Reducing food's environmental impacts through producers and consumers

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Joseph Poore
University of Oxford

Thomas Nemecek
Agroscope

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Title: Reducing food's environmental impacts through producers and consumers

Authors: J. Poore[1,2]*, T. Nemecek[3]

Affiliations:

[1]Department of Zoology, University of Oxford, New Radcliffe House, Oxford OX2 6GG, UK.

[2]School of Geography & Environment, University of Oxford, South Parks Road, Oxford OX1 3QY, UK.

[3]Agroscope, Agroecology and Environment Research Division, LCA Research Group, CH-8046 Zurich, Switzerland.

*Correspondence to: joseph.poore@queens.ox.ac.uk

Abstract: Food's environmental impacts are created by millions of diverse producers. To identify solutions that are effective under this heterogeneity, we consolidated data covering five environmental indicators; 38,700 farms; and 1600 processors, packaging types, and retailers. Impact can vary 50-fold among producers of the same product, creating substantial mitigation opportunities. However, mitigation is complicated by trade-offs, multiple ways for producers to achieve low impacts, and interactions throughout the supply chain. Producers have limits on how far they can reduce impacts. Most strikingly, impacts of the lowest-impact animal products typically exceed those of vegetable substitutes, providing new evidence for the importance of dietary change. Cumulatively, our findings support an approach where producers monitor their own impacts, flexibly meet environmental targets by choosing from multiple practices, and communicate their impacts to consumers.

Main Text:

With current diets and production practices, feeding 7.6 billion people is degrading terrestrial and aquatic ecosystems, depleting water resources, and driving climate change (*1*, *2*). It is particularly challenging to find solutions that are effective across the large and diverse range of producers that characterize the agricultural sector. More than 570 million farms produce in almost all the world's climates and soils (*3*), each using vastly different agronomic methods; average farm sizes vary from 0.5 hectares in Bangladesh to 3000 hectares in Australia (*3*); average mineral fertilizer use ranges from 1kg of nitrogen per hectare in Uganda to 300kg in China (*4*); and although four crops provide half of the world's food calories (*4*), more than 2 million distinct varieties are recorded in seed vaults (*5*). Further, products range from minimally to heavily processed and packaged, with 17 of every 100kg of food produced transported internationally, increasing to 50kg for nuts and 56kg for oils (*4*).

Previous studies have assessed aspects of this heterogeneity by using geospatial data sets (*6–8*), but global assessments using the inputs, outputs, and practices of actual producers have been limited by data. The recent rapid expansion of the life cycle assessment (LCA) literature is providing this information by surveying producers around the world. LCA then uses models to translate producer data into environmental impacts with sufficient accuracy for most decision-making (*9–11*).

To date, efforts to consolidate these data or build new large-scale data sets have covered greenhouse gas (GHG) emissions only (*8*, *12*, *13*), agriculture only (*13–16*), small numbers of products (8, 14–16), and predominantly Western European producers (*12–16*) and have not corrected for important methodological differences between LCAs (*12–16*). Here, we present a globally reconciled and methodologically harmonized database on the variation in food's multiple impacts. Our results show the need for far-reaching changes in how food's environmental impacts are managed and communicated.

Building the multi-indicator global database

We derived data from a comprehensive meta-analysis, identifying 1530 studies for potential inclusion, which were supplemented with additional data received from 139 authors. Studies were assessed against 11 criteria designed to standardize methodology, resulting in 570 suitable studies with a median reference year of 2010 (*17*). The data set covers ~38,700 commercially viable farms in 119 countries (fig. S2) and 40 products representing ~90% of global protein and calorie consumption. It covers five important environmental impact indicators (*18*): land use; freshwater withdrawals weighted by local water scarcity; and GHG, acidifying, and eutrophying emissions. For crops, yield represents output for a single harvest. Land use includes multiple cropping (up to four harvests per year), fallow (uncultivated periods between crops), and economic allocation to crop coproducts such as straw. This makes it a stronger indicator of both farm productivity and food security than yield.

The system we assess begins with inputs (the initial effect of producer choice) and ends at retail (the point of consumer choice) (fig. S1). For each study, we recorded the inventory of outputs and inputs (including fertilizer quantity and type, irrigation use, soil, and climatic conditions). Where data were not reported, for example, on climate, we used study coordinates and spatial data sets to fill gaps. We recorded environmental impacts at each stage of the supply chain. For GHG emissions, we further disaggregated the farm stage into 20 emission sources. We then used the inventory to recalculate all missing emissions. For nitrate leaching and aquaculture, we developed new models for this study (*17*).

Studies included provided ~1050 estimates of post-farm processes. To fill gaps in processing, packaging, or retail, we used additional meta-analyses of 153 studies providing 550 observations. Transport and losses were included from global data sets. Each observation was weighted by the share of national production it represents, and each country by its share of global production. We then used randomization to capture variance at all stages of the supply chain (*17*).

We validated the global representativeness of our sample by comparing average and 90th-percentile yields to Food and Agriculture Organization (FAO) data (*4*), which reconcile to within ±10% for most crops. Using FAO food balance sheets (*4*), we scaled up our sample data. Total arable land and freshwater withdrawals reconcile to FAO estimates. Emissions from deforestation and agricultural methane fall within ranges of independent models (*17*).

Environmental impacts of the entire food supply-chain

Today's food supply chain creates ~13.7 billion metric tons of carbon dioxide equivalents (CO_2eq), 26% of anthropogenic GHG emissions. A further 2.8 billion metric tons of CO_2eq (5%) are caused by nonfood agriculture and other drivers of deforestation (*17*). Food production creates ~32% of global terrestrial acidification and ~78% of eutrophication. These emissions can fundamentally alter the species composition of natural ecosystems, reducing biodiversity and ecological resilience (*19*). The farm stage dominates, representing 61% of food's GHG emissions (81% including deforestation), 79% of acidification, and 95% of eutrophication (table S17).

Today's agricultural system is also incredibly resource intensive, covering ~43% of the world's ice- and desert-free land. Of this land, ~87% is for food and 13% is for biofuels and textile crops or is allocated to nonfood uses such as wool and leather. We estimate that two-thirds of freshwater withdrawals are for irrigation. However, irrigation returns less water to rivers and groundwater than industrial and municipal uses and predominates in water-scarce areas and times of the year, driving 90-95% of global scarcity-weighted water use (*17*).

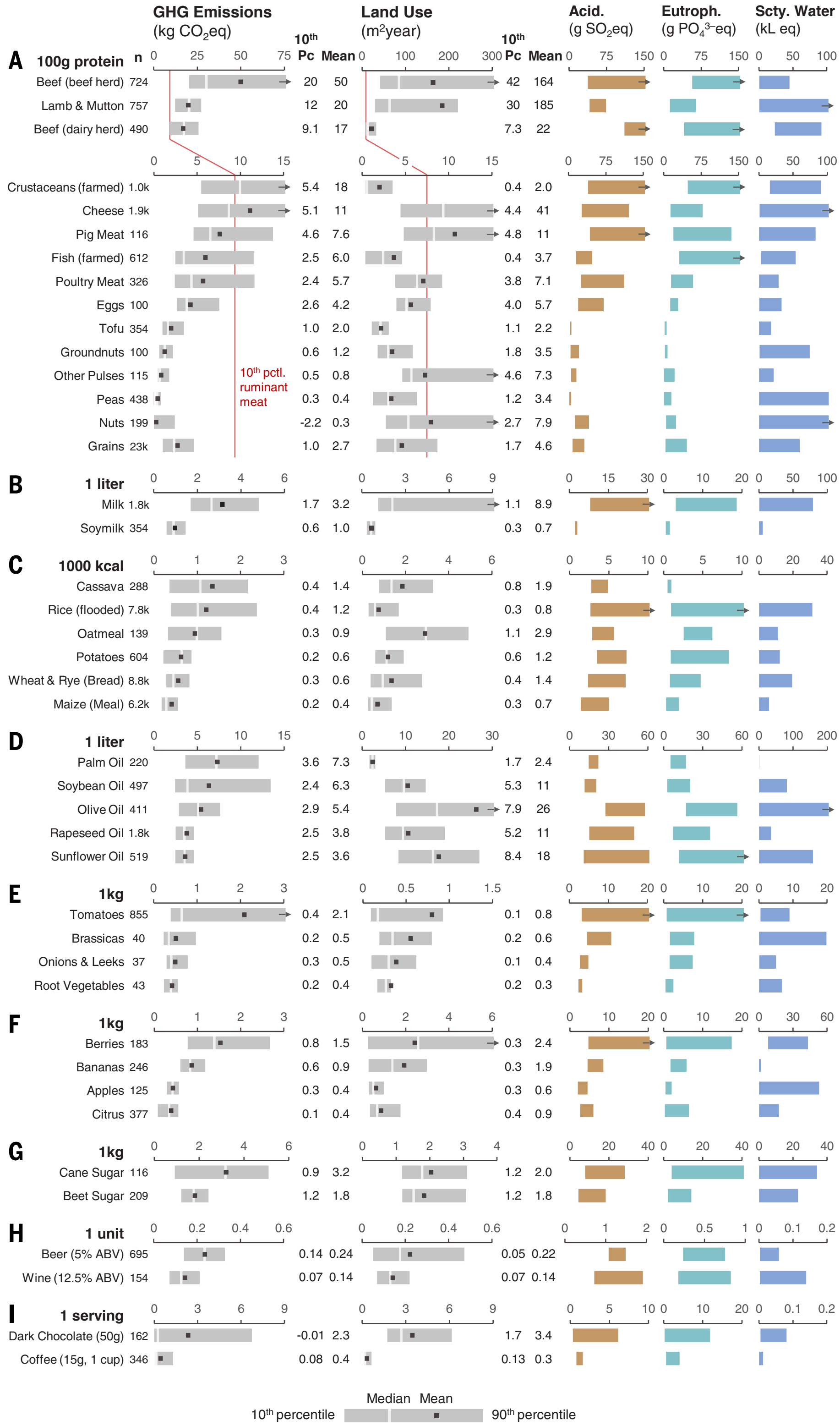
GHG Emissions (kg CO2eq)
10th Pc
Mean
Land Use (m2year)
10th Pc
Mean
Acid. (g SO2eq)
Eutroph. (g PO4 3-eq)
Scty. Water (kL eq)
A 100g protein n
Beef (beef herd) 724 20 50 42 164
Lamb & Mutton 757 12 20 30 185
Beef (dairy herd) 490 9.1 17 7.3 22
Crustaceans (farmed) 1.0k 5.4 18 0.4 2.0
Cheese 1.9k 5.1 11 4.4 41
Pig Meat 116 4.6 7.6 4.8 11
Fish (farmed) 612 2.5 6.0 0.4 3.7
Poultry Meat 326 2.4 5.7 3.8 7.1
Eggs 100 2.6 4.2 4.0 5.7
Tofu 354 1.0 2.0 1.1 2.2
Groundnuts 100 0.6 1.2 1.8 3.5
Other Pulses 115 0.5 0.8 4.6 7.3
Peas 438 0.3 0.4 1.2 3.4
Nuts 199 -2.2 0.3 2.7 7.9
Grains 23k 1.0 2.7 1.7 4.6
10th pctl. ruminant meat
B 1 liter
Milk 1.8k 1.7 3.2 1.1 8.9
Soymilk 354 0.6 1.0 0.3 0.7
C 1000 kcal
Cassava 288 0.4 1.4 0.8 1.9
Rice (flooded) 7.8k 0.4 1.2 0.3 0.8
Oatmeal 139 0.3 0.9 1.1 2.9
Potatoes 604 0.2 0.6 0.6 1.2
Wheat & Rye (Bread) 8.8k 0.3 0.6 0.4 1.4
Maize (Meal) 6.2k 0.2 0.4 0.3 0.7
D 1 liter
Palm Oil 220 3.6 7.3 1.7 2.4
Soybean Oil 497 2.4 6.3 5.3 11
Olive Oil 411 2.9 5.4 7.9 26
Rapeseed Oil 1.8k 2.5 3.8 5.2 11
Sunflower Oil 519 2.5 3.6 8.4 18
E 1kg
Tomatoes 855 0.4 2.1 0.1 0.8
Brassicas 40 0.2 0.5 0.2 0.6
Onions & Leeks 37 0.3 0.5 0.1 0.4
Root Vegetables 43 0.2 0.4 0.2 0.3
F 1kg
Berries 183 0.8 1.5 0.3 2.4
Bananas 246 0.6 0.9 0.3 1.9
Apples 125 0.3 0.4 0.3 0.6
Citrus 377 0.1 0.4 0.4 0.9
G 1kg
Cane Sugar 116 0.9 3.2 1.2 2.0
Beet Sugar 209 1.2 1.8 1.2 1.8
H 1 unit
Beer (5% ABV) 695 0.14 0.24 0.05 0.22
Wine (12.5% ABV) 154 0.07 0.14 0.07 0.14
I 1 serving
Dark Chocolate (50g) 162 -0.01 2.3 1.7 3.4
Coffee (15g, 1 cup) 346 0.08 0.4 0.13 0.3
Median Mean
10th percentile 90th percentile

Fig. 1. Estimated global variation in GHG emissions, land use, terrestrial acidification, eutrophication, and scarcity-weighted freshwater withdrawals, within and between 40 major foods. n = farm or regional inventories. Land use is area times years occupied (m^2·year). (**A**) Protein-rich products. Grains are also shown here given they contribute 41% of global protein intake, despite lower protein content. (**B**) Milks. (**C**) Starch-rich products. (**D**) Oils. (**E**) Vegetables. (**F**) Fruits. (**G**) Sugars. (**H**) Alcoholic beverages (1 unit = 10ml alcohol). (**I**) Stimulants.

Highly variable and skewed environmental impacts

We now group products by their primary dietary role and express impacts per unit of primary nutritional benefit (Fig. 1 and fig. S3). Immediately apparent in our results is the high variation in impact among both products and producers. Ninetieth-percentile GHG emissions of beef are 105kg of CO_2eq per 100g of protein, and land use (area multiplied by years occupied) is 370 m^2·year. These values are 12 and 50 times greater than 10th-percentile dairy beef impacts (which we report separately given that its production is tied to milk demand). Tenth-percentile GHG emissions and land use of dairy beef are then 36 and 6 times greater than those of peas. High variation within and between protein-rich products is also manifest in acidification, eutrophication, and water use.

Within the major crops wheat, maize, and rice, 90th-percentile impacts are more than three times greater than 10th-percentile impacts on all five indicators. Within major growing areas for these crops (the Australian wheat belt, the U.S. corn belt, and the Yangtze river basin), land use becomes less variable, but we observe the same high levels of variation in all other indicators. This variability, even among producers in similar geographic regions, implies substantial potential to reduce environmental impacts and enhance productivity in the food system.

For many products, impacts are skewed by producers with particularly high impacts. This creates opportunities for targeted mitigation, making an immense problem more manageable. For example, for beef originating from beef herds, the highest-impact 25% of producers represent 56% of the beef herd's GHG emissions and 61% of the land use (an estimated 1.3 billion metric tons of CO_2eq and 950 million hectares of land, primarily pasture). Across all products, 25% of producers contribute on average 53% of each product's environmental impact (fig. S3). For scarcity-weighted freshwater withdrawals, the skew is particularly pronounced: Producing just 5% of the world's food calories creates ~40% of the environmental burden. We will now explore how to access these mitigation opportunities through heterogenous producers.

Mitigation through producers

Enable producers to monitor multiple impacts

The first step in mitigation is estimating producer impacts. Prior research (e.g., *7*, *8*, *14*) has suggested that readily measurable proxies predict farm-stage impacts, avoiding the need for detailed assessment. From our larger data set, which includes more practices and geographies than prior studies, we assess the predictive power of common proxies, including crop yield, nitrogen use efficiency, milk yield per cow, liveweight gain, pasture area, and feed conversion ratios. Although most proxies significantly covary with impact, they make poor predictors when used alone, explaining little of the variation among farms (R^2 = 0-27% in 47 of 48 proxy-impact combinations assessed) (fig. S4).

Prior research has also suggested using one impact indicator to predict others (*20*). We find weakly positive and sometimes negative relationships between indicators. For similar products globally, correlations between indicators are low (R^2 = 0-30% in 26 of 32 impact-impact combinations assessed) (fig. S4). Pork, poultry meat, and milk show higher correlations between acidification and eutrophication ($R2 \leq 54\%$), explained by the dominant role of manure in these impacts, but this does not generalize to other products or indicators. The same conclusion holds for farms in similar geographies or systems (fig. S5).

Monitoring multiple impacts and avoiding proxies supports far better decisions and helps prevent harmful, unintended consequences. However, two recent studies suggest that data on practices and geography, required to quantify impacts, must come directly from producers (*11*, *21*); that quantifying impacts with the use of satellite or census data misses much of the variation among farms.

Set and incentivize mitigation targets

When land use or emissions are low, we find trade-offs between indicators for many crops (fig. S5). This reflects diminishing marginal yield with increasing inputs as crops tend toward their maximum yields (*22*). For example, for already low-emission Northern European barley farms, halving land use can increase GHG emissions per kilogram of grain by 2.5 times and acidification by 3.7 times. To explore trade-offs further, we pair observations from the same study, location, and year that assess a practice change (fig. S6). Of the nine changes assessed, only two (changing from monoculture to diversified cropping and improving degraded pasture) deliver statistically significant reductions in both land use and GHG emissions.

Geography influences these trade-offs. For example, in the Australian wheat belt, where farmers practice low-rainfall, low-input farming, we find that both output per hectare and GHG emissions are in the bottom 15% globally. The environmental and social importance of different impacts also varies locally, given land scarcity, endemic biodiversity, and water quality, among other factors. Setting regional and sector-specific targets will help producers navigate trade-offs and make choices that align with local and global priorities.

Meet targets by choosing from multiple practice changes

To meet these targets, policy might encourage widespread adoption of certain practices. However, the environmental outcomes of many practices, such as conservation agriculture (*23*), organic farming (fig. S6), and even integrated systems of best practice (*24*), are highly variable. Using our data set, we can generalize these findings. To do this, we disaggregate each environmental indicator into its sources or drivers. We consider practice change as a package of measures that targets one or more of these sources. If producers have different impact sources, the effects of practice change will be variable.

We find that sources of impact vary considerably among farms producing the same product (Fig. 2 and figs. S7-S9). Priority areas for reducing impact for one farm may be immaterial for another. For example, measures to reduce direct nitrous oxide emissions from synthetic and organic fertilizer, such as biochar application, are included in many mitigation estimates (*25*). However, for a third of global crop calorie production, these emissions represent less than 5% of farm-stage GHGs. It may be the case that low-impact farms have similar impact drivers. We again find variable sources of impact, even for low-impact farms (Fig. 2, C and D). Reducing impacts means focusing on different areas for different producers and, by implication, adopting different practices.

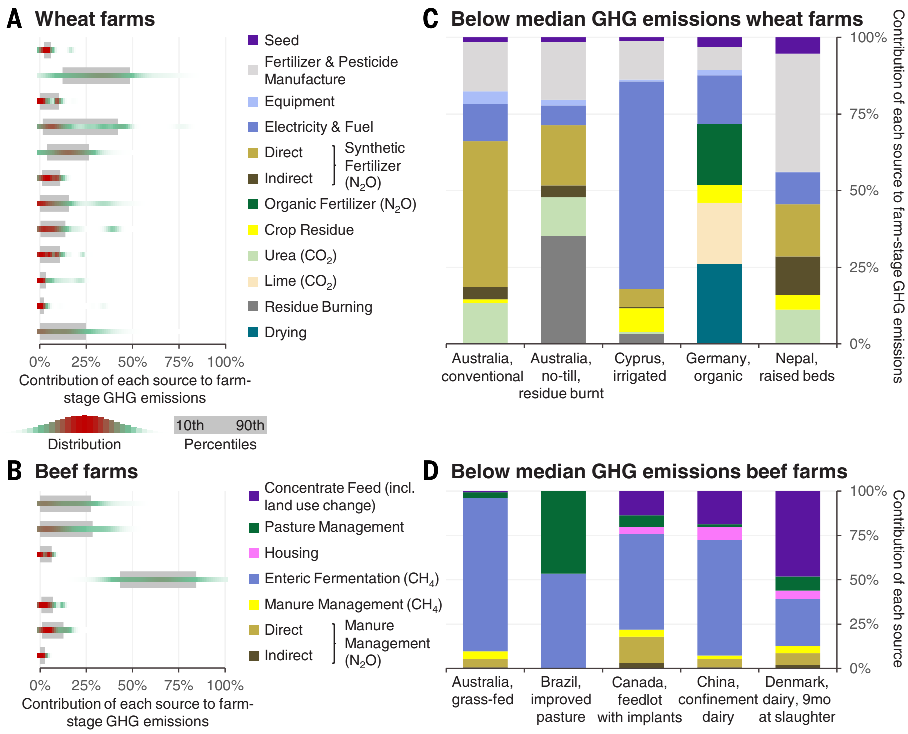

Fig. 2. Contributions of emission sources to total farm-stage GHG emissions. (**A**, and **B**). Gray bars show 10th- and 90th-percentile contributions. Shaded bars represent the distribution. For example, the 90th-percentile contribution of organic fertilizer N_2O to farm-stage emissions is 16%, but for most wheat producers the contribution is near 0%. Density is estimated using a Gaussian kernel with bandwidth selection performed with biased cross-validation. (**C**, and **D**) Contributions of emission sources for example producers with below median GHG emissions.

To explore this further, we use sensitivity analysis (*26*) to decompose the variance in each product's impact into its sources. Numerous sources contribute to variance (fig. S10). Most notably, for all crop calorie production globally, differences in fallow duration and multiple cropping drive 40% of the variance in land use. This is important as most strategies to increase productivity are focused on increasing single crop yields (*27*). But for many producers, increasing cropping intensity through the use of early-maturing varieties, intercropping, catch crops, and enhanced irrigation can provide more economically viable and trade-off–free ways to boost productivity and reduce impacts (*27*).

Geography plays a major role in this variation and affects the economic and environmental desirability of different practices (*28*). However, at the heart of agriculture is changing site conditions to enhance productivity (such as liming, terracing, or installing drainage), meaning that statements on the importance of geography have limitations. Nevertheless, some impact sources stand out. We find that freshwater aquaculture ponds create 0-450g of methane per kg of liveweight (for context, enteric fermentation in dairy cows creates ~30-400g per kg of liveweight). Of this variation, a third is explained by temperature (*17*), which accelerates methanogenesis and net primary production. Improving aeration and limiting addition of surplus feed to ponds can abate these emissions, particularly important in warm countries. Further, for every kilogram of nitrogen applied to crops, between 60-400g is lost in reactive forms. Of this wide range, ~40% is explained by site conditions, including soil pH, temperature, and drainage (*17*). Prior research has also found that the potential of soil to store carbon varies significantly with soil properties, slope, and prior practice (29).

Providing producers with multiple ways to reduce their environmental impacts recognizes the variability in sources and drivers of impact but requires a step change in thinking: that practices such as conservation agriculture or organic farming are not environmental solutions in themselves but options that producers choose from to achieve environmental targets.

However, some practice changes can be pursued across all producers. Methane from flooded rice, enteric methane from ruminants, and concentrate feed for pigs and poultry are sizeable globally, representing 30% of food's GHG emissions; are material for all producers, contributing at least 17% of farm-stage emissions (Fig. 2B and fig. S7); and can be mitigated with relatively trade-off–free approaches such as shorter and shallower rice flooding (*30*), improving degraded pasture (fig. S6), and improving lifetime animal productivity (*8*). Further, emissions from deforestation and cultivated organic soils drive on average 42% of the variance in each product's agricultural GHG emissions (fig. S10) and dominate the highest-impact producers' emissions (fig. S11), further justifying ongoing efforts to curb forest loss and limit cultivation on peatlands.

Communicate impacts up the supply-chain

Processors, distributors, and retailers can substantially reduce their own impacts. For any product, 90th-percentile post-farm emissions are 2-140 times larger than 10th-percentile emissions, indicating large mitigation potential (fig. S12). For example, returnable stainless-steel kegs create just 20g of CO_2eq per liter of beer, but recycled glass bottles create 300-750g of CO_2eq, and bottles sent to landfills create 450-2500g of CO_2eq.

Processing, more durable packaging, and greater usage of coproducts can also reduce food waste. For example, wastage of processed fruit and vegetables is ~14% lower than that of fresh fruit and vegetables, and wastage of processed fish and seafood is ~8% lower (*24*). Providing processors and retailers with information about the impacts of their providers could encourage them to reduce waste where it matters most. For products such as beef, distribution and retail losses contribute 12-15% of emissions (fig. S13), whereas the sum of emissions from packaging, transport, and retail contributes just 1-9%. Here, reducing losses is a clear priority.

As a third strategy, procurement could source from low-impact farms. Although this strategy is important, and possible only with information about the impacts of providers, it has clear limitations. To be effective, it relies on high-impact production not simply being purchased elsewhere in the market. The case of the Roundtable on Sustainable Palm Oil (RSPO) shows that this is hard to achieve: despite one-fifth of 2017 palm oil production being certified, there remains virtually no demand in China, India, and Indonesia (*31*). Alternatively, this strategy would be effective if higher prices for sustainable production incentivized low-impact producers to increase output or high-impact producers to change practices. The case of organic food shows how passing premiums to consumers limits total market size and widespread practice change.

However, processors and retailers routinely demand that products meet taste, quality, and food safety standards. These markets are concentrated, with just 10 retailers representing 52% of U.S. grocery sales and 15% of global sales (*32*). This sometimes means that standards achieve market transformation (*33*), where virtually all producers adhere to gain market access. A fourth strategy for producers is setting environmental standards. These are particularly important: Although many environmental issues can be monitored and mitigated in a flexible way, issues such as harmful pesticide usage and deforestation require strict controls, and issues such as on-farm biodiversity are hard to quantify (*28*). Procurement, farming organizations, and international policy-makers must come together to implement a safety net for global agriculture—comprehensive standards to manage the worst and hardest-to-quantify environmental issues, extending the successes of existing schemes and enabling a flexible mitigation approach to operate effectively.

Producer mitigation limits and the role of consumers

Though producers are a vital part of the solution, their ability to reduce environmental impacts is limited. These limits can mean that a product has higher impacts than another nutritionally equivalent product, however it is produced.

In particular, the impacts of animal products can markedly exceed those of vegetable substitutes (Fig. 1). To such a degree that meat, aquaculture, eggs, and dairy use ~83% of the world's farmland and contribute 56-58% of food's different emissions, despite providing only 37% of our protein and 18% of our calories. Can animal products be produced with sufficiently low impacts to redress this vast imbalance? Or will reducing animal product consumption deliver greater environmental benefits?

We find that the impacts of the lowest-impact animal products exceed average impacts of substitute vegetable proteins across GHG emissions, eutrophication, acidification (excluding nuts), and frequently land use (Fig. 1 and data S2). These stark differences are not apparent in any product groups except protein-rich products and milk.

Although tree crops can temporarily sequester carbon and reduce nutrient leaching, the impact of nuts is dominated by low-yielding cashews and water-, fertilizer-, and pesticide-intensive almonds. Production of nuts doubled between 2000 and 2015 (*4*), and more work is required to improve their resource use efficiency. Although aquaculture can have low land requirements, in part by converting by-products into edible protein, the lowest-impact aquaculture systems still exceed emissions of vegetable proteins. This challenges recommendations to expand aquaculture (*1*) without major innovation in production practices first. Further, though ruminants convert ~2.7

billion metric tons of grass dry matter, of which 65% grows on land unsuitable for crops (*34*), into human-edible protein each year, the environmental impacts of this conversion are immense under any production method practiced today.

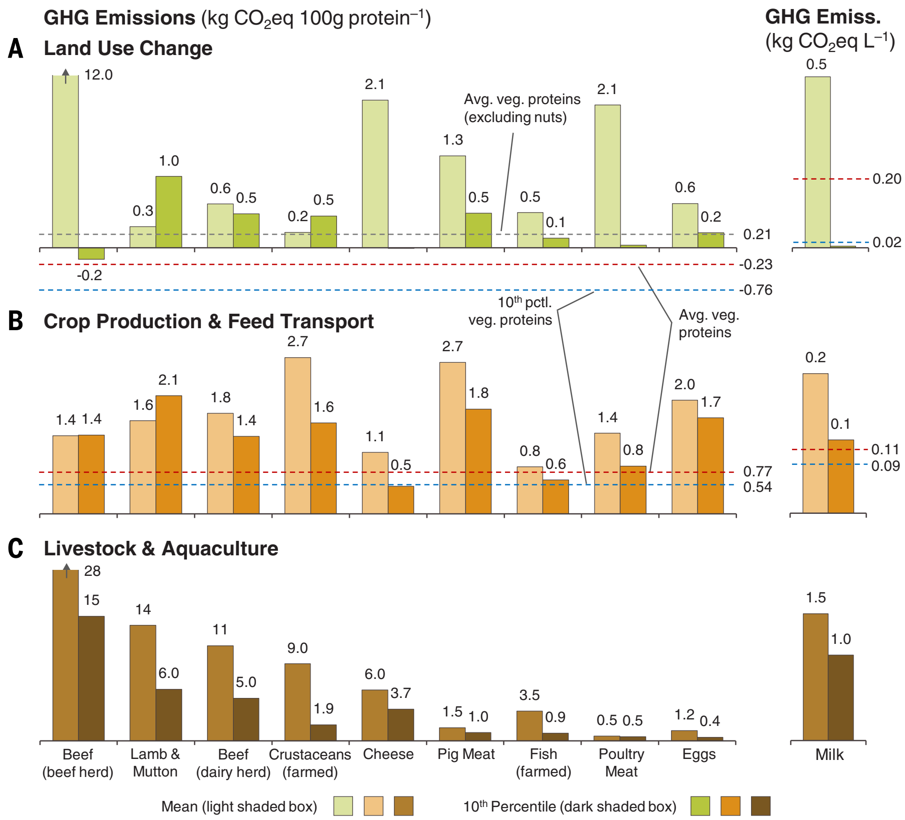

Fig. 3. Mean and 10th percentile GHG emissions of protein-rich products across three major production stages. Red lines represent average vegetable protein emissions, and blue lines represent 10th-percentile emissions. The gray line represents average emissions excluding nuts, which can temporarily sequester carbon if grown on cropland or pasture. To calculate 10th-percentile emissions by stage, we averaged across farms that have total emissions between the 5th and 15th percentiles, controlling for burden shifting between stages.

Using GHG emissions (Fig. 3), we identified five primarily biophysical reasons for these results. These reasons suggest that the differences between animal and vegetable proteins will hold into the future unless major technological changes disproportionately target animal products. First, emissions from feed production typically exceed emissions of vegetable protein farming. This is because feed-to-edible protein conversion ratios are greater than 2 for most animals (*13*, *34*); because high usage of low-impact by-products is typically offset by low digestibility and growth; and because additional transport is required to take feed to livestock. Second, we find that deforestation for agriculture is dominated (67%) by feed, particularly soy, maize, and pasture, resulting in losses of above- and below-ground carbon. Improved pasture management can temporarily sequester carbon (*25*), but it reduces life-cycle ruminant emissions by a maximum of 22%, with greater sequestration requiring more land. Third, animals create additional emissions from enteric fermentation, manure, and aquaculture ponds. For these emissions alone, 10th-percentile values are 0.4-15kg of CO_2eq per 100g of protein. Fourth, emissions from processing, particularly emissions from slaughterhouse effluent, add a further 0.3-1.1kg of CO_2eq, which is greater than processing emissions for most other products. Last, wastage is high for fresh animal products, which are prone to spoilage.

Mitigation through consumers

Today, and probably into the future, dietary change can deliver environmental benefits on a scale not achievable by producers. Moving from current diets to a diet that excludes animal products (table S13) (*35*) has transformative potential, reducing food's land use by 3.1 (2.8-3.3) billion hectares (a 76% reduction), including a 19% reduction in arable land; food's GHG emissions by 6.6 (5.5-7.4) billion metric tons of CO_2eq (a 49% reduction); acidification by 50% (45-54%);

eutrophication by 49% (37-56%); and scarcity-weighted freshwater withdrawals by 19% (−5 to 32%) for a 2010 reference year. The ranges are based on producing new vegetable proteins with impacts between the 10th- and 90th-percentile impacts of existing production. In addition to the reduction in food's annual GHG emissions, the land no longer required for food production could remove ~8.1 billion metric tons of CO_2eq from the atmosphere each year over 100 years as natural vegetation reestablishes and soil carbon re-accumulates, based on simulations conducted in the IMAGE integrated assessment model. For the United States, where per capita meat consumption is three times the global average, dietary change has the potential for a far greater effect on food's different emissions, reducing them by 61-73%. See supplementary text (*17*) for diet compositions and sensitivity analyses and fig. S14 for alternative scenarios.

Consumers can play another important role by avoiding high-impact producers. We consider a second scenario where consumption of each animal product is halved by replacing production with above-median GHG emissions with vegetable equivalents. This achieves 71% of the previous scenario's GHG reduction (a reduction of ~10.4 billion metric tons of CO_2eq per year, including atmospheric CO_2 removal by regrowing vegetation) and 67, 64, and 55% of the land use, acidification, and eutrophication reductions. Further, lowering consumption of more discretionary products (oils, sugar, alcohol, and stimulants) by 20% by avoiding production with the highest land use reduces the land use of these products by 39% on average. For emissions, the reductions are 31 to 46%, and for scarcity-weighted freshwater withdrawals, 87%.

Communicating average product impacts to consumers enables dietary change and should be pursued. Though dietary change is realistic for any individual, widespread behavioral change will be hard to achieve in the narrow timeframe remaining to limit global warming and prevent further, irreversible biodiversity loss. Communicating producer impacts allows access to the second scenario, which multiplies the effects of smaller consumer changes.

An integrated mitigation framework

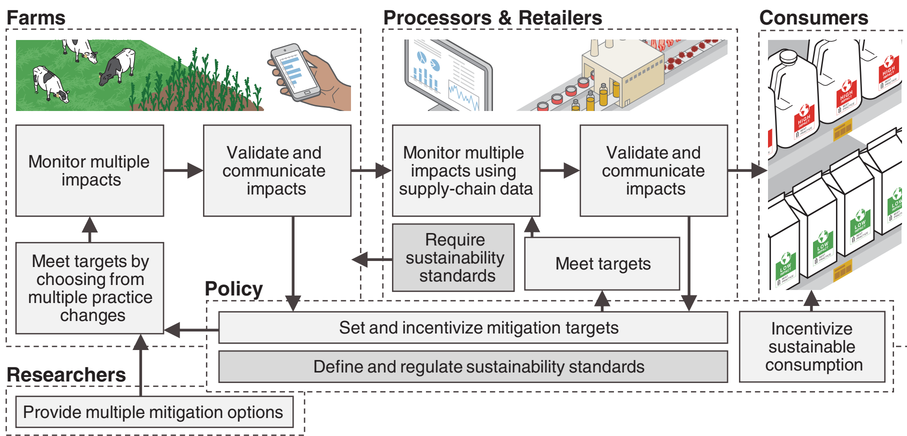

Fig. 4. Graphical representation of the mitigation framework.

In Fig. 4 we illustrate a potential framework implied by our findings, prior research, and emerging policy (*9*). First, producers would monitor their impacts using digital tools (*36*). Data would be validated against known ranges for each value (e.g., maximum yields given inputs) and validated or certified independently. In the United States these tools have already been integrated with existing farm software (*31*); in Africa and South Asia they are being trialed with 2G mobile phones (*37*); and in China they have been operated by extension services with extremely successful results (*24*).

Second, policy-makers would set targets on environmental indicators and incentivize them by providing producers with credit or tax breaks or by reallocating agricultural subsidies that now exceed half a trillion dollars a year worldwide (*38*). Third, the assessment tools would provide multiple mitigation and productivity enhancement options to producers. Ideally these tools would become platforms that consolidate the vast amounts of research conducted by scientists around the world, while also sharing producer best practices. In particular, practice sharing offers a very effective way to engage producers (*24*). Maximum flexibility also ensures least-cost mitigation (*39*) and supports producer-led innovation (*24*).

Finally, impacts would be communicated up the supply chain and through to consumers. For commodity crops that are hard to trace (*31*), this may not be feasible and mitigation efforts may have to focus on producers. For animal products, stringent traceability is already required in many countries (*40*), suggesting that communicating impacts is most feasible where it matters the most. Communication could occur through a combination of environmental labels, taxes or subsidies designed to reflect environmental costs in product prices (*35*), and broader education on the true cost of food.

