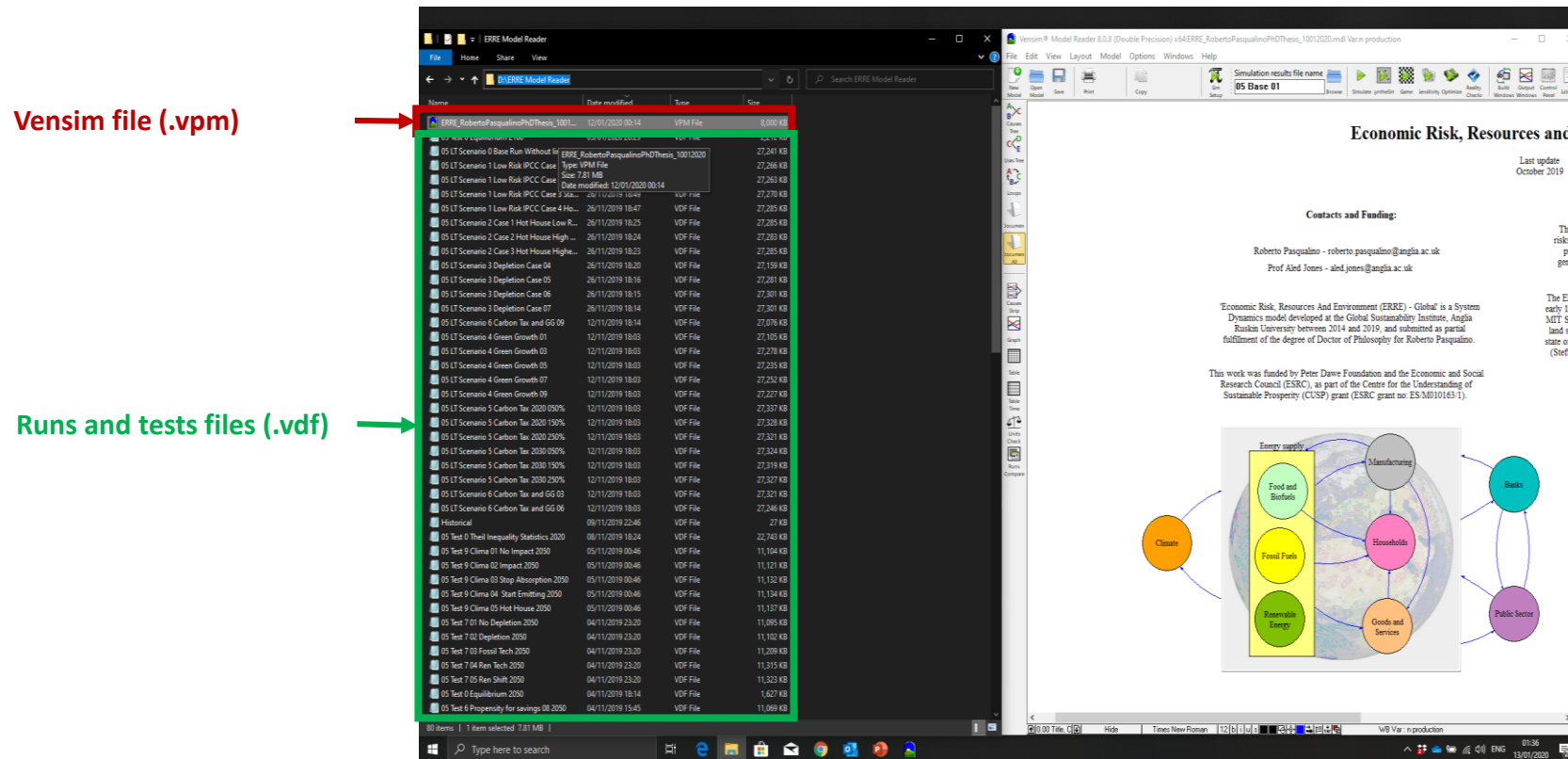


ERRE Simulation Guide

- ERRE model folder
- The first screen and panels
- 1. Navigate the model (sub-dimensions)
- 2. Control panel and Load desired runs
- 3. Navigate the model (variables)
- 4. Use of Run Compare if useful
- 5. Run scenarios

