

Getting started with SimaPro Explore

Title: Getting started with SimaPro Explore

Written by: Synnøve Hjellvik, PRé Sustainability

Version: 1

Date: April 2022

Copyright: © 2022 PRé Sustainability B.V. All rights reserved.

PRé grants the right to distribute and print the unchanged PDF version of this manual for non-commercial purposes only.

Parts of the manual may be reproduced in other work only after permission and if a clear reference is made that PRé is the author.

About SimaPro

SimaPro was developed by PRé with the goal of making sustainability a fact-based endeavor. PRé has been a leading voice in sustainability metrics and life cycle thinking development for more than 30 years, pioneering the field of environmental and social impact assessment. We develop tools that help you create value and drive sustainable change.



SimaPro is distributed through a Global Partner Network. All partners were carefully selected by PRé. A partner in your country will act as your local SimaPro sales and support representative and can show you a personal demo or provide more information.

Find your local partner: simapro.com/global-partner-network

Get in touch

T +31 33 450 40 10

E support@simapro.com

W simapro.com | support.simapro.com | pre-sustainability.com

Table of contents

| | | |
|----------|---|----------|
| 1 | Introduction | 4 |
| 2 | Prepare your SimaPro project | 4 |
| 2.1 | Guidelines for your SimaPro Flow model | 4 |
| 2.2 | Tips for your SimaPro Collect survey | 6 |
| 2.3 | Create your SimaPro Explore project | 7 |
| 3 | Start exploring!..... | 8 |
| 3.1 | Scenario overview | 8 |
| 3.2 | Scenario details and comparison | 10 |
| 3.3 | Results overview | 11 |

1 Introduction

SimaPro Explore allows you to create elaborate scenarios for your LCA study as well as to compare the results of similar or vastly different scenarios. For each scenario or collection of scenarios you can dive deeper into the results. Collaboration throughout the supply chain or design team is also facilitated through sharing features.



This guide is meant to help you, the Expert user, to create your first SimaPro Explore project.

Please note that while working with SimaPro Explore, you will be using a component of SimaPro Flow, which is currently in [beta](#). That means that it is still being tested and is not fully supported. We always welcome your feedback to make it better!

For more interesting articles, FAQs, and manuals please visit the [SimaPro Help Center](#). For additional support, please reach out to support@simapro.com or contact us via the online platform by going to the *Support* section in the left-side menu and clicking *Contact support*.

2 Prepare your SimaPro project

SimaPro Explore allows you to compare different scenarios by replacing certain processes with selectable processes or change the value of parameters through the inputs in a survey. The Business user changes processes and parameters using a Collect survey, then runs the calculations in the Flow model and sees the results in Explore. However, the Business users will have one project to manage, which is the Explore project.

To set up a SimaPro Explore project, you need to have a SimaPro Flow model which is connected to a SimaPro Collect survey. If you want to learn in detail how to set up a Flow model or Collect survey and what each part of these modules does, please refer to the [Getting started with SimaPro Flow](#) and [Getting started with SimaPro Collect](#).

In this chapter, tips and recommendations for setting up the Flow model and Collect survey to be used in Explore will be shared. However, these tips are not a substitution of the fundamental guides mentioned above.

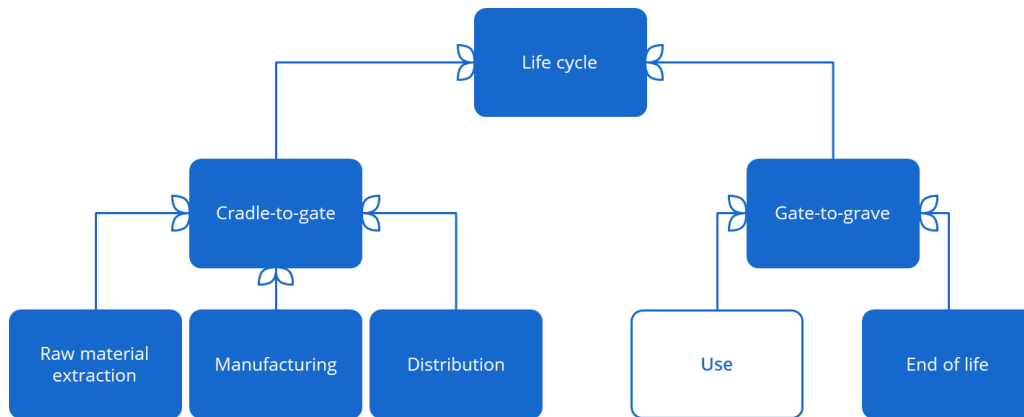
2.1 Guidelines for your SimaPro Flow model

Now that you know the fundamental task and workflow of Explore, we can move on to setting up the Flow model. Use the tips below to ensure that your Flow model is developed for exploring many different options and alternatives.

