

**TUM-MSM**

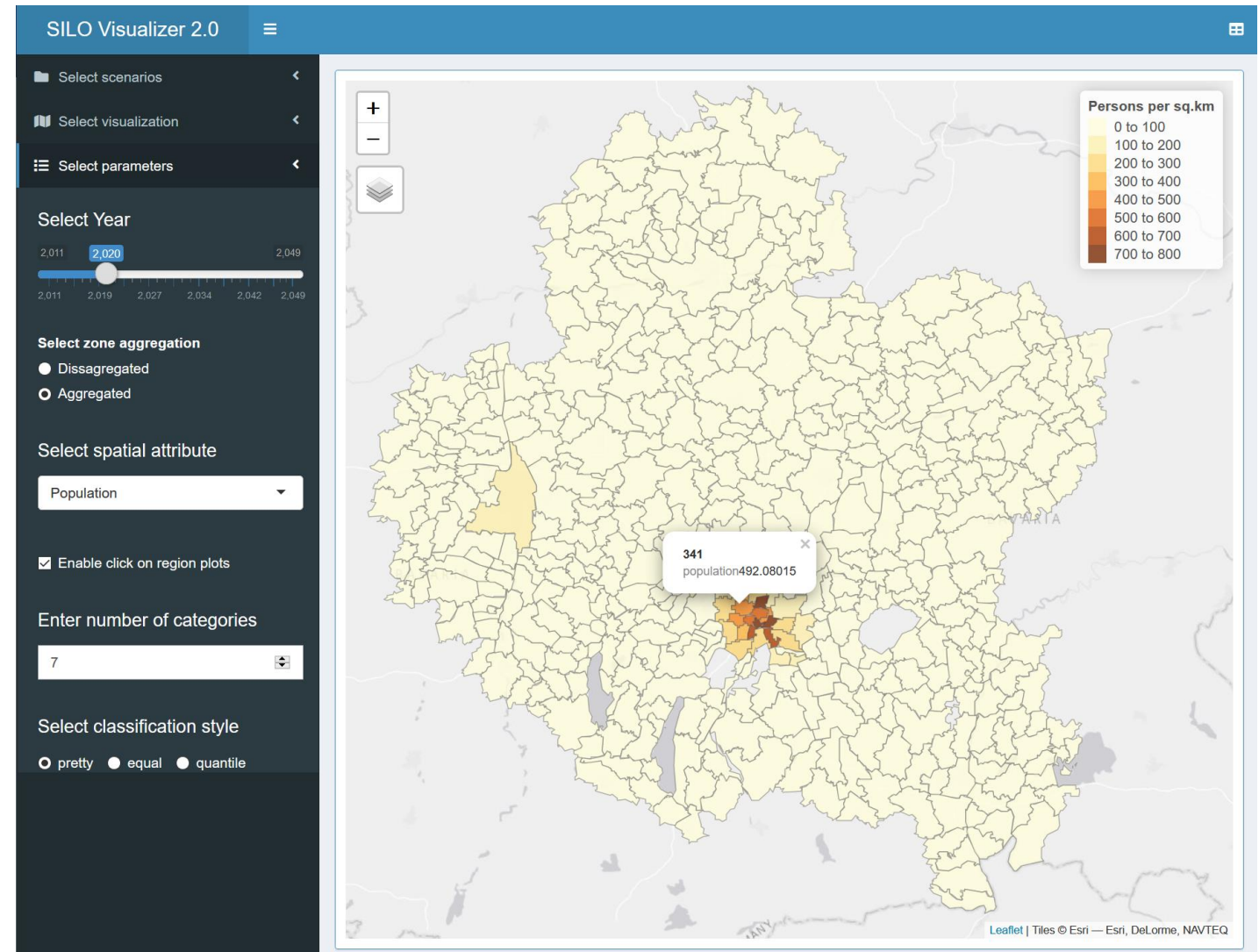
**Tutorial msm-visualizer**

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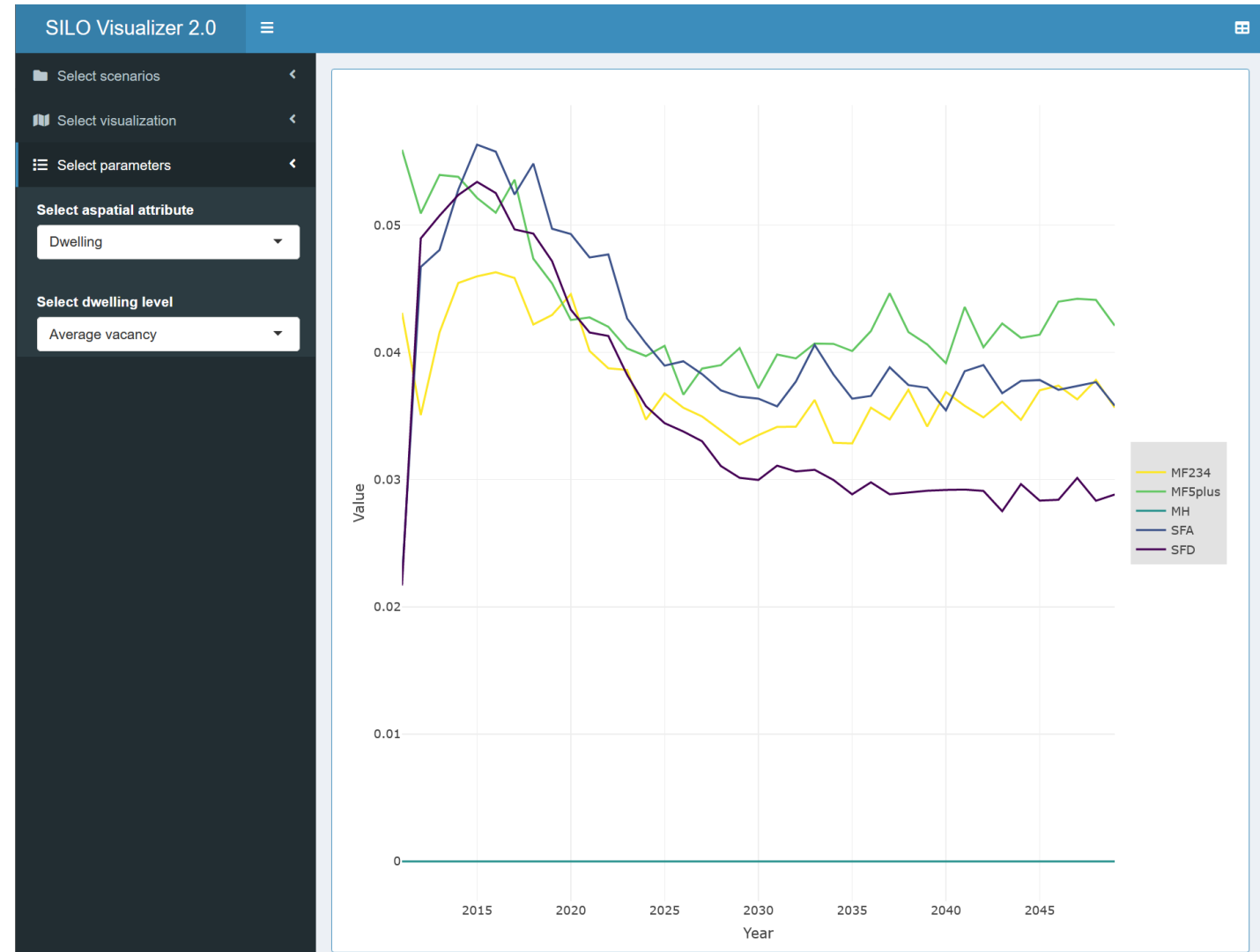
# Outline

- What is the visualizer
- Technical requirements and updates
- Download the visualizer
- Open the tool
- Use examples
- Load your own use-case



# What is the visualizer

- R, shiny and shiny dashboard based tool designed to visualize SILO model outputs.
- The tool is dynamic and adaptative, the implementation of new scenarios and use-cases does not require code modifications.
- The visualizer has spatial (maps) and aspatial (plots) outputs, both can be exported in .csv format for further analysis.