We have consolidated information on the practices and impacts of a wide range of producers. From this research, we have provided a unified exposition of the environmental science for making major changes to the food system. We hope this stimulates progress in this crucially important area.

References and Notes:

1. H. C. J. Godfray *et al.*, Food security: the challenge of feeding 9 billion people. *Science*. **327**, 812–818 (2010).
2. J. A. Foley *et al.*, Solutions for a cultivated planet. *Nature*. **478**, 337–342 (2011).
3. FAO, "The State of Food and Agriculture" (Rome, 2014).
4. FAOSTAT (2017), (available at http://www.fao.org/faostat).
5. FAO, "The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture" (Rome, 2010).
6. K. M. Carlson *et al.*, Greenhouse gas emissions intensity of global croplands. *Nat. Clim. Chang.* **7**, 63–68 (2016).
7. P. C. West *et al.*, Leverage points for improving global food security and the environment. *Science*. **345**, 325–328 (2014).
8. P. J. Gerber *et al.*, "Tackling Climate through Livestock: A Global Assessment of Emissions and Mitigation Opportunities" (Rome, 2013).
9. European Commission, *Recommendation 2013/179/EU on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations* (2013).
10. S. Hellweg, L. M. Canals, Emerging approaches, challenges and opportunities in life cycle assessment. *Science*. **344**, 1109–1113 (2014).
11. K. Paustian, Bridging the data gap: engaging developing country farmers in greenhouse gas accounting. *Environ. Res. Lett.* **8**, 21001 (2013).
12. S. Clune, E. Crossin, K. Verghese, Systematic review of greenhouse gas emissions for different fresh food categories. *J. Clean. Prod.* **140**, 766–783 (2017).
13. D. Tilman, M. Clark, Global diets link environmental sustainability and human health. *Nature*. **515**, 518–522 (2014).
14. M. Clark, D. Tilman, Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice. *Environ. Res. Lett.* **12**, 64016 (2017).
15. M. de Vries, I. J. M. de Boer, Comparing environmental impacts for livestock products: A review of life cycle assessments. *Livest. Sci.* **128**, 1–11 (2010).
16. D. Nijdam, T. Rood, H. Westhoek, The price of protein: Review of land use and carbon footprints from life cycle assessments of animal food products and their substitutes. *Food Policy*. **37**, 760–770 (2012).
17. Supplementary materials are available online.

18. W. Steffen *et al.*, Planetary Boundaries: Guiding human development on a changing planet. *Science*. **347**, 736 (2015).

19. A. F. Bouwman, D. P. Van Vuuren, R. G. Derwent, M. Posch, A global analysis of acidification and eutrophication of terrestrial ecosystems. *Water. Air. Soil Pollut.* **141**, 349–382 (2002).

20. E. Röös, C. Sundberg, P. Tidåker, I. Strid, P.-A. Hansson, Can carbon footprint serve as an indicator of the environmental impact of meat production? *Ecol. Indic.* **24**, 573–581 (2013).

21. E. Beza, J. V. Silva, L. Kooistra, P. Reidsma, Review of yield gap explaining factors and opportunities for alternative data collection approaches. *Eur. J. Agron.* **82**, 206–222 (2017).

22. Z. Cui *et al.*, Trade-offs between high yields and greenhouse gas emissions in irrigation wheat cropland in China. *Biogeosciences*. **11**, 2287–2294 (2014).

23. J. K. Ladha *et al.*, Agronomic improvements can make future cereal systems in South Asia far more productive and result in a lower environmental footprint. *Glob. Chang. Biol.* **22**, 1054–1074 (2016).

24. Z. Cui *et al.*, Pursuing sustainable productivity with millions of smallholder farmers. *Nature*. **555**, 363–366 (2018).

25. P. Smith *et al.*, in *Climate Change 2014: Mitigation of Climate Change* (Cambridge University Press, Cambridge, 2014).

26. E. Song, B. L. Nelson, J. Straum, Shapley Effects for Global Sensitivity Analysis: Theory and Computation. *SIAM/ASA J. Uncertain. Quantif.* **4**, 1060–1083 (2016).

27. Q. Yu *et al.*, Assessing the harvested area gap in China. *Agric. Syst.* **153**, 212–220 (2017).

28. R. N. German, C. E. Thompson, T. G. Benton, Relationships among multiple aspects of agriculture's environmental impact and productivity: a meta-analysis to guide sustainable agriculture. *Biol. Rev.* **92**, 716–738 (2017).

29. R. Lal, Digging Deeper: A Holistic Perspective of Factors Affecting Soil Organic Carbon Sequestration in Agroecosystems. *Glob. Chang. Biol.* (2018), doi:10.1111/gcb.14054.

30. P. Smith *et al.*, Policy and technological constraints to implementation of greenhouse gas mitigation options in agriculture. *Agric. Ecosyst. Environ.* **118**, 6–28 (2007).

31. K. B. Waldman, J. M. Kerr, Limitations of Certification and Supply Chain Standards for Environmental Protection in Commodity Crop Production. *Annu. Rev. Resour. Econ.* **6**, 429–449 (2014).

32. Euromonitor (2018), (available at http://www.portal.euromonitor.com).

33. D. Nepstad, W. Boyd, C. Stickler, T. Bezerra, A. Azevedo, Responding to climate change and the global land crisis: REDD+, market transformation and low-emissions rural development. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.* **368**, 20120167 (2013).

34. A. Mottet *et al.*, Livestock: On our plates or eating at our table? A new analysis of the feed/food debate. *Glob. Food Sec.* **14**, 1–8 (2017).

35. M. Springmann *et al.*, Mitigation potential and global health impacts from emissions pricing of food commodities. *Nat. Clim. Chang.* **7**, 69–74 (2016).

36. K. Denef, K. Paustian, S. Archibeque, S. Biggar, D. Pape, "Report of Greenhouse Gas Accounting Tools for Agriculture and Forestry Sectors" (Fort Collins, 2012).

37. GSMA, "Creating scalable, engaging mobile solutions for agriculture" (London, 2017).

38. OECD, "Agriculture Policy Monitoring and Evaluation 2017" (Paris, 2017).

39. K. Segerson, Voluntary Approaches to Environmental Protection and Resource Management. *Annu. Rev. Resour. Econ.* **5**, 161–180 (2013).

40. European Parliament and Council, *Regulation (EU) No 1308/2013: establishing a common organization of the markets in agricultural products* (2013).

41. J. Pryshlakivsky, C. Searcy, Fifteen years of ISO 14040: a review. *J. Clean. Prod.* **57**, 115–123 (2013).

42. T. C. Ponsioen, H. M. G. van der Werf, Five propositions to harmonize environmental footprints of food and beverages. *J. Clean. Prod.* **153**, 457–464 (2017).

43. IPCC, *Climate Change 2013: The Physical Science Basis* (Cambridge University Press, Cambridge, 2013).

44. CML, "CML2 Baseline Method 2000" (Netherlands, 2001).

45. A. M. Boulay *et al.*, The WULCA consensus characterization model for water scarcity footprints: assessing impacts of water consumption based on available water remaining (AWARE). *Int. J. Life Cycle Assess.* **23**, 368–378 (2018).

46. IPCC, *Climate Change 2007: Mitigation of Climate Change* (Cambridge University Press, Cambridge, 2007).

47. R. J. Hijmans *et al.*, GADM Database of Global Administrative Areas (v. 2.7) (2015), (available at http://www.gadm.org/).

48. FAO/IIASA/ISRIC/ISSCAS/JRC, "Harmonized World Soil Database (version 1.2)" (Rome, Italy and Laxenburg, Austria., 2012).

49. N. H. Batjes, "World soil property estimates for broad-scale modelling (WISE30sec)" (2015).

50. L. Scherer, S. Pfister, Modelling spatially explicit impacts from phosphorus emissions in agriculture. *Int. J. Life Cycle Assess.* **20**, 785–795 (2015).

51. J. Danielson, D. Gesch, An enhanced global elevation model generalized from multiple higher resolution source dataets. *Int. Arch. Photogramm. Remote Sens. Spat. Inf. Sci.* **XXXVII**, 1857–1864 (2008).

52. R. J. Hijmans, S. E. Cameron, J. L. Parra, P. G. Jones, A. Jarvis, Very high resolution interpolated climate surfaces for global land areas. *Int. J. Climatol.* **25**, 1965–1978 (2005).

53. R. J. Zomer, A. Trabucco, O. van Straaten, D. A. Bossio, "Carbon, Land and Water: A Global Analysis of the Hydrologic Dimensions of Climate Change Mitigation through Afforestation/Reforestation" (2006).

54. R. Hiederer *et al.*, "Biofuels: a new methodology to estimate GHG emissions from global land use change" (Luxembourg, 2010).

55. S. Pfister, P. Bayer, A. Koehler, S. Hellweg, Environmental impacts of water use in global crop production: hotspots and trade-offs with land use. *Environ. Sci. Technol.* **45**, 5761–8 (2011).

56. F. T. Portmann, S. Siebert, P. Döll, MIRCA2000 - Global monthly irrigated and rainfed crop areas around the year 2000: A new high-resolution data set for agricultural and hydrological modeling. *Global Biogeochem. Cycles*. **24** (2010), doi:10.1029/2008GB003435.

57. A. K. Chapagain, A. Y. Hoekstra, The blue, green and grey water footprint of rice from production and consumption perspectives. *Ecol. Econ.* **70**, 749–758 (2011).

58. T. Nemecek *et al.*, "World Food LCA Database: Methodological Guidelines for the Life Cycle Inventory of Agricultural Products. Version 3.0" (Lausanne and Zurich, 2015).

59. FAO, AQUASTAT (Database) (2017), (available at http://www.fao.org/nr/water/aquastat).

60. R. G. Allen, L. S. Pereira, D. Raes, M. Smith, "Crop evapotranspiration: Guidelines for computing crop requirements" (1998).

61. S. Siebert, F. T. Portmann, P. Doll, Global patterns of cropland use intensity. *Remote Sens.* **2**, 1625–1643 (2010).

62. N. Ramankutty, A. T. Evan, C. Monfreda, J. Foley, Farming the planet: 1. Geographic distribution of global agricultural lands in the year 2000. *Global Biogeochem. Cycles*. **22** (2008), doi:10.1029/2007GB002952.

63. J. Webb *et al.*, in *Agroecology and Strategies for Climate Change*, E. Lichtfouse, Ed. (Springer, ed. 8, 2012), vol. 8, pp. 67–107.

64. J. Sintermann *et al.*, Are ammonia emissions from field-applied slurry substantially over-estimated in European emission inventories? *Biogeosciences*. **9**, 1611–1632 (2012).

65. V. Colomb *et al.*, "AGRIBALYSE® , the French LCI Database for agricultural products: high quality data for producers and environmental labelling" (2014).

66. ASAE, "Manure Production and Characteristics" (St. Joseph, USA, 2005).

67. EEA, "EMEP/EEA air pollutant emission inventory guidebook 2013: Technical guidance to prepare national emission inventories" (Luxembourg, 2013).

68. T. V. Vellinga *et al.*, "Methodology used in feedprint: a tool quantifying greenhouse gas emissions of feed production and utilization" (2013).

69. V. Heuzé, G. Tran, Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. (2015), (available at http://www.feedipedia.org/).

70. R. Köble, "The Global Nitrous Oxide Calculator (GNOC) Online Tool Manual v. 1.2.4" (Ispra, Italy, 2014), (available at http://gnoc.jrc.ec.europa.eu/).

71. IPCC, *IPCC Guidelines for National Greenhouse Gas Inventories* (IGES, Japan, 2006).

72. H. Kowata, H. Moriyama, K. Hayashi, H. Kato, N. Agricultural, in *Proc. of the 6th Int. Conf. on LCA in the Agri-Food Sector, Zurich, November 12–14, 2008* (2008), pp. 49–57.

73. M. M. Mekonnen, A. Y. Hoekstra, "The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products" (Delft, 2010).

74. UNDP, "Human Development Report 2014" (New York, 2014).

75. M. Hauschild, J. Potting, "Spatial differentiation in Life Cycle impact assessment - The EDIP2003 methodology" (Copenhagen, 2005).

76. M. Goedkoop *et al.*, "ReCiPe 2008" (Netherlands, 2009).

77. EC-JRC/PBL, EDGAR v4.2 (2011), (available at http://edgar.jrc.ec.europa.eu/).

78. FAO, "Yield and nutritional value of the commercially more important fish species" (Rome, 1989).

79. IDF, A common carbon footprint approach for dairy: The IDF guide to standard lifecycle assessment methodology for the dairy sector. *Bull. Int. Dairy Fed.* (2010).

80. C. Opio *et al.*, "Greenhouse gas emissions from ruminant supply chains" (Rome, 2013).

81. T. Nemecek *et al.*, Designing eco-efficient crop rotations using life cycle assessment of crop combinations. *Eur. J. Agron.* **65**, 40–51 (2015).

82. FAO, "Tree Crops - Guidelines For Estimating Area Data" (Rome, 2011).

83. B. P. Weidema *et al.*, "The ecoinvent database: Overview and methodology" (2013), (available at www.ecoinvent.org).

84. E. Stehfest, L. Bouwman, N2O and NO emission from agricultural fields and soils under natural vegetation: summarizing available measurement data and modeling of global annual emissions. *Nutr. Cycl. Agroecosystems*. **74**, 207–228 (2006).

85. EEA, "EMEP/EEA air pollutant emission inventory guidebook 2016: Technical guidance to prepare national emission inventories" (Luxembourg, 2016).

86. F. J. de Ruijter, J. F. M. Huijsmans, B. Rutgers, Ammonia volatilization from crop residues and frozen green manure crops. *Atmos. Environ.* **44**, 3362–3368 (2010).

87. S. K. Akagi *et al.*, Emission factors for open and domestic biomass burning for use in atmospheric models. *Atmos. Chem. Phys.* **11**, 4039–4072 (2011).

88. F. N. Tubiello, R. Biancalani, M. Salvatore, S. Rossi, G. Conchedda, A Worldwide Assessment of Greenhouse Gas Emissions from Drained Organic Soils. *Sustainability*. **8** (2016), doi:10.3390/su8040371.

89. E. M. W. Smeets, L. F. Bouwman, E. Stehfest, D. P. van Vuuren, A. Posthuma, Contribution of N2O to the greenhouse gas balance of first-generation biofuels. *Glob. Chang. Biol.* **15**, 1–23 (2009).

90. J. Shan, X. Yan, Effects of crop residue returning on nitrous oxide emissions in agricultural soils. *Atmos. Environ.* **71**, 170–175 (2013).

91. H. Chen, X. Li, F. Hu, W. Shi, Soil nitrous oxide emissions following crop residue addition: A meta-analysis. *Glob. Chang. Biol.* **19**, 2956–2964 (2013).

92. C. Nevison, Review of the IPCC methodology for estimating nitrous oxide emissions associated with agricultural leaching and runoff. *Chemosph. - Glob. Chang. Sci.* **2**, 493–500 (2000).

93. G. van Drecht, A. F. Bouwman, J. M. Knoop, A. H. W. Beusen, C. R. Meinardi, Global modeling of the fate of nitrogen from point and nonpoint sources in soils, groundwater, and surface water. *Glob. Biogeochem. Cycles*. **17**, 1115 (2003).

94. I. G. Burns, An equation to predict the leaching of surface-applied nitrate. *J. agric. Sci., Camb*. **85**, 443–454 (1975).

95. S. M. Thomas, S. F. Ledgard, G. S. Francis, Improving estimates of nitrate leaching for quantifying New Zealand's indirect nitrous oxide emissions. *Nutr. Cycl. Agroecosystems*. **73**, 213–226 (2005).

96. J. Liu *et al.*, A high-resolution assessment on global nitrogen flows in cropland. *Proc. Natl. Acad. Sci.* **107**, 8035–8040 (2010).

97. E. Papatryphon, J. Petit, H. M. G. Van Der Werf, K. J. Sadasivam, K. Claver, Nutrient-balance modeling as a tool for environmental management in aquaculture: the case of trout farming in France. *Environ. Manage.* **35**, 161–74 (2005).

98. IPCC, *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (IPCC, Switzerland, 2014).

99. U. Dämmgen, "Calculations of emission from German agriculture - National Emission Inventory Report 2009 for 2007" (Braunschweig, 2009).

100. A. Gross, C. E. Boyd, C. W. Wood, Nitrogen transformations and balance in channel catfish ponds. *Aquac. Eng.* **24**, 1–14 (2000).

101. G. L. Schroeder, Carbon and Nitrogen Budgets in Manured Fish Ponds on Israel's Coastal Plain. *Aquaculture*. **62**, 259–279 (1987).

102. J. C. Fry, in *Detritus and microbial ecology in aquaculture*, D. J. W. Moriarty, R. S. V. Pullin, Eds. (ICLARM, Manila, Philippines, 1987), pp. 83–122.

103. W. Lewis Jr, Global primary production of lakes: 19th Baldi Memorial Lecture. *Inl.*

Waters. **1**, 1–28 (2011).

104. G. L. Schroeder, Autotrophic and heterotrophic production of micro-organisms in intensely-manured fish ponds, and related fish yields. *Aquaculture*. **14**, 303–325 (1978).

105. X. Wang *et al.*, Chemical composition and release rate of waste discharge from an Atlantic salmon farm with an evaluation of IMTA feasibility. *Aquac. Environ. Interact.* **4**, 147–162 (2013).

106. R. D. Fallon, S. Harrits, R. S. Hanson, T. D. Brock, The role of methane in internal carbon cycling in Lake Mendota during summer stratification. *Limnol. Oceanogr.* **25**, 357–360 (1980).

107. K. M. Kuivila, J. W. Murray, A. H. Devol, M. E. Lidstrom, C. E. Reimers, Methane cycling in the sediments of Lake Washington. *Limnol. Oceanogr.* **33**, 571–581 (1988).

108. O. J. Hall, Chemical flux and mass balances in a marine fish cage farm. I. Carbon. *Mar. Ecol. Prog. Ser.* **61**, 61–73 (1990).

109. D. M. Alongi *et al.*, The fate of organic matter derived from small-scale fish cage aquaculture in coastal waters of Sulawesi and Sumatra, Indonesia. *Aquaculture*. **295**, 60–75 (2009).

110. D. Bastviken, L. J. Tranvik, J. A. Downing, J. A. Crill, A. Enrich-Prast, Freshwater Methane Emissions Offset the Continental Carbon Sink. *Science*. **331**, 50 (2011).

111. A. M. Detweiler *et al.*, Characterization of methane flux from photosynthetic oxidation ponds in a wastewater treatment plant. *Water Sci. Technol.* **70**, 980–989 (2014).

112. D. Bastviken, J. J. Cole, M. L. Pace, M. C. Van de-Bogert, Fates of methane from different lake habitats: Connecting whole-lake budgets and CH4 emissions. *J. Geophys. Res. Biogeosciences*. **113** (2008), doi:10.1029/2007JG000608.

113. EPA, “Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014” (Washington, DC, 2016).

114. M. Holmer, D. Wildish, B. Hargrave, Organic Enrichment from Marine Finfish Aquaculture and Effects on Sediment Biogeochemical Processes. *Environ. Eff. Mar. Finfish Aquac.* **5**, 181–206 (2005).

115. K. I. Suhr, C. O. Letelier-Gordo, I. Lund, Anaerobic digestion of solid waste in RAS: effect of reactor type on the biochemical acidogenic potential (BAP) and assessment of the biochemical methane potential (BMP) by a batch assay. *Aquac. Eng.* **65**, 65–71 (2015).

116. Blonk Consultants, Direct Land Use Change Assessment Tool, Version 2013.1 (2013).

117. JRC, Support to Renewable Energy Directive (2010), (available at http://eusoils.jrc.ec.europa.eu/projects/RenewableEnergy/).

118. The British Standards Institution, “Publically Available Specificiation (PAS 2050: 2011)” (London, 2011).

119. S. Rossi *et al.*, FAOSTAT estimates of greenhouse gas emissions from biomass and peat fires. *Clim. Change*. **135**, 699–711 (2016).

120. N. Hosonuma *et al.*, An assessment of deforestation and forest degradation drivers in developing countries. *Environ. Res. Lett.* **7** (2012), doi:10.1088/1748-9326/7/4/044009.

121. M. C. C. Hansen *et al.*, High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science*. **342**, 850–854 (2013).

122. ecoinvent, Background data for transport (2013), (available at http://www.ecoinvent.org/files/transport_default_20130722.xls).

123. L. Fulton, P. Cazzola, F. Cuenot, IEA Mobility Model (MoMo) and its use in the ETP 2008. *Energy Policy*. **37**, 3758–3768 (2009).

124. UNCTAD, "Review of Maritime Transport 2015" (2015).

125. International Civil Aviation Organization, Civil Aviation Statistics of the World (2017), (available at http://www.icao.int/sustainability/Pages/Statistics.aspx).

126. S. J. James, C. James, The food cold-chain and climate change. *Food Res. Int.* **43**, 1944–1956 (2010).

127. G. Wernet *et al.*, The ecoinvent database version 3 (part I): overview and methodology. *Int. J. Life Cycle Assess.* **21**, 1218–1230 (2016).

128. FAO, "Global food losses and food waste – Extent, causes and prevention" (Rome, 2011).

129. FAO, "Food balance sheets – a handbook" (Rome, 2001).

130. J. Gustavsson, C. Cederberg, U. Sonesson, A. Emanuelsson, "The methodology of the FAO study: 'Global Food Losses and Food Waste - extent, causes and prevention' - FAO, 2011" (Gothenburg, 2013).

131. FAO, AQUASTAT (Database) - Conservation Agriculture Adoption Worldwide (2016), (available at http://www.fao.org/nr/water/aquastat/data/query/index.html).

132. S. Siebert *et al.*, Groundwater use for irrigation – a global inventory. *Hydrol. Earth Syst. Sci.* **14**, 1863–1880 (2010).

133. FiBL and IFOAM, in *The World of Organic Agriculture. Statistics and Emerging Trends 2014.*, H. Willer, J. Lernoud, Eds. (Frick and Bonn, 2014).

134. IIASA/FAO, "Global Agro-ecological Zones (GAEZ v3.0) - User's Guide" (2012).

135. FAO, FishStatJ - software for fishery statistical time series (2016), (available at http://www.fao.org/fishery/statistics/software/fishstatj).

136. FAO, "Global Livestock Environmental Assessment Model: Reference Documentation v2.0" (Rome, 2016).

137. National Development and Reform Commission of China, "National Data Compilation of Revenue and Cost of Agricultural Products 2013" (China Statistics Press, Beijing, 2013).

138. E. C. Ellis, K. Klein Goldewijk, S. Siebert, D. Lightman, N. Ramankutty, Anthropogenic transformation of the biomes, 1700 to 2000. *Glob. Ecol. Biogeogr.* **19**, 589–606 (2010).

139. M. Herrero *et al.*, Biomass use, production, feed efficiencies, and greenhouse gas emissions from global livestock systems. *Proc. Natl. Acad. Sci.* **110**, 20888–93 (2013).

140. R. A. Houghton *et al.*, Carbon emissions from land use and land-cover change. **4**, 5125–5142 (2012).

141. P. Friedlingstein *et al.*, Persistent growth of CO_2 emissions and implications for reaching climate targets. *Nat. Publ. Gr.* **7**, 709–715 (2014).

142. A. G. Pujol *et al.*, sensitivity. R package version 1.15.0. (2017).

143. E. H. Haddad, J. S. Tanzman, What do vegetarians in the United States eat. *Am. J. Clin. Nutr.* **78**, 626S–32S (2003).

144. M. Springmann, H. C. J. Godfray, M. Rayner, P. Scarborough, Analysis and valuation of the health and climate change cobenefits of dietary change. *Proc. Natl. Acad. Sci.* **113**, 4146–4151 (2016).

145. H. Darby, K. Hills, E. Cummings, R. Madden, “Assessing the value of oilseed meals for soil fertility and weed suppression” (Burlington, 2010).

146. K. Schmidinger, E. Stehfest, Including CO_2 implications of land occupation in LCAs—method and example for livestock products. *Int. J. Life Cycle Assess.* **17**, 962–972 (2012).

147. EC-JRC/PBL, EDGAR v4.2 FT2010 (2013), (available at http://edgar.jrc.ec.europa.eu/).

148. R. W. R. Parker *et al.*, Fuel use and greenhouse gas emissions of world fisheries. *Nat. Clim. Chang.* **8**, 333–337 (2018).

149. D. Cordell, A. Rosemarin, J. J. Schröder, A. L. Smit, Towards global phosphorus security: A systems framework for phosphorus recovery and reuse options. *Chemosphere*. **84**, 747–758 (2011).

150. T. Coelli, A. Henningsen, frontier: Stochastic Frontier Analysis. R package version 1.1-2. (2017).

151. K. M. Strassmann, F. Joos, G. Fischer, Simulating effects of land use changes on carbon fluxes: past contributions to atmospheric CO_2 increases and future commitments due to losses of terrestrial sink capacity. *Tellus*. **60B**, 583–603 (2008).

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Supplementary Materials:

Materials and Methods

Supplementary Text

Figs. S1 to S14

Tables S1 to S17

Captions for Data S1 to S2

References (*41–151*)

Reducing food's environmental impacts through producers and consumers
J. Poore and T. Nemecek
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Data S1: Reference Lists in PDF Format

Studies Included

Abeliotis, K., Detsis, D., Pappia, C. (2013). Life cycle assessment of bean production in the Prespa National Park, Greece. Journal of Cleaner Production, 41, 89-96.

Achten, W. M., & van Acker, K. (2016). EU-Average Impacts of Wheat Production: A Meta-Analysis of Life Cycle Assessments. Journal of Industrial Ecology, 20(1), 132-144.

Achten, W. M., Vandenbempt, P., Almeida, J., Mathijs, E., & Muys, B. (2010). Life cycle assessment of a palm oil system with simultaneous production of biodiesel and cooking oil in Cameroon. Environmental science & technology, 44(12), 4809-4815.

Acreche, M. M., & Valeiro, A. H. (2013). Greenhouse gasses emissions and energy balances of a non-vertically integrated sugar and ethanol supply chain: a case study in Argentina. Energy, 54, 146-154.

Adom, F., Maes, A., Workman, C., Clayton-Nierderman, Z., Thoma, G., & Shonnard, D. (2012). Regional carbon footprint analysis of dairy feeds for milk production in the USA. The International Journal of Life Cycle Assessment, 17(5), 520-534.

Afrane, G., Arvidsson, R., Baumann, H., Borg, J., Keller, E., Milà i Canals, L., & Selmer, J. K. (2013). A product chain organisation study of certified cocoa supply. In 6th International Conference on Life Cycle Management, LCM2013, 25-28 August 2013, Göteborg.

Aguilera, E., Guzmán, G., & Alonso, A. (2015a). Greenhouse gas emissions from conventional and organic cropping systems in Spain. I. Herbaceous crops. Agronomy for Sustainable Development, 35(2), 713-724.

Aguilera, E., Guzmán, G., & Alonso, A. (2015b). Greenhouse gas emissions from conventional and organic cropping systems in Spain. II. Fruit tree orchards. Agronomy for Sustainable Development, 35(2), 725-737.

Aguirre-Villegas, H. A., Passos-Fonseca, T. H., Reinemann, D. J., Armentano, L. E., Wattiaux, M. A., Cabrera, V. E., ... & Larson, R. (2015). Green cheese: Partial life cycle assessment of greenhouse gas emissions and energy intensity of integrated dairy production and bioenergy systems. Journal of dairy science, 98(3), 1571-1592.

Alaphilippe, A., Boissy, J., Simon, S., & Godard, C. (2016). Environmental impact of intensive versus semi-extensive apple orchards: use of a specific methodological framework for Life Cycle Assessments (LCA) in perennial crops. Journal of Cleaner Production, 127, 555-561.

Alaphilippe, A., Simon, S., Brun, L., Hayer, F., Gaillard, G. (2013). Life cycle analysis reveals higher agroecological benefits of organic and low-input apple production. Agronomy and Sustainable Development, 33, 581-592.

Alemu, A. W., Ominski, K. H., Tenuta, M., Amiro, B. D., & Kebreab, E. (2016). Evaluation of greenhouse gas emissions from hog manure application in a Canadian cow–calf production system using whole-farm models. Animal Production Science, 56(10), 1722-1737.

Alig, M., Grandl, F., Mieleitner, J., Nemecek, T. & Gaillard, G. (2012). Ökobilanz von Rind-, Schweine- und Geflügelfleisch. Report Agroscope ART, Zurich.

Andrade, H., Segura, M., Canal, D. S., Feria, M., Alvarado, J., Marín, L., ... & Gómez, M. (2014). The carbon footprint of coffee production chains in Tolima, Colombia. Sustainable Agroecosystems in Climate Change Mitigation. Wageningen Academic Publisher, 53-65.

Antón, A., Torrellas, M., Montero, J. I., Ruijs, M., Vermeulen, P., & Stanghellini, C. (2010). Environmental Impact Assessment of Dutch Tomato Crop Production in a Venlo Glasshouse. In XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on 927 (p. 781-791).

Apolio. (2010). EPD - Olio Extra Vergine Di Oliva "Denocciolato". Available at: <http://gryphon.environdec.com/data/files/6/8574/epd346it.pdf> Accessed 01/01/2017.

Archer, D. W., & Halvorson, A. D. (2010). Greenhouse gas mitigation economics for irrigated cropping systems in northeastern Colorado. Soil Science Society of America Journal, 74(2), 446-452.

Arroyo, J., Fortun-Lamothe, L., Auvergne, A., Dubois, J. P., Lavigne, F., Bijja, M., & Aubin, J. (2013). Environmental influence of maize substitution by sorghum and diet presentation on goose foie gras production. Journal of Cleaner Production, 59, 51-62.

Arsenault, N., Tyedmers, P., & Fredeen, A. (2009). Comparing the environmental impacts of pasture-based and confinement-based dairy systems in Nova Scotia (Canada) using life cycle assessment. International Journal of Agricultural Sustainability, 7(1), 19-41.

Aryal, J. P., Sapkota, T. B., Jat, M. L., & Bishnoi, D. K. (2015). On-Farm Economic and Environmental Impact of Zero-Tillage Wheat: a Case of North-West India. Experimental Agriculture, 51(01), 1-16.

Assoproli Bari. (2014). The first EPD food system certificate Environmental Product Declaration for oasis extra virgin olive oil packaged in glass bottles of 0.5l. Available at: <http://gryphon.environdec.com/data/files/6/8781/epd367en_rev4.pdf>. Accessed 01/01/2017.

Astier, M., Merlín-Uribe, Y., Villamil-Echeverri, L., Garciarreal, A., Gavito, M. E., & Masera, O. R. (2014). Energy balance and greenhouse gas emissions in organic and conventional avocado orchards in Mexico. Ecological Indicators, 43, 281-287.

Astudillo, M. F., Thalwitz, G., & Vollrath, F. (2015). Modern analysis of an ancient integrated farming arrangement: life cycle assessment of a mulberry dyke and pond system. The International Journal of Life Cycle Assessment, 20(10), 1387-1398.

Aubin, J., Papatryphon, E., Van der Werf, H. M. G., & Chatzifotis, S. (2009). Assessment of the environmental impact of carnivorous finfish production systems using life cycle assessment. Journal of Cleaner Production, 17(3), 354-361.

Australian Life Cycle Assessment Society. (ALCAS). (2012). AusLCI – The Australian life cycle inventory database initiative. Available at: <http://www.alcas.asn.au/auslci>. Accessed 01/01/2017.

Avadí, A., Pelletier, N., Aubin, J., Ralite, S., Núñez, J., & Fréon, P. (2015). Comparative environmental performance of artisanal and commercial feed use in Peruvian freshwater aquaculture. Aquaculture, 435, 52-66.

Avraamides, M., & Fatta, D. (2006). Life Cycle Assessment (LCA) as a Decision Support Tool (DST) for the ecoproduction of olive oil - TASK 3.2 Implementation of Life Cycle Inventory in Lythrodontas region of Cyprus. University of Cyprus.

Bakhtiari, A.A., Hematian, A., Moradipour, M. (2015). Energy, economic and GHG emissions analysis of potato production. Journal of Biodiversity and Environmental Sciences, 6(2), 398-406.

Bartl, K., Gómez, C.A., Nemecek, T. (2011). Life cycle assessment of milk produced in two smallholder dairy systems in the highlands and the coast of Peru. Journal of Cleaner Production, 19, 1494-1505.

Bartl, K., Verones, F., & Hellweg, S. (2012). Life cycle assessment based evaluation of regional impacts from agricultural production at the Peruvian coast. Environmental science & technology, 46(18), 9872-9880.

Bartocci, P., Fantozzi, P., & Fantozzi, F. (2017). Environmental impact of Sagrantino and Grechetto grapes cultivation for wine and vinegar production in central Italy. Journal of Cleaner Production, 140, 569-580.

Barton, L., Thamo, T., Engelbrecht, D., & Biswas, W. K. (2014). Does growing grain legumes or applying lime cost effectively lower greenhouse gas emissions from wheat production in a semi-arid climate? Journal of Cleaner Production, 83, 194-203.

Bartzas, G., Zaharaki, D., & Komnitsas, K. (2015). Life cycle assessment of open field and greenhouse cultivation of lettuce and barley. Information Processing in Agriculture, 2(3), 191-207.

Bartzas, G., Zaharaki, D., & Komnitsas, K. (2016). Life cycle analysis of pistachio production in Greece. Available at: <http://uest.ntua.gr/cyprus2016/proceedings/pdf/Komnitsas_Lifecycle_analysis_pistachio_production_Greece.pdf>. Accessed 01/01/2017.

Basarab, J., Baron, V., López-Campos, Ó., Aalhus, J., Haugen-Kozyra, K., & Okine, E. (2012). Greenhouse gas emissions from calf-and yearling-fed beef production systems, with and without the use of growth promotants. Animals, 2(2), 195-220.

Basset-Mens, C., & Van der Werf, H. M. (2005). Scenario-based environmental assessment of farming systems: the case of pig production in France. Agriculture, Ecosystems & Environment, 105(1), 127-144.

Basset-Mens, C., Ledgard, S., Boyes, M. (2009). Eco-efficiency of intensification scenarios for milk production in New Zealand. Ecological Economics. 68 (6), 1615-1625.

Basset-Mens, C., McLaren, S., Ledgard, S. (2007). Exploring a comparative advantage for New Zealand cheese in terms of environmental performance. Book of Proceedings 5th International Conference LCA in Foods, 25–26 April, (2007). Swedish Institute for Food and Biotechnology, Gothenburg. p. 84-87.

Basset-Mens, C., Vannière, H., Grasselly, D., Heitz, H., Braun, A., Payen, S., Koch, P. (2014). Environmental impacts of imported versus locally-grown fruits for the French market as part of the AGRIBALYSE® program. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Battini, F., Agostini, A., Boulamanti, A. K., Giuntoli, J., & Amaducci, S. (2014). Mitigating the environmental impacts of milk production via anaerobic digestion of manure: Case study of a dairy farm in the Po Valley. Science of the Total Environment, 481, 196-208.

Baumgartner, D. U., de Baan, L., & Nemecek, T. (2008). European grain legumes–Environment-friendly animal feed. Life cycle assessement of pork, chicken meat, egg, and milk production. Grain Legumes Integrated Project. Final Report WP2, 2.

Bautista, E.G., Saito, M. (2015). Greenhouse gas emissions from rice production in the Philippines based on life-cycle inventory analysis. Journal of Food, Agriculture & Environment, 13(1), 139-144.

Bava, L., Sandrucci, A., Zucali, M., Guerci, M., & Tamburini, A. (2014). How can farming intensification affect the environmental impact of milk production?. Journal of dairy science, 97(7), 4579-4593.

Bava, L., Zucali, M., Sandrucci, A., & Tamburini, A. (2017). Environmental impact of the typical heavy pig production in Italy. Journal of Cleaner Production, 140, 685-691.

Beauchemin, K. A., Janzen, H. H., Little, S. M., McAllister, T. A., & McGinn, S. M. (2011). Mitigation of greenhouse gas emissions from beef production in western Canada–Evaluation using farm-based life cycle assessment. Animal Feed Science and Technology, 166, 663-677.

Bell, M. J., Eckard, R. J., & Cullen, B. R. (2012). The effect of future climate scenarios on the balance between productivity and greenhouse gas emissions from sheep grazing systems. Livestock Science, 147(1), 126-138.

Bengtsson, J., & Seddon, J. (2013). Cradle to retailer or quick service restaurant gate life cycle assessment of chicken products in Australia. Journal of Cleaner Production, 41, 291-300.