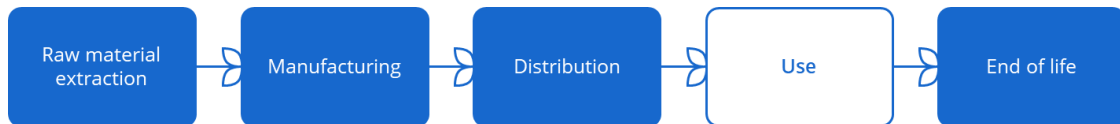
Model structure

The model structure is crucial for the flexibility of the model. One way to achieve this flexibility is by modelling vertically.

Vertical modelling:



Horizontal modelling:



As seen in the images, in linear modelling each step feeds into the other and it is difficult to exclude, for example, an input process to the 'Use' stage. While with vertical modelling, each stage and process feeds directly into the functional unit, and with that we can directly switch on or off specific parts of the model. This offers you and the Business users more possibilities to include or exclude parts of the model through choices in Explore.

Parameters

Parameters are the core of your Explore project. It is important to take the time to set these up properly. Using parameters, the user can 1) adapt values, and 2) operate switches in the model (e.g. whole parts of supply chains, geographies, process options, and more).

i Tips for parameters in SimaPro Explore

Tip 1: Keep the parameter names clear and readily understandable.

Tip 2: The comment field is good to use for keeping track of the unit of the parameter.

Tip 3: Remember to make sure it is not possible to put in a parameter that gives division by zero. This will give a calculation error. Read more about allowed expressions [here](#).

Processes

When it comes to processes, there are a few things to keep in mind. The processes which are being added by the Explore users in their scenarios will be added to the process list in the Flow project. When you later review your Flow project, you will notice many more processes in the

process list. Therefore, it is important to mark the original processes with a tag or identification in the name. This way it is easier to find them back later.



Tips for tagging relevant processes

Tip 1: Tags can be used to find the relevant processes back when Explore processes are added to the process list in the Flow project.

Tip 2: Tags can help with finding the relevant processes in the Material lists in the process connection between Flow and Collect.

Calculation set up

The last step in preparing your Flow model for an Explore project is to save a default calculation setup. You can do this by:

1. Open your Flow project
2. Go to 'Calculations'
3. Select the top process, product, amount, unit, and method details.
4. Click 'Save as default'.

Now, the Flow project is ready to go.

2.2 Tips for your SimaPro Collect survey

As mentioned, you also need to create a Collect survey which will be connected to the Flow model that you already set up.

Learn more

Learn more about the details of the question types and how to connect them to SimaPro Flow in [Getting started SimaPro Collect](#).

There are several types of questions available in Collect. For an Explore project, the four most important question types are 1) Grid questions, 2) Decimal questions, 3) Whole number questions, and 4) Yes/no questions. Here we briefly describe these and explain how you can use them in Explore:

1. **Grid questions** can be used as a simple table to fill in the information, or as a table with drop-down lists with selected processes from the Flow project.
 - These types of question can be useful for any process for which a wide range of materials is expected, such as material processing, modes of transport, and more.
2. **Decimal questions** accept all numbers, these can be whole numbers or decimal numbers.
 - This question type is good to use to connect with parameters in the Flow model. The parameters in the Flow model can be used in processes as allocation percentages or as input amount for a process and more.
3. **Whole number questions** accept all whole numbers. Any whole number can be filled in within your selected range.
 - These questions are handy for switching on or off scenarios, parts of the model, or for choosing a geography.

**Tip connect Collect and Flow**

If you connect processes in SimaPro Flow with the three question types described above, the Business user will be able to fill in the table or parameter in the survey and change the results they see in Explore accordingly.

Read more about how to make [process connections](#) and [parameter connections](#) in the linked articles.

