Welcome to REASSURe documentation

Developed by LSHTM with support from UNICEF, it streamlines the management and analysis of SMART Surveys. SMART surveys are essential for evaluating nutritional status and mortality. Typically, these surveys are analyzed using the ENA software, which handles only one survey at a time. For projects requiring the analysis of hundreds of SMART surveys at different administrative levels, this tool has been developed to optimize the process. It applies the results of the ENA to several surveys simultaneously and includes additional functionality to improve analysis and management.

This document will explain how you can run the app to obtain the results you expect.

Contents

Step 1: Access to R and RStudio

Both R and RStudio must be installed on your computer before moving on to Step 2.

If you already have RStudio on your computer, you can proceed directly to Step 2. If not, follow the instructions provided on this webpage: https://posit.co/download/rstudio-desktop/, or you can watch this YouTube video tutorial for a step-by-step guide: https://www.youtube.com/watch?v=H9EBlFDGG4k.

Step 1.1: Download R:

1. Copy and paste this link into your web browser: **https://posit.co/download/rstudio-desktop/**.
2. Follow the steps shown in Figures 1 to 5 to complete the installation.
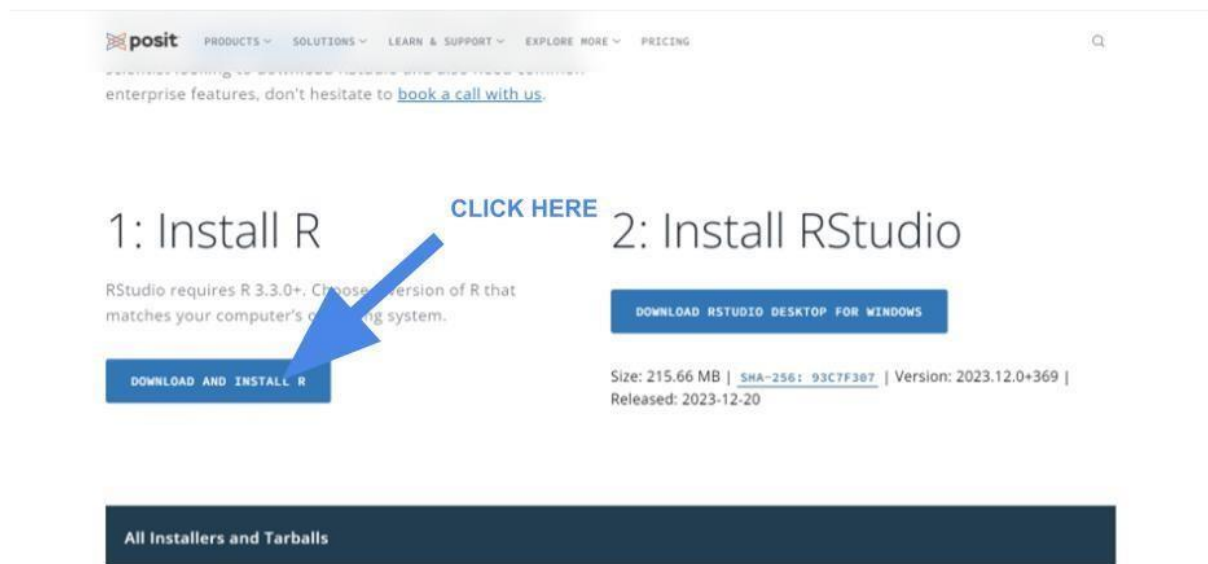
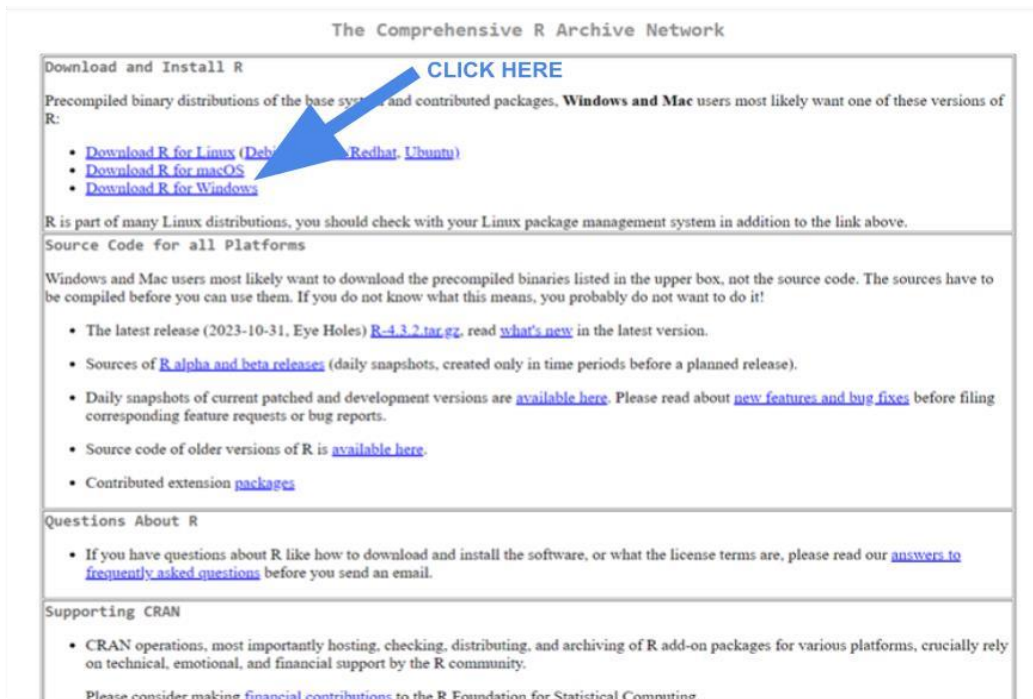***Figure 1****: This screenshot shows the homepage where you can download RStudio.*

Figure 2: *After accessing the website, navigate to the section for downloading R*
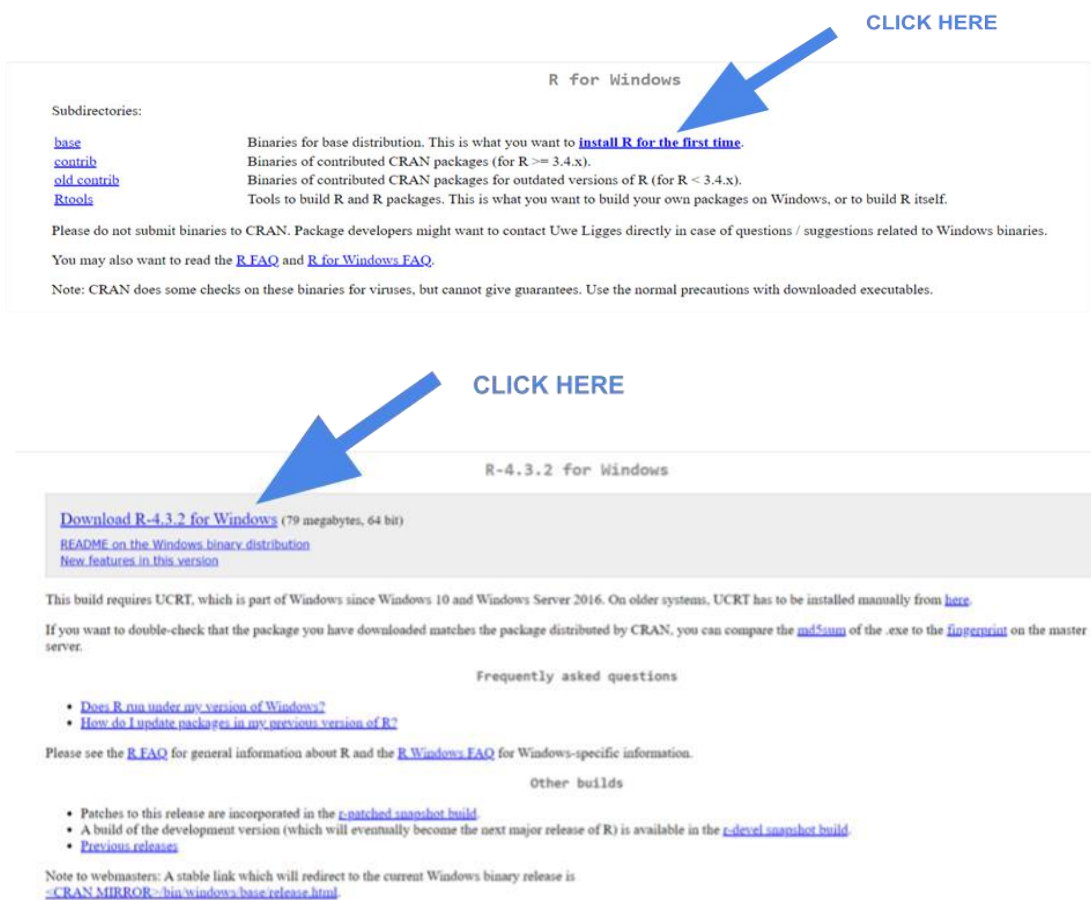