Berlin, J. (2002). Environmental life cycle assessment (LCA) of Swedish semi-hard cheese. International dairy journal, 12(11), 939-953.

Bernesson, S., Nilsson, D., & Hansson, P. A. (2004). A limited LCA comparing large-and small-scale production of rape methyl ester (RME) under Swedish conditions. Biomass and bioenergy, 26(6), 545-559.

Bernesson, S., Nilsson, D., & Hansson, P. A. (2006). A limited LCA comparing large-and small-scale production of ethanol for heavy engines under Swedish conditions. Biomass and Bioenergy, 30(1), 46-57.

Bessou, C., Basset-Mens, C., Latunussa, C., Vélu, A., Heitz, H., Vannière, H., & Caliman, J. P. (2016). Partial modelling of the perennial crop cycle misleads LCA results in two contrasted case studies. The International Journal of Life Cycle Assessment, 21(3), 297-310.

Beuchelt, T. D., Villa, C. T. C., Göhring, L., Rodríguez, V. M. H., Hellin, J., Sonder, K., & Erenstein, O. (2015). Social and income trade-offs of conservation agriculture practices on crop residue use in Mexico's central highlands. Agricultural Systems, 134, 61-75.

Biswas, W. K., Barton, L., & Carter, D. (2008). Global warming potential of wheat production in Western Australia: a life cycle assessment. Water and Environment Journal, 22(3), 206-216.

Biswas, W. K., Graham, J., Kelly, K., & John, M. B. (2010). Global warming contributions from wheat, sheep meat and wool production in Victoria, Australia–a life cycle assessment. Journal of Cleaner Production, 18(14), 1386-1392.

Blengini, G. A., & Busto, M. (2009). The life cycle of rice: LCA of alternative agri-food chain management systems in Vercelli (Italy). Journal of environmental management, 90(3), 1512-1522.

Blonk, H., Kool, A., Luske, B. (2008). Milieueffecten van Nederlandse consumptie van eiwitrijke producten (in Dutch, Environmental effects of Dutch consumption of protein-rich products). BMA/VROM, Gouda.

Blonk, H., Luske, B., & Kool, A. (2009). Milieueffecten van enkele populaire vissoorten (Environmental Effects of some Popular Fish Species). Blonk Consultants, Gouda.

BMZ Federal Ministry for Economic Cooperation and Development. (2014). The Ecological Footprint of Cassava and Maize Post-Harvest-Losses in Nigeria: A Life Cycle Assessment. Available at: <https://www.giz.de/fachexpertise/downloads/giz2013-en-report-food-loss-of-maize-and-cassava.pdf>. Accessed: 01/01/2017.

Boissy, J., Aubin, J., Drissi, A., van der Werf, H. M., Bell, G. J., Kaushik, S. J. (2011). Environmental impacts of plant-based salmonid diets at feed and farm scales. Aquaculture, 321(1), 61-70.

Bojacá, C. R., Wyckhuys, K. A., & Schrevens, E. (2014). Life cycle assessment of Colombian greenhouse tomato production based on farmer-level survey data. Journal of Cleaner Production, 69, 26-33.

Bolandnazar, E., Keyhani, A., & Omid, M. (2014). Determination of efficient and inefficient greenhouse cucumber producers using data envelopment analysis approach, a case study: Jiroft city in Iran. Journal of Cleaner Production, 79, 108-115.

Bonesmo, H., Skjelvåg, A. O., Janzen, H. H., Klakegg, O., & Tveito, O. E. (2012). Greenhouse gas emission intensities and economic efficiency in crop production: A systems analysis of 95 farms. Agricultural Systems, 110, 142-151.

Borg, J., Selmer, J. K. (2012). From Ghana to Magnum Ice Cream: Tracking Down the Organisation of Sustainable Cocoa Product Chains. ESA report 2012:14, Environmental Systems Analysis, Chalmers, Göteborg.

Borzęcka-Walker, M., Faber, A., Pudełko, R., Kozyra, J., Syp, A., & Borek, R. (2011). Life cycle assessment (LCA) of crops for energy production. Journal of Food, Agriculture & Environment, 9(3&4), 698-700.

Borzęcka-Walker, M., Faber, A., SYP, A., & PUDELKO, R. (2013). Greenhouse gas emissions from rape seed cultivation for FAME production in Poland. Journal of Food, Agriculture & Environment, 11(1), 1064-1068.

Bos, J. F., de Haan, J., Sukkel, W., & Schils, R. L. (2014). Energy use and greenhouse gas emissions in organic and conventional farming systems in the Netherlands. NJAS-Wageningen Journal of Life Sciences, 68, 61-70.

Bosco, S., Di Bene, C., Galli, M., Remorini, D., Massai, R., & Bonari, E. (2011). Greenhouse gas emissions in the agricultural phase of wine production in the Maremma rural district in Tuscany, Italy. Italian Journal of Agronomy, 6(2), 93-100.

Bosco, S., Di Bene, C., Galli, M., Remorini, D., Massai, R., & Bonari, E. (2013). Soil organic matter accounting in the carbon footprint analysis of the wine chain. The International Journal of Life Cycle Assessment, 18(5), 973-989.

Boulard, T., Raeppel, C., Brun, R., Lecompte, F., Hayer, F., Carmassi, G., & Gaillard, G. (2011). Environmental impact of greenhouse tomato production in France. Agronomy for sustainable development, 31(4), 757-777.

Braschkat, J., Patyk, A., Quirin, M. & Reinhardt, G.A. (2003). Life cycle assessment of bread production – a comparison of eight different scenarios. In Halberg, N. (ed.), Life Cycle Assessment in the Agri-food sector. Proceedings from the 4th International Conference, 6-8 October 2003, Bygholm, Denmark.

Brentrup, F., Küsters, J., Kuhlmann, H., & Lammel, J. (2001). Application of the Life Cycle Assessment methodology to agricultural production: an example of sugar beet production with different forms of nitrogen fertilisers. European Journal of Agronomy, 14(3), 221-233.

Brock, P., Madden, P., Schwenke, G., & Herridge, D. (2012). Greenhouse gas emissions profile for 1 tonne of wheat produced in Central Zone (East) New South Wales: a life cycle assessment approach. Crop and Pasture Science, 63(4), 319-329.

Brodt, S., Kendall, A., Mohammadi, Y., Arslan, A., Yuan, J., Lee, I. S., & Linquist, B. (2014). Life cycle greenhouse gas emissions in California rice production. Field Crops Research, 169, 89-98.

Brodt, S., Kramer, K. J., Kendall, A., & Feenstra, G. (2013). Comparing environmental impacts of regional and national-scale food supply chains: A case study of processed tomatoes. Food Policy, 42, 106-114.

Broekema, R., & Kramer, G. (2014). LCA of Dutch Semi-Skimmed Milk and Semi-Mature Cheese. Blonk Consultants, Gouda.

Busset, G., Belaud, J. P., Clarens, F., Espi, J. J., Montréjaud-Vignoles, M., & Sablayrolles, C. (2012). Life Cycle Assessment of olive oil production in France. In Proc. 4th Int. Conf. Eng. Waste Biomass Valoris. A. Nizhou & F. Castro, Porto. p. 987-992.

Bystricky, M., Alig, M., Nemecek, T., & Gaillard, G. (2014). Ökobilanz ausgewählter Schweizer Landwirtschaftsprodukte im Vergleich zum Import. Agroscope. Zurich.

Camargo, G. G., Ryan, M. R., & Richard, T. L. (2013). Energy use and greenhouse gas emissions from crop production using the farm energy analysis tool. BioScience, 63(4), 263-273.

Cao, L. (2012). Farming Shrimp for the Future: A Sustainability Analysis of Shrimp Farming in China. PhD Thesis. University of Michigan, United States.

Capper, J. L. (2012). Is the grass always greener? Comparing the environmental impact of conventional, natural and grass-fed beef production systems. Animals, 2(2), 127-143.

Capper, J. L., & Cady, R. A. (2012). A comparison of the environmental impact of Jersey compared with Holstein milk for cheese production. Journal of dairy science, 95(1), 165-176.

Cardoso, A. S., Berndt, A., Leytem, A., Alves, B. J., de Carvalho, I. D. N., de Barros Soares, L. H., ... & Boddey, R. M. (2016). Impact of the intensification of beef production in Brazil on greenhouse gas emissions and land use. Agricultural Systems, 143, 86-96.

Carlsson, B., Sonesson, U., Cederberg, C., Sund, V. (2009a). Livscykelanalys (LCA) avsvenskt ekologiskt griskött. (Life cycle assessment of Swedish organic pork meat.) SIK report no 798. Swedish Institute for Food and Biotechnology, Gothenburg.

Carlsson, B., Sonesson, U., Cederberg, C., Sund, V. (2009b). Livscykelanalys (LCA) avsvenskt ekologiskt ägg. (Life cycle assessment of a Swedish organic egg.) SIK report no 797. Swedish Institute for Food and Biotechnology, Gothenburg.

Carrouée, B., Ballot, R., Baranger, E., Berrodier, E., ... Laville, P. (2012). Amélioration des performances économiques et environnementales de systèmes de culture avec pois, colza et blé (in French). Projet Casdar 7-175. Union Nationale Interprofessionnelle des Plantes Riches en Protéines, Paris.

Carta, G. (2009). Evaluation of Environmental Sustainability of Two Italian Wine Productions Through the Use of the Life Cycle Assessment (LCA) Method. University of Sassari, Italy.

Casaca, J.M. (2008). Policultivos de peixes integrados à produção vegetal: avaliação econômica e sócio ambiental (peixe-verde). Tese de doutorado de Aqüicultura da UNESP, Brazilia.

Casey, J. W., & Holden, N. M. (2006a). Greenhouse gas emissions from conventional, agri-environmental scheme, and organic Irish suckler-beef units. Journal of Environmental Quality, 35(1), 231-239.

Castanheira, É. G., & Freire, F. (2013). Greenhouse gas assessment of soybean production: implications of land use change and different cultivation systems. Journal of Cleaner Production, 54, 49-60.

Castanheira, É. G., Acevedo, H., & Freire, F. (2014). Greenhouse gas intensity of palm oil produced in Colombia addressing alternative land use change and fertilization scenarios. Applied Energy, 114, 958-967.

Cavalett, O., & Ortega, E. (2009). Emergy, nutrients balance, and economic assessment of soybean production and industrialization in Brazil. Journal of Cleaner Production, 17(8), 762-771.

Cavalett, O., & Ortega, E. (2010). Integrated environmental assessment of biodiesel production from soybean in Brazil. Journal of Cleaner Production, 18(1), 55-70.

Cayambe, J., Iglesias, A., García de Jalón, S., Chuquillanqui, C., Riga, P. (2015). Evaluación económica de las estrategias de mitigación de gases de efecto invernadero en sistemas de producción de patata (in Spanish). ITEA Journal, 111-2, 154-173.

Cederberg, C., & Darelius, K. (2000). Livscykelanalys (LCA) av nötkött. (Life cycle assessment of beef meat.) Naturresursforum, Landstingen Halland.

Cederberg, C., & Darelius, K. (2001). Livscykelanalys (LCA) av griskött. (Life cycle assessment of pork meat.) Naturresursforum, Landstingen Halland.

Cederberg, C., & Flysjö, A. (2004). Life Cycle inventory of 23 dairy farms in South-Western Sweden. Swedish Institute for Food and Biotechnology, Gothenburg.

Cederberg, C., & Mattsson, B. (2000). Life cycle assessment of milk production—a comparison of conventional and organic farming. Journal of Cleaner production, 8(1), 49-60.

Cederberg, C., & Nilsson, B. (2004a). Miljösystemanalys av ekologisk griskött. (Environmental system analysis of organic pork meat.) SIK report no 717 (2004). Swedish Institute for Food and Biotechnology, Gothenburg.

Cederberg, C., & Nilsson, B. (2004b). Livscykelanalys (LCA) av ekologisk nötköttsproduktion i ranchdrift. (Life cycle assessment of organic beef production using ranch production system.) SIK report no 718 (2004). Swedish Institute for Food and Biotechnology, Gothenburg.

Cederberg, C., Flysjö, A., & Ericson, L. (2007). Livscykelanalys (LCA) av norrlandsk mjolkproduktion (Lifecycle assessment of milk production in northern Sweden). SIK report no. 761. Swedish institute for food and biotechnology, Gothenburg.

Cederberg, C., Meyer, D., & Flysjö, A. (2009). Life cycle inventory of greenhouse gas emissions and use of land and energy in Brazilian beef production. SIK Report No. 792. Swedish institute for food and biotechnology, Gothenburg.

Celis, J. E., Sandoval, N., & Wells, G. (2013). Carbon footprint estimation resulting from beef cattle at the Central Irrigated Valley, Bio-Bio region, Chile. Annals of Agrarian Science, 11(1), 86-94.

Cerutti, A., Bruun, S., Donno, D., Beccaro, G.L., & Bounous, G. (2013). Environmental sustainability of traditional foods: the case of ancient apple cultivars in Northern Italy assessed by multifunctional LCA. Journal of Cleaner Production, 52, 245-252.

Charles, R., Jolliet, O., Gaillard, G., & Pellet, D. (2006). Environmental analysis of intensity level in wheat crop production using life cycle assessment. Agriculture, ecosystems & environment, 113(1), 216-225.

Chen, X., Cui, Z., Fan, M., Vitousek, P., Zhao, M., Ma, W., ... & Zhang, F. (2014). Producing more grain with lower environmental costs. Nature, 514(7523), 486-489.

Chen, X., Samson, E., Tocqueville, A., & Aubin, J. (2015). Environmental assessment of trout farming in France by life cycle assessment: using bootstrapped principal component analysis to better define system classification. Journal of Cleaner Production, 87, 87-95.

Cheng, K., Yan, M., Nayak, D., Pan, G. X., Smith, P., Zheng, J. F., & Zheng, J. W. (2015). Carbon footprint of crop production in China: an analysis of national statistics data. The Journal of Agricultural Science, 153(03), 422-431.

Cherubini, E., Zanghelini, G. M., Alvarenga, R. A. F., Franco, D., & Soares, S. R. (2015). Life cycle assessment of swine production in Brazil: a comparison of four manure management systems. Journal of Cleaner Production, 87, 68-77.

Choo, Y. M., Muhamad, H., Hashim, Z., Subramaniam, V., Puah, C. W., & Tan, Y. (2011). Determination of GHG contributions by subsystems in the oil palm supply chain using the LCA approach. The International Journal of Life Cycle Assessment, 16(7), 669-681.

Christoforou, E., Fokaides, P. A., Koroneos, C. J., & Recchia, L. (2016). Life Cycle Assessment of first generation energy crops in arid isolated island states: The case of Cyprus. Sustainable Energy Technologies and Assessments, 14, 1-8.

Comandaru, I. M., Bârjoveanu, G., Peiu, N., Ene, S. A., & Teodosiu, C. (2012). Life cycle assessment of wine: focus on water use impact assessment. Environmental Engineering and Management Journal, 11(3), 533-543.

Cordes, H., Iriarte, A., & Villalobos, P. (2016). Evaluating the carbon footprint of Chilean organic blueberry production. The International Journal of Life Cycle Assessment, 21(3), 281-292.

Cortés, J.M. (2006). Life Cycle Assessment (LCA) as a Decision Support Tool (DST) for the ecoproduction of olive oil: Task 3.3 - Implementation of Life Cycle Inventory in Ribera Baja (Navarra, Spain). Córdoba, Spain.

Cudjoe Adebah, E., Langeveld, C., Kermah, M. (2010). Environmental Impact of Organic Pineapple Production in Ghana: a Comparison of Two Farms Using Life Cycle Assessment (LCA) Approach. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food (2010). Bari, Parallel Session 3A. 325-330.

Cunha, C. S., Lopes, N. L., Veloso, C. M., Jacovine, L. A. G., Tomich, T. R., Pereira, L. G. R., & Marcondes, M. I. (2016). Greenhouse gases inventory and carbon balance of two dairy systems obtained from two methane-estimation methods. Science of The Total Environment, 571, 744-754.

Dakpo, H., Laignel, G., Roulenc, M., & Benoit, M. (2013). L'élevage biologique consomme-t-il moins d'énergie et émet-il moins de gaz à effet de serre que l'élevage conventionnel ? Analyse en production ovine allaitante. Innovations Agronomiques 32, 95-107.

Dalgaard, R., Schmidt, J., Halberg, N., Christensen, P., Thrane, M., & Pengue, W. A. (2008). LCA of soybean meal. The International Journal of Life Cycle Assessment, 13(3), 240-254.

Datta, A., Rao, K. S., Santra, S. C., Mandal, T. K., & Adhya, T. K. (2011). Greenhouse gas emissions from rice based cropping systems: Economic and technologic challenges and opportunities. Mitigation and Adaptation Strategies for Global Change, 16(5), 597-615.

D'Avino, L., Dainelli, R., Lazzeri, L., & Spugnoli, P. (2015). The role of co-products in biorefinery sustainability: energy allocation versus substitution method in rapeseed and carinata biodiesel chains. Journal of Cleaner Production, 94, 108-115.

Davis, J., Wallman, M., Sund, V., Emanuelsson, A., Cederberg, C., Sonesson, U. (2011). Emissions of Greenhouse Gases from Production of Horticultural Products Analysis of 17 products cultivated in Sweden. SIK report no 828. Swedish Institute for Food and Biotechnology, Gothenburg.

de Alvarenga, R. A. F. (2010). Avaliação de métodos de AICV: um estudo de caso de quatro cenários de ração para frangos de corte. Dissertation. Universidade Federal de Santa Catarina, Florianópolis.

de Backer, E., Aertsens, J., Vergucht, S., Steurbaut. W. (2009). Assessing the ecological soundness of organic and conventional agriculture by means of life cycle assessment (LCA). British Food Journal, 111 (10), 1028-1061

de Figueiredo, E. B., & La Scala Jr, N. (2011). Greenhouse gas balance due to the conversion of sugarcane areas from burned to green harvest in Brazil. Agriculture, Ecosystems & Environment, 141(1), 77-85.

de Figueiredo, E. B., Panosso, A. R., Romão, R., & La Scala Jr, N. (2010). Greenhouse gas emission associated with sugar production in southern Brazil. Carbon Balance Managment, 5, 3-7.

de Figueirêdo, M. C. B., Kroeze, C., Potting, J., da Silva Barros, V., de Aragão, F. A. S., Gondim, R. S., ... & de Boer, I. J. (2013). The carbon footprint of exported Brazilian yellow melon. Journal of Cleaner Production, 47, 404-414.

de Figueirêdo, M. C. B., Potting, J., Serrano, L. A. L., Bezerra, M. A., da Silva Barros, V., Gondim, R. S., & Nemecek, T. (2016). Environmental assessment of tropical perennial crops: the case of the Brazilian cashew. Journal of Cleaner Production, 112, 131-140.

De Gennaro, B., Notarnicola, B., Roselli, L., & Tassielli, G. (2012). Innovative olive-growing models: an environmental and economic assessment. Journal of cleaner production, 28, 70-80.

De Menna, F., Vittuari, M., & Molari, G. (2015). Impact evaluation of integrated food-bioenergy systems: A comparative LCA of peach nectar. Biomass and Bioenergy, 73, 48-61.

de Oliveira Bordonal, R., de Figueiredo, E. B., Aguiar, D. A., Adami, M., Rudorff, B. F. T., & La Scala, N. (2013). Greenhouse gas mitigation potential from green harvested sugarcane scenarios in São Paulo State, Brazil. Biomass and Bioenergy, 59, 195-207.

De Souza, S. P., Pacca, S., De Avila, M. T., & Borges, J. L. B. (2010). Greenhouse gas emissions and energy balance of palm oil biofuel. Renewable Energy, 35(11), 2552-2561.

Dekamin, M., Veisi, H., Safari, E., Liaghati, H., Khoshbakht, K., & Dekamin, M. G. (2015). Life cycle assessment for rainbow trout (Oncorhynchus mykiss) production systems: a case study for Iran. *Journal of Cleaner Production*, *91*, 43-55.

Dekker, S. E. M., De Boer, I. J. M., Vermeij, I., Aarnink, A. J. A., & Koerkamp, P. W. G. (2011). Ecological and economic evaluation of Dutch egg production systems. Livestock Science, 139(1), 109-121.

Del Borghi, A., Gallo, M., Strazza, C., & Del Borghi, M. (2014). An evaluation of environmental sustainability in the food industry through Life Cycle Assessment: the case study of tomato products supply chain. Journal of Cleaner Production, 78, 121-130.

Del Prado, A., Mas, K., Pardo, G., & Gallejones, P. (2013). Modelling the interactions between C and N farm balances and GHG emissions from confinement dairy farms in northern Spain. Science of the Total Environment, 465, 156-165.

Delivand, M. K., & Gnansounou, E. (2013). Life cycle environmental impacts of a prospective palm-based biorefinery in Pará State-Brazil. Bioresource technology, 150, 438-446.

Dendooven, L., Gutiérrez-Oliva, V. F., Patiño-Zúñiga, L., Ramírez-Villanueva, D. A., Verhulst, N., Luna-Guido, M., ... & Govaerts, B. (2012). Greenhouse gas emissions under conservation agriculture compared to traditional cultivation of maize in the central highlands of Mexico. Science of the Total Environment, 431, 237-244.

Dendooven, L., Patiño-Zúñiga, L., Verhulst, N., Boden, K., García-Gaytán, A., Luna-Guido, M., Govaerts, B. (2014). Greenhouse Gas Emissions from Nontilled, Permanent Raised, and Conventionally Tilled Beds in the Central Highlands of Mexico. Journal of Crop Improvement, 28(4), 547-574.

Dias, G. M., Ayer, N. W., Khosla, S., Van Acker, R., Young, S. B., Whitney, S., & Hendricks, P. (2017). Life cycle perspectives on the sustainability of Ontario greenhouse tomato production: Benchmarking and improvement opportunities. Journal of Cleaner Production, 140, 831-839.

Dick, M., da Silva, M. A., & Dewes, H. (2015). Life cycle assessment of beef cattle production in two typical grassland systems of southern Brazil. Journal of Cleaner Production, 96, 426-434.

Dollé, J. B., Manneville, V., Gac, A., & Charpiot, A. (2011). Emissions de gaz à effet de serre et consommations d'énergie des viandes bovines et ovines françaises: revue bibliographique et évaluations sur l'amont agricole. Institut de l'Elevage, Paris.

Dolman, M. A., Vrolijk, H. C. J., & De Boer, I. J. M. (2012). Exploring variation in economic, environmental and societal performance among Dutch fattening pig farms. Livestock Science, 149(1), 143-154.

Doublet, G., Jungbluth, N., Flury, K., Stucki, M. (2013a) Life cycle assessment of orange juice. SENSE—Harmonised Environmental Sustainability in the European food and drink chain, Seventh Framework Programme: Project no. 288974. Funded by EC. Deliverable D 2.1 ESU-services Ltd, Zürich.

Doublet, G., Jungbluth, N., Flury, K., Stucki, M. et al. (2013b). Life cycle assessment of Romanian beef and dairy products. SENSE—Harmonised Environmental Sustainability in the European food and drink chain, Seventh Framework Programme: Project no. 288974. Funded by EC. Deliverable D 2.1 ESU-services Ltd, Zürich.

Dunkelberg, E., Finkbeiner, M., & Hirschl, B. (2014). Sugarcane ethanol production in Malawi: Measures to optimize the carbon footprint and to avoid indirect emissions. Biomass and Bioenergy, 71, 37-45.

Dwivedi, P., Spreen, T., & Goodrich-Schneider, R. (2012). Global warming impact of Florida's Not-From-Concentrate (NFC) orange juice. Agricultural Systems, 108, 104-111.

Eady, S., Carre, A., & Grant, T. (2012). Life cycle assessment modelling of complex agricultural systems with multiple food and fibre co-products. Journal of Cleaner Production, 28, 143-149.

Efole Ewoukem, T., Aubin, J., Mikolasek, O., Corson, M.S., Tomedi Eyango, M., Tchoumboue, J., van der Werf, H.M.G., Ombredane, D. (2012). Environmental impacts of farms integrating aquaculture and agriculture in Cameroon. Journal of Cleaner Production, 28, 208-214.

Eitner, A., Echao, C., Leer, W. (2012). Carbon Footprint Report on Five Banana Supply Chains for TASTE/Agrofair B.V.

Ellingsen, H., & Aanondsen, S. A. (2006). Environmental Impacts of Wild Caught Cod and Farmed Salmon-A Comparison with Chicken (7 pp). The international journal of life cycle assessment, 11(1), 60-65.

Ellingsen, H., Olaussen, J. O., Utne, I. B. (2009). Environmental analysis of the Norwegian fishery and aquaculture industry – a preliminary study focusing on farmed salmon. Marine Policy 33, 479-488

Emery, I., & Brown, S. (2016). Lettuce to Reduce Greenhouse Gases: A Comparative Life Cycle Assessment of Conventional and Community Agriculture. In Sowing Seeds in the City (p. 161-169). Springer, Netherlands.

Eshton, B., & Katima, J. H. (2015). Carbon footprints of production and use of liquid biofuels in Tanzania. Renewable and Sustainable Energy Reviews, 42, 672-680.

Espagnol, S., Demartini, J. (2014). Environmental impacts of extensive outdoor pig production systems in Corsica. 9th International Conference LCA of Food San Francisco, USA 8-10 October (2014). In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Esteban, B., Baquero, G., Puig, R., Riba, J. R., & Rius, A. (2011). Is it environmentally advantageous to use vegetable oil directly as biofuel instead of converting it to biodiesel?. Biomass and Bioenergy, 35(3), 1317-1328.

Falcone, G., De Luca, A. I., Stillitano, T., Strano, A., Romeo, G., & Gulisano, G. (2016). Assessment of Environmental and Economic Impacts of Vine-Growing Combining Life Cycle Assessment, Life Cycle Costing and Multicriterial Analysis. Sustainability, 8(8), 793.

Fallahpour, F., Aminghafouri, A., Behbahani, A. G., & Bannayan, M. (2012). The environmental impact assessment of wheat and barley production by using life cycle assessment (LCA) methodology. Environment, Development and Sustainability, 14(6), 979-992.

Fantin, V., Buttol, P., Pergreffi, R., & Masoni, P. (2012). Life cycle assessment of Italian high quality milk production. A comparison with an EPD study. Journal of Cleaner Production, 28, 150-159.

Fantozzi, F., Bartocci, P., D'Alessandro, B., Testarmata, F., & Fantozzi, P. (2015). Carbon footprint of truffle sauce in central Italy by direct measurement of energy consumption of different olive harvesting techniques. Journal of Cleaner Production, 87, 188-196.

FAO. (2014). Environmental performance of animal feeds supply chains: Guidelines for quantification. Available at: <http://www.fao.org/3/a-mj751e.pdf>. Accessed 01/01/2017.

Figueiredo, F., Castanheira, É. G., & Freire, F. (2017). Life-cycle assessment of irrigated and rainfed sunflower addressing uncertainty and land use change scenarios. Journal of Cleaner Production, 140, 436-444.

Figueiredo, F., Castanheira, É. G., Feliciano, M., Rodrigues, M. A., Peres, A. M., Maia, F., ... & Freire, F. (2013b). Carbon footprint of apple and pear: orchards, storage and distribution. In: Proceedings from Energy for Sustainability 2013, Sustainable Cities: Designing for People and the Planet, Coimbra, 8-10th September (2013).

Figueiredo, F., Coroama, V. C., Ramos, A. S., Almeida, A., Ramalhosa, E., Castanheira, E. G., ... & Gomes, P. C. (2013a). Life-cycle greenhouse gas emissions of portuguese olive oil. In: Proceedings from Energy for Sustainability 2013, Sustainable Cities: Designing for People and the Planet, Coimbra, 8-10th September (2013).

Figueiredo, F., Geraldes Castanheira, E., & Freire, F. (2012). LCA of sunflower oil addressing alternative land use change scenarios and practices. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes. p. 257-261.

Flores, E. D., Cruz, R. S. D., & Antolin, M. C. R. (2016). Energy Use and Greenhouse Gas Emissions of Farmer-level Sweet Potato Production Systems in the Philippines. Asian Journal of Applied Sciences (ISSN: 2321–0893), 4(01).

Flysjö, A., Cederberg, C., & Strid, I. (2008). LCA-databas för konventionella fodermedel - miljöpåverkan i samband med produktion. Rapport nr 772. Swedish institute for food and biotechnology, Gothenburg.

Flysjö, A., Henriksson, M., Cederberg, C., Ledgard, S., & Englund, J. E. (2011a). The impact of various parameters on the carbon footprint of milk production in New Zealand and Sweden. Agricultural systems, 104(6), 459-469.

Fogelberg, C., & Carlsson-Kanyama, A. (2006). Environmental assessment of foods- an LCA inspired approach. In: Fuentes, C., Carlsson-Kanyama, A., Biel, A., Bergström, K., Grankvist, G., Lagerberg Fogelberg, C., Shanahan, H., Solér, C., Environmental information in the food supply chain. Stockholm: FOI- Swedish Defence Research Agency (FOI report 2006: FOI-R-1903-SE), p. 57-62.

Foley, P. A., Crosson, P., Lovett, D. K., Boland, T. M., O'Mara, F. P., & Kenny, D. A. (2011). Whole-farm systems modelling of greenhouse gas emissions from pastoral suckler beef cow production systems. Agriculture, Ecosystems & Environment, 142(3), 222-230.

Foster, C., Guében, C., Holmes, M., Wiltshire, J., Wynn, S. (2014). The environmental effects of seasonal food purchase - a rasberry case study. Journal of Cleaner Production, 73, 269-274.

Foteinis, S., & Chatzisymeon, E. (2016). Life cycle assessment of organic versus conventional agriculture. A case study of lettuce cultivation in Greece. Journal of Cleaner Production, 112, 2462-2471.

Frieden, D., Pena, N., Bird, D. N., Schwaiger, H., & Canella, L. (2011). Emission balances of first-and second-generation biofuels: Case studies from Africa, Mexico and Indonesia (Vol. 70). CIFOR.

Fusi, A., Bacenetti, J., González-García, S., Vercesi, A., Bocchi, S., & Fiala, M. (2014a). Environmental profile of paddy rice cultivation with different straw management. Science of The Total Environment, 494, 119-128.

Fusi, A., Castellani, V., Bacenetti, J., Cocetta, G., Fiala, M., & Guidetti, R. (2016). The environmental impact of the production of fresh cut salad: a case study in Italy. The International Journal of Life Cycle Assessment, 21(2), 162-175.

Fusi, A., Guidetti, R., & Benedetto, G. (2014b). Delving into the environmental aspect of a Sardinian white wine: From *partial* to *total* life cycle assessment. Science of the total environment, 472, 989-1000.

Gan, Y., Liang, C., Hamel, C., Cutforth, H., & Wang, H. (2011). Strategies for reducing the carbon footprint of field crops for semiarid areas. A review. Agronomy for sustainable development, 31(4), 643-656.

Gan, Y., Liang, C., Huang, G., Malhi, S. S., Brandt, S. A., & Katepa-Mupondwa, F. (2012b). Carbon footprint of canola and mustard is a function of the rate of N fertilizer. The international journal of life cycle assessment, 17(1), 58-68.

Gan, Y., Liang, C., May, W., Malhi, S. S., Niu, J., & Wang, X. (2012a). Carbon footprint of spring barley in relation to preceding oilseeds and N fertilization. The International Journal of Life Cycle Assessment, 17(5), 635-645.

García, C. A., García-Treviño, E. S., Aguilar-Rivera, N., & Armendáriz, C. (2016). Carbon footprint of sugar production in Mexico. Journal of Cleaner Production, 112, 2632-2641.

Garcia-Launay, F., van der Werf, H. M. G., Nguyen, T. T. H., Le Tutour, L., & Dourmad, J. Y. (2014). Evaluation of the environmental implications of the incorporation of feed-use amino acids in pig production using Life Cycle Assessment. Livestock Science, 161, 158-175.

Garcia-Nunez, J. A. (2015). Evolution of palm oil mills into biorefineries. PhD Thesis. Washington State University, Pullman.

Garg, M., Phondba, B., Sherasia, P., & Makkar, H. (2016). Carbon footprint of milk production under smallholder dairying in Anand district of Western India: A cradle-to-farm gate life cycle assessment. Animal Production Science, 56, 423-436.

Garrigues, E., Corson, M.S., Wilfart, A., Menasseri, S. (2014).Effect of on-farm biogas production on impacts of pig production in Brittany, France. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Gathorne-Hardy, A, Reddy, D. N., Venkatanarayana, M., & Harriss-White, B. (2013). A life cycle assessment (LCA) of greenhouse gas emissions from SRI and flooded rice production in SE India. Taiwan Water Conservancy, 61(4), 110-125.

Georgiou, K., Mentzis, A., Papadopoulos, A., Vageloglou, V., & Papadakis, G. (2006). Life Cycle Assessment (LCA) as a Decision Support Tool (DST) for the ecoproduction of olive oil: Task 3.1 - Implementation of Life Cycle Inventory in Voukolies / Polemarchi region of Crete. Chania, Crete.

Ghahderijani, M., Komleh, S. H. P., Keyhani, A., & Sefeedpari, P. (2013). Energy analysis and life cycle assessment of wheat production in Iran. African Journal of Agricultural Research, 8(18), 1929-1939.

Glithero, N. J., Ramsden, S. J., & Wilson, P. (2012). Farm systems assessment of bioenergy feedstock production: integrating bio-economic models and life cycle analysis approaches. Agricultural systems, 109, 53-64.

Goglio, P., Bonari, E., Mazzoncini, M. (2012). LCA of cropping systems with different external input levels for energetic purposes. Biomass and Bioenergy, 42, 33-42.

González-García, S., Belo, S., Dias, A. C., Rodrigues, J. V., da Costa, R. R., Ferreira, A., ... & Arroja, L. (2015). Life cycle assessment of pigmeat production: Portuguese case study and proposal of improvement options. Journal of Cleaner Production, 100, 126-139.

Govaerts, B., Sayre, K. D., & Deckers, J. (2005). Stable high yields with zero tillage and permanent bed planting?. Field crops research, 94(1), 33-42.

Graefe, S., Dufour, D., Giraldo, A., Muñoz, L. A., Mora, P., Solís, H., ... & Gonzalez, A. (2011). Energy and carbon footprints of ethanol production using banana and cooking banana discard: A case study from Costa Rica and Ecuador. biomass and bioenergy, 35(7), 2640-2649.

Grant, T., Beer, T., Campbell, P. K., & Batten, D. (2008). Lifecycle assessment of environmental outcomes and greenhouse gas emissions from biofuels production in Western Australia. Department of Agriculture and Food Government of Western Australia, Western Australia, South Perth.

Grassini, P., & Cassman, K. G. (2012). High-yield maize with large net energy yield and small global warming intensity. Proceedings of the National Academy of Sciences, 109(4), 1074-1079.

Gretz, J., Henderson, A., Lalonde, S., Mills, M., Price, A., & Walsh, B. (2011). Sustainability and Tracking Strategies for Gills Onions Farming Operations. Donald Bren School of Environmental Science & Management, Isla Vista.

Guerci, M., Bava, L., Zucali, M., Sandrucci, A., Penati, C., & Tamburini, A. (2013a). Effect of farming strategies on environmental impact of intensive dairy farms in Italy. Journal of dairy research, 80(03), 300-308.

Guerci, M., Bava, L., Zucali, M., Tamburini, A., & Sandrucci, A. (2014). Effect of summer grazing on carbon footprint of milk in Italian Alps: a sensitivity approach. Journal of Cleaner Production, 73, 236-244.

Guerci, M., Knudsen, M. T., Bava, L., Zucali, M., Schönbach, P., & Kristensen, T. (2013b). Parameters affecting the environmental impact of a range of dairy farming systems in Denmark, Germany and Italy. Journal of Cleaner Production, 54, 133-141.

Guo, M. (2012). Life cycle assessment (LCA) of light-weight eco-composites. Springer Science & Business Media, Berlin/Heidelberg.

Gustafson, D. I., Collins, M., Fry, J., Smith, S., Matlock, M., Zilberman, D., Shyrock, J., Doane, M., Ramsey, N. (2014). Climate adaptation imperatives: global sustainability trends and eco-efficiency metrics in four major crops–canola, cotton, maize, and soybeans. International journal of agricultural sustainability, 12(2), 146-163.

