DEMOGRAPHIC UGANDA PROJECT REPORT

A project Report

Submitted by

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Abstract

This report describes the analysis, design, and implementation of the UgaDemos web based system which provides a flexible and thorough analysis of Uganda's population for the past twenty years (1996 to 2016) to the intended users, basing on the following characteristics; Births, Deaths, Total population, Number of migrants per 1000 population, rate of natural increase, Births per 1000 population, Deaths per 1000 population, Growth rate, Net number of migrants, Natural increase and population change

Acknowledgements

We are pleased to acknowledge Mr. Mbabazi Isaac for his invaluable guidance during the course of this project work, because without his guidance, this project would have been an uphill task.

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1. INTRODUCTION

1.1 Overview

This report describes the result of the work done in the development of UgaDemos system using basic HTML, CSS, and R programming language, therefore it requires that any computer to run it must have R environment. The system measures the dynamics of Uganda's population for the past 20 years and services rendered include;

- Visualizing population data graphics such as scatter plots matrix, box and whisker plots, bar plot, and pie charts depending on selected parameters for example how population changes over the years and provide reasons to support the change.
- Calculating population growth by adding natural increase (births minus deaths) and net migrates (immigrants minus emigrants).
- Calculating population change which is analyzed by measuring the change between population size to another and be able to give supportive information as to why there is such a change (either an increase or decrease). This is calculated by taking one population size of a given year minus the population size of the previous year.
- Calculating population density.
- Allowing users to download the graphics so as to keep them for future reference.
- Displaying all the population data of Uganda for the last 20yrs.
- Searching for population data for specific year where the user will enter the specific year between 1996 and 2016. The system also able making of population projections which are estimates of future population calculated basing on birthrates, death rates and the number of migrants.

1.2 Background

Before and currently, most of the analysis on population was done using elementally tools for example spreadsheet programs such as excel where data is manually entered and incase of some changes in the data some steps of the analysis such as visualization have to be redone thus provide no flexibility in case of changes and these analysis tools are not so accurate which left out some crucial details in the data

unexplored, due to these limitations it has given us a strong ground to come up with the Demographic Uganda project which is to provide solution to such challenges.

1.3 Objectives

The final goals of the system include;

- Provide information about the current population in Uganda.
- Provide a brief description about the location, geography, and current administration of Uganda.
- Analyze Uganda's population data for the past 20 years.
- Visualize the population information using graphics such as Box and Whisker plots, Bar plots, pie charts, and scatter plot matrices.
- Draw conclusions based on the observations of the analysis of the population basing on parameters such as deaths, births, birth rate, and others.
- Predict future population over a specific period of time in the future.

2. SIGNIFICANCE OF THE ANALYSIS

The target group which is to benefit from the system include government bodies interested in carrying out population studies (demographics) for example Uganda Bureau of Statistics so as they are able to make informed decisions about economic planning for the future depending on analysis from past experiences.

3. TOOL DESCRIPTION

3.1 User Interface

The tool is very user friendly and intuitive. It's implemented using a Graphical User interface, where its user navigates the system by clicking on certain buttons, menu bars in order to complete certain tasks with the system for example downloading content requires the user to click on the

download button, users have to type in text in text input boxes to label their plots, to search for specific data and other action described below;

Navigation; the user clicks on the menu icons and menu tabs to navigate the UgaDemos system.

Downloading contents; user clicks on the download button next to the content that he or she would wish to download.

Uploading files; the user has to click on the upload file icon in order to select which file to upload onto the UgaDemos system.

Viewing content; in case content does not fit on the whole page, the user is required to scroll up or down in order to view all the content.

Plotting graphics; user clicks plot buttons in order to make plots from his or her uploaded data after selecting the fields to plot using the select inputs.

Labeling plots; user types in the text box in order to give labels to the plots he/she makes using the UgaDemos system.

Note:

On top of the description above, the users of UgaDemos system are assumed to be well vast with the general principles of a GUI.

