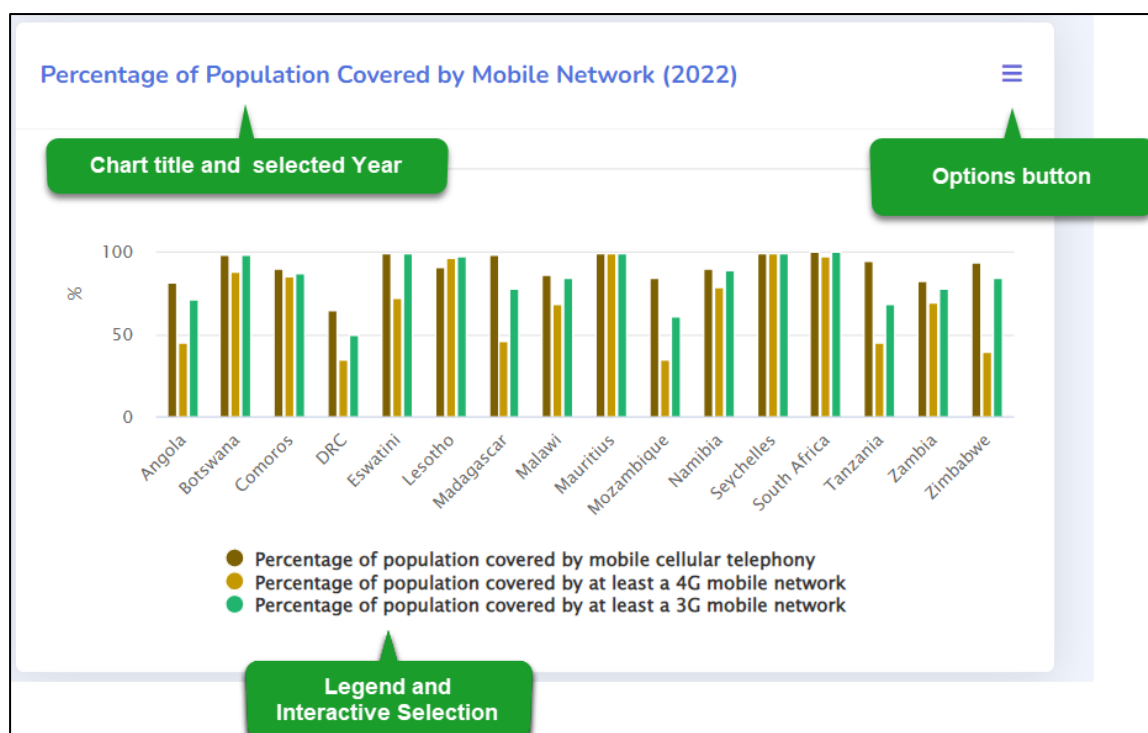
1. **Chart Title (Year):** The chart title is the title of each chart and the Year of the data the chart.
2. **Options button:** clicking on the options button will open up a menu with a list of multiple buttons as can be seen below.
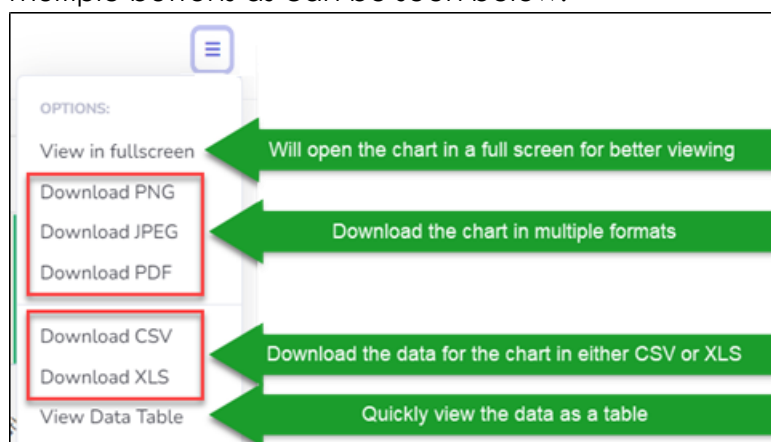
Figure 8: Options for charts