Gutiérrez, A. S., Eras, J. J. C., Billen, P., & Vandecasteele, C. (2016). Environmental assessment of pig production in Cienfuegos, Cuba: alternatives for manure management. Journal of Cleaner Production, 112, 2518-2528.

Ha, N., Feike, T., Angenendt, E., Xiao, H., & Bahrs, E. (2015). Impact of farm management diversity on the environmental and economic performance of the wheat–maize cropping system in the North China Plain. International Journal of Agricultural Sustainability, 13(4), 350-366.

Halberg, N., Dalgaard, R., & Rasmussen, M. D. (2006). Miljøvurdering af konventional og økologisk avl af grøntsager-Livscyklusvurdering af produktion i væksthuse og på friland: Tomater, agurker, løg, gulerødder. Arbejdsrapport fra Miljøstyrelsen Nr. 5.

Halberg, N., Hermansen, J. E., Kristensen, I. S., Eriksen, J., Tvedegaard, N., & Petersen, B. M. (2010). Impact of organic pig production systems on CO2 emission, C sequestration and nitrate pollution. Agronomy for Sustainable Development, 30(4), 721-731.

Hall, G., Rothwell, A., Grant, T., Isaacs, B., Ford, L., Dixon, J., ... & Friel, S. (2014). Potential environmental and population health impacts of local urban food systems under climate change: a life cycle analysis case study of lettuce and chicken. Agriculture & Food Security, 3(1), 6.

Harada, H., Kobayashi, H., & Shindo, H. (2007). Reduction in greenhouse gas emissions by no-tilling rice cultivation in Hachirogata polder, northern Japan: Life-cycle inventory analysis. Soil science and plant nutrition, 53(5), 668-677.

Harsono, S. S., Prochnow, A., Grundmann, P., Hansen, A., & Hallmann, C. (2012). Energy balances and greenhouse gas emissions of palm oil biodiesel in Indonesia. GCB Bioenergy, 4(2), 213-228.

Hatcho, N., Matsuno, Y., Kochi, K., & Nishishita, K. (2012). Assessment of Environment-friendly Rice Farming Through Life Cycle Assessment (LCA). CMU.J.Nat.Sci.Special Issue on Agricultural & Natural Resources. 11(1), 403-408.

Haverkort, A. J., & Hillier, J. G. (2011). Cool farm tool–potato: model description and performance of four production systems. Potato Research, 54(4), 355-369.

Haverkort, A. J., Sandaña, P., & Kalazich, J. (2014). Yield gaps and ecological footprints of potato production systems in Chile. Potato research, 57(1), 13-31.

Hayer, F., Kägi, T., Casado, D., Czembor, E., Delval, P., Gaillard, G., ... & Strassemeyer, J. O. (2008). 53-Life cycle assessment of wheat and apple production systems within the ENDURE project. In: Proceesings of ENDURE International Conference 2008, 12-15 October, La Grande-Motte, France.

He, X., Qiao, Y., Liu, Y., Dendler, L., Yin, C., & Martin, F. (2016). Environmental impact assessment of organic and conventional tomato production in urban greenhouses of Beijing city, China. Journal of Cleaner Production, 134, 251-258.

Henriksson, P. J. G., Zhang, W., Nahid, S. A. A., Newton, R., Phan, L. T., Dao, H. M. , Zhang, Z., Jaithiang, J., Andong, R., Chaimanuskul, K., Vo, N. S., Hua, H. V., Haque, M. M., Das, R., Kruijssen, F., Satapornvanit, K., Nguyen, P. T., Liu, Q., Liu, L., Wahab, M. A., Murray, F. J., Little, D. C. & Guinée, J. B. (2014a). Results of LCA studies of Asian Aquaculture Systems for Tilapia, Catfish, Shrimp, and Freshwater prawn. SEAT Deliverable Ref: D 3.5. University of Stirling, Stirling.

Hetherington, C.A. (2014). Life Cycle Assessment of the Production of Edible Emulsions - Comparing A Novel Process Route Using Adequately Extracted Oil-Bodies Against Existing Technology. PhD Thesis. University of Bath, Bath.

Hillier, J., Hawes, C., Squire, G., Hilton, A., Wale, S., & Smith, P. (2009). The carbon footprints of food crop production. International Journal of Agricultural Sustainability, 7(2), 107-118.

Hirschfeld, J., Weiß, J., Preidl, M., & Korbun, T. (2008). Klimawirkungen der Landwirtschaft in Deutschland. IÖW, Germany.

Hokazono, S., & Hayashi, K. (2012). Variability in environmental impacts during conversion from conventional to organic farming: a comparison among three rice production systems in Japan. Journal of Cleaner Production, 28, 101-112.

Hokazono, S., Hayashi, K., & Sato, M. (2009). Potentialities of organic and sustainable rice production in Japan from a life cycle perspective. In Agronomy Research (Vol. 7, No. Special Issue 1, p. 257-262). Estonian University of Life Sciences, Jõgeva Plant Breeding Institute, Estonian Research Institute of Agriculture, Saku.

Hörtenhuber, S., Lindenthal, T., Amon, B., Markut, T., Kirner, L., & Zollitsch, W. (2010). Greenhouse gas emissions from selected Austrian dairy production systems—model calculations considering the effects of land use change. Renewable Agriculture and Food Systems, 25(04), 316-329.

Huerta, A. R., Güereca, L. P., & Lozano, M. D. L. S. R. (2016). Environmental impact of beef production in Mexico through life cycle assessment. Resources, Conservation and Recycling, 109, 44-53.

Huerta, J.H., Alvear, E.M., Navarro, R.M. (2012). Evaluation of two production methods of Chilean wheat by life cycle assessment (LCA). Páginas, 30 (2), 101-110.

Hun, A. L. N., Mele, F. D., & Pérez, G. A. (2016). A comparative life cycle assessment of the sugarcane value chain in the province of Tucumán (Argentina) considering different technology levels. The International Journal of Life Cycle Assessment, doi:10.1007/s11367-016-1047-3.

Ingrao, C., Matarazzo, A., Tricase, C., Clasadonte, M. T., & Huisingh, D. (2015). Life cycle assessment for highlighting environmental hotspots in Sicilian peach production systems. Journal of Cleaner Production, 92, 109-120.

Ingwersen, W.W. (2012). Life cycle assessment of fresh pineapple from Costa Rica. Journal of Cleaner Production, 35, 152-163.

Iraldo, F., Testa, F., & Bartolozzi, I. (2014). An application of Life Cycle Assessment (LCA) as a green marketing tool for agricultural products: the case of extra-virgin olive oil in Val di Cornia, Italy. Journal of Environmental Planning and Management, 57(1), 78-103.

Iriarte, A., Almeida, M. G., & Villalobos, P. (2014). Carbon footprint of premium quality export bananas: Case study in Ecuador, the world's largest exporter. Science of The Total Environment, 472, 1082-1088.

Iriarte, A., Rieradevall, J., & Gabarrell, X. (2010). Life cycle assessment of sunflower and rapeseed as energy crops under Chilean conditions. Journal of Cleaner Production, 18(4), 336-345.

Iribarren, D., Hospido, A., Moreira, M. T., & Feijoo, G. (2011). Benchmarking environmental and operational parameters through eco-efficiency criteria for dairy farms. Science of the Total Environment, 409(10), 1786-1798.

Jakobsen, M., Preda, T., Kongsted, A. G., & Hermansen, J. E. (2015). Increased Foraging in Outdoor Organic Pig Production—Modeling Environmental Consequences. Foods, 4(4), 622-644.

Jayasundara, S., & Wagner-Riddle, C. (2014). Greenhouse gas emissions intensity of Ontario milk production in 2011 compared with 1991. Canadian Journal of Animal Science, 94(1), 155-173.

Jayasundara, S., Wagner-Riddle, C., Dias, G., & Kariyapperuma, K. A. (2014). Energy and greenhouse gas intensity of corn (Zea mays L.) production in Ontario: A regional assessment. Canadian Journal of Soil Science, 94(1), 77-95.

Jerbi, M. A., Aubin, J., Garnaoui, K., Achour, L., & Kacem, A. (2012). Life cycle assessment (LCA) of two rearing techniques of sea bass (Dicentrarchus labrax). Aquacultural Engineering, 46, 1-9.

Johansen, A., Daugstad, K., Bakken, A. K., & Fystro, G. (2013). Inventories as basis for life cycle assessments of milk and meat produced at Norwegian dairy farms. Bioforsk Rapport Vol. 8 Nr. 73. Bioforsk Midt Norge, Stjørdal.

Jonell, M., & Henriksson, P. J. G. (2015). Mangrove–shrimp farms in Vietnam—Comparing organic and conventional systems using life cycle assessment. Aquaculture, 447, 66-75.

Jones, C. D., Fraisse, C. W., & Ozores-Hampton, M. (2012). Quantification of greenhouse gas emissions from open field-grown Florida tomato production. Agricultural Systems, 113, 64-72.

Jungbluth, N., Chudacoff, M., Dauriat, A., Dinkel, F., Doka, G., Faist Emmenegger, M., ... & Sutter, J. (2007). Life cycle inventories of bioenergy. Final report ecoinvent data v2. 0 No, 17. Ecoinvent, Zurich.

Kaltsas, A. M., Mamolos, A. P., Tsatsarelis, C. A., Nanos, G. D., & Kalburtji, K. L. (2007). Energy budget in organic and conventional olive groves. Agriculture, ecosystems & environment, 122(2), 243-251.

Karakaya, A., & Özilgen, M. (2011). Energy utilization and carbon dioxide emission in the fresh, paste, whole-peeled, diced, and juiced tomato production processes. Energy, 36(8), 5101-5110.

Katajajuuri, J-M., Grönroos, J., Usva, K., Virtanen, Y., Sipilä, I., Venäläinen, E., Kurppa, S., Tanskanen, R., Mattila, T., & Virtanen. H. (2006). Broilerin fileesuikaleiden tuotannon ympäristövaikutukset ja kehittämismahdollisuudet. Maa-ja elintarviketalous. 90, 1-118.

Kehagias, M. C., Michos, M. C., Menexes, G. C., Mamolos, A. P., Tsatsarelis, C. A., Anagnostopoulos, C. D., & Kalburtji, K. L. (2015). Energy equilibrium and Carbon dioxide, Methane, and Nitrous oxide-emissions in organic, integrated and conventional apple orchards related to Natura 2000 site. Journal of Cleaner Production, 91, 89-95.

Kendall, A., Marvinney, E., Brodt, S., & Zhu, W. (2015). Life Cycle–based Assessment of Energy Use and Greenhouse Gas Emissions in Almond Production, Part I: Analytical Framework and Baseline Results. Journal of Industrial Ecology, 19(6), 1008-1018.

Keyes, S., Tyedmers, P., & Beazley, K. (2015). Evaluating the environmental impacts of conventional and organic apple production in Nova Scotia, Canada, through life cycle assessment. Journal of Cleaner Production, 104, 40-51.

Khatiwada, D., & Silveira, S. (2011) Greenhouse gas balances of molasses based ethanol in Nepal. Journal of Cleaner Production, 19, 1471-1485.

Khatiwada, D., Venkata, B. K., Silveira, S., & Johnson, F. X. (2016). Energy and GHG balances of ethanol production from cane molasses in Indonesia. Applied Energy, 164, 756-768.

Khojastehpour, M., Nikkhah, A., & Hashemabadi, D. (2015). A comparative study of energy use and greenhouse gas emissions of canola production. International Journal of Agricultural Management and Development, 5(1), 51-58.

Khoshnevisan, B., Bolandnazar, E., Shamshirband, S., Shariati, H. M., Anuar, N. B., & Kiah, M. L. M. (2015). Decreasing environmental impacts of cropping systems using life cycle assessment (LCA) and multi-objective genetic algorithm. Journal of Cleaner Production, 86, 67-77.

Khoshnevisan, B., Rafiee, S., & Mousazadeh, H. (2013). Environmental impact assessment of open field and greenhouse strawberry production. European Journal of Agronomy, 50, 29-37.

Khoshnevisan, B., Rafiee, S., Omid, M., Mousazadeh, H., & Clark, S. (2014a). Environmental impact assessment of tomato and cucumber cultivation in greenhouses using life cycle assessment and adaptive neuro-fuzzy inference system. Journal of Cleaner Production, 73, 183-192.

Khoshnevisan, B., Rafiee, S., Omid, M., Mousazadeh, H., & Rajaeifar, M. A. (2014b). Application of artificial neural networks for prediction of output energy and GHG emissions in potato production in Iran. Agricultural Systems, 123, 120-127.

Kim, D., Thoma, G., Nutter, D., Milani, F., Ulrich, R., & Norris, G. (2013). Life cycle assessment of cheese and whey production in the USA. The International Journal of Life Cycle Assessment, 18(5), 1019-1035.

Kim, S., Dale, B. E., & Jenkins, R. (2009). Life cycle assessment of corn grain and corn stover in the United States. The International Journal of Life Cycle Assessment, 14(2), 160-174.

Knudsen, M. T., Meyer-Aurich, A., Olesen, J. E., Chirinda, N., & Hermansen, J. E. (2014). Carbon footprints of crops from organic and conventional arable crop rotations–using a life cycle assessment approach. Journal of Cleaner Production, 64, 609-618.

Knudsen, M. T., Yu-Hui, Q., Yan, L., & Halberg, N. (2010). Environmental assessment of organic soybean (*Glycine max*) imported from China to Denmark: a case study. Journal of Cleaner Production, 18(14), 1431-1439.

Knudsen, M.T., Fonseca de Almeida, G., Langer, V., Santiago de Abreu, L., Halberg, N. (2011). Environmental assessment of organic juice imported to Denmark: a case study on oranges (Citrus sinensis) from Brazil. Organic Agriculture, 1, 167-185.

Koch, P., Salou, T. (2015) AGRIBALYSE®: METHODOLOGY Version 1.2. ADEME, Angers, France.

Koga, N., Sawamoto, T., & Tsuruta, H. (2006). Life cycle inventory-based analysis of greenhouse gas emissions from arable land farming systems in Hokkaido, northern Japan. Soil Science and Plant Nutrition, 52(4), 564-574.

Koga, N., Tajima, R. (2011). Assessing energy efficiencies and greenhouse gas emissions under bioethanol-oriented paddy rice production in northern Japan. Journal of Environmental Management, 92, 967-973.

Kool, A., Blonk, H., Ponsioen, T., Sukkel, W., Vermeer, H., De Vries, J., & Hoste, R. (2009). Carbon footprints of conventional and organic pork. Assessment of typical production systems in the Netherlands, Denmark, England and Germany. Blonk Consultants, Gouda.

Korsaeth, A., Jacobsen, A. Z., Roer, A. G., Henriksen, T. M., Sonesson, U., Bonesmo, H., ... & Strømman, A. H. (2012). Environmental life cycle assessment of cereal and bread production in Norway. Acta Agriculturae Scandinavica, Section A–Animal Science, 62(4), 242-253.

Krieger, T.M., Knowlton, S. (2014). Environmental Life Cycle Impacts of High Oleic Soybean Oil Used for Frying. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Kristensen, T., Mogensen, L., Knudsen, M. T., & Hermansen, J. E. (2011). Effect of production system and farming strategy on greenhouse gas emissions from commercial dairy farms in a life cycle approach. Livestock Science, 140(1), 136-148.

Kulak, M., Nemecek, T., Frossard, E., Chable, V., & Gaillard, G. (2015). Life cycle assessment of bread from several alternative food networks in Europe. Journal of Cleaner Production, 90, 104-113.

Küstermann, B., Kainz, M., & Hülsbergen, K. J. (2008). Modeling carbon cycles and estimation of greenhouse gas emissions from organic and conventional farming systems. Renewable agriculture and food systems, 23(01), 38-52.

Lalonde, S., Nicholson, A., Schenck, R. (2013). Life Cycle Assessment of Beer in Support of an Environmental Product Declaration. Earthsure. Available at: <http://iere.org/wp-content/uploads/2013/10/IERE_Beer_LCA_Final.pdf>. Accessed 01/01/2017.

Legesse, G., Beauchemin, K. A., Ominski, K. H., McGeough, E. J., Kroebel, R., MacDonald, D., Little, S,M. & McAllister, T. A. (2016). Greenhouse gas emissions of Canadian beef production in 1981 as compared with (2011). Animal Production Science, 56, 153-168.

Leinonen, I., Williams, A. G., & Kyriazakis, I. (2016). Comparing the environmental impacts of UK turkey production systems using analytical error propagation in uncertainty analysis. Journal of Cleaner Production, 112, 141-148.

Leinonen, I., Williams, A.G., Wiseman, J., Guy, J., Kyriazakis, I. (2012a). Predicting the environmental impacts of chicken systems in the United Kingdom through a life cycle assessment: Broiler production systems. Poultry Science 91, 8-25.

Leinonen, I., Williams, A.G., Wiseman, J., Guy, J., Kyriazakis, I. (2012b). Predicting the environmental impacts of chicken systems in the United Kingdom through a life cycle assessment: Egg production systems. Poultry Science 91, 26-40.

Lillywhite, R., Chandler, D., Grant, W., Lewis, K., Firth, C., Schmutz, U., and Halpin, D. (2007). Environmental Footprint and Sustainability of Horticulture (including Potatoes) – A Comparison with other Agricultural Sectors. Final report produced for the Department for Environment, Food and Rural Affairs. University of Warwick

Litskas, V. D., Mamolos, A. P., Kalburtji, K. L., Tsatsarelis, C. A., & Kiose-Kampasakali, E. (2011). Energy flow and greenhouse gas emissions in organic and conventional sweet cherry orchards located in or close to Natura 2000 sites. Biomass and Bioenergy, 35(3), 1302-1310.

Liu, Q., Liu, B., Ambus, P., Zhang, Y., Hansen, V., Lin, Z., ... & Wang, X. (2016). Carbon footprint of rice production under biochar amendment–a case study in a Chinese rice cropping system. Gcb Bioenergy, 8(1), 148-159.

Liu, Y., Langer, V., Høgh-Jensen, H., & Egelyng, H. (2010). Life cycle assessment of fossil energy use and greenhouse gas emissions in Chinese pear production. Journal of Cleaner Production, 18(14), 1423-1430.

Lo Giudice, A., Mbohwa, C., Clasadonte, M. T., & Ingrao, C. (2013). Environmental assessment of the citrus fruit production in Sicily using LCA. Italian Journal of Food Science, 25(2).

Lo Giudice, A., Mbohwa, C., Clasadonte, M. T., & Ingrao, C. (2014). Life cycle assessment interpretation and improvement of the Sicilian artichokes production. International Journal of Environmental Research, 8(2), 305-316.

Luske, B. (2010). Comprehensive Carbon Footprint Assessment Dole Bananas. Soil & More International, Waddinxveen.

Ma, B. L., Liang, B. C., Biswas, D.K., Morrison, M.J., McLaughlin, N.B. (2012). The carbon footprint of maize production as affected by nitrogen fertilizer and maize-legume rotations. Nutrient Cycling in Agroecosystems, 94, 15-31.

Macedo, I. D. C., Leal, M. R. L. V., & Da Silva, J. E. A. R. (2004). Assessment of greenhouse gas emissions in the production and use of fuel ethanol in Brazil. Government of the State of São Paulo, São Paulo.

Maciel, V. G., Zortea, R. B., da Silva, W. M., de Abreu Cybis, L. F., Einloft, S., & Seferin, M. (2015). Life Cycle Inventory for the agricultural stages of soybean production in the state of Rio Grande do Sul, Brazil. Journal of Cleaner Production, 93, 65-74.

MacWilliam, S., Sanscartier, D., Lemke, R., Wismer, M., & Baron, V. (2016). Environmental benefits of canola production in 2010 compared to 1990: A life cycle perspective. Agricultural Systems, 145, 106-115.

MacWilliam, S., Wismer, M., & Kulshreshtha, S. (2014). Life cycle and economic assessment of Western Canadian pulse systems: The inclusion of pulses in crop rotations. Agricultural Systems, 123, 43-53.

Maina, J. J., Mutwiwa, U. N., Githiru, M., & Kituu, G. M. (2014). Evaluation of Greenhouse Gas Emissions from Small-scale Coffee Producers in Kiambu-Kenya Based on Calculations of the Cool Farm Tool. In Proceedings of Sustainable Research and Innovation Conference (p. 192-195).

Maraseni, T. N., & Cockfield, G. (2011). Does the adoption of zero tillage reduce greenhouse gas emissions? An assessment for the grains industry in Australia. Agricultural Systems, 104(6), 451-458.

Maraseni, T. N., Cockfield, G., & Apan, A. (2007). A comparison of greenhouse gas emissions from inputs into farm enterprises in Southeast Queensland, Australia. Journal of Environmental Science and Health Part A, 42(1), 11-18.

Maraseni, T. N., Cockfield, G., Maroulis, J., & Chen, G. (2010). An assessment of greenhouse gas emissions from the Australian vegetables industry. Journal of Environmental Science and Health Part B, 45(6), 578-588.

Maraseni, T. N., Mushtaq, S., & Reardon-Smith, K. (2012). Integrated analysis for a carbon-and water-constrained future: An assessment of drip irrigation in a lettuce production system in eastern Australia. Journal of environmental management, 111, 220-226.

Martínez-Blanco, J., Muñoz, P. Antón, A., & Rieradevall, J. (2011). Assessment of tomato Mediterranean production in open-field and standard multi-tunnel greenhouse, with compost or mineral fertilizers, from an agricultural and environmental standpoint. Journal of Cleaner Production, 19, 985-997.

Martínez-Blanco, J., Rieradevall, J., Antón, A., & Muñoz, P. (2014). Multifunctionality-solving approaches of compost application in crop rotations. Journal of Cleaner Production, 64, 384-395.

Martin-Gorriz, B., Soto-García, M., & Martínez-Alvarez, V. (2014). Energy and greenhouse-gas emissions in irrigated agriculture of SE (southeast) Spain. Effects of alternative water supply scenarios. Energy, 77, 478-488.

Marvinney, E., Kendall, A., Brodt, S. (2014). A comparative assessment of greenhouse gas emissions in California almond, pistachio, and walnut production. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Mashoko, L., Mbohwa, C., & Thomas, V. M. (2010). LCA of the South African sugar industry. Journal of Environmental Planning and Management, 53(6), 793-807.

Mathews, J., & Ardiyanto, A. (2015). Estimation of greenhouse gas emissions for palm oil biodiesel production: a review and case study within the Council Directives 2009/28/EC of the European parliament. Journal of Oil Palm, Environment & Health, 6, 25-41.

Mathot, M., Van Stappen, F., Loriers, A., Planchon, V., Jamin, J., Corson, M., Stilmant, D. (2014). Environmental impacts of milk production in southern Belgium: estimation for nine commercial farms and investigation of mitigation via better manure application. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the

Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Matsuura, M. I. F., Dias, F. R., Picoli, J. F., Lucas, K. R. G., de Castro, C., & Hirakuri, M. H. (2016). Life-cycle assessment of the soybean-sunflower production system in the Brazilian Cerrado. The International Journal of Life Cycle Assessment, doi:10.1007/s11367-016-1089-6.

Mattsson, B., & Wallén, E. (2003). Environmental life cycle assessment (LCA) of organic potatoes. ActaHort, 619, 427-435.

Mazzetto, A. M., Feigl, B. J., Schils, R. L. M., Cerri, C. E. P., & Cerri, C. C. (2015). Improved pasture and herd management to reduce greenhouse gas emissions from a Brazilian beef production system. Livestock Science, 175, 101-112.

Mc Geough, E. J., Little, S. M., Janzen, H. H., McAllister, T. A., McGinn, S. M., & Beauchemin, K. A. (2012). Life-cycle assessment of greenhouse gas emissions from dairy production in Eastern Canada: A case study. Journal of dairy science, 95(9), 5164-5175.

McCarty, J., Sandefur, H., Matlock, M., et al. (2012). National Scan-level Life Cycle Assessment for Production of US Peanut Butter. Center for Agricultural and Rural Sustainability Technical Report 3Q-2012-01. Fayetteville: University of Arkansas.

Mele, F. D., Kostin, A. M., Guillén-Gosálbez, G., & Jiménez, L. (2011). Multiobjective model for more sustainable fuel supply chains. A case study of the sugar cane industry in Argentina. Industrial & Engineering Chemistry Research, 50(9), 4939-4958.

Meneses, M., Torres, C. M., & Castells, F. (2016). Sensitivity analysis in a life cycle assessment of an aged red wine production from Catalonia, Spain. Science of The Total Environment, 562, 571-579.

Meul, M., Ginneberge, C., Van Middelaar, C. E., de Boer, I. J., Fremaut, D., & Haesaert, G. (2012). Carbon footprint of five pig diets using three land use change accounting methods. Livestock Science, 149(3), 215-223.

Meul, M., Van Middelaar, C. E., de Boer, I. J., Van Passel, S., Fremaut, D., & Haesaert, G. (2014). Potential of life cycle assessment to support environmental decision making at commercial dairy farms. Agricultural Systems, 131, 105-115.

Michael, D. (2011). Carbon Reduction Benchmarks & Strategies - New Animal Products. RIRDC Publication No. 11/063. Rural Industries Research and Development Corporation, Sydney, Australia.

Michos, M. C., Mamolos, A. P., Menexes, G. C., Tsatsarelis, C. A., Tsirakoglou, V. M., & Kalburtji, K. L. (2012). Energy inputs, outputs and greenhouse gas emissions in organic, integrated and conventional peach orchards. Ecological indicators, 13(1), 22-28.

Milà i Canals, L. (2003). Contributions to LCA methodology for agricultural systems: Site-dependency and soil degredation impact assessment. PhD Thesis. Universitat Autonoma de Barcelona. Bellaterra, Barcelona.

Milà i Canals, L., Muñoz, I., Hospido, A., Plassmann, K., McLaren, S., Edwards-Jones, G., & Hounsome, B. (2008). Life Cycle Assessment (LCA) of Domestic vs. Imported Vegetables. Case Studies on Broccoli, Salad Crops and Green Beans (p. 46). CES working paper 01/08 Centre for Environmental Strategy, University of Surrey, Guildford.

Mirasi, A., Samadi, M., Rabiee, A.H. (2015). An analytical method to survey the energy input-output and emissions of greenhouse gases from Wheat and Tomato farms in Iran. Biological Forum, 7(1), 52-58.

Mithraratne, N., Barber, A., McLaren, S.J. (2010). Carbon Footprinting for the Kiwifruit Supply Chain – Report on Methodology and Scoping Study - Final Report. Landcare Research Contract Report: LC0708/156 (Revised Edition), Lincoln.

Mobtaker, H. G., Keyhani, A., Mohammadi, A., Rafiee, S., & Akram, A. (2010). Sensitivity analysis of energy inputs for barley production in Hamedan Province of Iran. Agriculture, Ecosystems & Environment, 137(3), 367-372.

Mobtaker, H. G., Taki, M., Salehi, M., & Zarei Shahamat, E. (2013). Application of nonparametric method to improve energy productivity and CO2 emission for barley production in Iran. Agricultural Engineering International: CIGR Journal, 15(4), 84-93.

Mogensen, L., Kristensen, T., Nguyen, T. L. T., Knudsen, M. T., & Hermansen, J. E. (2014). Method for calculating carbon footprint of cattle feeds–including contribution from soil carbon changes and use of cattle manure. Journal of Cleaner Production, 73, 40-51.

Mogensen, L., Kristensen, T., Nielsen, N. I., Spleth, P., Henriksson, M., Swensson, C., ... & Vestergaard, M. (2015). Greenhouse gas emissions from beef production systems in Denmark and Sweden. Livestock Science, 174, 126-143.

Mohammadi, A., Rafiee, S., Jafari, A., Dalgaard, T., Knudsen, M. T., Keyhani, A., Mousavi-Avva, S.H., Hermansen, J. E. (2013). Potential greenhouse gas emission reductions in soybean farming: a combined use of Life Cycle Assessment and Data Envelopment Analysis. Journal of Cleaner Production, 54, 89-100.

Mohammadi, A., Rafiee, S., Jafari, A., Keyhani, A., Mousavi-Avval, S. H., & Nonhebel, S. (2014). Energy use efficiency and greenhouse gas emissions of farming systems in north Iran. Renewable and Sustainable Energy Reviews, 30, 724-733.

Mohammadi, A., Rafiee, S., Jafari, A., Keyhani, A., Dalgaard, T., Knudsen, M. T., ... & Hermansen, J. E. (2015). Joint Life Cycle Assessment and Data Envelopment Analysis for the benchmarking of environmental impacts in rice paddy production. Journal of Cleaner Production, 106, 521-532.

Mohammadi-Barsari, A., Firouzi, S., & Aminpanah, H. (2016). Energy-use pattern and carbon footprint of rain-fed watermelon production in Iran. Information Processing in Agriculture, 3(2), 69-75.

Mollenhorst, H., Berentsen, P. B. M., De Boer, I. J. M. (2006). On-farm quantification of sustainability indicators: an application to egg production systems. British Poultry Science 47, 405-417.

Monini S.p.A. (2013) Environmental Product Declaration (EPD®) for "GranFruttato" Extra Virgin Olive Oil S-P-00383. Available at: <http://gryphon.environdec.com/data/files/6/9628/epd383_monini_granfruttato.pdf>. Accessed 01/01/2017.

Moraditochaee, M., Azarpour, E., Bozorgi, H.R. (2014). Lentil (Lens culinaris Medik) Production Systems in Term of Energy Use Efficiency and Economical Analysis in North of Iran. Indian Journal of Fundamental and Applied Life Sciences. 4(1) 379-387.

Mortimer, N. D., & Elsayed, M. A. (2006). North east biofuel supply chain carbon intensity assessment. North Energy Associates, Sheffield.

Moudrý Jr, J., Jelínková, Z., Jarešová, M., Plch, R., Moudrý, J., & Konvalina, P. (2013a). Assessing greenhouse gas emissions from potato production and processing in the Czech Republic. Outlook on AGRICULTURE, 42(3), 179-183.

Moudrý Jr, J., Jelínková, Z., Jarešová, M., Plch, R., Moudrý, J., & Konvalina, P., Hyšpler, R. (2013b). The emissions of greenhouse gases produced during growing and processing of wheat products in the Czech Republic. Journal of Food, Agriculture & Environment, 11(1), 1133-1136.

Moudrý Jr, J., Jelínková, Z., Kopecký, M., Bernas, J., Moudrý, J., Konvalina, P., Kalsuš, V. (2014). Emissions of Greenhouse Gases from the Egg Production Within the Conventional and Organic Farming System. Lucrări Ştiinţifice, 57(1), 17-21.

Moudrý Jr, J., Jelínková, Z., Moudrý, J., Bernas, J., Kopecký, M., Konvalina, P. (2013c). Influence of farming systems on production of greenhouse gas emissions within cultivation of selected crops. Journal of Food, Agriculture & Environment, 11(3&4), 1015-18.

Mouron, P., Nemecek, T., Scholz, R. W., & Weber, O. (2006). Management influence on environmental impacts in an apple production system on Swiss fruit farms: combining life cycle assessment with statistical risk assessment. Agriculture, ecosystems & environment, 114(2), 311-322.

Mousavi-Avval, S. H., Rafiee, S., Jafari, A., & Mohammadi, A. (2011a). Optimization of energy consumption for soybean production using Data Envelopment Analysis (DEA) approach. Applied Energy, 88(11), 3765-3772.

Muir, S., Brock, P., Schwenke, G., Herridge, D., Scott, F., Madden, P. (2013). Identifying opportunities to reduce greenhouse gas emissions for climate change mitigation in grain production systems. 8th Australian LCA Conference. Sydney.

Müller, K., Holmes, A., Deurer, M., & Clothier, B. E. (2015). Eco-efficiency as a sustainability measure for kiwifruit production in New Zealand. Journal of Cleaner Production, 106, 333-342.

Mungkung, R., Aubin, J., Prihadi, T. H., Slembrouck, J., van der Werf, H. M., & Legendre, M. (2013). Life Cycle Assessment for environmentally sustainable aquaculture management: a case study of combined aquaculture systems for carp and tilapia. Journal of Cleaner Production, 57, 249-256.

Muñoz, P., Antón, A., Nuñez, M., Paranjpe, A., Ariño, J., Castells, X., Rieradevall, J. (2007). Comparing the environmental impacts of greenhouse versus open-field tomato production in the Mediterranean region. In International Symposium on High Technology for Greenhouse System Management: Greensys2007 801 (p. 1591-1596).

Murphy, C. W., & Kendall, A. (2013). Life cycle inventory development for corn and stover production systems under different allocation methods. Biomass and Bioenergy, 58, 67-75.

Nabavi-Pelesaraei, A., Sadeghzadeh, A., Payman, M. H., & Ghasemi, H. (2013). An analysis of energy use, CO2 emissions and relation between energy inputs and yield of hazelnut production in Guilan province of Iran. International journal of Advanced Biological and Biomedical Research, 1(12), 1601-1613.

Nabavi-Pelesaraei, A., Abdi, R., Rafiee, S., & Mobtaker, H. G. (2014). Optimization of energy required and greenhouse gas emissions analysis for orange producers using data envelopment analysis approach. Journal of Cleaner Production, 65, 311-317.

Nabavi-Pelesaraei, A., Abdi, R., Rafiee, S., & Bagheri, I. (2016a). Determination of efficient and inefficient units for watermelon production-a case study: Guilan province of Iran. Journal of the Saudi Society of Agricultural Sciences, 15(2), 162-170.

Nabavi-Pelesaraei, A., Rafiee, S., Hosseinzadeh-Bandbafha, H., & Shamshirband, S. (2016b). Modeling energy consumption and greenhouse gas emissions for kiwifruit production using artificial neural networks. Journal of Cleaner Production.

Nakashima, T. (2010). Life cycle assessment integrated into positive mathematical programming: a conceptual model for analyzing area-based farming policy. Japan Agricultural Research Quarterly: JARQ, 44(3), 301-310.

Nakashima, T., & Ishikawa, S. (2016). Energy inputs and greenhouse gas emissions associated with small-scale farmer sugarcane cropping systems and subsequent bioethanol production in Japan. NJAS-Wageningen Journal of Life Sciences, 76, 43-53.

Narayanaswamy, V., Altham, J., Van Berkel, R., & McGregor, M. (2004). Environmental life cycle assessment (LCA) case studies for Western Australian grain products. Grains Research and Development Corporation, Curtin University of Technology, Perth, Australia.

Naudin, C., van der Werf, H. M., Jeuffroy, M. H., & Corre-Hellou, G. (2014). Life cycle assessment applied to pea-wheat intercrops: a new method for handling the impacts of co-products. Journal of Cleaner Production, 73, 80-87.

Neira, D. P. (2016). Energy sustainability of Ecuadorian cacao export and its contribution to climate change. A case study through product life cycle assessment. Journal of Cleaner Production, 112, 2560-2568.

Nemecek, T., Bengoa, X., Lansche, J., Mouron, P., Riedener, E., Rossi, V. & Humbert, S. (2015) Methodological Guidelines for the Life Cycle Inventory of Agricultural Products. Version 3.0, July (2015). World Food LCA Database (WFLDB). Quantis and Agroscope, Lausanne and Zurich, Switzerland.

Nemecek, T., Huguenin-Elie, O., Dubois, D. & Gaillard, G. (2005). Ökobilanzierung von Anbausystemen im schweizerischen Acker- und Futterbau. Agroscope FAL Reckenholz, Zürich, Schriftenreihe der FAL, 155 p.

Nemecek, T., von Richthofen, J. S., Dubois, G., Casta, P., Charles, R., & Pahl, H. (2008). Environmental impacts of introducing grain legumes into European crop rotations. European journal of agronomy, 28(3), 380-393.

Nemecek, T., Weiler, K., Plassmann, K., & Schnetzer, J. (2011a). Geographical extrapolation of environmental impact of crops by the MEXALCA method. Unilever-ART project no (p. 1-132). CH-2009-0362—final report phase 2.

Neto, B., Dias, A.C., Machado, M. (2013). Life cycle assessment of the supply chain of a Portuguese wine: from viticulture to distribution. The International Journal of Life Cycle Assessment, 18, 590-602.

Neufeldt, H., Schäfer, M. (2008). Mitigation strategies for greenhouse gas emissions from agriculture using a regional economic-ecosystem model. Agriculture, Ecosystems and Environment, 123, 305-316.

Nguyen, T. L. T., & Hermansen, J. E. (2012). System expansion for handling co-products in LCA of sugar cane bio-energy systems: GHG consequences of using molasses for ethanol production. Applied energy, 89(1), 254-261.