Below are some of the interfaces in the UgaDemos system;

3.1.1. Home interface.

This is the page displayed first as soon as the user visits UgaDemos system.

It is on the home page where the user is able to get general information about Uganda and About UgaDemos.

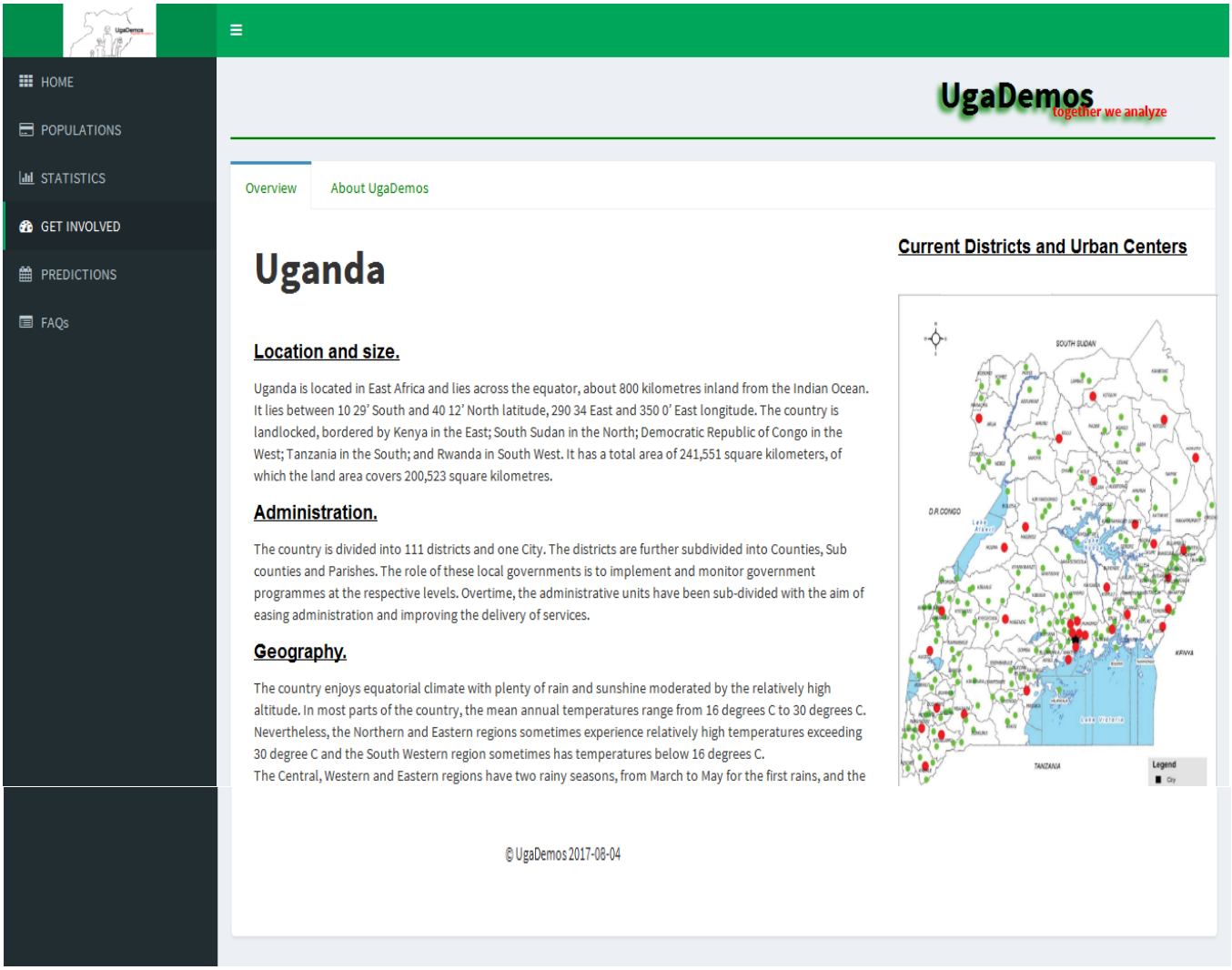

Figure 3.0. Home page for UgaDemos system

3.1.2 About UgaDemos interface.

On this page, the users are able to get information concerning the UgaDemos system.

