



What's New in SimaPro 8.4

Colophon

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1 Introduction

This document describes the changes in the SimaPro 8.4 software and database.

We are happy to announce that one of the top user requests has now become reality: an updated look and feel. Thanks to a fresh and modern interface, working with SimaPro will be a more enjoyable experience. Of course, we also updated a number of LCA data libraries and impact assessment methods, discussed below.

On another note, we are happy to announce that a new **SimaPro Help Center** is now live at: <http://support.simapro.com/>. This online knowledge base aggregates all support info about our current tools and presents them in a fresher, easier to navigate interface. Thus, it replaces the old support corner on pre-sustainability.com.

We trust that the 8.4 release offers you enhanced contents in various data libraries that you are looking for.

2 Software Updates

After you update to SimaPro 8.4 we hope you enjoy the modernized look & feel of SimaPro. Some things have been moved or added, for example: a Windows calculator button has been added to toolbar, the Home and Find buttons have been moved to beginning of toolbar; process description has been reorganized where the Comment field with most info is now on top, etc.

SimaPro Layout Settings

Note that some layout settings may change, so it may be that windows open smaller or larger than usual. The default SimaPro font and size should be Segou UI 11 points. To make any changes to the font size or type, go to Tools> Options> Desktop (tab).

In addition, a number of bug fixes and improvements were implemented, including:

- When creating a new project, only the Methods library is selected by default. You can select any other data libraries as needed. This prevents having all libraries being loaded at the same time, which can considerably slow down the process.
- DQI fields in Process description are no longer shown. If they were filled in previously, the DQI data itself is still in SimaPro (invisible) and will be exported/imported as usual.
- In the network view, market process nodes (boxes) are no longer marked with red vertical lines.



3 Updated Data Libraries

3.1 Agri-Footprint® version 3

In this updated version of the well-known Agri-Footprint database, more than 800 new processes have been added. These include:

- **Production of pesticides:** Life cycle inventories (LCIs) for the production of pesticides were added. Three different types of LCIs were generated; LCI's for the production of specific pesticides, for specific pesticide families and for pesticide families.
- **Production of capital goods:** LCIs for the production of tractors, basic farm infrastructure and storage silos are now included in Agri-footprint, and linked to the crop inventories.
- **Expansion of scope for crops:** The global coverage of the production of crops has been expanded (i.e. more crop country combinations).
- **Expansion of processing scope:** Amongst others groundnut processing, ethanol production, fish meal and oil production are now included.
- **Small additions and bug fixes:** Correction of small errors. Addition of transport of goods to the farm.
- **Updates of background data:** Most recent FAO statistics for crop yields, and manure application, most recent land use change tool, IFA statistics on fertilizer consumptions in countries.

	AFP 1.0	AFP 2.0	AFP 3.0
Crops	30	300+	1000+*
(Intermediate) products from processing	100	200	500
Feed compounds	80	80	80
Food products	35	86	163
Animal production systems	4	4	4

** Agri-footprint version 3 now includes inventories for seed production*

3.2 Industry Data 2.0

The following processes have been added to the Industry Data 2.0 library, from Plastics Europe:

- Aromatic Polyester Polyols
- Polyurethane flexible foam (PU) - TDI-based, with flame retardant
- Sodium hypochlorite
- Di-isononyl Phthalate (DINP)
- Aliphatic Isocyanates
- Glacial Acrylic Acid (GAA)

- Methyl Acrylate (MA)
- Ethyl Acrylate (EA)
- n-Butyl Acrylate (BA)
- 2-Ethylhexyl Acrylate (2-EHA)
- Polyurethane flexible foam (PU) TDI-based, no flame retardant, low density

3.3 US LCI

Minor changes have been made to this data library, where 105 water flows have been corrected in a number of processes.

4 Impact Assessment Methods

The most important changes in impact assessment methods are listed below. For more details, please see the comment section of the individual methods, or the methods manual in SimaPro (via Help> Data Manuals> Methods Manual).

4.1 ReCiPe 2016

The following table describes the changes and updates made in ReCiPe 2016. Since they are very extensive, this is implemented as a new method and not as an update of the previous ReCiPe 2008 method. Also, the results are not comparable.

