System for Environmental and Agricultural Modelling;
Linking European Science and Society

How to Handle SEAMLESS-IF Prototype 1

A short how-to description

PD5.6.3.1

Patrik Wallman, Irina Bezlepkina, Rob Knapen

Partner: Lund University, Wageningen University, Alterra

Submission date: 2006-07-03

INTEGRATED PROJECT EU FP 6 (contract no. 010036)
Global Change and Ecosystems
Project duration: January 2005 - December 2008

SEAMLESS integrated project aims at developing an integrated framework that allows ex-ante assessment of agricultural and environmental policies and technological innovations. The framework will have multi-scale capabilities ranging from field and farm to the EU25 and globe; it will be generic, modular and open and using state-of-the art software. The project is carried out by a consortium of 30 partners, led by Wageningen University (NL).

Email: seamless.office@wur.nl
Internet: www.seamless-ip.org

Authors of this report and contact details

Name: Patrik Wallman Partner acronym: LU
Address: LUCSUS, P O Box 170
SE-221 00 Lund, Sweden
E-mail: patrik.wallman@lucsus.lu.se

Name: Bezlepkina, I. Partner acronym: WU
Address: Hollandseweg 1, 6706KN Wageningen, the Netherlands
E-mail: irina.bezlepkina@wur.nl

Name: Knapen, M.J.R. Partner acronym: Alterra
Address: PO Box 47, 6700 AA Wageningen, the Netherlands
E-mail: rob.knapen@wur.nl

Disclaimer:

“This publication has been funded under the SEAMLESS integrated project, EU 6th Framework Programme for Research, Technological Development and Demonstration, Priority 1.1.6.3. Global Change and Ecosystems (European Commission, DG Research, contract no. 010036-2). Its content does not represent the official position of the European Commission and is entirely under the responsibility of the authors.”

"The information in this document is provided as is and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability."

Table of contents

Table of contents 3

General information 5

Executive summary 5

1 Introduction 7

2 How to install SEAMLESS-IF Prototype 1 9

2.1 Technical requirements 9

2.2 How to install and setup SEAMLESS-IF Prototype 1 9

2.3 Installing the Microsoft .NET Framework 10

2.4 Installing Java Runtime Environment 11

2.5 Installation Path 12

2.6 GAMS and CAPRI 14

2.7 Starting SEAMLESS-IF Prototype 1 16

2.8 Creating a working directory 16

3 How to use the general features of SEAMLESS-IF Prototype 1 17

3.1 Text formatting 17

3.2 Sorting of lists 17

3.3 Graphical editing 18

3.4 Copying text to SEAMLESS-IF Prototype 1 19

3.5 Navigating in SEAMLESS-IF Prototype 1 20

3.6 The colour coding system 20

3.7 The help system 20

4 How to handle projects in SEAMLESS-IF Prototype 1 23

4.1 How to set application settings 23

4.2 How to open an existing project 25

4.3 How to create a new project 26

4.4 How to manage projects 28

4.4.1 Work plan 28

4.4.2 Stakeholders 30

4.4.3 Impacts 31

4.4.4 System overview 32

4.5 Cleaning up projects 33

5 How to define a problem in SEAMLESS-IF Prototype 1 35

6 How to define a scenario in SEAMLESS-IF Prototype 1 37

7 How to select indicators in SEAMLESS-IF Prototype 1 39

8 How to build a model chain in SEAMLESS-IF Prototype 1 41

8.1 How to open an existing model chain 41

8.2 How to create a new model chain 41

8.3 How to import and export model chains 45

9 How to execute a model chain in SEAMLESS-IF Prototype 1 47

9.1 Step 1: Indicator binding 47

9.2 Step 2: Specify scenario settings 48

9.3 Step 3: Start calculations 50

9.4 Step 4: Result visualization 51

10 How to handle outputs in SEAMLESS-IF Prototype 1 53

10.1 File browsing 53

10.2 CAPRI results 54

10.2.1 The Map Viewer 54

10.2.2 The Table Viewer 56

10.3 Ideas for the next version 58

11 How to use the Trac system 61

11.1 How to login to Trac 61

11.2 How to submit a ticket 62

11.3 Support 64

General information

Task(s) and Activity code(s):	5.6.3.1
Input from (Task and Activity codes):	
Output to (Task and Activity codes):	Task 1.4, Activity 1.4.1
Related milestones:	M 1.4.2

Executive summary

This document is a description of how to use SEAMLESS-IF Prototype 1. It describes the most important steps on how to install the software, create and manage projects including choosing indicators, building and running model chains and exploring the results. A brief introduction to the general features of the software, such as text formatting, sorting of lists and tables is also provided.

Also the Trac system, a web-based management system of software for reporting bugs, missing functions, glitches in design and usability as well as collecting wishes and requests for future versions, is described in a stepwise how-to format along with information about support and contact information.

1 Introduction

The SEAMLESS-IF Prototype 1 How-To Manual is an informal and short description of how to install and set up SEAMLESS-IF Prototype 1 and how to accomplish some of the most important specific tasks. Also the general features of the software are described as well as how to handle project files. It is meant to help users who will perform testing of Prototype 1, and may leave out details that are only important to modellers and software engineers.

Also the web-based Trac system for reporting bugs and suggested enhancements of SEAMLESS-IF Prototype 1 is described.

The models that are installed with SEAMLESS-IF Prototype 1 are not described in this document but in corresponding deliverables of WP3 and WP1. Elaborations on the software design and the modeling environments used to create or run the models in the SEAMLESS-IF Prototype 1 can be found under deliverables of WP5.

Due to the rapid and always ongoing development of SEAMLESS-IF, some of screenshots in the versions that you download might look a little different from the ones in this document.

It should be noted that the features that are available in Prototype 1 and described in this manual are not meant for the end user. Many features will be further developed and become accessible to various groups of users, for example modellers, viewers, etc.

2 How to install SEAMLESS-IF Prototype 1

2.1 Technical requirements

Currently SEAMLESS-IF Prototype 1 is only available as a Microsoft Windows-application. A PC with available hard disk space of 2 GB is required to install the system. Additional space of at least 1 GB is required to run models. SEAMLESS-IF Prototype 1 also requires that a Java 5 Runtime Environment (JRE) and the Microsoft .NET Framework 2.0 are installed on the system.

To utilize all the functionality of the CAPRI TableViewer also the software SVGView from Adobe is required.

2.2 How to install and setup SEAMLESS-IF Prototype 1

Often the installation can be done by users themselves but in case the user accounts are managed by System Administrators, it is recommended to use their assistance.

To install the SEAMLESS-IF software, the installer has to be available either on a CD with Prototype 1 (D1.4.1) or on your local computer. If not available, download the content of this CD from an ftp location as described in the Release Notes and unzip the folder Prototype1.zip. Note that the total download size is over 400 Mb, so it might take some time. After unzipping the Prototype1.zip folder, open the file Index.htm (Figure 1) or go to the directory called Installer. The file index.htm allows you to navigate through the content of this CD and to install the SEAMLESS-IF software (Figure 2) along with other programs necessary for its successful functionality.

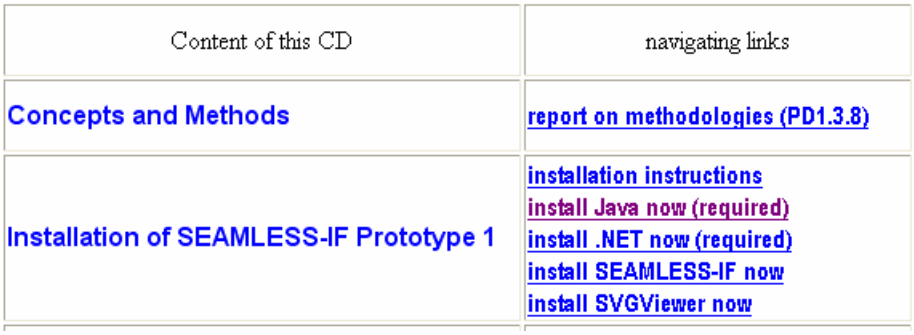


Figure 1. Index.htm, to install SEAMLESS-IF and other software

The directory Installer has four files; double-click 'Setup' (or 'Setup.exe' if you have chosen to show file extensions on your Microsoft Windows system). The installer only works under Microsoft Windows.

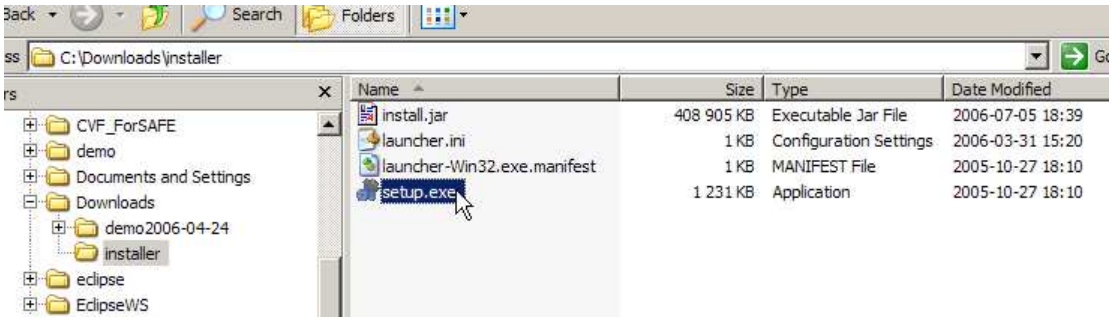


Figure 2.

If Java Runtime Environment is not installed on your computer or the installer cannot find it, a dialog box appears (Figure 3b) with options to either download the latest JRE from the Internet or to locate an already existing installation on your computer manually.

2.3 Installing the Microsoft .NET Framework

If .NET is not installed on your computer, follow the installation link available in the index.htm (Figure 1).The following window will appear (Figure 3a). By clicking the Download button, the process on the .NET guided installation will start. The Microsoft .NET Framework is necessary to run the Modcom Engine that is in the core of the APES Tool.

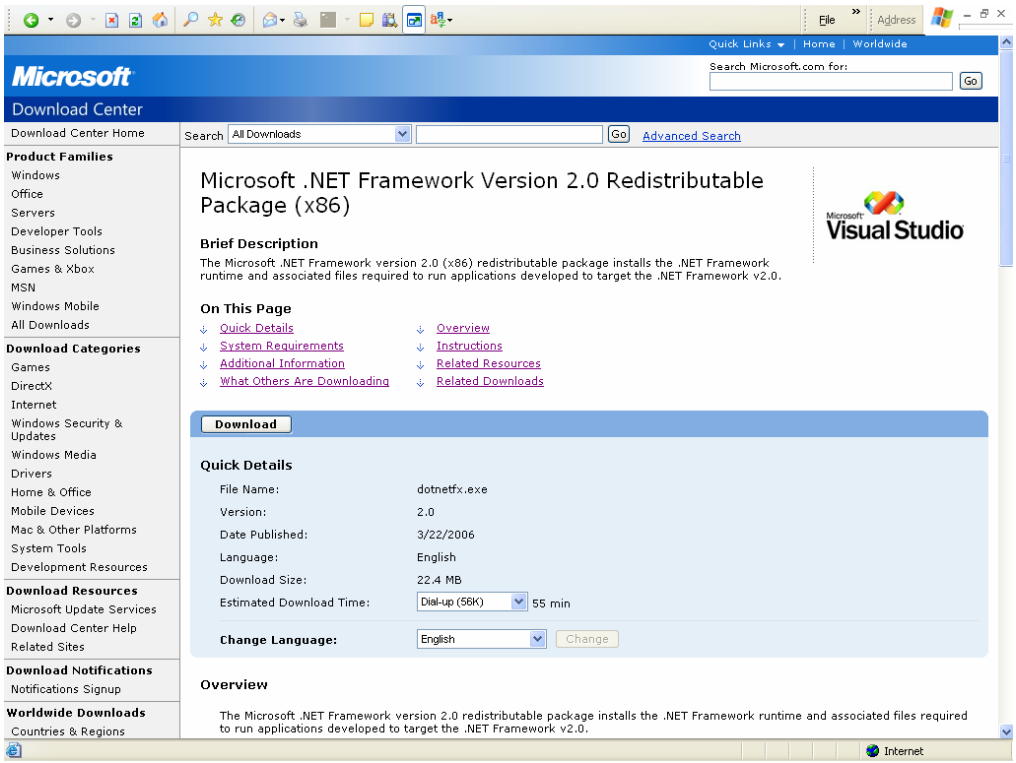


Figure 3a.

2.4 Installing Java Runtime Environment

If a Java Runtime Environment (JRE) is not present on your computer and you did not install it from the link available on the CD (Figure 1), chose to download the latest version (you need at least Java version 5.0 for running SEAMLESS-IF) from the internet and click 'Continue' (Figure 3b).

Figure 3b.

Your default internet browser will open the Java download web page (Figure 4). Follow the download and installation instructions on the web page. You might have to allow the ActiveX-control from Sun Microsystems, Inc. to be run in your browser.

Figure 4.

When JRE has been installed or successfully located by the installer a welcome screen appears (Figure 5), click 'Next'.

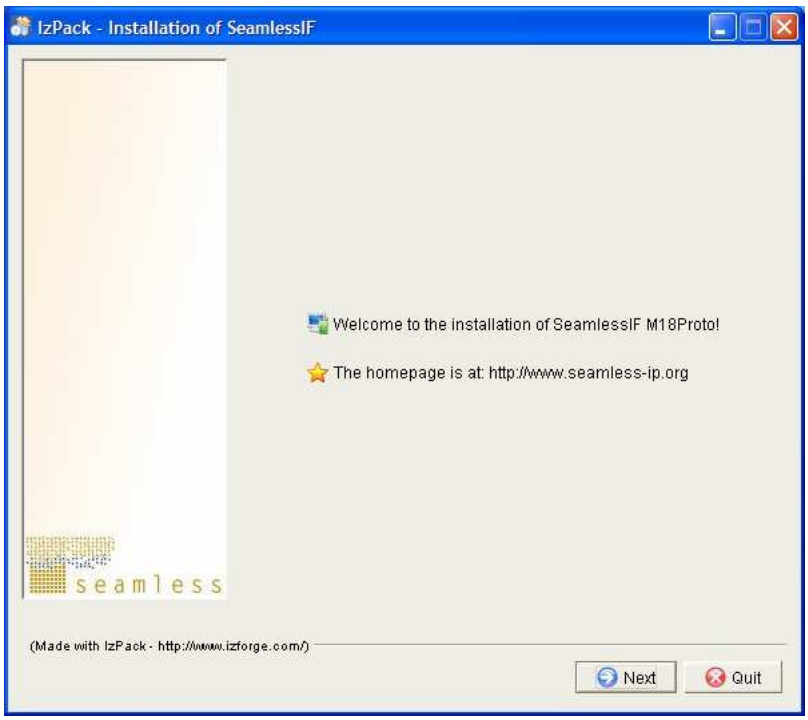
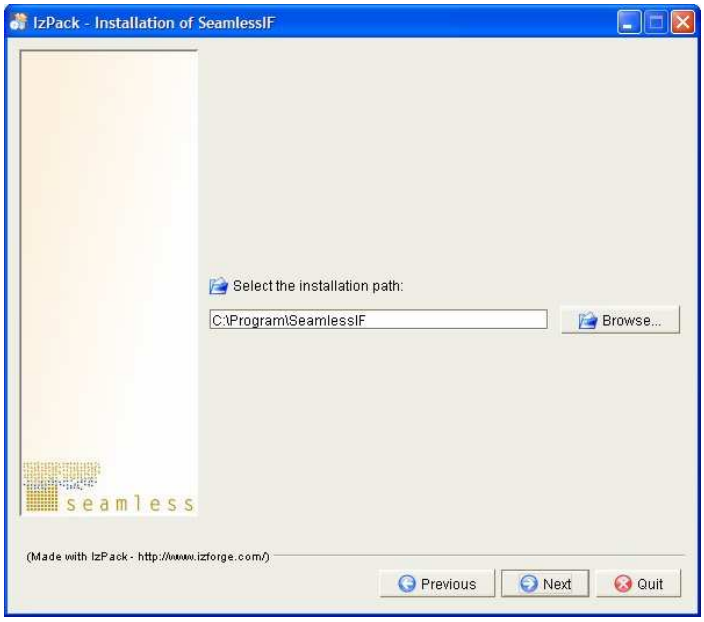


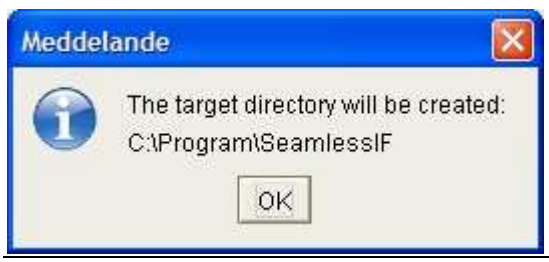
Figure 5.

2.5 Installation Path



The default installation path suggested (Figure 6) might not suit your Microsoft Windows system, depending on what language it is. The folder 'Program' generally does not exist on English Windows versions, where it instead is called 'Program Files', on German systems 'Programme' etc. To avoid creating an extra directory for program files, change the installation path to your default folder for programs. You will be prompted by the system that the target directory will be created (Figure 7).

Figure 6.



It is also possible to install the SEAMLESS-IF onto a different drive.

Figure 7.

When the installation path is set, click 'Next' to go to the pack installation screen (**Figure 8**a). Choose the models you want to be installed, click 'Next'.

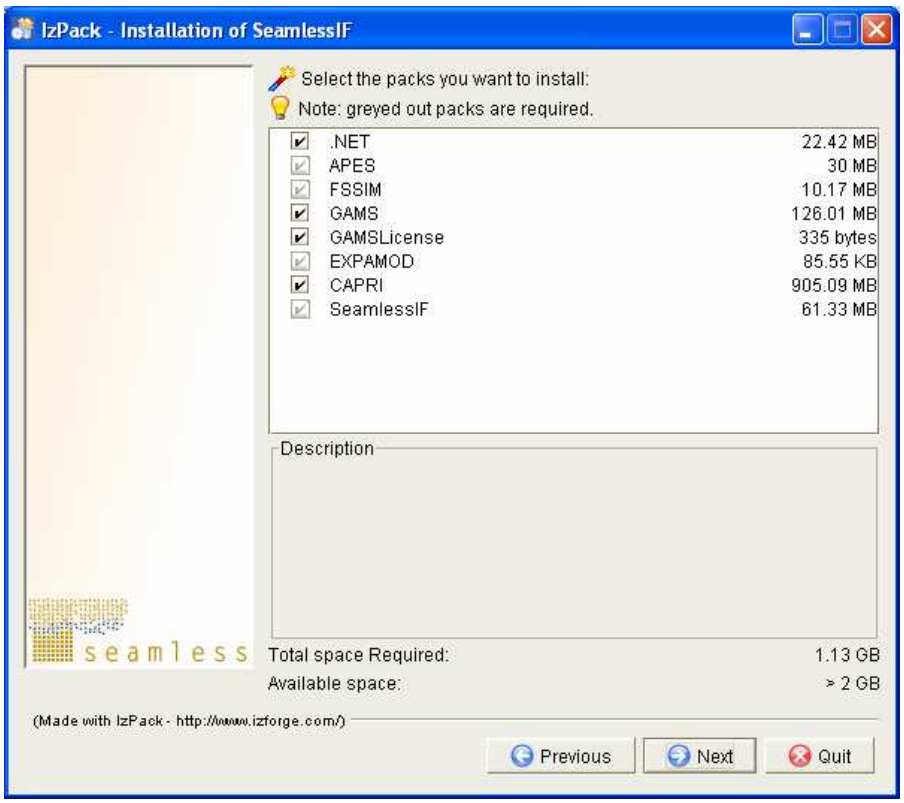
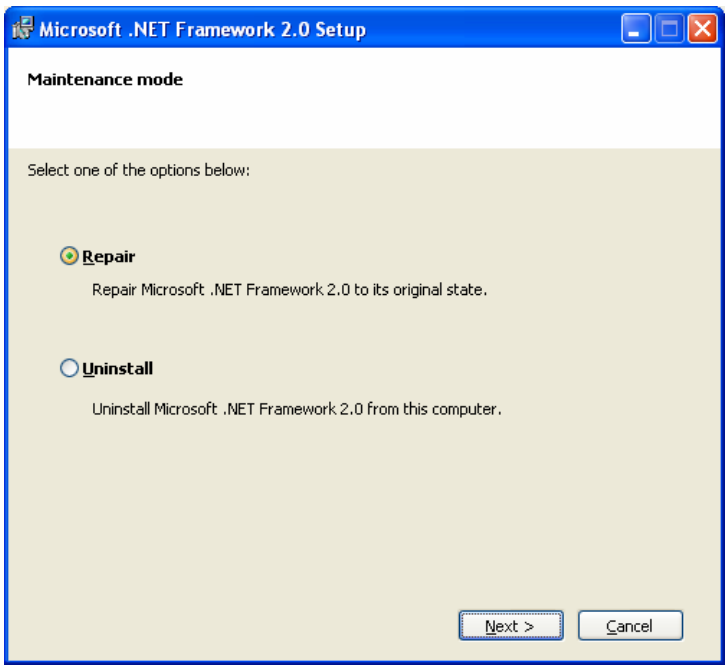


Figure 8a.



Installation of the Microsoft .NET Framework can be deselected if this software is already installed. If it was not deselected, the .NET will be reinstalled and the following screen may appear (Figure 8b). Continue by selecting the Repair option.

Figure 8b.

2.6 GAMS and CAPRI

A screen with options to fill in pathways to GAMS and CAPRI installations appears (Figure 9). If you do not have any of these pre-installed, leave the text fields empty to use the defaults and click 'Next'.