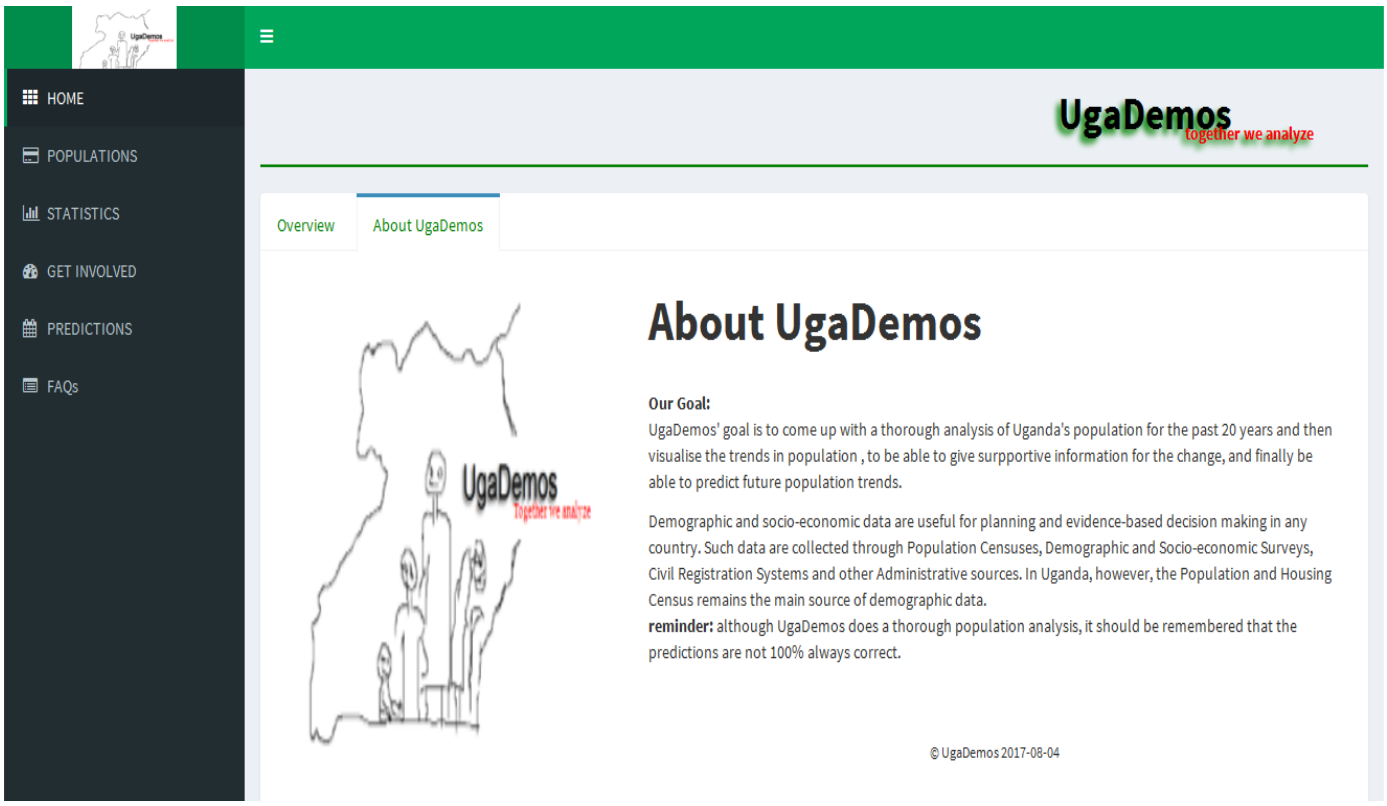

Figure 3.1. About UgaDemos page.