For example, in the figure below, we can see the Data Table for the selected chart. To hide the Data Table, click again on the View Data Table button from the Options menu.
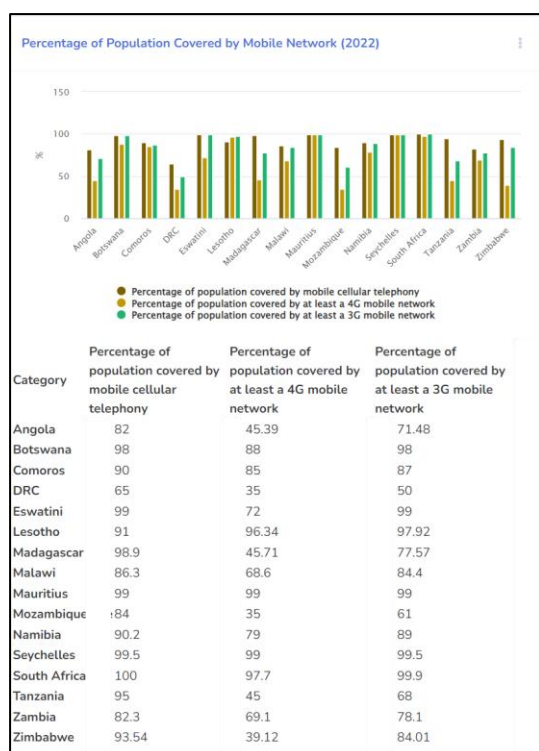
Figure 9: Chart with Data Table view

3. **Interactive Selection:** for charts plotted with more than one indicator, you can use the chart Legend area to hide/show indicators. Clicking on each legend entry will toggle the indicator from shown to hidden and vice versa.

For example, in the figure below, it can be seen that the second indicator in the legend (Percentage of population covered by at least 4G mobile network) is greyed out. Correspondingly, there are only two bars in the charts area while the greyed out indicator is hidden from view. To view the greyed out indicator, click on the indicator in the Legend area.
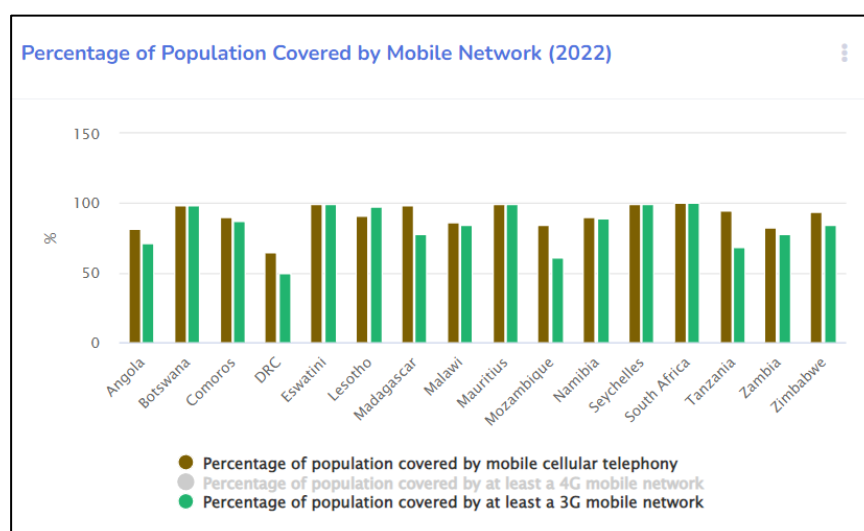
Figure 10: Toggle indicators from view to hide and vice versa