4. **Yes/no question** is a multiple-choice question with two answer possibilities (Yes and No); only one choice can be selected.
 - These questions are only useful on the questionnaire level. You can use them to show or hide parts of the questionnaire. To set this up you need to use *Conditions*. See more about conditioning in [Getting started with Collect](#).

When you have set up the questions and connected them to the Flow model, it is important to make sure that everything looks good. You can preview what the Explore user will see by going to the survey and clicking 'Preview'. This shows how the Business user will see the questionnaire.

Remember!

All connections and changes need to be set up before publishing and sending the survey. The Collect survey will be frozen after adding Explore users, and no editing of the Collect survey will be possible.

2.3 Create your SimaPro Explore project

After the Flow and Collect projects are ready, then you can move on to create an Explore project. To set up an Explore project, you can follow the steps below:

1. In the project overview, click *+New project*.
2. Then, select *Explore*.
3. In the project set up for the new project, fill in the project name.
4. Select the Flow model and the Collect survey.
5. Make sure that the top process and the method is the one you want to create the project for. If not, then you need to go to the Flow project and save a new default calculation set up with the correct top process and method.
6. You can, optionally, also fill in a project description and interpretation of the results. These two fields will be visible to the Business user and can be used as guidance.
7. Another optional step is to add an image header, which will be visible to the Business users as they go through the project.
8. Click *Create project*.

Now, the project has been set up and ready for use. You can always go back to the *Setup* tab to edit the details of the project and see which calculation set is being used.

Insight for EN 15804

Setup Explore

Setup

Project details

Project title
Insight for EN 15804

Project description
Normal B I U

This is a description of the project, which makes the Business user understand the project and how they can explore new configurations.

Interpretation of results
Normal B I U

The results are always good! Now we can work to reduce our impact.

Save project details Cancel

Linked projects

Flow project
EN 15804 model

Collect survey
EN 15804 Model

Top process
Top process

Method
IPCC 2013 GWP 100a

3 Start exploring!

In the *Explore* tab of your project, there are three parts: the scenario overview, the scenario details and comparison, and the results overview. Let's go through each of these one by one.

3.1 Scenario overview

The scenario overview is where you can add scenarios, invite users, keep an overview of the scenarios, and select scenarios to calculate and compare.

Scenarios

The screenshot shows the 'Scenarios' interface with the following elements and callouts:

- 1. Search and sort:** A search bar with a magnifying glass icon and a dropdown menu labeled 'Sort by: Date created'.
- 2. Add baseline:** A button labeled '+ Add baseline'.
- 3. Invite users:** A button labeled '+ Invite user'.
- 4. Scenario overview:** A list of scenarios, each with a toggle switch, a title, and a creation date. The first scenario is 'Baseline' (Created March 24, 2022) and the second is 'Customized Road Bike Survey -' (Created February 5, 2020).
- 5. Calculate scenarios:** A 'Calculate' button at the bottom of the interface.

Search and sort

It is also possible to sort by date and search for the name of the scenarios. To sort the scenarios, click on *Sort by Date created*. To search amongst the scenarios, fill in the search word in the search bar, and it will immediately filter them.

Remember!

The search filter will be applied until you remove it. This means that you will not see all the scenarios if you have used the search until you remove it.

Add baselines or scenarios

To add a baseline or scenario:

1. Click on *+ Add baseline*.
2. Fill in a scenario name.
3. Optionally, you can select another scenario to make a copy of that one.
4. Click *Continue*.
5. Fill in the survey with the processes and values you want.
6. By clicking *Close survey*, you save the survey, and you will be directed back to the Explore overview where you will see your new scenario in the list of scenarios.

You can create as many scenarios as you want with different values and processes. As an Expert user, all the scenarios you create will be visible to the Business users.

Invite users

To invite Business users:

1. Click on *+ Invite user*.
2. Fill in the name and email address of the user
3. Then, click *Send invitation* to send an email to the Explore user.

Important!

After inviting users, the Collect survey will be locked, and you cannot edit it anymore. Therefore, make sure to carefully check it before inviting users.

Additional question: What will the invited business users in Explore see?

The Business users will only see the Explore project that they have been invited to. With that, they will see the setup tab and the Explore tab, but will not be able to edit anything in the setup tab. To clarify, the Business users will not see Flow or Collect project.

