Abstract of Contribution 708

ID: 708 / D-II-I: 5
D-II Practical applications of advanced LCA to LCM 1
Topics: Generating data: LCA databases and datasets quality, assurance and verification, LCM for food & beverage
Keywords: LCA, inventory, agriculture, regionalization, Brazil

Inventories regionalization: the Brazilian experience on agribusiness

Marilia Ieda Da S. Folegatti Matsuura[1], Fernando Rodrigues Teixeira Dias[2], Juliana Ferreira Picoli[3], Cassia Maria Lie Ugaya[4], Maria Clea Brito de Figueiredo[5]

[1]Embrapa Meio Ambiente, Brazil; [2]Embrapa Pantanal, Brazil; [3]Unicamp, Brazil; [4]Universidade Federal do Parana, Brazil; [5]Embrapa Agroindustria Tropical, Brazil

Introduction of Life Cycle Assessment (LCA) in Brazil started with ISO 14040 family of standards translation in 2001 and Brazilian Association of Life Cycle (ABCV) foundation in 2002. In 2004 started the first project for inventories nationalization: the Capacity Building Program of the Brazilian Institute of Information Science and Technology (PCI-IBICT), in partnership with Ecoinvent, followed by the "Life Cycle Inventory for Environmental Competitiveness of Brazilian Industry" project, from 2006 to 2011. Brazilian agribusiness sector accounts for over 20% of GDP and more than 40% of exports. Due to the importance of Brazilian agribusiness sector IBICT, CEBDS (Brazilian Business Council for Sustainable Development) and UNEP (United Nations Environment Programme) set a partnership in January, 2015 with the purpose of offering the first process inventories adapted to Brazilian conditions. The first inventories to be adapted are the main Brazilian commodities: soybeans, corn, cotton and sugarcane. Processes available in international inventory databases for this commodities were mostly generated for European conditions, with many differences from Brazilian reality. Some of the necessary adaptations needed are: a) adoption of a regional (rather than national) level for geographic coverage, considering Brazil continental dimension, covered by seven different biomes; b) adjusting models for emission estimation, taking into account some important Brazilian soil characteristics (high acidity and aluminum content and low fertility) and Brazilian climates (heavy rain in some areas and mild winter); c) inclusion of land use change impact, as Brazil's agricultural frontier is still expanding; d) adoption of "crop systems" (as the most common practice is the succession of different crops on the same land during the growing season); e) no-tillage technique; f) larger equipment with more efficient use of fuel, because of the Brazilian larger average production area; f) more frequent updates of inventories, given the growing technological support and productivity in some producing regions. Most of the inventories are now work in progress and will be published on 2015's first semester, improving accuracy and reducing uncertainties on LCA studies that include Brazilian agriculture products.