⑤ **Socio-Economic Charts**

Clicking on the Socio-Economic link will redirect you to another dashboard that contains five charts related to Population, GDP/GNI and Exchange Rate data for the selected year.
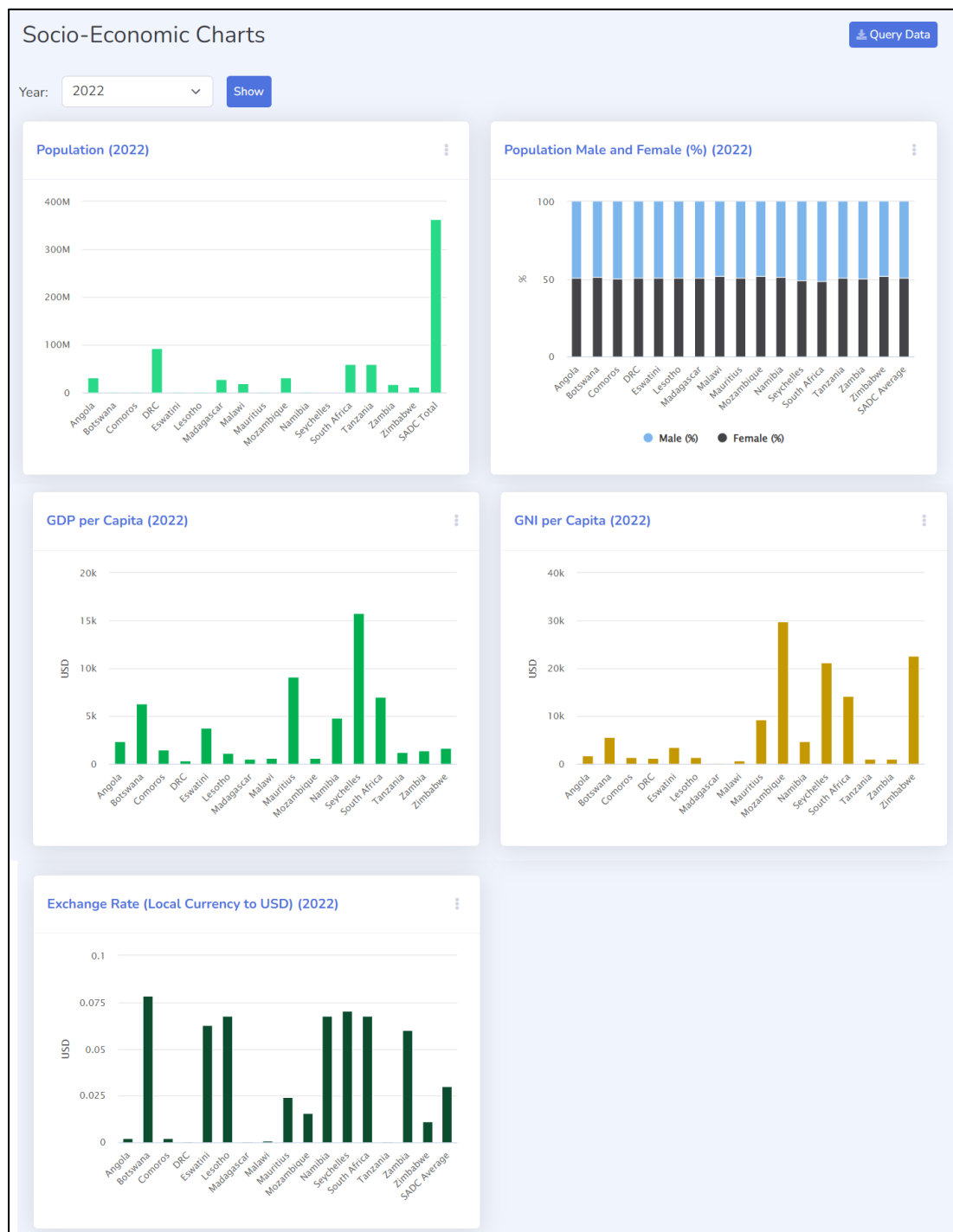
Figure 11: Socio-Economic Charts

4. AUTHENTICATED USERS: USING THE BACKEND

When you log into the system through the login page, you'll automatically be directed to the Backend page of the portal.