Figure 3. *Continue following the instructions to select the appropriate version for your operating system.*
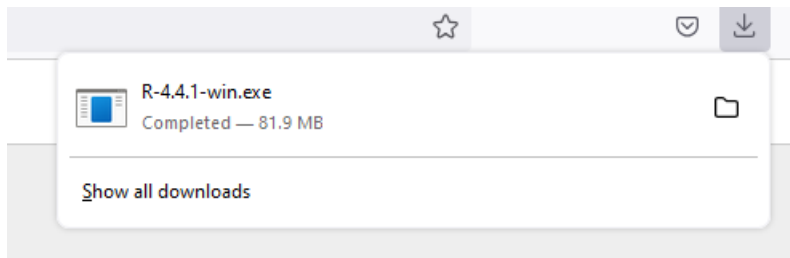
Figure 4: Once the .exe file is downloaded, double-click on it to start the installation process.
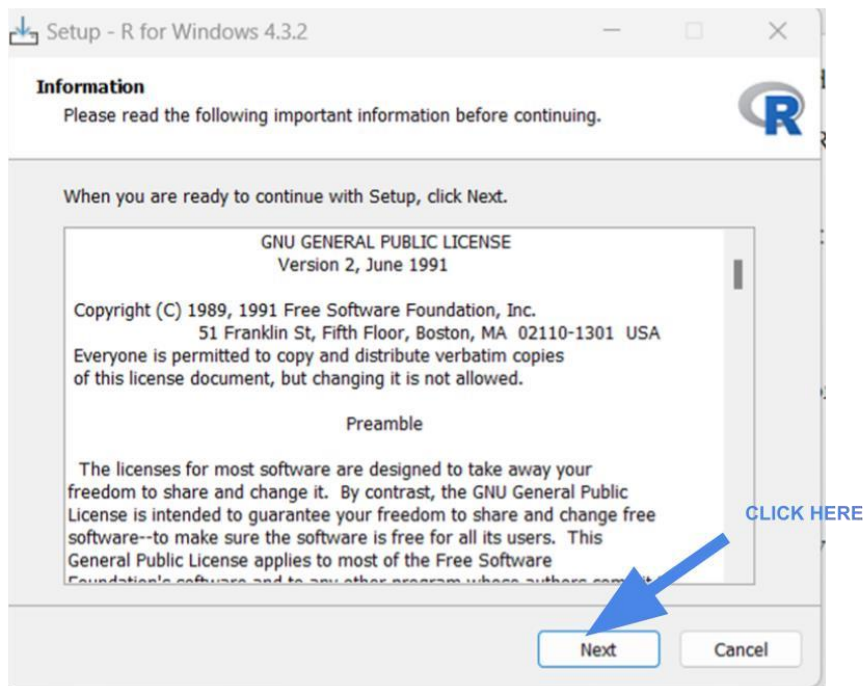

Figure 5: Click "Next" through the installation prompts until the installation is complete.

Step 1.2: Download RStudio:

1. Copy and paste this link into your web browser: **https://posit.co/download/rstudio-desktop/**.
2. Follow the steps shown in Figures 6 and 7 to complete the download.
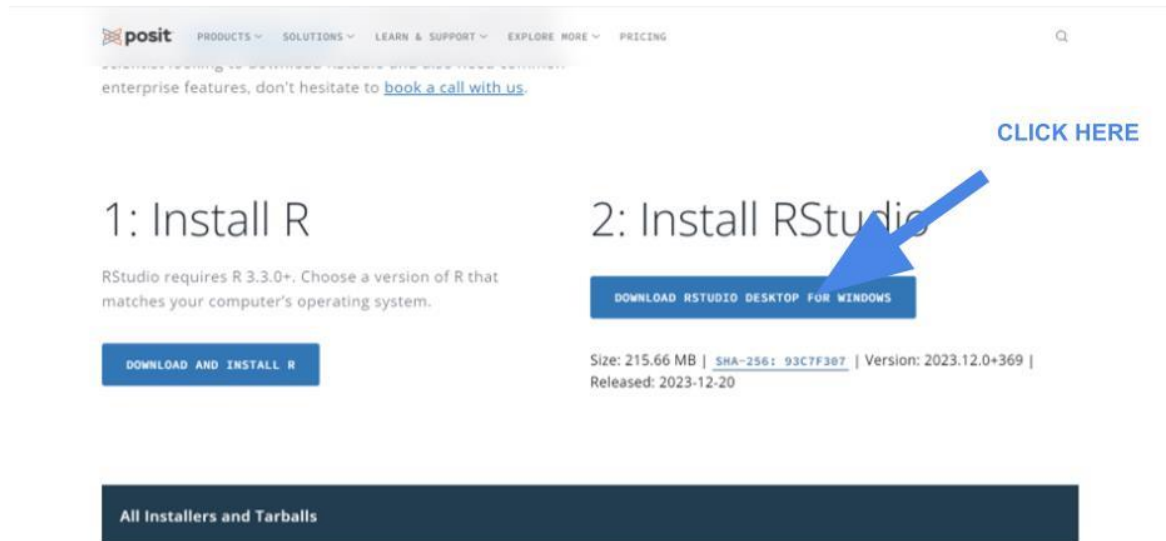
Figure 6: This screenshot shows the download page for RStudio, similar to the R page.

Figure 7: Once the file is downloaded, you will see this screen. Double-click to install.
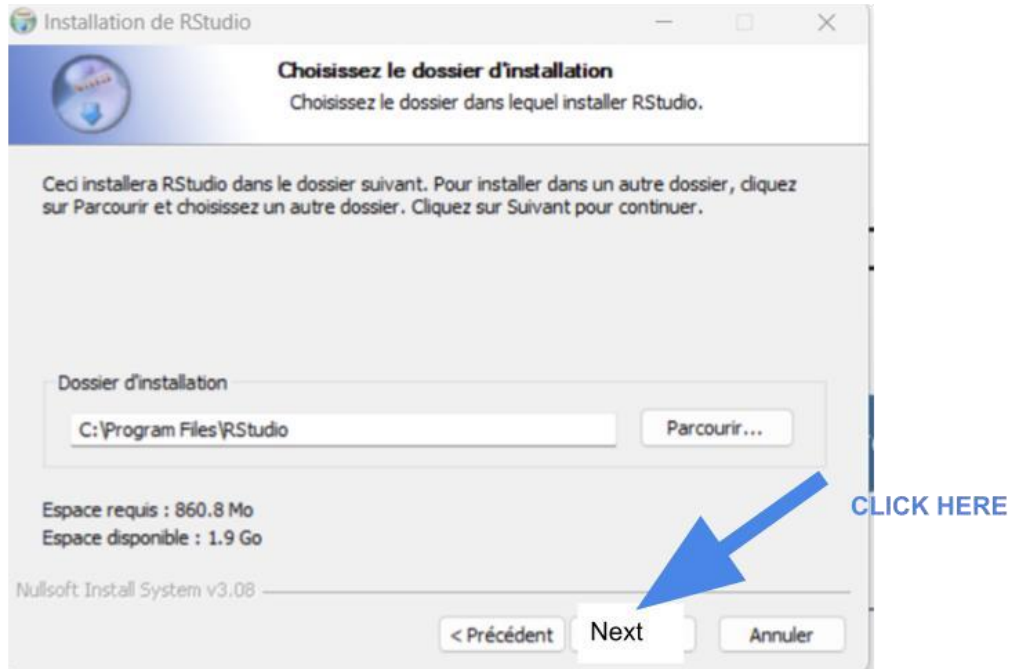
Figure 8: Click "Next" through the installation prompts until the installation is complete.

Step 2: Download REASSURE

Now that you have R and RShiny installed, you are ready to download the REASSURe app.