ERRE model folder



- The folder contains all runs and the Vensim model as a stand alone application
- The runs can be visualized from the Vensim only, and must be saved in the same folder of the model to allow the model to read them
- All runs and tests you find in here are all those presented in the thesis

First screen and Panels

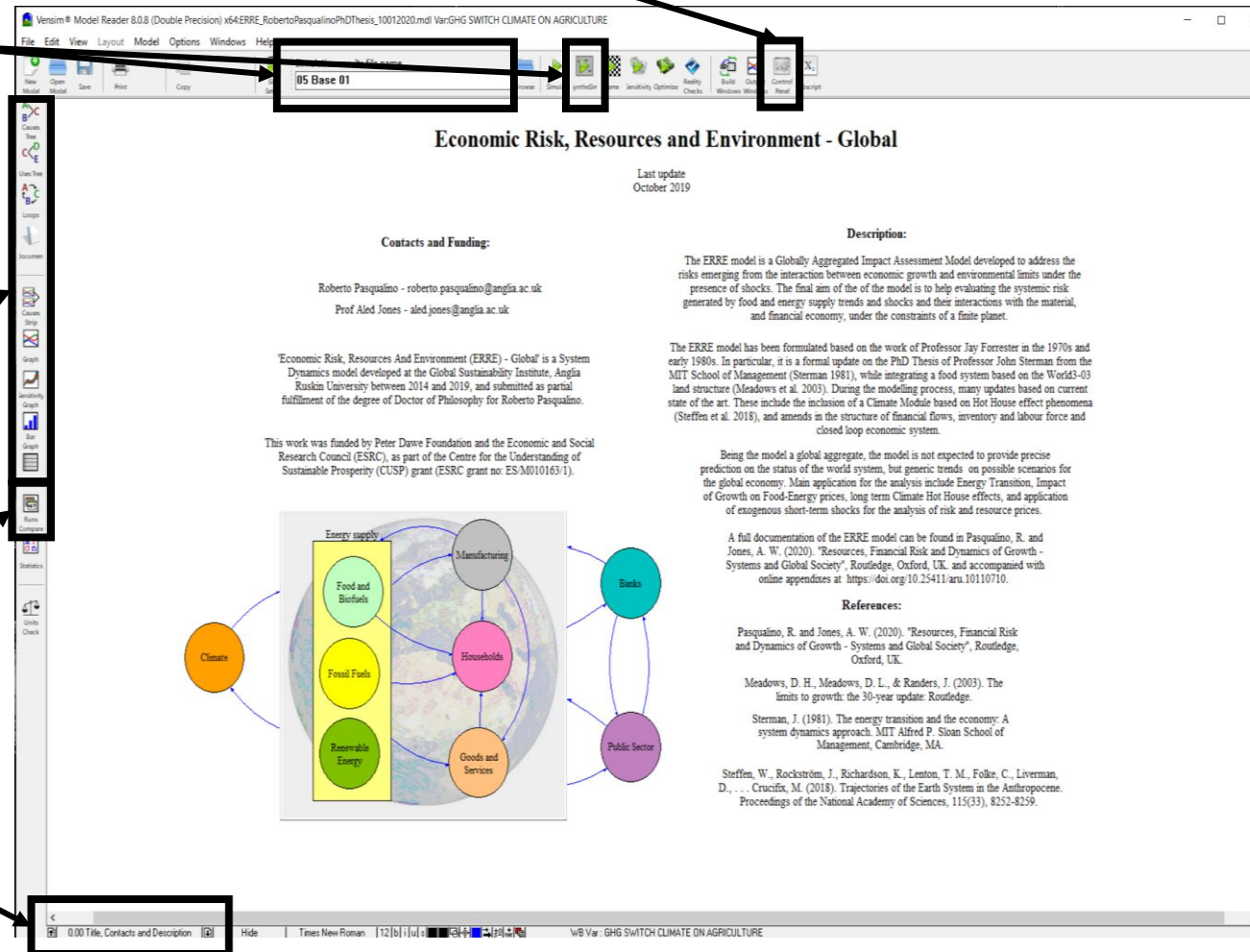
5. Create scenarios: Run the model and create the output (named "05 Base 01.vdf"). The run is created in the same folder where the model is saved

