Questions & Answers

Webinar: *Agri-footprint 3.0 and SimaPro 8.4 (morning and afternoon session)*
Date: *14th of September 2017*

Data

Q: We have Agri-footprint 2.0 and the amount of NPK fertilizer used in crop cultivation in different counties where do you get them from? For Swedish crops in the database we don't recognize the NPK levels.

A: You can find more information in the Agri-footprint methodology report (part 2 - chapter 3.4). We are always looking for better data to improve the methodology and data. If you have inputs for us, please send an email to info@agri-footprint.com.

Q: Do you include direct field fertilizer and pesticide emissions to the database? How do they are modelled?

A: Yes, direct emissions from fertilizers are included as well as indirect emissions and emissions from crop residues. Section 3.5 of the Agri-footprint methodology report (part 2) provides a detailed description of how emissions from fertilizers are modelled. Section 3.7.5 provides information on the fate of the pesticides emissions.

Q: From where do you get data for seed production, pesticide production, capital goods, processing of products as there is a large difference for example a tractor of 60 Hp or a tractor of 200 HP?

A: The data sources are described in detail in the background reports which are freely available at the Agri-footprint website. It can be found in the Agri-footprint methodology report (part 2).

Q: What about the production of the broiler parent in the broiler production cycle? It seems that all chickens are used for the food product production.

A: There is a process for the breeding of broiler parents, which is also considered in the production of hatching eggs. These hatching eggs will then grow out to broilers. The hatching eggs for the production of broiler parents are not explicitly in the LCI to avoid circular references in SimaPro. Instead a closed loop is assumed where a number of eggs produced by the broiler parents (which are not reported as outputs) are used as in input for new broiler parents.

Q: In manure management how do you deal with manure processing and incorporation into the fields?

A: Currently we don't include manure processing like fermentation (into slurry) or other manure processing technologies. Manure transport is included and is allocated to the plant production system. Manure management and emissions are allocated to the animal production system.

Q: Regarding the fertilizer production: do you still use J.Davis ref from 1999?

A: Unfortunately, yes. We are in contact with several parties in the fertilizer industry and hope to be able to update to more recent in coming updates. We have planned an (internal) project on this for the beginning of 2018. In case you have more recent/better data available or want to disclose data from within the industry, please send an email to info@agri-footprint.com.

Q: Do you have LCI on feathers or animal hairs?

A: We include the co-products from slaughtering but on a feed/food and other grade level. You could include more detail in this dataset when you have more/better primary data. In the past we did some specific studies on these kind of products but these datasets are not included in Agri-footprint.

Q: Which background databases are used for energy and fuels in Agri-footprint? Why have you chosen to use these?

A: For energy and fuels we use ELCD because these datasets are free to use. It is not possible to use other commercially databases (like ecoinvent) in your database. Transport datasets are all modelled by ourselves. Some other background datasets are also modelled by us. We hope in the future to also model energy datasets ourselves so that we are not dependent anymore on other datasets.

Q: In case of animal food products what is the analysis boundaries e.g. packaging and transport to the distributor (leaving the gate of the processing plant)

A: The products at gate level of the slaughterhouse (so meat and co-products). No packaging is included.

Q: How do you deal within crop production if the crop is invaded by pests, diseases?

A: The pesticide data is coming from literature and other statistics (depending on the crop and country). So this data should be an average use of a certain crop / country including when crops are attacked by pests / diseases. So Agri-footprint is an average and not a farm specific datasets. But you can improve the crop dataset in your study to investigate it.

Q: Have you included mineralisation of soils in the inventories?

A: Yes, we included emissions from peat (e.g. palm oil cultivation in Indonesia, milk production in Netherlands). But we acknowledge that this can be improved for some countries (e.g. Eastern Europe).

Q: Have you quantified impacts on Organic farming or food products separately?

A: No - this is still a wish. Most questions and projects we deal with are for conventional farming. It looks like organic farming is not that interested in LCA - off course due to the limitations of food LCAs (e.g. soil quality) which do not capture (yet) well enough some positive aspects of organic farming. It's a big wish of our team.

Q: Can we use this data LCA analysis in the US?

A: Currently we cover some data for the United States. However, in our next update (version 4) we will include many more crop inventories based on Life Cycle information created by the USDA.

Q: How do you define parent plants as input of seeds production?

A: Currently we take the 'normal' crop production as a basis, we then make corrections on the yield to generate the 'parent' crop LCI. This methodology could of course be improved, which we intend to do in future releases of Agri-footprint. An (internal) project has been started on this specific topic in September 2017.

Q: Why are there no implementation for carbon storage for crops?

A: The carbon stored in crops is short-cyclical, because when it is used as feed or fuel the carbon will again be released into the atmosphere. Therefore, it is not taken into account. Regarding the carbon storage and/or removal in agricultural soils no consistent methodology is available in LCA.

Q: How is pesticide application distributed between air/ground/water?

A: This is described in the methodology reports; in essence we follow the same approach as what is described in the Product Environmental Footprint guidance. This means: 90% to soil, 1% to fresh water and 9% to air.

Q: Did you take the Agri-footprint in the case of microalgae integration in the agriculture sector for biofuels production?

A: (micro)algae are currently not included in Agri-footprint unfortunately.

Q: Will crop rotation be looked into in future versions? Or is that too complex?

A: We have done studies on specific crop rotations and their impacts on the LCA-results. However, since Agri-footprint is a background database we do not intend to include specific crop rotations per country/region in the near future.