Nguyen, T. L. T., Hermansen, J. E., & Mogensen, L. (2011). Environmental assessment of Danish pork. Det jordbrugsvidenskabelige Fakultet, Aarhus Universitet.

Nguyen, T. T. H., Bouvarel, I., Ponchant, P., van der Werf, H. M. (2012b). Using environmental constraints to formulate low-impact poultry feeds. Journal of Cleaner Production, 28, 215-224.

Nguyen, T. T. H., Doreau, M., Corson, M. S., Eugène, M., Delaby, L., Chesneau, G., ... & van der Werf, H. M. G. (2013a). Effect of dairy production system, breed and co-product handling methods on environmental impacts at farm level. Journal of environmental management, 120, 127-137.

Nguyen, T. T. H., Doreau, M., Eugène, M., Corson, M. S., Garcia-Launay, F., Chesneau, G., & Van Der Werf, H. M. G. (2013b). Effect of farming practices for greenhouse gas mitigation and subsequent alternative land use on environmental impacts of beef cattle production systems. animal, 7(05), 860-869.

Nguyen, T. T. H., van der Werf, H. M. G., Eugène, M., Veysset, P., Devun, J., Chesneau, G., Doreau, M. (2012a). Effects of type of ration and allocation methods on the environmental impacts of beef-production systems. Livest. Sci. 145, 239-251.

Niero, M., Ingvordsen, C. H., Peltonen-Sainio, P., Jalli, M., Lyngkjær, M. F., Hauschild, M. Z., & Jørgensen, R. B. (2015). Eco-efficient production of spring barley in a changed climate: A Life Cycle Assessment including primary data from future climate scenarios. Agricultural Systems, 136, 46-60.

Nikkhah, A., Emadi, B., Soltanali, H., Firouzi, S., Rosentrater, K. A., & Allahyari, M. S. (2016). Integration of life cycle assessment and Cobb-Douglas modeling for the environmental assessment of kiwifruit in Iran. Journal of Cleaner Production, 137, 843-849.

Nikkhah, A., Khojastehpour, M., Emadi, B., Taheri-Rad, A., & Khorramdel, S. (2015). Environmental impacts of peanut production system using life cycle assessment methodology. Journal of Cleaner Production, 92, 84-90.

Nileas Group, Peza Union and Mirabello Union. (2012). EDP One pack of 0.75 Litre of Extra Virgin Olive Oil. RodaxAgro Ltd, Athens.

Noponen, M. R., Edwards-Jones, G., Haggar, J. P., Soto, G., Attarzadeh, N., & Healey, J. R. (2012). Greenhouse gas emissions in coffee grown with differing input levels under conventional and organic management. Agriculture, ecosystems & environment, 151, 6-15.

Norton, T., Hay, F., Lambert, S., Sparrow, L., Kirkwood, I, (2008). Enhancing environmental sustainability in the processing potato industry in Australia. Final Report (HAL Project PTO7060). Sydney: Horticulture Australia Limited (HAL).

Notten, P., Mason-Jones, K., Cohen, B., von Bormann, T. (2011). Life Cycle Assessment of Milk Production in the Western Cape. The Greenhouse. Kenilworth, South Africa.

Noya, I., González-García, S., Bacenetti, J., Arroja, L., & Moreira, M. T. (2015). Comparative life cycle assessment of three representative feed cereals production in the Po Valley (Italy). Journal of Cleaner Production, 99, 250-265.

Ntiamoah, A., & Afrane, G. (2008). Environmental impacts of cocoa production and processing in Ghana: life cycle assessment approach. Journal of Cleaner Production, 16(16), 1735-1740.

O'Brien, D., Bohan, A., McHugh, N., & Shalloo, L. (2016a). A life cycle assessment of the effect of intensification on the environmental impacts and resource use of grass-based sheep farming. Agricultural Systems, 148, 95-104.

O'Brien, D., Capper, J. L., Garnsworthy, P. C., Grainger, C., & Shalloo, L. (2014). A case study of the carbon footprint of milk from high-performing confinement and grass-based dairy farms. Journal of dairy science, 97(3), 1835-1851.

O'Brien, D., Geoghegan, A., McNamara, K., & Shalloo, L. (2016b). How can grass-based dairy farmers reduce the carbon footprint of milk?. Animal Production Science, 56, 495-500.

O'Brien, D., Shalloo, L., Patton, J., Buckley, F., Grainger, C., & Wallace, M. (2012). A life cycle assessment of seasonal grass-based and confinement dairy farms. Agricultural Systems, 107, 33-46.

OiLCA. (2016) Olive Oil Life Cycle Assessment. Online Tool. Available at: <http://www.oilca.eu/>. Accessed: 01/01/2017.

Olszensvski, F. T. (2011). Avaliação do ciclo de vida da produção de leite em sistema semi extensivo e intensivo: estudo aplicado. Masters Thesis. Universidade Federal de Santa Catarina, Santa Catarina.

Ortiz-Rodríguez, O. O., Villamizar Gallardo, R. A., & Rangel, J. M. (2014). Applying life cycle management of colombian cocoa production. Food Science and Technology (Campinas), 34(1), 62-68.

Ortiz-Rodríguez, O. O., Villamizar-Gallardo, R. A., Naranjo-Merino, C. A., García-Caceres, R. G., & Castañeda-galvís, M. T. (2016). Carbon footprint of the colombian cocoa production. Engenharia Agrícola, 36(2), 260-270.

Page, G., Ridoutt, B., Bellotti, B. (2012). Carbon and water footprint tradeoffs in fresh tomato production. Journal of Cleaner Production, 32, 219-226.

Palmieri, N., Forleo, M. B., Suardi, A., Coaloa, D., & Pari, L. (2014). Rapeseed for energy production: Environmental impacts and cultivation methods. Biomass and Bioenergy, 69, 1-11.

Pashei Kamali, F., van der Linden, A., Meuwissen, M. P., Malafaia, G. C., Lansink, A. G. O., & de Boer, I. J. (2016). Environmental and economic performance of beef farming systems with different feeding strategies in southern Brazil. Agricultural Systems, 146, 70-79.

Pathak, H., Agarwal, T., & Jain, N. (2012a). Greenhouse Gas Emission from Rice and Wheat Systems: A Life-Cycle Assessment. In. Pathak, H. Aggarwal, P.K. (Eds.). (2012). Low Carbon Technologies for Agriculture: A Study on Rice and Wheat Systems in the Indo-Gangetic Plains. Indian Agricultural Research Institute, p. xvii + 78

Pathak, H., Chakrabarti, B., Bhatia, A., Jain, N., & Aggarwal, P. K. (2012b). Potential and Cost of Low Carbon Technologies in Rice and Wheat Systems: A Case Study of the Indo-Gangetic Plains. In. Pathak, H. Aggarwal, P.K. (Eds.). (2012). Low Carbon Technologies for Agriculture: A Study on Rice and Wheat Systems in the Indo-Gangetic Plains. Indian Agricultural Research Institute, 12-41

Pathak, H., Sankhyan, S., Dubey, D.S., Bhatia, A. & Jain, N. (2013). Dry direct-seeding of rice for mitigating greenhouse gas emission: field experimentation and simulation. Paddy Water Environ, 11, 593-601

Payen, S., Basset-Mens, C., & Perret, S. (2015). LCA of local and imported tomato: an energy and water trade-off. Journal of Cleaner Production, 87, 139-148.

Pehnelt, G., & Vietze, C. (2013a). Quo vadis European biofuel policy: The case of rapeseed biodiesel (No. 2013-015). Jena Economic Research Papers.

Pehnelt, G., & Vietze, C. (2013b). Recalculating GHG emissions saving of palm oil biodiesel. Environment, development and sustainability, 15(2), 429-479.

Pelletier, N., Arsenault, N., Tyedmers, P. (2008). Scenario Modeling Potential Eco-Efficiency Gains from a Transition to Organic Agriculture: Life Cycle Perspectives on Canadian Canola, Corn, Soy, and Wheat Production. Environmental Management, 42, 989-1001.

Pelletier, N., Ibarburu, M., & Xin, H. (2013). A carbon footprint analysis of egg production and processing supply chains in the Midwestern United States. Journal of Cleaner Production, 54, 108-114.

Pelletier, N., Ibarburu, M., & Xin, H. (2014). Comparison of the environmental footprint of the egg industry in the United States in 1960 and (2010). Poultry science, 93(2), 241-255.

Pelletier, N., Pirog, R., & Rasmussen, R. (2010). Comparative life cycle environmental impacts of three beef production strategies in the Upper Midwestern United States. Agricultural Systems, 103(6), 380-389.

Penati, C. A., Tamburini, A., Bava, L., Zucali, M., & Sandrucci, A. (2013). Environmental impact of cow milk production in the central Italian Alps using Life Cycle Assessment. Italian Journal of Animal Science, 12(4), 584-592.

Penati, C., Sandrucci, A., Tamburini, A., de Boer, I.J.M. (2010). Effects of farming system changes on life cycle assessment indicators for dairy farms in the Italian Alps. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food (2010). Bari, Session 2A. 173-178.

Perez, R. O. (2009). Analysis of Sustainability in the Pig Production Chain: Life Cycle Assessment of Contrasting Scenarios. PhD Thesis. Newcastle University, Newcastle Upon Tyne.

Pergola, M., D'Amico, M., Celano, G., Palese, A.M., Scuderi, A., Di Vita, G., Pappalardo, G., & Inglese, P. (2013b). Sustainability evaluation of Sicily's lemon and orange production: An energy, economic and environmental analysis. Journal of Environmental Management, 128, 674-682.

Pergola, M., Favia, M., Palese, A. M., Perretti, B., Xiloyannis, C., & Celano, G. (2013a). Alternative management for olive orchards grown in semi-arid environments: An energy, economic and environmental analysis. Scientia Horticulturae, 162, 380-386.

Perrin, A. (2013). Evaluation environnementale des systèmes agricoles urbains en Afrique de l'Ouest: Implications de la diversité des pratiques et de la variabilité des émissions d'azote dans l'Analyse du Cycle de Vie de la tomate au Bénin (Doctoral dissertation, Paris, AgroParisTech).

Phetteplace, H., Johnson, D., Seidl, A. (2001). Greenhouse gas emissions from simulated beef and dairy livestock systems in the United States. Nutrient Cycling in Agroecosystems 60, 99-102.

Phong, L. T., de Boer, I. J. M., Udo, H. M. J. (2011). Life cycle assessment of food production in integrated agriculture–aquaculture systems of the Mekong Delta. Livestock Science 139, 80-90

Picasso, V. D., Modernel, P. D., Becoña, G., Salvo, L., Gutiérrez, L., & Astigarraga, L. (2014). Sustainability of meat production beyond carbon footprint: a synthesis of case studies from grazing systems in Uruguay. Meat science, 98(3), 346-354.

Pishgar-Komleh, S. H., Ghahderijani, M., & Sefeedpari, P. (2012). Energy consumption and CO 2 emissions analysis of potato production based on different farm size levels in Iran. Journal of Cleaner production, 33, 183-191.

Pishgar-Komleh, S. H., Omid, M., & Heidari, M. D. (2013). On the study of energy use and GHG (greenhouse gas) emissions in greenhouse cucumber production in Yazd province. Energy, 59, 63-71.

Plassmann, K., Brentrup, F., Lammel, J. (2014). Trade-offs between agricultural product carbon footprints and land use: a case study from Tanzania. In Schenck, R., Huizenga, D. (Eds.), (2014).

Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Plassmann, K., Norton, A., Attarzadeh, N., Jensen, M. P., Brenton, P., & Edwards-Jones, G. (2010). Methodological complexities of product carbon footprinting: a sensitivity analysis of key variables in a developing country context. Environmental Science & Policy, 13(5), 393-404.

Plawecki, R., Pirog, R., Montri, A., & Hamm, M. W. (2014). Comparative carbon footprint assessment of winter lettuce production in two climatic zones for Midwestern market. Renewable Agriculture and Food Systems, 29(04), 310-318.

Pleanjai, S., & Gheewala, S. H. (2009). Full chain energy analysis of biodiesel production from palm oil in Thailand. Applied Energy, 86, S209-S214.

Point, E., Tyedmers, P., & Naugler, C. (2012). Life cycle environmental impacts of wine production and consumption in Nova Scotia, Canada. Journal of Cleaner Production, 27, 11-20.

Pollack, J.P.E., Greig, A.L. (2010). Life Cycle Impact of Soybean Production and Soy Industrial Products. Report for The United Soybean Board. Omni Tech International, Midland.

Pratibha, G., Srinivas, I., Rao, K. V., Raju, B. M. K., Thyagaraj, C. R., Korwar, G. R., ... & Srinivasarao, C. (2015). Impact of conservation agriculture practices on energy use efficiency and global warming potential in rainfed pigeonpea–castor systems. European Journal of Agronomy, 66, 30-40.

Prudêncio da Silva, V., van der Werf, H. M., Soares, S. R., & Corson, M. S. (2014). Environmental impacts of French and Brazilian broiler chicken production scenarios: An LCA approach. Journal of environmental management, 133, 222-231.

Prudêncio da Silva, V., van der Werf, H. M., Spies, A., & Soares, S. R. (2010). Variability in environmental impacts of Brazilian soybean according to crop production and transport scenarios. Journal of Environmental Management, 91(9), 1831-1839.

Punter, G., Rickeard, D., Larivé, J. F., Edwards, R., Mortimer, N., Horne, R., Bauen, A. & Woods, J. (2004). Well-to-wheel evaluation for production of ethanol from wheat. Report by the LowCVP Fuels Working Group, WTW Sub-Group.

Qasemi-Kordkheili, P., & Nabavi-Pelesaraei, A. (2014). Optimization of energy required and potential of greenhouse gas emissions reductions for nectarine production using data envelopment analysis approach. International Journal of Energy and Environment, 5(2), 207-218.

Queirós, J., Malça, J., & Freire, F. (2015). Environmental life-cycle assessment of rapeseed produced in Central Europe: addressing alternative fertilization and management practices. Journal of Cleaner Production, 99, 266-274.

Rahn, E., Läderach, P., Baca, M., Cressy, C., Schroth, G., Malin, D., ... & Shriver, J. (2014). Climate change adaptation, mitigation and livelihood benefits in coffee production: where are the synergies? Mitigation and Adaptation Strategies for Global Change, 19, 1119-1137

Rajaeifar, M. A., Akram, A., Ghobadian, B., Rafiee, S., & Heidari, M. D. (2014a). Energy-economic life cycle assessment (LCA) and greenhouse gas emissions analysis of olive oil production in Iran. Energy, 66, 139-149.

Rajaeifar, M. A., Ghobadian, B., Safa, M., & Heidari, M. D. (2014b). Energy life-cycle assessment and CO 2 emissions analysis of soybean-based biodiesel: a case study. Journal of Cleaner Production, 66, 233-241.

Rajaniemi, M., Mikkola, H., & Ahokas, J. (2011). Greenhouse gas emissions from oats, barley, wheat and rye production. Agron. Res, 9(1), 18.

Ramjeawon, T. (2004). Life cycle assessment of cane-sugar on the island of Mauritius. The international journal of life cycle assessment, 9(4), 254-260.

Raucci, G. S., Moreira, C. S., Alves, P. A., Mello, F. F., de Almeida Frazão, L., Cerri, C. E. P., & Cerri, C. C. (2015). Greenhouse gas assessment of Brazilian soybean production: a case study of Mato Grosso State. Journal of Cleaner Production, 96, 418-425.

Renouf, M. A., Pagan, R. J., & Wegener, M. K. (2011). Life cycle assessment of Australian sugarcane products with a focus on cane processing. The International Journal of Life Cycle Assessment, 16(2), 125-137.

Renouf, M. A., Wegener, M. K., & Pagan, R. J. (2010). Life cycle assessment of Australian sugarcane production with a focus on sugarcane growing. The International Journal of Life Cycle Assessment, 15(9), 927-937.

REWE Group. (2009). Fallstudie"BEST ALLIANCE"--Früherdbeeren der REWE Group–Dokumentation. Fallstudie im Rahmen des PCF (Product Carbon Footprint) Pilotprojekts Deutschland. Available at: <www.pcf-projekt.de/files/1232962839/pcf_rewe_erdbeeren.pdf>. Accessed 01/01/2017.

Ribal, J., Ramírez-Sanz, C., Estruch, V., Clemente, G., & Sanjuán, N. (2016). Organic versus conventional citrus. Impact assessment and variability analysis in the Comunitat Valenciana (Spain). The International Journal of Life Cycle Assessment, doi: 10.1007/s11367-016-1048-2.

Ridoutt, B. G., Page, G., Opie, K., Huang, J., & Bellotti, W. (2014). Carbon, water and land use footprints of beef cattle production systems in southern Australia. Journal of Cleaner Production, 73, 24-30.

Ridoutt, B. G., Sanguansri, P., Freer, M., & Harper, G. S. (2012). Water footprint of livestock: comparison of six geographically defined beef production systems. The International Journal of Life Cycle Assessment, 17(2), 165-175.

Ridoutt, B. G., Sanguansri, P., Harper, G. S. (2011). Comparing carbon and water footprints for beef cattle production in southern Australia. Sustainability 3, 2443-2455

Ridoutt, B. G., Wang, E., Sanguansri, P., & Luo, Z. (2013). Life cycle assessment of phosphorus use efficient wheat grown in Australia. Agricultural Systems, 120, 2-9.

Rinaldi, S., Barbanera, M., & Lascaro, E. (2014). Assessment of carbon footprint and energy performance of the extra virgin olive oil chain in Umbria, Italy. Science of The Total Environment, 482, 71-79.

Rivas-García, P., Botello-Álvarez, J. E., Abel Seabra, J. E., da Silva Walter, A. C., & Estrada-Baltazar, A. (2015). Environmental implications of anaerobic digestion for manure management in dairy farms in Mexico: a life cycle perspective. Environmental technology, 36(17), 2198-2209.

Rivera, J.E., Arenas, F.A., Rivera, R., Benavides, L.M., Sanchez, R.B. (2014). Lifecycle assessment in the production of milk: comparison of two specialized dairy herds. Livestock Research for Rural Development, 26(6). Available at: <http://www.lrrd.org/lrrd26/6/rive26112.htm>. Accessed 01/01/2017.

Röder, M., Thornley, P., Campbell, C., Bows-Larkin, A. (2014). Emissions associated with meeting the future global wheat demand: A case study of UK production under climate change constraints. Environmental Science & Policy, 39, 13-24.

Roer, A. G., Johansen, A., Bakken, A. K., Daugstad, K., Fystro, G., & Strømman, A. H. (2013). Environmental impacts of combined milk and meat production in Norway according to a life cycle assessment with expanded system boundaries. Livestock Science, 155(2), 384-396.

Roer, A. G., Korsaeth, A., Henriksen, T. M., Michelsen, O., & Strømman, A. H. (2012). The influence of system boundaries on life cycle assessment of grain production in central southeast Norway. Agricultural Systems, 111, 75-84.

Roibás, L., Elbehri, A., & Hospido, A. (2015). Evaluating the sustainability of Ecuadorian bananas: Carbon footprint, water usage and wealth distribution along the supply chain. Sustainable Production and Consumption, 2, 3-16.

Roibás, L., Elbehri, A., & Hospido, A. (2016). Carbon footprint along the Ecuadorian banana supply chain: Methodological improvements and calculation tool. Journal of Cleaner Production, 112, 2441-2451.

Romero-Gámez, M. Suárez-Rey, E.M., Antón, A., Castilla, N., Soriano, T. (2012). Environmental impact of screenhouse and open-field cultivation using a life cycle analysis: the case study of green bean production. Journal of Cleaner Production, 28, 63-69.

Romero-Gámez, M., Audsley, E., & Suárez-Rey, E. M. (2014). Life cycle assessment of cultivating lettuce and escarole in Spain. Journal of Cleaner Production, 73, 193-203.

Roop, D. J., Shrestha, D. S., & Saul, D. A. (2013). Cradle-to-Gate Life Cycle Assessment of Locally Produced Beef in the Palouse Region of the Northwestern US. Transactions of the ASABE, 56(5), 1933-1941.

Röös, E., Karlsson, H. (2013). Effect of eating seasonal on the carbon footprint of Swedish vegetable consumption. Journal of Cleaner Production, 59, 63-72.

Röös, E., Sundberg, C., & Hansson, P. A. (2010). Uncertainties in the carbon footprint of food products: a case study on table potatoes. The international journal of life cycle assessment, 15(5), 478-488.

Roque d'Orbcastel, E., Blanchetona, J-P., Aubin, J. (2009). Towards environmentally sustainable aquaculture: Comparison between two trout farming systems using Life Cycle Assessment. Aquacultural Engineering, 40, 113-119.

Rosa, D., Figueiredo, F., Castanheira, É. G., & Freire, F. (2017). Life-cycle assessment of fresh and frozen chestnut. Journal of Cleaner Production, 140, 742-752.

Rosado, M. M., Marques, C., & Fragoso, R. (2013). Economical and environmental trade-offs of traditional Mediterranean dry farming systems in the Alentejo region of Portugal, Proceedings ESADR 2013-Energia e Ambiente: Uso, avaliação económica e políticas na Agricultura, p. 4649-4666.

Rosado, M., Marques, C., & Fragoso, R. (2015). Environmental evaluation and benchmarking of the traditional dryland Mediterranean crop farming system in the Alentejo region of Portugal. International Journal of Sustainable Society, 7(2), 173-187.

Ross, S. A., Chagunda, M. G., Topp, C. F., & Ennos, R. (2014). Effect of cattle genotype and feeding regime on greenhouse gas emissions intensity in high producing dairy cows. Livestock Science, 170, 158-171.

Rotz, C. A., Isenberg, B. J., Stackhouse-Lawson, K. R., & Pollak, E. J. (2013). A simulation-based approach for evaluating and comparing the environmental footprints of beef production systems. Journal of animal science, 91(11), 5427-5437.

Rouault, A., Beauchet, S., Renaud-Gentie, C., & Jourjon, F. (2016). Life Cycle Assessment of viticultural technical management routes (TMRs): comparison between an organic and an integrated management route. OENO One, 50(2).

Rugani, B., Niccolucci, V., Pulselli, R. M., Tiezzi, E. (2009). A cradle-to-gate Life Cycle Assessment integrated with emergy evaluation: sustainability analysis of an organic wine production. In: Proceedings of the SETAC Europe 19th Annual Meeting, “Protecting Ecosystem Health: Facing the Challenge of a Globally Changing Environment”, p. 274, Göteborg, Sweden, May 31st June 4th (2009).

Rustandi, F., & Wu, H. (2010). Biodiesel production from canola in Western Australia: Energy and carbon footprints and land, water, and labour requirements. Industrial & Engineering Chemistry Research, 49(22), 11785-11796.

Sah, G., Shah, S.C., Sah, S.K., Thapa, R.B., McDonald, A., Sidhu, H.S., Gupta, R.K., Tripathi, B.P., Justice, S.E. (2014). Effects of Tillage and Crop Establishment Methods, Crop Residues, and Nitrogen Levels on Wheat Productivity, Energy-savings and Greenhouse Gas Emission under Rice - Wheat Cropping System. Nepal Journal of Science and Technology, 15(2), 1-10.

Saharawat, Y. S., Ladha, J. K., Pathak, H., Gathala, M., Chaudhary, N., & Jat, M. L. (2012). Simulation of resource-conserving technologies on productivity, income and greenhouse gas GHG emission in rice-wheat system. Journal of Soil Science and Environmental Management, 3(1), 9-22.

Salehi, M. A., Almassi, M., Borghai, A. M., & Beheshti, B. (2014). Determination of energy balance, greenhouse gas emissions and global warming potential for sugar beet production. Journal of Biodiversity and Environmental Sciences, 6(1), 132-142.

Salehi, M., Maleki, A., Rostami, S., & Shakeri, H. (2016). Investigation of energy inputs and CO2 emission for almond production using sensitivity analysis in Iran. Agricultural Engineering International: CIGR Journal, 18(1), 158-166.

Samardžić, M., Castaldi, S., Valentini, R., Vasenev I.I. (2014). Calculation of carbon emission resulting from poultry production under the conditions of the central region in European Russia. Scientific-theoretical Journal of Russian State Agrarian University, 2, 35-48.

Sami, M., Shiekhda Voodi, M.J., Almassi, M. (2014). Analysis of energy and greenhouse gas balance as indexes for environmental assessment of wheat and maize farming: a case study. Acta agriculturae Slovenica, 103(2), 191-201.

Samson, R., Lafontaine, M., Saad, R., Tom, M., Charron-Doucet, F., Clément, E., Couture, J.M., Lamarche, V., Gilbert, D., Revére, J.P., Maxime, D., Margni, M., Parent, J. (2012). Environmental and Socioeconomic Life Cycle Assessment Of Canadian Milk - Executive Summary (Prepared for Dairy Farmers of Canada). Quantis Canada, Groupe AGECO and CIRAG, Montreal, Canada.

Sandaña, P., & Kalazich, J. (2015). Attainable CO2 Emission of Ware Potatoes Under High Yield Conditions in Southern Chile. American Journal of Potato Research, 92, 318-325.

Santos, A. A. O., Aubin, J., Corson, M. S., Valenti, W. C., & Camargo, A. F. M. (2015). Comparing environmental impacts of native and introduced freshwater prawn farming in Brazil and the influence of better effluent management using LCA. Aquaculture, 444, 151-159.

Sapkota, T. B., Majumdar, K., Jat, M. L., Kumar, A., Bishnoi, D. K., McDonald, A. J., & Pampolino, M. (2014). Precision nutrient management in conservation agriculture based wheat production of Northwest India: Profitability, nutrient use efficiency and environmental footprint. Field Crops Research, 155, 233-244.

Sasu-Boakye, Y., Cederberg, C., & Wirsenius, S. (2014). Localising livestock protein feed production and the impact on land use and greenhouse gas emissions. Animal, 8(8), 1339-1348.

Saswattecha, K., Kroeze, C., Jawjit, W., & Hein, L. (2015). Assessing the environmental impact of palm oil produced in Thailand. Journal of Cleaner Production 100, 150-169

Saunders, C., & Barber, A. (2007). Comparative energy and greenhouse gas emissions of New Zealand's and the UK's dairy industry (Vol. 297). Agribusiness & Economics Research Unit, Lincoln University, Lincoln.

Saunders, C., Barber, A., & Taylor, G. (2006). Food miles-comparative energy/emissions performance of New Zealand's agriculture industry. Agribusiness & Economics Research Unit, Lincoln University, Lincoln.

Schader, C., Jud, K., Meier, M. S., Kuhn, T., Oehen, B., & Gattinger, A. (2014). Quantification of the effectiveness of greenhouse gas mitigation measures in Swiss organic milk production using a life cycle assessment approach. Journal of Cleaner Production, 73, 227-235.

Schäfer, F., & Blanke, M. (2012). Farming and marketing system affects carbon and water footprint–a case study using Hokaido pumpkin. Journal of Cleaner Production, 28, 113-119.

Schmidt, J. H. (2010). Comparative life cycle assessment of rapeseed oil and palm oil. The International Journal of Life Cycle Assessment, 15(2), 183-197.

Schmidt, J. H. (2015). Life cycle assessment of five vegetable oils. Journal of Cleaner Production, 87, 130-138.

Scholten, J., Durlinger, B., Tyszler, M., Broekema, R., van Zeist, W.J., Blonk, H. (2014). Agri-footprint - Methodology and basic principles Version 1.0. Blonk Consultants, Gouda.

Schroeder, R., Aguiar, L. K., & Baines, R. (2012). Carbon footprint in meat production and supply chains. Journal of Food Science and Engineering, 2(11), 652.

Schroth, G., Jeusset, A., da Silva Gomes, A., Florence, C. T., Coelho, N. A. P., Faria, D., & Läderach, P. (2016). Climate friendliness of cocoa agroforests is compatible with productivity increase. Mitigation and Adaptation Strategies for Global Change, 21(1), 67-80.

Sefeedpari, P., Shokoohi, Z., & Behzadifar, Y. (2014). Energy use and carbon dioxide emission analysis in sugarcane farms: a survey on Haft-Tappeh Sugarcane Agro-Industrial Company in Iran. Journal of Cleaner Production, 83, 212-219.

Seguin, F., Van der Werf, H. M. G., Bouvarel, I., Pottiez, E. (2011). Environmental analysis of organic broiler production in France and improvement options. LCM 2011 - Towards Life Cycle Sustainability Management, Berlin, Germany.

Segura, M. A., & Andrade, H. J. (2012). Huella de carbono en cadenas productivas de café (Coffea arabica L.) con diferentes estándares de certificación en Costa Rica. Luna Azul, 36, 60-77.

Seó, H. L. S. (2015). Avaliação do Ciclo de Vida e Estoque de Carbono da Produção Leiteira em Pastoreio Racional Voisin. Doctoral dissertation, Universidade Federal de Santa Catarina, Florianópolis.

Sikfoder.se. (2015) LCA-databas för konventionella fodermedel - miljöpåverkan i samband med produktion. Available at: <http://sikfoder.se> Acccessed 01/01/2017.

Silalertruksa, T., Gheewala, S. H. (2009). Environmental sustainability assessment of bio-ethanol production in Thailand. Energy, 34(11), 1933-1946.

Silalertruksa, T., Pongpat, P., & Gheewala, S. H. (2017). Life cycle assessment for enhancing environmental sustainability of sugarcane biorefinery in Thailand. Journal of Cleaner Production, 140, 906-913.

Siqueira, T. T., & Duru, M. (2016). Economics and environmental performance issues of a typical Amazonian beef farm: a case study. Journal of Cleaner Production, 112, 2485-2494.

Siregar, K., Tambunan, A. H., Irwanto, A. K., Wirawan, S. S., & Araki, T. (2015). A comparison of life cycle assessment on Oil Palm (Elaeis guineensis Jacq.) and Physic Nut (Jatropha curcas Linn.) as feedstock for Biodiesel production in Indonesia. Energy Procedia, 65, 170-179.

Soam, S., Kumar, R., Gupta, R. P., Sharma, P. K., Tuli, D. K., & Das, B. (2015). Life cycle assessment of fuel ethanol from sugarcane molasses in northern and western India and its impact on Indian biofuel programme. Energy, 83, 307-315.

Soltani, A., Rajabi, M. H., Zeinali, E., & Soltani, E. (2013). Energy inputs and greenhouse gases emissions in wheat production in Gorgan, Iran. Energy, 50, 54-61.

Sonesson, U., Cederberg, C., Flysjö, A., Carlsson, B. (2008). Livscykelanalys (LCA) av svenska ägg (ver.2). SIK Report Nr 783. Swedish Institute for Food and Biotechnology, Gothenburg.

Soni, P., Taewichit, C., & Salokhe, V. M. (2013). Energy consumption and CO2 emissions in rainfed agricultural production systems of Northeast Thailand. Agricultural Systems, 116, 25-36.

Spahat, N. (2014). Environmental impact of different production systems and consumer willingness to pay for chicken meat produced with a higher regard for the environment. PhD Thesis. Newcastle University, Newcastle Upon Tyne.

Spies, A. (2003). The sustainability of the pig and poultry industries in Santa Catarina, Brazil: a framework for change. PhD Thesis. The University of Queensland, Brisbane.

Spinelli, D., Jez, S., & Basosi, R. (2012). Integrated Environmental Assessment of sunflower oil production. Process Biochemistry, 47(11), 1595-1602.

Spinelli, D., Jez, S., Pogni, R., & Basosi, R. (2013). Environmental and life cycle analysis of a biodiesel production line from sunflower in the Province of Siena (Italy). Energy Policy, 59, 492-506.

Spugnoli, P., Dainelli, R., D'Avino, L., Mazzoncini, M., & Lazzeri, L. (2012). Sustainability of sunflower cultivation for biodiesel production in Tuscany within the EU Renewable Energy Directive. Biosystems Engineering, 112(1), 49-55.

Stephenson, A. L., von Blottnitz, H., Brent, A. C., Dennis, J. S., & Scott, S. A. (2010). Global warming potential and fossil-energy requirements of biodiesel production scenarios in South Africa. Energy & Fuels, 24(4), 2489-2499.

Stevenson, M., Evans, C., Forgie, J., Huttinger, L. (2010). Evaluating the Environmental Impacts of Packaging Fresh Tomatoes Using Life-Cycle Thinking & Assessment: A Sustainable Materials Management Demonstration Project. EPA Contract No. EP-W-07-003, Work Assignment 3-68.

Stichnothe, H., Schuchardt, F. (2011). Life cycle assessment of two palm oil production systems. Biomass and Bioenergy, 35, 3976-3984

Stoessel, F., Juraske, R., Pfister, S., & Hellweg, S. (2012). Life cycle inventory and carbon and water foodprint of fruits and vegetables: application to a Swiss retailer. Environmental science & technology, 46(6), 3253-3262.

Stone, J. J., Dollarhide, C. R., Benning, J. L., Carlson, C. G., & Clay, D. E. (2012). The life cycle impacts of feed for modern grow-finish Northern Great Plains US swine production. Agricultural Systems, 106(1), 1-10.

Strid Eriksson, I., Elmquist, H., Stern, S., Nybrant, T. (2005). Environmental systems analysis of pig production. The impact of feed choice. The International Journal of Life Cycle Assessment, 10, 143-154.

Tabatabaie, S. M. H., & Murthy, G. S. (2016). Cradle to farm gate life cycle assessment of strawberry production in the United States. Journal of Cleaner Production, 127, 548-554.

Tamburini, E., Pedrini, P., Marchetti, M. G., Fano, E. A., & Castaldelli, G. (2015). Life Cycle Based Evaluation of Environmental and Economic Impacts of Agricultural Productions in the Mediterranean Area. Sustainability, 7(3), 2915-2935.

Teixeira, R., Domingos, T., Simões, A., & Rodrigues, O. (2007). Local vs global grain maize production. Where shoud you get your maize from. Environment and Energy Section, DEM, Instituto Superior Técnico, Lisbon.

Thamsiriroj, T., & Murphy, J. D. (2009). Is it better to import palm oil from Thailand to produce biodiesel in Ireland than to produce biodiesel from indigenous Irish rape seed?. Applied Energy, 86(5), 595-604.

Thanawong, K., Perret, S. R., & Basset-Mens, C. (2014). Eco-efficiency of paddy rice production in Northeastern Thailand: a comparison of rain-fed and irrigated cropping systems. Journal of Cleaner Production, 73, 204-217.

The Climate Conservancy. (2008). The Carbon Footprint of Fat Tire Amber Ale. Available at: <http://www.newbelgium.com/Files/the-carbon-footprint-of-fat-tire-amber-ale-2008-public-dist-rfs.pdf>. Accessed: 01/01/2017.

Theurl, M. C., Haberl, H., Erb, K. H., & Lindenthal, T. (2014). Contrasted greenhouse gas emissions from local versus long-range tomato production. Agronomy for Sustainable Development, 34(3), 593-602.

Thomassen, M. A., van Calker, K. J., Smits, M. C., Iepema, G. L., & de Boer, I. J. (2008). Life cycle assessment of conventional and organic milk production in the Netherlands. Agricultural systems, 96(1), 95-107.

Thomassen, M.A., Dolman, M.A., van Calker, K.J., de Boer, I.J.M. (2009). Relating life cycle assessment indicators to gross value added for Dutch dairy farms. Ecological Economics. 68, 2278-2284.

Tidåker, P., Mattsson, B., & Jönsson, H. (2007). Environmental impact of wheat production using human urine and mineral fertilisers–a scenario study. Journal of Cleaner Production, 15(1), 52-62.

Torrellas, M., Antón, A., Ruijs, M., García Victoria, N., Stanghellini, C., & Montero, J. I. (2012b). Environmental and economic assessment of protected crops in four European scenarios. Journal of Cleaner Production, 28, 45-55.

Torres, C. M. E., Kohmann, M. M., & Fraisse, C. W. (2015). Quantification of greenhouse gas emissions for carbon neutral farming in the Southeastern USA. Agricultural Systems, 137, 64-75.

Tsiropoulos, I., Faaij, A. P., Seabra, J. E., Lundquist, L., Schenker, U., Briois, J. F., & Patel, M. K. (2014). Life cycle assessment of sugarcane ethanol production in India in comparison to Brazil. The International Journal of Life Cycle Assessment, 19(5), 1049-1067.

Tzilivakis, J., Warner, D. J., May, M., Lewis, K. A., & Jaggard, K. (2005). An assessment of the energy inputs and greenhouse gas emissions in sugar beet (*Beta vulgaris*) production in the UK. Agricultural Systems, 85(2), 101-119.

