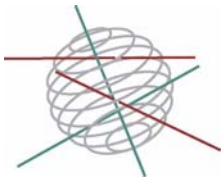
SCIENTIFIC SUPPORT PLAN FOR A SUSTAINABLE DEVELOPMENT POLICY
(SPSD II)



Part 1:
Sustainable production and consumption patterns

FINAL REPORT

GreenMod II: Dynamic Regional and Global Multi-Sectoral Modelling of the Belgian Economy for Impact, Scenario and Equity Analysis

Appendix 2: model interface

CP/51

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6.3. Overview of the model interface

6.3.1. Installing GreenMod II

When you are ready to install GreenMod II, follow these steps:

Step1: Insert GreenMod II CD into your CD-ROM drive. The **Install** program appears automatically after you insert the CD. Alternatively click on the Setup.exe file in the GreenMod II CD to install the program.

Step 2: Follow the on-screen instructions to complete the installation. In case the following massage appears during the installation process "The destination file is in-use" click **Ignore** button.

Step 3: Click on Finish to complete the installation.

6.3.2. Launching GreenMod II

Follow these steps to launch GreenMod II.

Step 1: Click on the **Start Menu**.

Step 2: Select **Programs**, then locate **GreenMod II**.

Step 3: Click on **GreenMod II** and the program opens.

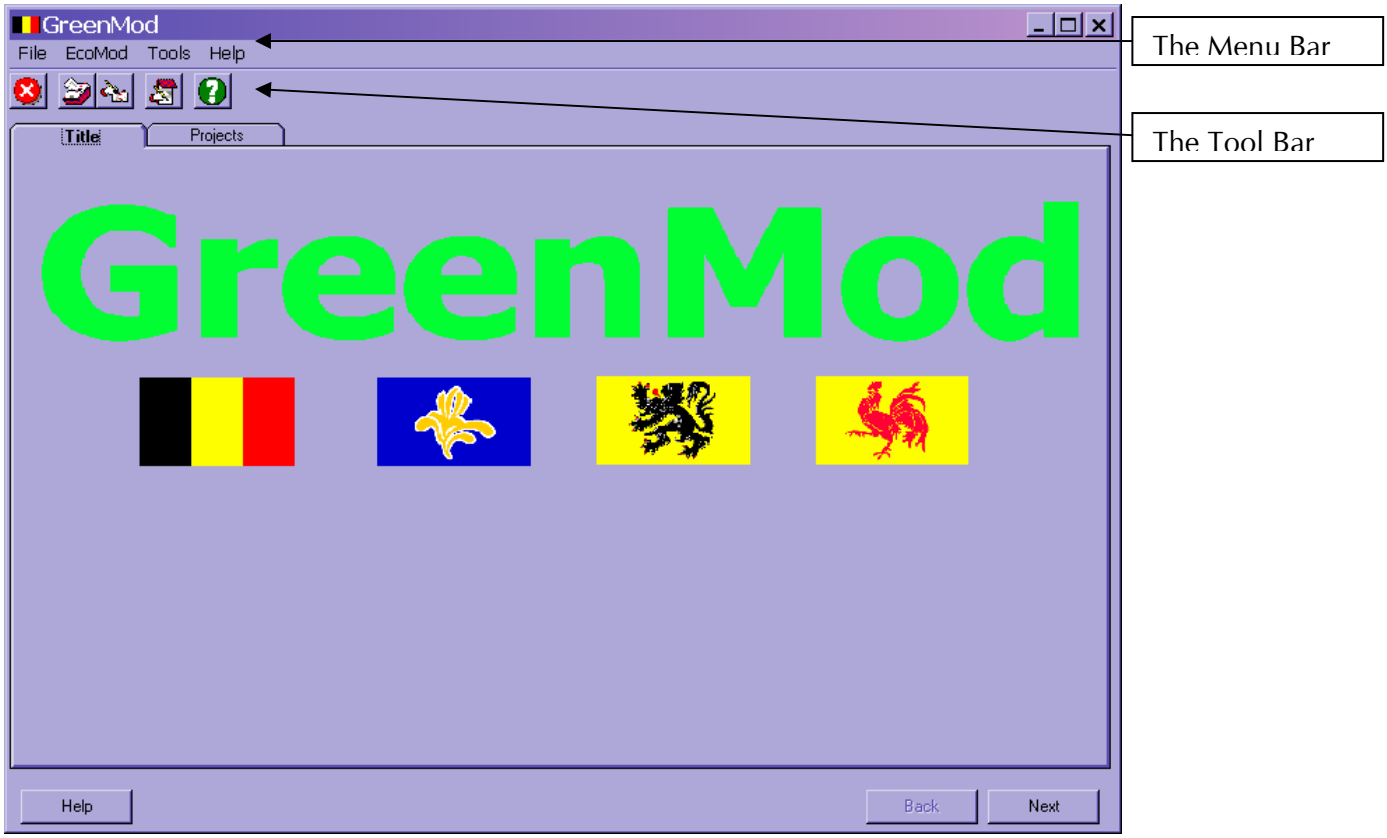
6.3.3. Exiting GreenMod II

When you are ready to exit from **GreenMod II**, you can select menu command **Exit** from the menu item **File** or just close the window.

6.3.4. Program overview

Main window

After you successfully launch **GreenMod II**, the GreenMod II **Main Window** appears. The Main window is shown below:



Main window.

Before you begin working with the program, you should familiarize yourself with the parts of this window, listed below. This manual will refer to these terms throughout. An explanation of each part follows:

- The Menu bar.
- The Tool bar.

The Menu Bar

The Menu Bar.

The **menu bar** is located across the top of the screen just below the title bar and contains four items: **File**, **EcoMod**, **Tools** and **Help**. Below, you will find a description of each of these menus and their corresponding commands.

File Menu

Click on **File** in the menu bar. It contains the following commands:

New project... - click on this command, if you want to create new project. The window Add new project will appear.

New scenario... - click on this command, if you want to create new scenario. The window Add new scenario will appear.

Select GAMS program – click on this command, if you want to select the GAMS version to be used. The list of all the GAMS versions installed on your computer will be shown and you will be able to choose one of them.

Exit – select this option to exit from GreenMod II.