Data quality

Q: How is the consistency between the ecoinvent database and the Agri-footprint database? Are there methodological challenges when it comes to mixing data from the two in an assessment?

A: For the modelling of agro-food processes ecoinvent and Agri-footprint both make use of different methodologies and use different activity data. The modelling of field emission from cultivation is mostly done using similar methodologies, but there are exceptions (e.g. nitrate emissions). In general, Agri-footprint strives to build datasets based on large datasets and statistics, while ecoinvent relies more on data from specific (case) studies and reports. However, since both databases provide background datasets there is no problem in using datasets from both databases. The main challenge of using processes from both databases is in the impact assessment methodology, where Agri-footprint is directly developed to be compatible with Recipe and ILCD (as implemented in SimaPro), ecoinvent flows/substances have been mapped by PRé to match their equivalents in SimaPro.

Q: How does data quality compare between the different crops datasets/countries in the database?

A: The data quality method is aligned over all the crop datasets. So, all processes have a data quality score given their representativeness for the given crop, country, technology etcetera. For more information on our data quality procedure, please see the Agri-footprint methodology report (part 1).

Q: Do all the crop datasets have somewhat the same level of quality or would you say that the data with the best quality are for a certain region only or for a particular crop?

A: Please check section 4.1 of the Agri-footprint methodology report (part 1). We differentiate certainly between the crops and regions.

Q: Is Agri-footprint consistent with LCIA methods impact 2002+ or CML?

A: During our development, we mainly focus on aligning our flows to the impact categories in Recipe and ILCD. This means that a lot of CML and Impact 2002+ will be covered as well. However, we do no formal checks to ensure this.

Allocation

Q: Is it possible to combine allocation types on a system? In SimaPro?

A: It is possible to combine economic, mass and energy datasets in SimaPro but please be aware about the limitations when doing this. We can imagine that you use an economic allocation in the downstream life cycles like cultivation and a mass allocation in the slaughterhouse but we would not advice to mix allocations within one life cycle stage (e.g. cultivation).

Q: If to use Agri-footprint data in an ecoInvent project (even if it's better to avoid), is it better to use Economic, Mass or Energy allocation, considering an allocation based on recycled content of data from ecoInvent?

A: The developers of Ecoinvent also use Agri-footprint for their projects. What they often do is replacing the background datasets (enegy, fuels) from Agri-footprint to their own background datasets. We would use the economic allocation approach.

Documentation

Q: Does the documentation include details on which emission calculation method was used for each specific emission?

A: Yes it does

Other

Q: What methods are used to calculate emissions?

A: Several methods are used like methods from the IPCC background documents, scientific literature for heavy metal emissions, etcetera. Detailed information can be found in the Agri-footprint methodology report (part 2).

Q: What is the main difference between the Agri-footprint database and Agribalyse database?

A: Agri-footprint has a global focus and Agribalyse focuses mainly on France. Also the background methodology is a bit different.

Q: Do you collaborate with other initiatives (such as the World Food database) in order to have the same modelling rules?

A: We are regularly in contact with the World Food Database and Agribalyse. For example, to discuss methodological differences, but there is no formal collaboration.

Q: Has Agri-footprint data been used within Product Environmental Footprint (PEF) pilots?

A: Yes, many Product Environmental Footprint (PEF) pilots have used data from Agri-footprint. For example, the following PEF-pilots: Beer, Red Meat, Animal feed, Dairy, Pasta and Pet food.

Q: Does Agri-food investigate other type of functional unit rather than mass? For instance, nutritional values?

A: Often we provide some information about the reference flows beyond the mass in the comment fields (e.g. the dry matter, and energy content). However, this is something we want to improve in the future. In Optimeal, which is tool we developed based on Agri-footprint data we can optimize diets based on many different nutritional values, such as energy, protein, iron and many others.

SimaPro

Q: Do you plan to introduce normalisation to these new methods? if so, when?

A: We implement the methods as provided by the method developers. If and when the method developers release normalization and weighting, we will implement it.

Q: IS SimaPro working on a GIS (geographic information system) module to use regionalized methods like AWARE?

We do not have a GIS module, but we do have water flows regionalized and the AWARE method has already been implemented in a previous SimaPro release.

Q: The documentation information linked to each process in Sima pro is often uncomplete has that been improved?

We are continually working on improving, but the documentation is often what the database providers provide themselves. In the previous SimaPro 8.3 release, you can see a new field that allows links to PDF documents, which we are using in the ecoinvent library. We think this feature improves the documentation available.

Q: If I want to upgrade to Agri-footprint 3.0 from the 2.0 version, is it compatible with Simapro 8.3?

Yes, it is compatible with SimaPro 8.3. If you have an active SimaPro service contract, you will be able to update your Agri-footprint library. If you do not have an active service contract, you can purchase one here. If you have additional questions about your specific license, please contact us directly at support@pre-sustainability.com.

Q: If we already have a license for Simapro 8.3, is there a cost for updating it to Simapro 8.4?

Again, if you have an active SimaPro service contract, you will be able to update your software and libraries. If you do not have an active service contract, you can purchase one here. If you have additional questions about your specific license, please contact us directly at support@pre-sustainability.com.

More questions?

Do you have more questions? We are happy to receive your message!

Questions related to Agri-footprint:

Send an email to: info@agri-footprint.com

Questions related to SimaPro:

Send an email to: support@pre-sustainability.com