

Climada viewer

Intro:

The *climada viewer* is a simple GUI (graphical user interface) to plot the inputs (assets) and results (damage and benefit) produced by using *climada* to conduct the methodology *economics of climate adaptation* on a specific region.

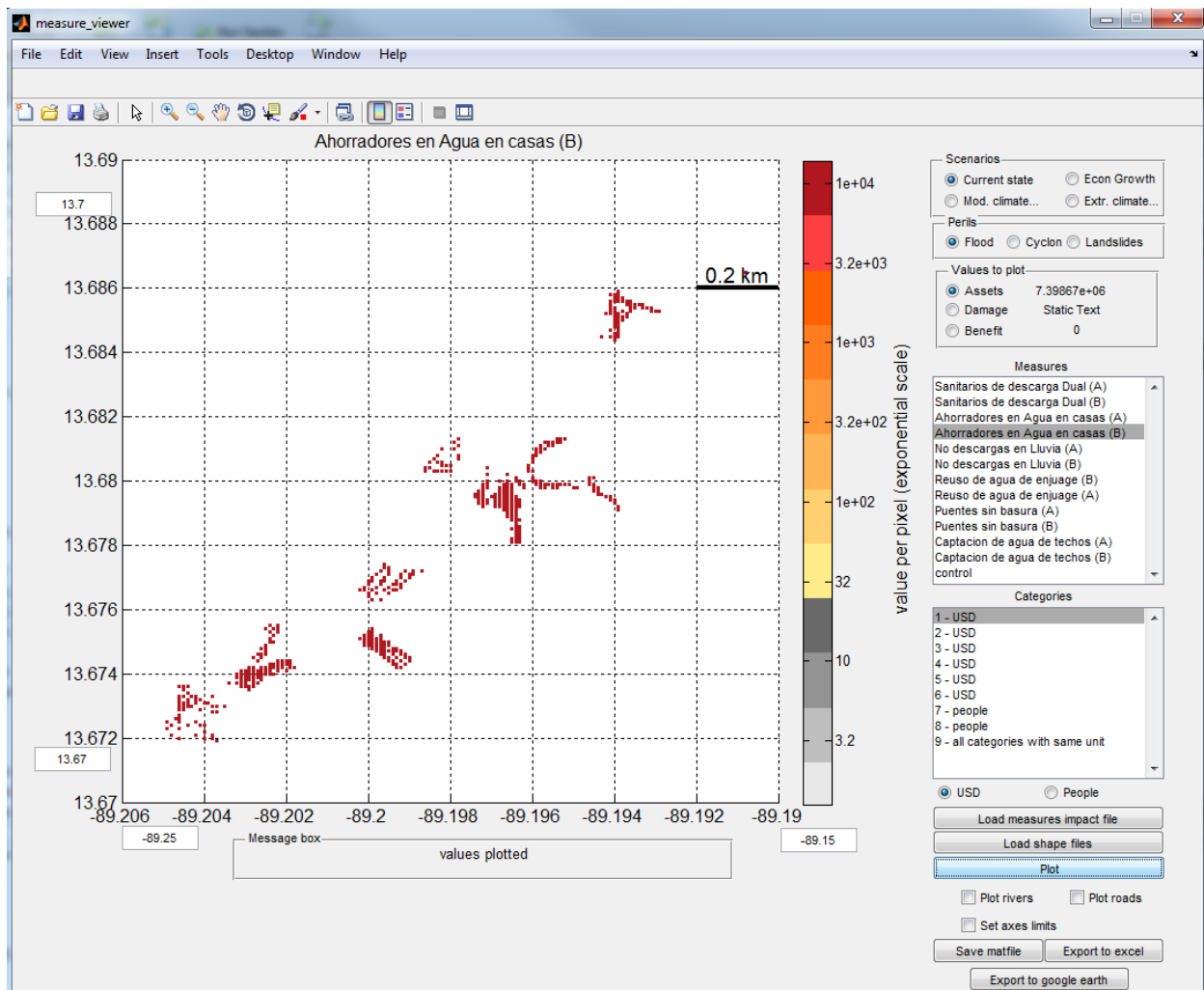


Fig.1 The graphical user interface showing the assets (USD) used for calculating the flood damage at the current state.