3.2.0 Populations interface.

On this page, the users are able to view Uganda's population data for the past 20 years and also be able to download it by clicking on the download buttons below each table.

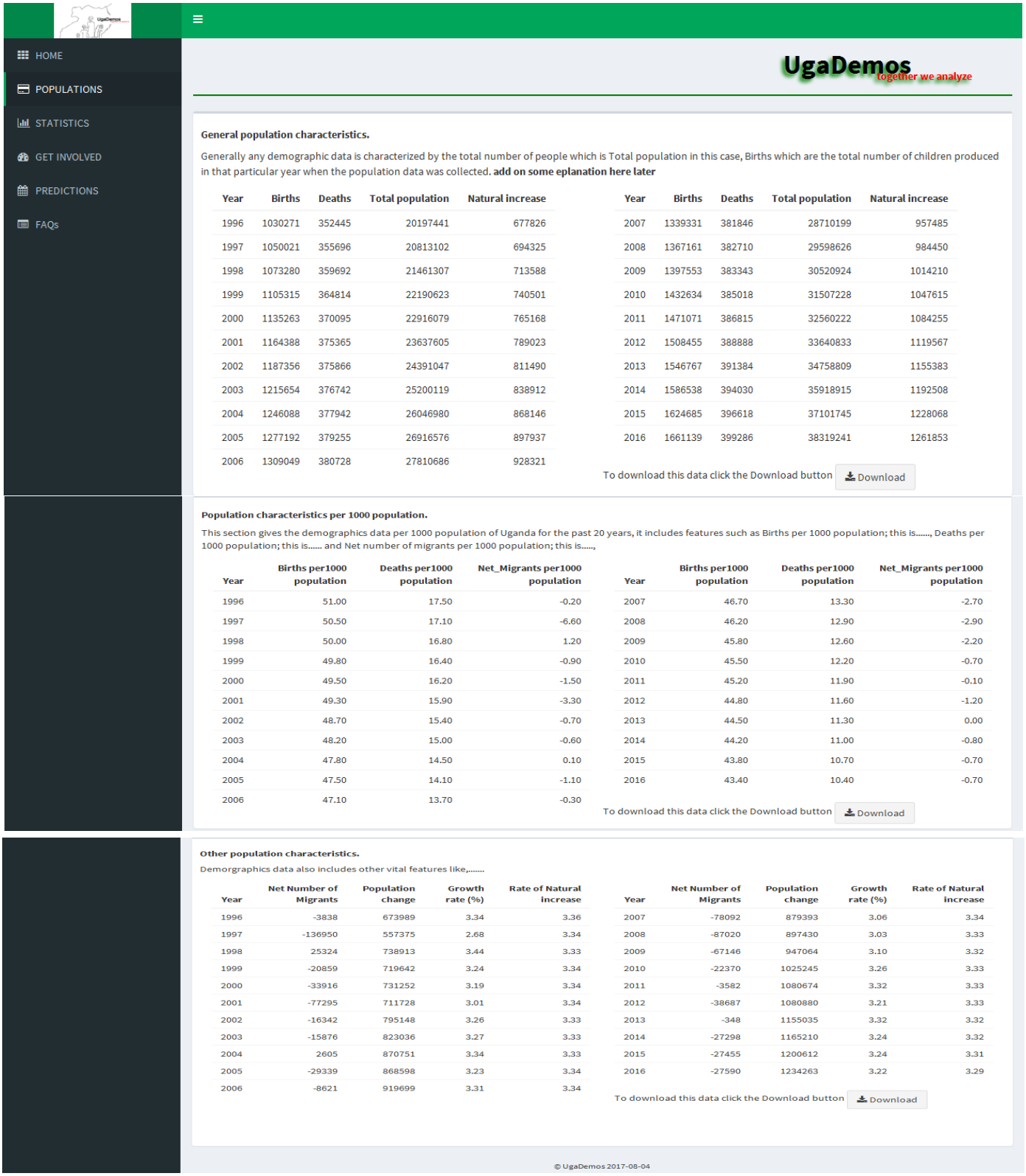

Figure 3.2. Populations page for UgaDemos system

3.3.0 Statistics interface.

On this page, the users are able to visualize population data and population plots for the various population characteristics of Uganda, see observation from plots and conclusions from the plots as well.