Depending on the type of user you are logged in as, you'll see different features.

Organisations / Implementing Agencies

Backend Overview
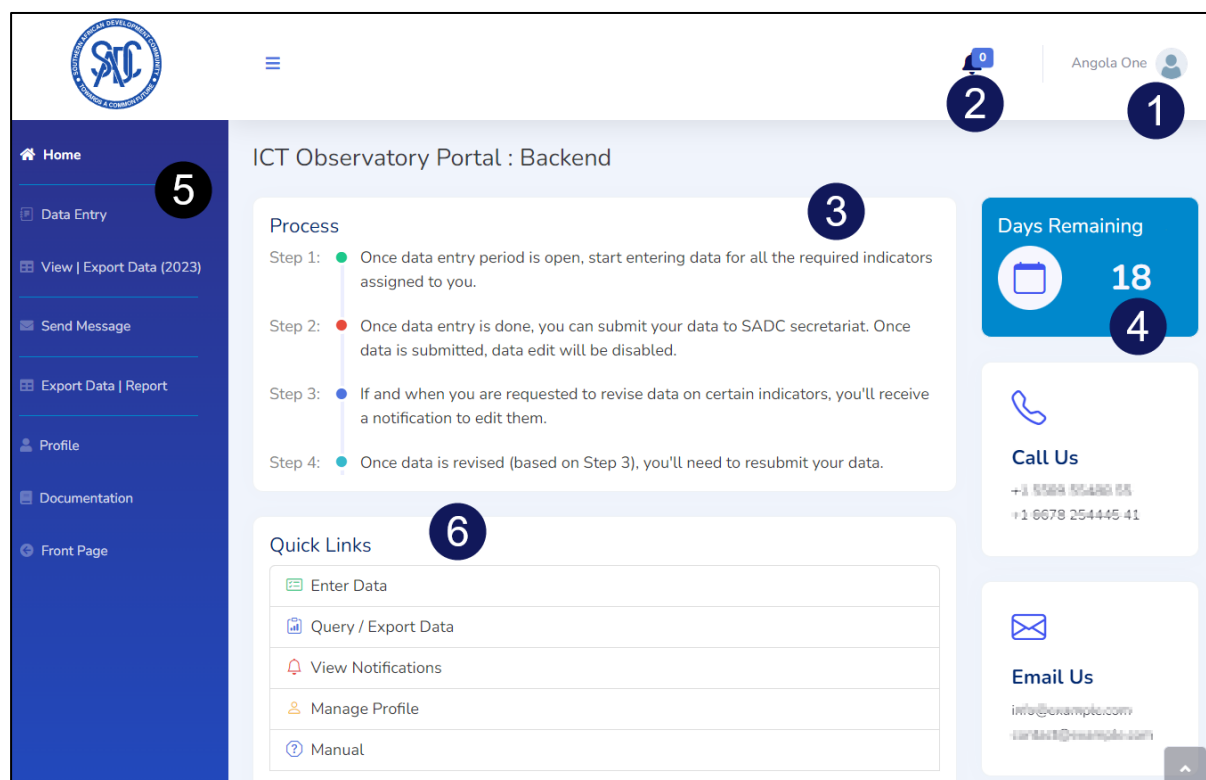
① **Logged in User:** Shows the full name of the logged in user. Clicking on this link will open a menu where with Profile and Logout buttons. The Profile button will redirect you to the Profile page (see figure below) where you can review your profile information as well as change password. The Logout button is used to logout of the system.
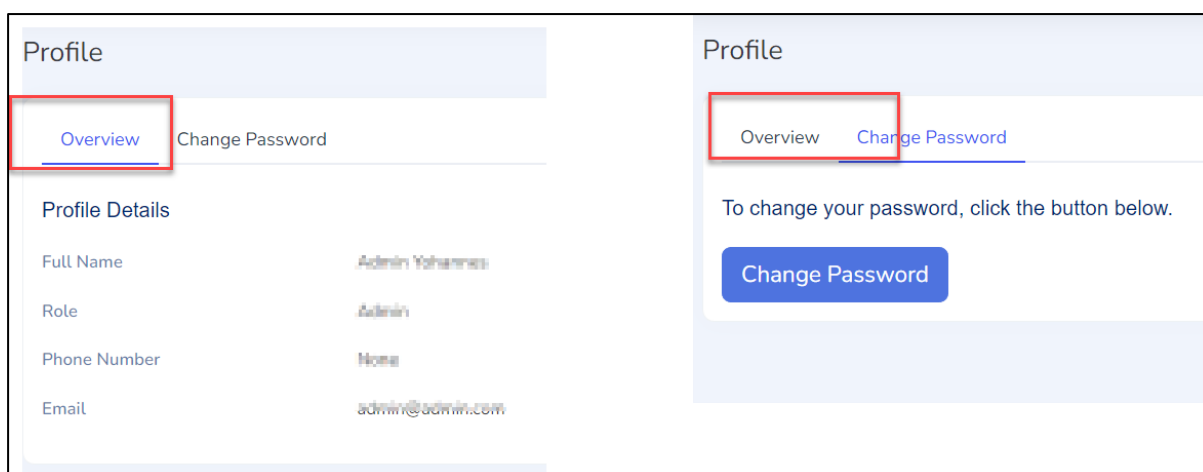
Figure 12: Profile Overview and Change Password Tabs

