SETAC 18th LCA Case Study Symposium

4th NorLCA Symposium

Sustainability Assessment in the 21st century Tools, Trends & Applications

Monday, Poster Overview, Dine & Discuss session

Monday, Posters, RS-01

19:00 - 21:30	Monday, 26 November	Poster Area
RS-01: Carbon footprinting		
LCA and carbon footprint of innovative plastic masterbatches. The Granic® case. *Benveniste, G*		MPRS01-01
Assessing greenhouse gases emissions of sewage sludge and disposal routes - from theory to practice through the use of a carbon footprint tool named GESTABoues. *Pradel, M*		MPRS01-02
Evaluating improvements in farming practices with carbon footprint and energy index. *Finér, A-HJ*		MPRS01-03
Evaluation of the carbon footprint of a holiday farm: What functional unit to use? *Cerutti, AK*		MPRS01-04
Carbon footprints of printing: When it is taken as a service. *Chen, S*		MPRS01-05
Carbon footprint of cyclamen production system. Main drawbacks in the application of PAS 2050.1. *Anton, A*		MPRS01-06
Remarks on consideration of life cycle assessment of jute fiber. *Wong, D*		MPRS01-07
Carbon footprint of the Catalan fruit sector (focused on apple and peach). *Gasol, M*		MPRS01-08
Greenhouse gas emissions of conventional and organic beef and pork production in Lower Austria. *Kral, I*		MPRS01-09
Sustainable needs for controlling the greenhouse gas emissions as a result of the containerboard production, based on the results of the LCA application. Case study: Smurfit Kappa Mexico. *Carpio, JC*		MPRS01-10
Approaches to allocation of responsibility in GHG emissions. A new proposal. *Berzosa, A*		MPRS01-11

Monday, Posters, RS-02

19:00 - 21:30	Monday, 26 November	Poster Area
RS-02: Social life cycle assessment		
SIS - Social Interaction Scheme Social LCA development of local communities, people and commercial business. *Junker, K*		MPRS02-01
Integration of social aspects in product design. *Franze, J*		MPRS02-02
Social assessment of sustainable recycling strategies in developing countries with focus on the informal sector. Case studies from Peru. *Aparcana, SR*		MPRS02-03
A tomato case study using subcategory assessment method for social life cycle assessment. *Petti, L*		MPRS02-04
Metrics for sustainable production in process industry - background, theory and development work for social indicators. *Husgafvel, RK*		MPRS02-05
Sustainability assessment of complex systems: A methodological contribution based on a case study on informal collection and Re-Use of bulky waste. *Obersteiner, G*		MPRS02-06

MPRS01-04

Evaluation of the carbon footprint of a holiday farm: What functional unit to use?

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Farm-based tourism has a long tradition in Central Europe. In recent years, there has been a significant growth in the supply of farm-based tourism in Italy. Using farms to host tourists has become more widely seen as an effective means of addressing the socio-economic problems of rural areas in general and the agricultural sector in particular. As farm tourism could support local economies and contribute to the preservation of landscapes and cultural heritage in the countryside, farm-based tourism is considered one of the most environmentally sustainable activities among touristic options. Nevertheless, environmental sustainability of holiday farms has still to be assessed. No applications of an environmental assessment method (EAM) to touristic farms can be found in the literature. This study therefore aims at modelling the environmental impacts of a farm holiday as a case study for discussing guidelines in the application of environmental certifications for this commercial activity.

The analysis has been conducted in the holyday farm "Tetto Garrone", located in Roata Rossi (Cuneo, Northern Italy). The farm covers 15 hectares of orchards (hazelnut, chestnut and walnut) managed according to the organic production protocol. The hosting system is structured as a Bed & Breakfast: it includes a communal breakfast room and eight guest rooms which resulting from the barn conversion. The kitchen and the laundry are managed by the farm owner. Furthermore, on the roof there are photovoltaic panels which supply the whole system with electricity.

As in most holiday farms, in Tetto Garrone both the productive and the hosting sections are fully active. Therefore both sub-systems produce their specific goods or services: orchards produce nuts, accordingly the most common functional units (FU) in fruit production systems are tons of product or hectares of plantations, but the hosting structure produces a touristic service which may be accounted as number of guests multiplied by nights in one year. Furthermore, the two sub-systems are connected because, even if nut production is mostly sold outside the farm, a significant amount of fruit is consumed by guests.

In order to give a precise evaluation of the farm, the performance of four FU have been tested. We considered two simple FU of (I) 1 ton of nuts and (II) 1 guest*night; and two combined FU: (III) 1 € earned by the owner, this unit considers both hostelling and production, in particular, in 2011, for each euro earned, about 0,36 € are allocated to the touristic activity and 0,64 € are allocated to nut production; (III) the sum of X tons of nuts and Y guest*nights of the farm, where X is the amount of nuts produced at the farm and Y is the number of guest*nights produced at the farm. This last unit would be preferred in comparative assessments, because it is possible to produce this in alternative ways in the other scenarios. Results of the fourth FU correspond to the impacts of the whole farm, but this unit allows comparison with other alternative ways of producing the same service. Results from each of the four units are compared, assessing the strengths and weaknesses of each method.

A full Life Cycle Assessment has been performed, in accordance with the guidelines and requirements of the ISO 14040, but just the characterization results in Global Warming Potential have been considered, in order to assess the Carbon Footprint of the system.