SimaPro 9.4

What's new?

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Title: SimaPro 9.4 | What's new?

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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 nearly 30 years, pioneering the field of environmental and social impact assessment. We develop tools that help you create value and drive sustainable change.

PRé
Fact-based sustainability

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

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1 Introduction

This document describes the changes in the SimaPro 9.4 software and database (compared to the previous release). The focus of the release has been on data and impact assessment methods - ensuring quality, consistency, and accuracy. In addition, a number of improvements and fixes have been implemented in the software.

We hope you have a smooth experience updating to SimaPro 9.4 and feel free to reach out to us for feedback and further suggestions for improvements!

2 Software updates

An overview of the changes to the software (compared to SimaPro 9.3) are listed below.

- Improvements have been made regarding the following functions:
  - Activation server (deactivation of licenses)
  - Packing when opening databases
  - Carrying out a database check (improved speed, does not crash)
  - Error logging and bug reporting

- Bug fixes, including:
  - For multiusers 'Selected location is in use' will no longer appear after a user has opened a database via local server first.
  - Adding analysis groups from the network

- Users have to accept updated ecoinvent EULA in the SimaPro installer. More information on the impact of the updated EULA to SimaPro users can be found here.

3 Data library changes

3.1 Agri-footprint 6.0

Starting with SimaPro 9.4, only Agri-footprint 6.0 economic allocation is included in the default SimaPro databases (Professional, Update940, FullUpdate940). The remaining Agri-footprint 6.0 mass and energy allocation libraries will be available as a separate download for free for SimaPro users with a valid subscription or service contract.

Since its release in 2014, Agri-footprint has become one of the world's leading Life Cycle Inventory (LCI) database in the agri-food sector. Known for its high-quality data and global scale, it is an increasingly important source of information for experts working on environmental assessment of the agricultural value chain. These experts represent key stakeholders from the

private sector, the scientific community, and governmental authorities, who are unified in their mission of building a more sustainable future. There are many additions to this update, but most notably a large expansion of animal production systems. More update details can be found below.

Expansion of Animal production systems

It's increasingly apparent that urgent efforts are needed globally to improve the impact of environmentally intense products, of which animal products rank highly. As such, Blonk largely expanded the animal farming datasets to provide thorough environmental information on major animal products, using experience and knowledge from projects performed over the past years. The newly added datasets include:

- Dairy: Belgium, Brazil, Germany, Denmark, Spain, France, Ireland, Italy, the Netherlands, New Zealand, Poland, United Kingdom, United States.
- Pig breeding and fattening: Belgium, Brazil, Germany, Denmark, Spain, France, Great Britain, North America, the Netherlands, Europe.
- Broiler breeding and fattening: Brazil, China, France, Japan, the Netherlands, Thailand, United States.
- Pullet rearing and egg production: the Netherlands, North America, Europe.

Other new components of Agri-footprint 6.0

- Update of activity data of for instance yield crops, manure for crops, Land Use Change and land transformations from crops, energy use for cultivations, water use for cultivations, expansion of animal production systems and feed compound composition.
- Improved data and methodology for post-harvesting: more specific data to determine energy use for storage of cultivated crops.
- Addition of market mixes of important processed feed materials, for instance for soybean meal and rapeseed meal.
- Expansion of scope for crops, more countries available.
- Improved emission modelling, for instance peat oxidation for all cultivations, improvements from the IPCC 2019 report are used to model various emissions.

		Agri-footprint 5.0	Agri-footprint 6.0
General	Release year	2019	2022
	Geographical scope	Focus on EU & North America	Focus on EU & North America
	System boundaries	Cradle-to-market, Cradle-to-animal	Cradle-to-market, Cradle-to-animal
	Allocation options	Mass, Energy, Economic	Mass, Energy, Economic
Methodology	Applied emission modelling	IPCC 2006	IPCC 2019
	Direct Land Use Change methodology	Direct Land Use Change Assessment Tool (version 2018)	LUC impact tool (version 2021)
	Energy and fuel background datasets	ELCD	ecoinvent
	Water footprint	Blue Waterfootprint	Blue Waterfootprint and Water Requirement Ratio
Data	Total number of datasets	3,755	4,841
	Market mixes	398	420

Food products	188	212
Animal Production Systems	4	37

For Agri-footprint 6.0, Blonk's End User License Agreement (EULA) applies to your use of SimaPro and this EULA can be downloaded at: https://www.blonksustainability.nl/eula-afp60-via-simapro-july2022

4 Changes to impact assessment methods

For more details on each method, please see the comment section of the individual methods, or the methods manual in SimaPro (via Help > Data Manuals > Methods Manual).