EcoMod Menu

This menu item is to provide you with information about EcoMod Network.

Tools

This menu item is to provide optional specific tools

Help

This menu item is to provide help on the interface.

The Tool Bar

The Tool Bar.

The **tool bar** is located just below the menu bar and allows you quick access to certain functions. You can access a brief explanation of each button by letting the mouse pointer rest on it. Each button is defined below.

Button Function

 Click on this button to exit GreenMod II. This is the same as clicking on **Exit** item of the **File** Menu.

 Click on this button to start new project. This is the same as clicking on **New Project...** item of the **File** Menu.

 Click on this button to start new scenario. This is the same as clicking on **New Scenario...** item of the **File** Menu.

 Click on this button to select the GAMS version to be used. This is the same as clicking on **Select GAMS program** item of the **File** Menu.

 Click on this button to get help on the interface.

The other buttons.

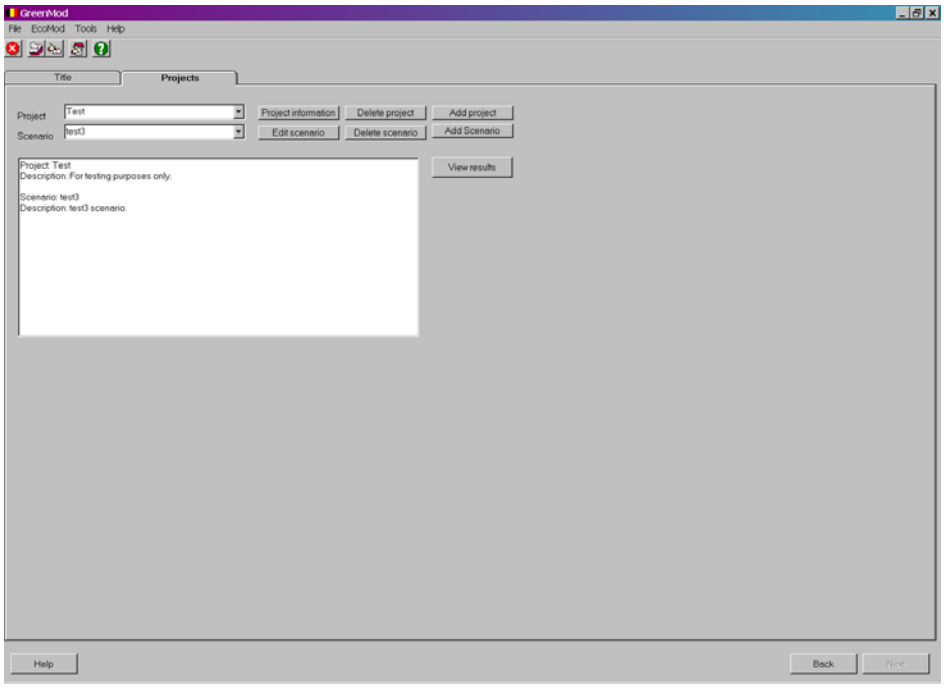
Button **Help**. The same as tool item  .

Button **Back**. It redirects you to the previous tab. When the tab Title is active, this button is not.

Button **Next**. It redirects you to the next tab. When the tab Projects is active, this button is not.

Creating new project/opening old project

After you start up the program activates the **Projects** tab as shown here

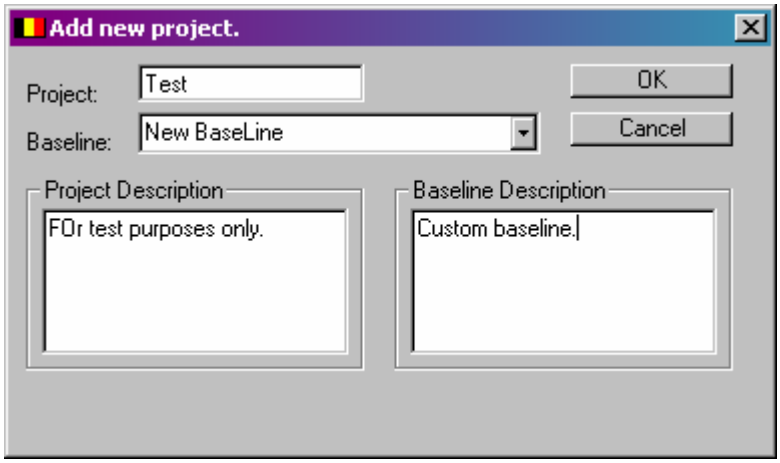


Projects tab

The **Project** tab allows you to access old projects, delete them and create new ones. Drop-down list **Project** allows you to choose from the list of the existing projects and information about the chosen one is displayed in the window below. After a certain project is chosen in the drop-down list, you can delete it using button **Delete project**.

*Note: button **Project information** is not working yet. It is under development.*

In order to create a new project click on the button **Add project**. In the field **Project** of the **Add new project** window write down a project name and in the field **Project description** any relevant information about a project. For each project user must decide if he or she wants to use a default baseline or to create a new one. The drop-down list **Baseline** allows you to choose between using the Default baseline for your project and creating you own Custom baseline (for more details see § III.1). Then fill in the field **Baseline Description** using relevant information about your baseline. After all fields are filled in click the **OK** button to create the project or the **Cancel** button to abort its creation.

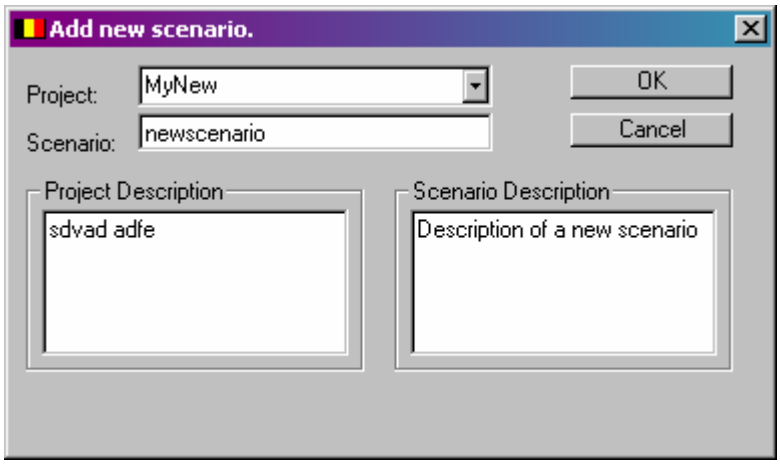


Add new project window

Creating new scenario/opening old scenario

An existing project can incorporate a range of different scenarios. In order to access the old project scenarios choose the right project name using drop-down list **Project** in the tab **Projects** and specify which scenario you would like to work with using drop-down list **Scenario**. After the scenario has been chosen it is possible to delete it using the button **Delete scenario**, edit the scenario using the button **Edit scenario** or view its simulation results using the button **View results**.