3. Variables visualization: Allows to select variables and return graphs and values

4. Run compare function: Allows to check the differences between two runs

1. Navigate the model: Allows to explore all the dimensions and dashboards of the model

2. Control panel: Allows to load and unload runs



- Vensim reader allows to Simulate the model, explore relationships and load scenarios (not to amend the model)
- The panels 1,2, 3 are those you need to load scenarios and navigate the effects in the model
- Panels 4,5 can help you to automatically check differences between loaded scenarios, and run some scenarios

1. Navigate the model (sub dimensions)

Select
'2.01 LT Scen1 – Climate Hot House Effect'

Scenarios and tests used in the book

All the equations of the ERRE model, divided sector by sector

Scroll down

The screenshot shows the Vensim Model Reader interface. On the left, the 'SCENARIOS' list is visible, with '2.01 LT Scen1 – Climate Hot House Effect' selected. Below it, the 'TESTS' and 'QUALITY CHECKS' sections are also visible. The main window displays the model title 'Economic Risk, Resources and Environment - Global' and a description of the model. A diagram of the model structure is shown at the bottom, illustrating the flow of energy, food, and capital between different sectors.

- The subdimensions of the model can be explored clicking on the Navigation button on the bottom-left corner
- The ones at the top are a series of Dashboards used to present the thesis
- All the rest is the model, divided sector by sector
- For example you can select the Dashboard for Long Term Scenario 1