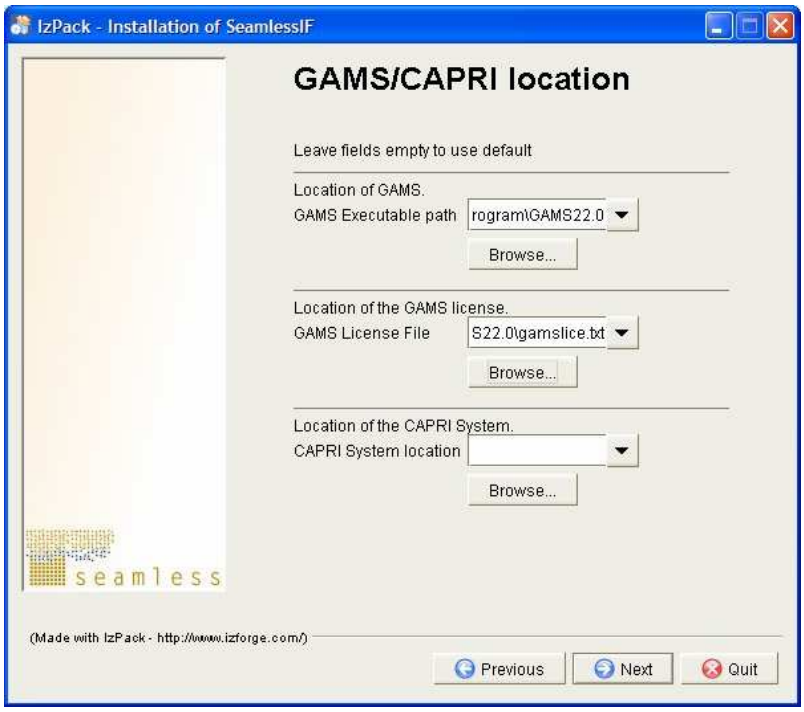
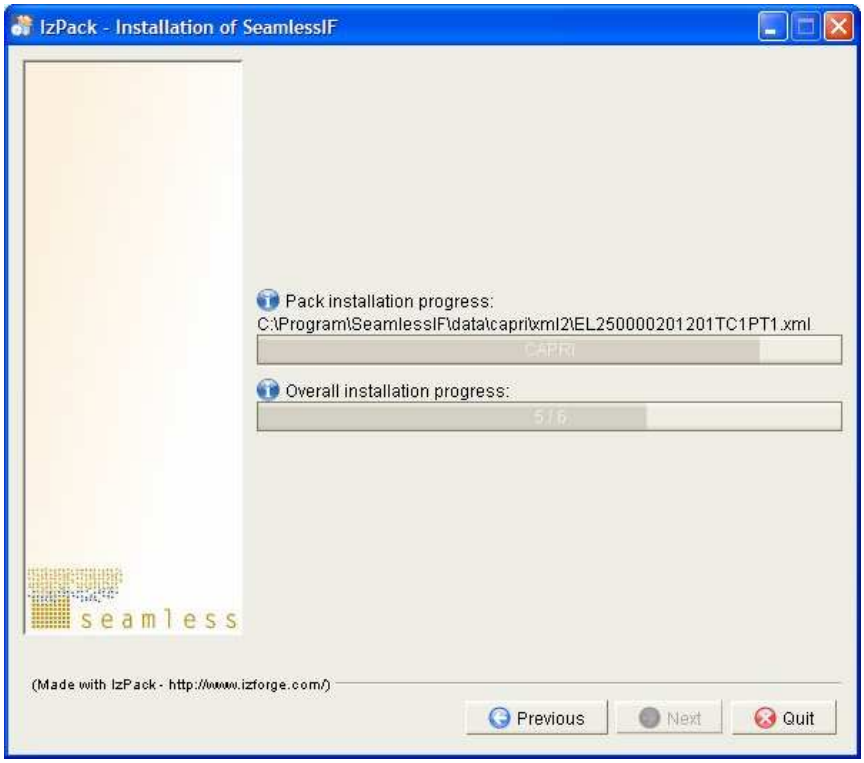
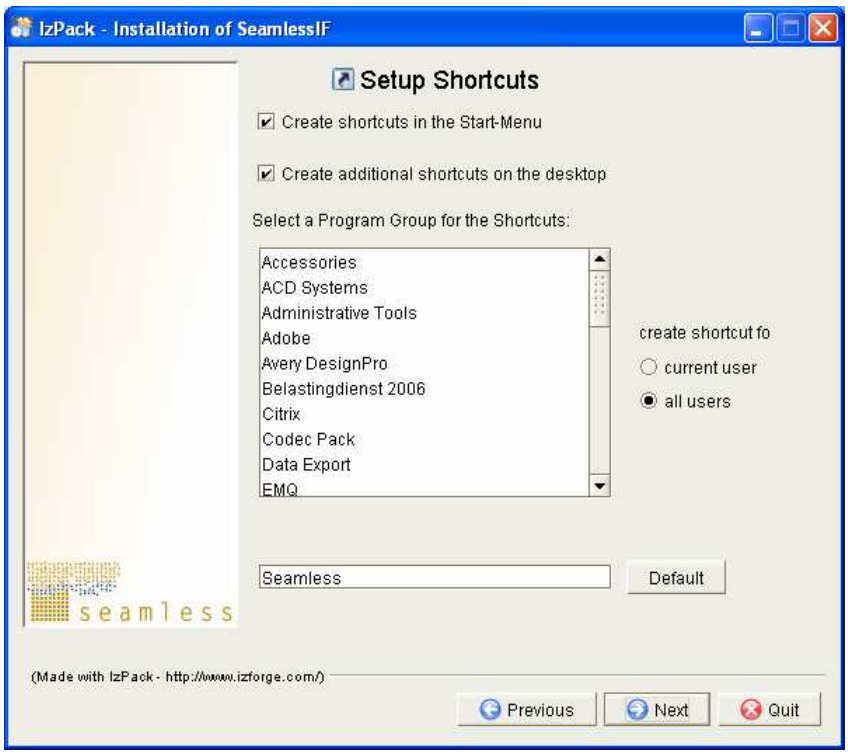


Figure 9.



A screen that shows the progress of the installation is shown (Figure 10).

Figure 10.



When installation of SEAMLESS-IF Prototype 1 is finished you have the option to create shortcuts to the software (Figure 11).

Figure 11.

After a successful installation a box similar to the one in Figure 12a should show up on your screen. Click 'Done' and the installation of SEAMLESS-IF is finished.

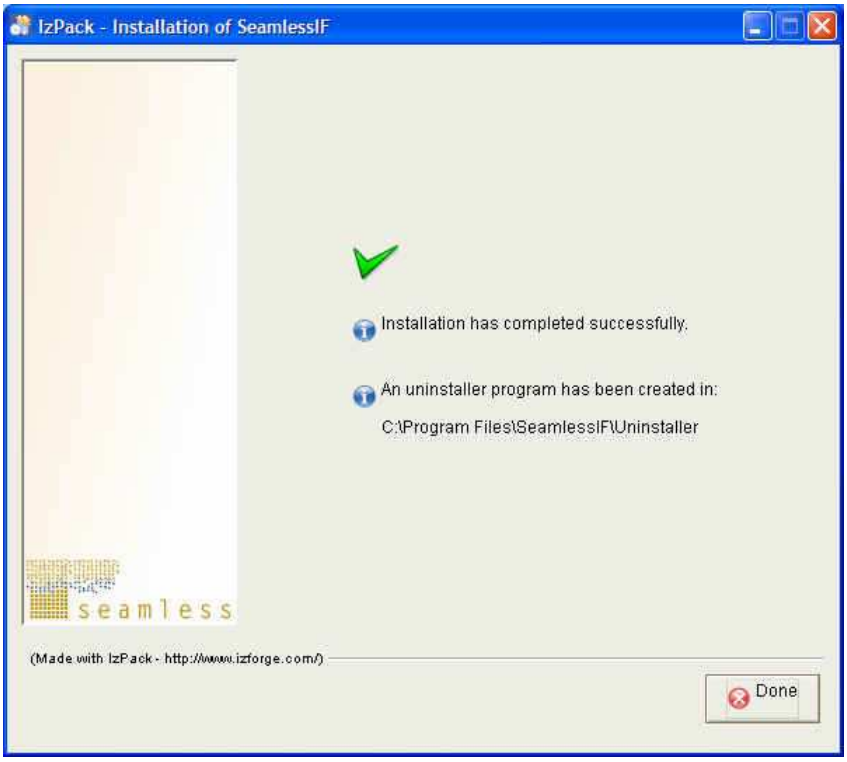


Figure 12a.

During the installation the directory Uninstaller is created. In case you need to uninstall SEAMLESS-IF, double click on the file uninstaller.jar and confirm the process of uninstalling by clicking the "Uninstall" button (Figure 12b):

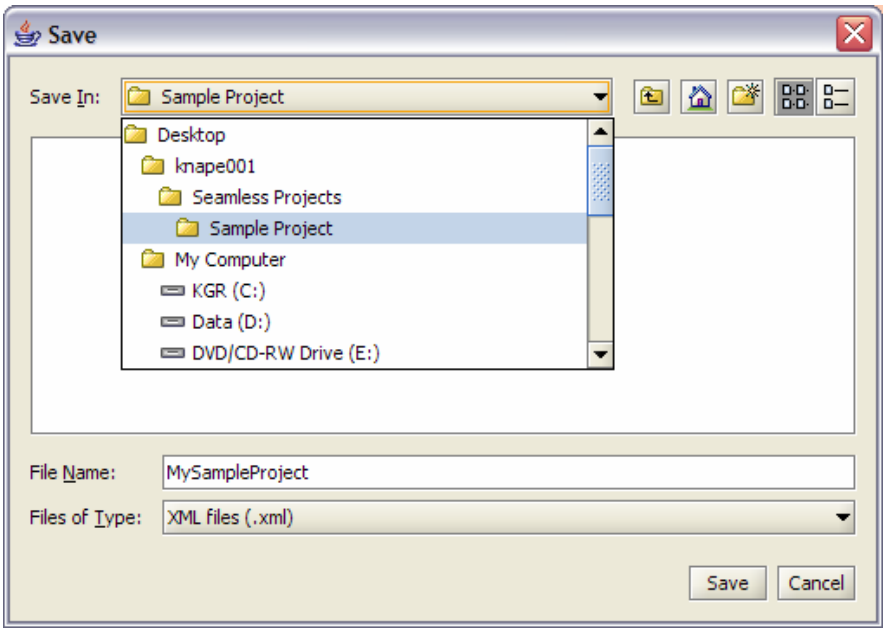
Figure 12b.

2.7 Starting SEAMLESS-IF Prototype 1

Locate the shortcut 'Start SeamlessIF' on your desktop and double-click it or use the shortcut created in the Start menu. The start-up and initialization of SEAMLESS-IF Prototype 1 takes some time, for quite a while (30 seconds or so) you will only see the black MS DOS-window. This window will remain open during the whole session; if you close it you will also close SEAMLESS-IF Prototype 1. The best is to minimize it to the task bar.

2.8 Creating a working directory

The current version of the installer does not create a default folder for saving projects. It is advisable to create a directory for all SEAMLESS-IF projects, and a subdirectory in it for every project. Then save the project file in its subdirectory. This will make managing projects and related files easier. Note that the sample project file that comes with Prototype 1 is stored in the directory testcases. To avoid creating disorder in this folder and to make sure that you always have a fresh copy of the sample file it is strongly suggested that you create a project folder, e. g. Sample Project in My Documents, copy the sample file to this directory and work with it from there and then also save all your projects to this folder.



The newly created Working directory can be chosen to store the project files (Figure 13).

Figure 13.

3 How to use the general features of SEAMLESS-IF Prototype 1

3.1 Text formatting

Text you write in the text boxes in SEAMLESS–IF Prototype 1 can be formatted to some extent to make your text more expressive. To format a text, click the 'Formatting' menu in the top of the screen (Figure 14). Point and click the formatting style you want to use, and the style will marked with a check mark. When you do not want to use the formatted text anymore, do the same thing again, the check mark disappears and the text you write will go back to normal.

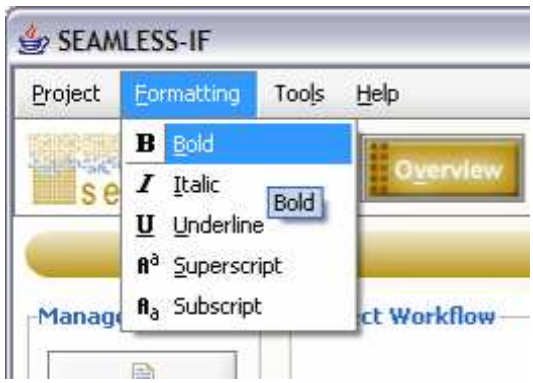


Figure 14.

It is also possible to open the Formatting menu by pressing ALT+F (press and hold the ALT-key, then press the F-key and release both). Once the formatting menu is opened, press ALT+B to toggle the bold option, ALT+I for italic, and so on. A selection will close the menu, but it can also be closed without selecting anything by pressing the Escape-key. In general a small underline below a letter in the menu or on a button indicates a keyboard shortcut. Pressing the ALT key together with the underlined letter has the same effect as clicking on the menu item or button with the mouse.

Note that not all text fields can use formatted text, e. g. names in the indicator library and similar. This feature is only meant to be used in running text.

Also note than on some tabs the size of the text fields can be changed (Figure 15), either by clicking on the small black arrows to the left on the bar between the text fields or by simply placing the cursor on the bar and drag it.

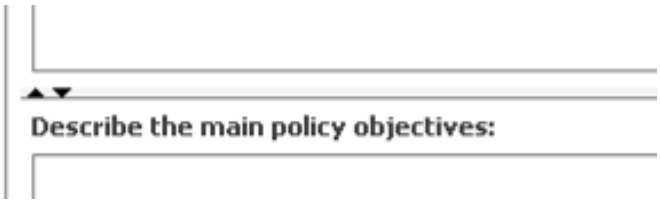


Figure 15

3.2 Sorting of lists

To help you to find the item of interest in a list or a library, SEAMLESS-IF Prototype 1 has a sorting function attached to all its lists. By clicking the headline of the column of the parameter that you want to sort the list depending on, you can chose from having the list sorted chronologically (no arrow showing in the headline, Figure 16a), alphabetically or numerically (depending on the content of the column), ascending (up arrow showing, Figure 16b) or descending (down arrow showing, Figure 16c)

Figure 16.

3.3 Graphical editing

When it comes to the graphical representation of models and other entities used in SEAMLESS-IF Prototype 1, in e. g. diagrams in the work plan, systems description part and the model chain builder, there are certain possibilities to edit these to make them clear, structured and pedagogic.

Double-click on the graphical representation, the box that represents the model, element or activity, or right-click it and choose 'Graphics…' from the pop-up menu you want to edit to open the editor (Figure 17).

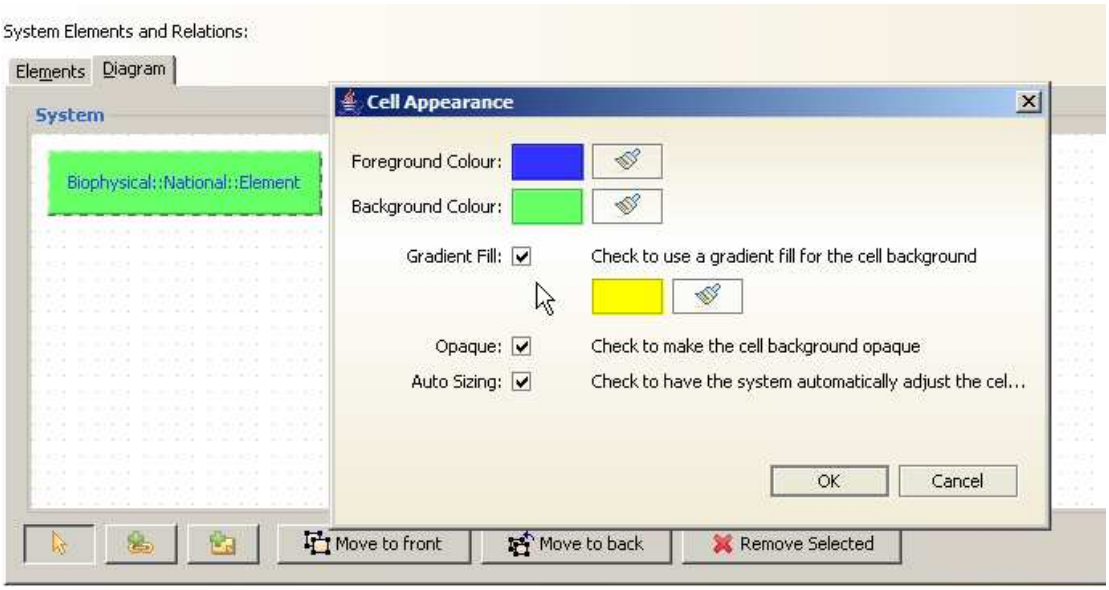


Figure 17.

You can change the colour of the text by clicking either of the foreground colour boxes. You can choose the colour you want to use by clicking the samples that are shown (Figure 18). Also other ways to change the colour are available, the HSB and RGB tabs, experiment with them if you would like.

The different elements can be moved to the back or the front of the diagram if they are overlapping by marking an element and then clicking 'Move to front' or 'Move to back'

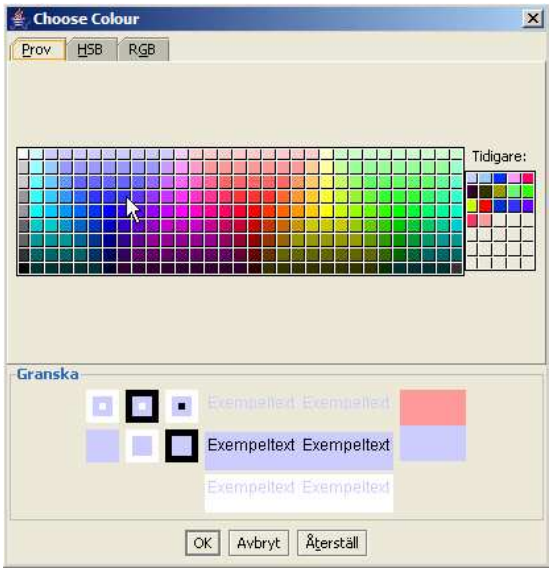


Figure 18.

Also the link and arrows in the graphical representations can be edited. Double-click the line or right-click it and choose 'Graphics' from the pop-up menu to open the editor (Figure 19.).

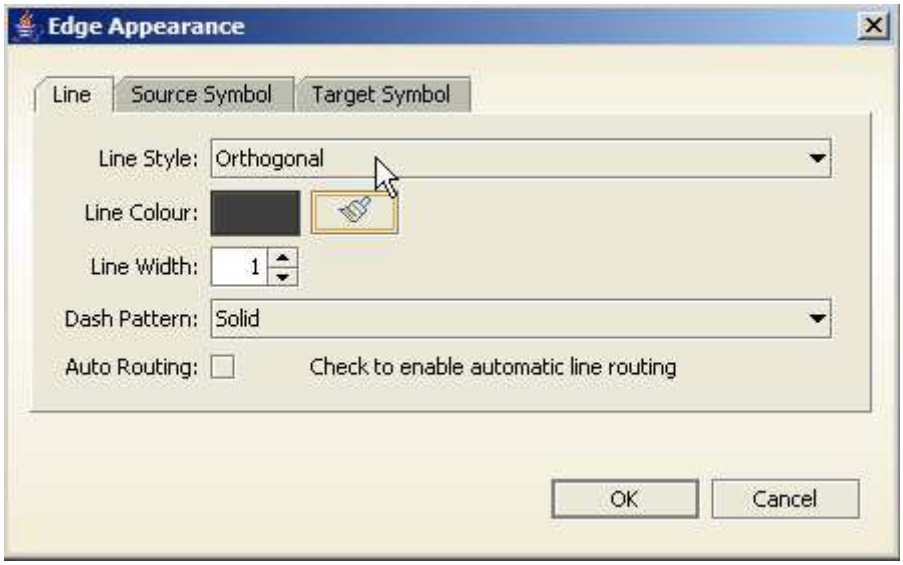


Figure 19.

You can edit the colour of the line the same way as the boxes mentioned above. You can also choose different line styles from the drop-down menu and enabling the automatic line routing if you would like to use curved or only straight lines. Line width and different dash patterns can also be chosen. On the 'Source Symbol' and 'Target Symbol' tabs you can chose symbol, size and filling of the arrows starting and ending points, respectively.

3.4 Copying text to SEAMLESS-IF Prototype 1

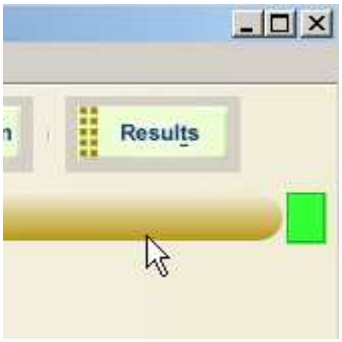
There are no possibilities to import documents or formatted text to SEAMLESS-IF Prototype 1. Only text in ascii-format can be pasted in into the text fields. If you have text in Microsoft Word format or similar, the work-around would be to save the document in ascii-format (*.txt), open it in a simple text

program, like Microsoft Notepad and copy it from there with ctrl-c, then paste it into the text window in SEAMLESS-IF Prototype 1 using the ctrl-v command.

3.5 Navigating in SEAMLESS-IF Prototype 1

SEAMLESS-IF Prototype 1 is a quite complex piece of software which is not trivial to navigate within. If you loose track, one way to always come back to a known point is to navigate back to the overview screen or any of the task screens by clicking the 'appropriate' button in the top menu. This menu is always visible and can always be used to go directly to any of the task screens. You do not have to worry about loosing any information by doing this; everything you do is instantaneously written to the project file (it is important to save changes when quitting the whole application). If you open an item in a list there is always a 'Back to list' button to click to return to the list.

3.6 The colour coding system



In SEAMLESS-IF Prototype 1 a colour coding system is implemented to give some guiding regarding the operational status of the screen you are working with. A green rectangle in the upper right corner of the screen (Figure 20) shows that most the indented functionality of the screen has been implemented.

Figure 20.

A blue rectangle means that the screen is under development and is going to be changed considerably. If you place the mouse pointer over the coloured rectangle for a short while a tooltip will be displayed with a short explanation.

3.7 The help system

SEAMLESS-IF Prototype 1 has the help system that is accessible from the top menu and in other specific screens of the program. On some screens you will find a clickable question mark button (Figure 21) behind which you can find additional information about the item or function it belongs to. Additional information can be also found when clicking the "I" – standing for Info – button.

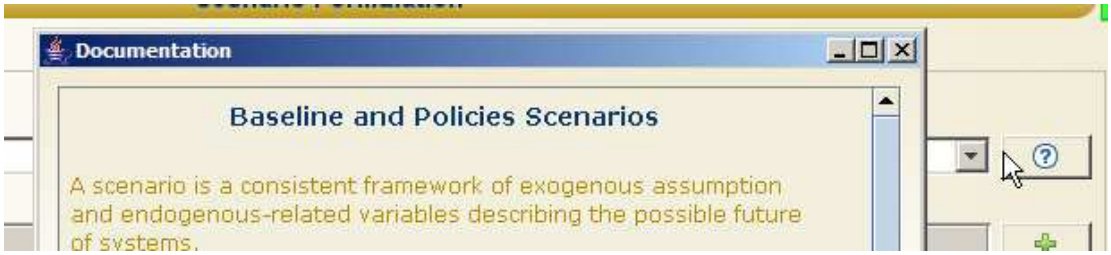


Figure 21.

In the 'Help' menu at the top of the screen you can find a list of all the available keyboard shortcut commands you can use when working with SEAMLESS-IF Prototype 1 (Figure 22a).

Figure 22a.

