Best Practice LCA: Land Use Change Emissions

Questions and Answers

The following are questions and the corresponding answers from the PE INTERNATIONAL webinar titled “Best Practice LCA: Land Use Change Emissions” which took place on 29th January 2015. The questions are in no particular order.

Q: How would a crop rotation be handled where a field has been used for agricultural production for 100 years and the farmer rotates from corn to soybeans to cotton (3 year rotation)?
A: No land use change would apply in this case: The time frame to analyse land use changes is the last 20 years. Effectively over this time frame, no changes occurred (as there were no changes for the past 100 years in the example) - the different carbon compartments are not altered over a longer time frame. Under certain special circumstances a more in depth analysis may make sense.
Q: Does the land use change emissions always refer to the geographical system boundary of the investigated process?
A: Yes. For agricultural processes at farm gate, field border etc. the regional boundary is always applied. In consumption mixes (e.g. ethanol, crops etc.) effects from land use change of the respective areas of import are considered.
Q: Do you also account for increasing carbon stocks because, for example short rotation trees are planted on a former wheat field, this would mean giving credits?
A: According to PAS 2050 standard this is not possible. With only the "weighted average" approach, which is required by the Envifood protocol, theoretically a net carbon uptake is possible. So far we have not encountered such a case.
Q: Is it possible to differentiate "old" renewable datasets from the new ones? Are there any markers of the new ones?
A: "Old" renewable datasets carry now in the process name "(incl. LUC as fossil CO2)". To avoid possible double counting of emissions the flow "carbon dioxide (from land use change)" was set to 0 for these datasets. The information introduced with the latest GaBi DB 2014 of the "new" approach are included in all other processes.
Q: As I can see, the Quantity: "CML2001 - Apr. 2013, Global Warming Potential (GWP 100 years)" already includes the flow Carbon dioxide (Land use change). So where is the difference to the new quantity (GWP incl. LUC)?
A: In the latest GaBi version, the flow "carbon dioxide (land use change)" is only included in the respective quantities which include emissions from land use change. In case you encounter this problem, update your GaBi and/or contact our technical support at support@gabi-software.com
Q: Are these functions (only LUC) already available? Are they coming with the new update or new Service Pack? Thanks
A: The functionalities are already available
Q: Will the applied methodology and data sources provided in the dataset documentation?
A: To avoid redundancies and to not have too much information in the documentation, we refer in the process documentation to our modelling principles. In this document also the methodology and the data sources are documented. Additionally there is an LUC manual available. They are also available online: http://www.gabi-software.com/fileadmin/gabi/Modelling_Principles/GaBi_Modelling_Principles_2014.pdf and http://www.gabi-software.com/fileadmin/gabi/Modelling_Principles/GaBi_LUC_Modelling_Documentation.pdf

Q: The PAS 2050 methodology requires data of the type of land use and to what land type it was transformed -- for the datasets which have LUC incorporated, what were the data sources, and going forward with projects that require LUC calculation, is there guidance on methodology?
A: Please check the http://www.gabi-software.com/fileadmin/gabi/Modelling_Principles/GaBi_Modelling_Principles_2014.pdf and http://www.gabi-software.com/fileadmin/gabi/Modelling_Principles/GaBi_LUC_Modelling_Documentation.pdf. In case there are any special questions please contact content@pe-international.com
Q: Do you consider data from the FAO Stat as a reference?
A: In the chosen approach, data from FAOSTAT is actually used as the basis for the calculation. Although we know that data in FAOSTAT is sometimes not very accurate, it is an official and global data source which as such is unique.
Q: If we know a purchased Palm Oil derivate has a RSPO certificate, can we exclude Land Use Change from the LCA, in your opinion?
A: The RSPO standard guidelines does not exclude land use change (only on protected areas). Additionally common calculation methods require an analysis of the last 20 years (or a period cultivation). RSPO started to be in force in 2007. For these reasons more consideration on the topic should be applied (please contact us in case you have specific questions). Excluding LUC emissions in general is not an option.