Get overview of scenarios

Below the mentioned buttons, there is a list of all the scenarios in this project. As an Expert user, you see all the scenarios from the Business users in a nested list, and you can see when each scenario was created. Whereas, the Business users only see their own scenarios and the baseline scenarios created by Expert users.

Select scenarios and calculate

When you want to see the results of a scenario or compare several scenarios, you can:

1. Click on the slider in front of the relevant scenarios, so it becomes blue. As you select the scenarios the details from the survey will be displayed in the right column. These details will be discussed further in the next section. You can select up to 4 scenarios at once.
2. Click the *Calculate* button at the bottom.

A moment later the results from the scenarios will load at the bottom of the screen.

3.2 Scenario details and comparison

The second part of the Explore tab is the Scenario details and comparison. In this section, all the input data from the questionnaire is displayed. Each scenario that is selected is shown side by side. There are two types of displays:

- **Data from number or text questions** are shown like this:

| | Baseline | Dororama Inc. |
|------------------------------------|----------|---------------|
| 5. Use | | |
| 5.2. Days of use in a year | 350 | 350 |
| 5.3. Power input in Operation mode | 40 | 45 |
| 5.4. Active hours per day | 2 | 5 |
| 5.1 Reference service life | 25 | 25 |
| 5.5. Power input in Standby mode | 20 | 25 |
| 5.6. Standby hours per day | 22 | 19 |

Here the question text is written in the first column then each of the scenario is listed in the next columns. Depending on the number of scenarios you have chosen, more columns will be added.

- **Listed data from grid questions** are displayed like this:

Scenario details and comparison

| | Baseline | Dororama Inc. | | | | | | |
|-----------------------------------|----------|---------------|-----------------------|-----------------|---------------|----------------|--------------|--------------|
| 3.6. Raw materials and transports | | | | | | | | |
| > Scenarios | M. | Material... | Material selection | Material amount | Material unit | Transport ... | Distance ... | Comment |
| > Dororama ... | — | Glass | glazing, double, ... | 6 | m2 | transport, ... | 260 | Default d... |
| | — | Metals | steel, chromium ... | 13.6 | kg | transport, ... | 260 | — |
| | — | Material | polypropylene, g... | 4.8 | kg | transport, ... | 260 | — |
| | — | Plastics | synthetic rubber | 0.4 | kg | transport, ... | 260 | — |
| | — | Road | electric motor, fo... | 1.2 | kg | — | — | — |
| > Baseline | — | Glass | glazing, double, ... | 5 | m2 | transport, ... | 260 | Default d... |
| | — | Metals | steel, chromium ... | 14.6 | kg | transport, ... | 260 | — |
| | — | Material | polypropylene, g... | 5 | kg | transport, ... | 260 | — |
| | — | Plastics | synthetic rubber | 0.4 | kg | transport, ... | 260 | — |

Here each scenario is displayed with its own grid. This way, it is easier to have an overview of the scenarios, especially since each scenario can have a large range of differences in these grids as they depend on the material composition of the product.

i Tip for collapsing data

If there are sections of the questions that are not interesting to you, you can always use the arrows on the left side to close sections of the questionnaire to make the overview simpler.