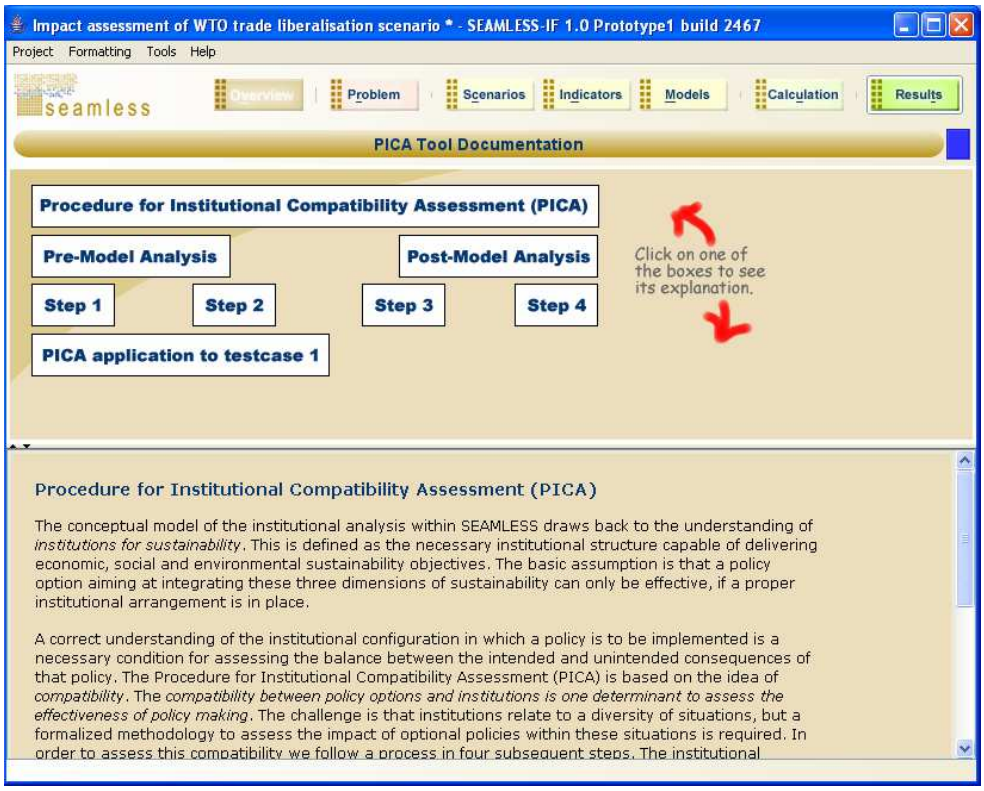


Figure 22b.

From here you can also look at the PICA (Procedure of Institutional Compatibility Assessment) tool and start the applications console window (see Section 4.1 below). The screens of PICA tool (Figure 22b and c) are not operational in Prototype 1.

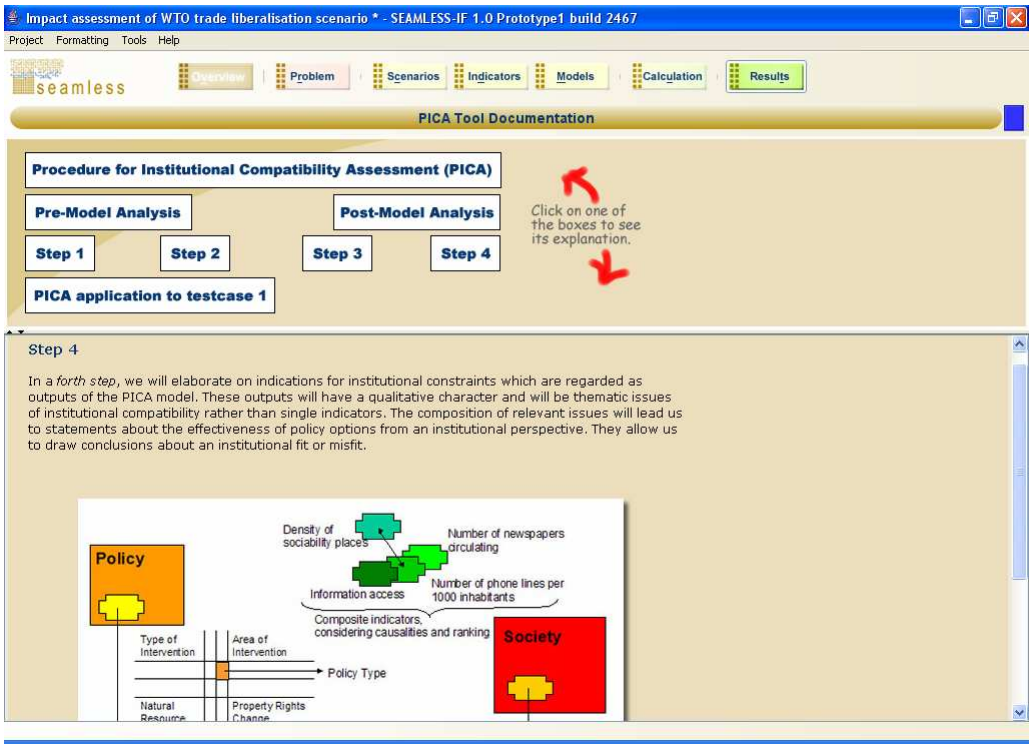

Impact assessment of WTO trade liberalisation scenario * - SEAMLESS-IF 1.0 Prototype1 build 2467
Project Formatting Tools Help
seamless
Overview
Problem
Scenarios
Indicators
Models
Calculation
Results
PICA Tool Documentation
Procedure for Institutional Compatibility Assessment (PICA)
Pre-Model Analysis
Post-Model Analysis
Step 1
Step 2
Step 3
Step 4
PICA application to testcase 1
Click on one of the boxes to see its explanation.
Step 4
In a forth step, we will elaborate on indications for institutional constraints which are regarded as outputs of the PICA model. These outputs will have a qualitative character and will be thematic issues of institutional compatibility rather than single indicators. The composition of relevant issues will lead us to statements about the effectiveness of policy options from an institutional perspective. They allow us to draw conclusions about an institutional fit or misfit.
Policy
Density of sociability places
Number of newspapers circulating
Number of phone lines per 1000 inhabitants
Information access
Composite indicators, considering causalities and ranking
Society
Type of Intervention
Area of Intervention
Policy Type
Natural Resource
Property Rights Change

Figure 22c.

4 How to handle projects in SEAMLESS-IF Prototype 1

Start SEAMLESS-IF Prototype 1 by double-clicking the shortcut on your desktop. After 30 seconds or so (depending on your computer specifications) SEAMLESS-IF is started and initialized, ready to be used.

4.1 How to set application settings

Start by looking up the application settings (Figure 23) for SEAMLESS-IF Prototype 1.

Figure 23.

Fill in your name and then check the locations of the different libraries used by SEAMLESS-IF Prototype 1 (Figure 24a). These are generally correct by default. You can change the font size used in the application by ticking the check box. You can also choose how you would like to handle the console window. In the console window you can see the output from the underlying Java-program. This should not be considered as some kind of output from SEAMLESS-IF Prototype 1. For many users the information in the console window is not very useful, and it can be closed without influencing the performance or capabilities of SEAMLESS-IF Prototype 1.

Note that if you choose not to use the console window or close it SEAMLESS-IF will instead use the MS DOS window it was started from to write (internal) messages to. These might only be of interest (for developers) when an error occurs so that the problem can be located quicker, or for modellers to study intermediate outputs from models when they are run by SEAMLESS-IF.

The look and feel and the size of the fonts used in the software can also be chosen in ‘General Options’. These changes take effect when you restart SEAMLESS-IF Prototype 1.

In case there are some display problems in Windows XP when the ‘Windows and Buttons’ (Control Panel|Display|Appearance) is set to ‘Windows Classic Style’, it is recommended to change the Windows and Buttons setting to ‘Windows XP Style’ or change in the look and feel of SEAMLESS-IF Prototype 1 (Tools|Settings) to ‘ GoodiesPlastic3D’ (see Figure 24a and b).

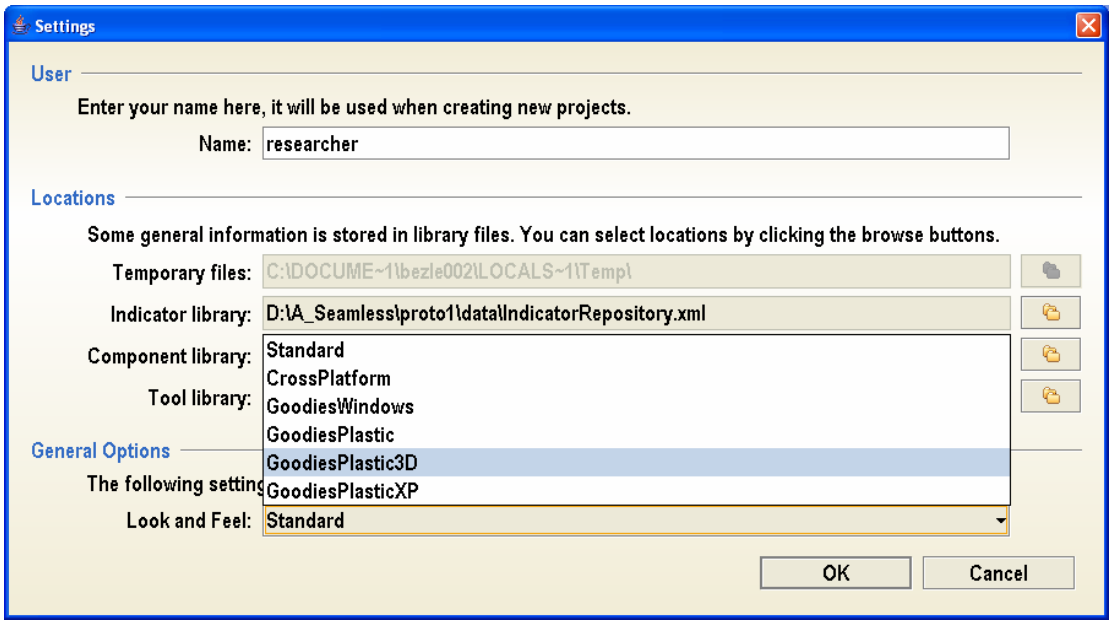


Figure 24a.

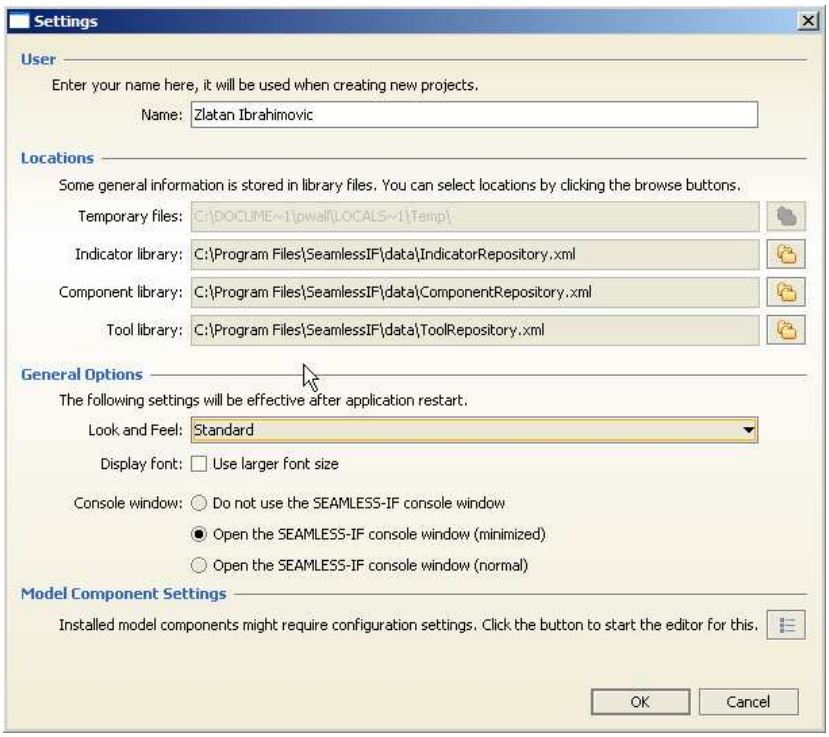


Figure 24b.

The option to use a larger display font is only recommended for presentation purposes so that people in the back of a room can better follow a demonstration. Since the larger font size requires more screen space for all the text, some other things might move accordingly or not display correctly anymore. For working with SEAMLESS-IF it is best to keep the large font setting turned off.

In some cases installed model components might require changes in the configuration settings. This is done in the Model Component Configuration Editor (Figure 25 and Figure 26). What is given here are keys and relative search paths for the different model components used by SEAMLESS-IF Prototype 1. These should normally be correct by default, and nothing the user should have to care about.

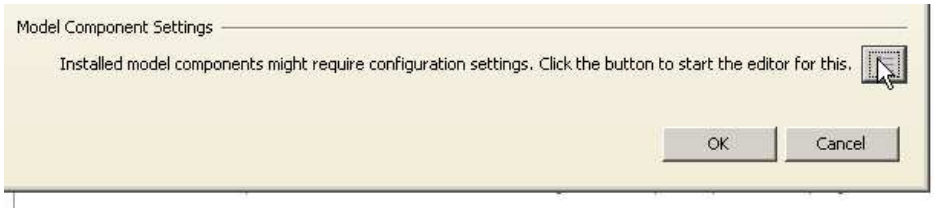


Figure 25.

Figure 26.

When you are satisfied with the program settings, click ‘OK’, and restart SEAMLESS-IF Prototype 1 to activate your changes.

4.2 How to open an existing project

Click ‘Open’ either in the ‘Project’ menu at the top, or in the menu to the left on the overview screen (Figure 27). Locate the project file of interest by navigating in the dialog box that appears. Click ‘Open’ and the project is loaded.

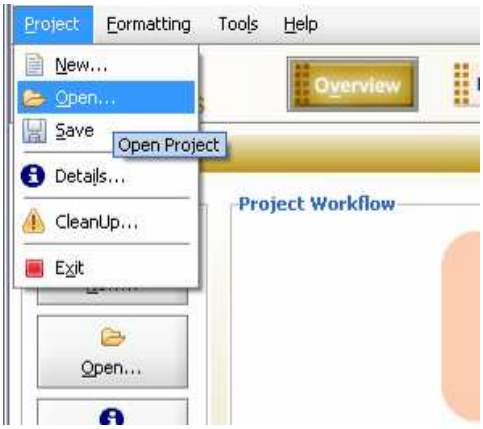


Figure 27.

SEAMLESS-IF will try to load the file you have selected. If it is not a proper project file or when errors are detected a message will be displayed and not all information about the project might be loaded.

When opening a project SEAMLESS-IF will automatically validate if the project requires additional subdirectories. For example for storing scenarios settings and calculation results. Should these directories not exist (e.g. when the project file is copied or moved from a different location) new empty directories will be created.

Details about the active project can be reviewed and modified by opening the Project Settings dialog (Figure 28). To do this select *Project* | *Details* from the menu, or click on the *Details* button in the Management panel.

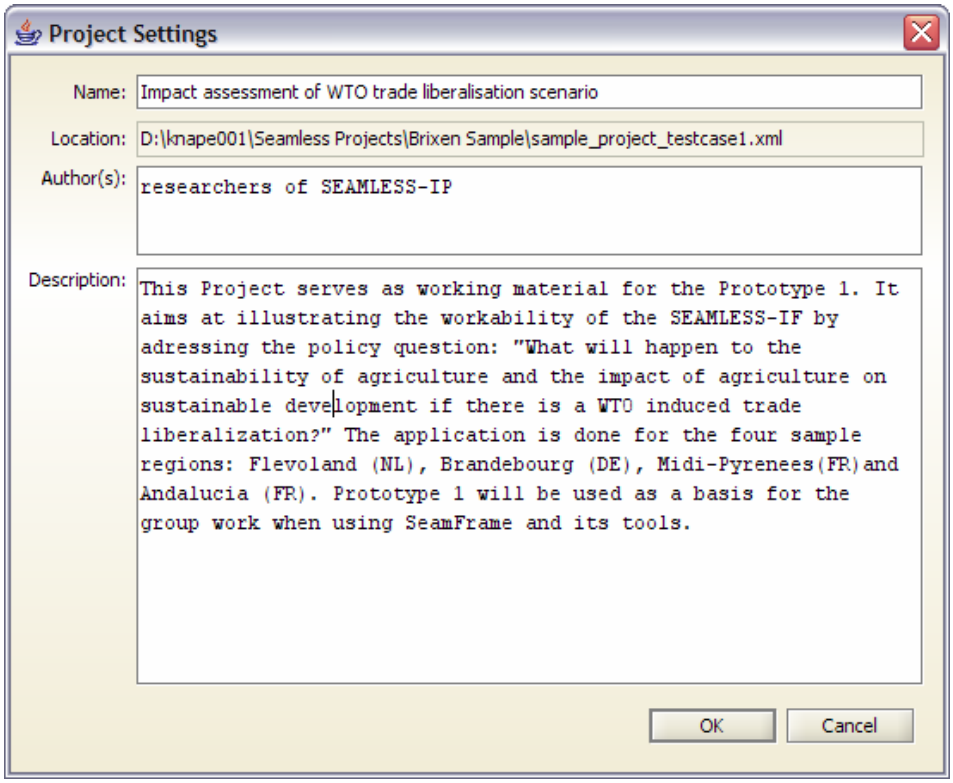


Figure 28.

The Project Settings dialog will be opened. Click *OK* to close it and save any modifications made, or *Cancel* to close it without saving the changes.

4.3 How to create a new project

You can create new project either by clicking ‘New…’ in the Management menu to the left on the main screen or by using the Project drop-down menu (Figure 29.).

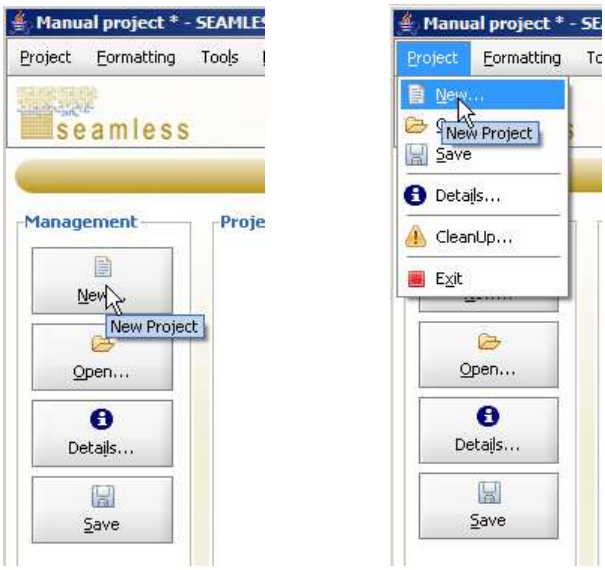


Figure 29.

The 'Project Settings' screen appears. Here you can name your project, provide the names of the project authors (your name should already be filled in if you filled it in the SEAMLESS-IF Prototype 1 settings). You can also write a description of the project here (Figure 30a.).

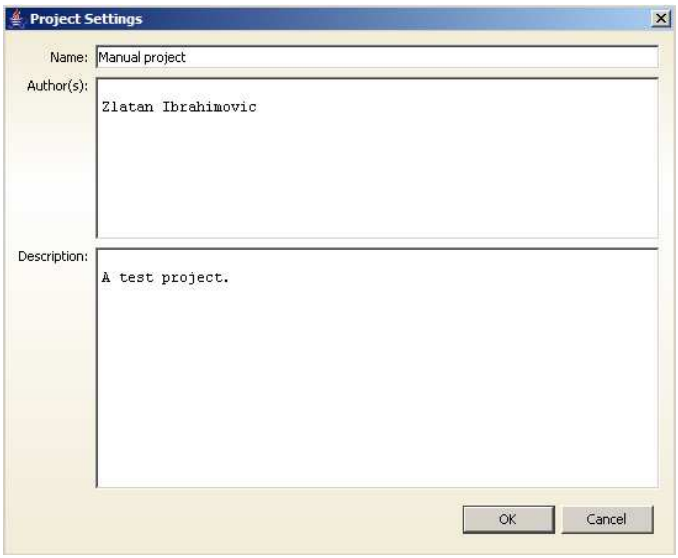


Figure 30a.

When a project is created or loaded its location is known by SEAMLESS-IF. You can review it by looking at the location field in the Project Settings dialog (select *Project* | *Details*).

Changes made to the project are detected by the program, and an asterisk will be placed in the window title after the project name (Figure 30b). This indicates that the project in memory does not match the project on disk anymore and saving is needed if the modifications must be kept.

Figure 30b.

To save the project simply click on the *Save* button in the Management panel, or select *Project* | *Save* from the menu. After the project file is updated the asterisk marker will disappear, until you make a new change.

Click ‘OK’ to close the project settings and save it to the working directory you created before (see Section 2.8). The project is saved in the extensible markup language (xml) format (Figure 31) under the name you gave it in the project settings. You can handle the project files just as any other file, copy, zip or e-mail. For example, to exchange projects with your fellow-colleagues, it is recommended to send in a zipped package the following files: project file, indicator repository file). After receiving such a package, it is necessary to locate the files properly as it is described in Figure 23.

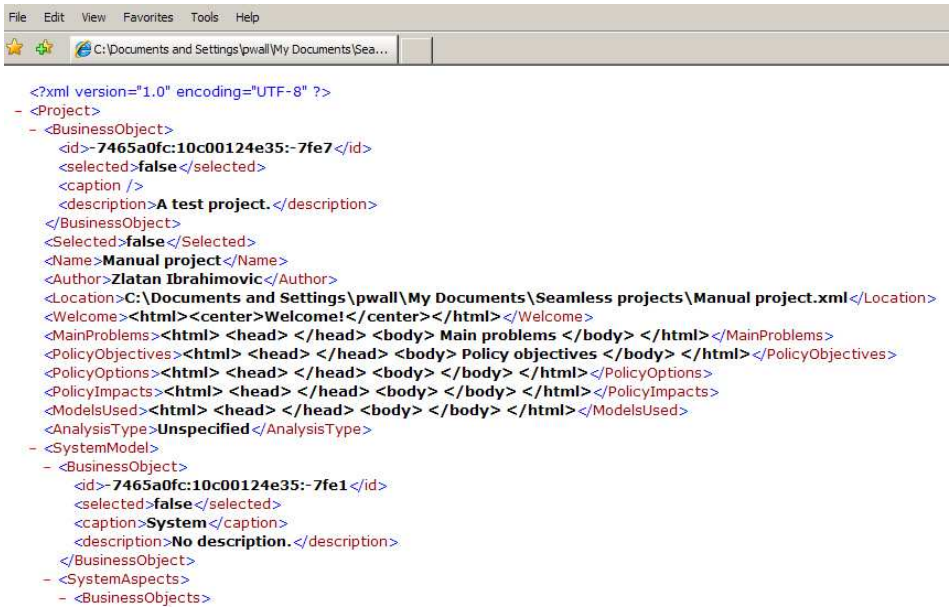


Figure 31.

4.4 How to manage projects

In the management menu on the left side of the overview screen you have the option provide a lot of information about the project.

4.4.1 Work plan

Whether and when the users and stakeholders are interviewed as part of the project can be documented in the Workplan. This shows all relevant project activities and the relations between them. Project activities can be managed in a table like schedule or in a diagram.