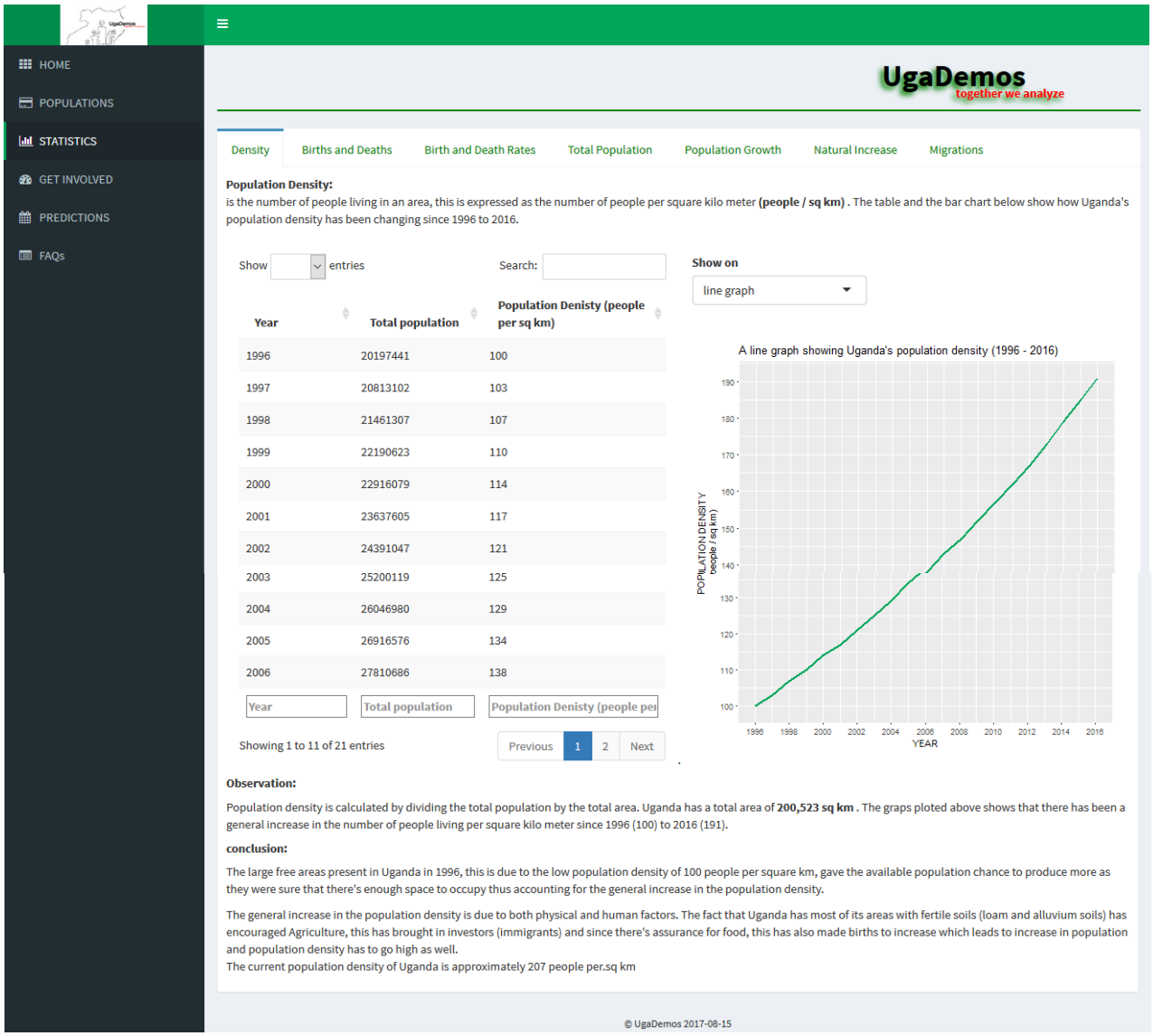

Figure 3.3. Statistics page for UgaDemos System

3.4.0. Get involved interface.

On this interface, the user is required to upload a csv file by clicking on the upload csv file button, the contents will be displayed in the Uploaded data display area.