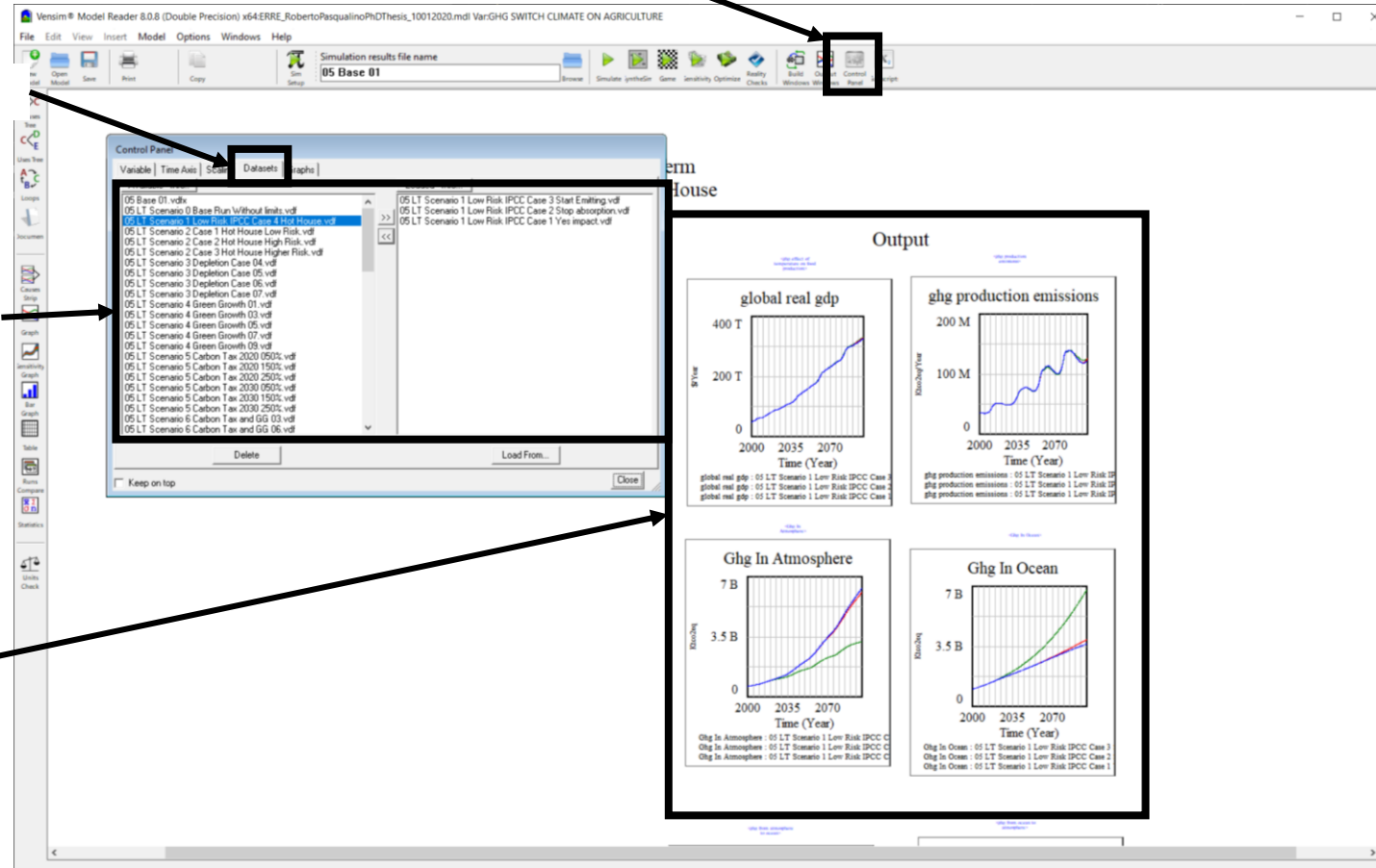
2. Load scenarios in the Control Panel

Control panel

Select Dataset Menu

1. Double click on the desired scenarios to load/unload them

2. Data of selected scenarios will appear in the charts

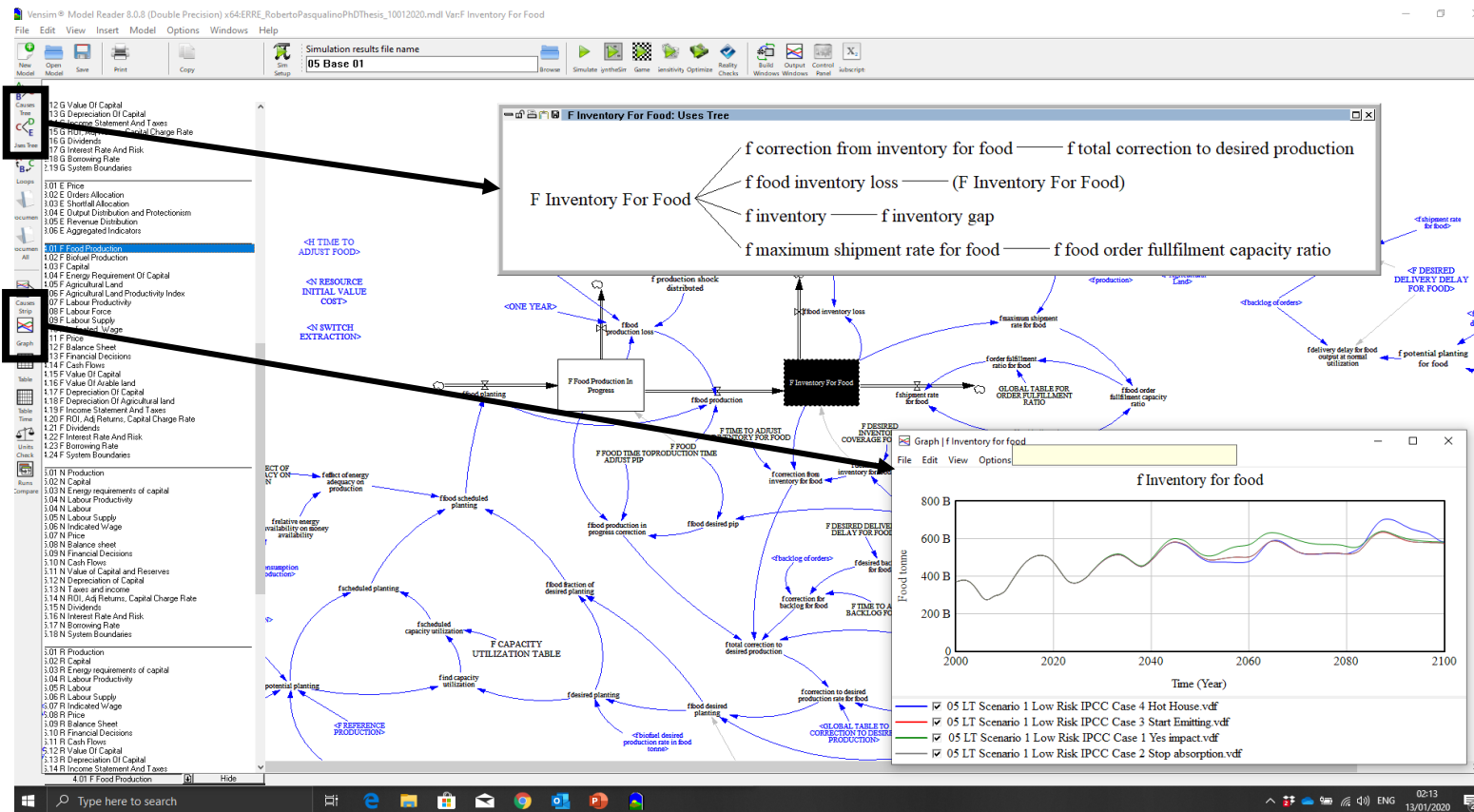


- This screen presents a lists of empty charts.
- It requires to load runs to see them
- In order to do this:
 1. Click on the Control Panel
 2. Assure you select the Dataset Menu on the pop up window
 3. Load/Unload all scenarios you wish to see by double-clicking on them
- The resulting scenarios will automatically appear in the charts

3. Navigate the model Visualize variables

Causes
Uses Tree

Graph



- Once the runs are loaded, it is possible to look at any other variable and check how they look like
- For example, I select the variable **Food Inventory (subdimension 4.01 F Food Production)** and I visualize its values in the selected runs (**Graph**). Also I look at which other variables are impacted by it (**Causes use tree**)
- In order to do so:
 - Left click on the variable to select them
 - Left click on the left hand panel to pick the preferred feature
- Quick navigation feature:
 - After selecting a variable, it is possible to use **F3 button** on the keyboard to quickly move to all other dimension where the selected variable is used.