For each Workplan activity it is possible to specify Time, Expected Date of completion and the percentage of completion. Moreover, the activities will be stored in the Knowledge Base with their Name, Method and description. Finally, when an activity box is selected in the diagram the input fields in the lower part the properties of the activity can be modified. To provide a work plan, click ‘Workplan’ to open the work plan screen (Figure 32a and b).

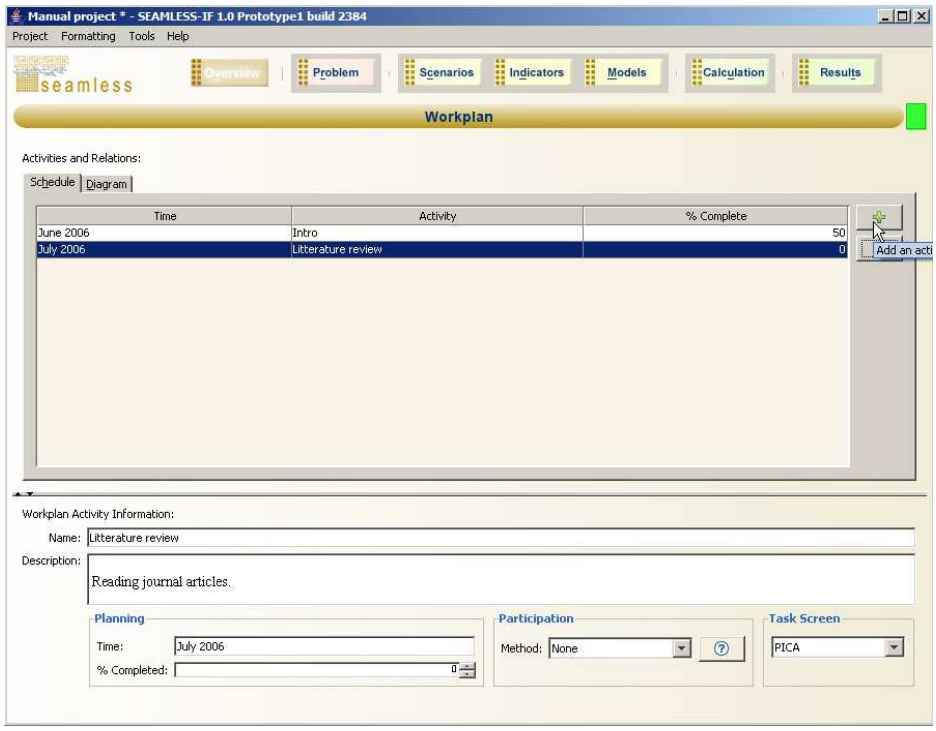


Figure 32a.

You can add an item to the work plan by clicking the green plus sign button. A new entry is created in the schedule in the upper pane and simultaneously in the Workplan Activity Information in the lower pane. Fill in the appropriate information in the text fields. You can choose among a set of participation methods if that is applicable for the activity and also what task screen in SEAMLESS-IF Prototype 1 it belongs to (e.g. project overview, policy impacts, indicator selection, etc.) (Figure 32b).

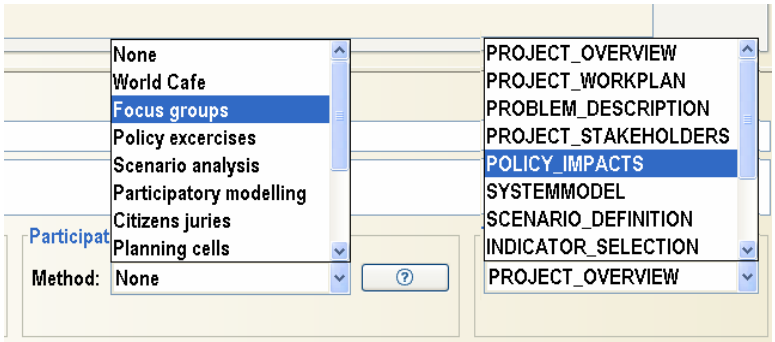


Figure 32b.

By clicking on the 'Diagram' tab a visual representation of the activities and relations between them in the project (Figure 33). It should be noted that when elements are removed from the diagram, they are automatically removed from the table as well. Details about graphical features of diagrams are discussed in Section 3.3. Below an explanation on building the diagram is presented.

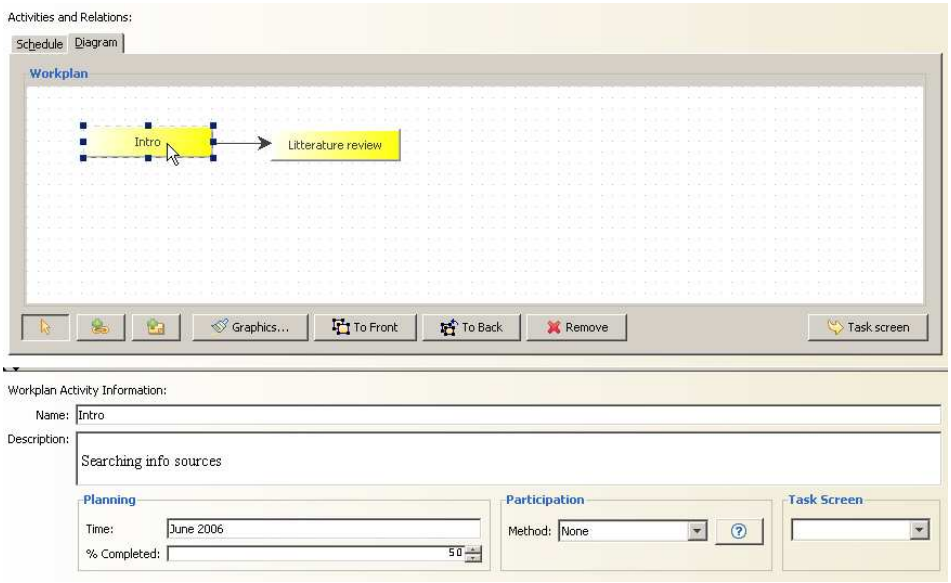


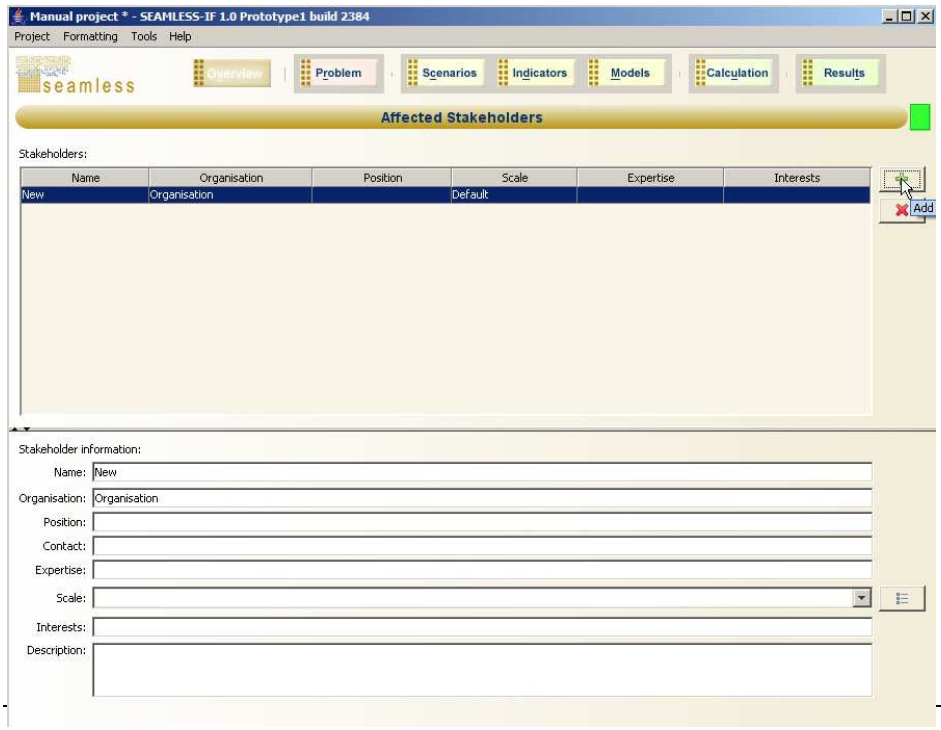
Figure 33.

The activities created in the previous step are already created in the work plan. You can add relations between the activities and further activities by clicking the respective buttons. The name of the activity can be modified by selecting it and updating the name in the input field in the bottom part of the screen. A second option is to double click on the box in the diagram and entering a new name there. To indicate a relation between two activities it is possible to add arrows to the diagram. Clicking on the 'Add Relation' button will add a new relation arrow in the top left corner of the screen.

Also relations in the diagram can be described by clicking the relation of interest in the diagram and fill in the Workplan Relation Information form that shows up in the lower pane.

You can go directly to the task screen that is related to an activity by clicking the 'Task screen' button in the lower right corner.

4.4.2 Stakeholders



The next task in the project definition is to provide information about the major stakeholders involved. To provide information about the stakeholders in the project, click the 'Stakeholders' button to open the 'Affected Stakeholders' screen (Figure 34).

Figure 34.

The screen Affected Stakeholders consists of two main parts. The top part of the screen (in the center area) contains a list of all the specified stakeholders.

Add a stakeholder by clicking the green plus sign to the right and fill in the information in the lower pane. The scale at which the stakeholder is active can be chosen from the drop-down list. You can edit or add an item to this list if you click the list button to the right to open the list management screen (Figure 35). Stakeholders can also be deleted by marking them in the list and then click the red cross to the right.

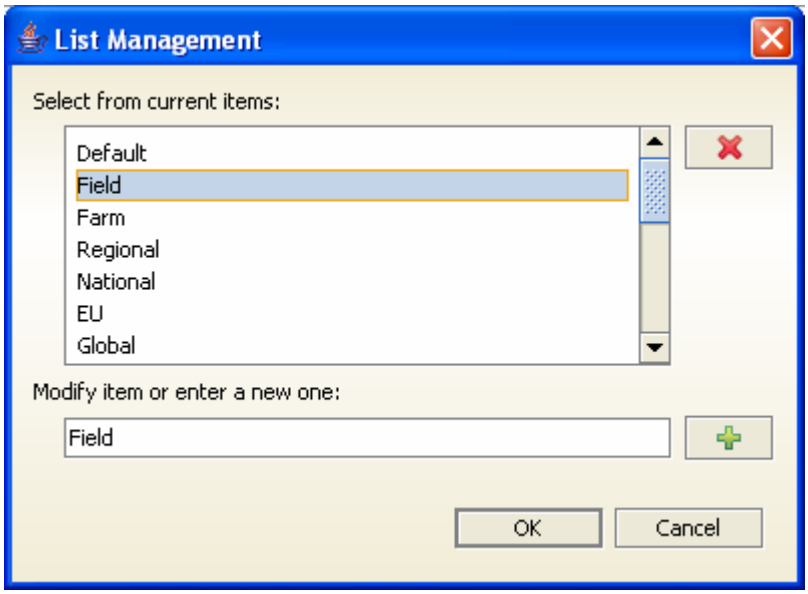


Figure 35.

4.4.3 Impacts

Impacts can be described in the 'Impacts of Interest' screen. Click the 'Impacts' button and provide the appropriate information in the screen that opens (Figure 36).

Add an impact by clicking the green plus sign to the right. Aspect and scale can be chosen from the drop-down menus and items can be added or edited as mentioned in Section 4.4.2 above.

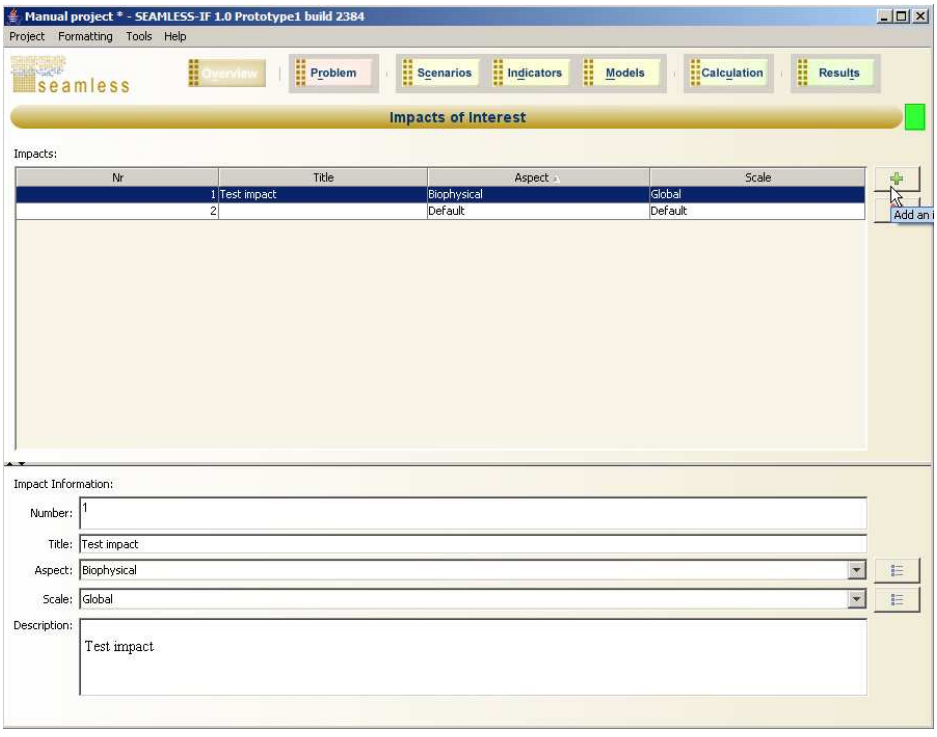


Figure 36.

Impacts can also be deleted by marking them in the list and then clicking the red cross to the right.

4.4.4 System overview

When entering the information about the stakeholders and impacts of interests already some relevant scales and aspects for the system model have been defined. In the **System Description** screen *elements* can be specified for these scales and aspects and the *relations* between them. Together they document the system that is applicable to the integrated assessment project.

Given the Test Case 1 description, which is focusing on arable farms, the example screen of a system represents four levels: Field, Farm, Regional and EU. There is no claim of having a full representation of the system to make an impact assessment. The example serves illustrative purposes only.

The elements can be modified and reviewed in table format or as a diagram (which also shows the relations between the elements). The first image illustrates the table format of system elements, which are specified in accordance with system aspects and levels:

As it was presented in Section 3.3, the graphics of system elements and system relations allows using various visualisation schemes (shape, colours and heading of arrows, colours and headings of the boxes).

Adding elements and editing them in the diagram uses the same methods as the Workplan diagram described before and no further detailed description will be provided for that. The only difference is that for an element it is not possible to modify its name by double clicking on it. Since the caption in the element box is a combination of aspect, scale and element name it can only be changed by using the input fields in the bottom part of the screen.

The Relation can be named and described (Fig. 37a). Its name will also appear in the diagram.

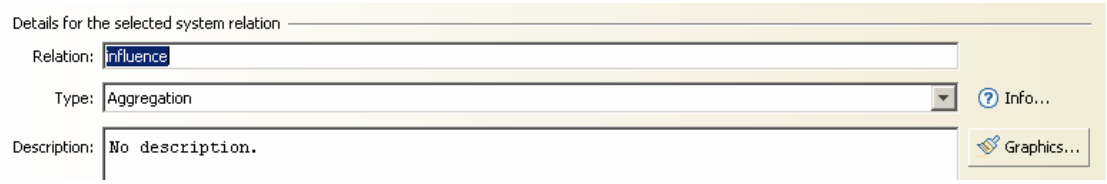


Figure 37a.

Various types of relations can be identified as shown in Fig. 37b.

Figure 37b.

The following diagram (Fig. 37c) of a System Description is included in the example project file of Prototype 1. The elements are grouped and coloured as the four system levels: Field, Farm, Region and EU. The elements that are placed at the EU level at the top right area (GDP Growth, Inflation rate, etc.) are exogenous to the scenarios which will be formulated at the next step (see Section 6) and further implemented under the Calculation.

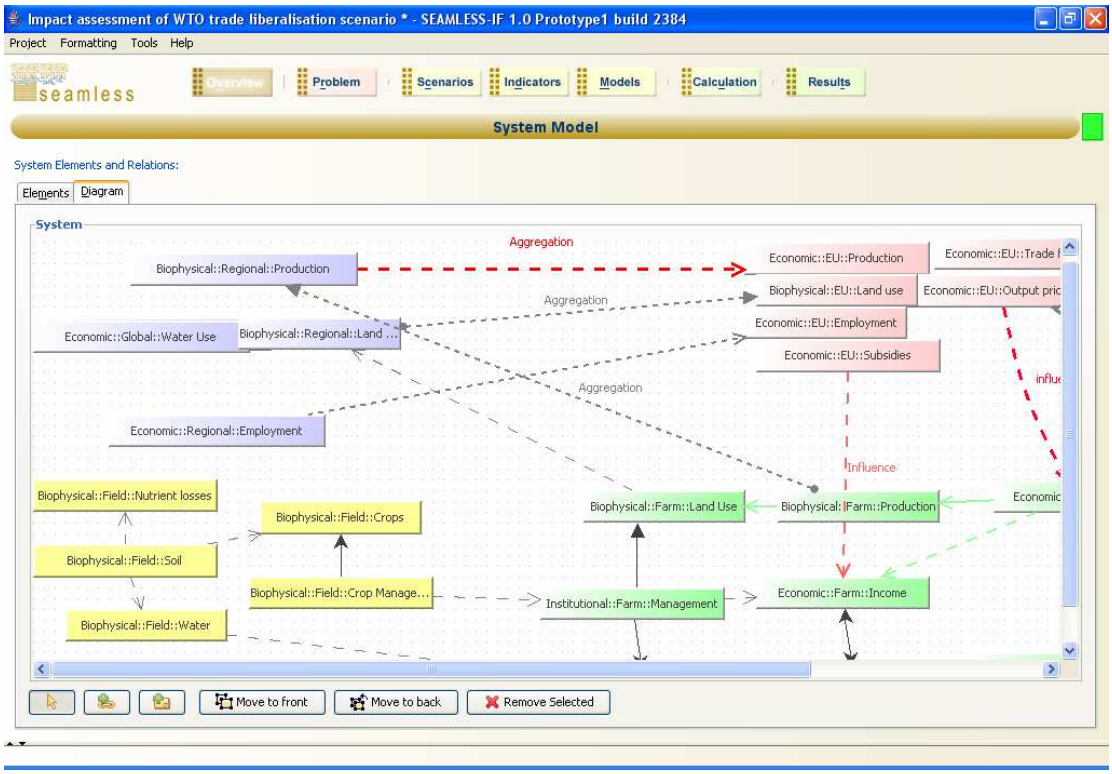


Figure 37c.

This is the same screen that is used for providing “Exogenous elements” in the Scenario formulation screen (see Section 6).

4.5 Cleaning up projects

SEAMLESS-IF Prototype can help you in managing your projects. In the ‘Project’ menu chose CleanUp (Figure 38) to open the ‘Project CleanUp’ screen (Figure 39). You can also delete files and folders that are no longer used by the project by clicking ‘Delete’. Please verify that the items in the list are safe to delete. To be extra cautious a good idea can be to copy the files and folders to another directory before deleting them from the project.

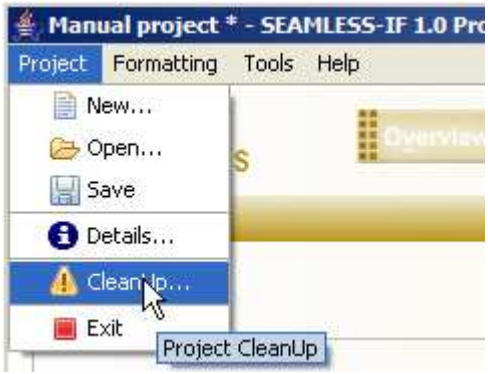


Figure 38.

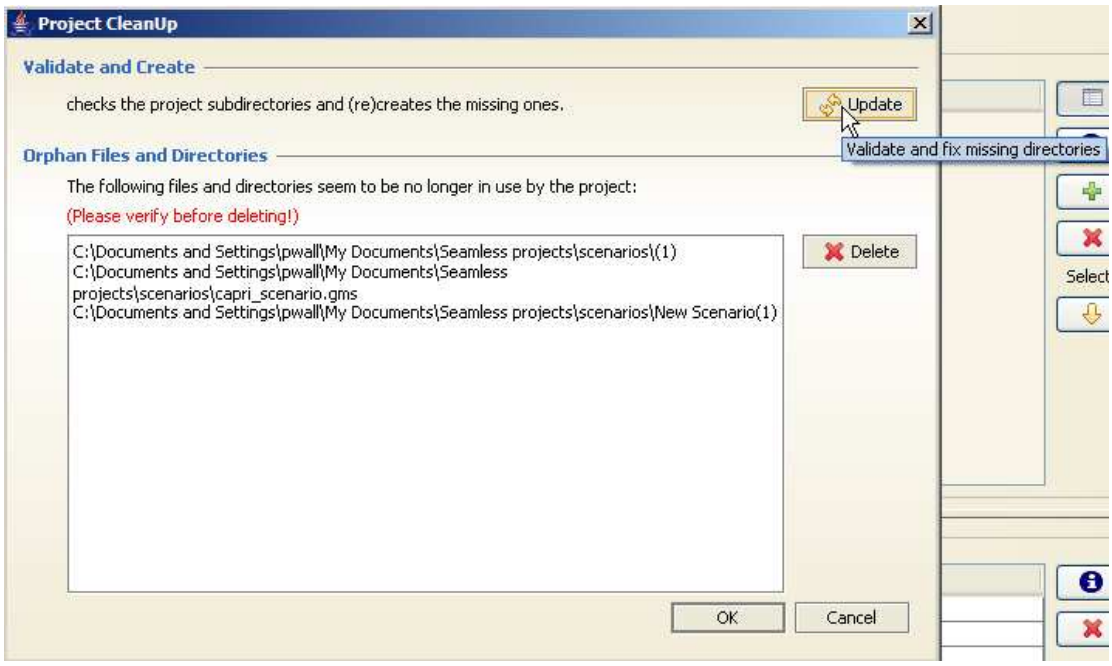


Figure 39.

Should there be problems with missing scenario subdirectories in the project, you can try to fix it by clicking on the *Update* button in the Validate and Create section. Where needed new (empty) directories will be added.

When there are orphan files and directories reported in the second section, for example when you created a test scenario and later decided to not save the project, first verify if they can really be deleted and not contain any essential data anymore. Then click the *Delete* button, the system will now attempt to delete all listed files and directories (with their contents). This option should be used with care!

5 How to define a problem in SEAMLESS-IF Prototype 1

Open the problem definition screen by either clicking 'Problem' in the top menu (Figure 40) or the icon in the workflow on the overview screen (Figure 41). Remember that can you can always return to the overview screen by clicking 'Overview' in the top menu.

Figure 40.