# Technical requirements

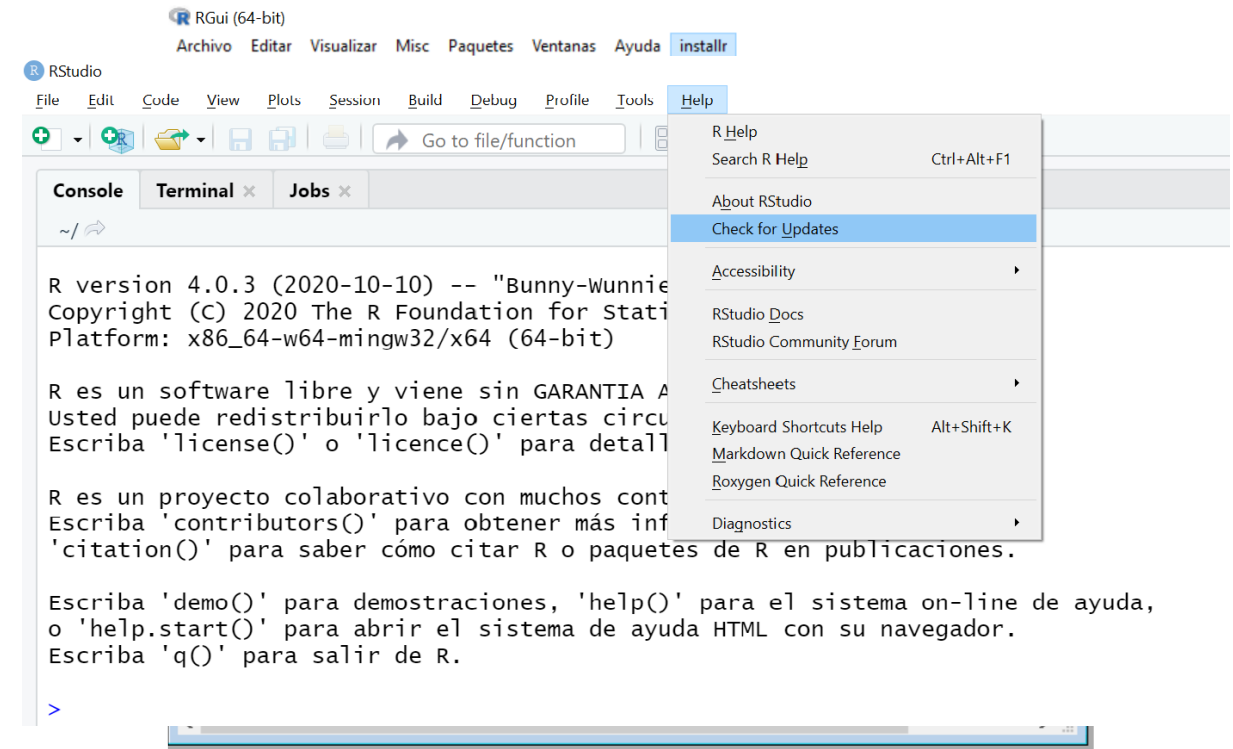
- R version 3.6.1. ( to install and run all the required packages).
- R studio Version 1.3.1093

## How to update R?

1. Open “R” and run the command:  
`install.packages("installr")`
2. Packages -> load package  
Select the new package: installr
3. Select: installr -> Update R

## How to update R studio?

1. Help ->Check for updates



# Download the visualizer

The repository can be found in GitHub:

<https://github.com/msmobility/msm-visualizer>

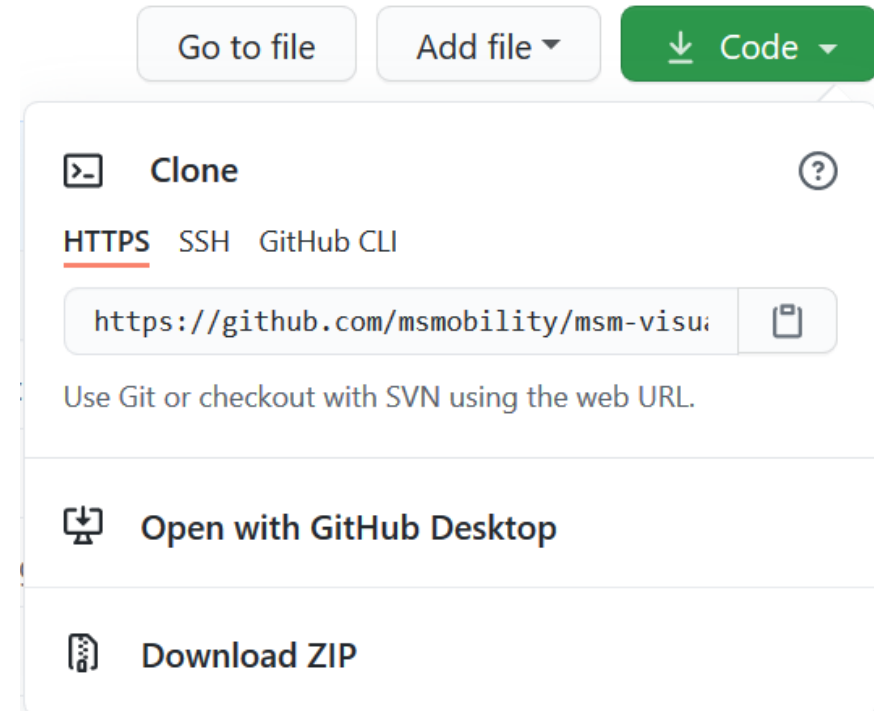
There are two ways to download the visualizer:

## Way 1: Download zip file and unzip data

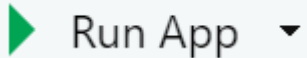
- Simplest way, does not require GIT, but not complete access to the repo history.

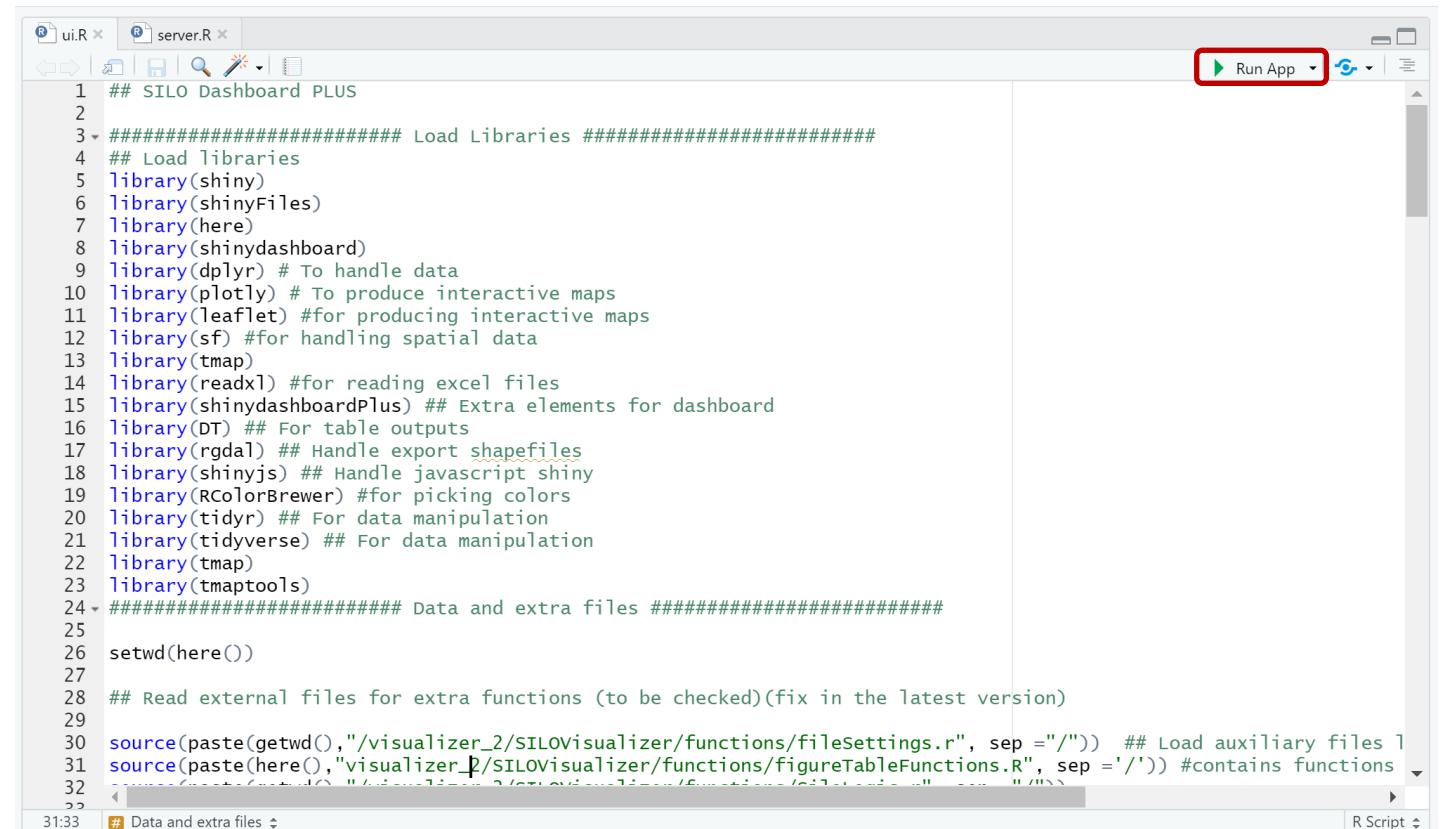
## Way 2: GIT clone

- It will include all the repo history, and enable the use of the GIT commands, you can also commit and create pull requests.