② **Notification centre:** This is where your unread notifications appear. The notification badge will inform you of the number of notifications received. Clicking on the Notifications icon will open a list of recent unread notifications. You can click on the Mail icon to mark all notifications as Read. To see all notifications received, click on the Show All Notifications Icon to go to the Notification Centre Page.
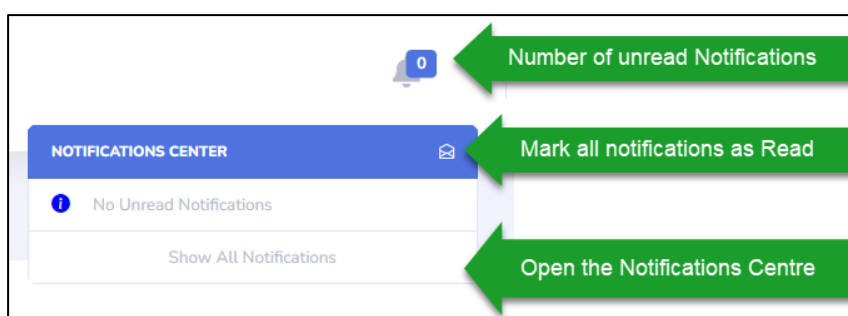
③ **Process:** Lists a quick overview of the process of data entry, submission and validation.

④ **Days Remaining:** the number of days remaining before the data entry period ends is displayed on the right-side panel. This will only appear during reporting periods.

⑤ **Left Pane:** The left panel contains multiple buttons that enables you to Administer the system. Each button is described in detail in the next sections.

⑥ **Quick Links:** Contains a quick links for ease of navigation.

Data Entry Progress Dashboard

The Data Entry Progress Dashboard has five components as can be seen below.

① On top of the window, you'll find the Organisation name and the year of the active reporting period.

② The three columns contain the S/N, Indicator and the Focus Area for the indicators that are assigned to you.

③ Displays the progress of data entry for each indicator. It shows the total number of required data that will need to be completed and progress in percentage terms.