Uchida, S., & Hayashi, K. (2012). Comparative life cycle assessment of improved and conventional cultivation practices for energy crops in Japan. biomass and bioenergy, 36, 302-315.

Udo, H., Weiler, V., Modupeore, O., Viets, T., & Oosting, S. (2016). Intensification to reduce the carbon footprint of smallholder milk production: fact or fiction?. Outlook on Agriculture, 45(1), 33-38.

Utomo, B., Prawoto, A. A., Bonnet, S., Bangviwat, A., & Gheewala, S. H. (2016). Environmental performance of cocoa production from monoculture and agroforestry systems in Indonesia. Journal of Cleaner Production, 134, 583-591.

Vagnoni, E., Franca, A., Breedveld, L., Porqueddu, C., Ferrara, R., & Duce, P. (2015). Environmental performances of Sardinian dairy sheep production systems at different input levels. Science of the Total Environment, 502, 354-361.

van der Laan, M., Jumman, A., & Perret, S. R. (2015). Environmental benefits of improved water and nitrogen management in irrigated sugar cane: a combined crop modelling and life cycle assessment approach. Irrigation and Drainage, 64(2), 241-252.

van der Werf, H. M. (2004). Life Cycle Analysis of field production of fibre hemp, the effect of production practices on environmental impacts. Euphytica, 140(1-2), 13-23.

van der Werf, H. M., Petit, J., & Sanders, J. (2005). The environmental impacts of the production of concentrated feed: the case of pig feed in Bretagne. Agricultural Systems, 83(2), 153-177.

van der Werf, H., Kanyarushoki, C., Corson, M.S. (2009). An operational method for the evaluation of resource use and environmental impacts of dairy farms by life cycle assesment. Journal of Environmental Management. 90, 3643-3652.

van Middelaar, C. E., Berentsen, P. B. M., Dolman, M. A., & De Boer, I. J. M. (2011). Eco-efficiency in the production chain of Dutch semi-hard cheese. Livestock Science, 139(1), 91-99.

van Rikxoort, H., Schroth, G., Läderach, P., & Rodríguez-Sánchez, B. (2014). Carbon footprints and carbon stocks reveal climate-friendly coffee production. Agronomy for sustainable development, 34(4), 887-897.

van Zanten, H. H. E., Bikker, P., Mollenhorst, H., Meerburg, B. G., & de Boer, I. J. M. (2015). Environmental impact of replacing soybean meal with rapeseed meal in diets of finishing pigs. animal, 9(11), 1866-1874.

Vázquez-Rowe, I., Rugani, B., & Benetto, E. (2013). Tapping carbon footprint variations in the European wine sector. Journal of Cleaner Production, 43, 146-155.

Vázquez-Rowe, I., Villanueva-Rey, P., Iribarren, D., Teresa Moreira, M., & Feijoo, G. (2012b). Joint life cycle assessment and data envelopment analysis of grape production for vinification in the *Rías Baixas* appellation (NW Spain). Journal of Cleaner Production, 27, 92-102.

Vázquez-Rowe, I., Villanueva-Rey, P., Moreira, M. T., & Feijoo, G. (2012a). Environmental analysis of Ribero wine from a timeline perspective: Harvest year matters when reporting environmental impacts. Journal of environmental management, 98, 73-83.

Velazco-Bedoya, D. M. V. (2015). Análise da sustentabilidade da produção de leite: um estudo na principal bacia leiteira do Brasil. Thesis, Universidade de São Paulo, São Paulo.

Vellinga, T. V., Blonk, H., Marinussen, M., van Zeist, W.J., de Boer, I.J.M. & Starmans, D. (2013). Methodology used in FeedPrint: a tool quantifying greenhouse gas emissions of feed production and utilization. Wageningen UR Livestock Research, Lelystad, the Netherlands. Report 674.

Venkat, K. (2012). Comparison of twelve organic and conventional farming systems: a life cycle greenhouse gas emissions perspective. Journal of Sustainable Agriculture, 36(6), 620-649.

Vergé, X. P. C., Dyer, J. A., Desjardins, R. L., & Worth, D. (2007). Greenhouse gas emissions from the Canadian dairy industry in (2001). Agricultural Systems, 94(3), 683-693.

Vergé, X. P. C., Dyer, J. A., Desjardins, R. L., & Worth, D. (2008). Greenhouse gas emissions from the Canadian beef industry. Agricultural Systems, 98(2), 126-134.

Vergé, X. P. C., Dyer, J. A., Desjardins, R. L., & Worth, D. (2009a). Greenhouse gas emissions from the Canadian pork industry. Livestock Science, 121(1), 92-101.

Vergé, X. P. C., Dyer, J. A., Desjardins, R. L., & Worth, D. (2009b). Long-term trends in greenhouse gas emissions from the Canadian poultry industry. The Journal of Applied Poultry Research, 18(2), 210-222.

Vermeulen, P. C. M., & van der Lans, C. J. M. (2011). Combined heat and power (CHP) as a possible method for reduction of the CO2 footprint of organic greenhouse horticulture. In: Dorais, M. & Bishop, S. D. (Eds.), First International Conference on Organic Greenhouse Horticulture. Bleiswijk, Netherlands, p. 61-68.

Veysset, P., Lherm, M., & Bébin, D. (2011). Productive, environmental and economic performances assessments of organic and conventional suckler cattle farming systems. Organic Agriculture, 1(1), 1-16.

Villanueva-Rey, P., Vázquez-Rowe, I., Moreira, M. T., & Feijoo, G. (2014). Comparative life cycle assessment in the wine sector: biodynamic vs. conventional viticulture activities in NW Spain. Journal of Cleaner Production, 65, 330-341.

Vinyes, E., Gasol, C. M., Asin, L., Alegre, S., & Muñoz, P. (2015). Life Cycle Assessment of multiyear peach production. Journal of Cleaner Production, 104, 68-79.

Voutilainen, P., Tuhkanen, H. R., Katajajuuri, J. M., Nousiainen, J., Honkasalo, N. (2003). Emmental Sinileima-juuston tuotantoketjun ymparistovaikutukset ja parannusmahdollisuudet (Environmental Impacts and Improvement Possibilities of Emmental Blue-Label Cheese). Publications of Agrifood Research Finland, 35. Agrifood Research Finland, Jokioinen.

Wallman, M., Cederberg, C., Sonesson, U. (2011). Life cycle assessment of Swedish lamb production. SIK report no 831 (2011). Swedish Institute for Food and Biotechnology, Gothenburg.

Wang, M., Xia, X., Zhang, Q., & Liu, J. (2010). Life cycle assessment of a rice production system in Taihu region, China. International Journal of Sustainable Development & World Ecology, 17(2), 157-161.

Wang, C., Li, X., Gong, T., & Zhang, H. (2014). Life cycle assessment of wheat-maize rotation system emphasizing high crop yield and high resource use efficiency in Quzhou County. Journal of Cleaner Production, 68, 56-63.

Wang, W., & Dalal, R. C. (2015). Nitrogen management is the key for low-emission wheat production in Australia: A life cycle perspective. European Journal of Agronomy, 66, 74-82.

Wang, X., Kristensen, T., Mogensen, L., Knudsen, M. T., & Wang, X. (2016a). Greenhouse gas emissions and land use from confinement dairy farms in the Guanzhong plain of China–using a life cycle assessment approach. Journal of Cleaner Production, 113, 577-586.

Wang, Z. B., Zhang, H. L., Lu, X. H., Wang, M., Chu, Q. Q., Wen, X. Y., & Chen, F. (2016b). Lowering carbon footprint of winter wheat by improving management practices in North China Plain. Journal of Cleaner Production, 112, 149-157.

Warner, D.J., Davies, M., Hipps, N., Osborne, N., Tzilivakis, J., Lewis, K.A. (2010). Greenhouse gas emissions and energy use in UK-grown short-day strawberry (Fragaria xananassa Duch) crops. Journal of Agricultural Science, 148, 667-681.

Weiler, V., Udo, H. M., Viets, T., Crane, T. A., & De Boer, I. J. (2014). Handling multi-functionality of livestock in a life cycle assessment: the case of smallholder dairying in Kenya. Current Opinion in Environmental Sustainability, 8, 29-38.

Wells, C. (2001). Total Energy Indicators of Agricultural Sustainability: Dairy Farming Case Study, Ministry of Agriculture and Forestry, Wellington.

Wettstein, S., Stucki, M., Meier, M., Schumacher, P., Buchli, J., & Im Auftrag des Bundesamtes für Umwelt, B. A. F. U. (2016). Ökobilanz von Schweizer Wein aus ÖLN-und biologischer Produktion. Bundesamt für Umwelt BAFU, Switzerland.

White, R. R., Brady, M., Capper, J. L., & Johnson, K. A. (2014). Optimizing diet and pasture management to improve sustainability of US beef production. Agricultural Systems, 130, 1-12.

White, R. R., Brady, M., Capper, J. L., McNamara, J. P., & Johnson, K. A. (2015). Cow–calf reproductive, genetic, and nutritional management to improve the sustainability of whole beef production systems. Journal of animal science, 93(6), 3197-3211.

Widheden, A., Strömberg, K., Andersson, K., Ahlmén, K. (2001). LCA Kyckling. (LCA Chicken). CIT Ekologik AB and Ciconia AB, Sweden.

Widi, T. S. M., Udo, H. M. J., Oldenbroek, K., Budisatria, I. G. S., Baliarti, E., Viets, T. C., & van der Zijpp, A. J. (2015). Is cross-breeding of cattle beneficial for the environment? The case of mixed farming systems in Central Java, Indonesia. Animal Genetic Resources/Ressources génétiques animales/Recursos genéticos animales, 57, 1-13.

Wiedemann, S., McGahan, E., Grist, S., & Grant, T. (2010). Environmental assessment of two pork supply chains using life cycle assessment (No. 09/176). Rural Industries Research and Development Corporation.

Wiedemann, S. G., Ledgard, S. F., Henry, B. K., Yan, M. J., Mao, N., & Russell, S. J. (2015a). Application of life cycle assessment to sheep production systems: investigating co-production of wool and meat using case studies from major global producers. The International Journal of Life Cycle Assessment, 20(4), 463-476.

Wiedemann, S., McGahan, E., Murphy, C., Yan, M. J., Henry, B., Thoma, G., & Ledgard, S. (2015b). Environmental impacts and resource use of Australian beef and lamb exported to the USA determined using life cycle assessment. Journal of Cleaner Production, 94, 67-75.

Wiedemann, S. G., Yan, M. J., & Murphy, C. M. (2015c). Resource use and environmental impacts from Australian export lamb production: a life cycle assessment. Animal Production Science.

Wiedemann, S. G., Yan, M. J., Henry, B. K., & Murphy, C. M. (2016a). Resource use and greenhouse gas emissions from three wool production regions in Australia. Journal of Cleaner Production.

Wiedemann, S., McGahan, E., Murphy, C., & Yan, M. (2016b). Resource use and environmental impacts from beef production in eastern Australia investigated using life cycle assessment. Animal Production Science, 56, 482-494.

Wiedemann, S. G., McGahan, E. J., & Murphy, C. M. (2017). Resource use and environmental impacts from Australian chicken meat production. Journal of Cleaner Production, 140, 675-684.

Wilfart, A., Prudhomme, J., Blancheton, J-P., Aubin, J. (2013). LCA and emergy accounting of aquaculture systems: Towards ecological intensification. Journal of Environmental Management. 121, 96-109.

Wilkes, A., Wang, S. (2009). GHG Emissions from Intensive and Extensive Dairy Production in Drylands: case studies from Inner Mongolia, China. Drynet Report.

Williams, A. G., Audsley, E., & Sandars, D. L. (2010). Environmental burdens of producing bread wheat, oilseed rape and potatoes in England and Wales using simulation and system modelling. International Journal of Life Cycle Assessment 15, 855-868.

Williams, A. G., Audsley, E., & Sandars, D.L. (2006) Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205. Cranfield University, Bedford.

Williams, A. G., Pell, E., Webb, J., Tribe, E., Evans, D., Moorhouse, E., Watkiss, P. (2008). Final Report for Defra Project FO0103, Comparative Life Cycle Assessment of Food Commodities Procured for UK Consumption through a Diversity of Supply Chains. UK.

Wiltshire, J., Wynn, S., Clarke, J., Chambers, B., Cottrill, B., Drakes, D., ... & Foster, C. (2009). Scenario building to test and inform the development of a BSI method for assessing greenhouse gas emissions from food. Defra, London.

Winkler, T., Schopf, K., Aschemann, R., & Winiwarter, W. (2016). From Farm to Fork-A Life Cycle Assessment of Fresh Austrian Pork. Journal of Cleaner Production 116, 80-89.

Wongwai, C., Mungcharoen, T., & Tongpool, R. (2014). Environmental Mitigation Possibility via Organic Farming: Lettuce Case Study. International Journal of Environmental Science and Development, 5(5), 426-430.

Xu, X., & Lan, Y. (2016). A comparative study on carbon footprints between plant-and animal-based foods in China. Journal of Cleaner Production, 112, 2581-2592.

Xu, X., Zhang, B., Liu, Y., Xue, Y., & Di, B. (2013). Carbon footprints of rice production in five typical rice districts in China. Acta Ecologica Sinica, 33(4), 227-232.

Xue, J. F., Liu, S. L., Chen, Z. D., Chen, F., Lal, R., Tang, H. M., & Zhang, H. L. (2014). Assessment of carbon sustainability under different tillage systems in a double rice cropping system in Southern China. The International Journal of Life Cycle Assessment, 19(9), 1581-1592.

Yan, M. J., Humphreys, J., & Holden, N. M. (2013). Life cycle assessment of milk production from commercial dairy farms: The influence of management tactics. Journal of dairy science, 96(7), 4112-4124.

Yan, M., Cheng, K., Luo, T., & Pan, G. (2014). Carbon footprint of crop production and the significance for greenhouse gas reduction in the agriculture sector of China. In Assessment of Carbon Footprint in Different Industrial Sectors, Volume 1 (p. 247-264). Springer Singapore.

Yan, M., Cheng, K., Luo, T., Yan, Y., Pan, G., & Rees, R. M. (2015a). Carbon footprint of grain crop production in China–based on farm survey data. Journal of Cleaner Production, 104, 130-138.

Yan, M., Luo, T., Bian, R., Cheng, K., Pan, G., & Rees, R. (2015b). A comparative study on carbon footprint of rice production between household and aggregated farms from Jiangxi, China. Environmental monitoring and assessment, 187(6), 1-13.

Yan, M., Cheng, K., Yue, Q., Yan, Y., Rees, R. M., & Pan, G. (2016). Farm and product carbon footprints of China's fruit production—life cycle inventory of representative orchards of five major fruits. Environmental Science and Pollution Research, 23(5), 4681-4691.

Yang, Q., & Chen, G. Q. (2013). Greenhouse gas emissions of corn–ethanol production in China. Ecological Modelling, 252, 176-184.

Yang, X., Gao, W., Zhang, M., Chen, Y., & Sui, P. (2014). Reducing agricultural carbon footprint through diversified crop rotation systems in the North China Plain. Journal of Cleaner Production, 76, 131-139.

Yee, K. F., Tan, K. T., Abdullah, A. Z., & Lee, K. T. (2009). Life cycle assessment of palm biodiesel: revealing facts and benefits for sustainability. Applied Energy, 86, S189-S196.

Yousefi, M., Khoramivafa, M., & Mondani, F. (2014). Integrated evaluation of energy use, greenhouse gas emissions and global warming potential for sugar beet (Beta vulgaris) agroecosystems in Iran. Atmospheric Environment, 92, 501-505.

Yusoff, S., Hansen, S. (2007). Feasibility study of performing an life cycle assessment on crude palm oil production in Malaysia (9 pp). The International Journal of Life Cycle Assessment, 12(1), 50-58.

Yuttitham, M., Gheewala, S. H., & Chidthaisong, A. (2011). Carbon footprint of sugar produced from sugarcane in eastern Thailand. Journal of Cleaner Production, 19(17), 2119-2127.

Zaher, U., Higgins, S., & Carpenter-Boggs, L. (2016). Interactive life cycle assessment framework to evaluate agricultural impacts and benchmark emission reduction credits from organic management. Journal of Cleaner Production, 115, 182-190.

Zehetmeier, M., Hoffmann, H., Sauer, J., Hofmann, G., Dorfner, G., & O'Brien, D. (2014). A dominance analysis of greenhouse gas emissions, beef output and land use of German dairy farms. Agricultural Systems, 129, 55-67.

Zeus. (2011) EPD for 1kg of kiwifruit (inclusive of peel) eaten by the consumer. Available at: <http://www.rodaxagro.com/wp-content/uploads/2015/10/epd310_v1.pdf>. Accessed 01/01/2017.

Zygouras, G., Kornaros, M., & Angelopoulos, K. (2005). Life cycle assessment (LCA) as a tool for assessing the environmental performance of flour production in Greece. Proceedings of the 9th International Conference on Environmental Science and Technology, Rhodes Island, Greece, 1-3: A1716-A1721.

Processing

Achouri, A., Boye, J. I., & Zamani, Y. (2008). Soybean variety and storage effects on soymilk flavour and quality. International journal of food science & technology, 43(1), 82-90.

Adams, M., & Ghaly, A. E. (2007). Maximizing sustainability of the Costa Rican coffee industry. Journal of Cleaner Production, 15(17), 1716-1729.

Agroscope. (2014) Swiss Agricultural Life Cycle Database SALCA. Agroscope, Zurich.

Aguirre-Villegas, H. A., Milani, F. X., Kraatz, S., & Reinemann, D. J. (2012). Life cycle impact assessment and allocation methods development for cheese and whey processing. Transactions of the ASABE, 55(2), 613-627.

Amienyo, D., & Azapagic, A. (2016). Life cycle environmental impacts and costs of beer production and consumption in the UK. The International Journal of Life Cycle Assessment, 21(4), 492-509.

Amienyo, D., Camilleri, C., & Azapagic, A. (2014). Environmental impacts of consumption of Australian red wine in the UK. Journal of Cleaner Production, 72, 110-119.

Ayer, N. W., Tyedmers, P. H., Pelletier, N. L., Sonesson, U., & Scholz, A. (2007). Co-product allocation in life cycle assessments of seafood production systems: review of problems and strategies. The International Journal of Life Cycle Assessment, 12(7), 480-487.

Bond, J., Capehard, T., Allen, E., & Kim, G. (2015). Feed Outlook: Special Article - Boutique Brews, Barley, and the Balance Sheet: Changes in malt barley industrial use require an updated forecasting approach. USDA ERS, Washington.

Broekema, R., Blonk, H. (2009). Milieukundige vergelijking van vleesvervangers. Blonk Consultants, Gouda.

Buchspies, B., Tölle, S. J., Jungbluth, N. (2011). Life Cycle Assessment of High-Sea Fish and Salmon Aquaculture. ESU-services Ltd., Uster.

Cai, T. D., & Chang, K. C. (1998). Characteristics of production-scale tofu as affected by soymilk coagulation method: propeller blade size, mixing time and coagulant concentration. Food Research International, 31(4), 289-295.

Cai, T. D., Chang, K. C., Shih, M. C., Hou, H. J., & Ji, M. (1997). Comparison of bench and production scale methods for making soymilk and tofu from 13 soybean varieties. Food research international, 30(9), 659-668.

Cappelletti, G. M., Ioppolo, G., Nicoletti, G. M., & Russo, C. (2014). Energy Requirement of Extra Virgin Olive Oil Production. Sustainability, 6(8), 4966-4974.

Carlsberg. (2014a). "Birrificio Angelo Poretti 5 Luppoli Bock Chiara® and Birrifico Angelo Poretti 6 Luppoli Bock Rossa® Beer ", Environmental product declaration. Stockholm, Sweden. Available at: <http://gryphon.environdec.com/data/files/6/9938/epd314en_v4.pdf>. Accessed 01/01/2017.

Carlsberg. (2014b). "Carlsberg® Beer", Environmental product declaration, Sweden. Available at: <http://gryphon.environdec.com/data/files/6/9934/epd312_Carlsberg_2014_02_27.pdf>. Accessed 01/01/2017.

Cimini, A., & Moresi, M. (2016). Carbon footprint of a pale lager packed in different formats: assessment and sensitivity analysis based on transparent data. Journal of Cleaner Production, 112, 4196-4213.

Coltro, L., Mourad, A., Oliveira, P., Baddini, J., & Kletecke, R. (2006). Environmental Profile of Brazilian Green Coffee. The International Journal of Life Cycle Assessment, 11(1), 16-21.

Contreras, A. M., Rosa, E., Pérez, M., Van Langenhove, H., & Dewulf, J. (2009). Comparative life cycle assessment of four alternatives for using by-products of cane sugar production. Journal of Cleaner Production, 17(8), 772-779.

Cordella, M., Tugnoli, A., Spadoni, G., Santarelli, F., & Zangrando, T. (2008). LCA of an Italian lager beer. The International Journal of Life Cycle Assessment, 13(2), 133-139.

Craig, A. J., Blanco, E. E., & Sheffi, Y. (2012). A supply chain view of product carbon footprints: results from the banana supply chain. ESD Working Paper Series. Massachusetts Institute of Technology, Cambridge.

Croezen, H., & Kampman, B. (2008). Calculating greenhouse gas emissions of EU biofuels. An assessment of the EU methodology proposal for biofuels CO2 calculations. CE Delft, Delft.

Dalgaard, R., Halberg, N., & Hermansen, J. E. (2007). Danish pork production: an environmental assessment (p. 38). Aarhus University, Aarhus.

Daneshi, A., Esmaili-sari, A., Daneshi, M., & Baumann, H. (2014). Greenhouse gas emissions of packaged fluid milk production in Tehran. Journal of Cleaner Production, 80, 150-158.

Desjardins, R. L., Worth, D. E., Vergé, X. P., Maxime, D., Dyer, J., & Cerkowniak, D. (2012). Carbon footprint of beef cattle. Sustainability, 4(12), 3279-3301.

Devers, L., Kleynhans, T. E., & Mathijs, E. (2012). Comparative life cycle assessment of Flemish and Western Cape pork production. Agrekon, 51(4), 105-128.

Fet, M.A., Schau, E. M., & Haskins, C. (2010). A framework for environmental analyses of fish food production systems based on systems engineering principles. Systems Engineering, 13(2), 109-118.

Figueiredo, F., Castanheira, É. G., Ferreira, A., Trindade, H., & Freire, F. (2015). Greenhouse gas assessment of wine produced in Portugal. In: Proceedings from Energy for Sustainability 2013, Sustainable Cities: Designing for People and the Planet, Coimbra, 8-10th September (2013).

Finnegan, W., Goggins, J., Clifford, E., & Zhan, X. (2015). Global warming potential associated with dairy products in the Republic of Ireland. Journal of Cleaner Production. Available at: <http://dx.doi.org/10.1016/j.jclepro.2015.08.025>. Accessed: 01/01/2017.

Flysjö, A., Cederberg, C., Henriksson, M., & Ledgard, S. (2011b). How does co-product handling affect the carbon footprint of milk? Case study of milk production in New Zealand and Sweden. The International Journal of Life Cycle Assessment, 16(5), 420-430.

Flysjö, A., Thrane, M., & Hermansen, J. E. (2014). Method to assess the carbon footprint at product level in the dairy industry. International Dairy Journal, 34(1), 86-92.

Gazulla, C., Raugei, M., & Fullana-i-Palmer, P. (2010). Taking a life cycle look at crianza wine production in Spain: where are the bottlenecks?. The International Journal of Life Cycle Assessment, 15(4), 330-337.

Geraghty, R. (2011) Resource Efficiency in Ireland's Dairy Processing Sector. Enterprise Ireland, Dublin

González-García, S., Castanheira, É. G., Dias, A. C., & Arroja, L. (2013b). Environmental performance of a Portuguese mature cheese-making dairy mill. Journal of Cleaner Production, 41, 65-73.

González-García, S., Hospido, A., Moreira, M. T., Feijoo, G., & Arroja, L. (2013a). Environmental life cycle assessment of a Galician cheese: San Simon da Costa. Journal of Cleaner Production, 52, 253-262.

Granarolo. (2012a). Environmental Product Declaration for “Piacere Leggero” fresh milk in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=7378>. Accessed 01/01/2017.

Granarolo. (2012b). Environmental Product Declaration for organic milk pasteurized at a high temperature and packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=7375>. Accessed 01/01/2017.

Granarolo. (2012c). Environmental Product Declaration for organic semi-skimmed milk packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=8774>. Accessed 01/01/2017.

Granarolo. (2012d). Environmental Product Declaration for High-quality pasteurized milk packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=6091>. Accessed 01/01/2017.

Granarolo. (2013b). Environmental Product Declaration of Mozzarella made from high quality milk. Available at: <http://www.environdec.com/en/Detail/?Epd=6103>. Accessed 01/01/2017.

Grönroos, J., Seppala, J., Silvenius, F., & Makinen, T. (2006). Life cycle assessment of Finnish cultivated rainbow trout. Boreal environment research, 11(5), 401.

Guignard, C., Verones, F., Loerincik, Y., & Jolliet, O. (2009). Environmental/Ecological Impact of the Dairy Sector. Bulletin of the International Dairy Federation, 436/2009.

Hassard, H. A., Couch, M. H., Techa-erawan, T., & McLellan, B. C. (2014). Product carbon footprint and energy analysis of alternative coffee products in Japan. Journal of Cleaner Production, 73, 310-321. H. A., Couch, M. H., Techa-erawan, T., & McLellan, B. C. (2014). Product carbon footprint and energy analysis of alternative coffee products in Japan. Journal of Cleaner Production, 73, 310-321.

Heller, M. C., & Keoleian, G. A. (2011). Life cycle energy and greenhouse gas analysis of a large-scale vertically integrated organic dairy in the United States. Environmental science & technology, 45(5), 1903-1910.

Hoang, H. M., Brown, T., Indergard, E., Leducq, D., & Alvarez, G. (2016). Life cycle assessment of salmon cold chains: comparison between chilling and superchilling technologies. Journal of Cleaner Production, 126, 363-372.

Høgaas Eide, M. (2002). Life cycle assessment (LCA) of industrial milk production. The International Journal of Life Cycle Assessment, 7(2), 115-126.

Hospido, A., Moreira, M. T., & Feijoo, G. (2003). Simplified life cycle assessment of Galician milk production. International Dairy Journal, 13(10), 783-796.

Hospido, A., Moreira, M. T., & Feijoo, G. (2005). Environmental analysis of beer production. International journal of agricultural resources, governance and ecology, 4(2), 152-162.

Humbert, S., Loerincik, Y., Rossi, V., Margni, M., & Jolliet, O. (2009). Life cycle assessment of spray dried soluble coffee and comparison with alternatives (drip filter and capsule espresso). Journal of Cleaner Production, 17(15), 1351-1358.

Jackson, C. J., Dini, J. P., Lavandier, C., Rupasinghe, H. P. V., Faulkner, H., Poysa, V., ... & DeGrandis, S. (2002). Effects of processing on the content and composition of isoflavones during manufacturing of soy beverage and tofu. Process Biochemistry, 37(10), 1117-1123.

Jacobsen, R., Vandermeulen, V., Van Huylenbroeck, G., & Gellynck, X. (2014). Carbon footprint of pigmeat in Flanders. International Journal of Agricultural Sustainability, 12(1), 54-70.

Kasmaprapruet, S., Paengjuntuek, W., Saikhwan, P., & Phungrassami, H. (2009). Life cycle assessment of milled rice production: case study in Thailand. European Journal of Scientific Research, 30 (2) p. 195-203

Khatiwada, D., & Silveira, S. (2009). Net energy balance of molasses based ethanol: The case of Nepal. Renewable and sustainable energy reviews, 13(9), 2515-2524.

Kilian, B., Hettinga, J., Jiménez, G. A., Molina, S., & White, A. (2012). Case study on Dole's carbon-neutral fruits. Journal of Business Research, 65(12), 1800-1810.

Killian, B., Rivera, L., Soto, M., & Navichoc, D. (2013). Carbon footprint across the coffee supply chain: the case of Costa Rican coffee. Journal of Agricultural Science and Technology. B, 3(3B), 151.

Kingston, C., Fry, J. M., & Aumonier, S. (2009). Scoping Life Cycle Assessment of Pork Production. Final report prepared for Environmental Resources, AHDB, Kenilworth.

Klenk, I., Landquist, B., & Ruiz de Imaña, O. (2012). The Product Carbon Footprint of EU Beet Sugar: Summary of Key Findings. Sugar Industry Journal, 137, 62.

Koroneos, C., Roumbas, G., Gabari, Z., Papagiannidou, E., & Moussiopoulos, N. (2005). Life cycle assessment of beer production in Greece. Journal of Cleaner Production, 13(4), 433-439.

Krajnc, D., Mele, M., & Glavič, P. (2007). Improving the economic and environmental performances of the beet sugar industry in Slovenia: increasing fuel efficiency and using by-products for ethanol. Journal of Cleaner Production, 15(13), 1240-1252.

Lantmännen. (2010). Environmental Product Declaration - Kimatdeklaration för vegemjöl, Sweden. Available at: <gryphon.environdec.com/data/files/6/9279/CD213SE.pdf>. Accessed 01/01/2017.

Lantmännen. (2012). Environmental Product Declaration - Kimatdeklaration för axa havregryn, Sweden. EPD®, Stockholm.

Lantmännen. (2013a) Lantmännen Klimatdeklaration för havregryn. Environmental product declaration S-P-00147, Sweden. Available at: <http://gryphon.environdec.com/data/files/6/8820/CD147se_2013-12-04.pdf>. Accessed 01/01/2017.

Lantmännen. (2013b). Environmental Product Declaration - Kimatdeklaration för kärnvetemjöl, Sweden. EPD®, Stockholm.

Ledgard, S.F., Lieffering, M., McDevitt, J., Boyes, M. & Kemp, R. (2010). A Greenhouse Gas Footprint Study for Exported New Zealand Lamb. AgResearch, Hamilton.

Li, Y., Griffing, E., Higgins, M., & Overcash, M. (2006). Life cycle assessment of soybean oil production. Journal of food process engineering, 29(4), 429-445.

Lim, J. S., Abdul Manan, Z., Hashim, H., & Wan Alwi, S. R. (2013). Towards an integrated, resource-efficient rice mill complex. Resources, Conservation and Recycling, 75, 41-51.

Luo, L., van der Voet, E., Huppes, G., & De Haes, H. A. U. (2009). Allocation issues in LCA methodology: a case study of corn stover-based fuel ethanol. The International Journal of Life Cycle Assessment, 14(6), 529-539.

MacLeod, M., Gerber, P., Mottet, A., Tempio, G., Falcucci, A., Opio, C., Vellinga, T., Henderson, B. & Steinfeld, H. (2013). Greenhouse gas emissions from pig and chicken supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Manfredi, M., & Vignali, G. (2015). Comparative Life Cycle Assessment of hot filling and aseptic packaging systems used for beverages. Journal of Food Engineering, 147, 39-48.

Maravić, N., Kiss, F., Šereš, L., Bogdanović, B., Bogdanović, B., & Šereš, Z. (2015). Economic analysis and LCA of an advanced industrial-scale raw sugar juice purification procedure. Food and Bioproducts Processing, 95, 19-26.

Meisterling, K., Samaras, C., & Schweizer, V. (2009). Decisions to reduce greenhouse gases from agriculture and product transport: LCA case study of organic and conventional wheat. Journal of Cleaner Production, 17(2), 222-230.

Min, S., Yu, Y., & Martin, S. S. (2005). Effect of soybean varieties and growing locations on the physical and chemical properties of soymilk and tofu. Journal of food science, 70(1).

Mortimer, N. D., Cormack, P., Elsayed, M. A., Horne, R. E. (2003) Evaluation of the comparative energy, global warming and socio-economic costs and benefits of biodiesel. Report to the Department for Environment, Food and Rural Affairs Contract Reference No. CSA 5982 (2003).

Mortimer, N. D., Elsayed, M. A., & Horne, R. E. (2004). Energy and greenhouse gas emissions for bioethanol production from wheat grain and sugar beet. Resources Research Unit School Of Environment And Development, Sheffield Hallam University, Sheffield.

Muñoz, E., Riquelme, C., Cardenas, J.P. (2012). Carbon Footprint of Beer - Analysis of a Small Scale Processing Plant in Chile. Proceedings 2nd LCA Conference, 6-7 November 2012, Lille.

Muñoz, I., Flury, K., Jungbluth, N., Rigarlsford, G., Milà i Canals, L., & King, H. (2014). Life cycle assessment of bio-based ethanol produced from different agricultural feedstocks. The International Journal of Life Cycle Assessment, 19(1), 109-119.

Nemecek, T., Alig., M., Schmid, A., Vaihinger, M., Schnebli, K. (2011b).Variability of the global warming potential and energy demand of Swiss cheese. SETAC Case Study Symposium 28th February, Budapest.

Niederl, A., & Narodoslawsky, M. (2004). Life cycle assessment–study of biodiesel from tallow and used vegetable oil. Institute for Resource Efficient and Sustainable Systems. Graz.

Nielsen, A.M., Nielsen, P.H. (2003). LCA Food Database. 2.-O LCA consultants, Aalborg.

Noya, I., Aldea, X., Gasol, C. M., González-García, S., Amores, M. J., Colón, J., ... & Moreira, M. T. (2016). Carbon and water footprint of pork supply chain in Catalonia: From feed to final products. Journal of environmental management, 171, 133-143.

Nutter, D. W., Kim, D. S., Ulrich, R., & Thoma, G. (2013). Greenhouse gas emission analysis for USA fluid milk processing plants: processing, packaging, and distribution. International Dairy Journal, 31, S57-S64.

Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., Vellinga, T., Henderson, B. & Steinfeld, H. (2013). Greenhouse gas emissions from ruminant supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Özilgen, M., & Sorgüven, E. (2011). Energy and exergy utilization, and carbon dioxide emission in vegetable oil production. Energy, 36(10), 5954-5967.

Pelletier, N. (2006). Life cycle measures of biophysical sustainability in feed production for conventional and organic salmon aquaculture in the Northeast Pacific. Dalhousie University, Halifax.

Peters, G. M., Rowley, H. V., Wiedemann, S., Tucker, R., Short, M. D., & Schulz, M. (2010a). Red meat production in Australia: life cycle assessment and comparison with overseas studies. Environmental science & technology, 44(4), 1327-1332.

Peters, G. M., Wiedemann, S. G., Rowley, H. V., & Tucker, R. W. (2010b). Accounting for water use in Australian red meat production. The International Journal of Life Cycle Assessment, 15(3), 311-320.

Ramirez, A.D. (2012). The life cycle greenhouse gas emissions of rendered products. PhD Thesis. Harper Adams University College, Newport.

Reckmann, K., Traulsen, I., & Krieter, J. (2013). Life Cycle Assessment of pork production: A data inventory for the case of Germany. Livestock Science, 157(2), 586-596.

Salunkhe, D. K., & Deshpande, S. S. (2012). Foods of plant origin: production, technology, and human nutrition. Springer Science & Business Media, Berlin/Heidelberg.

Schneider, L., Finkbeiner, P.M. (2013). Life Cycle Assessment of EU Oilseed Crushing and Vegetable Oil Refining - Commissioned by FEDIOL. Available at: <http://www.fediol.eu/data/Full%20FEDIOL%20LCA%20report_05062013_CR%20statement.pdf>. Accessed: 01/01/2017.

Seabra, J. E., Macedo, I. C., Chum, H. L., Faroni, C. E., & Sarto, C. A. (2011). Life cycle assessment of Brazilian sugarcane products: GHG emissions and energy use. Biofuels, Bioproducts and Biorefining, 5(5), 519-532.

Sheane, R., Lewis, K., Hall, P., Holmes-Ling, P., Kerr, A., Stewart, K., Webb, D. (2011). Identifying opportunities to reduce the carbon footprint associated with the Scottish dairy supply chain – Main report. Scottish Government, Edinburgh.

Shi, C. W. P., Rugrungruang, F., Yeo, Z., & Song, B. (2011). Carbon footprint analysis for energy improvement in flour milling production. In Glocalized Solutions for Sustainability in Manufacturing (p. 246-251). Springer, Berlin/Heidelberg.

Sipperly, E., Edinger, K., Ziegler, N., & Roberts, E. (2014). Comparative Cradle to Gate Life Cycle Assessment of 100% Barley-based Singha Lager Beer in Thailand. King Mongkut's University of Technology, Thonburi.