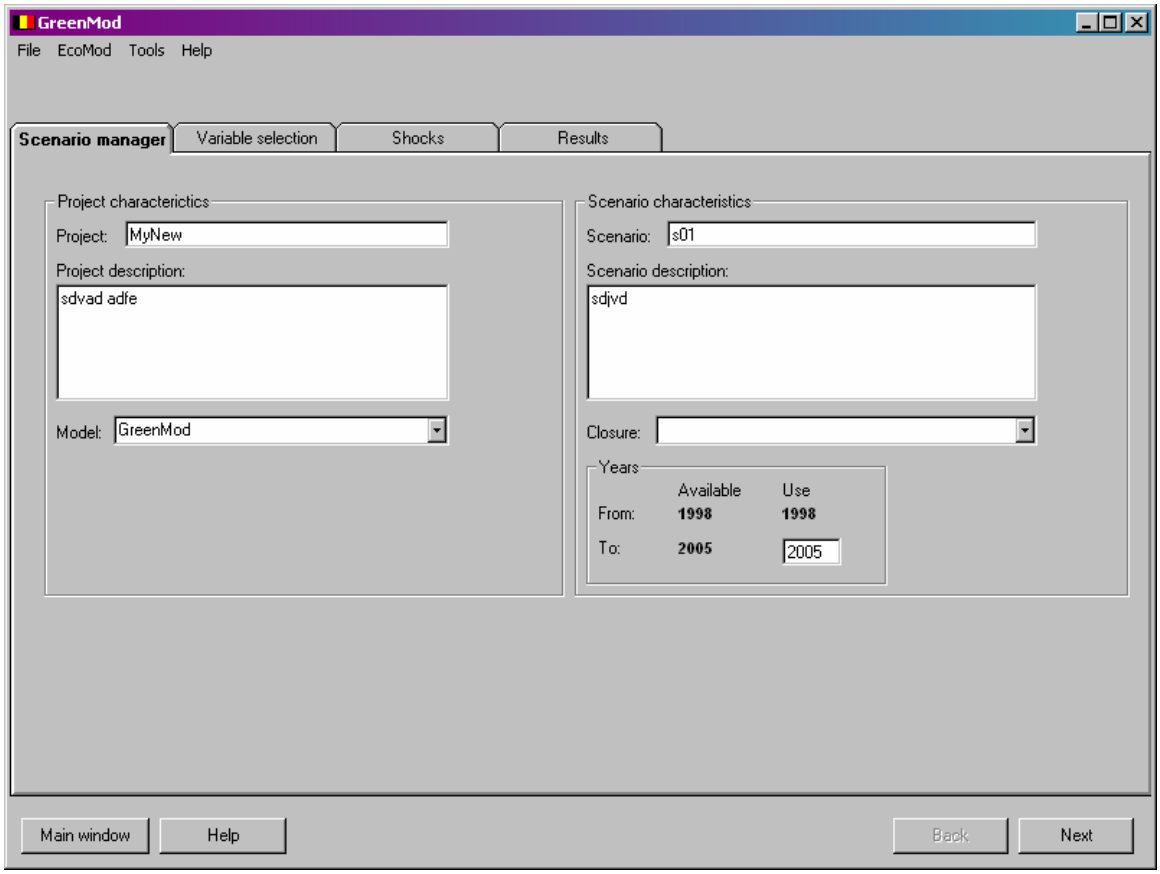
In the case when a new scenario should be created you can add it to the chosen existing project using the button **Add scenario**. After the button is clicked the **Add new scenario** window appears together with the name and description of the chosen project. In order to create a scenario you should fill in the **Scenario** and the **Scenario description** fields. After all fields are filled in click the **OK** button to create the scenario or the **Cancel** button to abort its creation.



Add new scenario window

Creating a shock file

After a new scenario is created or you chose to edit an old one, the program takes you to the **Scenario manager** tab.



Scenario manager tab

This tab allows you to choose the time horizon for your scenario using the corresponding textbox.