④ To enter or edit data for a particular indicator, click on the pencil icon in the column. It will open the data entry form (covered in the Entering Indicator Data section below).

⑤ The Submit button will submit all completed data to the SADC secretariat. As can be seen in the figure, the Submit button will stay disabled until all required indicators are completed, i.e. when overall progress is 100%.

Data Entry and Reporting Periods

Data entry is enabled only during active reporting periods (as set by the System Administrators). If you open the Data Entry Progress Dashboard during non-reporting periods, you'll see an information as shown below. In addition, the cards are not active and cannot be clicked on.

Entering Indicator Data

Clicking on the pencil icon in the Enter /Edit Data column will open the indicator data entry window as shown below.

① On top of the window, you'll find the Organisation name you represent and the Year you are reporting the data for.

② Click on the eye icon to see the detailed definition for this particular indicator.

③ Shows the list of Member States that you'll need to enter data for.

④ This is where you enter data for each indicator. Data will be automatically validated based on the data type of each indicator (e.g., you cannot enter alphabet characters on the data field of currency indicators).

⑤ If you have any comments, you can enter them here. To expand the data entry field, click and drag on the two diagonal lines at the right bottom part of the data entry field.

⑥ Check this box if you don't have data for a particular Member State. Explained in detail on "Handling unavailable data" section below.

⑦ The Save button will save your changes while the Close button will close the data entry form and takes you back to the Data Entry Progress window.

Saving Partial Data

You are not required to fill out all data in one session. You can save the data that you entered and come back to it again to do the same again and again.

After you save your data and click on the close button, you'll see the progress updated showing you the number of data that you've completed, and the percentage progress as can be seen below.

Data Entry Progress

Once you enter and save data, you can see your progress being updated as shown in the figure above. For example, here, it shows that you have entered 3 of the 16 required Member State data for the ICT-AUA-1 indicator (Fixed telephone price of a three-minute local call (off-peak). In addition, the overall progress (below the Submit button) shows your current progress is at 9%.

Handling unavailable data

Sometimes, you might not be able to get data for a particular Member State, to handle this issue, use the Data N/A checkbox to denote data is not available for a particular indicator as can be seen below.

Clicking on the N/A checkbox will disable the data entry field for the selected indicator, unchecking it will enable it back so you can enter data.

In the example below, two Member States are set as N/A (annotated in red).

After you click on the Save button and go back to the progress dashboard, you see in the progress it shows 5 of 16 completed (figure below) since you've noted that data is not available for two of the 16 Member States with a check mark.

Indicators with Choices (dropdown boxes)

Some indicators will require you to choose from a set of options. For example, the ICT Policy and Regulation Focus Area indictors. For these types of indicators, click on the dropdown box in the Data column and make a selection.

Optional Indicators

Some indicators are optional. Optional indicators are not required to be completed. However try and complete these indicators as much as possible where data is available. For example, as can be seen below, the e-Services and ICT in Business Focus Area shows 0 of 0 completed but you will still be able to submit if all required indicators in other sections are completed. This is because there are no required indicators for this particular Focus Area.
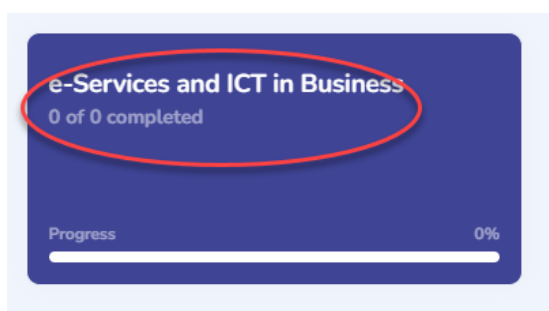
If you click on the card to open the data entry form, you can see that there are four indicators under this Focus Area. If you have the data for any of them, you can enter the data and save.

