



What's New in SimaPro 8.3

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| Phone: | +31 33 4504010 |
| Fax: | +31 33 4555024 |
| Email: | support@pre-sustainability.com |
| Website: | www.pre-sustainability.com |



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1 Introduction

This document describes the changes in the SimaPro 8.3 software and database.

An update of the ecoinvent database to version 3.3 is included for all users, which includes more than 1,200 new and updated datasets. Furthermore, the European Life Cycle Database (ELCD) has been updated to version 3.2. Two new impact assessment methods: AWARE (Available WATER REMaining) and EPS 2015 have been added; a number of existing methods have been updated as well. Regarding changes in the software, a number of small improvements and bug fixes have been implemented.

Finally, we are pleased to offer you a new data library: AGRIBALYSE v1.3. This is an agricultural LCI database for background LCIs, food LCA and benchmarking in the food sector. It comprises the most common French agricultural products and a few imported ones, with production data from 2005 to 2009. AGRIBALYSE uses a transparent methodology that was co-developed by an extensive partnership between public and private research institutes, coordinated by ADEME. AGRIBALYSE v1.3 is not included in the 'usual' update database, but is available for free download from simapro.com (available mid-January 2017).

We trust that the 8.3 release offers you enhanced contents in various data libraries that you are looking for.

2 New and Updated Data Libraries

2.1 ecoinvent 3.3

The new update to ecoinvent includes more than 1,200 new and updated datasets, including the following:

- **Agriculture:** Several hundreds of new agricultural datasets from the World Food LCA database were added. Some examples include the following:
 - vegetables (such as asparagus, carrots, onions, potatoes)
 - fruits (such as lemons, mandarins, oranges, peaches)
 - cereal and grain products (such as oat, rice, sweetcorn, wheat)
 - tea
 - coffee (such as Robusta and Arabica)
 - sugar and confectionery (such as cocoa and vanilla)
- **Improved markets and supply chains:** Some sectors have had their supply chains improved with more specific, local data. The largest examples are waste treatment activities in Europe and Switzerland, and supply chains specifically in Switzerland.
- **PDF documentation in every dataset:** Comprehensive and easy to access documentation is vital to better understand the dataset you are working with in context. One of the major steps in ecoinvent version 3.3 was to include more information directly in the dataset. This pdf contains both unit process information as well as some key impact assessment results, which makes the information in ecoinvent datasets more accessible for all users.

For more detailed information about the update, please refer to the ecoinvent website at <http://www.ecoinvent.org/>.



ecoinvent Allocation Default Library

ecoinvent has changed the name of the allocation default library to “allocation at the point of substitution” or APOS. Please be advised that PRé has not implemented this name change in SimaPro.

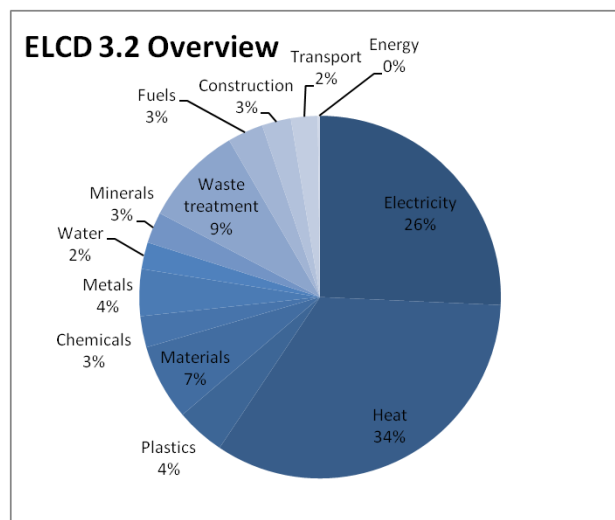
Obsolete ecoinvent 3.2 data

A number of processes from ecoinvent 3.2 are no longer supported and are considered obsolete. As such, PRé created special replacement files to allow you to change most of these obsolete links in your projects from ecoinvent 3.2 to the correct processes in ecoinvent 3.3 automatically. However, please note that 100% replacement is not possible. You can create your own replacement file for remaining processes.

How to use the replacement files is described in the update manual.

2.2 ELCD 3.2

According to the JRC, the focus of the latest ELCD is laid on data quality, consistency and applicability. Many of the existing processes have been reviewed against the ILCD entry-level data quality requirements in order to provide quality-assured LCI data. ELCD 3.2 comprises of 503 processes, of which 43 are new and 190 are ILCD entry-level compliant datasets.