The user can select from the uploaded data which fields he or she wishes to represent on the chart area, this is accomplished when the user clicks the select boxes on the left of the uploaded data display area.

The user gives labels to the plots made by typing the labels in the text inputs provided under the give labels to plots region on the left side of the displayed data.

The user can also download the plot made by clicking the download plot button below the chart area on the right, refer to the illustration below.

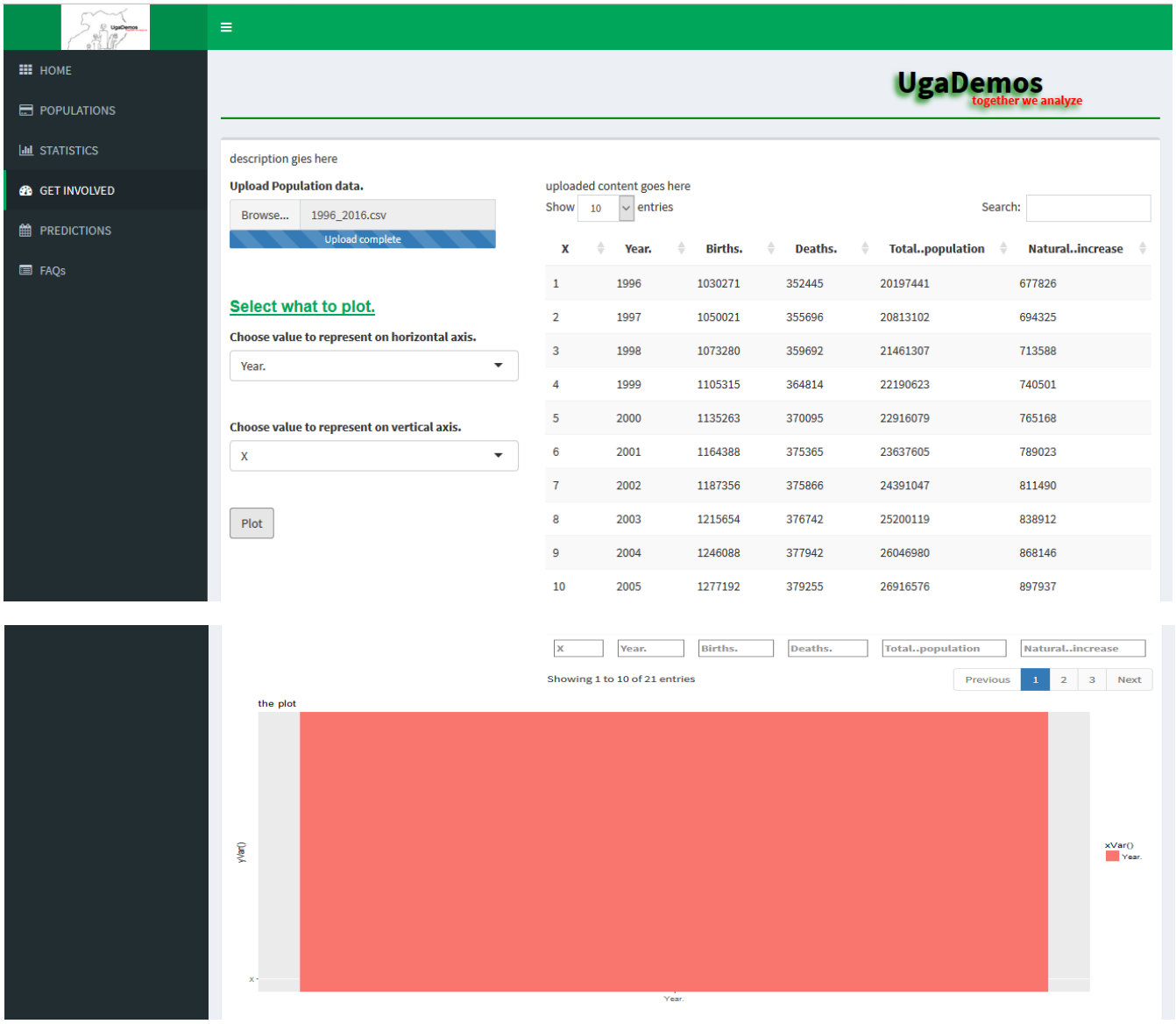

Figure 3.4. Get Involved page for UgaDemos System.

3.5.0. FAQs interface.