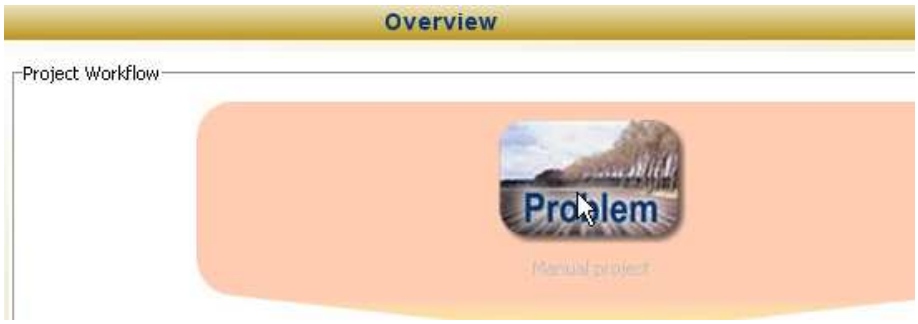


Figure 41.

Navigate on the problem description screen by clicking the different tabs and fill in the appropriate information (Fig. 42).

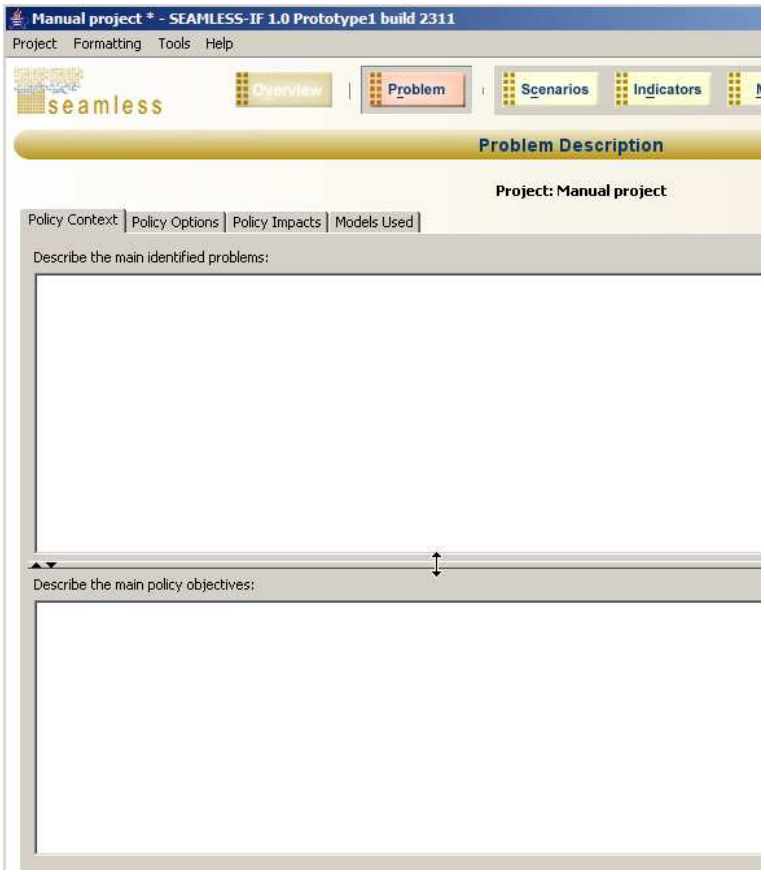


Figure 42.

Note than on some tabs the size of the text fields can be changed, either by clicking on the small black arrows to the left on the bar between the text fields or by simply placing the cursor on the bar and drag it (Figure 42).

Also note that there is no ‘Save’ button, the information provided is saved automatically in the project file and also updated if you return to this screen to change something.

6 How to define a scenario in SEAMLESS-IF Prototype 1

Click 'Scenarios', either in the top menu or in the project workflow map on the overview screen to open the scenario formulation screen (Figure 43).

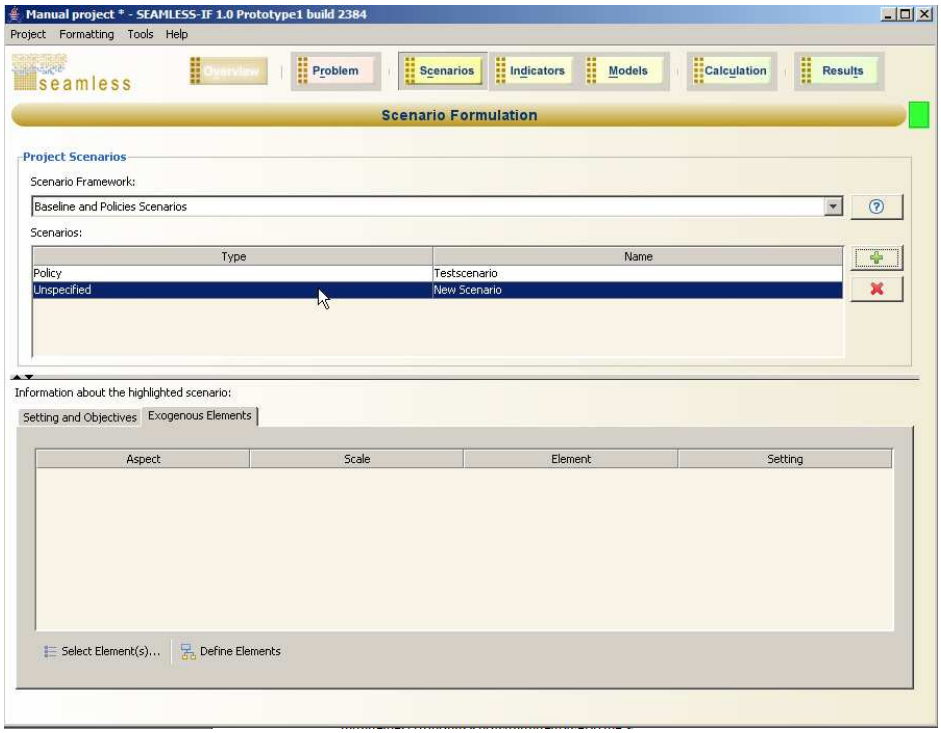


Figure 43.

To see the description of an already existing scenario highlight it in the list in the upper pane and the description is shown in the lower pane.

To add a scenario, click the green 'plus' to the right in the upper pane and fill in the name, choose what type of scenario you are providing from the drop-down list (e.g. Baseline, Policy, Contrasting, Ceteris Paribus) and fill in the description in the text field in the lower pane.

To delete a scenario, highlight it in the list and click the red cross button to the right.

To add exogenous elements to your scenario click the 'Exogenous Elements' tab in the lower pane (Figure 43). Click 'Select Element(s)' to see a list of already existing exogenous elements (Figure 44).

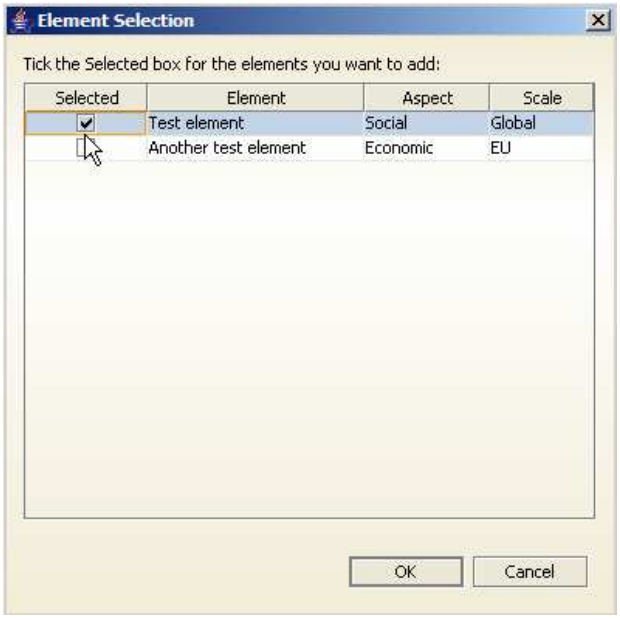


Figure 44.

To add an element to a system model, click 'Define Elements' and click on the workspace of the system model that appears (Figure 45). Fill in the appropriate information in the lower pane. Aspect and scale can be chosen from drop-down menus and new item in the list can be added according to Section 4.4.2 above. Add relations between the elements by clicking the add relations button at the bottom. When selecting the graphical representation of the relation in the system model a form for system relation information in which you can provide information is shown in the lower pane.

To return to the scenario formulation screen click 'Scenarios' in the top menu.

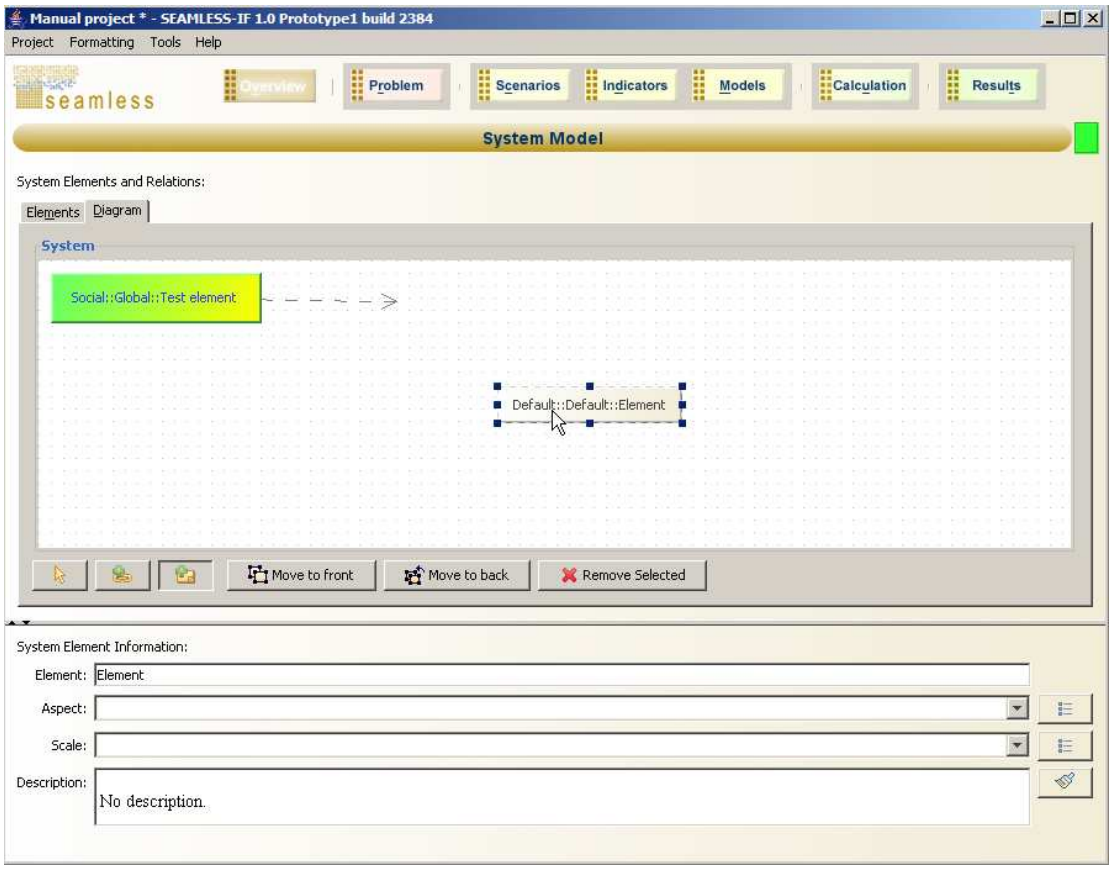


Figure 45.

Also here everything is automatically saved and hence no 'Save' button. The scenarios are saved in separate folders in the scenario folder of your home directory.

7 How to select indicators in SEAMLESS-IF Prototype 1

To open the indicator management screen (Figure 46), click 'Indicators', either in the top menu or in the project workflow map on the overview.

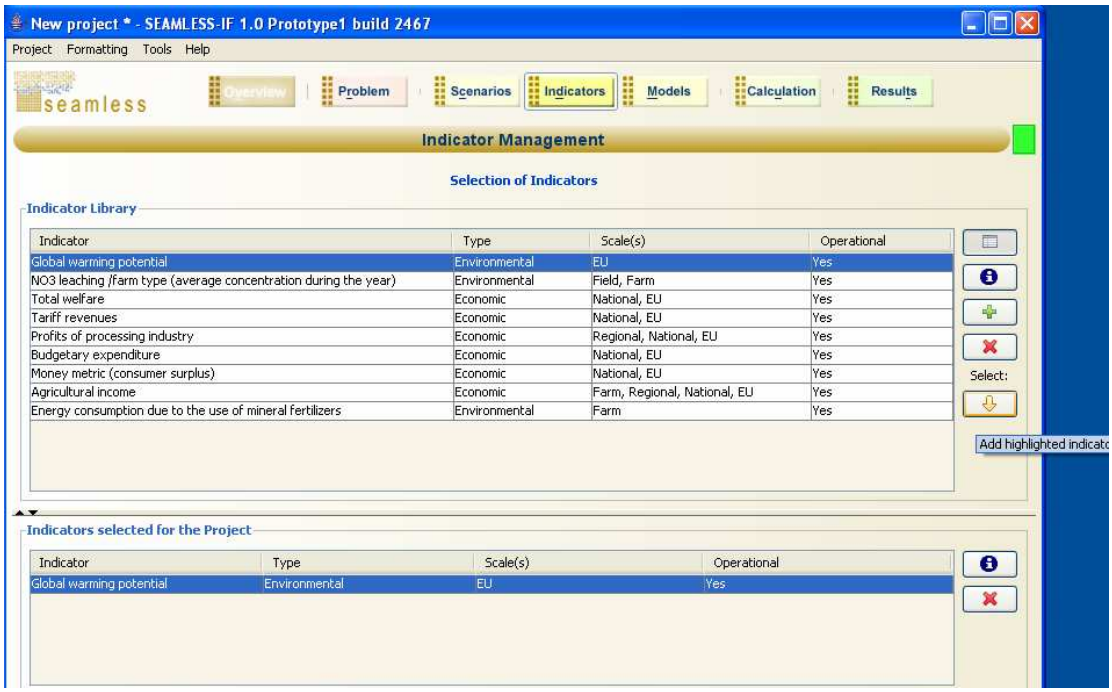


Figure 46.

In the scrollable list you can see all the indicators in the indicator library, their types (economic, environmental, social or institutional), scale or scales on which the indicator is applicable and if the indicator is operational within the framework. Information about the indicator (Figure 47) is available if you click on the "I" button or if you double-click on the indicator in the list. This screen is build from the indicator factsheets and it can also be populated by using these factsheets (available at WP2 portal).

To select an indicator for your project, highlight it in the list of the indicator library and click the select button with the yellow down arrow to the right. The chosen indicator will show up in the list of selected indicators in the lower pane.

To add a new indicator to the library, click the green 'plus'. A 'New indicator' entry appears at the bottom of the list. Double-click this line to open the indicator description (Figure 47). Navigate in the description by clicking the different tabs and fill in appropriate information. When you return to the library list by clicking the 'Back to list' button in the lower right corner your indicator is saved in the library.

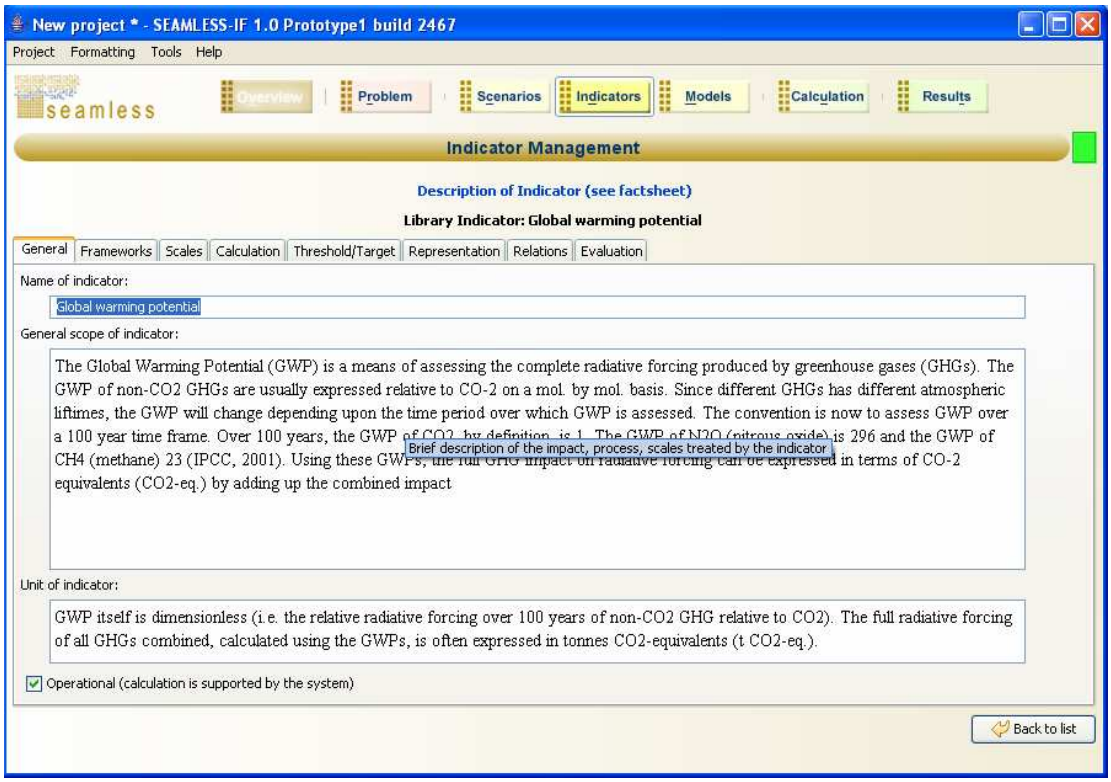


Figure 47.

To delete an indicator, either from the indicator library or from your project, highlight the indicator in the list, click on the red cross button to the right of the appropriate list.

Your choice of indicators for the project will be saved in the project file automatically.

8 How to build a model chain in SEAMLESS-IF Prototype 1

Click 'Models', either in the top menu or in the project workflow map on the overview screen to open the model chains screen (Figure 48).

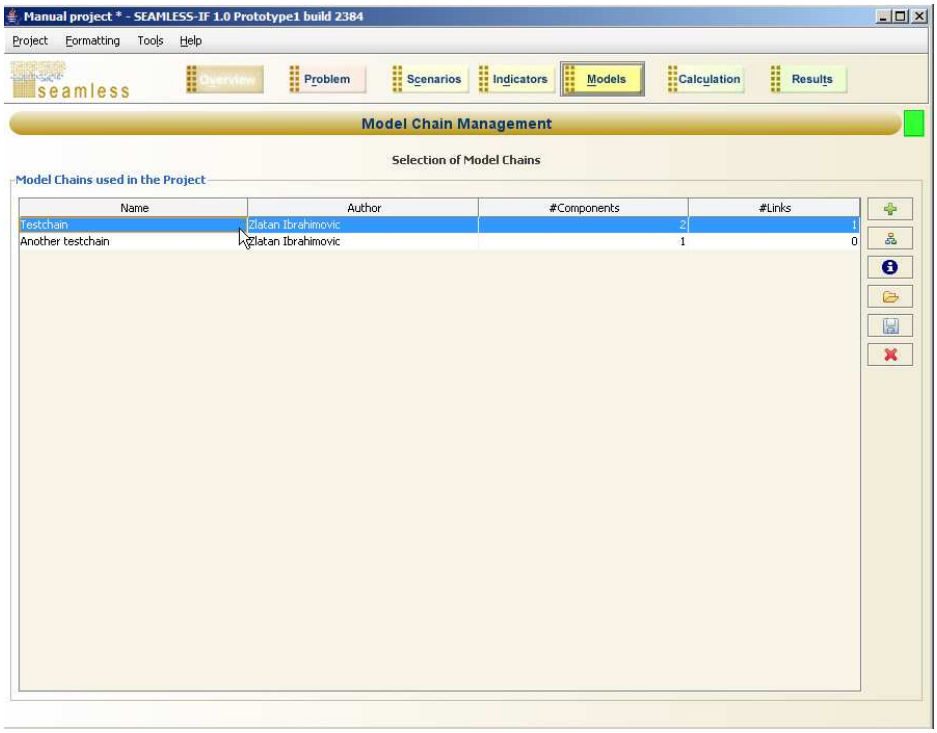


Figure 48.

8.1 How to open an existing model chain

You can select an already existing model chain in your project by selecting it in the list and then click the editor button to the right (Figure 49), or double-clicking it. A graphical representation of the chain opens. The chain can then be edited following the same steps as described in Section 8.2 below.

Figure 49.

8.2 How to create a new model chain

To create a new model chain, click the green plus sign button on the right side to open the composition settings (Figure 50).

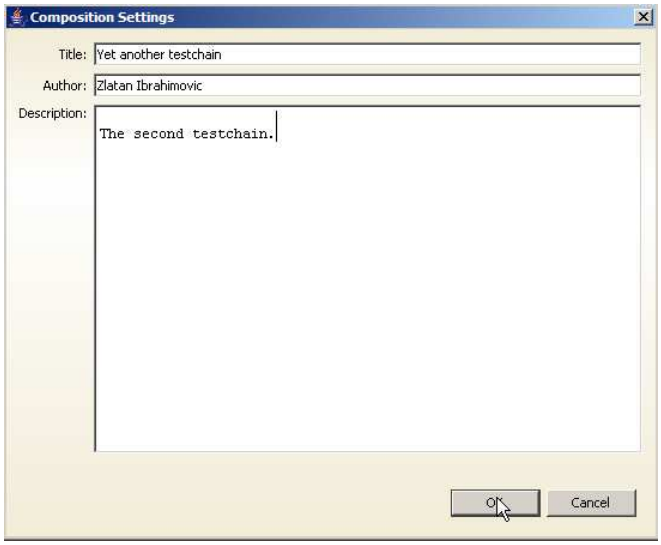


Figure 50.

After filling in the title and the description click 'OK' to open the model chain building diagram (Figure 51a).