1. Copy and paste the following link into your web browser:
   https://github.com/yamnao/reassure_app
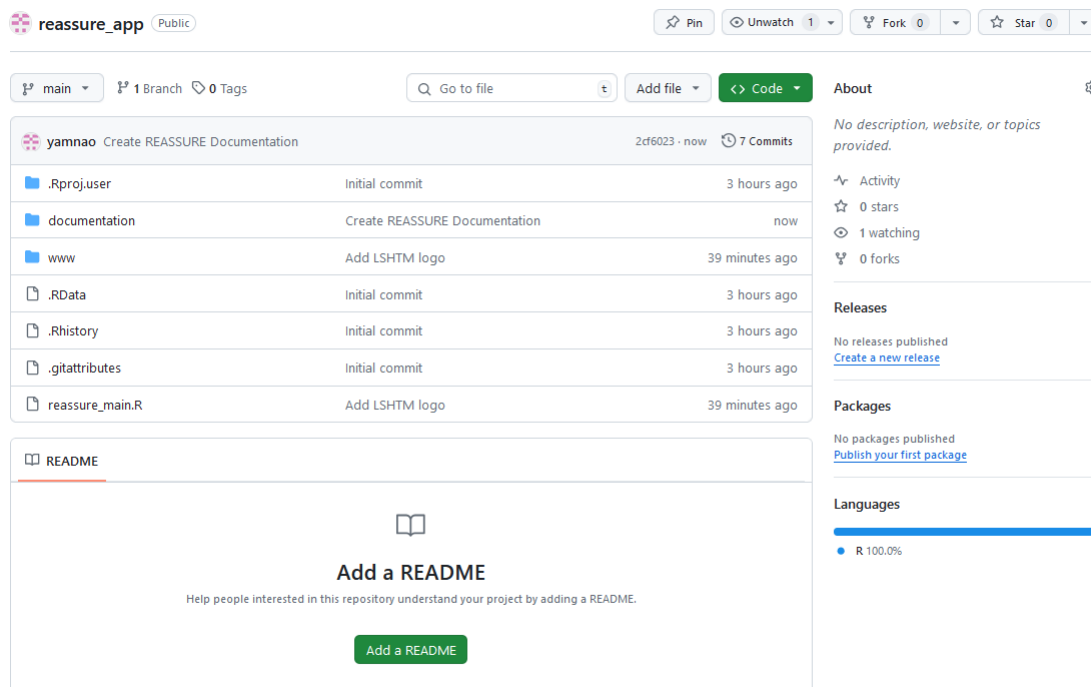
Figure 8: Github webpage containing the REASSURE app.

2. To download the App, please click on the "Code" button and then on "Download ZIP".
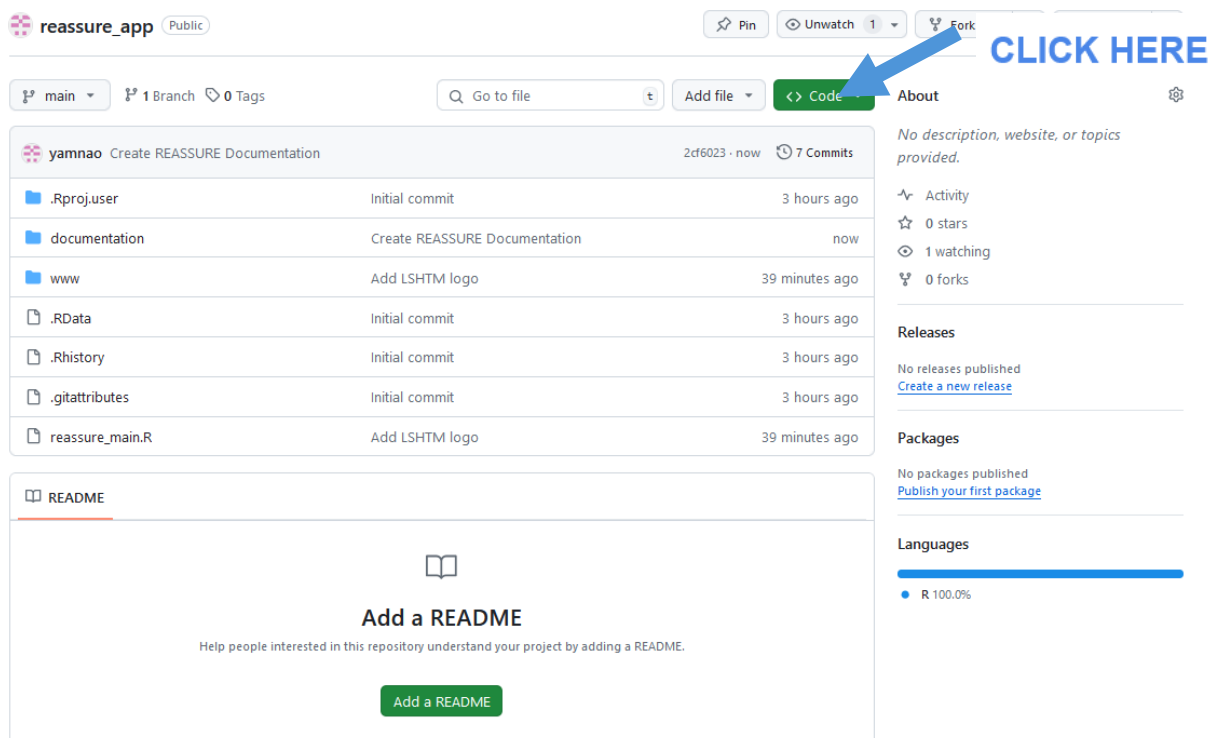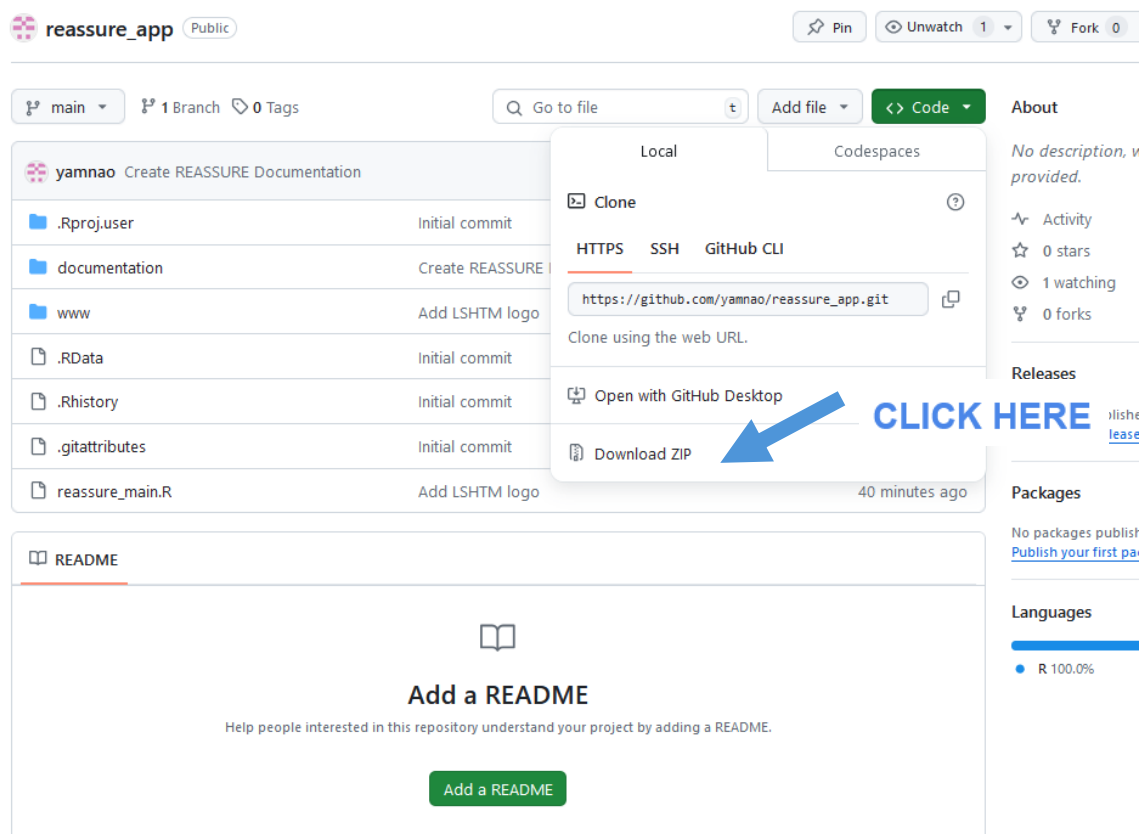
Figure 9: Download the ZIP file containing the REASSURE code.

3. Unzip the folder by extracting it.
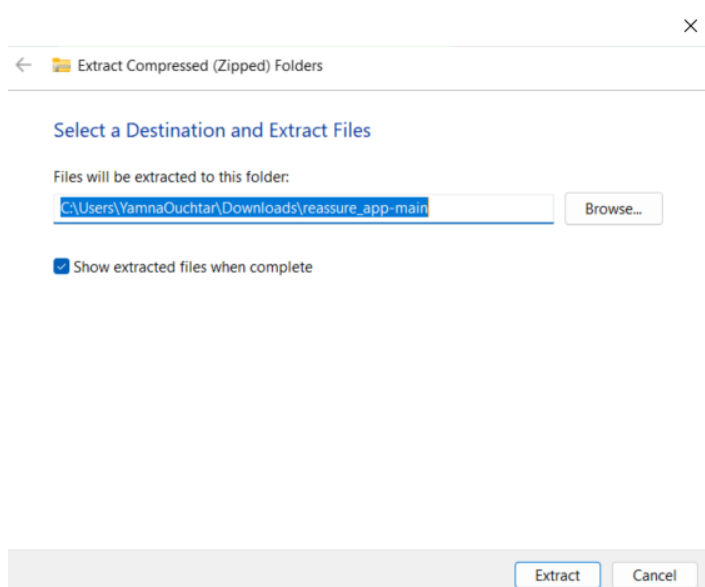
Figure 10: Unzip the file.

4. After unzipping the folder, locate the reassure_main file. Right-click on it, and select "Open with RStudio"

📁 .Rproj.user	☁	20/05/2024 13:39	File folder	
📁 documentation	♻	22/08/2024 14:11	File folder	
📁 www	⊘	22/08/2024 13:22	File folder	
📄 .gitattributes	⊘	22/08/2024 10:55	GITATTRIBUTES File	1 KB
Ⓡ .RData	⊘	12/07/2024 16:53	R Workspace	3 KB
📄 .Rhistory	⊘	09/08/2024 14:54	RHISTORY File	3 KB
Ⓡ reassure_main	⊘	22/08/2024 13:23	R File	33 KB

Figure 11: Open the reassure_main code using Rstudio.