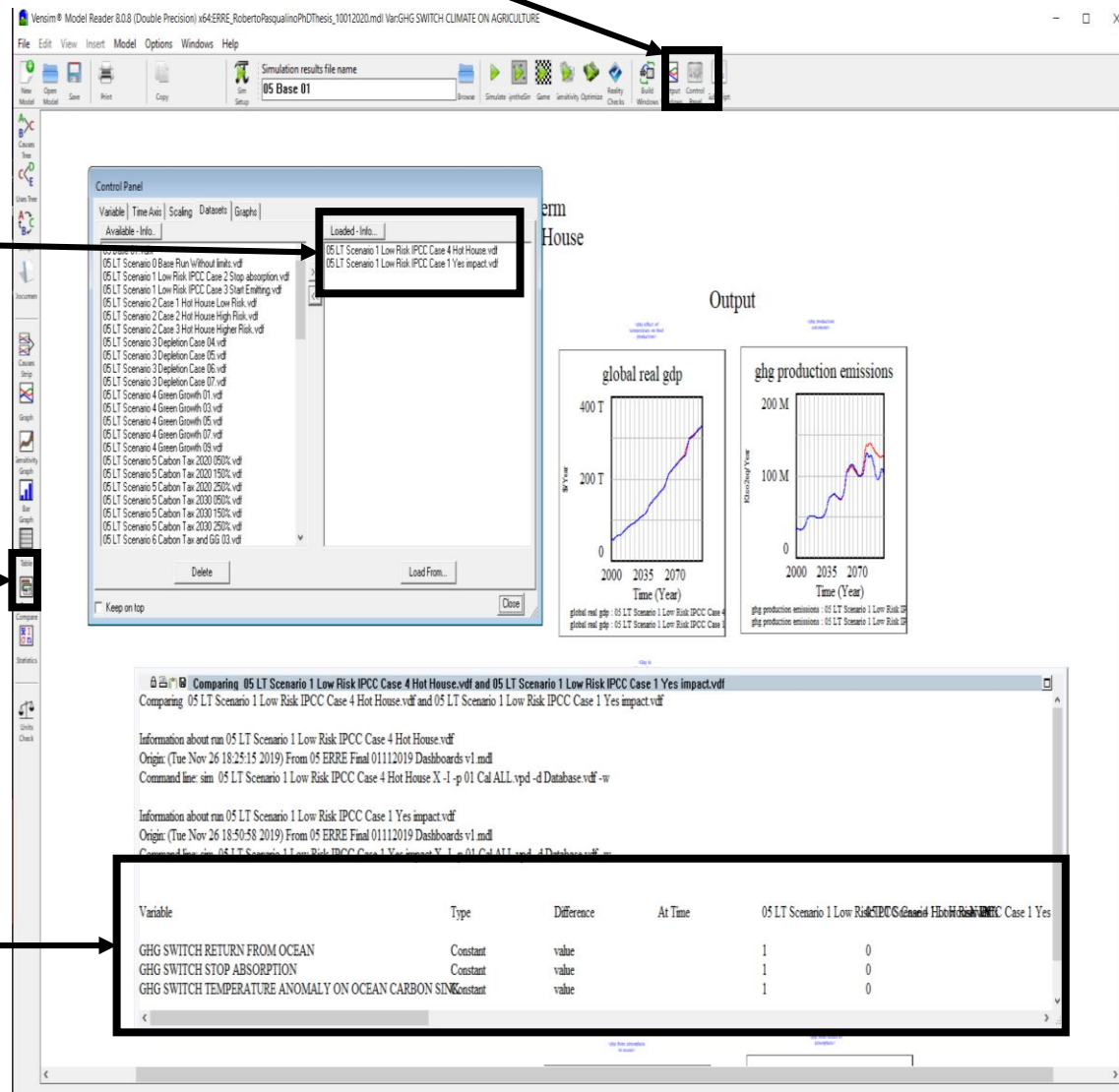
4. Run compare

1. Control panel

2. Bring two desired scenarios in the Control Panel

3. Click on Run compare

4. Shows all the differences between the two runs (the first scenario is on the left, and the second scenario is on the right)