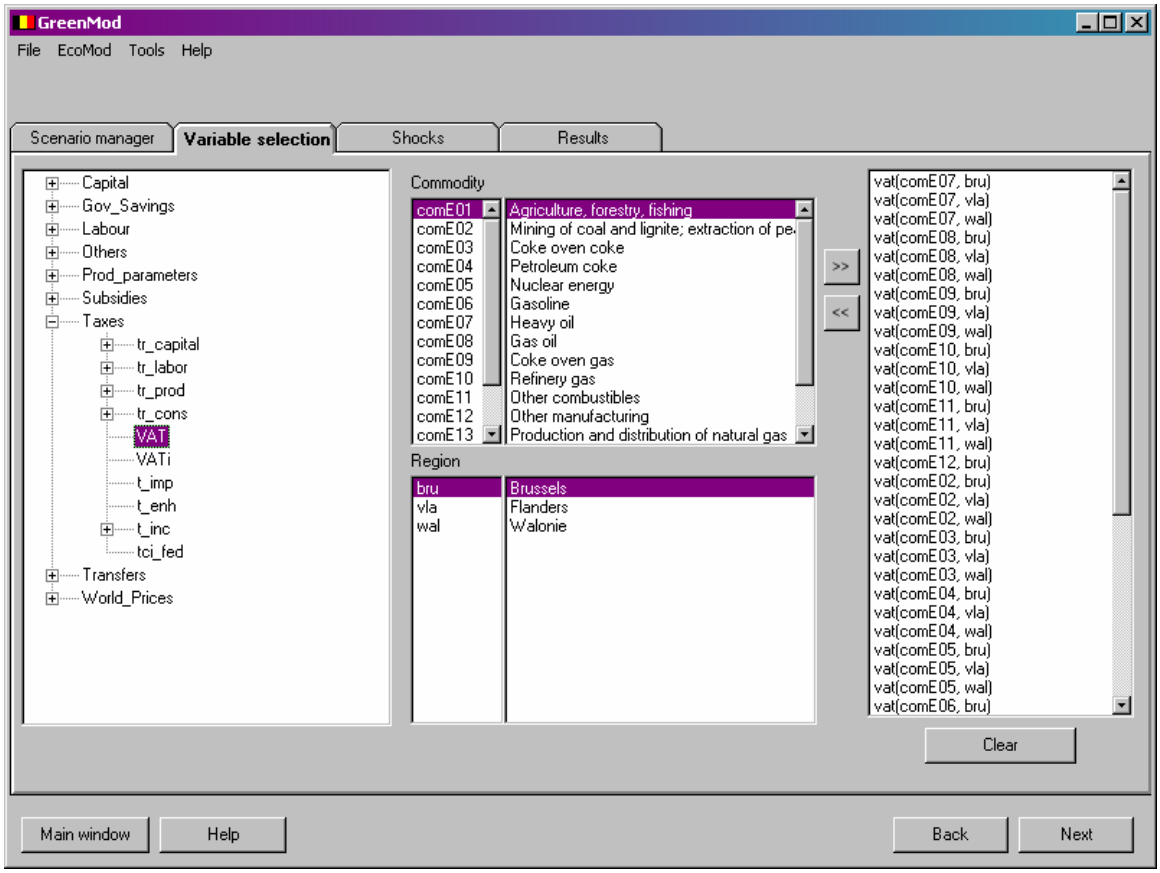
Note: the upper limit for the chosen time horizon is the year 2035 and by default any scenario starts from the year 1998.

After the right time horizon has been chosen click on the **Next** button or on the tab **Variable selection**. **Variable selection** tab allows you to select economic variables, which you would like to change in your scenario. The variables are chosen from the list provided in the left tab window and are grouped by categories. To choose a variable from the list you should click on its name. This opens a range of windows in the middle of the tab, which provide the sets of sectors, commodities or regions over which a variable is defined. The combination of these sets depends upon a variable type. For global variables (such as total governmental transfers) no sets are provided since they do not vary with sectors, commodities or regions.

In order to add a variable to the shock file you should select names of sectors, commodities or regions for which you would like it to be changed using the lists in the middle of the tab and click on the **> >** button. Respective variable will be moved to the right tab window together with the values of its sets. In order to remove a variable from the right tab window you should select it and click on the **< <** button. In the case you want to remove all selected variables from the right tab window use the **Clear** button at the bottom of it.

Note: in order to select a variable for all sectors, commodities and regions it is defined over, you should select it in the left tab window and click directly on the **> >** *button.*

*Note: to select a range of sets elements (sectors, commodities or regions) use **TAB** or **Ctrl** buttons.*

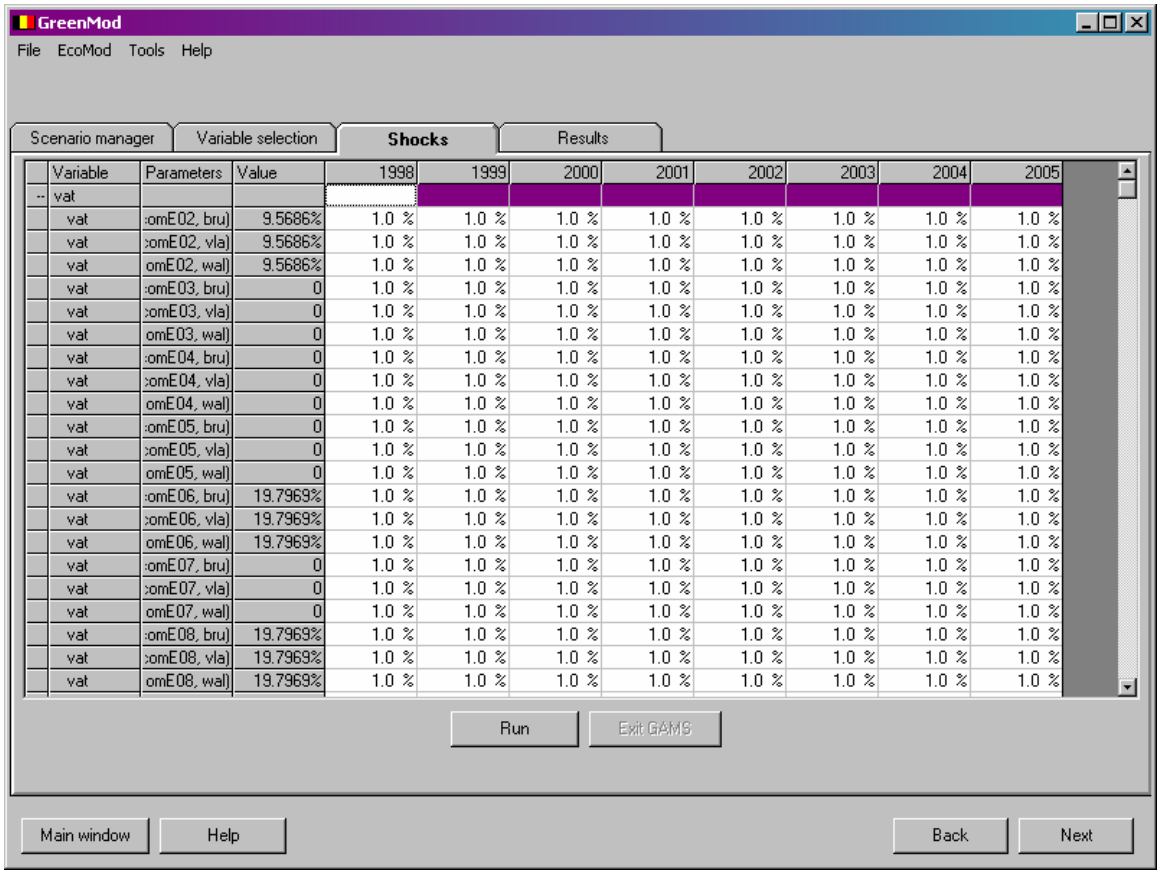


Variable selection tab

After all shock variables are chosen and placed into the right window of the **Variable selection** tab you either click on the **Next** button or on the tab **Shocks**.