5. The following window will appear.
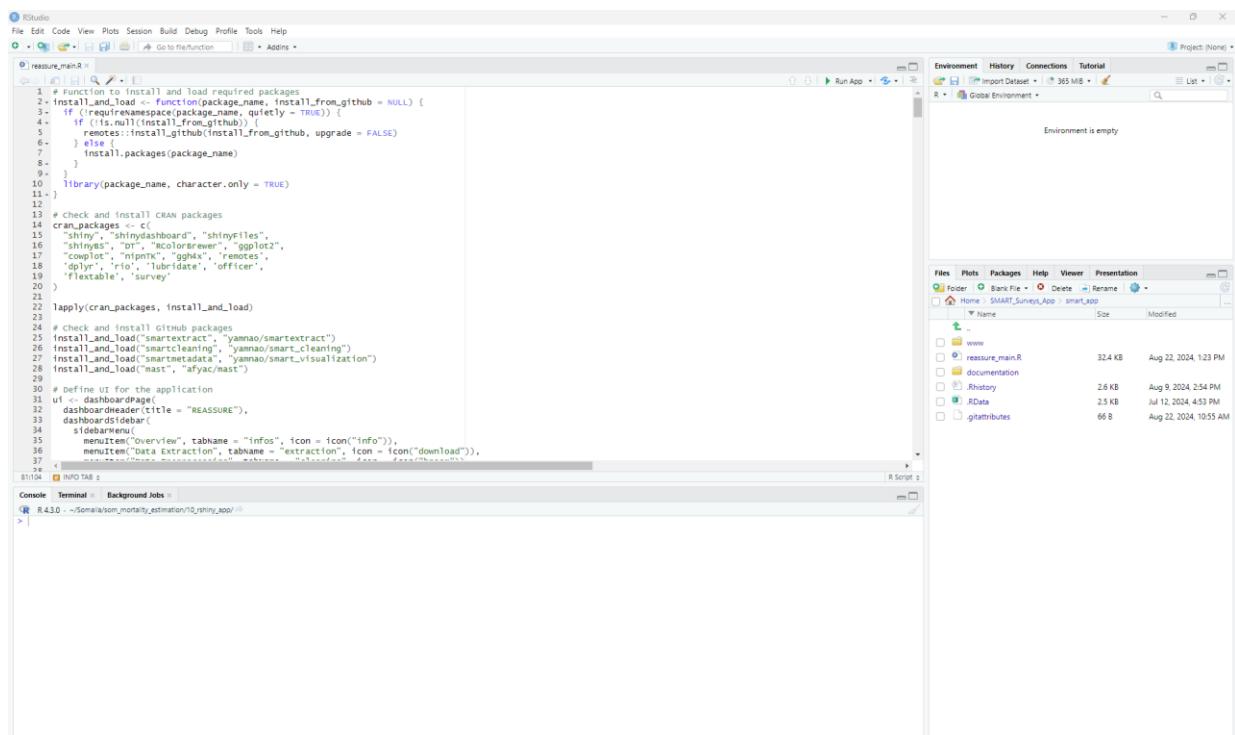
Figure 12: Overview of the REASSURE code.

Step 3: Run the App Locally

1. In RStudio, click on the "Run App" button.
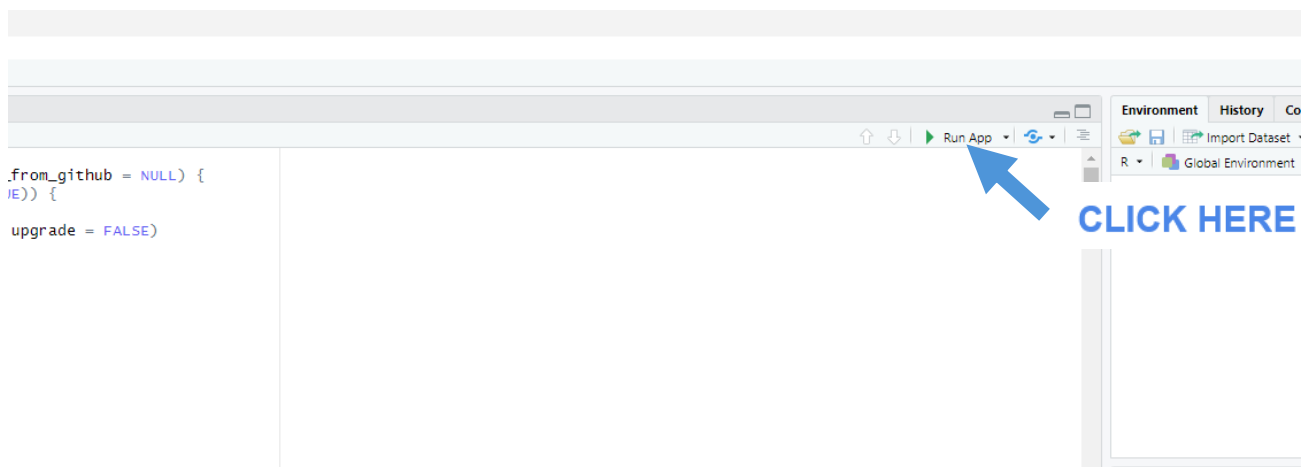
Figure 13: Click on the Run App button to run the REASSURE app from the Rstudio code.

2. REASSURe App will appear.
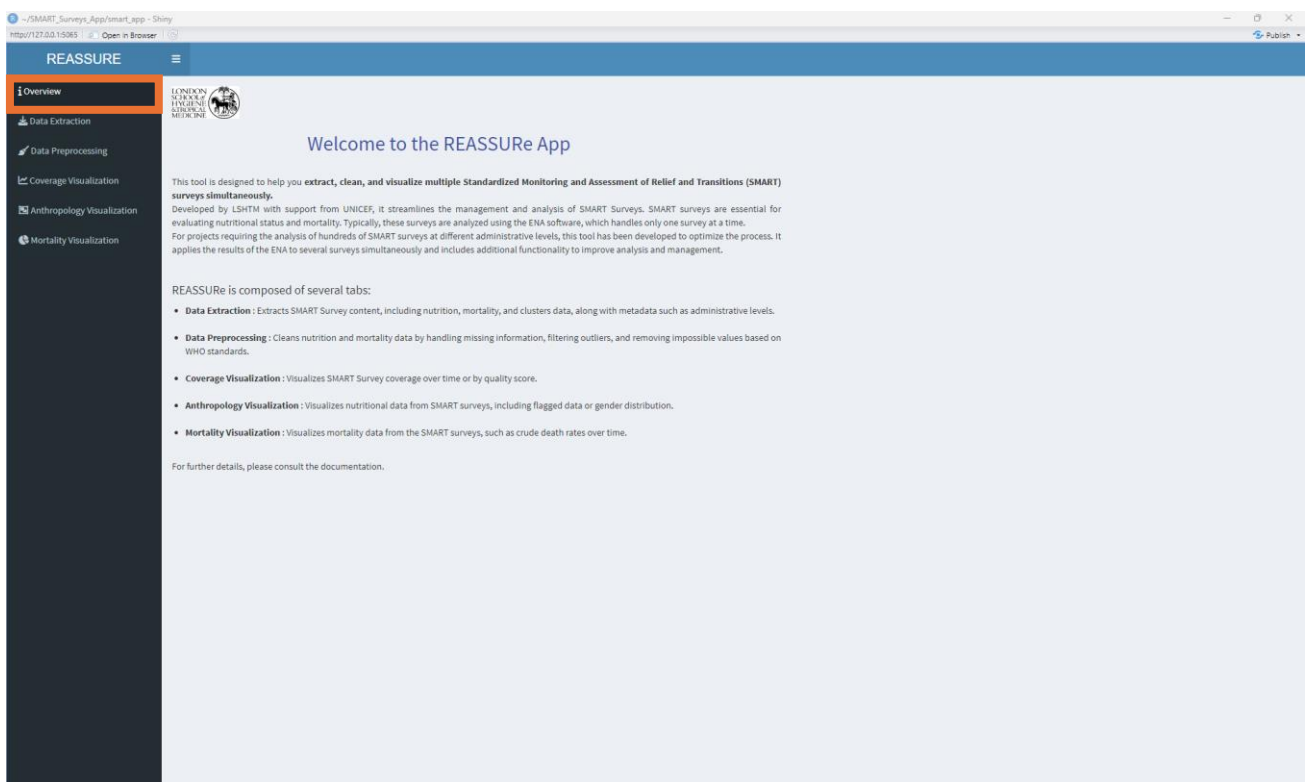
Figure 14: Overview of the REASSURE App.

Step 4: Understanding the different tabs

Tab 1: Extract SMART Survey Content

1. Click on the **Data Extraction** tab

Figure 15: Overview of the Data Extraction tab.