Environmental mechanism	Update
Climate change	<ul style="list-style-type: none"> - The time horizon for the Egalitarian perspective was explicitly taken as 1,000 years, which is the longest time horizon reported for CO₂ response functions in the literature. - A much larger set of greenhouse gas emissions (207 GHGs in total) is included on the basis of the latest IPCC report - Damage factors for human health and terrestrial ecosystems were updated - Damage to freshwater (river) ecosystems was now included
Stratospheric ozone depletion	<ul style="list-style-type: none"> - New semi-empirical ODPs were included with a more detailed specification between various chlorofluorocarbons (CFCs) - A preliminary ODP for N₂O was included - Three time horizons were consistently implemented: 20 years (Individualist), 100 years (Hierarchist) and infinite (Egalitarian)
Ionizing radiation	<ul style="list-style-type: none"> - Three time horizons were consistently implemented: 20 years (Individualist), 100 years (Hierarchist) and 100,000 years (Egalitarian) - Dose and dose rate effectiveness factors (DDREFs) were specified per cultural perspective - Updated DALYs per fatal cancer incidence were applied.
Fine particulate matter formation	<ul style="list-style-type: none"> - The European factor was replaced by a world average factor - Lung cancer and cardiovascular mortality were included as critical effects - Value choices were added - World-region specific characterisation factors were added (not implemented in SimaPro)
Photochemical ozone formation	<ul style="list-style-type: none"> - The European factor was replaced by a world average factor - Respiratory mortality was included - To derive characterisation factors for individual VOCs, most recent photochemical ozone formation potentials (POCPs) reported in the literature were used - Damage to terrestrial ecosystems was included as well - World-region specific characterisation factors were added (not implemented in SimaPro)
Terrestrial acidification	<ul style="list-style-type: none"> - The European factor was replaced by a world average factor, based on gridspecific factors - Soil sensitivity was based on H⁺ concentration instead of base saturation

	<ul style="list-style-type: none"> - Effects of all vascular plant species included, not only forest species - Country-specific characterisation factors were provided (not implemented in SimaPro)
Freshwater eutrophication	<ul style="list-style-type: none"> - Fate factors were derived with a state-of-the-art global fate model for phosphorus instead of a European fate model - Effect factors were updated based on a global analysis instead of using information from the Netherlands only - Country-specific characterisation factors were provided as well (not implemented in SimaPro)
Toxicity	<ul style="list-style-type: none"> - Characterisation factors for human cancer and non-cancer effects were separately included - Fate and exposure for dissociating organics was explicitly modeled - The USEtox organic and inorganic database was implemented (3094 substances) - Time horizon of 20 years was included for the Individualist perspective - Only linear effect factors were included for reasons of simplicity - Effects on agricultural soil were excluded to prevent double counting with land use impact category
Water use	<ul style="list-style-type: none"> - Consumption/extraction ratios were provided - Characterisation factors on an endpoint level for human health, terrestrial and aquatic ecosystems were included - Country-specific characterisation factors were provided (to be implemented in SimaPro)
Land use	<ul style="list-style-type: none"> - Characterisation factors were based on global scale data, whereas the previous factors focused on Europe - The local impact of land use was covered only, as the modelling of regional impacts in the previous ReCiPe version was considered too uncertain to recommend
Mineral resource scarcity	<ul style="list-style-type: none"> - Cumulative grade-tonnage relationships and cumulative cost-tonnage relationships were used, based on mine-specific cost and production data - An estimation of future production was included in the modelling without future discounting
Fossil resource scarcity	<ul style="list-style-type: none"> - Cumulative cost-tonnage relationships were based on recent cost and future production data - An estimation of future production was included in the modelling without future discounting

4.2 USEtox 2

The new version of USEtox has also been implemented in SimaPro as a new method. The characterisation factors for existing substances have been updated and around 600 new substances have been added. The method includes both midpoint and endpoint calculations, but, in contrast to USEtox 1, normalisation is no longer implemented.

Please note that USEtox 1 has been moved to the superseded methods section.

4.3 AWARE

The AWARE method has been updated to include all unspecified water flows. Previously, the method had specific sub-compartments which led to incomplete results. Specifically, for water flows that are raw materials, the subcompartment was changed from 'in water' to '(unspecified)'. In the previous version, flows with other subcompartment were not accounted for and now all will be considered.

Similarly, for water flows that are waterborne emissions, the subcompartments 'groundwater', 'lake' and 'river' all had the same factors, therefore they were removed and only subcompartment '(unspecified)' was kept with the factor. Subcompartment ocean was added with factor zero, as it is not supposed to be characterised.

5 Contact Us

Please contact us or your [local partner](#) if you have questions about these changes in the SimaPro software or database, or if you have any other questions related to the update.

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