The tab **Shocks** allows you to specify how you would like to change the shock variables. When you get to the tab **Shocks** you find all the names of the variables you have chosen at the previous step under the field **Variables**. By clicking on the "**+**" sing to the left of the variable name you open its sets (sectors, commodities and regions) and can specify your shocks differently for different elements of these sets. Under the field **Parameters** you see sets elements a variable is defined over and under the field **Value** you see variable initial value.

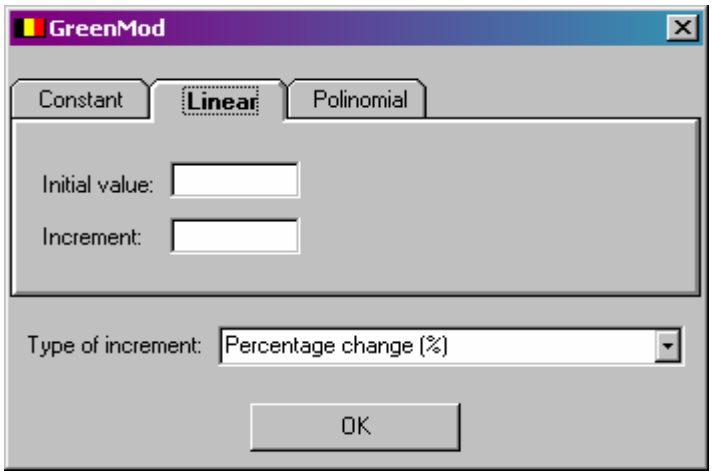
Shocks can be specified either in percent (%) or in value (fixed amount = fa). All shocks are given with respect to the initial value of a variable. In order to specify your shock in percent you should type shock value followed by **%** sign. In order to give a shock in value you should type **fa** after your shock level.



Variable	Parameters	Value	1998	1999	2000	2001	2002	2003	2004	2005
vat										
vat	omE02, bru)	9.5686%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE02, vla)	9.5686%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE02, wal)	9.5686%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE03, bru)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE03, vla)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE03, wal)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE04, bru)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE04, vla)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE04, wal)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE05, bru)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE05, vla)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE05, wal)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE06, bru)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE06, vla)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE06, wal)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE07, bru)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE07, vla)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE07, wal)	0	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE08, bru)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE08, vla)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %
vat	omE08, wal)	19.7969%	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %	1.0 %

Shocks tab

In order to assign the same shock to a range of cells, select them and right click on the mouse. In the appearing menu choose **Insert**. The following window appears:

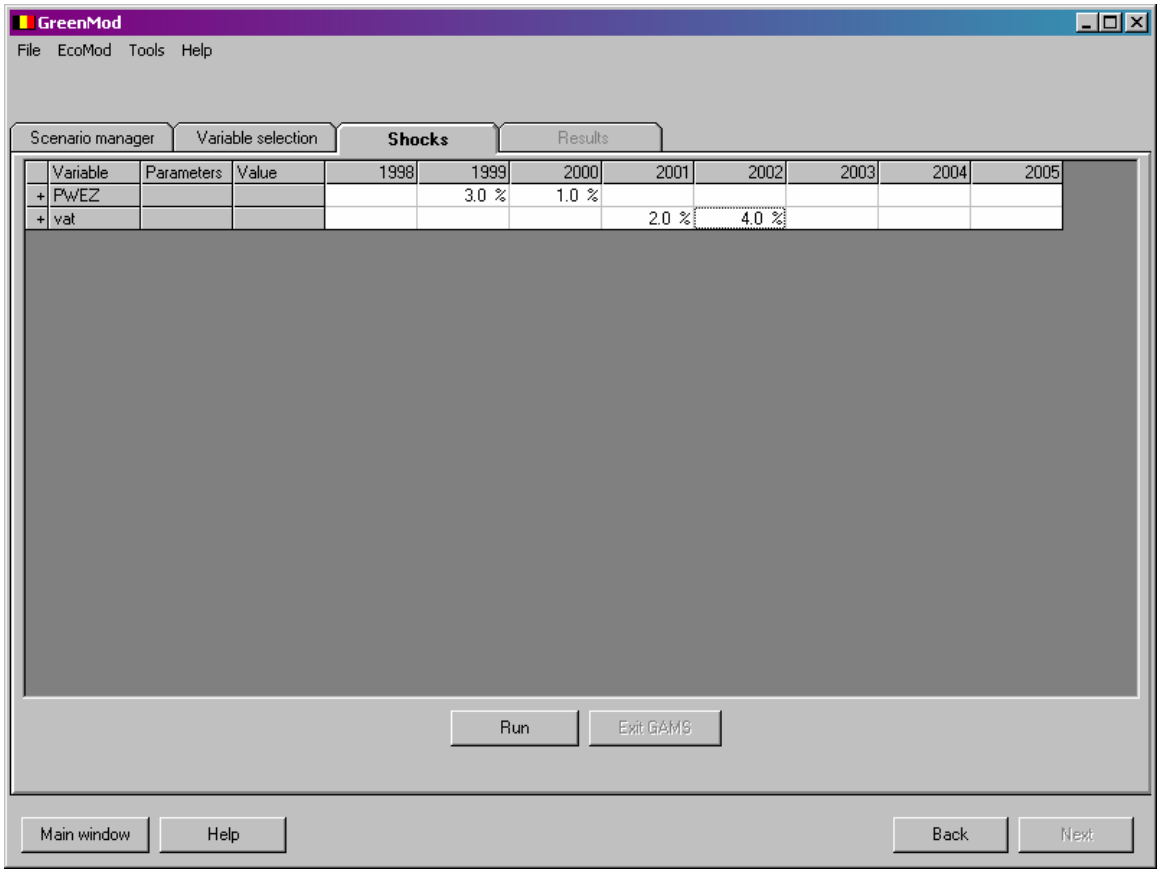


Shocks increment window

The window allows you to set a value for the shock using the field **Increment** and to choose its type: percentage change or fixed amount using the field **Type of incerment**. The chosen shock is assigned to all selected cells.