2. Select the localization of the SMART survey you want to extract:

- **KEN** option: If the SMART survey was conducted in Kenya, select this option to filter and manage the data specific to Kenya.
- **SOM** option: If the SMART survey was conducted in Somalia, select this option to focus on Somalia-specific data.
- **No Specified Country** option: If you prefer not to specify a country, select this option. This can be useful for managing data that spans multiple regions or when country-specific analysis is not necessary.
- **Add a Country** option: if the survey was conducted in a country other than Kenya or Somalia, or if you need to include additional countries in your analysis, select this option to add the relevant country. In this case, you will need to add administrative level data with the expected format. The country data should be an Excel file with 3 different columns: eventual_name, right_name, and level. The last column could contain levels such as admin1, admin2, or lhz.

Figure 16: Select the localisation of the SMART surveys.

Figure 17. *Add an excel file containing the localisation area of the country where the SMART surveys have been conducted if you have selected the* **Add Country** *option.*

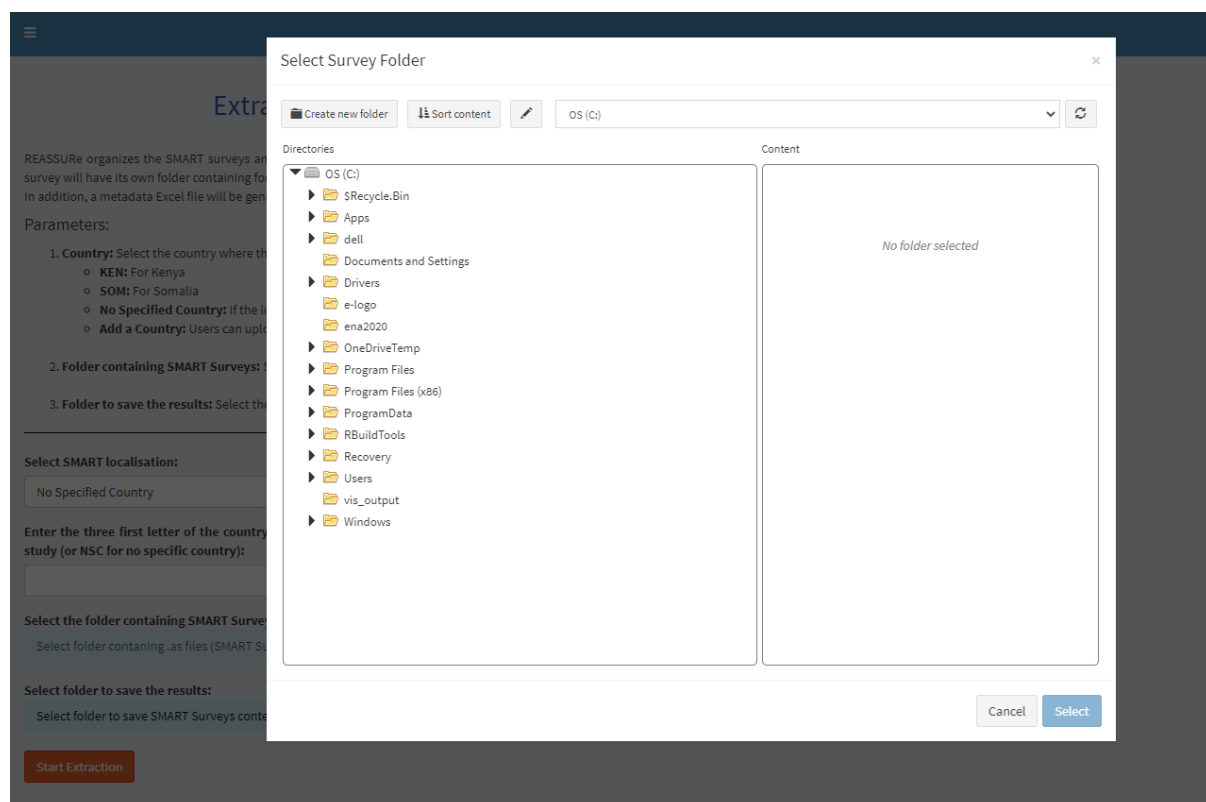3. Select the folder containing the SMART Surveys i.e. the .as files.

Figure 18. Select the path where the SMART survey have been saved.

4. Select the folder to save the different results.

Figure 19. Select the path where the results will be saved

EXAMPLE of SMART Survey Extraction

1. Enter the different parameters.

Figure 20. Example of the different parameters filled in the Data Extraction tab.

If the app cannot automatically find the correct localization, you will be prompted to manually select the appropriate location. This ensures that the data is correctly categorized and analysed according to its geographical context.
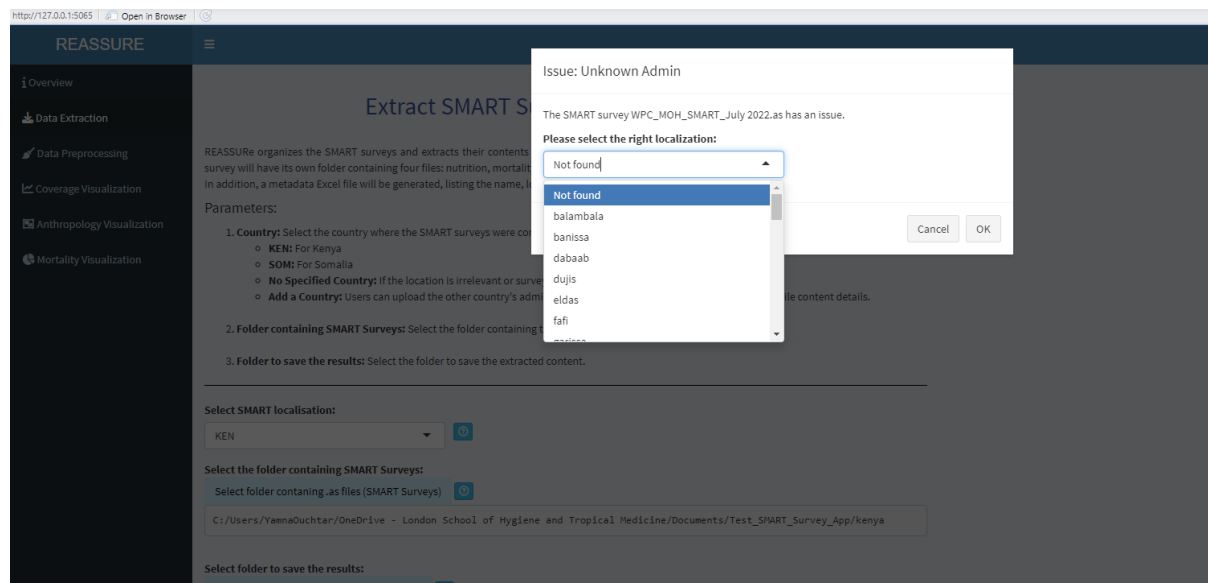
Figure 21. Example of the pop-up window that appears if one of the SMART surveys has not been located correctly.