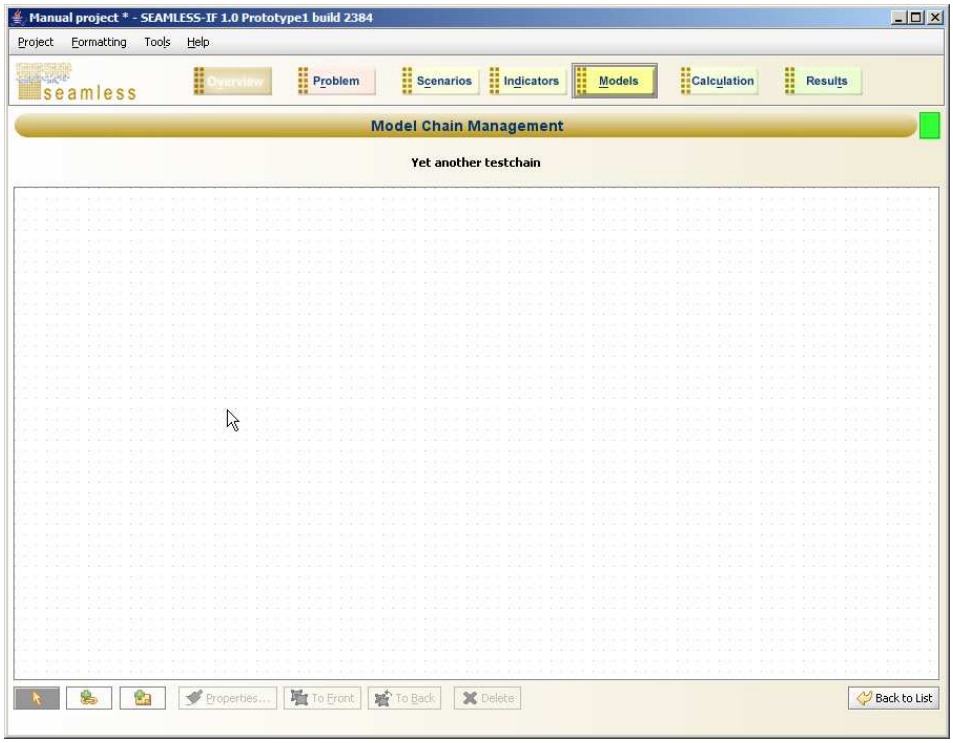
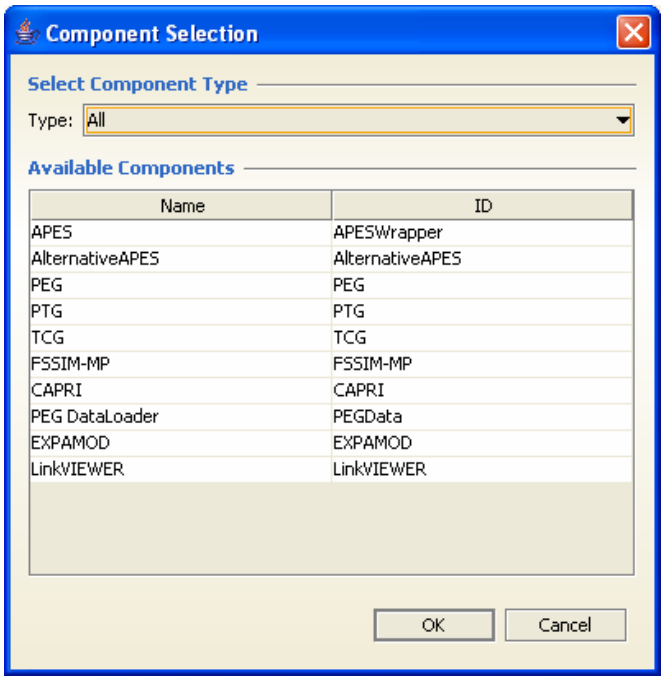


Figure 51a.

To add one or more model(s) to the chain in the diagram enable the 'Add models to the diagram' button in the lower left corner of the screen (Figure 51a). Click anywhere on the workspace in the diagram and a list of available models appears (Figure 51b).



Highlight the model(s) of your choice and click 'OK'. When you add multiple models at once (Figure 51c), they will appear stacked in the diagram, and you should manually rearrange them to a more proper location. The blocks that represent the models, can be moved by clicking on them with the mouse (this selects a block) followed by dragging (move the mouse while keeping the mouse button pressed) it to a new location.

Figure 51b.

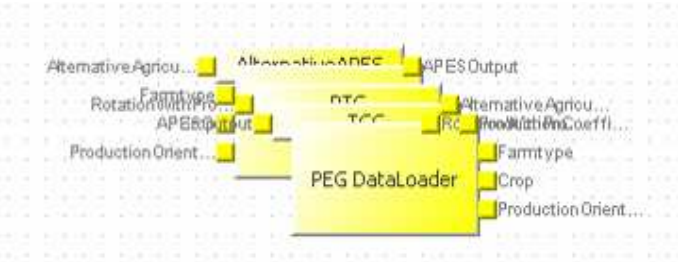


Figure 51c.

You can also select the models one by one by repeatedly opening the selection dialog. When you are finished with this your diagram could look something like Figure 52.

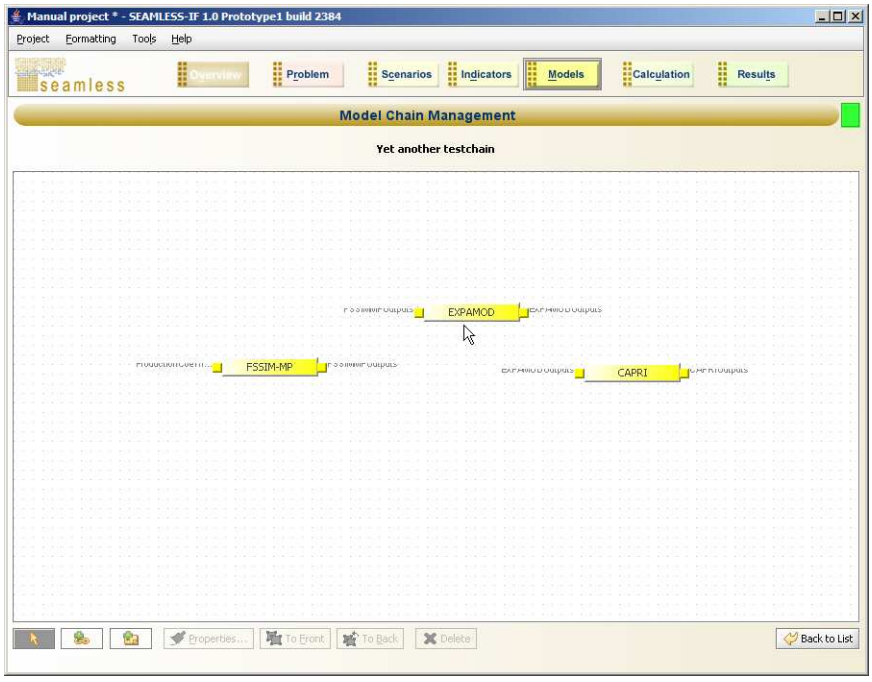


Figure 52.

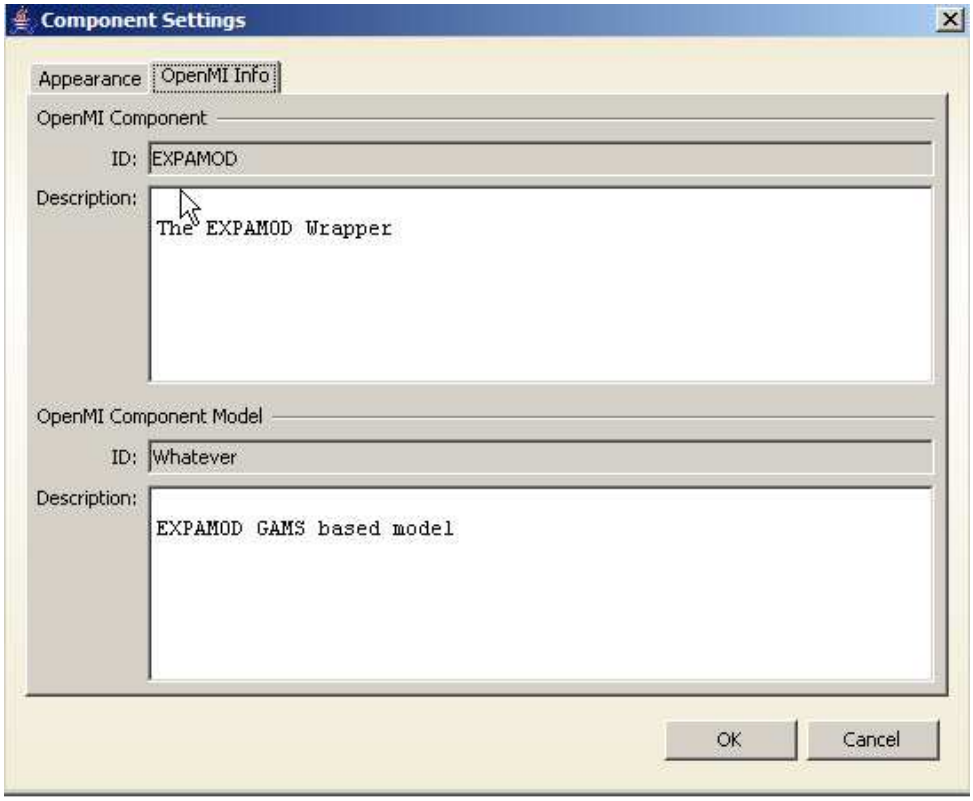


Figure 53.

You can edit the appearance of the model icons, according to Section 3.3 above by right-clicking the model icon and choosing 'Properties' from the pop-up menu or select the model by clicking it and then click 'Properties' in the bottom menu. In the properties you can also see the OpenMI (the programming interface used to link models in SEAMLESS-IF Prototype 1) information about the component (Figure 53).

To link the models, enable the 'Add links to the diagram' button in the lower left corner (Figure 52). Start by clicking the knob on the model that receives data by the link, and then drag the link (a thin green line) over to the knob of the model that provides data. As soon as you have clicked the knob of the providing model, the link turns into a thin grey arrow linking the models. The appearance of this link can be edited according to Section 3.3 above. This way of linking illustrates that OpenMI employs a pull approach which means that models ask other models for necessary data and not the other way around (i.e. models offer data to other models, the so called push approach).

At this stage of development, SEAMLESS-IF Prototype 1 cannot help you on how to link the different models. However the linking of models is only possible in the following sequence: PEG Data Loader, PEG, PTG, APES, TCG, FSSIM-MP, EXPAMOD, CAPRI. This is ensured by the fact that each model input can be linked to only one output of a neighboring (in the sequence) model. An alternative to APES model can be used. This Alternative APES component has been developed as a component for the SEAMLESS prototype 1. Alternative APES uses simple rules of thumb to produce similar outputs as APES (i.e. APES which is a dynamic crop growth simulation model, is temporarily left out); alternative APES as a temporary component, facilitates development of the other components (e.g. FSSIM and EXPAMOD) by supplying reasonable values for yields and environmental effects to all crop types and all agricultural activities without limitations.

8.3 How to import and export model chains

You can import model chains from other projects by clicking the open icon to the right on the 'Model Chain Management' screen (Figure 54). Navigate to the location of the xml-file of interest and click 'Open'.

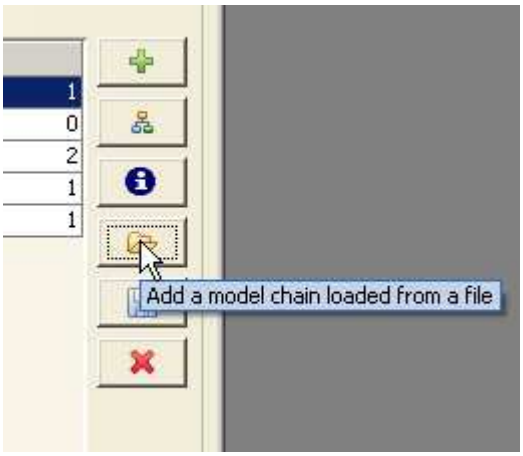


Figure 54.

To save a model chain to a file, click the save button, name the file what it is named in the list. This name is saved in the xml-file, but is not filled in by default in the save dialog. If you import the model chain to another project, it will be opened with the name it had when saving it, regardless of the file name it was saved with.

9 How to execute a model chain in SEAMLESS-IF Prototype 1

Click 'Calculations' in the top menu or the 'Run Calculations' button in the project workflow map on the overview screen to open the SEAMLESS Calculation Wizard (Figure 55).

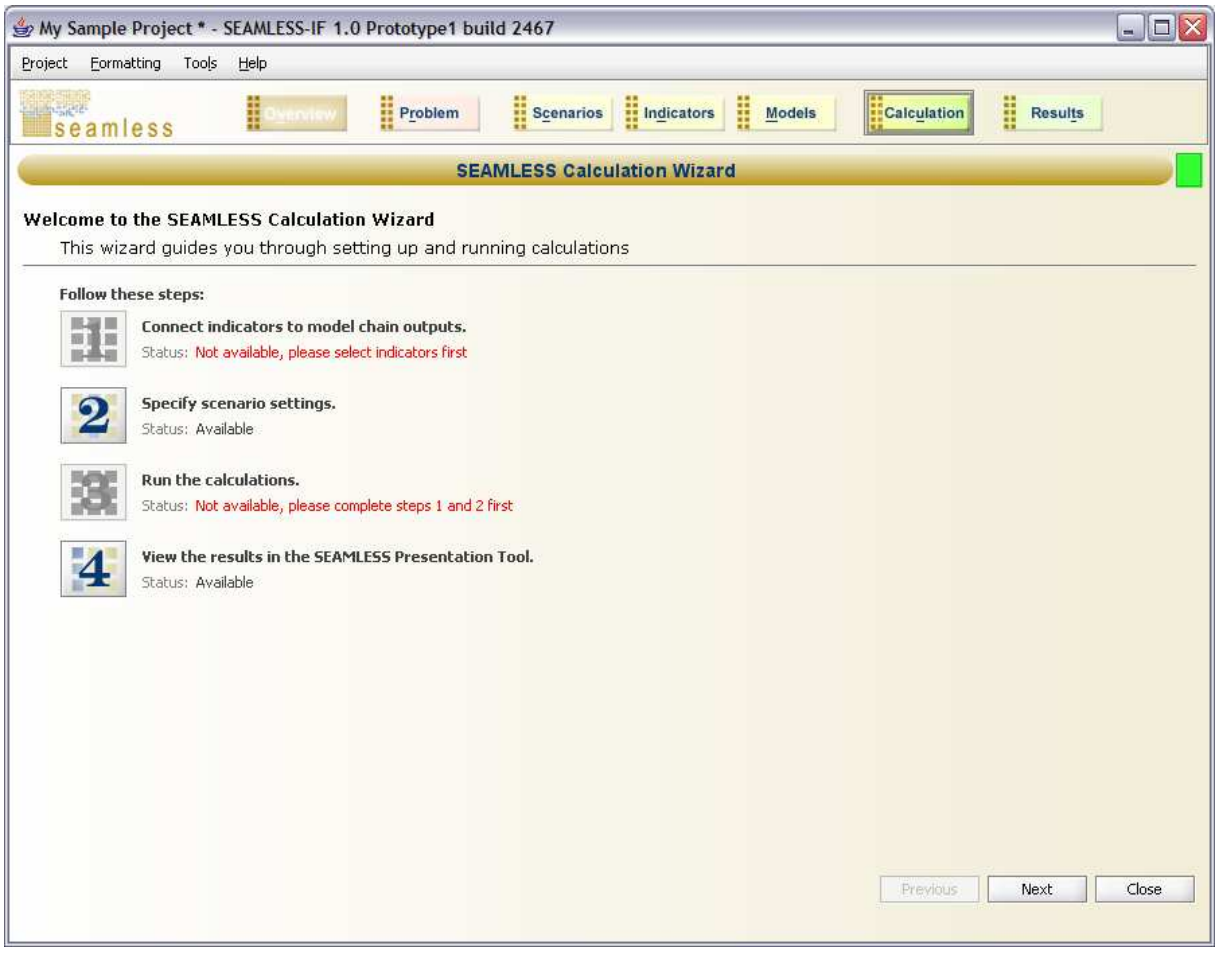


Figure 55.

The Calculation Wizard guides you through the (currently) four steps needed to set up and run calculations. The buttons marked 1 to 4 can be clicked to go to a particular step directly. Use the Next and Previous buttons in the lower right to navigate through the wizard sequentially.

After the 1 to 4 buttons a short text explains the step needed and a status message indicates if the step is available to you or not. A step will not be available until the required prerequisites are fulfilled. The status message will indicate what type of information you need to provide to SEAMLESS-IF first.

9.1 Step 1: Indicator binding

Click '1' to connect the indicators you chose to the outputs of your model chain (Figure 55). Highlight the indicator in the upper pane and then the model chain output you would like to connect it to (Figure 56). The link button to the right is highlighted if the link is possible. Click this button if you want to create the link.

It should be noted that once an indicator is linked to a model, this model will pull other relevant model chain components. Thus, if none of the indicators is linked to APES, APES will nevertheless be activated by FSSIM or by CAPRI through FSSIM. APES will calculate a lot of outputs per agricultural activity, while FSSIM will select the agricultural activity with the optimal values. In Prototype 1 it is important that at least one indicator is linked to CAPRI to run the full_model_chain and one indicator linked to FSSIM model to run the FSSIM model chain. Adding other links does not influence the whole workflow of calculations that are performed on the background.

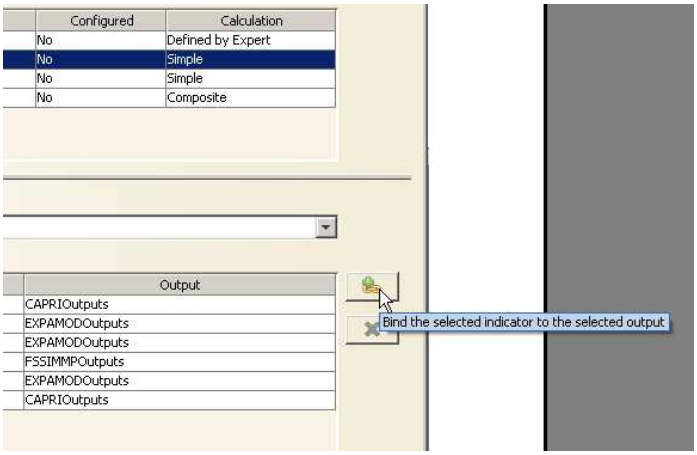


Figure 56.

An message shows up in the lower pane if the indicator will not yet be calculated (Figure 57).

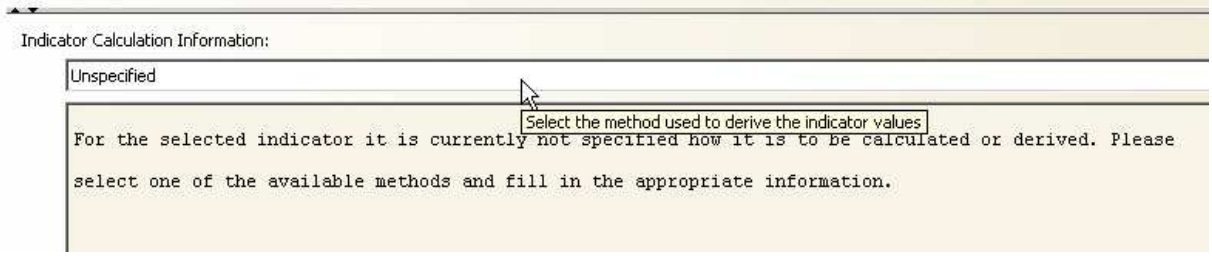


Figure 57.

Go to the next step by clicking 'Next' on the previous screen or by clicking '2' on the Wizard screen (Figure 55).

9.2 Step 2: Specify scenario settings

Inspect the scenario(s) you want to run by selecting them from the drop-down menu (Figure 58).

To edit the configuration arguments (input parameters) of the different components in your model chains, select the component by clicking it in the list in the lower pane.

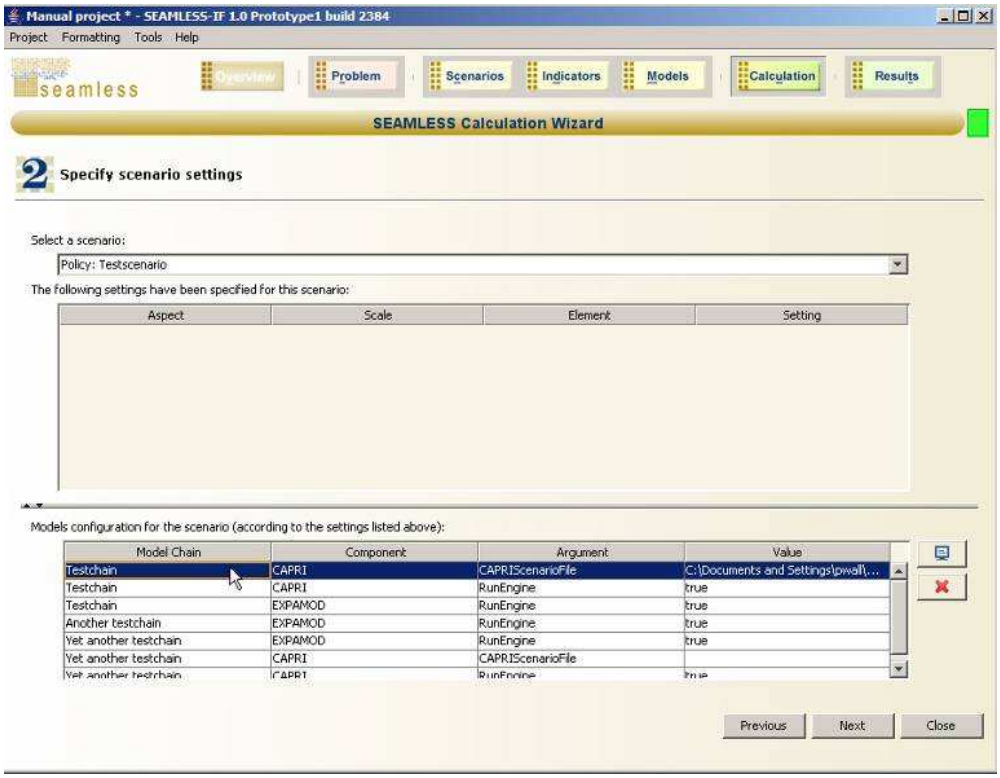


Figure 58.

Currently, the only model that has a kind of extended integrated user interface for this in SEAMLESS-IF Prototype 1 is CAPRI. Other values can be changed from True to False to enable/disable viewing intermediate model outputs appearing as pop-up screens; select various rotation filters and management practices; choose among three farm types in Flevoland. The final specification of a model chain available in the sample_project file is described in the Release notes available in the package of Prototype 1 (D1.4.1).

To edit the CAPRI scenario highlight the line where the argument says CapriScenarioFile, and click the 'Edit' button to the right. The CAPRI Scenario Editor appears. Open up the tree to see the different editable items in the CAPRI scenario file (Figure 59). All the three Boarder Protection Measures are editable, whereas other items in this tree are not enabled in the current version of SEAMLESS-IF Prototype 1.