# Open the tool

- Open “path/msm-visualizer.Rproj”
- Open “path/visualizer\_2/ui.r”
- Update packages if needed
- Click on 
- Check and test the examples



```

1  ## SILO Dashboard PLUS
2
3  ##### Load Libraries #####
4  ## Load libraries
5  library(shiny)
6  library(shinyFiles)
7  library(here)
8  library(shinydashboard)
9  library(dplyr) # To handle data
10 library(plotly) # To produce interactive maps
11 library(leaflet) #for producing interactive maps
12 library(sf) #for handling spatial data
13 library(tmap)
14 library(readxl) #for reading excel files
15 library(shinydashboardPlus) ## Extra elements for dashboard
16 library(DT) ## For table outputs
17 library(rgdal) ## Handle export shapefiles
18 library(shinyjs) ## Handle javascript shiny
19 library(RColorBrewer) #for picking colors
20 library(tidyr) ## For data manipulation
21 library(tidyverse) ## For data manipulation
22 library(tmap)
23 library(tmtools)
24 ##### Data and extra files #####
25
26 setwd(here())
27
28 ## Read external files for extra functions (to be checked)(fix in the latest version)
29
30 source(paste(getwd(),"/visualizer_2/SILOvisualizer/functions/fileSettings.r", sep ="/")) ## Load auxiliary files 1
31 source(paste(here(),"visualizer_2/SILOvisualizer/functions/figureTableFunctions.R", sep ='/')) #contains functions
32
33

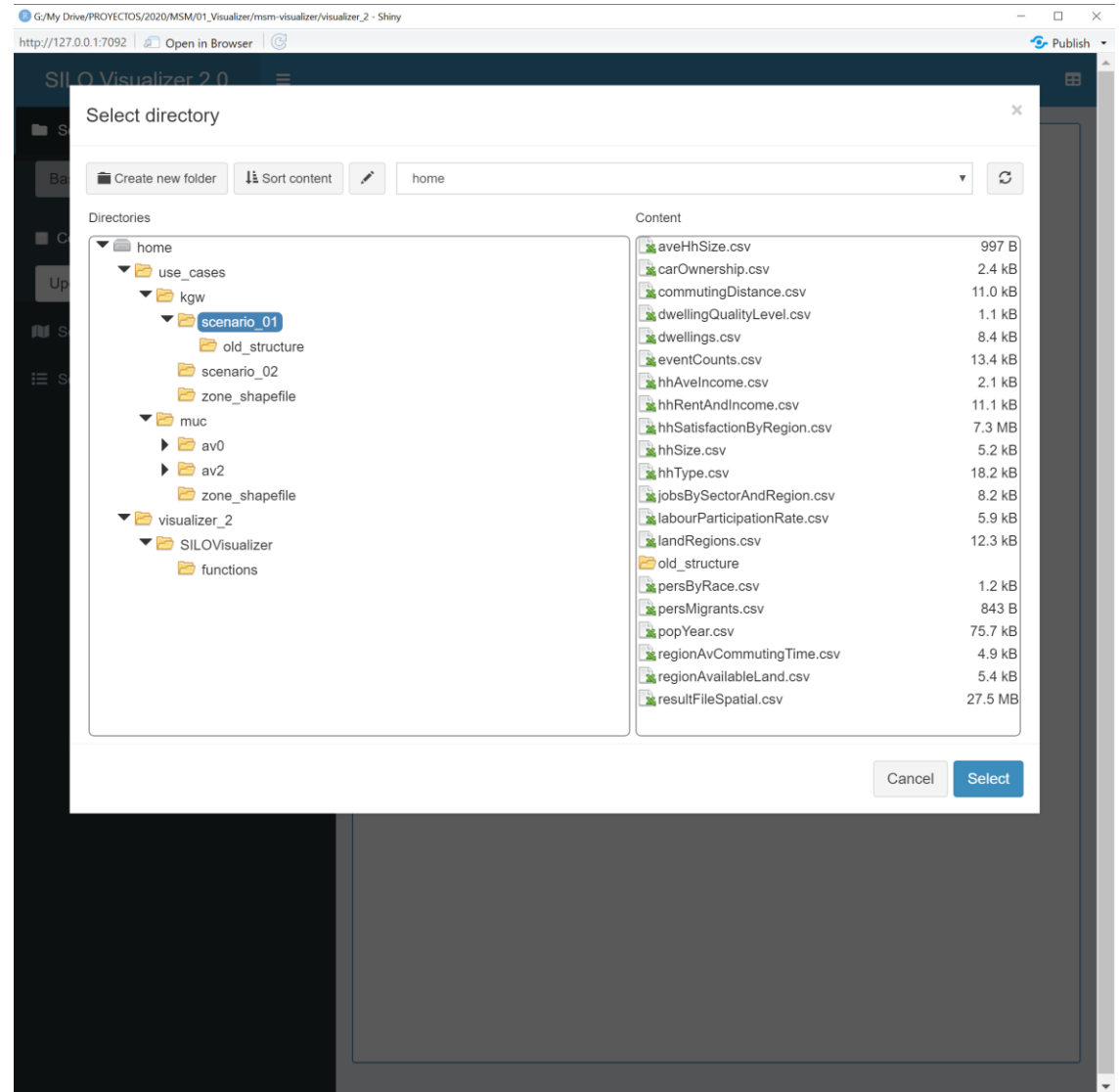
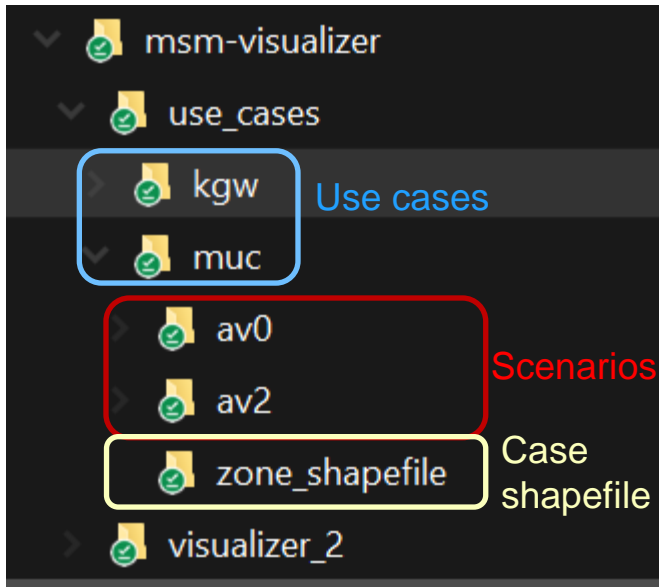
```