2. Once all the SMART Survey have been extracted, you will see the following figures.
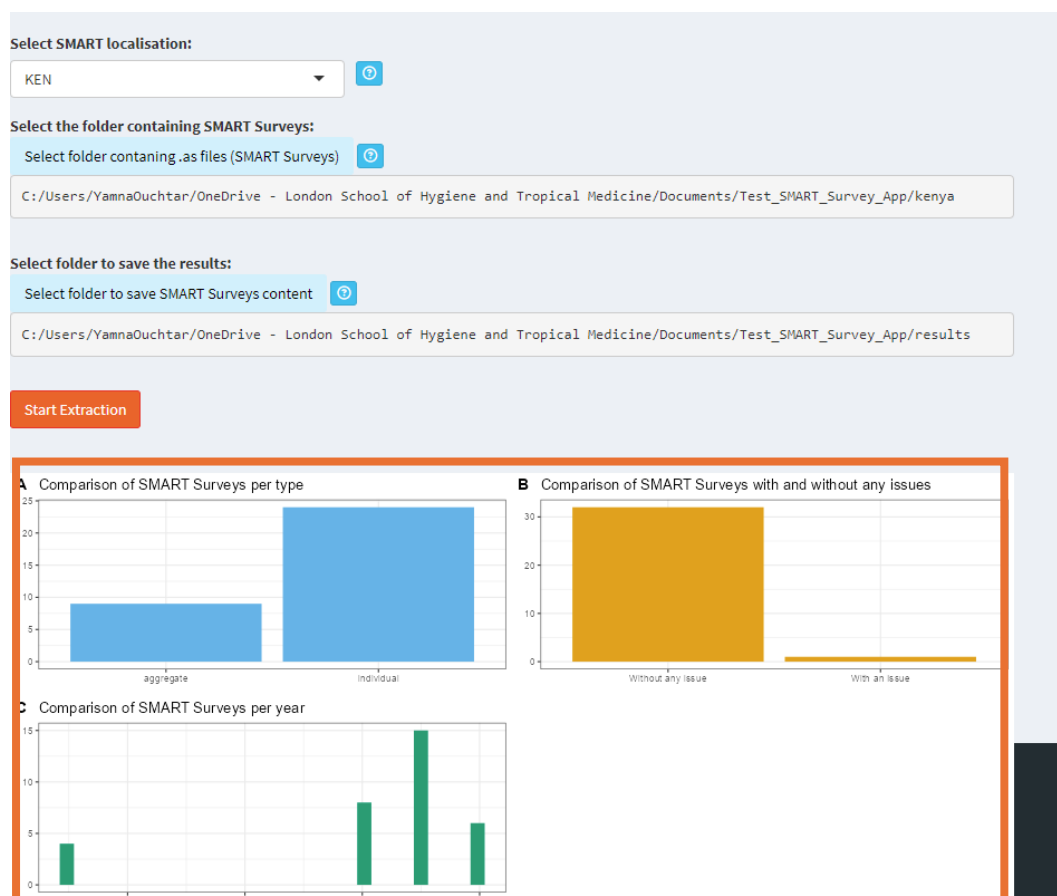

Figure 22. Example of the figures that will appear once extraction is complete.

3. In the folder where you saved the input, you will find a separate directory for each SMART Survey. Additionally, a folder named smart_with_issue will contain surveys with localization or date issues. A metadata Excel file will also be created, summarizing the analyzed SMART surveys.

Figure 23. Example of different folders obtained after the extraction.

Figure 24. Example of information extracted from the SMART Survey and available in one repository: cluster data, mortality data, nutrition data, and the raw SMART survey file.

Tab 2: Cleaning SMART Survey Content

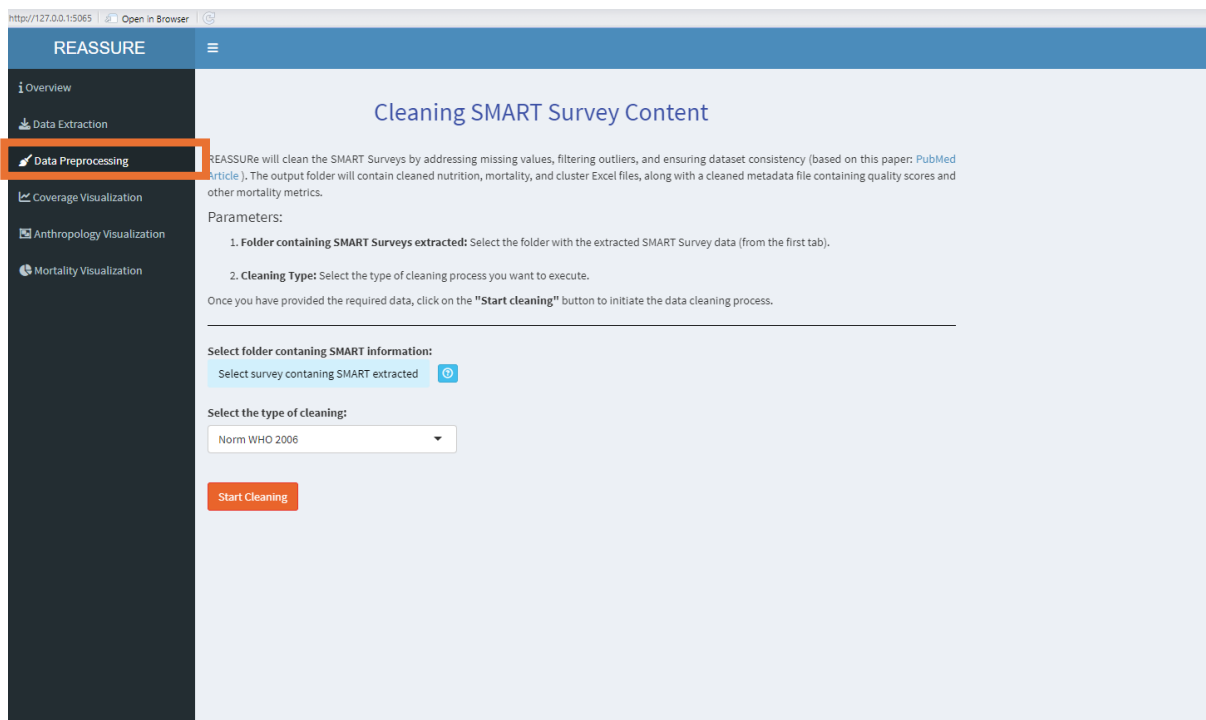1. Click on the Data Preprocessing tab

Figure 25: Overview of the Data Preprocessing tab.

2. Specify the location where the SMART surveys were extracted. If you have previously completed the extraction step, this path will be automatically filled..
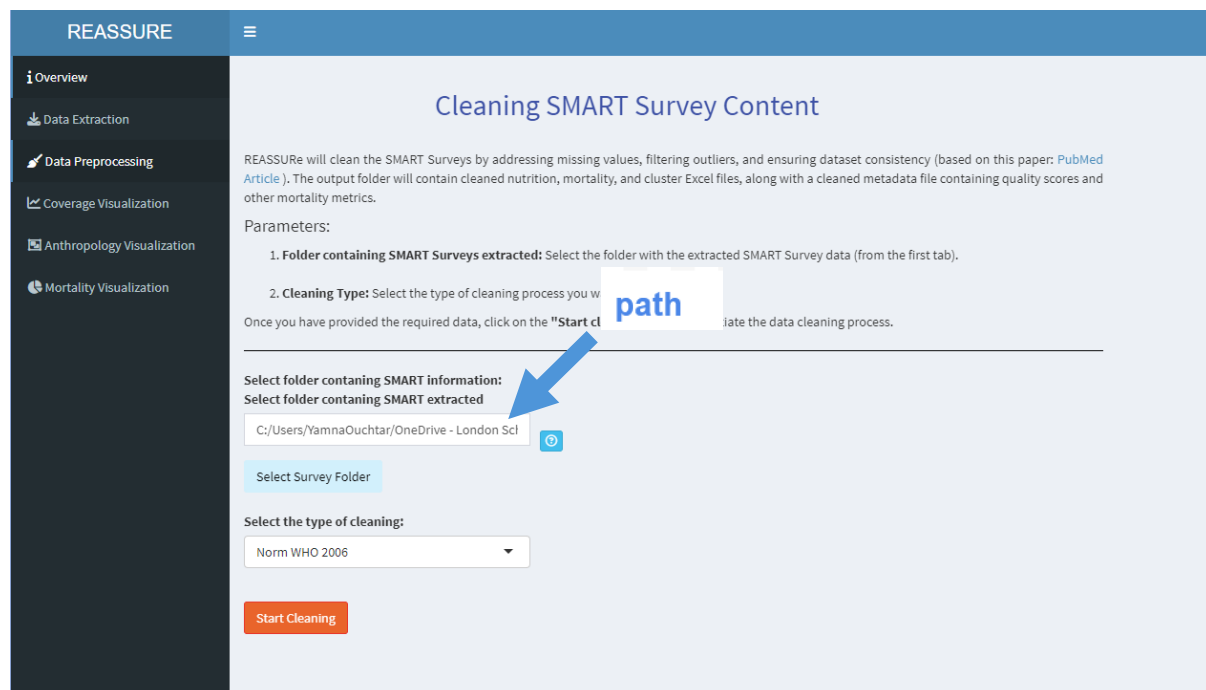

Figure 25: Overview of parameter to fill.

3. Choose the cleaning process you want to execute.

Figure 26: Overview of type of cleaning choices.