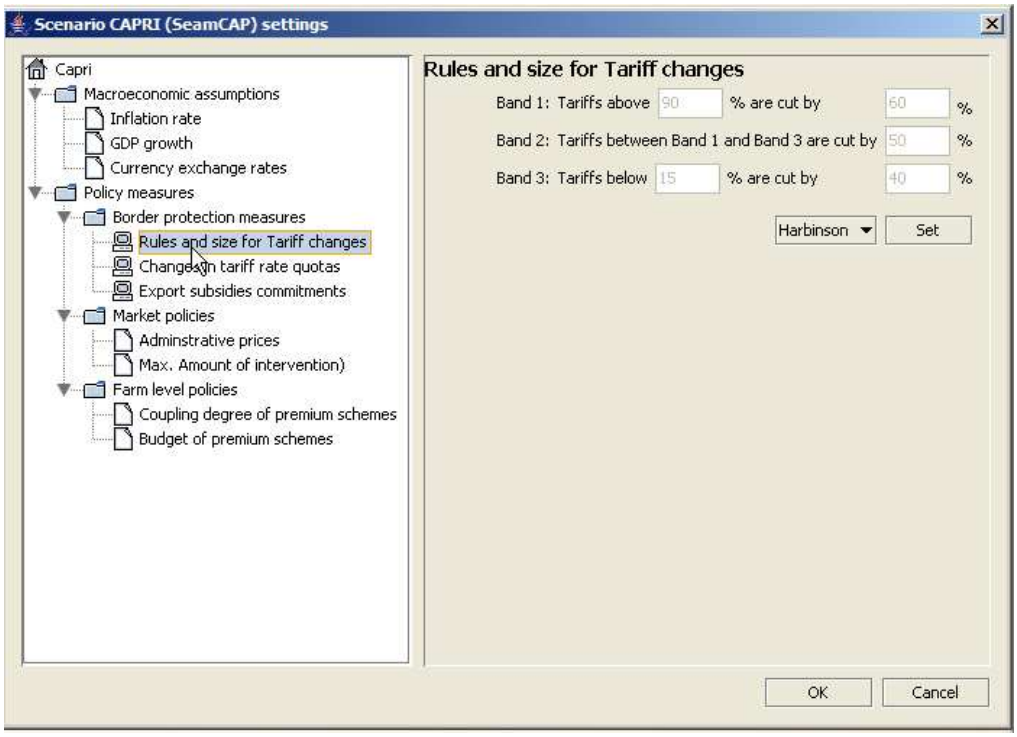


Figure 59.

When your scenario files are set, click 'OK' to return to step 2. If everything is set to your likings, click 'Next' to go to step 3.

9.3 Step 3: Start calculations

Select the scenario you want to run from the drop-down menu and click 'Start'. You can follow the progress of the calculations in the lower pane (Figure 60).

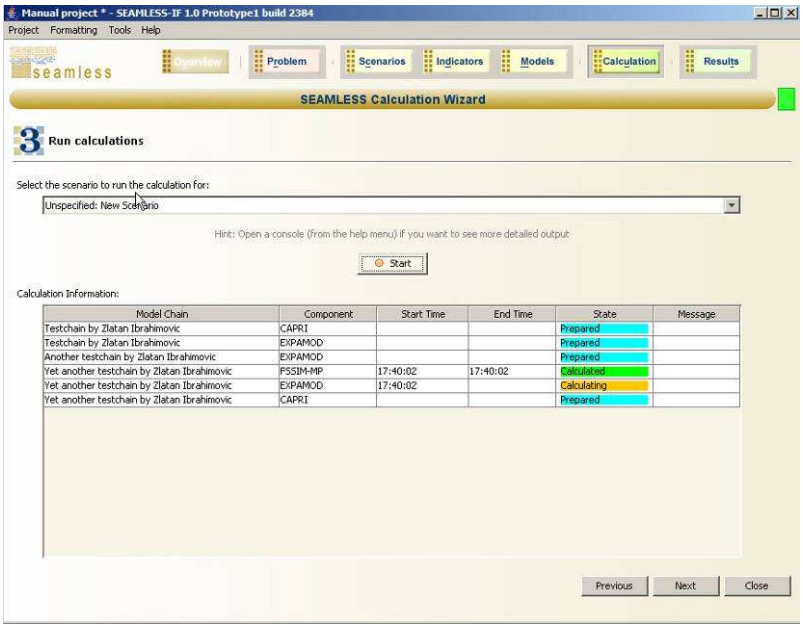


Figure 60.

When the calculations are finished, go to step 4, which is Result visualization, by clicking ‘Next’.

Note that though the calculations will be started as a background process allowing you to keep working in SEAMLESS-IF (and e.g. open different screens and modify information), this is not recommended. Please allow SEAMLESS-IF and the models to finish the calculations first before continuing work, unless you absolutely know what you are doing.

9.4 Step 4: Result visualization

This part of SEAMLESS-IF is currently under development (note the blue status rectangle in the upper right corner); the MapViewer and TableViewer tools from CAPRI are available by clicking the appropriate buttons on this screen (Figure 61). This is further described in Section 10.

10 How to handle outputs in SEAMLESS-IF Prototype 1

Step 4 in the Calculation Wizard is Result visualization. You can also open the Presentation tools if you click 'Results' in the top menu of the overview screen or the results icon in the workflow map on the same screen (Figure 61).

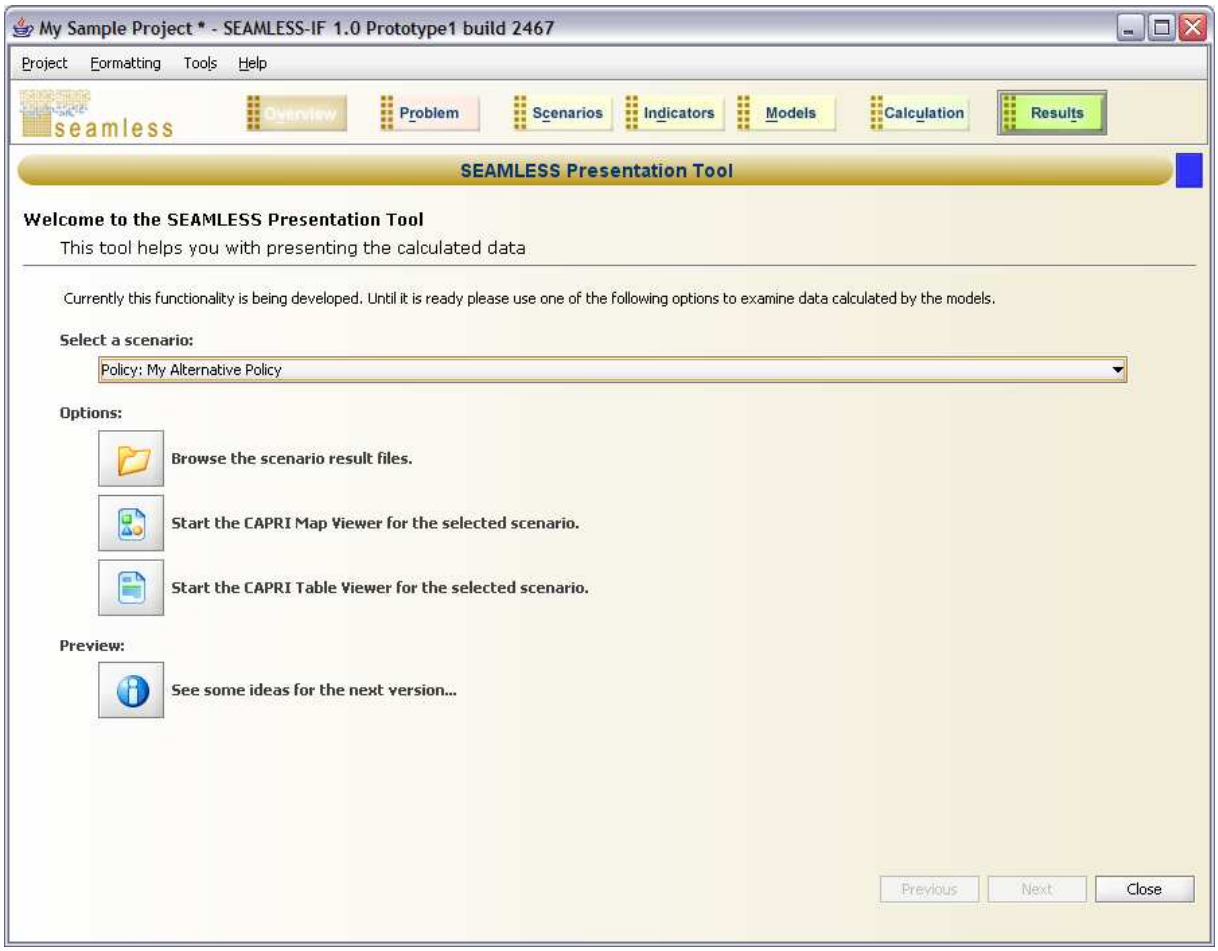


Figure 61.

10.1 File browsing

Currently, the visualization possibilities in SEAMLESS-IF Prototype 1 are limited. You can browse the results files by clicking the 'Browse the scenario result files' button (Figure 61). Most of the files you will see are csv (comma separated values) files that can be opened in Microsoft Excel, Notepad or any other text editor (Figure 62). Unfortunately, export options for results in formats such as xls or ASCII are not yet implemented. It is, however, easy to save files in a different format after e.g. a CSV file is loaded into Microsoft Excel. The files can be opened by a double-click directly from the SEAMLESS-IF, but also can be browsed through in the folder with results. This folder will be stored under the location where the SEAMLESS-IF is installed:

"SEAMLESS-IF\YourProjectName\scenarios\NameOfYourScenario\NameOfYourModelChain\".

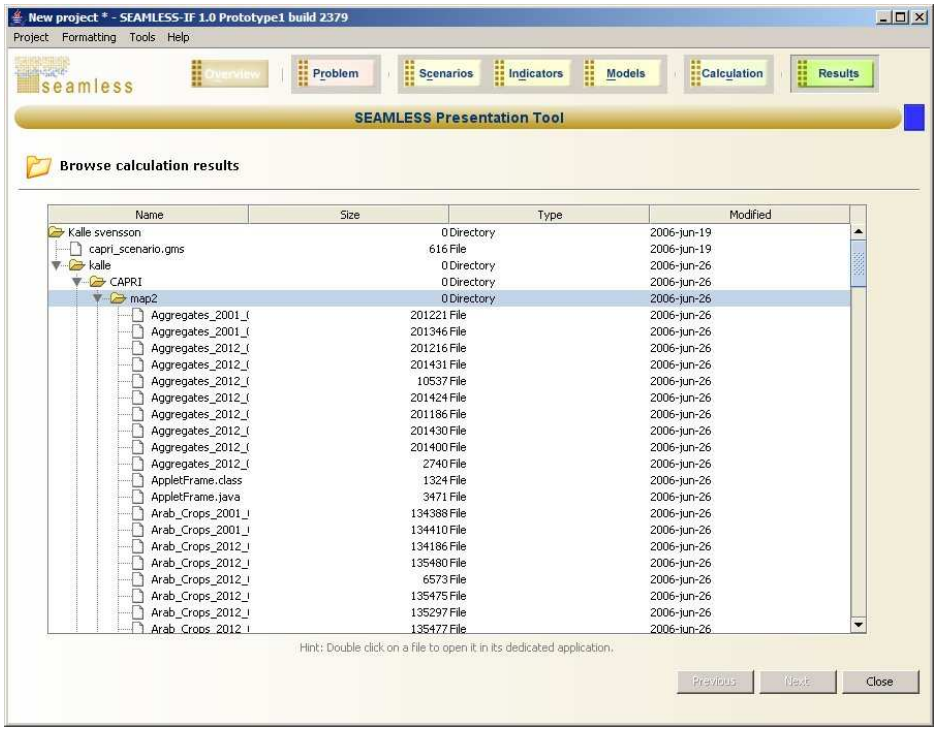


Figure 62.

10.2 CAPRI results

You can also view the CAPRI related result files, either in the Map Viewer or in the Table Viewer.

10.2.1 The Map Viewer

To open the Map Viewer, click the button (Figure 61) and the Map Viewer tool opens as a Java application in your default web browser (Figure 63). By using the drop-down menus (Figure 64) you can filter the information you want to visualize. When you place the cursor over a NUTS II area in the map, information is shown in the box in upper left corner (Figure 65).

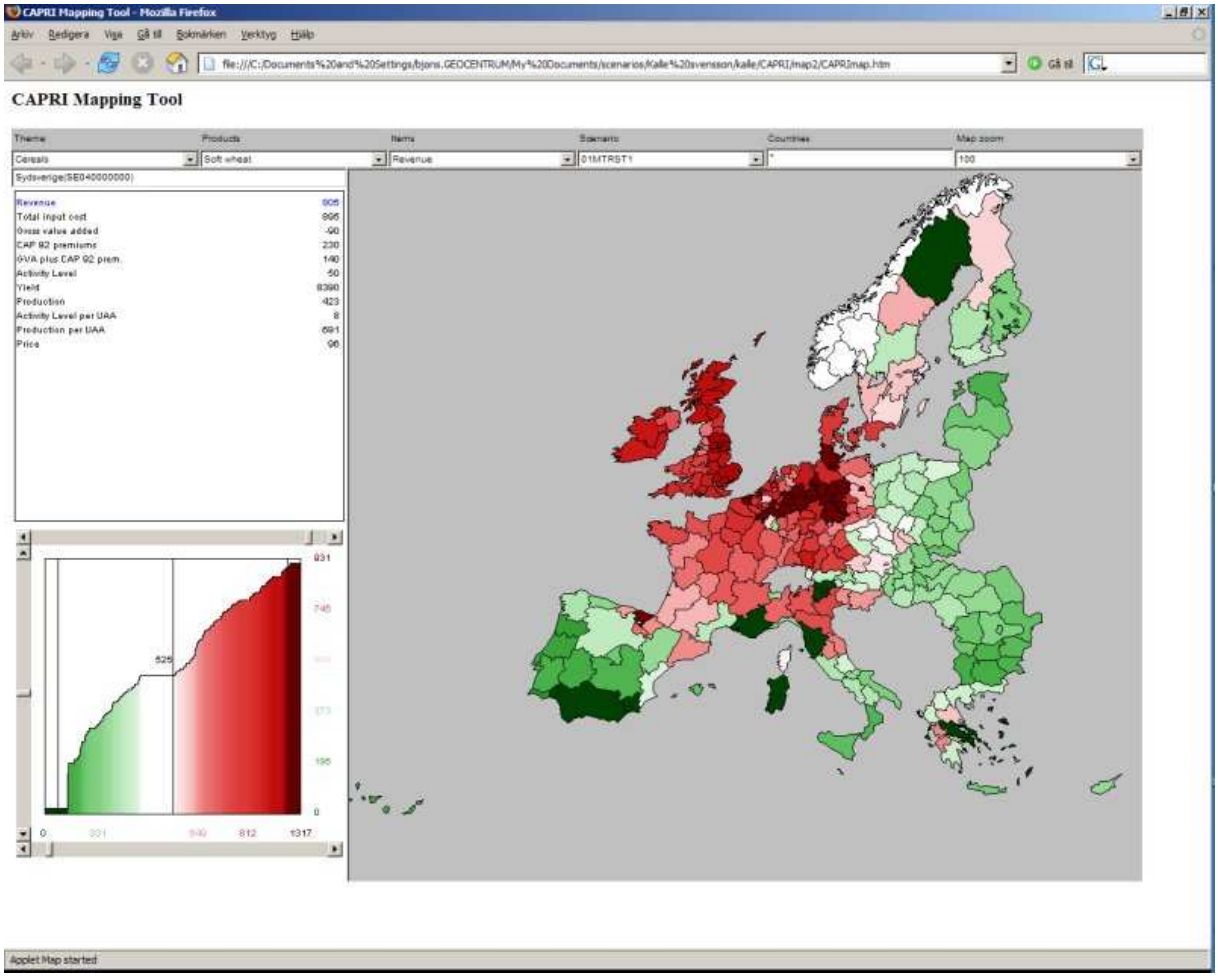


Figure 63.

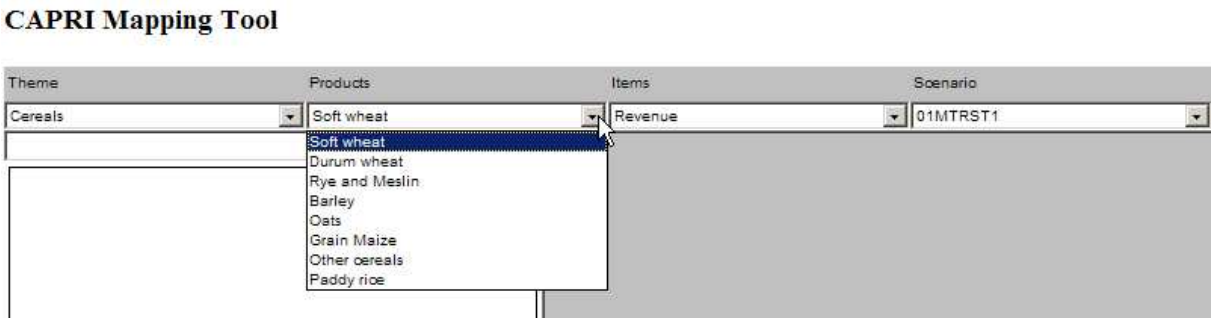


Figure 64.

In the diagram in the lower left corner you can change colour coding of the map by dragging the scrollable list to desired positions.

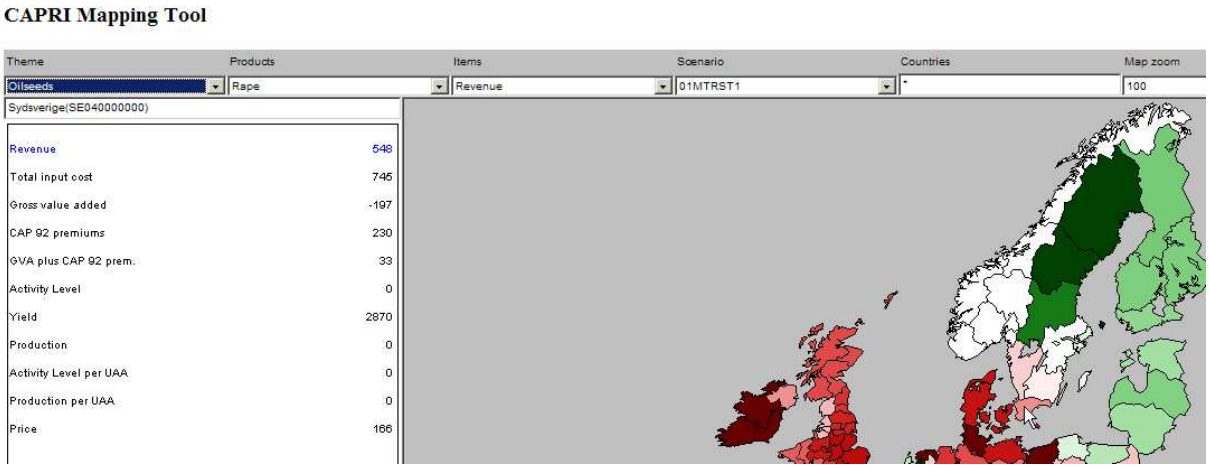


Figure 65.

10.2.2 The Table Viewer

To look at the results in the Table Viewer, click the button on the SEAMLESS presentation tool screen (Figure 61). The Table Viewer opens up in your default web browser (Figure 66). Probably you have to allow you web browser to run the active web page contents used by the tool (Figure 67).

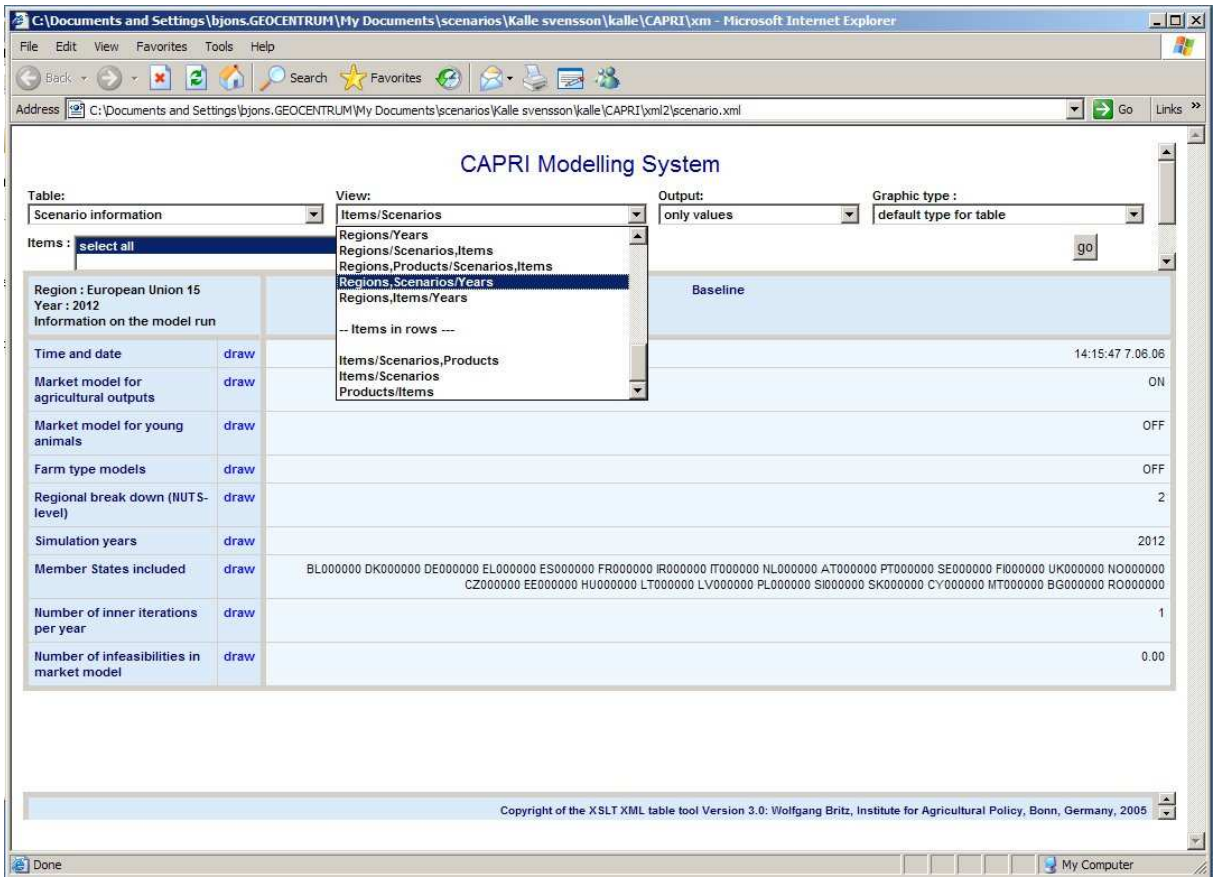


Figure 66.