Save Alert

On any of the data entry forms, if you have made changes and click on the Close button (or navigate away from the page using the back button on your browser) without saving, you'll get an alert asking you if you want to save your data before leaving the page as you can see from the figure below.

Click Cancel to go back and save your changes or you can click on the Leave button to close the form without saving your changes.

Submitting Data to SADC secretariat

Only when you complete all required indicators for all focus areas can you submit your data. In other words, the Progress bar on the Overall card should be 100%.

The Submit button will only become active when all required indicators are completed. In addition, you'll see the number of indicators that will be submitted to SADC secretariat in a red badge on the button (e.g. as shown below).

Clicking on the Submit button will open a confirmation dialog box (as can be seen below) notifying you that once data is submitted, it cannot be edited. If you want to submit, click on the Submit button, clicking on the Cancel button will cancel the submission and take you back to the Data Entry Progress Dashboard.

Once data is submitted, the Submit button will become inactive again with a message informing you that you've submitted all data (see below).

In addition, once you submit data for review, the data entry fields on all of the data entry forms will become inactive as can be seen below. You can view but not be able to change a data once submitted.

Figure 13: Data entry fields will become inactive once data is submitted for review

When you submit data for review, the system will send an automatic notification on the system to SADC secretariat informing them that you've submitted data. In addition, an email will also be sent with the same information.

SADC secretariat will receive a notification as shown in the figure to the right.
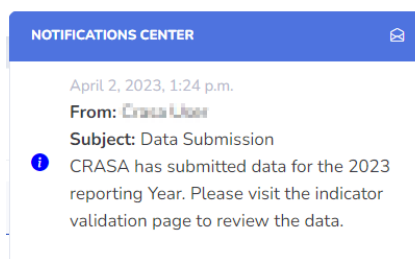
Revising Indicator Data

All data submitted will be validated by SADC secretariat for accuracy. Only validated data will be available on the Frontend as a chart or for querying.

SADC secretariat will review the data and set the status as validated or will return the data for revision back to Member States.
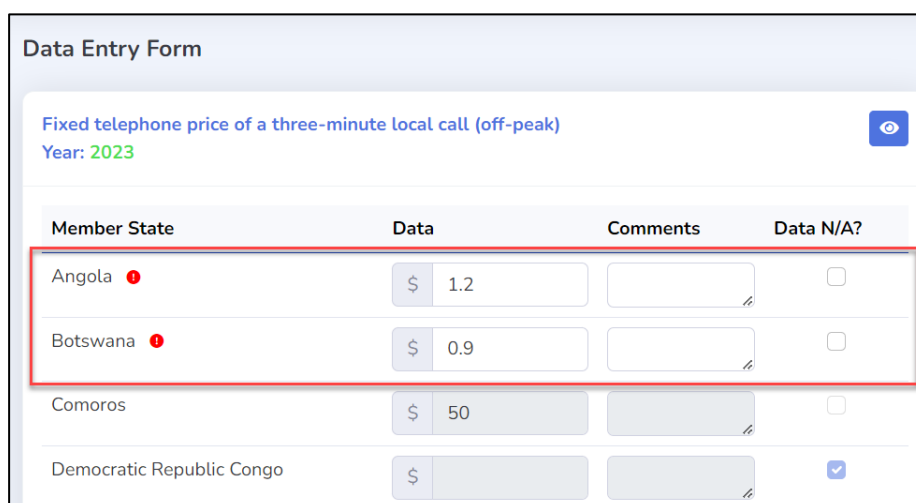
- In the case of indicator returned for revision, you will receive a notification through email as well as on the Backend portal. As can be seen below, you'll get a notification informing you the indicator that will need to be revised.
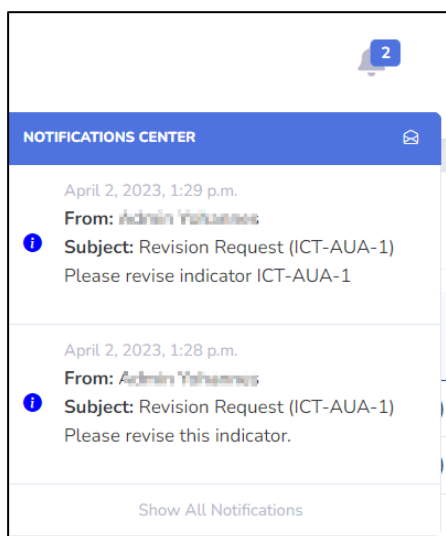
- In addition, when you go to the Data Entry Progress Dashboard, you'll see the number of datasets returned for revision on the respective indicator row. For example, as can be seen from the figure below, you're requested to revise 2 data from the ICT-AUA-1 indicator (Fixed telephone price of a three-minute local call (off-peak).