# Use the examples

The example

Data structure:

Use\_cases/case/scenario



# Load your own use-case

You can load your own study cases to the visualizer, just follow the next steps:

1. Create a new study case folder (recommended, only 3 letters)
2. In the new study case folder, create a new folder called “**zone\_shapefile**” and save your shapefile as “**zone\_system.shp**”(check the examples to define columns, names and data types.
3. Create a new folder for each scenario and paste the results, check the examples to verify the names and data structure.

## Zone\_shapefile main columns:

zone\_system — Features Total: 4953, Filtered: 4953, Selected: 0

	shp_id	shp_muni	shp_area	Area (m2)
1	3583	363	160000.000000...	

Id disaggregated zones      Id aggregated zones

## Scenario folder

(check the code execution after pressing “update” it will show the found and missing .csv files.)

```
[1] "G:/My Drive/PROYECTOS/2020/MSM/01_visualizer/msm-visualizer/use_cases/kgw/scenario_02/hhAveIncome.csv"
[1] "Warning , G:/My Drive/PROYECTOS/2020/MSM/01_visualizer/msm-visualizer/use_cases/kgw/scenario_02/hhRentAndIncome.csv does not exist in this scenario, dependent plots will be hidden"
[1] "G:/My Drive/PROYECTOS/2020/MSM/01_visualizer/msm-visualizer/use_cases/kgw/scenario_02/hhSize.csv"
[1] "G:/My Drive/PROYECTOS/2020/MSM/01_visualizer/msm-visualizer/use_cases/kgw/scenario_02/hhType.csv"
```

# Questions?

If you have questions about the visualizer, or want to know more to expand the functionalities, contact me to my e-mail:

[Rafael.Nieto@tum.de](mailto:Rafael.Nieto@tum.de)

Or just write to me in Slack.

**Many thanks!**