4. Once you have selected the parameters of your choice, click on 'Start Cleaning'. Once the process is completed, some figures will appear.
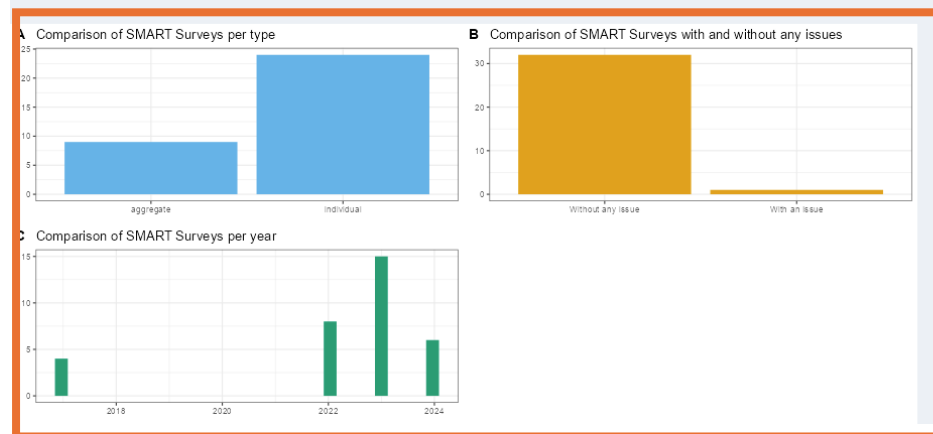
Figure 27. Example of the figures that will appear once cleaning is complete.

EXAMPLE of Cleaning SMART Survey Content

1. Below is an example of a folder you will obtain using the cleaning tab.

📁 ken_admin2_turkanasouth_2023_6	⊘	22/08/2024 14:35	File folder	
📁 ken_admin2_turkanasouth_2024_3	⊘	22/08/2024 14:35	File folder	
📁 ken_admin2_turkanawest_2017_6_	⊘	22/08/2024 14:35	File folder	
📁 ken_admin2_turkanawest_2023_6_	⊘	22/08/2024 14:35	File folder	
📁 ken_admin2_turkanawest_2024_3_	⊘	22/08/2024 14:35	File folder	
📁 smart_with_issue	⊘	22/08/2024 14:31	File folder	
📊 metadata	⊘	22/08/2024 14:31	Microsoft Excel Comma...	7 KB
📊 metadata_clean	⊘	22/08/2024 14:35	Microsoft Excel Comma...	16 KB

Figure 28. Example of different folders obtained after the cleaning.

2. In each folder, you will find the following Excel file.

Figure 29. Example of different files obtained after the cleaning.

3. The folder will also contain a Word file with the data quality report.

Figure 30. Example of word file obtained after the cleaning.

Tab 3: Visualization of SMART Surveys coverage

1. Click on the **Coverage Visualization** tab.

Figure 31: Overview of the Coverage Visualization tab.

2. Select the path where the SMART Surveys have been extracted and cleaned (the folder containing the metadata_clean Excel file). *If you have already cleaned the SMART surveys using the Data Preprocessing tab, the path will be automatically filled.*

Figure 32: Select the path.

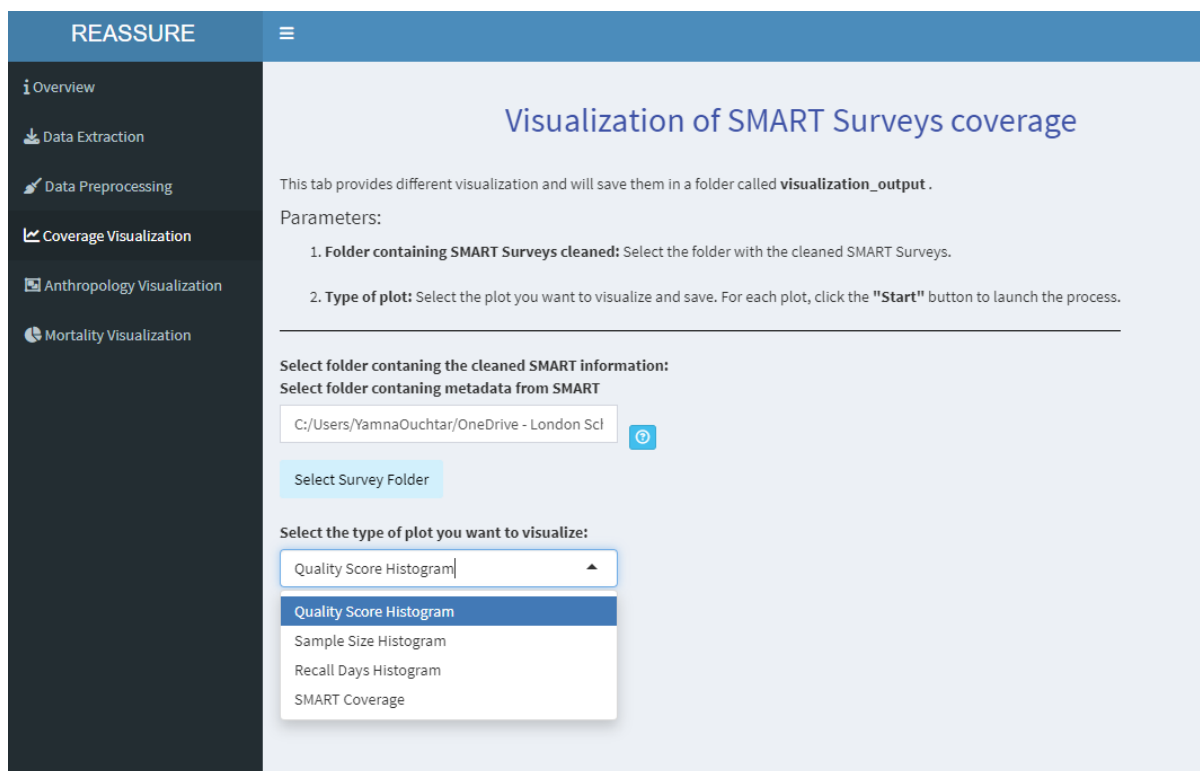3. Choose the type of plot you want to generate from the available options.

Figure 33: Overview of type of plot.

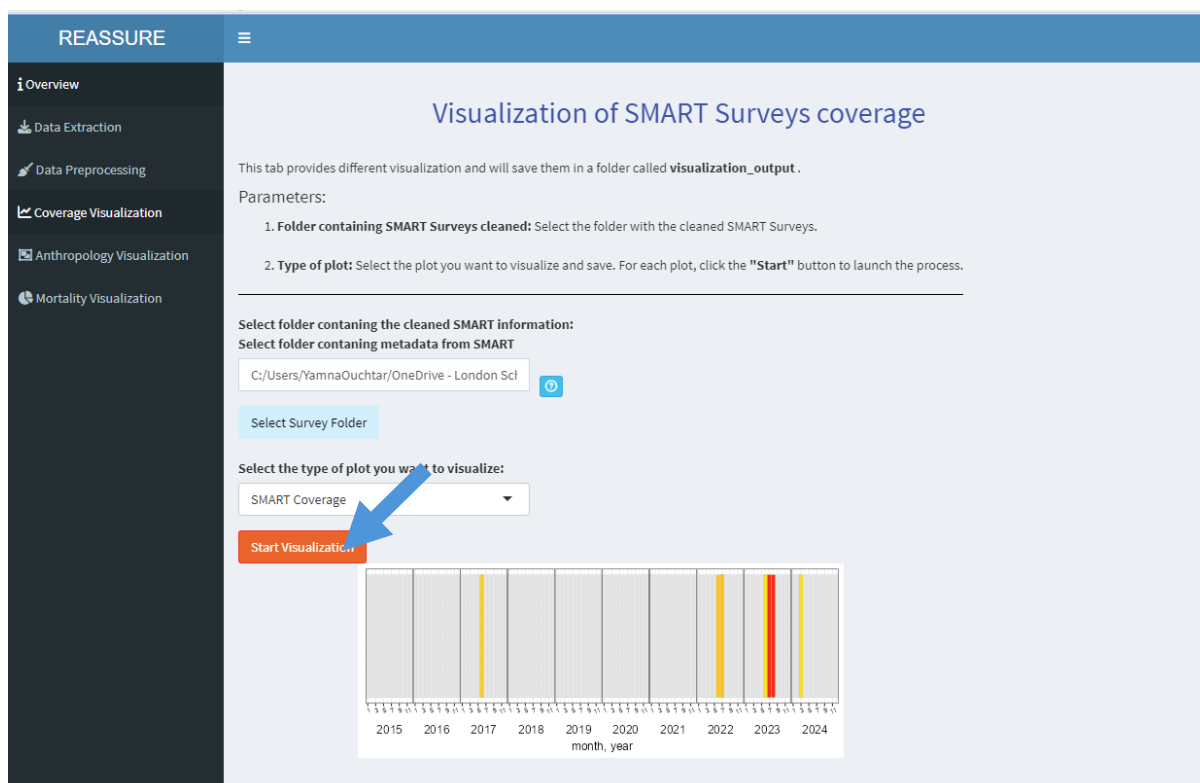4. Click on the **Start Visualization** button, and the plot will appear.

