



MEANS-InOut: user-friendly software to perform complete LCI and share data of agricultural products

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Titre :

MEANS-InOut: user-friendly software to perform complete LCI and share data of agricultural products

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Abstract

All environmental studies show that agriculture is one of the main drivers of environmental impacts of our societies. The environmental improvement of this sector involves the assessment of the impacts for technical choices and consumer awareness.

INRA, the French National Institute for Agronomical Research, is developing the MEANS platform, dedicated to multi-criteria sustainability assessment of agri-food systems, with the support of ADEME (French environmental agency). The main objectives of the platform are to facilitate multi-criteria assessments of agri-food systems for non-specialist practitioners and to capitalize on and share research results supporting multi-criteria sustainability assessment: data describing agri-food systems and models to estimate direct emissions and resource use. Thus the MEANS platform provides databases and software to calculate sustainability indicators for agri-food systems. For now, the MEANS platform is designed for environmental assessment within the methodological framework of Life Cycle Assessment (LCA). Our ambition is to complete the platform with data and tools for other environmental indicators, and for economic and social assessment.

In November 2016, the MEANS platform launched the MEANS-InOut software, a user-friendly tool to generate Life Cycle Inventories (LCI) of the main French agricultural productions at farm gate (plant and livestock productions).

MEANS-InOut follows the AGRIBALYSE methodology (Koch and Salou, 2015), which results from a consensus among the main stakeholders of the French agricultural sector, and is in agreement with international recommendations (ISO, ILCD). MEANS-InOut provides forms to guide data collection, including a reference data set for the main inputs of agri-food systems (LCIs coming from AGRIBALYSE and Ecoinvent so far), and mathematic models to calculate direct pollutant emissions and resource use. Thus, the practitioner only needs to provide the information describing the foreground system to perform an LCI. Using MEANS-InOut to establish agricultural LCIs helps the practitioner not to forget any input, resource, waste or pollutant flow and to respect international guidelines and reference methodologies (such as AGRIBALYSE). When foreground data is available, a complete LCA can be made within half a day. A LCA software (such as SimaPro) is required to calculate impact indicators. MEANS-InOut is adapted to French conditions (inputs, parameters set for models of emissions estimation...). Adaptations to other countries can be pursued to meet needs or demands of partners.

Users are invited to share the technical descriptions of their systems they have created using MEANS-InOut, so that the MEANS databases are incremented by users. A quality management system and a

data review system will ensure that shared data is sufficiently reliable to be reused or adapted by other practitioners, for their own needs.

MEANS-InOut is available in English and French, it is open to any user since January 1st, 2017 after purchasing a license.

Further developments will be pursued in 2017 on modeling of food processing, and on offering more options to estimate other impacts such as of water footprint or toxicity due to pesticide use. INRA is looking for scientific partnerships to develop MEANS, in order to provide users with up-to-date data and tools regarding international and methodological developments.

References

Koch P. and Salou T., 2015. AGRIBALYSE®: Rapport Méthodologique – Version 1.2. Mars 2015. Ed ADEME, Angers, France. 393 p.