2.2.1 Corrections to water flows

Update of ELCD library in SimaPro does not only mean introducing the ELCD 3.2 datasets but also a correction to water flows. In the previous version there was a mistake in the mapping. Some water flows were modelled in ELCD as product flows, and as such did not contribute to impact assessment results. These flows (see below) are now mapped to corresponding elementary flows.

| Mapped as Product flow in ELCD 3.1, excluded in LCIA | Mapped to this substance in ELCD 3.2 implementation |
|--|---|
| Water | Water, unspecified natural origin/kg |
| Water (rain water) | Water, rain |
| Water (evapotranspiration) | Water |
| Water (river water from technosphere, cooling water) | Water, cooling, surface |
| Water (river water from technosphere, turbined) | Water, turbine use, unspecified natural origin |
| Water (river water from technosphere, waste water) | Waste water |
| Water (sea water from technosphere, waste water) | Waste water |
| Water (groundwater from technosphere, waste water) | Waste water |
| Water (sea water from technosphere, cooling water) | Water |

2.2.2 Further corrections

We found that incorrect reference amounts were used in two processes. We have corrected this. Please check if you use these processes as the correction significantly influences the result:

- Graphic Paper, technology mix, production mix, at plant, 79% primary fibre, 21% recycled fibre EU-25
- Precipitated Calcium Carbonate (PCC) - slurry, uncoated, at plant, RER S

2.3 AGRIBALYSE 1.3

The French Environment and Energy Management Agency (ADEME) launched the AGRIBALYSE® program to create a Life Cycle Inventory (LCI) database of French agricultural products. AGRIBALYSE® provides 137 LCI data sets for arable, horticultural and livestock products, and links to copies of ecoinvent 3.2 processes. The following products are included in this database:

| Products inventoried in AGRIBALYSE® | |
|--|---|
| Annual crops | <i>Durum wheat, soft wheat, sugar beet, carrots, rapeseed, faba beans, grain maize, barley, peas, potatoes, sunflowers, triticale</i> |
| Forage/grassland | <i>Grass, alfalfa, silage maize</i> |
| Fruits and vineyard | <i>Peaches, apples, cider apples, wine grapes</i> |
| Special crops | <i>Roses, tomatoes, ornamental shrubs</i> |
| Tropical special crops | <i>Coffee, clementines, jasmine rice, cocoa, oil palm fruit, mango</i> |
| Arable and horticultural total: 28 product groups | |
| Cattle | <i>Cow's milk, beef cattle</i> |
| Sheep | <i>Sheep's milk, lambs</i> |
| Goats | <i>Goat's milk</i> |
| Poultry | <i>Eggs, broilers, turkeys, ducks for roasting, ducks for foie gras</i> |
| Rabbits | <i>Rabbits</i> |
| Aquaculture | <i>Trout, sea bass/sea bream</i> |
| Pigs | <i>Pigs</i> |
| Livestock total: 14 product groups | |

Please note that this database will be available from mid-January 2017 as a separate (free) download on simapro.com for users with a service contract valid on or after 31-10-2016, and comes with separate import instructions.



3 Impact Assessment Methods & Substances

The most important changes in impact assessment methods are listed below. For more details, please see the comment section of the individual methods in SimaPro.

3.1 New methods

3.1.1 AWARE

AWARE (Available Water REmaining) is the recommended method from WULCA to assess water consumption impact assessment in LCA. In May 2016, the method was also endorsed by the EU Joint Research Center.

It is a midpoint indicator representing the relative Available Water REmaining per area in a watershed after the demand of humans and aquatic ecosystems has been met. It assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived.

Implementation of AWARE in SimaPro includes only the generic factors for unknown water usage and not the factors specific for agricultural and non-agricultural use of water (irrigation/non-irrigation, these are currently not supported in SimaPro and its inventory data). Additionally, AWARE was adapted to support the water flows from aluminium producing regions (IAI Area) but using proxies, not factors calculated for the specific combinations of countries.

Documentation is available on WULCA website: <http://www.wulca-waterlca.org>.

3.1.2 EPS 2015d and EPS 2015dx

EPS 2015d is a damage oriented impact assessment method, part of the EPS system (Environmental Priority Strategies in product design). Comparing to EPS 2000, the method was redeveloped, therefore, it is implemented as a separate method and the results cannot be compared. However, the intended application remains the same - supporting product development by monetarizing the environmental damage caused by use of certain materials and processes.

The method is provided in two versions - 2015d and 2015dx. The first includes the climate impacts from secondary particles, in the later these impacts are excluded. Based on the recommendation from UNEP-SETAC Life Cycle Initiative, it is advised to use EPS 2015dx (impacts excluded) by and apply EPS 2015d (impacts included) by the experts "understanding the underlying concept".

Documentation is available on the website of IVL Swedish Environmental Research Institute: <http://www.ivl.se/eps>

3.2 Updated methods

3.2.1 ILCD 2011 Midpoint+

The previous version of ILCD in SimaPro corresponded to version 1.0.6 of the spreadsheet provided by JRC. This update includes all the changes introduced by JRC between versions 1.0.6 and 1.0.9 of the spreadsheet.