Figure 34: Overview of the plot visualization.

5. A folder called visualization_output will be created, and the plot will be saved in this folder.
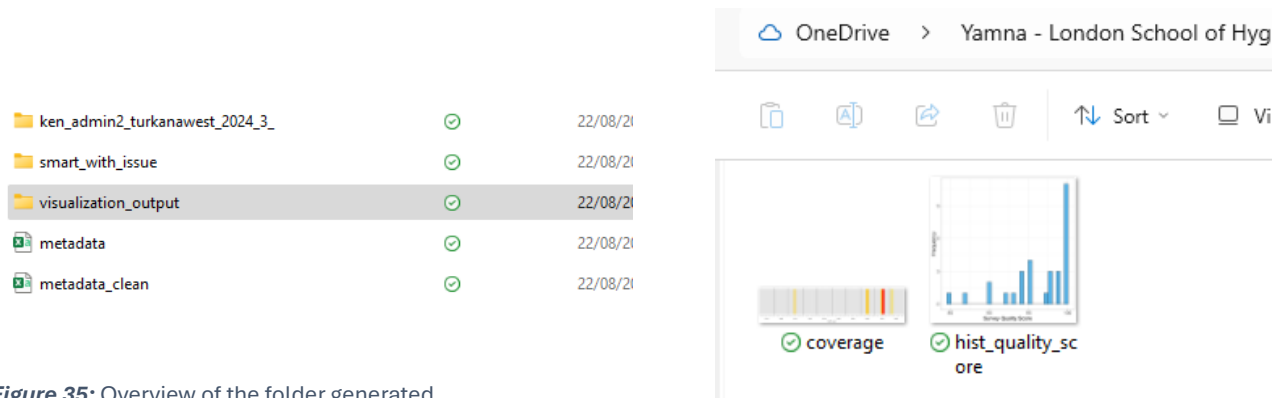

Figure 35: Overview of the folder generated.

Tab 4: Visualization of SMART Surveys anthropology

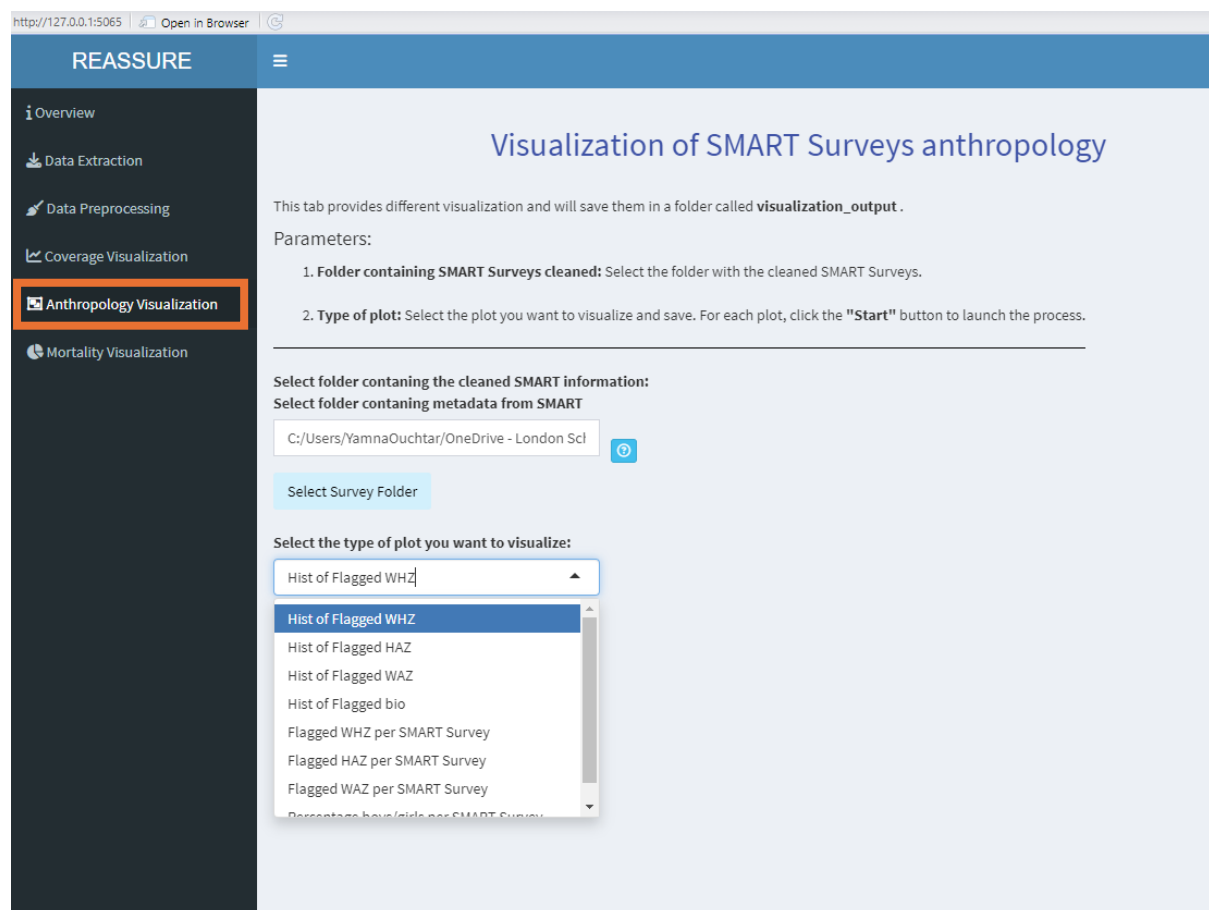1. Click on the **Anthropology Visualization** tab.

Figure 36: Overview of the Anthropology Visualization tab.

2. Follow the same steps as in Tab 3.

Tab 5: Visualization of SMART Surveys mortality

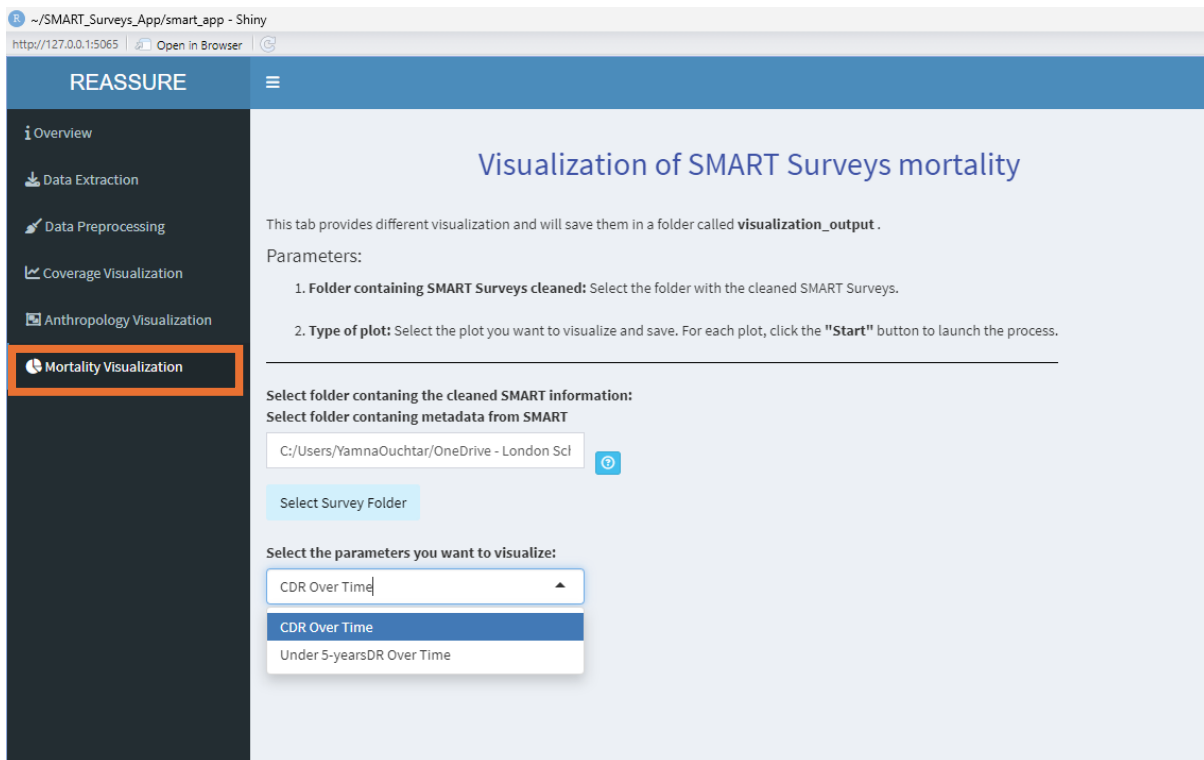1. Click on the **Mortality Visualization** tab.

Figure 37: Overview of the Mortality Visualization tab

2. Follow the same steps as in Tab 3.