Sonesson, U., Wallman, M., Nilsson, K. (2013). Life Cycle Inventories of three Norwegian post-farm food supply chains – dairy, meat and bread. SIK Report SR859. Swedish Institute for Food and Biotechnology, Gothenburg.

Stanojevic, S. P., Barac, M. B., Pesic, M. B., & Vucelic-Radovic, B. V. (2011). Assessment of soy genotype and processing method on quality of soybean tofu. Journal of agricultural and food chemistry, 59(13), 7368-7376.

Svanes, E., & Aronsson, A. K. (2013). Carbon footprint of a Cavendish banana supply chain. The International Journal of Life Cycle Assessment, 18(8), 1450-1464.

Svanes, E., Vold, M., & Hanssen, O. J. (2011). Effect of different allocation methods on LCA results of products from wild-caught fish and on the use of such results. The International Journal of Life Cycle Assessment, 16(6), 512-521.

Tan, A., Nutter, D.W., Milani, F. (2011). GHG emissions and energy use from a multiproduct dairy processing plant, (2011). In: ASME Early Career Technical Conference (ECTC). American Society of Mechanical Engineers, Fayetteville.

Tchibo GMBH. (2008). Case Study Tchibo Privat Kaffee Rarity Machare by Tchibo GmbH: Documentation. Case Study undertaken within the PCF Pilot Project Germany. Available at: <www.pcf-projekt.de/files/1232962944/pcf_tchibo_coffee.pdf>. Accessed: 01/01/2017.

Thévenot, A., Aubin, J., Tillard, E., & Vayssières, J. (2013). Accounting for farm diversity in Life Cycle Assessment studies–the case of poultry production in a tropical island. Journal of Cleaner Production, 57, 280-292.

Thoma, G., Popp, J., Shonnard, D., Nutter, D., Matlock, M., Ulrich, R., ... & Adom, F. (2013b). Regional analysis of greenhouse gas emissions from USA dairy farms: A cradle to farm-gate assessment of the American dairy industry circa (2008). International Dairy Journal, 31, S29-S40.

Thomae, D. (2013). Klimarelevanz von Prozessketten zur Bereitstellung von Trinkmilch: von der Landwirtschaft bis zum Handel. PhD Thesis. Justus-Liebig-Universität Gießen, Giessen.

Trommer, M. (2014) Avaliacao do Proceesso Produtivo Da Cerveja Com Abordagem de Ciclo de Vida. Santa Barbara D'Oeste, São Paulo.

Tsarouhas, P., Achillas, C., Aidonis, D., Folinas, D., & Maslis, V. (2015). Life Cycle Assessment of olive oil production in Greece. Journal of Cleaner Production, 93, 75-83.

van Middelaar, C. E., Dijkstra, J., Berentsen, P. B. M., & De Boer, I. J. M. (2014). Cost-effectiveness of feeding strategies to reduce greenhouse gas emissions from dairy farming. Journal of dairy science, 97(4), 2427-2439.

van Zutphen, J. M., Wijbrans, R. A., & Ng, F. Y. (2011). LCI comparisons of five vegetable oils as feedstock for biodiesel. Journal of Oil Palm, Environment and Health (JOPEH), 2, 25-37.

Varun, & Chauhan, M. K. (2014). Carbon Footprint and Energy Estimation of the Sugar Industry: An Indian Case Study. In Assessment of Carbon Footprint in Different Industrial Sectors, Volume 2 (p. 53-79). Springer Singapore, Singapore.

Vergé, X. P. C., Maxime, D., Dyer, J. A., Desjardins, R. L., Arcand, Y., & Vanderzaag, A. (2013). Carbon footprint of Canadian dairy products: Calculations and issues. Journal of dairy science, 96(9), 6091-6104.

Vergé, X., Maxime, D., Desjardins, R. L., & VanderZaag, A. C. (2016). Allocation factors and issues in agricultural carbon footprint: a case study of the Canadian pork industry. Journal of Cleaner Production, 113, 587-595.

Vidal, R., Martínez, P., & Garraín, D. (2009). Life cycle assessment of composite materials made of recycled thermoplastics combined with rice husks and cotton linters. The international journal of life cycle assessment, 14(1), 73-82.

Volpe, R., Messineo, S., Volpe, M., & Messineo, A. (2015). Carbon Footprint of Tree Nuts Based Consumer Products. Sustainability, 7(11), 14917-14934.

Wallman, M., & Sonesson, U. (2010). Livscykelanalys (LCA) av svensk kalkonproduktion. Swedish institute for food and biotechnology, Gothenburg.

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., & Weidema, B. (2016). The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, 21(9), 1218-1230.

Wiedemann, S., Yan, M. (2014). Livestock meat processing: inventory data and methods for handling co-production for major livestock species and meat products. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Williams, A.G., Mekonen, S. (2014). Environmental performance of traditional beer production in a micro-brewery. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, p. 1535-1540. American Center for Life Cycle Assessment, Vashon.

Yodkhuma, S., & Sampattagul, S. (2014). Life Cycle Greenhouse Gas Evaluation of Rice Production in Thailand. In: Proceedings from ENRIC2014, The 1st Environment and Natural Resources International Conference (2014), Bangkok.

Yossapol, C., Nadsataporn, H. (2008). Life cycle assessment of rice production in Thailand. In: Proceedings from LCA Food 2008, 12-14 November 2008, Zurich.

Packaging

Allione, C., De Giorgi, C., Lerma, B., & Petrucelli, L. (2011). Sustainable food packaging: a case study of chocolate products. Proceedings of LCM (2011).

Assomela. (2012). Environmental Product Declaration - Dichiarazione Ambientale di Prodotto Mele Italiane. EPD®, Stockholm.

Büsser, S., & Jungbluth, N. (2009a). LCA of Chocolate Packed in Aluminium Foil Based Packaging. ESU-services, Uster.

Büsser, S., & Jungbluth, N. (2009b). The role of flexible packaging in the life cycle of coffee and butter. The International Journal of Life Cycle Assessment, 14(1), 80-91.

Djekic, I., Miocinovic, J., Tomasevic, I., Smigic, N., & Tomic, N. (2014). Environmental life-cycle assessment of various dairy products. Journal of Cleaner Production, 68, 64-72.

FostPlus. (2015) ECO-DESIGN of packaging: The toolbox of packaging professionals. Available at: <http://www.pack4ecodesign.org>. Accessed 01/01/2015.

Girgenti, V., Peano, C., Bounous, M., Baudino, C. (2013). A life cycle assessment of non-renewable energy use and greenhouse gas emissions associated with blueberry and raspberry production in northern Italy. Science of The Total Environment, 458-460, 414-418.

Granarolo. (2013a). Environmental Product Declaration of Fresh Organic Eggs. Available at: <http://environdec.com/en/Detail/epd127>. Accessed 01/01/2017.

Kang, D., Sgriccia, N., Selke, S., & Auras, R. (2013). Comparison of bacon packaging on a life cycle basis: a case study. Journal of Cleaner Production, 54, 142-149.

Koskela, S., Dahlbo, H., Judl, J., Korhonen, M. R., & Niininen, M. (2014). Reusable plastic crate or recyclable cardboard box? A comparison of two delivery systems. Journal of Cleaner Production, 69, 83-90.

Labouze, E., Schultze, A., & Trarieux, M. (2008). Analyses de Cycle de Vie de produits vendus à la coupe, pré-emballé et en libre-service Etude de cas: jambon. Bio Intelligence Service pour Eco-Emballages, Paris.

Levi, M., Cortesi, S., Vezzoli, C., & Salvia, G. (2011). A comparative life cycle assessment of disposable and reusable packaging for the distribution of Italian fruit and vegetables. Packaging Technology and Science, 24(7), 387-400.

Madival, S., Auras, R., Singh, S. P., & Narayan, R. (2009). Assessment of the environmental profile of PLA, PET and PS clamshell containers using LCA methodology. Journal of Cleaner Production, 17(13), 1183-1194.

Meneses, M., Pasqualino, J., & Castells, F. (2012). Environmental assessment of the milk life cycle: The effect of packaging selection and the variability of milk production data. Journal of environmental management, 107, 76-83.

Monini S.p.A. (2014) Dichiarazione Ambientale di Prodotto (EPD®) di Olio Extra Vergine di Oliva "Delicato" S-P-00386. Available at: <http://www.monini.com/sites/default/files/image/Festa/News/02_EPD_Monini_Delicato.pdf>. Accessed 01/01/2017.

Mourad, A. L., Garcia, E. E., Vilela, G. B., & von Zuben, F. (2008). Environmental effects from a recycling rate increase of cardboard of aseptic packaging system for milk using life cycle approach. The International Journal of Life Cycle Assessment, 13(2), 140-146.

Pardo, G., & Zufía, J. (2012). Life cycle assessment of food-preservation technologies. Journal of Cleaner Production, 28, 198-207.

Pasqualino, J., Meneses, M., & Castells, F. (2011). The carbon footprint and energy consumption of beverage packaging selection and disposal. Journal of food Engineering, 103(4), 357-365.

Pattara, C., Raggi, A., & Cichelli, A. (2012). Life cycle assessment and carbon footprint in the wine supply-chain. Environmental management, 49(6), 1247-1258.

Peano, C., Baudino, C., Tecco, N., & Girgenti, V. (2015). Green marketing tools for fruit growers associated groups: application of the Life Cycle Assessment (LCA) for strawberries and berry fruits ecobranding in northern Italy. Journal of Cleaner Production, 104, 59-67.

Poovarodom, N., Ponnak, C., & Manatphrom, N. (2012). Comparative carbon footprint of packaging systems for tuna products. Packaging Technology and Science, 25(5), 249-257.

Rinaldi, S., Bonamente, E., Scrucca, F., Merico, M. C., Asdrubali, F., & Cotana, F. (2016). Water and Carbon Footprint of Wine: Methodology Review and Application to a Case Study. Sustainability, 8(7), 621.

Robertson, K., Garnham, M., & Symes, W. (2014). Life cycle carbon footprint of the packaging and transport of New Zealand kiwifruit. The International Journal of Life Cycle Assessment, 19(10), 1693-1704.

Roy, P., Ijiri, T., Nei, D., Orikasa, T., Okadome, H., Nakamura, N., & Shiina, T. (2009). Life cycle inventory (LCI) of different forms of rice consumed in households in Japan. Journal of Food Engineering, 91(1), 49-55.

Saleh, Y. (2016). Comparative life cycle assessment of beverages packages in Palestine. Journal of Cleaner Production, 131, 28-42.

Silvenius, F., Katajajuuri, J. M., Grönman, K., Soukka, R., Koivupuro, H. K., & Virtanen, Y. (2011). Role of packaging in LCA of food products. In Towards Life Cycle Sustainability Management (p. 359-370). Springer Netherlands, Houten.

Songsangthong, W., Jarupan, L. (2014). Decision support system model for total cost and environmental impact: a case study of rice packaging in Thailand. In Schenck, R., Huizenga, D.

(Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Toniolo, S., Mazzi, A., Niero, M., Manzardo, A., & Scipioni, A. (2013a). The Impacts of Two Milk Packages on Climate Change in the Life Cycle Perspective. Journal of Food Science and Engineering, 3(7), 371.

Toniolo, S., Mazzi, A., Niero, M., Zuliani, F., & Scipioni, A. (2013b). Comparative LCA to evaluate how much recycling is environmentally favourable for food packaging. Resources, Conservation and Recycling, 77, 61-68.

Williams, H., & Wikström, F. (2011). Environmental impact of packaging and food losses in a life cycle perspective: a comparative analysis of five food items. Journal of Cleaner Production, 19(1), 43-48.

Zabaniotou, A., & Kassidi, E. (2003). Life cycle assessment applied to egg packaging made from polystyrene and recycled paper. Journal of Cleaner Production, 11(5), 549-559.

Zampori, L., & Dotelli, G. (2014). Design of a sustainable packaging in the food sector by applying LCA. The International Journal of Life Cycle Assessment, 19(1), 206-217.

Zgola, M., Bengoa, X., Pike, A., Dettling, J., Takata, C. (2012). A comparative life cycle assessment of soup packaging. Prepared for LCAXII, September 2012, Tacoma.

Zhang, H., Hortal, M., Dobon, A., Bermudez, J. M., & Lara-Lledo, M. (2015). The Effect of Active Packaging on Minimizing Food Losses: Life Cycle Assessment (LCA) of Essential Oil Component-enabled Packaging for Fresh Beef. Packaging Technology and Science, 28(9), 761-774.

Retail

Rizet, C., Browne, M., Léonardi, J., Allen, J., Piotrowska, M. (2008). Chaînes logistiques et Consommation d'énergie: Cas des meubles et des fruits & légumes. Contrat INRETS/ADEME N° 05 03 C 0170. INRETS, Bron.

Rizet, C., Keïta, B. (2005). Chaînes logistiques et Consommation d'énergie: cas du Yaourt et du Jean. Contrat INRETS/ADEME n°: 0203034. INRETS, Bron.

Other

AAFC. (2005). Statistics of the Canadian Dairy Industry. Agriculture and Agrifood Canada, Dairy Section, 177p.

ABARES. (2015) Australian crop report, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, Australia.

Abenyega, O., & Gockowski, J. (2001). Labor practices in the cocoa sector of Ghana with a special focus on the role of children. STCP/IITA Monagraph IITA, Ibadan, Nigeria.

ABS. (2012). Agricultural commodities Australia: 2010–11. Australian Bureau of Statistics: Canberra, ACT. Available at <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/7121.02010-11?OpenDocument>. Accessed 01/01/2017.

AGRESTE. (2006). Enquête pratiques culturales. Available at: <http://agreste.agriculture.gouv.fr/publications/chiffres-et-donnees/article/enquete-sur-les-pratiques>. Accessed: 01/01/2017.

AGRESTE. (2010) Les élevages de porcs en France métropolitaine en (2010). Agreste Primeur 300. Agreste, Castanet-Tolosan.

AHDB. (2017). Market Information. Available at: <http://dairy.ahdb.org.uk/market-information/>. Accessed 01/01/2017.

Akagi, S. K., Yokelson, R. J., Wiedinmyer, C., Alvarado, M. J., Reid, J. S., Karl, T., ... & Wennberg, P. O. (2011). Emission factors for open and domestic biomass burning for use in atmospheric models. Atmospheric Chemistry and Physics, 11(9), 4039-4072.

Allen, R. G., Pereira, L. S., Raes, R. & Smith, M. (1998). Crop evapotranspiration - Guidelines for computing crop water requirements. Irrigation and Drainage Paper 56. Food and Agriculture Organization of the United Nations, Rome.

Alongi, D. M., McKinnon, A. D., Brinkman, R., Trott, L. A., & Undu, M. C. (2009). The fate of organic matter derived from small-scale fish cage aquaculture in coastal waters of Sulawesi and Sumatra, Indonesia. Aquaculture, 295(1), 60-75.

AQUASTAT. (2012). Irrigation water requirement and water withdrawal by country. FAO, Rome. Available at: <http://www.fao.org/nr/water/aquastat/water_use_agr/index.stm>. Accessed: 01/01/2017.

AQUASTAT. (2016). Conservation Agriculture Adoption Worldwide. Food and Agriculture Organization of the United Nations (FAO). Available at: http://www.fao.org/nr/water/aquastat/data/query/index.html. Accessed: 01/01/2017.

Araya, Y. N., De Neve, S., & Hofman, G. (2010). Nitrogen mineralization from cabbage crop residue and its uptake efficiency by rye grass. Acta Agriculturae Scandinavica Section B–Soil and Plant Science, 60(1), 33-39.

ASAE. (2005). ASAE D384.2 MAR2005 Manure production and characteristics, American Society of Agricultural Engineers, St. Joseph, USA. Available at: <http://extension.psu.edu/animals/dairy/nutrient-management/certified-dairy/tools/manure-prod-char-d384-2.pdf>. Accessed 01/01/2017.

Askegaard, M., Olesen, J. E., Rasmussen, I. A., & Kristensen, K. (2011). Nitrate leaching from organic arable crop rotations is mostly determined by autumn field management. Agriculture, Ecosystems & Environment, 142(3), 149-160.

Barah, B. C., & Narendranath. (2011). Status of SRI in India: Up-scaling Strategy and Global Experience-Sharing. Indian Agricultural Research Institute, New Delhi.

Bare, J. (2011). TRACI 2.0: the tool for the reduction and assessment of chemical and other environmental impacts 2.0. Clean Technologies and Environmental Policy, 13(5), 687-696.

Bastviken, D., Cole, J. J., Pace, M. L., & Van de Bogert, M. C. (2008). Fates of methane from different lake habitats: Connecting whole-lake budgets and CH4 emissions. Journal of Geophysical Research: Biogeosciences, 113(G2).

Bastviken, D., Tranvik, L. J., Downing, J. A., Crill, P. M., Enrich-Prast, A. (2011). Freshwater Methane Emissions Offset the Continental Carbon Sink. Science, 331, 50.

Bebe, B. O., Udo, H. M. J., & Thorpe, W. (2002). Development of smallholder dairy systems in the Kenya highlands. Outlook on Agriculture, 31(2), 113-120.

Becoña, G., Astigarraga, L., & Picasso, V. D. (2014). Greenhouse Gas Emissions of Beef Cow-Calf Grazing Systems in Uruguay. Sustainable Agriculture Research, 3(2), 89-105.

Benites, J., Pisante, M., & Stagnari, F. (2005). Integrated soil and water management for orchard development, role and importance. Food and Agriculture Organization of the United Nations (FAO), Rome.

Blonk Consultants. (2014). The Direct Land Use Change Assessment Tool. Available at: <http://blonkconsultants.nl/en/tools/land-use-change-tool.html>. Accessed: 01/12/2014.

Bouwman, A. F., Lee, D. S., Asman, W. A. H., Dentener, F. J., Van Der Hoek, K. W., & Olivier, J. G. J. (1997). A global high-resolution emission inventory for ammonia. Global biogeochemical cycles, 11(4), 561-587.

Brander, M., Sood, A., Wylie, C., Haughton, A., & Lovell, J. (2011). Technical Paper| Electricity-specific emission factors for grid electricity. Ecometrica. Available at: <https://ecometrica.com/assets/Electricity-specific-emission-factors-for-grid-electricity.pdf>. Accessed: 01/01/2017.

Brentrup, F., Küsters, J., Lammel, J., & Kuhlmann, H. (2000). Methods to estimate on-field nitrogen emissions from crop production as an input to LCA studies in the agricultural sector. The international journal of life cycle assessment, 5(6), 349-357.

Burford, M. A., Peterson, E. L., Baiano, J. C. F., & Preston, N. P. (1998). Bacteria in shrimp pond sediments: their role in mineralizing nutrients and some suggested sampling strategies. Aquaculture research, 29(11), 843-849.

Capper, J. L. (2011). The environmental impact of beef production in the United States: 1977 compared with (2007). Journal of animal science, 89(12), 4249-4261.

Casey, J. W., & Holden, N. M. (2006b). Quantification of GHG emissions from sucker-beef production in Ireland. Agricultural Systems, 90(1), 79-98.

Chapagain, A. K., & Hoekstra, A. Y. (2011). The blue, green and grey water footprint of rice from production and consumption perspectives. Ecological Economics, 70(4), 749-758.

China Dairy Yearbook. (2010). China Dairy Yearbook. Dairy Association of China.

CML. (2015). CML-IA Characterisation Factors, January 2015 Update. Available at: <http://cml.leiden.edu/software/data-cmlia.html>. Accessed 01/01/2017.

CONAB. (2015). Agricultura e abastecimento em boa companhia. Available at: <http://www.conab.gov.br/>. Accessed 01/01/2017.

Corley, R. H. V., & Tinker, P. B. H. (2008). The oil palm. John Wiley & Sons, Oxford.

Dämmgen, U. (2009). Calculations of emission from German agriculture-National Emission Inventory Report (NIR) 2009 for 2007. Johann Heinrich von Thünen-Institut Federal Research Institute for Rural Areas, Forestry and Fisheries, Brunswick.

Dämmgen, U., Haenel, H. D., Rösemann, C., Hutchings, N. J., Brade, W., & Meyer, U. (2013). Estimate of methane, volatile solids and nitrogen excretion rates of German suckler cows. Landbauforschung Volkenrode, 63(4), 285-301.

de Alvarenga, R. A. F., da Silva Júnior, V. P., & Soares, S. R. (2012). Comparison of the ecological footprint and a life cycle impact assessment method for a case study on Brazilian broiler feed production. Journal of Cleaner Production, 28, 25-32.

DEFRA. (2012). Farming Statistics Final Crop Areas, Yields, Livestock Populations and Agricultural Workforce at 1 June 2012, United Kingdom. Available at: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183200/defra-stats-foodfarm-landuselivestock-farmingstats-june-statsrelease-june12finaluk-121220.pdf>. Accessed 01/01/2017.

Derpsch, R., Friedrich, T., Kassam, A., & Li, H. (2010). Current status of adoption of no-till farming in the world and some of its main benefits. International Journal of Agricultural and Biological Engineering, 3(1), 1-25.

Detweiler, A. M., Bebout, B. M., Frisbee, A. E., Kelley, C. A., Chanton, J. P., & Prufert-Bebout, L. E. (2014). Characterization of methane flux from photosynthetic oxidation ponds in a wastewater treatment plant. Water Science and Technology, 70(6), 980-989.

Dijkstra, J., Oenema, O., Van Groenigen, J. W., Spek, J. W., Van Vuuren, A. M., & Bannink, A. (2013). Diet effects on urine composition of cattle and N 2 O emissions. Animal, 7(s2), 292-302.

Drackley, J. K., Clark, A. K., Sahlu, T., & Schingoethe, D. J. (1985). Evaluation of sunflower crop residue in rations for growing Holstein heifers. Journal of Dairy Science, 68(9), 2390-2395.

EC-JRC/PBL. (2011). EDGAR v4.2. Available at: <http://edgar.jrc.ec.europa.eu/>. Accessed: 01/01/2017.

Ecoinvent. (2013). Background data for transport. Available at: <http://www.ecoinvent.org/files/transport_default_20130722.xlsx>. Accessed 01/01/2017.

EEA. (2013) EMEP/EEA air pollutant emission inventory guidebook 2013: Technical guidance to prepare national emission inventories. EEA Tech. Rep. 23

EEA. (2016) EMEP/EEA air pollutant emission inventory guidebook 2016: Technical guidance to prepare national emission inventories. Update Nov. 2016

Eldin, A., Helaly, A., Obiadalla-Ali, H. A., & Glala, A. A. A. (2011). Yield and quality of celeriac (Apium graveolens var. rapaceum M.) as affect by harvesting dates and cultivars. J. Hortic. Sci. Ornam. Plants, 3(2), 137-142.

EPA. (US Environmental Protection Agency) (2014) Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-(2014). Annex 3: Methodological Descriptions for Additional Source or Sink Categories. US Environmental Protection Agency, Washington, DC.

Esengun, K., Erdal, G., Gündüz, O., & Erdal, H. (2007). An economic analysis and energy use in stake-tomato production in Tokat province of Turkey. Renewable Energy, 32(11), 1873-1881.

EUROSTAT. (2017). EU statistics on crops products: areas and productions. Available at: <http://ec.europa.eu/eurostat/web/agriculture/data/database>. Accessed 01/01/2017.

Faist Emmenegger, M., Reinhard, J., & Zah, R. (2009) SQCB-sustainability quick check for biofuels. Second draft, 18th February 2009-intermediate background report. Agroscope, Zurich.

Fallon, R. D., Harrits, S., Hanson, R. S., & Brock, T. D. (1980). The role of methane in internal carbon cycling in Lake Mendota during summer stratification. Limnology and Oceanography, 25(2), 357-360.

FAO. (1989). Yield and nutritional value of the commercially more important fish species. Torry Research Station, Aberdeen, Scotland, UK.

FAOSTAT. (2017). FAOSTAT Database. Accessed: Available at: <http://faostat.fao.org>. Accessed 01/01/2017.

Feedipedia. (INRA CIRAD AFZ and FAO). (2015). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. Available at: http://www.feedipedia.org/. Accessed 31/12/2015.

Feliciano, M., Maia, F., & Gonçalves, A. (2014). An Analysis of Eco-efficiency and GHG Emission of Olive Oil Production in Northeast of Portugal. International Journal of Biological, Veterinary, Agricultural and Food Engineering, 8(4), 347-352.

FiBL and IFOAM. (2014). Share of organic agriculture - world: selected crops by country 2004 - 2013 [in] Willer, H., Lernoud, J. & Eds. (2014). The World of Organic Agriculture. Statistics and Emerging Trends (2014).

FIGIS. (2017). Fisheries Global Information System (FIGIS). Available at: <http://www.fao.org/fishery/figis/en>. Accessed 01/01/2017.

Figueiredo, F., Marques, P., Castanheira, É. G., Kulay, L., & Freire, F. (2014). Greenhouse gas assessment of olive oil in Portugal addressing the valorization of olive mill waste. Proceedings from SYMBIOSIS 2014 (19th - 21st June 2014).

Frei, M., & Becker, K. (2005). Integrated rice–fish production and methane emission under greenhouse conditions. Agriculture, ecosystems & environment, 107(1), 51-56.

Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. (2013). Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome.

Goedkoop, M., Demmers, M., & Collignon, M. (1995). The Eco-indicator 95: Manual for designers. PRé Consultants, Amersfoort.

Goedkoop, M., Heijungs, R., Huijbregts, M., De Schryver, A., Struijs, J., van Zelm, Z. (2009). ReCiPe 2008, A life cycle impact assessment method which comprises harmonised category indicators at the midpoint and the endpoint level, Report I: Characterisation. Ministerie van VROM, The Hague.

Grant, T., Cruypenninck, H., Eady, S., & Mata, G. (2014). AusAgLCI methodology for developing Life Cycle Inventory. RIRDC Publication No. 14/046. Rural Industries Research and Development Corporation, Barton.

Gross, A., Boyd, C. E., & Wood, C. W. (2000). Nitrogen transformations and balance in channel catfish ponds. Aquacultural Engineering, 24(1), 1-14.

Gustavsson, J., Cederberg, C., Sonesson, U., & Emanuelsson, A. (2013). The methodology of the FAO study:"Global Food Losses and Food Waste–extent, causes and prevention"–FAO, 2011. Swedish Institute for Food and Biotechnology, Gothenburg.

Hall, O. J. (1990). Chemical flux and mass balances in a marine fish cage farm. I. Carbon. Marine Ecology Progress Series, 61, 61-73.

Halvorson, A. D., & Reule, C. A. (2006). Irrigated corn and soybean response to nitrogen under no-till in northern Colorado. Agronomy journal, 98(5), 1367-1374.

Hauschild, M., & Potting, J. (2005). Spatial differentiation in Life Cycle impact assessment - The EDIP2003 methodology. Danish Ministry of the Environment, Copenhagen.

Heinrichs, J., Jones, C., & Bailey, K. (2005). Milk Components: Understanding the Causes and Importance of Milk Fat and Protein Variation in Your Dairy Herd. Penn State University, Pennsylvania.

Henriksson, P. J. G., Zhang, W., Nahid, S. A. A., Newton, R., Phan, L. T., Dao, H. M. , Zhang, Z., Jaithiang, J., Andong, R., Chaimanuskul, K., Vo, N. S., Hua, H. V., Haque, M. M., Das, R., Kruijssen, F., Satapornvanit, K., Nguyen, P. T., Liu, Q., Liu, L., Wahab, M. A., Murray, F. J., Little, D. C. & Guinée, J. B. (2014b). Primary data and literature sources adopted in the SEAT LCA studies. SEAT Deliverable Ref: D 3.5. University of Stirling, Stirling.

Hiederer, R., Ramos, F., Capitani, C., Koeble, R., Blujdea, V., Gomez, O., ... & Marelli, L. (2010). Biofuels: a new methodology to estimate GHG emissions from global land use change. Office for Official Publications of the European Communities, Luxembourg.

Holmer, M., Wildish, D., & Hargrave, B. (2005). Organic enrichment from marine finfish aquaculture and effects on sediment biogeochemical processes. In Environmental effects of marine finfish aquaculture (p. 181-206). Springer, Berlin/Heidelberg.

Humbert, S., De Schryver, A., Bengoa, X., Margni, M., & Jolliet, O. (2012). IMPACT 2002+: User Guide Draft for version Q 2.21 (version adapted by Quantis). Quantis, Lausanne.

IBGE. (2010). Pesquisa da pecuária municipal. Available through <http://web.archive.org/> at: <www.ibge.gov.br/home/estatistica/economia/ppm/2010/tabelas_pdf/tab06.pdf>. Accessed 12/09/(2016).

IIASA/FAO. (2012). Global Agro-ecological Zones (GAEZ v3.0). IIASA, Laxenburg, Austria and FAO, Rome.

INSEE. (2015). Publications et statistiques pour la France ou les régions. Available at: <https://www.insee.fr/fr/statistiques>. Accessed: 01/01/2017.

IPCC. (2006). 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). IGES, Japan.

IPCC. (2013). Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Stocker, T.F., Qin, D., Plattner, G., Tignor, M., Allen, S. K., Boschung, J., Nauels, A., Xia, Y., Bex, V., Midgley, P. M. (eds). Cambridge University Press, Cambridge.

IPCC. (2014) 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands. Hiraishi, T., Krug, T., Tanabe, K., Srivastava, N., Baasansuren, J., Fukuda, M. and Troxler, T.G. (eds). IPCC, Switzerland.

Istat. (2016) Wine Production by Region, (2015). Available at: <http://www.istat.it/en/products/databases>. Accessed 01/01/2017.

JEMA. (Japan Environmental Management Association for Industry) (2010). Life cycle assessment society of Japan Characterization Factors, Tokyo.

Jenkins, K.H. (2010). Feed value of alternative crops for beef cattle. UNL Extension Publication. University of Nebraska, Lincoln.

Jiménez-Montealegre, R., Verdegem, M. C., Van Dam, A. A., & Verreth, J. A. (2005). Effect of organic nitrogen and carbon mineralization on sediment organic matter accumulation in fish ponds. Aquaculture Research, 36(10), 1001-1014.

Knudsen, M.T. (2011). Life Cycle assessment (LCA) of organic food. SOAR-ProGrOV cource 4th-9th September (2011). 16 p.

Köble, R. (2014). The Global Nitrous Oxide Calculator (GNOC) Online Tool Manual v. 1.2.4. European Commission JRC Technical Reports.

Koch, P., Salou, T. (2013) AGRIBALYSE®: METHODOLOGY Version 1.1. ADEME, Angers.

Koga, N., Tsuruta, H., Tsuji, H., & Nakano, H. (2003). Fuel consumption-derived CO 2 emissions under conventional and reduced tillage cropping systems in northern Japan. Agriculture, ecosystems & environment, 99(1), 213-219.

Kolay, A. K. (2007). Manures and fertilizers. Atlantic Publishers & Dist. New Delhi.

Konishi, T. (2011). Climate Change on the Vietnam, Mekong Delta: Expected impacts and adaptations. In: Proceedings from Climate Change and Adaptation in Agriculture - East Asia and the Pacific Region: Issues & Options, Rome.

Kool, A., Marinussen, M., & Blonk, H. (2012). LCI data for the calculation tool Feedprint for greenhouse gas emissions of feed production and utilization. GHG Emissions of N, P and K fertilizer production. Blonk Consultants, Gouda.

Kowata, H., Moriyama, H., Hayashi, K., & Kato, H. (2008). Comparison of air emissions for the construction of various greenhouses. Life Cycle Assessment in the Agri-Food Sector. In. Nemecek, T. & Gaillard, G. (eds.) Proceedings of the 6th International Conference on LCA in the Agri-Food Sector – Towards a sustainable management of the Food chain. November 12–14, 2008, Zurich, Switzerland, Agroscope Reckenholz-Tänikon Research Station ART, June 2009, p. 49-57.

Kuivilal, K. M., Murray, J. W., Devol, A. H., Lidstrom, M. E., & Reimers, C. E. (1988). Methane cycling in the sediments of Lake Washington. Limnology and Oceanography, 33(4), 571-581.

Lal, R. (2004). Carbon emission from farm operations. Environment international, 30(7), 981-990.

LePorc.com. (2015) LES DÉMARCHES QUALITÉ. Available at: <http://www.leporc.com/qualite/certifications.html>. Accessed 01/01/2017.

Lindfors, L-G., Christiansen, K., Hoffman, L., Virtanen, Y., Juntilla, V., Hanssen, O-J., (1995). Nordic guidelines on life-cycle assessment. Nordic Council of Ministers, Copenhagen.

Liu, J., You, L., Amini, M., Obersteiner, M., Herrero, M., Zehnder, A. J., & Yang, H. (2010). A high-resolution assessment on global nitrogen flows in cropland. Proceedings of the National Academy of Sciences, 107(17), 8035-8040.

Lund Produce. (2015) N-P-K Value of Everything. Available at <http://www.lundproduce.com/N-P-K-Value-of-Everything.html>. Accessed 01/01/2017.

Mashoko, L., Mbohwa, C., & Thomas, V. M. (2013). Life cycle inventory of electricity cogeneration from bagasse in the South African sugar industry. Journal of Cleaner Production, 39, 42-49.

Mekonnen, M.M., Hoekstra, A.Y. (2010). The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products. Value of Water Research Report Series No. 48, UNESCO-IHE, Delft.

Michalopoulos, G., Christodoulopoulou, L., Giakoumaki, G., Manolaraki, C., Malliaraki, S., Aggelaki, K., Zontanou, E. (2011). Life Cycle Assessment of Extra Virgin Olive Oil produced by three groups of farmers in south Greece. RodaxAgro, Metamorfosi.

Ministry of Statistics & Programme Implementation India. (2015) Statistical Year Book, India (2015). Available at: <http://www.mospi.gov.in/statistical-year-book-india/2015>. Accessed 01/01/2017.

Modernel, P., Astigarraga, L., & Picasso, V. (2013). Global versus local environmental impacts of grazing and confined beef production systems. Environmental Research Letters, 8(3), 035052.

Mousavi-Avval, S. H., Rafiee, S., Jafari, A., & Mohammadi, A. (2011b). Energy flow modeling and sensitivity analysis of inputs for canola production in Iran. Journal of Cleaner Production, 19(13), 1464-1470.

Mueller, N. D., Gerber, J. S., Johnston, M., Ray, D. K., Ramankutty, N., & Foley, J. A. (2012). Closing yield gaps through nutrient and water management. Nature, 490(7419), 254-257.

Munro, L. I. (2014). Development and application of dynamic models for environmental management of aquaculture in South East Asia. PhD Thesis, University of Stirling, Stirling.

Murthy, G.S. (2014). Final Report: Developing Life Cycle Inventory Data for Science-Based Strawberry Production Sustainability Metrics. Oregon State University, Corvallis.

National Bureau of Statistics China. (2014). China Statistical Yearbook - 2014. Available at: <http://www.stats.gov.cn/tjsj/ndsj/2014/indexeh.htm>. Accessed 01/01/2017.

Nijdam, D., Rood, T., Westhoek, H. (2012). The price of protein: Review of land use and carbon footprints from life cycle assessments of animal food products and their substitutes. Food Policy 37, 760-770.

Omiti, J., Wanyoike, F., Staal, S., Delgado, C., and Njoroge, L. (2006). Will small-scale dairy producers in Kenya disappear due to economies of scale in production? Contributed paper at the International Association of Agricultural Economists Conference, Gold Coast, Australia.

Ostermann, H. (2013). Losses in cassava and maize value chains in Nigeria and their ecological footprint. Presentation. Available at: <https://www.giz.de/fachexpertise/downloads/giz2013-en-reducing-food-losses-improve-food-security.pdf>. Accessed 01/01/2017.

Panichelli, L., Dauriat, A., & Gnansounou, E. (2009). Life cycle assessment of soybean-based biodiesel in Argentina for export. The International Journal of Life Cycle Assessment, 14(2), 144-159.

Papadakis, G., Vageloglou, V., Papadopoulos, A., Mentzis, A., & Georgiou, K. (2005). Life Cycle Assessment (LCA) as a Decision Support Tool (DST) for the ecoproduction of olive oil: Task 4.1 - Life Cycle Impact Assessment (LCIA) Polemarchi Region of Crete. Chania, Crete.

Papatryphon, E., Petit, J., Van Der Werf, H. M., Sadasivam, K. J., & Claver, K. (2005). Nutrient-balance modeling as a tool for environmental management in aquaculture: the case of trout farming in France. Environmental Management, 35(2), 161-174.

Pathak, H., Saharawat, Y. S., Gathala, M., & Ladha, J. K. (2011). Impact of resource-conserving technologies on productivity and greenhouse gas emissions in the rice-wheat system. Greenhouse Gases: Science and Technology, 1(3), 261-277.

