Shiny application for consulting data online

INTRODUCTION

Shiny application uses the API of Worlclim data set (https://www.worldclim.org/data/index.html) for getting climate data with coordinates taken by clicking on an interactive map or by typing on a text box.

The applications uses WorldClim version 2.1, which contains monthly averages data calculated with climate data from 1970 to 2000, the resolution of data is available for three resolution size: 4.6km (2.5 minutes), 9.2 km (5 minutes) and 18.5 km (10 minutes). monthly averages.

Each data represents a square surface (called pixel), which length per side is the resolution mentioned above.

The climate variables available for downloading are:

- Maximum temperature.
- Minimum temperature.
- Mean temperature.
- Rainfall.

Elevation data is also available, derived from SRTM elevation data, for the same resolution mentioned above.

Link of application

For visit the website of shiny application, the URL is shown below:

http://foresight.e-agrology.org:3838/foresight/

Main interface

The interface contains the sections: main menu, resolution and download buttons, map options, coordinates text box and map(Image 1).

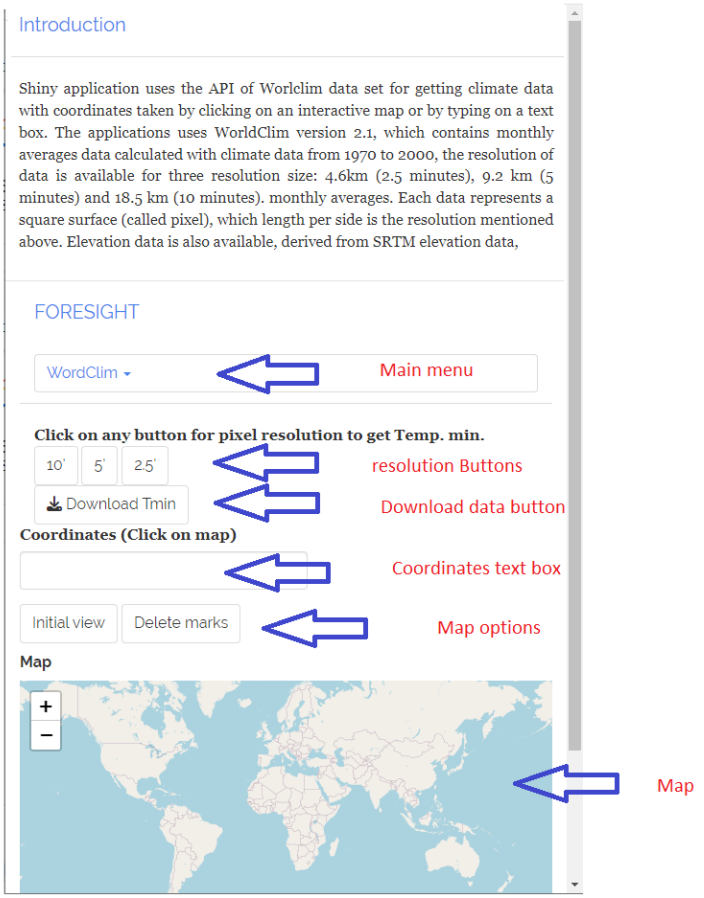

Image 1: Main interface

The main menu contains a dropdown list of variables and altitude to select (Image 2)

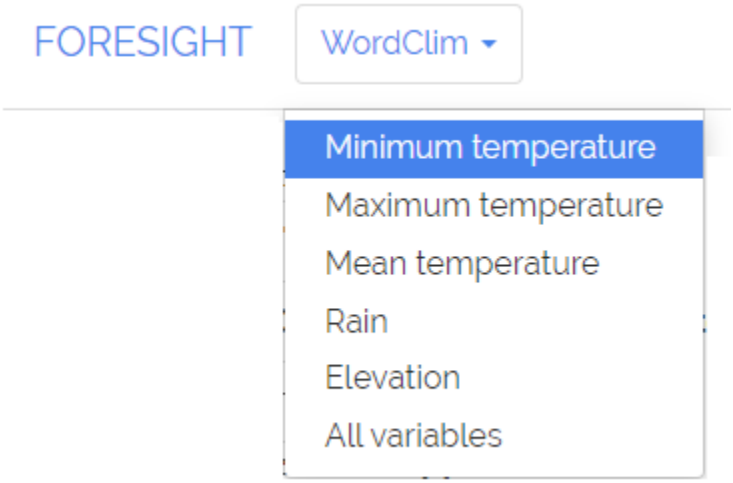

Image 2. List of variables and altitude

Steps for getting data.