*Note: the field **Functional form** is not active, it is under development.*

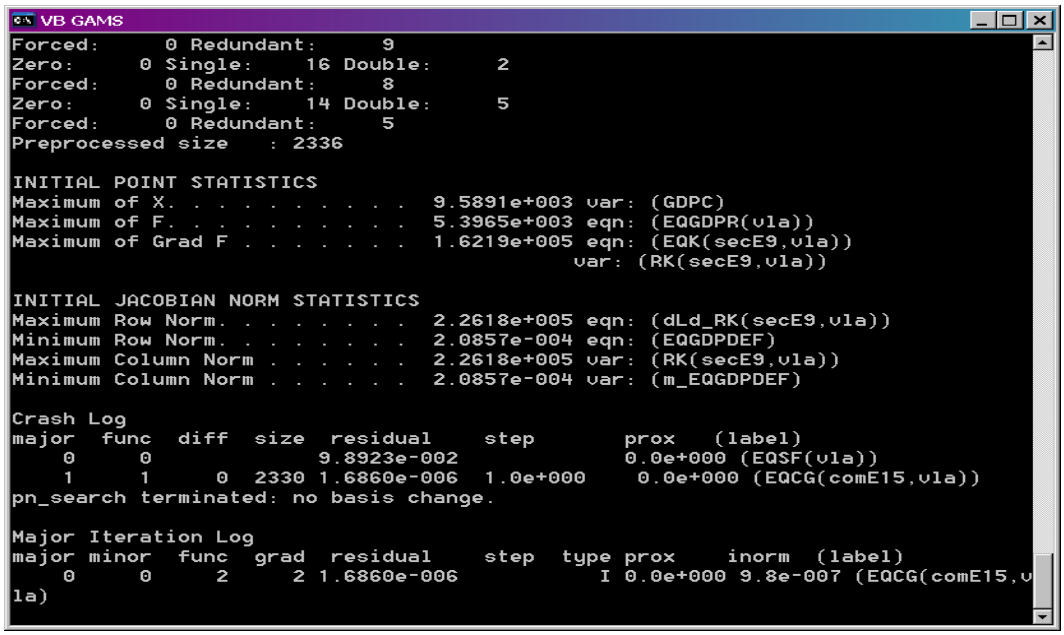
In order to specify the same shock over all sets of a variable, you should leave the variable closed and modify the row associated directly with the variable name as shown below:



Shocks tab

Running a simulation

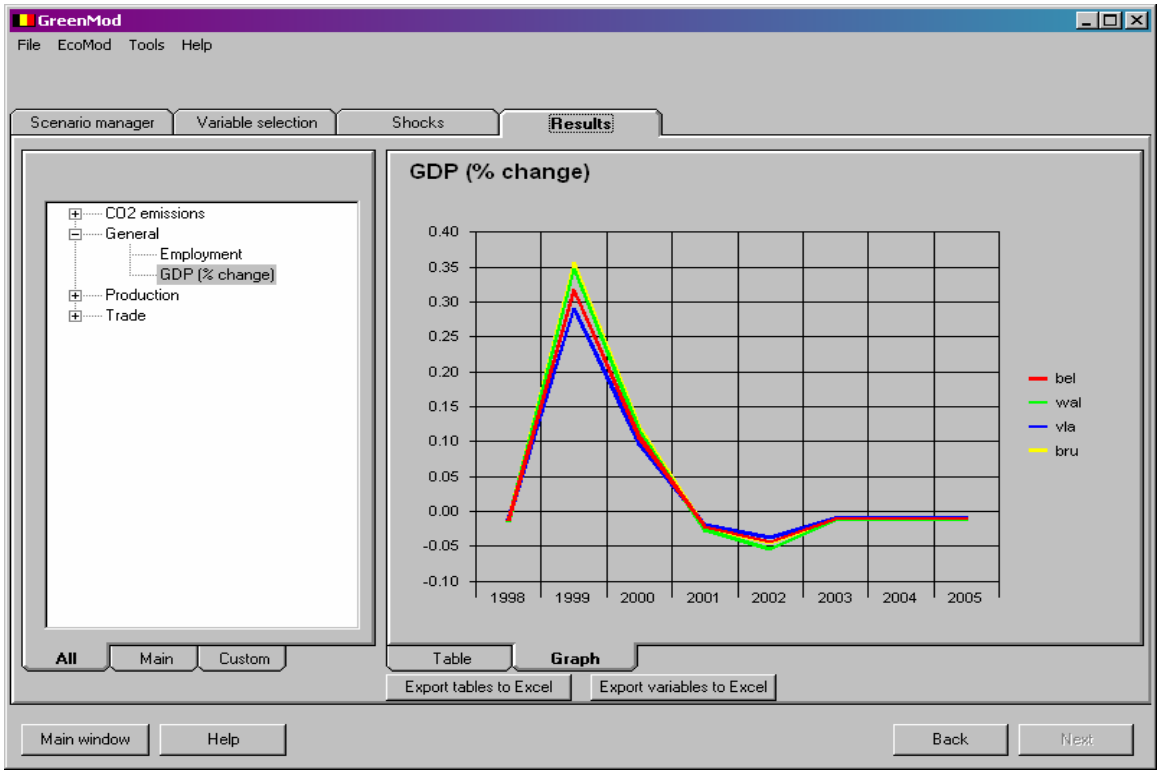
After all shocks have been specified you can start simulations with the model by clicking on **Run** button. This will start GAMS calculations in the DOS window. If during the simulations you would like to stop GAMS use the button **Exit GAMS** on the **Shocks** tab or just close the **DOS** window.



DOS window

Viewing results

After the simulations are finalised the **DOS** window closes and the program takes you to **Results** tab.