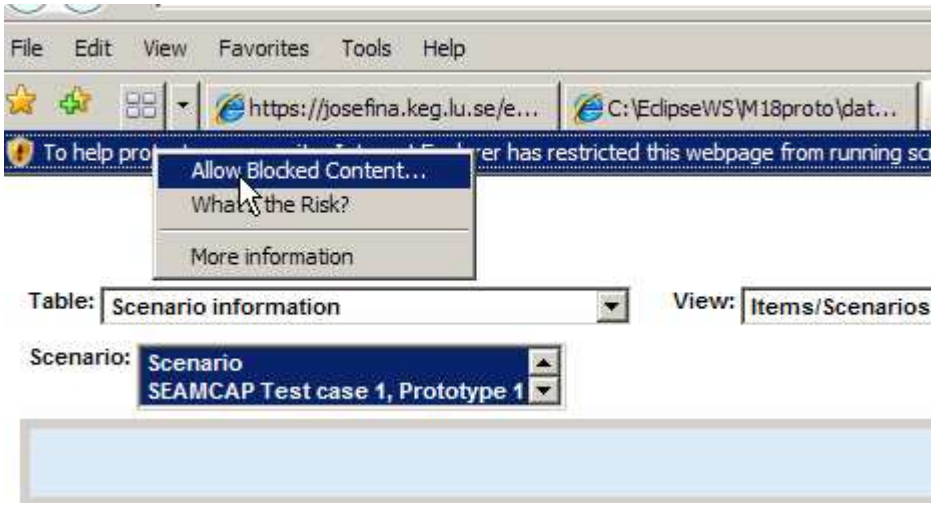


Figure 67.

In the drop-down menus you can filter the information to be shown by the tool. Choose among numerous items to show, cut in many ways in the drop-down menus and then click the 'Go' button in the upper right corner. If you would like to visualize the tables as graphs, you have to install a program called SVGView (see Figure 1). It is available free of charge from Adobe on the Internet: http://www.adobe.com/svg/viewer/install/main.html

Download the appropriate version to your computer and save in a location where you can easily find it. Double-click the downloaded file SVGView.exe and the installation will be carried out automatically. Click the blue 'draw' hyperlink after the item you want to visualize in a graph and the graph tool is started (Figure 68).

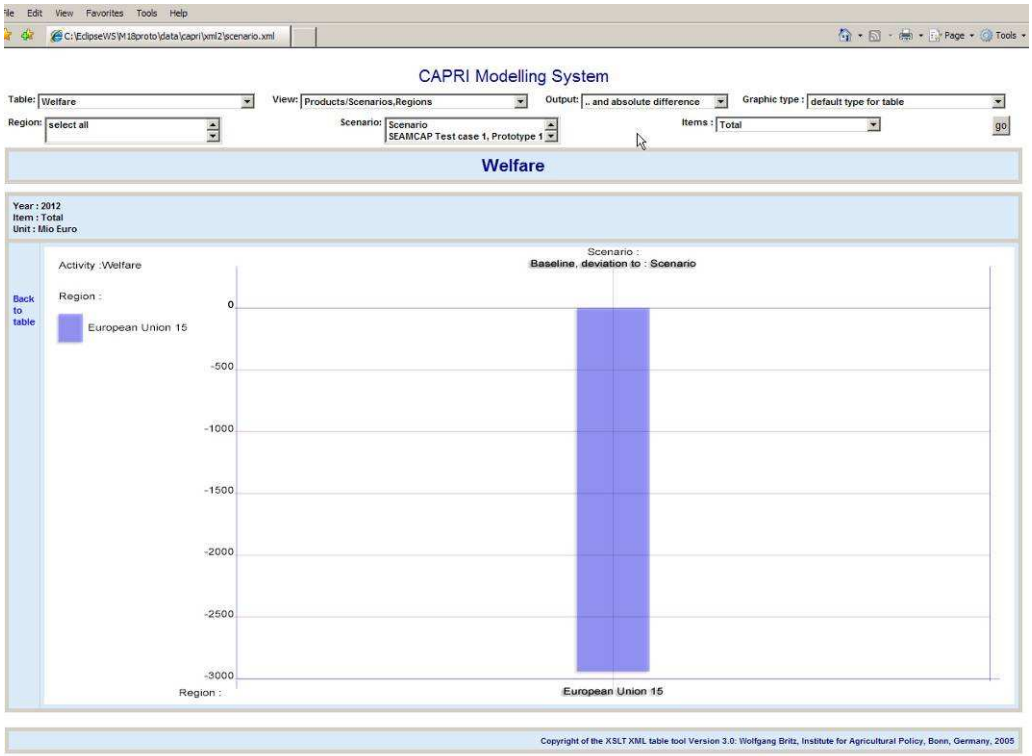


Figure 68.

10.3 Ideas for the next version

You can also view ideas for the FSSIM (Figure 69a) and APES (Figure 69b) results presentation under the button 'Ideas for the next version'. These results are recognisable from results provided with the sample project file (see Release Notes).

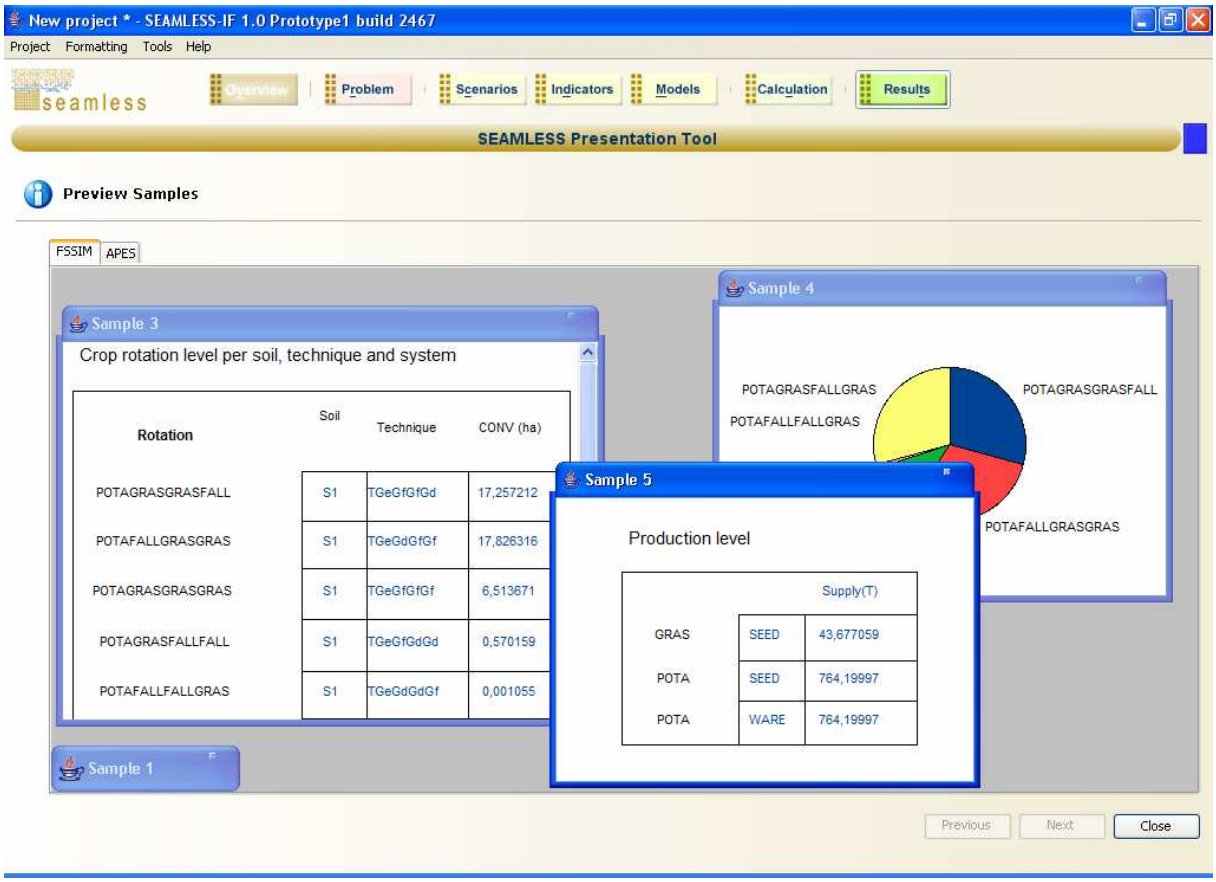


Figure 69a.

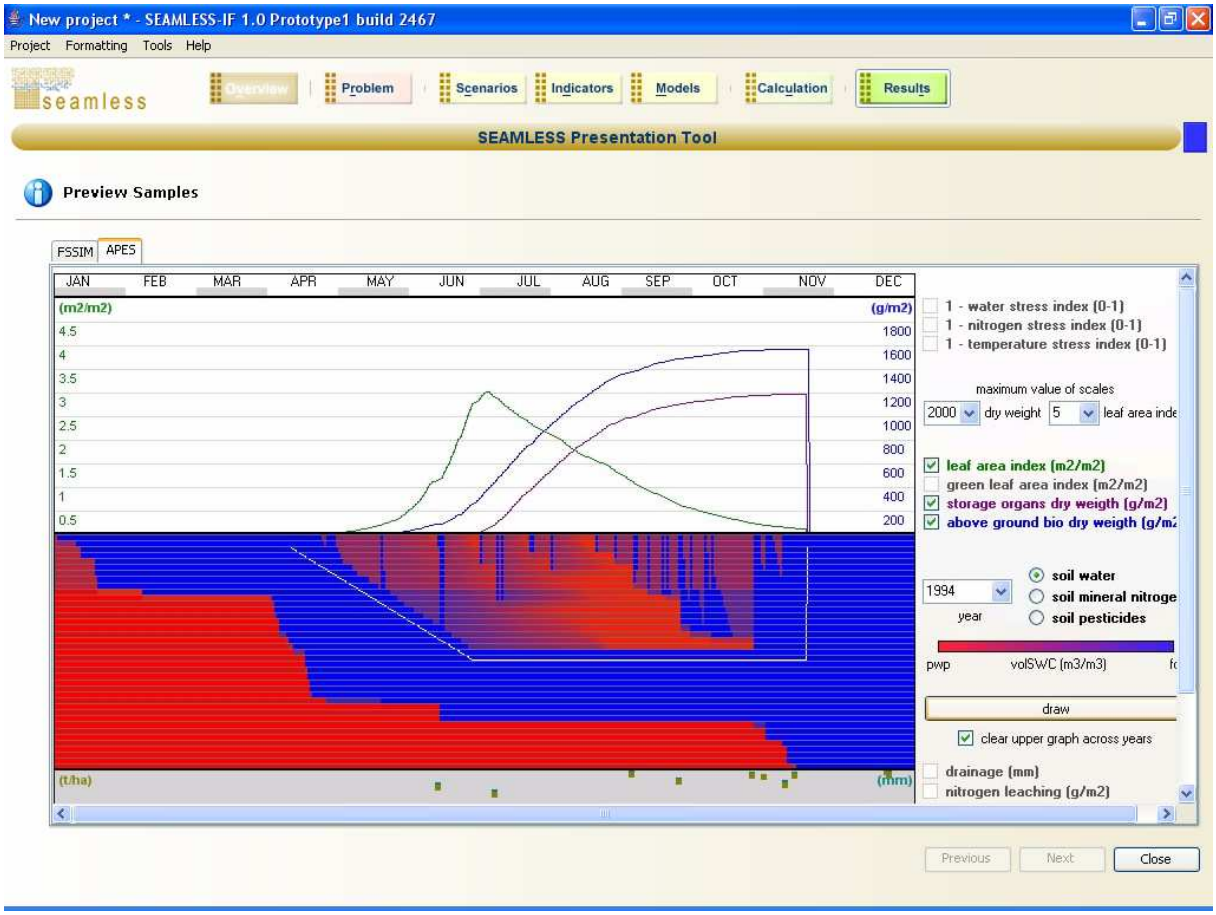

New project * - SEAMLESS-IF 1.0 Prototype1 build 2467
Project Formatting Tools Help
seamless
Overview
Problem
Scenarios
Indicators
Models
Calculation
Results
SEAMLESS Presentation Tool
Preview Samples
FSSIM
APES
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
(m2/m2)
(g/m2)
4.5 4 3.5 3 2.5 2 1.5 1 0.5
1800 1600 1400 1200 1000 800 600 400 200
(t/ha)
(mm)
1 - water stress index (0-1)
1 - nitrogen stress index (0-1)
1 - temperature stress index (0-1)
maximum value of scales
2000 dry weight 5 leaf area inde
leaf area index (m2/m2)
green leaf area index (m2/m2)
storage organs dry weigth (g/m2)
above ground bio dry weigth (g/m2
1994
year
soil water
soil mineral nitroge
soil pesticides
pwp
volSWC (m3/m3)
draw
clear upper graph across years
drainage (mm)
nitrogen leaching (g/m2)
Previous
Next
Close

Figure 69b.

11 How to use the Trac system

Trac is a web-based management of software projects, and is available for all SEAMLESS-IF users for reporting bugs, missing functions, glitches in design and usability as well as for collecting wishes and requests for future versions. Its goal is to simplify effective tracking and handling of software issues and improvement suggestions.

11.1 How to login to Trac

To use the SEAMLESS Trac system you need a login ID and a password. If you do not already have an ID or you have forgotten your ID or the password, please contact Benny Jonsson (benny.jonsson@lucsus.lu.se, phone: +46-46-2224809)

Open your favorite web browser and go to http://trac.seamless-ip.org.

Start logging in by clicking 'Login' in the upper right corner (Figure 70).

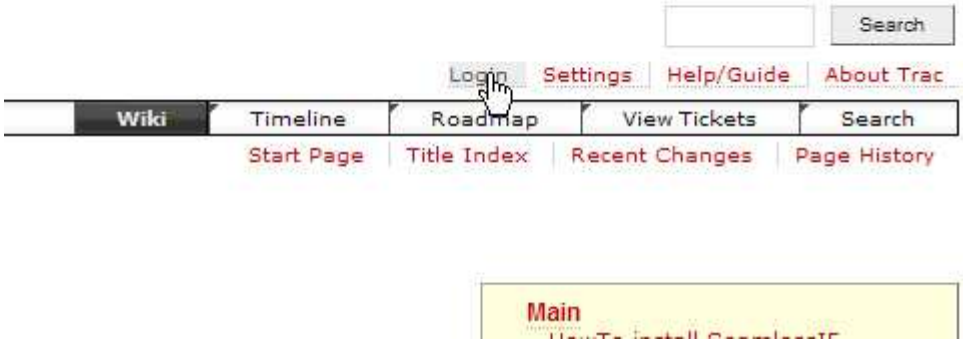


Figure 70.

The login screen appears (Figure 71) where you should fill in the user name and password provided from the Trac system administrator.

Figure 71.

11.2 How to submit a ticket

Start by browsing tickets already submitted by others to see if your issue/problem/request has already been addressed by someone else. Click 'View Tickets' in the upper right corner of the screen. You will be presented a list of available ways of sorting the tickets already in the system (Figure 72). Choose a suitable report format (all tickets by milestone is often a good choice) by clicking on it. As you can see, you can also keep track of your own submitted tickets here for follow-up and to see the progress of its handling.

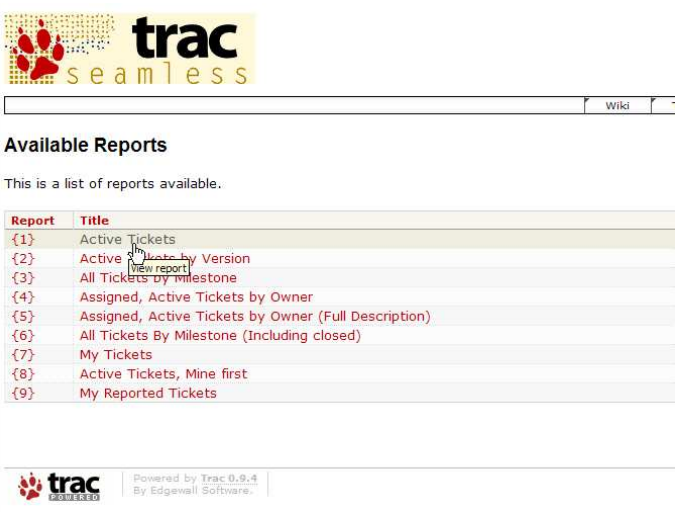


Figure 72.

In these reports you can explore what tickets are submitted, to whom it has been assigned, the severity etc. (Figure 73). You can also look at individual tickets by clicking them in the list.

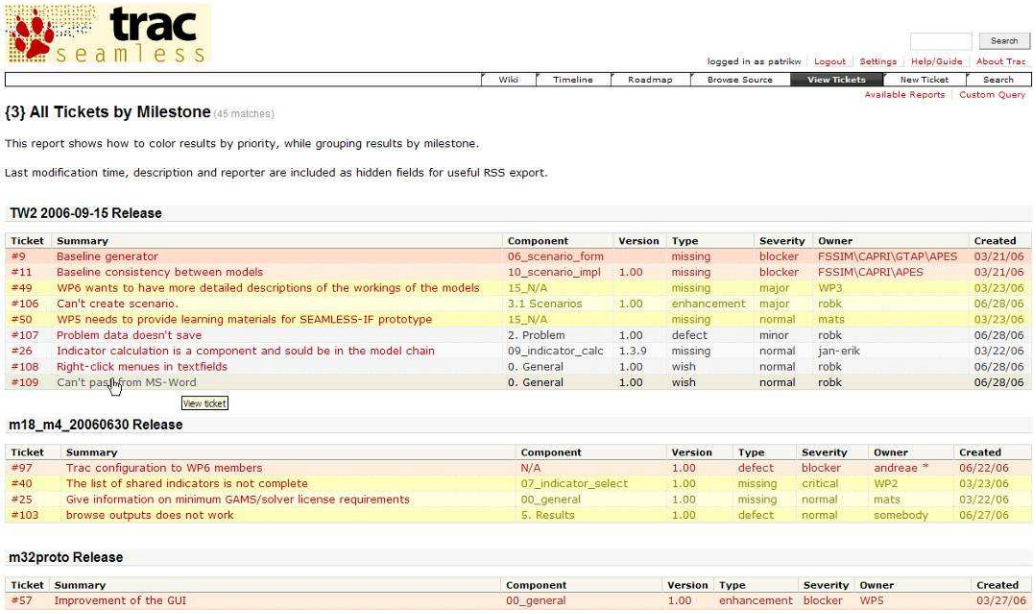


Figure 73.

If you find out that your issue is not already reported, click 'New Ticket' in the menu in the upper right corner of the screen (Figure 74).

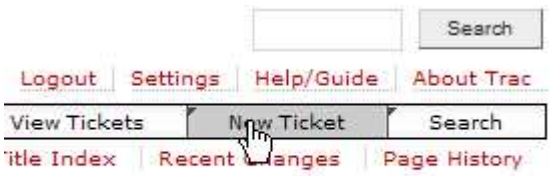


Figure 74.

Fill in a description of what you want to report and the type of the ticket; defect, enhancement, missing, wish or task (Figure 75).

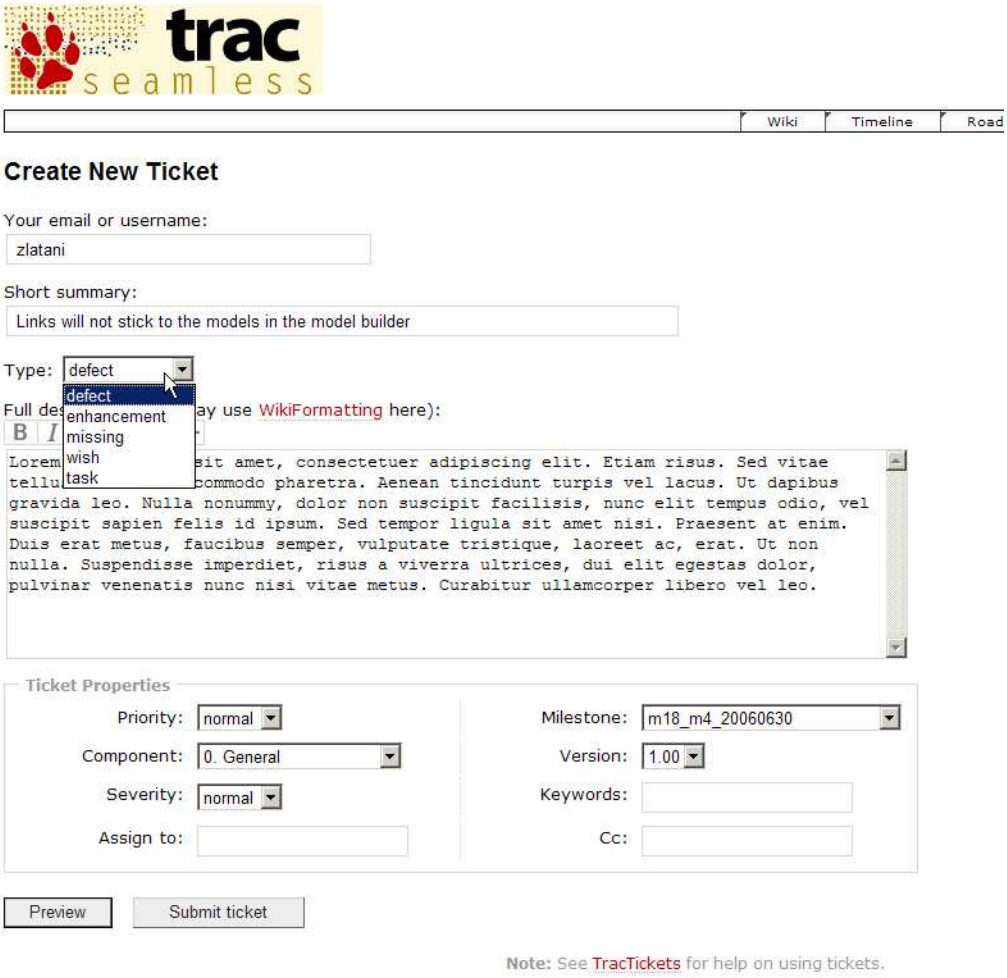


Figure 75.

You can change the ticket properties by using the drop-down menus in the 'Ticket Properties' box. Priority can be set from lowest to highest and severity from trivial to blocker on multi step scales. How these properties are set is not critical; all tickets will be individually read, assessed and labeled by the software developers in WP5.

Assign the ticket to a person**.** If you do not know to whom it should be assigned or otherwise are in doubt, assign it to a WP leader.

The milestone and version properties are automatically set according to what software version is out for testing; you should not have to change these in a normal case.

You can provide some keywords to help the readers of the tickets in the sorting procedure, but that is optional.

The CC field is not used.

Submit the ticket by clicking 'Submit ticket'. There is no reply function enabled in the system, so you will not receive a receipt on your submission, neither will you be notified on the progress of your ticket. You will have to follow that yourself by looking in the system as described above every now and then.

For the interested reader lots of documentation and help functions are provided on the web page, but you are also always welcome to contact the SEAMLESS Trac Team in Lund:

Mats Svensson (mats.svensson@lucsus.lu.se, phone: +46-46-2220513)
Benny Jonsson (benny.jonsson@lucsus.lu.se, phone: +46-46-2224809)
Patrik Wallman (patrik.wallman@lucsus.lu.se, phone: +46-46-2224809)

11.3 Support

An FAQ (Frequently Asked Questions) web page has been set up in the Trac system. Just click on the link in the menu on the right on the web page (Figure 76).

Figure 76.