S/N	Indicator	Focus Area	Progress (# of Member States)	Enter / Edit Data
ICT-AUA-1 🔴2	Fixed telephone price of a three-minute local call (off-peak)	Access to, Use and Affordability of ICT	16 of 16 completed. (100%)	✏️
ICT-AUA-2	Fixed telephone price of a three-minute local call (peak)	Access to, Use and Affordability of ICT	16 of 16 completed. (100%)	✏️

- When you open the data entry form, you'll see that the data entry fields are active only for the Member States that you are requested to revise. There is also an additional icon 🔴 in the S/N column to denote the request for revision.

- Once you revise the data, you'll need to re-submit the data using the Submit button. As can be seen below, the Submit button shows the number of indicators that will be re-submitted.
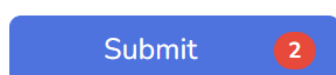
View | Export Data (for current reporting year)

On the left pane, there is a button titled View | Export Data that enables you to export data entered for the current reporting period.
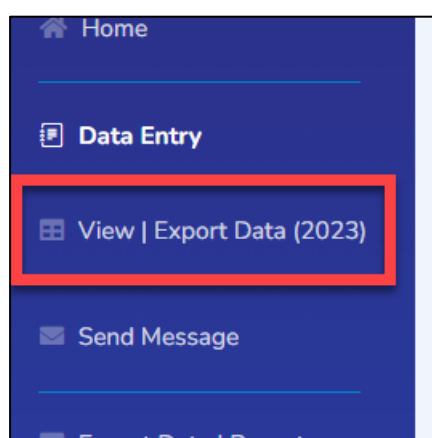
Figure 14: View Export data button

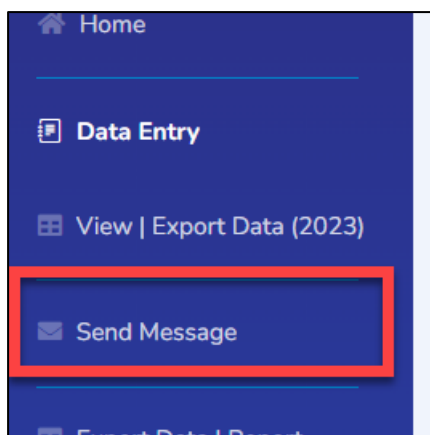Clicking on the button will open a window as shown in the figure below.

① Shows the current reporting year.

② You can copy, or export the data using this buttons to either CSV or Excel formats..

③ Shows the data that you've entered into the system

④ Shows the status of your data. If submitted, the status will change to "Submitted".

⑤ Clicking on the ✚ button will open up another window with details about the indicator that you've clicked on (as shown below)

Figure 15: Indicator Data Details

Send Message

You can send messages to SADC Secretariat using the Send Message button that can be found on the left pane.

Clicking on the Send Message button will open up a window that asks you to enter Subject and Message that will be sent to SADC Secretariat.

Once you hit send, the message will be sent to SADC Secretariat both through the system and through email. A copy of the email will also be sent to you for documentation purposes.

Figure 16: Sending Message