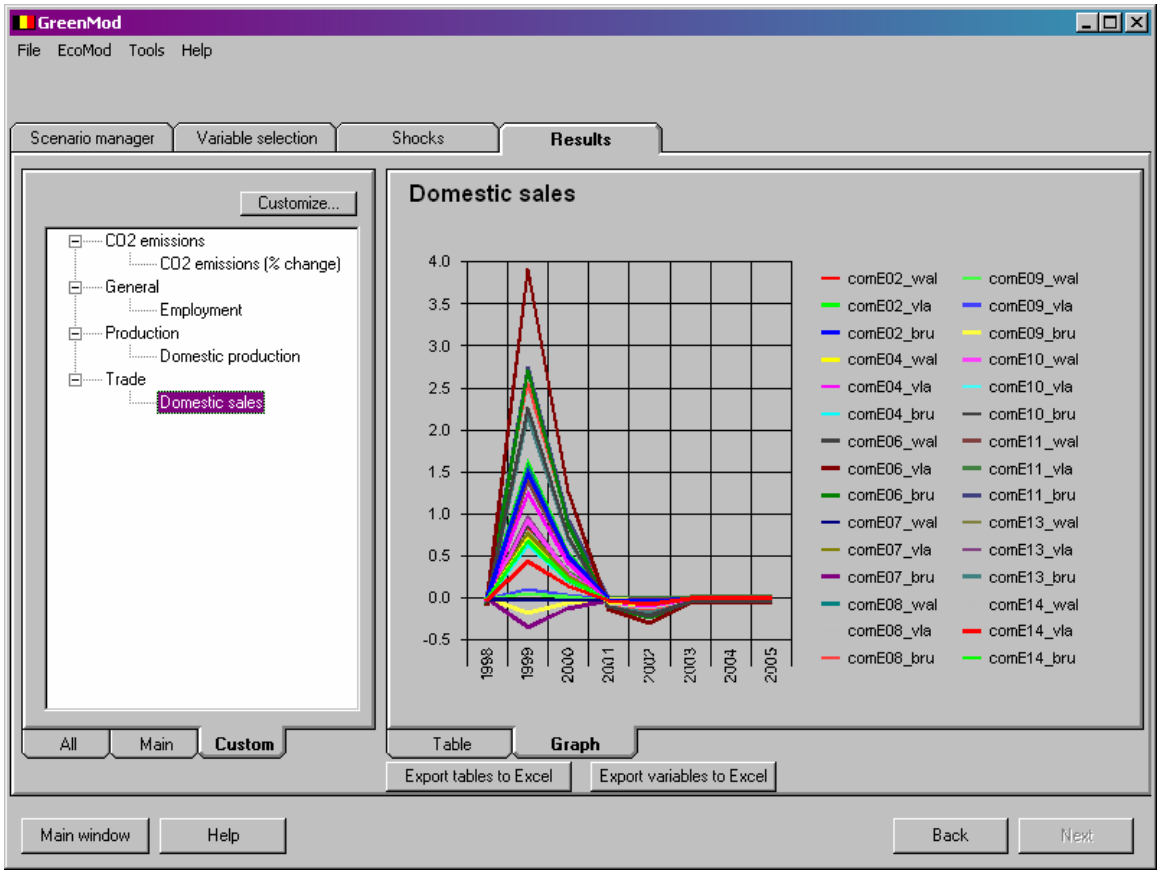


Results tab

The **Results** tab allows you to access simulation results in the form of tables and graphs. The results are grouped according to their categories presented at the left tab window. By selecting specific variable of interest from each category you can view its values in the form of table or a

graph at the right tab window. In order to switch between the two presentation forms use **Table** and **Graph** tabs.

Left widow of the **Results** tab contains **All**, **Main** and **Custom** tabs. Tab **All** allows you to access the full range of model results whereas tab **Main** contains only most important variables. You can also create you own list of most used model results by using tab **Custom**.

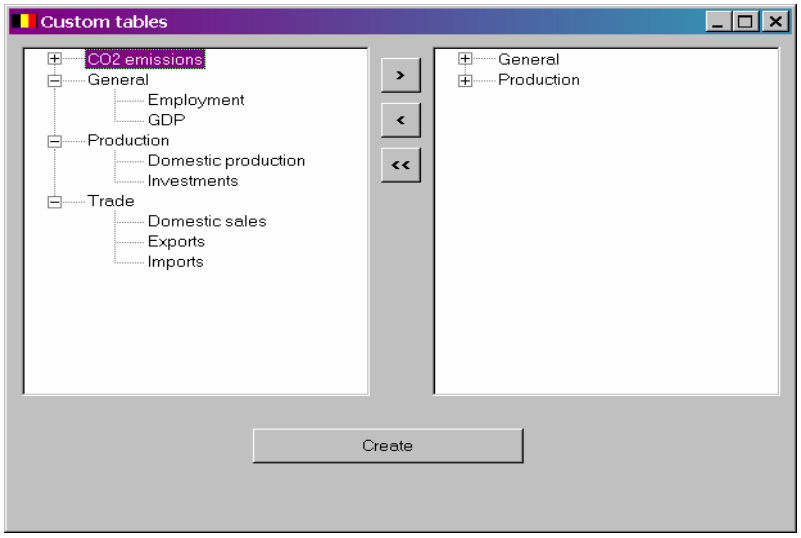


Custom tab of the **Results** tab

In order to create or change your own custom list of model results click on the button **Customize**. It opens **Custom tables** window which is quite similar to **Variables** tab in its structure and allows you to modify your custom tables by adding one from the list in the left side of the window using **>** button or remove already chosen table from the custom tables using **<** button. Button **<<** is used to remove all tables from the custom tables list.

*Note: to select a range of tables use **TAB** or **Ctrl** buttons.*

After the selection is completed click on the **Create** button to modify custom tables.