1. Select the climate variable or altitude

2. click on interactive map or type the coordinates or type in a text box (image 3). After clicking on map, the application will do a zoom to the point selected and a mark will be located on the map image 4). If you want to see full map, click on initial view button (image 5).

Image 3. Example of coordinates

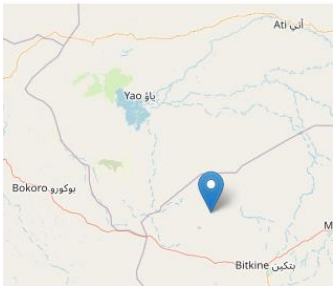

Image 4. Example of mark on map

Image 5. Initial view button

3. Delete mark on map(image 6) if you disagree with that point and click again on map for the place you need to get climate data.

Imagen 6. Delete marks button

4. Click on pixel resolution buttons and wait while information is generated.

Image 7. Pixel resolution and example of rain data

5. Click on download button for getting data in csv format (image 8).

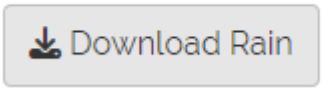

Image 8. Download button.

Download all variables at the same time.

The application has an option to get all variables at the same time, just select “All variables” option in main menu (image 9)

Image 9. Download all variables.

After click on map for getting coordinates, you can give a click on pixel resolution buttons (image 10) for watching data or select the download button for resolution you need (image 11).

Image 10. Pixel resolution buttons

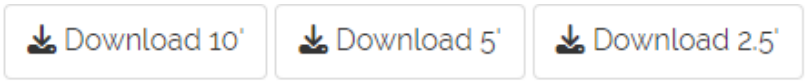

Image 11. Download buttons per resolution of pixel.

Application runs on cellphone

As the application generates html code, it is readable for any internet browser, it lets to use the application in other operative systems with internet browser, like Android

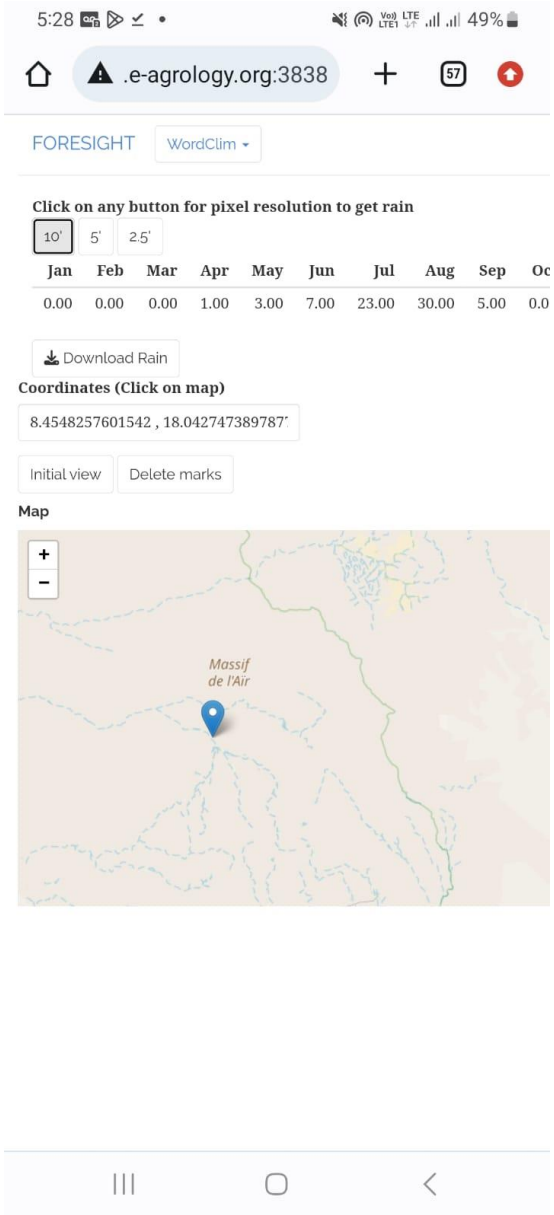

Image 12. Application running on Android.

References

Fick, S.E. and R.J. Hijmans, 2017. WorldClim 2: new 1km spatial resolution climate surfaces for global land areas. International Journal of Climatology 37 (12): 4302-4315.