This interface is used by the user to ask questions concerning anything about what, how, and why UgaDemos is able to perform, the user types in the question from the text input region under the Type here your question section.

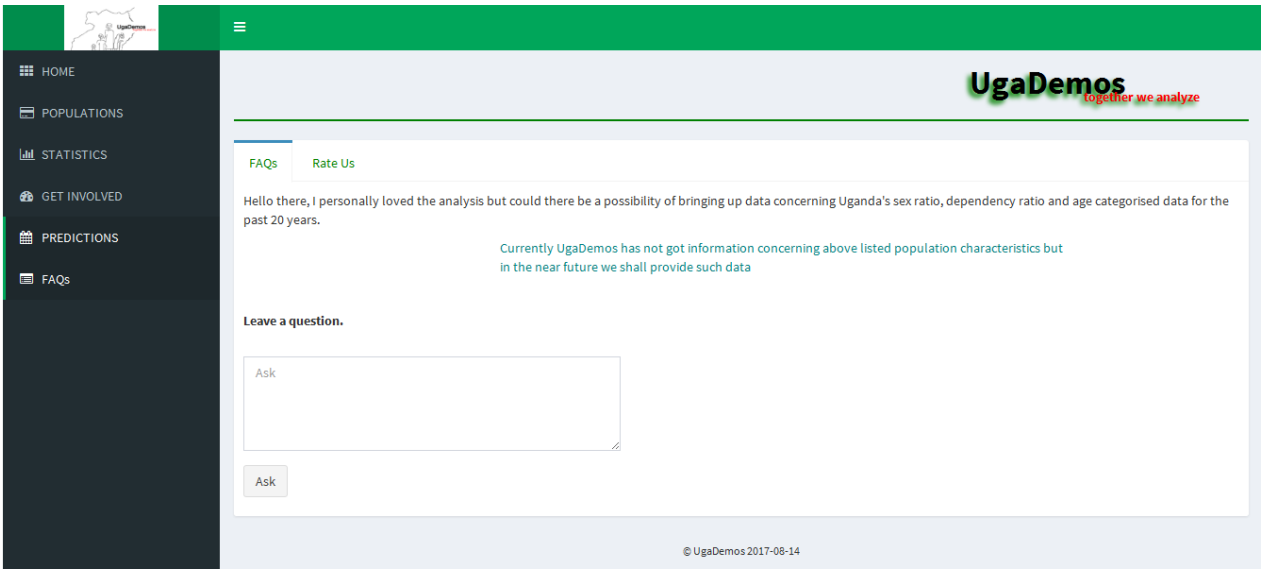

Figure 3.5FAQs page for UgaDemos System.

4.0 CONCLUSION

In this project, we identified from the beginning that producing a complete result would be impossible within a given timeframe. We viewed the project as a journey where we learned many lessons and gained some insights to the subject which we tried to share in this report and summarized. The problem was looked at from many points of view which generated some new ideas that could be explored.

More about UgaDemos system can be got from; http://grp11com.wordpress.com