4.1 New Methods

4.1.1 Ecological scarcity 2021

The "Ecological scarcity" method (also called Ecopoints or Umweltbelastungspunkte method) is a follow up of the Ecological scarcity 2013, the Ecological scarcity 2006, and the Ecological scarcity 1997 method which was named Ecopoints 97 (CH) in the SimaPro method library.

The Ecological scarcity method weights environmental impacts - pollutant emissions and resource consumption - by applying "eco-factors". The distance to target principle is applied in the Ecological scarcity method.

4.1.2 Land use impacts on biodiversity (Chaudhary et al. 2015)

This method for assessing land use impacts on biodiversity is developed by Chaudhary et al. (2015). The indicator is expressed as Potential Species Loss (PSL) and it measures the potential effect of land occupation displacing entirely or reducing the species which would otherwise exist on that land.

The method uses the countryside Species-Area Relationship (SAR) to quantify regional species loss due to land occupation and transformation for five taxa (mammals, reptiles, fish, amphibians, and birds) and six land use types (annual crops, permanent crops, extensive forestry, intensive forestry, pasture, and urban) in 804 terrestrial ecoregions (according to the World Wildlife Fund).

Further, it calculates vulnerability scores for each ecoregion based on the fraction of each species' geographic range (endemic richness) hosted by the ecoregion and the International Union for Conservation of Nature (IUCN) assigned threat level of each species. Vulnerability scores are multiplied with SAR-predicted regional species loss to estimate potential global extinctions per unit of land use.

4.2 Minor updates of existing methods

4.2.1 Extension of IPCC 2021

The characterization factors in the IPCC 2021 report Table 7.SM.7 (52 substances that were not available in SimaPro 9.3 and 12 substances that could previously not be mapped) are now added. Thus all characterization factors in the aforementioned table are now implemented.

4.2.2 Other method updates

When applicable, existing methods were updated as follows:

- Characterization factors for the substances Carbon dioxide, peat oxidation, Dinitrogen monoxide, peat oxidation and Methane, peat oxidation were added to impact categories in which Carbon dioxide, fossil, Dinitrogen monoxide, fossil and Methane, fossil had already been characterized before. The characterization factors are the same as for Carbon dioxide, fossil, Dinitrogen monoxide, fossil and Methane, fossil. The updated methods include:
    - BEES+
    - CML-IA baseline and non-baseline
    - EF 3.0 Method (adapted)
    - EN 15804 + A2 Method
    - Environmental Prices
    - EPD (2018)
    - EPS 2015d
    - EPS 2015dx
    - IMPACT World+
    - LC-IMPACT
    - ReCiPe 2016
    - Selected LCI results
    - TRACI 2.1
    - Selected LCI results, additional
    - IPCC 2021

- Characterization factors of missing regions for COD (Chemical Oxygen Demand), BOD (Biological Oxygen Demand), NMVOC (non-methane volatile organic compounds), as well as several regionalized water flows were added with the same characterization factor as the GLO/unspecified region. The updated methods include:
    - BEES+
    - CML-IA non-baseline
    - EF 3.0 Method (adapted)
    - EN 15804 + A2 Method
    - Environmental Prices
    - EPD (2018)
    - IMPACT World+
    - LC-IMPACT
    - ReCiPe 2016
    - Selected LCI results, additional

- Cumulative Exergy Demand
- Hoekstra et al 2012 (Water Scarcity)
- Boulay et al 2011 (Water scarcity)
- Berger et al 2014 (Water Scarcity)
- AWARE

Further updates include:

- Characterization factors for Methane in the Global warming impact category of all ReCiPe 2016 (v1.07) methods were assigned the same characterization factor as Methane, fossil.
- Characterization factors for Methane, biogenic in the Global warming impact category of the Ecological Scarcity 2013 (v1.09) and all ReCiPe 2016 (v1.07) methods were adapted to account for the degradation of methane into carbon dioxide. Thereby, Methane, biogenic gets a lower characterization factor than Methane, fossil if the method does not account for biogenic carbon dioxide uptake and release.

4.3 Superseded impact assessment methods

A number of methods were moved to the Superseded section and will no longer be maintained because these methods have been updated or replaced by a newer version. Therefore, users are advised not to use these methods.

Description of these methods and how they were implemented in SimaPro can be found here.

5 Contact us

We hope you have a smooth experience updating to SimaPro 9.3! 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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