Folder structure:

The functions and the GUI of the *measures_viewer* are located in the code folder. In the data folder, example measures impact files for each peril are located in the folder 'results'. The belonging entity for San Salvador (tropical cyclone, flood and landslide) can be found in the 'entities' folder.. A set of shape files (roads, rivers) are also provided in the 'results' folder.

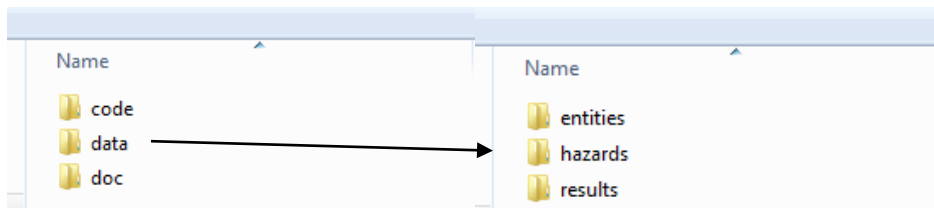


Fig.2 The basic folder structure.

To make these files faster available, copy them into the climada -> data folder into entities (respectively results) as the load function will look here for the files by default.

Loading data:

The GUI is started by running the *measure_viewer.m* file after climada startup has been initialized.

- Base files:

First of all, a set of an *impact_measures.mat* file and the belonging *entity.mat* file have to be selected. This can be done using the "Load measures impact file" button. A popup menu will appear and ask for the *impact_measures* and the *entity* file. The peril is recognized automatically.

Multiple files of different perils can be loaded and stored in the background. Simply another *measures_impact* and *entity* file needs to be loaded. Altogether, 3 different *measures_impact.mat* files (storm, flood and landslide) can be loaded.

- Shape files:

Using the button "Load shape files", an ensemble of shape files can be loaded.

Plot settings:

To obtain a graph with the spatial distribution of the selected values, the following options need to be selected.

- Scenarios:

- Current state: The actual state of the economy with present hazard.

- Economic growth: The state with an economic growth scenario in the year 2040 (in the case of San Salvador) and present hazard
- Mod. climate change: The economic state in the year 2040 with moderate climate change hazard
- Extr. climate change: The economic state in the year 2040 with extreme climate change hazard
- Perils:
 - Flood: The inundation assets and hazard
 - Cyclon: Tropical cyclone assets and hazard
 - Landslides: Landslide assets and hazard
- Values to plot:
 - Assets: Selects the assets that apply for the specific scenario, category and measure
 - Damage: Selects the damage that apply for the specific scenario, category and measure
 - Benefit: Selects the benefits that apply for the specific scenario, category and measure
- Measures: A list with the measures to select from.
- Categories:
 - A list with the categories that can be selected. Recognizes automatically if the unit "USD" or "people" apply.

If "all categories with same unit" is selected, one has to also select "USD" or "people" and all categories with the specified unit are selected. The category should be chosen by double clicking on it.

The plotting:

After the selection, the graph is shown by pressing the "plot" button.

- Plot rivers: The shape file for rivers (if loaded) is shown, too.
- Plot roads: The shape file for roads (if loaded) is shown, too.
- Set axes limits: On the left and the bottom side of the graphic field 2 little box each can be seen: A lat/ lon value can be entered here (point separated) and registered by pressing enter. By selecting the "set axes limits" box, the plot shows the same figure but without stretching.

Additional options:

- Save matfile: Asks to enter a *name* and then saves the current selection as *name.mat* file to the current working directory.
- Export to excel: After specifying the name two times, (first time to save the ".mat" file, second time as name for the ".xls" file) saves the current selection as *name.xls* file to the current working directory.
- Export to google earth: Produces a ".kmz" file that can be viewed with google earth.

Attention: The geolocation has a small offset that can be fine-tuned in the code in the kml / kmz section.

Limitations:

- The GUI can produce errors for certain combinations of selections. Please report them with a screenshot and short description back to j.anz@gmx.net.