The most visible change is addition of 194 new substances, mostly due to inclusion of regionalized flows in Acidification and Terrestrial eutrophication (ammonia, nitrogen dioxide, nitrogen oxides, sulfur dioxide, sulfur oxides). However, those flows are not currently used by any inventories in SimaPro.

Two additional normalization sets were added, following the recommendation by JRC: 'EC-JRC Global (2010 or 2013), per person' and 'PROSUITE Global (2010 or 2000), per person'. Also, more significant digits were added to normalization factors (SimaPro uses the multiplicative inverse of factors). It has a minor influence on the results and assures higher accuracy.

3.2.2 Greenhouse gas Protocol

Characterization factors were updated to IPCC 2013.

3.2.3 CML-IA (baseline)

Characterization factors in 'Global warming 100a' were updated to IPCC 2013. The original CML-IA spreadsheet did not contain all the substances but after consultation and in agreement with CML they were added so that the implementation is compatible with IPCC report.

3.2.4 CML-IA (non-baseline)

Characterization factors in 'Global warming 20a' were updated to IPCC 2013. The original CML-IA spreadsheet did not contain all the substances but after consultation and in agreement with CML they were added so that the implementation is compatible with IPCC report.

Impact category 'Global warming 500a' is now empty because IPCC 2013 does not provide factors for such a long time horizon.

3.2.5 EPD (2013)

Characterization factors for 'Global warming (GWP100a)' were updated from IPCC 2007 to 2013 (according to the implementation in CML-IA, baseline).

New impact category was added – 'Abiotic depletion, fossil fuels (opt.)'. It is a copy of 'Abiotic depletion (fossil fuels)' from CML-IA, baseline. With this update all the impact categories from EN15804:2010 (required and optional) are included in the method.

3.2.6 EPS 2000

This method was moved to superseded and will no longer be supported.



3.3 Changes in Append

The main improvement is the alignment of land use flow nomenclature with ecoinvent, which solves some inconsistencies in the flow nomenclature in SimaPro.

3.4 Other changes

Amongst new substances added to SimaPro with methods and data libraries, *Carbon dioxide, to soil or biomass stock* requires a separate mention. This flow is a consequence of change in modeling of land tenure in ecoinvent. It was added to the following methods which include Climate change (but not to ILCD 2011 Midpoint+): CML-IA baseline and non-baseline, Ecological scarcity 2013, EDIP 2003, EPD (2013), IMPACT 2002+, ReCiPe (all versions), BEES+, TRACI 2.1, Greenhouse Gas Protocol, IPCC 2013 GWP 100a, IPCC 2013 GWP 20a.

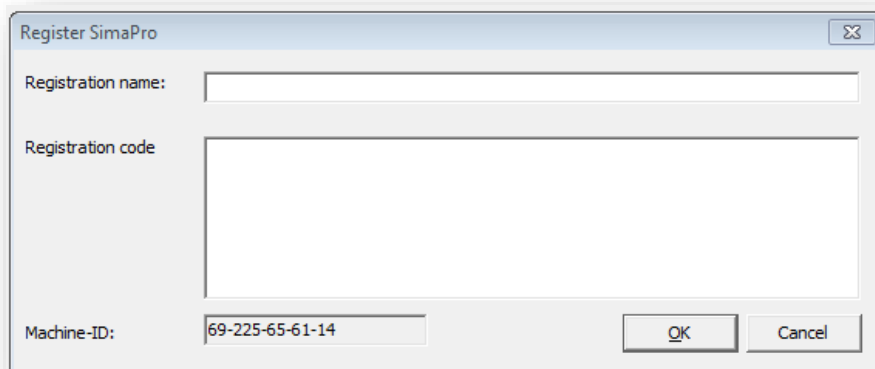
4 Software Updates

A number of bug fixes and improvements were implemented, including:

- Links to ecoinvent documentation (see also section 2.1):
To access the specific process documentation, go to the 'Documentation' tab where you will find the 'External link' URL field. Right-click the field and select 'Open document'. You will be directed to the ecoinvent website where you need to enter your login credentials to access the PDF document.

At this time, the documentation links are only available in the unit libraries, but we are working to update this before the next release.

- It is now easier to retrieve your Machine-ID, which is needed for activation-related purposes. To do so, go to Help> Register SimaPro and click 'I accept these conditions'.



- We fixed an issue with the import/export of Product Stages, where the units were not properly recognized and thus caused import/export errors.

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.

- Website: <http://www.pre-sustainability.com/contact>
- Email: support@pre-sustainability.com
- Phone: +31-33-4504010