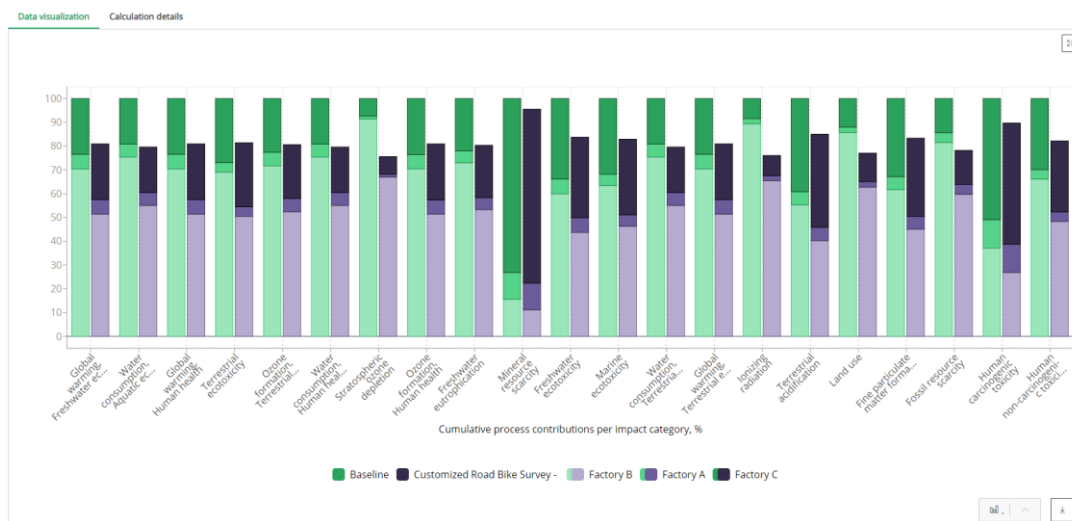
Scenario details and comparison

| > | Baseline | Dororama Inc. |
|---|------------------------|---------------|
| > | 3. Product | |
| > | 2. General information | |
| > | 5. Use | |
| > | 1. Title page | |
| > | 4. Manufacturing | |

3.3 Results overview

The last section of the Explore tab is the results sections. In this section, you can look at the results from the product that you have created and compare the product with other products or scenarios.

The visualization initially shows the impact assessment through the cumulative process contributions per impact category for each of the selected products, as seen in the picture:



i Tips when having multiple Expert users in a company

Tip 1: If the method in the default calculation set up is a midpoint method and/or is normalized and/or weighted, you will see a drop-down menu above the graph where you can select damage assessment or single score.

Tip 2: You can dive deeper into the results of one impact category by clicking on the graph.

Tip 3: If you want to download the graph, then clicking on the  next to the graph

Tip 5: There is also an option to expand the results sections by clicking the  .

Tip 4: You can change the direction of the graph by using this menu:



The second option under the results section is the table view of the impact assessment with the cumulative process contributions per impact category. You can always review the results in the table or export the results to Excel.

Data visualization Calculation details

Indicators per analysis group

Baseline

| Impact category | Unit | Factory B | Factory A | Factory C | Total |
|---|------------|-----------|-----------|-----------|----------|
| Global warming, Freshwater ecosystems | species.yr | 1.21E-10 | 1.05E-11 | 4.02E-11 | 1.71E-10 |
| Customized Road Bike Survey - | species.yr | 8.81E-11 | 1.05E-11 | 4.02E-11 | 1.39E-10 |
| Water consumption, Aquatic ecosystems | species.yr | 1.13E-12 | 8.1E-14 | 2.87E-13 | 1.5E-12 |
| Customized Road Bike Survey - | species.yr | 8.24E-13 | 8.1E-14 | 2.87E-13 | 1.19E-12 |
| Global warming, Human health | DALY | 2.21E-3 | 1.92E-4 | 7.37E-4 | 3.14E-3 |
| Customized Road Bike Survey - | DALY | 1.62E-3 | 1.92E-4 | 7.37E-4 | 2.54E-3 |
| Terrestrial ecotoxicity | species.yr | 1.09E-8 | 6.3E-10 | 4.25E-9 | 1.57E-8 |
| Customized Road Bike Survey - | species.yr | 7.95E-9 | 6.3E-10 | 4.25E-9 | 1.28E-8 |
| Ozone formation, Terrestrial ecosystems | species.yr | 5.82E-8 | 4.62E-9 | 1.83E-8 | 8.11E-8 |
| Customized Road Bike Survey - | species.yr | 4.24E-8 | 4.62E-9 | 1.83E-8 | 6.54E-8 |
| Water consumption, Human health | DALY | 4.15E-6 | 2.98E-7 | 1.05E-6 | 5.5E-6 |
| Customized Road Bike Survey - | DALY | 3.03E-6 | 2.98E-7 | 1.05E-6 | 4.38E-6 |
| Stratospheric ozone depletion | DALY | 5.4E-7 | 7.51E-9 | 4.35E-8 | 5.91E-7 |
| Customized Road Bike Survey - | DALY | 3.96E-7 | 7.51E-9 | 4.35E-8 | 4.47E-7 |
| Ozone formation, Human health | DALY | 3.82E-7 | 3.22E-8 | 1.28E-7 | 5.42E-7 |

Be aware!

Notice that in the table view of the results, the baseline (or first selected scenario) shows directly after the impact category name.

Good luck and enjoy the SimaPro online platform!

For additional support, please visit the [SimaPro Help Center](#).