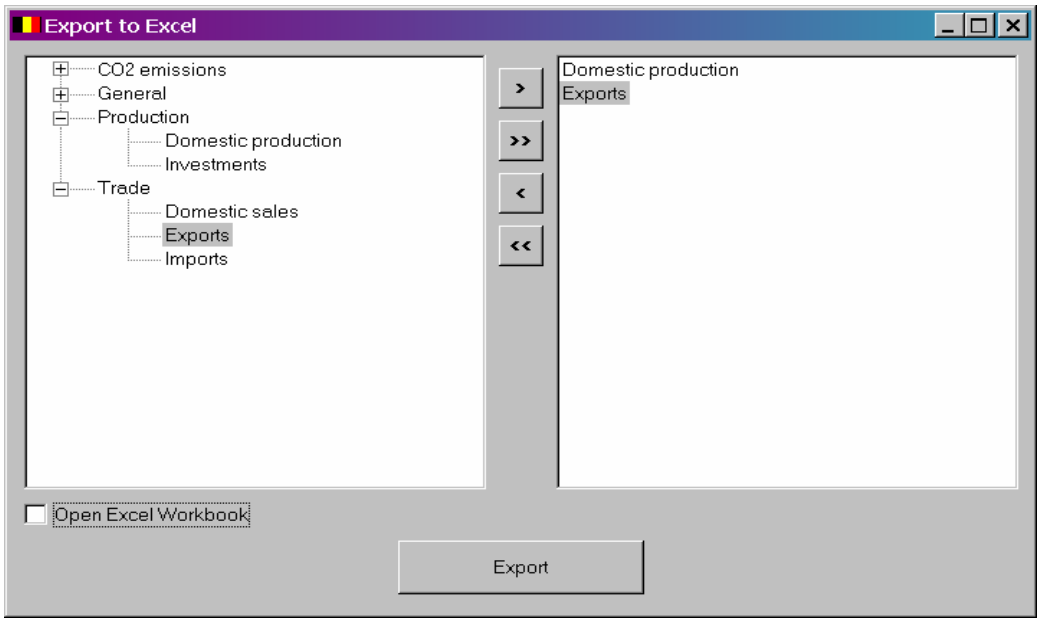


Custom tables window

Exporting results to Excel

The program gives you the possibility to export both tables presented in **Results** tab and all other model results to Excel.

In order to export tables to Excel click on the **Export tables to Excel** button of the **Results** tab. There appears **Export to Excel** window.

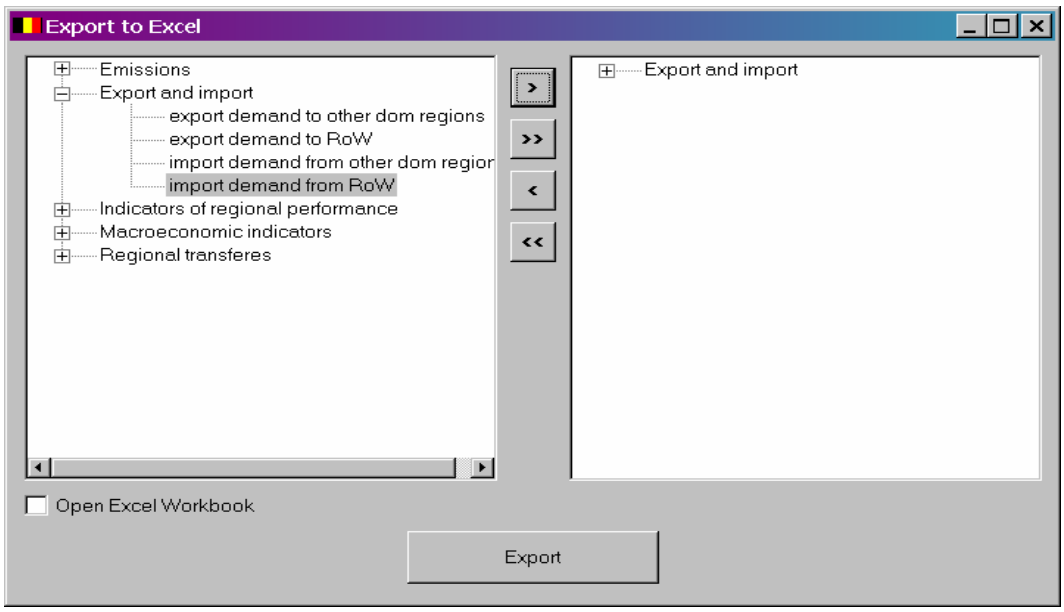


Export to Excel window

By selecting table names on the left side of the window and clicking on > button you can add them to the list of tables to be exported to Excel (on the right side of the window). In order to remove already chosen tables use < button. Buttons << and >> allow you to remove or add all tables respectively. There is a possibility to open created Excel file after it has been generated. In order to activate it check the **Open excel Workbook** box. After the selection is completed click on the **Export** button to start exporting. First **Explorer** window opens, where

you can choose location and name of you excel file. After you have chosen name and location click on **OK** button to finalize the process.

In order to export all other model results to Excel click on the **Export variables to Excel** button of the **Results** tab. There appears **Export to Excel** window.



Export to Excel window

Exporting procedure is similar to the one described above. The difference between the two exporting procedures is the range of results available for exportation.

Printing and copying the results, shocks and graphs

If you would like to print out the Shock table or the Results table or the chart you can select the **File** menu item **Print Shocks**, **Print Results** or **Print Chart** respectively. Also you can copy any of these objects and paste into a text file or Excel worksheet. To copy tables (first select cells you would like to copy) and charts you should click on the right mouse button over an object and select an action from a popup menu.

Saving scenarios

After you work with the scenario and its results is finalized and you want to save your scenario use one of the following possibilities:

1. Click on the button **Main window** or select the **File** menu item **Main window** and answer **Yes** when the program asks you whether you want to save scenario. By clicking on this button you go back to the **Projects** tab and can work further by creating new projects and scenarios.

2. Go to the menu **File** and choose **Save**. In order to go back to the **Projects** tab choose **Main window** in the menu **File**.

3. Close the program window and answer **Yes** when the program asks you whether you want to save scenario.

6.3.5. Special features

Creating custom baseline

While creating a new project you can chose whether you are going to use default baseline or create your own custom baseline. Creation of the custom baseline is similar to creating a scenario and uses the same **Variables**, **Shocks** and **Results** tabs. You should remember that in case of the custom baseline shocks of the alternative scenarios should be specified with the respect to this baseline not default one. One project may be associated with a single custom baseline. In case you want to generate another baseline you have to create a new project.

After you have chosen that you are going to create a custom baseline for the new project, you are taken consequently to **Variables**, **Shocks** and **Results** tabs. In the process of baseline creation you can switch between these tabs to modify your shocks and analyze results. Once you are satisfied with them, save your baseline using **Save** button in the **File** menu or click on the **Main window** button (**Main window** item in the **File** menu). After that you can go back to the Main window where you can continue by creating an alternative scenario for your project.