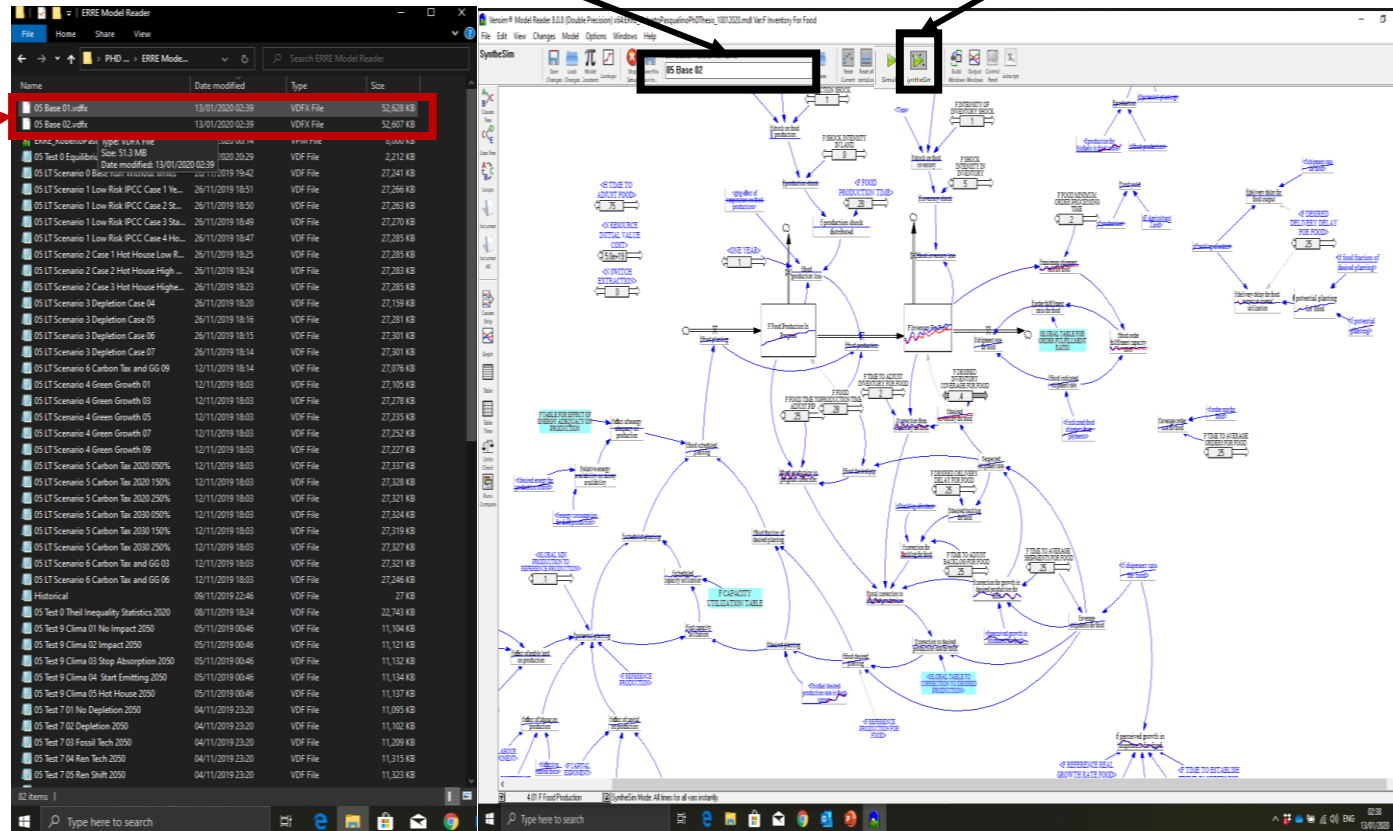
- A useful feature to check the differences between runs is to use the **Run compare button** on the left-hand panel
- It works by comparing the differences in INPUT parameters that produce two different scenarios, which can be selected in the control panel
- In order to use it:
 1. Click on control panel
 2. Select two desired runs
 3. Click on the Run compare button on the left

5. Run other scenarios

1. Run name: Change the name of the run to be created before running it

2. Synthesim: Run the model and allow to change parameters

When the Synthesim is stopped, the new runs will be saved alongside all other runs, and can be used in the same way



- You might be interested in running the model on your own.
- Every new run will start from the base configuration of the packaged model.
- To create a new run:
 1. Type the run name in the Text box
 2. Click on Synthesim
- Synthesim mode allows the model to be live. All parameters will become sliders, and all all non-linear relationships (light blue) will become editable.
- Every time a parameter is changed, a new run will be recorded.
- In order to save every new run during Synthesim mode, there is need to:
 1. Type a new run name
 2. Change a parameter
- When Synthesis is stopped, the new runs will be saved alongside all others