Pfister, S., & Bayer, P. (2014). Monthly water stress: spatially and temporally explicit consumptive water footprint of global crop production. Journal of Cleaner Production, 73, 52-62.

Point, E. (2008). Life Cycle Environmental Impacts of Wine Production and Consumption in Nova Scotia, Canada. Master's Thesis. Dalhousie University, Halifax.

Prado, R. D. M., Caione, G., & Campos, C. N. S. (2013). Filter cake and vinasse as fertilizers contributing to conservation agriculture. Applied and Environmental Soil Science, (2013).

Rodrigues, T. O., Caldeira-Pires, A., Luz, S., & Frate, C. A. (2014). GHG balance of crude palm oil for biodiesel production in the northern region of Brazil. Renewable Energy, 62, 516-521.

Roque d'Orbcastel, E. (2008). Optimisation de deux syste`mes de production piscicole: biotransformation des nutriments et gestion des rejets. The` se de doctorat, INP Toulouse, Universite´ Paul Sabatier, Toulouse III, 144 p.

Rudorff, B. (2011). Remote sensing for sustainable sugarcane production. Workshop materials: Agro-environmental impact of biofuels and bioenergy. Available at: <http://iet.jrc.ec.europa.eu/remea/sites/remea/files/files/documents/events/rudorff_remote_sensing.pdf>. Accessed: 01/01/2017.

Scherer, L., & Pfister, S. (2015). Modelling spatially explicit impacts from phosphorus emissions in agriculture. The International Journal of Life Cycle Assessment, 20(6), 785-795.

Schmidt, J. (2007) Life cycle assessment of rapeseed oil and palm oil. PhD Thesis. Department of Development and Planning, Aalborg University, Aalborg.

Schroeder, G. L. (1978). Autotrophic and heterotrophic production of micro-organisms in intensely-manured fish ponds, and related fish yields. Aquaculture, 14(4), 303-325.

Schroeder, G. L. (1987). Carbon and nitrogen budgets in manured fish ponds on Israel's coastal plain. Aquaculture, 62(3), 259-279.

Scott, P., Turner, A., Bibby, S., & Chamings, A. (2005). Structure and dynamics of Australia's commercial poultry and ratite industries. Report prepared for The Department of Agriculture, Fisheries and Forestry by Scolexia Animal and Avian Health Consultancy.

Siebert, S., & Döll, P. (2008). The Global Crop Water Model (GCWM): Documentation and first results for irrigated crops. Frankfurt Hydrology Paper. University of Frankfurt, Frankfurt.

Siebert, S., Burke, J., Faures, J. M., Frenken, K., Hoogeveen, J., Döll, P., & Portmann, F. T. (2010). Groundwater use for irrigation–a global inventory. Hydrology and Earth System Sciences, 14(10), 1863-1880.

Sintermann, J., Neftel, A., Ammann, C., Häni, C., Hensen, A., Loubet, B., & Flechard, C. R. (2012). Are ammonia emissions from field-applied slurry substantially over-estimated in European emission inventories?. Biogeosciences, 9(5), 1611-1632.

Skowroñska, M., & Filipek, T. (2014). Life cycle assessment of fertilizers: a review. International Agrophysics, 28(1), 101-110.

Smith, A., Watkiss, P., Tweddle, G., McKinnon, A., Browne, M., Hunt, A., ... & Cross, S. (2005). The validity of food miles as an indicator of sustainable development-final report. REPORT ED50254.

Statistics Canada. (2016) CANSIM (database). Available at: <http://www.statcan.gc.ca/>. Accessed 01/01/2017.

Statistics Japan. (2016) Japan Statistical Yearbook (2016). Available at: <http://www.stat.go.jp/english/data/nenkan/index.htm>. Accessed 01/01/2017.

Statistische Amter. (2015) Agriculture - Harvested Quantities (2014). Available at: <http://www.statistik-portal.de/Statistik-Portal/en/en_jb11_jahrtab21.asp>. Accessed 01/01/2017.

Stehfest, E., & Bouwman, L. (2006). N2O and NO emission from agricultural fields and soils under natural vegetation: summarizing available measurement data and modeling of global annual emissions. Nutrient Cycling in Agroecosystems, 74(3), 207-228.

Suhr, K. I., Letelier-Gordo, C. O., & Lund, I. (2015). Anaerobic digestion of solid waste in RAS: Effect of reactor type on the biochemical acidogenic potential (BAP) and assessment of the biochemical methane potential (BMP) by a batch assay. Aquacultural Engineering, 65, 65-71.

Thoma, G., Popp, J., Nutter, D., Shonnard, D., Ulrich, R., Matlock, M., ... & Adom, F. (2013a). Greenhouse gas emissions from milk production and consumption in the United States: A cradle-to-grave life cycle assessment circa (2008). International Dairy Journal, 31, S3-S14.

Thomas, S. M., Ledgard, S. F., & Francis, G. S. (2005). Improving estimates of nitrate leaching for quantifying New Zealand’s indirect nitrous oxide emissions. Nutrient Cycling in Agroecosystems, 73(2-3), 213-226.

Torrellas, M., Antón, A., López, J. C., Baeza, E. J., Parra, J. P., Muñoz, P., & Montero, J. I. (2012a). LCA of a tomato crop in a multi-tunnel greenhouse in Almeria. The International Journal of Life Cycle Assessment, 17(7), 863-875.

UNDP. (2014). Human Development Report 2014. UNDP, New York City.

USDA. (2011) Cattle (January 2011). Available at: <http://usda.mannlib.cornell.edu/usda/nass/Catt//2010s/2011/Catt-01-28-2011.pdf>. Accessed 02/11/2016.

USDA. (2012) 2012 Census. Available at: <https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_US_State_Level/>. Accessed 01/01/2017.

USDA. (2015). Global Agricultural Information Network - Argentina Sugar Annual (2015). Available at: <http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Sugar%20Annual_Buenos%20Aires_Argentina_4-15-(2015).pdf>. Accessed 01/01/2017.

USDA/NASS. (2007). Census of Agriculture: Farm and Ranch Irrigation Survey. USDA, Washington DC, USA.

Utomo, B., Prawoto, A.A., Bonnet, S., Bangviwat, A., Gheewala, S.H. (2014). Environmental Performance of Cocoa Production from Monoculture System and Agroforestry System in Indonesia. Presentation Paper for 4th ICGSI & 3rd LCA AGRI-FOOD ASIA on 22-24 May 2014 at Pullman King Power Bangkok Hotel, Bangkok, Thailand.

van der Werf, H. M., Tzilivakis, J., Lewis, K., & Basset-Mens, C. (2007). Environmental impacts of farm scenarios according to five assessment methods. Agriculture, ecosystems & environment, 118(1), 327-338.

van Rikxoort, H., Läderach, P., & van Hal, J. (2013). The Potential of Latin American Coffee Production Systems to Mitigate Climate Change. In Climate Change and Disaster Risk Management (p. 655-679). Springer, Berlin/Heidelberg.

Wang, X., Andresen, K., Handå, A., Jensen, B., Reitan, K. I., & Olsen, Y. (2013). Chemical composition and release rate of waste discharge from an Atlantic salmon farm with an evaluation of IMTA feasibility. Aquaculture environment interactions, 4(2), 147-162.

Webb, J., Sommer, S. G., Kupper, T., Groenestein, K., Hutchings, N. J., Eurich-Menden, B., ... & Amon, B. (2012). Emissions of ammonia, nitrous oxide and methane during the management of solid manures. In Agroecology and Strategies for Climate Change (p. 67-107). Springer, Netherlands.

Webb, J., Williams, A. G., Hope, E., Evans, D., & Moorhouse, E. (2013). Do foods imported into the UK have a greater environmental impact than the same foods produced within the UK? The International Journal of Life Cycle Assessment, 18(7), 1325-1343.

Wenzel, H., Hauschild, M., Ahing, L. (1997). Environmental Assessment of Products. Vol. 1 - Methdology, tools and case studies in product development. First edition. Chapman & Hall, United Kingdom.

West, T. O., & Marland, G. (2002). A synthesis of carbon sequestration, carbon emissions, and net carbon flux in agriculture: comparing tillage practices in the United States. Agriculture, Ecosystems & Environment, 91(1), 217-232.

Wiloso, E. I., Bessou, C., & Heijungs, R. (2015). Methodological issues in comparative life cycle assessment: treatment options for empty fruit bunches in a palm oil system. The International Journal of Life Cycle Assessment, 20(2), 204-216.

Studies Excluded (see Data S1 for justifications)

Avadí, A., Nitschelm, L., Corson, M., & Vertès, F. (2016). Data strategy for environmental assessment of agricultural regions via LCA: case study of a French catchment. The International Journal of Life Cycle Assessment, 21(4), 476-491.

Bacenetti, J., Fusi, A., Negri, M., Guidetti, R., & Fiala, M. (2014). Environmental assessment of two different crop systems in terms of biomethane potential production. Science of the total environment, 466, 1066-1077.

Basset-Mens, C., Vannière, H., Grasselly, D., Heitz, H., Braun, A., Payen, S., ... & Biard, Y. (2016). Environmental impacts of imported and locally grown fruits for the French market: a cradle-to-farm-gate LCA study. Fruits, 71(2), 93-104.

Bennett, R.M., Phipps, R.H. & Strange, A.M. (2006). The use of life cycle assessment to compare the environmental impact of production and feeding of conventional and genetically modified maize for broiler production in Argentina. Journal of Animal and Feed Sciences, 15, 71-82.

Benoit, M., Laignel, G., & Roulenc, M. (2010). Emissions de gaz à effet de serre et consommations d’énergie en élevage ovin viande. Renc. Rech. Ruminants, 17, 351-354.

Berners-Lee, M., Hoolohan, C., Cammack, H., & Hewitt, C. N. (2012). The relative greenhouse gas impacts of realistic dietary choices. Energy Policy, 43, 184-190.

Blonk, H., Kool, A., Luske, B., Ponsioen, T. & Scholten, J. (2010). Methodology for assessing carbon footprints of horticultural products A study of methodological issues and solutions for the development of the Dutch carbon footprint protocol for horticultural product. Blonk Milieu Advies BV, Gouda.

Börjesson, P., Tufvesson, L., & Lantz, M. (2010). Life cycle assessment of biofuels in Sweden. Lund University, Lund.

Browne, N. A., Eckard, R. J., Behrendt, R., & Kingwell, R. S. (2011). A comparative analysis of on-farm greenhouse gas emissions from agricultural enterprises in south eastern Australia. Animal Feed Science and Technology, 166, 641-652.

Buller, L. S., Bergier, I., Ortega, E., Moraes, A., Bayma-Silva, G., & Zanetti, M. R. (2015). Soil improvement and mitigation of greenhouse gas emissions for integrated crop–livestock systems: Case study assessment in the Pantanal savanna highland, Brazil. Agricultural Systems, 137, 206-219.

Butler, G., Cooper, J. M., Leifert, C., Ben Salem, H., & López-Francos, A. (2013). Greenhouse gas emissions from organic and conventional systems of food production, with and without bio-energy options. Feeding and Management Strategies to Improve Livestock Productivity, Welfare and Product Quality under Climate Change, 243-252.

Cappelletti, G. M., Nicoletti, G. M., & Russo, C. (2010). Life Cycle Assessment (LCA) of Spanish-style green table olives. Italian Journal of Food Science, 22(1), 3-14.

Cederberg, C., 2002. Life cycle assessment (LCA) of animal production. Ph.D. Thesis. Department of Applied Environmental Science, Göteborg University, Gothenburg.

Cederberg, C., Sonesson, U., Henriksson, M., Sund, V., & Davis, J. (2009). Greenhouse gas emissions from Swedish production of meat, milk and eggs 1990 and 2005. Swedish Institute for Food and Biotechnology, Gothenburg.

Cellura, M., Longo, S., & Mistretta, M. (2012a). Life Cycle Assessment (LCA) of protected crops: an Italian case study. Journal of cleaner production, 28, 56-62.

Cellura, M., Ardente, F., & Longo, S. (2012b). From the LCA of food products to the environmental assessment of protected crops districts: a case-study in the south of Italy. Journal of environmental management, 93(1), 194-208.

Cerutti, A. K., Beccaro, G. L., Bagliani, M., Donno, D., & Bounous, G. (2013). Multifunctional ecological footprint analysis for assessing eco-efficiency: A case study of fruit production systems in Northern Italy. Journal of Cleaner Production, 40, 108-117.

Chatterjee, R., Sharma, V., Mukherjee, S., & Kumar, S. (2015). Environmental impact of vegetable oil-based bio-diesel by life cycle assessment for sustainable cleaner production. International Journal of Energy Technology and Policy, 11(1), 13-35.

Chen, J., & Kobayashi, H. (2001). A study on comparison of life cycle energy consumption and CO/sub 2/emission in grains production-transportation in Japan and Heilongjiang province of China. In Environmentally Conscious Design and Inverse Manufacturing, 2001. Proceedings EcoDesign 2001: Second International Symposium on (p. 791-796). IEEE.

Chhabra, A., Manjunath, K. R., Panigrahy, S., & Parihar, J. S. (2013). Greenhouse gas emissions from Indian livestock. Climatic change, 117(1-2), 329-344.

Clark, S., Khoshnevisan, B., & Sefeedpari, P. (2016). Energy efficiency and greenhouse gas emissions during transition to organic and reduced-input practices: Student farm case study. Ecological Engineering, 88, 186-194.

Cooper, J. M., Butler, G., & Leifert, C. (2011). Life cycle analysis of greenhouse gas emissions from organic and conventional food production systems, with and without bio-energy options. Njas-Wageningen Journal of Life Sciences, 58(3), 185-192.

Courtney, D. (2013). Sustainability of intensified agricultural production in the Boyne catchment (Doctoral dissertation, National University of Ireland Maynooth).

Croezen, H., & Kampman, B. (2008). Calculating greenhouse gas emissions of EU biofuels. An assessment of the EU methodology proposal for biofuels CO2 calculations, a report CE Delft, summary.

Du Toit, C. J. L., Van Niekerk, W. A., & Meissner, H. H. (2014). Direct greenhouse gas emissions of the South African small stock sectors. South African Journal of Animal Science, 43(3), 340-361.

Dubey, A., & Lal, R. (2009). Carbon footprint and sustainability of agricultural production systems in Punjab, India, and Ohio, USA. Journal of Crop Improvement, 23(4), 332-350.

Dubey, A., & Lal, R. (2009). Carbon footprint and sustainability of agricultural production systems in Punjab, India, and Ohio, USA. Journal of Crop Improvement, 23(4), 332-350.

Duchemin, M. (2011). Greenhouse Gas emissions in Dairy and Sheep & Beef systems: a cross-sector analysis. AgResearch, Hamilton.

Dunkley, C.S., & Dunkley, K.D. (2013). Greenhouse Gas Emissions from Livestock and Poultry. Agriculture, Food and Analytical Bacteriology, 3, 17-29.

Dyer, J. A., Vergé, X. P. C., Desjardins, R. L., & Worth, D. E. (2010). The protein-based GHG emission intensity for livestock products in Canada. Journal of Sustainable Agriculture, 34(6), 618-629.

Dyer, J. A., Vergé, X. P. C., Kulshreshtha, S. N., Desjardins, R. L. & McConkey, B. G. (2011). Areas and Greenhouse Gas Emissions from Feed Crops Not Used in Canadian Livestock Production in 2001. Journal of Sustainable Agriculture, 35(7), 780-803.

Eady, S., Carre, A., & Grant, T. (2012). Life cycle assessment modelling of complex agricultural systems with multiple food and fibre co-products. Journal of Cleaner Production, 28, 143-149.

Ekman, A., & Börjesson, P. (2011). Life cycle assessment of mineral oil-based and vegetable oil-based hydraulic fluids including comparison of biocatalytic and conventional production methods. The International Journal of Life Cycle Assessment, 16(4), 297-305.

Emberger-Klein, A., Menrad, K., Ergül, R., & Mempel, H.(2015). Carbon-Footprint-Analysen entlang der Wertschöpfungs-ketten von Obst und Gemüse an ausgewählten Beispielen sowie Erarbeitung eines entsprechenden Zertifizierungs-und Labellingsystems. Weihenstephan-Triesdorf University of Applied Sciences, Freising.

Erzinger, S., Dux, D., Zimmermann, A., & Badertscher Fawaz, R. (2004). LCA of animal products from different housing systems in Switzerland: relevance of feedstuffs, infrastructure and energy use. In. Halberg ed. (2004) Life Cycle Assessment in the Agri-food sector, Proceedings from the 4th International Conference, October 6-8, 2003, Bygholm, Denmark, 55-62.

Eshel, G., Shepon, A., Makov, T., & Milo, R. (2014). Land, irrigation water, greenhouse gas, and reactive nitrogen burdens of meat, eggs, and dairy production in the United States. Proceedings of the National Academy of Sciences, 111(33), 11996-12001.

Fazio, S., & Monti, A. (2011). Life cycle assessment of different bioenergy production systems including perennial and annual crops. Biomass and Bioenergy, 35(12), 4868-4878.

Fedele, A., Mazzi, A., Niero, M., Zuliani, F., & Scipioni, A. (2014). Can the Life Cycle Assessment methodology be adopted to support a single farm on its environmental impacts forecast evaluation between conventional and organic production? An Italian case study. Journal of Cleaner Production, 69, 49-59.

Fisher, K., James, K., Sheane, R., Nippress, J., Allen, S., Cherruault, J. Y., ... & Sarrouy, C. (2013). An initial assessment of the environmental impact of grocery products. In Report submitted to the Product Sustainability Forum (PSF), Code: RPD002-004.

Flachowsky, G. (2011). Carbon-footprints for food of animal origin, reduction potentials and research need. Journal of Applied Animal Research, 39(1), 2-14.

Flachowsky, G., & Hachenberg, S. (2009). CO2-footprints for food of animal origin–Present stage and open questions. Journal für Verbraucherschutz und Lebensmittelsicherheit, 4(2), 190-198.

Flessa, H., Ruser, R., Dörsch, P., Kamp, T., Jimenez, M. A., Munch, J. C., & Beese, F. (2002). Integrated evaluation of greenhouse gas emissions (CO 2, CH 4, N 2 O) from two farming systems in southern Germany. Agriculture, Ecosystems & Environment, 91(1), 175-189.

Foster, C., Green, K., & Bleda, M. (2007). Environmental impacts of food production and consumption: final report to the Department for Environment Food and Rural Affairs.

Gabrielle, B., Gagnaire, N., Massad, R. S., Dufossé, K., & Bessou, C. (2014). Environmental assessment of biofuel pathways in Ile de France based on ecosystem modeling. Bioresource technology, 152, 511-518.

Gallejones, P., Pardo, G., Aizpurua, A., & Del Prado, A. (2015). Life cycle assessment of first-generation biofuels using a nitrogen crop model. Science of the Total Environment, 505, 1191-1201.

Goglio, P., Grant, B. B., Smith, W. N., Desjardins, R. L., Worth, D. E., Zentner, R., & Malhi, S. S. (2014). Impact of management strategies on the global warming potential at the cropping system level. Science of The Total Environment, 490, 921-933.

Goldstein, B., Hauschild, M., Fernández, J., & Birkved, M. (2016). Testing the environmental performance of urban agriculture as a food supply in northern climates. Journal of Cleaner Production, 135, 984-994.

González-García, S., Bacenetti, J., Negri, M., Fiala, M., & Arroja, L. (2013). Comparative environmental performance of three different annual energy crops for biogas production in Northern Italy. Journal of cleaner production, 43, 71-83.

González-García, S., Baucells, F., Feijoo, G., & Moreira, M. T. (2016). Environmental performance of sorghum, barley and oat silage production for livestock feed using life cycle assessment. Resources, Conservation and Recycling, 111, 28-41.

Grace, P. R., Harrington, L., Jain, M., & Robertson, G. P. (2003). Long-term sustainability of the tropical and subtropical rice–wheat system: an environmental perspective. In: Ladha, J. K. (2003). Improving the Productivity and Sustainability of Rice–Wheat Systems: Issues and Impacts. ASA Special Publications 65, p. 27-43.

Griffing, E. M., Schauer, R. L., & Rice, C. W. (2014). Life Cycle Assessment of Fertilization of Corn and Corn–Soybean Rotations with Swine Manure and Synthetic Fertilizer in Iowa. Journal of environmental quality, 43(2), 709-722.

Grönroos, J., Seppälä, J., Voutilainen, P., Seuri, P., & Koikkalainen, K. (2006). Energy use in conventional and organic milk and rye bread production in Finland. Agriculture, ecosystems & environment, 117(2), 109-118.

Gunady, M. G., Biswas, W., Solah, V. A., & James, A. P. (2012). Evaluating the global warming potential of the fresh produce supply chain for strawberries, romaine/cos lettuces (Lactuca sativa), and button mushrooms (Agaricus bisporus) in Western Australia using life cycle assessment (LCA). Journal of Cleaner Production, 28, 81-87.

Halleux, H., Lassaux, S., Renzoni, R., & Germain, A. (2008). Comparative life cycle assessment of two biofuels ethanol from sugar beet and rapeseed methyl ester. The International Journal of Life Cycle Assessment, 13(3), 184-190.

Hallström, E., Röös, E., & Börjesson, P. (2014). Sustainable meat consumption: A quantitative analysis of nutritional intake, greenhouse gas emissions and land use from a Swedish perspective. Food Policy, 47, 81-90.

Hanssen, O. J., Rukke, E. O., Saugen, B., Kolstad, J., Hafrom, P., von Krogh, L., ... & Wigum, K. S. (2007). The environmental effectiveness of the beverage sector in Norway in a factor 10 perspective. The International Journal of Life Cycle Assessment, 12(4), 257-265.

Heflin, K. R. (2015). Life-cycle greenhouse gas emissions of five beef production systems typical of the Southern High Plains. Doctoral dissertation, West Texas A&M University.

Henriksen, T. M., & Korsaeth, A. (2013). Inventory of Norwegian grain production. Bioforsk Report, 8 (69).

Hess, T., Aldaya, M., Fawell, J., Franceschini, H., Ober, E., Schaub, R., & Schulze-Aurich, J. (2014). Understanding the impact of crop and food production on the water environment—using sugar as a model. Journal of the Science of Food and Agriculture, 94(1), 2-8.

Hilborn, R., & Tellier, P. (2012). The environmental cost of New Zealand food production. New Zealand Seafood Industry Council Ltd, Wellington, New Zealand.

Hill, J., Nelson, E., Tilman, D., Polasky, S., & Tiffany, D. (2006). Environmental, economic, and energetic costs and benefits of biodiesel and ethanol biofuels. Proceedings of the National Academy of sciences, 103(30), 11206-11210.

Hoefnagels, R., Smeets, E., & Faaij, A. (2010). Greenhouse gas footprints of different biofuel production systems. Renewable and Sustainable Energy Reviews, 14(7), 1661-1694.

Huang, J., Chen, Y., Sui, P., & Gao, W. (2013). Estimation of net greenhouse gas balance using crop- and soil-based approaches: Two case studies. Science of the Total Environment, 456, 299-306.

Jianyi, L., Yuanchao, H., Shenghui, C., Jiefeng, K., & Lilai, X. (2015). Carbon footprints of food production in China (1979–2009). Journal of Cleaner Production, 90, 97-103.

Jianyi, L., Yuanchao, H., Shenghui, C., Jiefeng, K., & Lilai, X. (2015). Carbon footprints of food production in China (1979–2009). Journal of Cleaner Production, 90, 97-103.

Kaparaju, P., & Rintala, J. (2011). Mitigation of greenhouse gas emissions by adopting anaerobic digestion technology on dairy, sow and pig farms in Finland. Renewable Energy, 36(1), 31-41.

Katajajuuri, J. M., Virtanen, Y., Voutilainen, P., & Tuhkanen, H. R. (2004). Life cycle assessment results and related improvement potentials for oat and potato products as well as for cheese. In. Halberg ed. (2004) Life Cycle Assessment in the Agri-food sector, Proceedings from the 4th International Conference, October 6-8, 2003, Bygholm, Denmark, 222-225.

Kim, S., & Dale, B. E. (2009). Regional variations in greenhouse gas emissions of biobased products in the United States—corn-based ethanol and soybean oil. The International Journal of Life Cycle Assessment, 14(6), 540-546.

Kimura, S. D., Mu, Z., Toma, Y., & Hatano, R. (2007). Eco-balance analysis of six agricultural land uses in the Ikushunbetsu watershed. Soil Science and Plant Nutrition, 53(4), 373-386.

Kingwell, R., Jeanne, R. M., & Hailu, A. (2016). A longitudinal analysis of some Australian broadacre farms' greenhouse gas emissions, farming systems and efficiency of production. Agricultural Systems, 146, 120-128.

Knudsen, M. T., Hermansen, J. E., Olesen, J. E., Topp, C. F., Schelde, K., Angelopoulos, N., & Reckling, M. (2014). Climate impact of producing more grain legumes in Europe. In 9th International Conference LCA of Food. San Francisco, USA.

Lechon, Y., Cabal, H., & Saez, R. (2005). Life cycle analysis of wheat and barley crops for bioethanol production in Spain. International journal of agricultural resources, governance and ecology, 4(2), 113-122.

Lehuger, S., Gabrielle, B., & Gagnaire, N. (2009). Environmental impact of the substitution of imported soybean meal with locally-produced rapeseed meal in dairy cow feed. Journal of Cleaner Production, 17(6), 616-624.

Lesschen, J. P., Van den Berg, M., Westhoek, H. J., Witzke, H. P., & Oenema, O. (2011). Greenhouse gas emission profiles of European livestock sectors. Animal Feed Science and Technology, 166, 16-28.

Lesschen, J. P., Van den Berg, M., Westhoek, H. J., Witzke, H. P., & Oenema, O. (2011). Greenhouse gas emission profiles of European livestock sectors. Animal Feed Science and Technology, 166, 16-28.

Li, B., Fan, C. H., Zhang, H., Chen, Z. Z., Sun, L. Y., & Xiong, Z. Q. (2015). Combined effects of nitrogen fertilization and biochar on the net global warming potential, greenhouse gas intensity and net ecosystem economic budget in intensive vegetable agriculture in southeastern China. Atmospheric Environment, 100, 10-19.

Lindenthal, T., Markut, T., Hörtenhuber, S., Theurl, M., & Rudolph, G. (2010). Greenhouse gas emissions of organic and conventional foodstuffs in Austria. Available at: <https://www.fibl.org/fileadmin/documents/de/oesterreich/arbeitsschwerpunkte/Klima/lca_conf ernce_abstract_lindenthal_1003.pdf>. Accessed 01/01/2017.

Maheswarappa, H. P., Srinivasan, V., & Lal, R. (2011). Carbon footprint and sustainability of agricultural production systems in India. Journal of Crop Improvement, 25(4), 303-322.

Malcolm, G. M., Camargo, G. G. T., Ishler, V. A., Richard, T. L., & Karsten, H. D. (2015). Energy and greenhouse gas analysis of northeast US dairy cropping systems. Agriculture, Ecosystems & Environment, 199, 407-417.

Maraseni, T. N., & Cockfield, G. (2011). Does the adoption of zero tillage reduce greenhouse gas emissions? An assessment for the grains industry in Australia. Agricultural Systems, 104(6), 451-458.

Markussen, M. V., Kulak, M., Smith, L. G., Nemecek, T., & Østergård, H. (2014). Evaluating the sustainability of a small-scale low-input organic vegetable supply system in the United Kingdom. Sustainability, 6(4), 1913-1945.

Martindale, W., McGloin, R., Jones, M., & Barlow, P. (2008). The carbon dioxide emission footprint of food products and their application in the food system. Aspects of Applied Biology, 86, 55-60.

Mattila, T., Leskinen, P., Soimakallio, S., & Sironen, S. (2012). Uncertainty in environmentally conscious decision making: beer or wine?. The International Journal of Life Cycle Assessment, 17(6), 696-705.

Mortimer, N. D., Elsayed, M. A., Horne, R. E. (2004). Energy and greenhouse gas emissions from bioethanol production from wheat grain and sugar beet. Final report for British Sugar plc. Report 23/1. Sheffield Hallam University, Sheffield.

Mortimer, N. D., Evans, A. K. F., Mwabonje, O., Whittaker, C. L., & Hunter, A. J. (2010). Comparison of the greenhouse gas benefits resulting from use of vegetable oils for electricity, het, transport and industrial purposes. Project code NNFCC, 10-016.

Mosier, A. R., Halvorson, A. D., Peterson, G. A., Robertson, G. P., & Sherrod, L. (2005). Measurement of net global warming potential in three agroecosystems. Nutrient Cycling in Agroecosystems, 72(1), 67-76.

Mosnier, E., Van der Werf, H. M. G., Boissy, J., & Dourmad, J. Y. (2011). Evaluation of the environmental implications of the incorporation of feed-use amino acids in the manufacturing of pig and broiler feeds using Life Cycle Assessment. Animal, 5(12), 1972-1983.

Muñoz, I., Milà i Canals, L., & Fernández-Alba, A. R. (2010). Life cycle assessment of the average Spanish diet including human excretion. The International Journal of Life Cycle Assessment, 15(8), 794-805.

Nagano, H., Kato, S., Ohkubo, S., & Inubushi, K. (2012). Emissions of carbon dioxide, methane, and nitrous oxide from short-and long-term organic farming Andosols in central Japan. Soil science and plant nutrition, 58(6), 793-801.

Nemecek, T., von Richthofen, J. S., Dubois, G., Casta, P., Charles, R., & Pahl, H. (2008). Environmental impacts of introducing grain legumes into European crop rotations. European journal of agronomy, 28(3), 380-393.

Nemecek, T., Hayer, F., Bonnin, E., Carrouée, B., Schneider, A., & Vivier, C. (2015). Designing eco-efficient crop rotations using life cycle assessment of crop combinations. European Journal of Agronomy, 65, 40-51.

Nie, S. W., Gao, W. S., Chen, Y. Q., Sui, P., & Eneji, A. E. (2010). Use of life cycle assessment methodology for determining phytoremediation potentials of maize-based cropping systems in fields with nitrogen fertilizer over-dose. Journal of Cleaner Production, 18(15), 1530-1534.

Nielsen, P. H., Nielsen, A. M., Weidema, B. P., Dalgaard, R., & Halberg, N. (2003). LCA food database: Representative inventory for resource use and environmental impact of Danish farms and food products. Available at: <http://www.lcafood.dk>. Accessed: 01/01/2017.

Nilsson, K., Sund, V., & Florén, B. (2011). The environmental impact of the consumption of sweets, crisps and soft drinks. Nordic Council of Ministers.

Nunez, Y., Fermoso, J., Garcia, N., & Irusta, R. (2005). Comparative life cycle assessment of beef, pork and ostrich meat: a critical point of view. International journal of agricultural resources, governance and ecology, 4(2), 140-151.

O'Connell, D., Batten, D., O'Connor, M., May, B., Raison, J., Keating, B., ... & Poole, M. (2007). Biofuels in Australia: An Overview of Issues and Prospects. Rural Industries Research and Development Corporation.

O'Halloran, N., Fisher, P., Rab, A., & Victoria, D. P. I. (2008). Options for mitigating greenhouse gas emissions for the Australian vegetable industry. In Report No. VG08107: Vegetable Industry Carbon Footprint Scoping Study Discussion Papers and Workshop. HAL.

Oliquino-Abasolo, A., & Zamora, O. B. (2016). Agro-environmental Sustainability of Conventional and Organic Vegetable Production Systems in Tayabas, Quezon, Philippines. Journal of Environmental Science and Management, 19(1).

Özilgen, M., & Sorgüven, E. (2011). Energy and exergy utilization, and carbon dioxide emission in vegetable oil production. Energy, 36(10), 5954-5967.

Paolotti, L., Boggia, A., Castellini, C., Rocchi, L., & Rosati, A. (2016). Combining livestock and tree crops to improve sustainability in agriculture: a case study using the Life Cycle Assessment (LCA) approach. Journal of Cleaner Production, 131, 351-363.

Park, Y. S., Egilmez, G., & Kucukvar, M. (2016). Emergy and end-point impact assessment of agricultural and food production in the United States: a supply chain-linked ecologically-based life cycle assessment. Ecological Indicators, 62, 117-137.

Pathak, H., & Wassmann, R. (2007). Introducing greenhouse gas mitigation as a development objective in rice-based agriculture: I. Generation of technical coefficients. Agricultural Systems, 94(3), 807-825.

Pathak, H., Jain, N., Bhatia, A., Patel, J., & Aggarwal, P. K. (2010). Carbon footprints of Indian food items. Agriculture, ecosystems & environment, 139(1), 66-73.

Pimentel, D., Hepperly, P., Hanson, J., Douds, D., & Seidel, R. (2005). Environmental, energetic, and economic comparisons of organic and conventional farming systems. BioScience, 55(7), 573-582.

Polo, J.A., Salido, J.A., Mourelle, A., 2010. Calculation and verification of carbon footprint in agricultural products. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari. p. 105-110.

Ponsioen, T. C., & Blonk, T. J. (2012). Calculating land use change in carbon footprints of agricultural products as an impact of current land use. Journal of Cleaner Production, 28, 120-126.

Quirós, R., Villalba, G., Gabarrell, X., & Muñoz, P. (2015). Life cycle assessment of organic and mineral fertilizers in a crop sequence of cauliflower and tomato. International Journal of Environmental Science and Technology, 12(10), 3299-3316.

Ramirez, A.D. (2012). The life cycle greenhouse gas emissions of rendered products. PhD Thesis. Harper Adams University College, Newport.

Reinhard, J., & Zah, R. (2009). Global environmental consequences of increased biodiesel consumption in Switzerland: consequential life cycle assessment. Journal of Cleaner Production, 17, S46-S56.

Renouf, M. A., Wegener, M. K., & Nielsen, L. K. (2008). An environmental life cycle assessment comparing Australian sugarcane with US corn and UK sugar beet as producers of sugars for fermentation. Biomass and Bioenergy, 32(12), 1144-1155.

Rollefson, J., Chan, A., & Fu, G. (2004). Assessment of the environmental performance and sustainability of biodiesel in Canada. National Research Council, Ontario.

Rosado, M., Marques, C., & Fragoso, R. (2015). Environmental evaluation and benchmarking of the traditional dryland Mediterranean crop farming system in the Alentejo region of Portugal. International Journal of Sustainable Society, 7(2), 173-187.

Roy, P., Orikasa, T., Thammawong, M., Nakamura, N., Xu, Q., & Shiina, T. (2012). Life cycle of meats: an opportunity to abate the greenhouse gas emission from meat industry in Japan. Journal of environmental management, 93(1), 218-224.

Schmidt, J. H. (2015). Life cycle assessment of five vegetable oils. Journal of Cleaner Production, 87, 130-138.

Sonesson, U., Davis, J., & Ziegler, F. (2009). Food production and emissions of greenhouse gases. SIK Report No 802 2010. Swedish Institute for Food and Biotechnology, Gothenburg.

Soode, E., Lampert, P., Weber-Blaschke, G., & Richter, K. (2015). Carbon footprints of the horticultural products strawberries, asparagus, roses and orchids in Germany. Journal of Cleaner Production, 87, 168-179.

Sørensen, C. G., Halberg, N., Oudshoorn, F. W. Petersen, B. M. & Dalgaard, R. (2014). Energy inputs and GHG emissions of tillage systems. Biosystems Engineering, 120, 2-14.

Stephen, K. L. (2012). Life cycle assessment of UK pig production systems: the impact of dietary protein source. MPhil Dissertation, The University of Edinburgh, Edinburgh.

Taylor, R. D. & Koo, W. W. (2010). Impacts of greenhouse gas emission regulations on the US industry. Center for Agricultural Policy and Trade Studies, North Dakota University, Grand Forks.

TESCO. (2012) Product Carbon Footprint Summary. Available at: <https://www.tescoplc.com/assets/files/cms/Tesco_Product_Carbon_Footprints_Summary(1).pdf >. Accessed 01/01/2017.

Torres, C. M., A. Antón and F. Castells (2014). Moving toward scientific LCA for farmers. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 1336-1433). American Center for Life Cycle Assessment, Vashon.

Usubharatana, P., & Phungrassami, H. (2016). Greenhouse Gas Emission in the Chicken Feed Industry Using Life Cycle Considerations: Thailand Case Study. Journal of Chemical Engineering of Japan, 49(10), 943-950.

Usva, K., Saarinen, M., & Katajajuuri, J. M. (2008). Supply chain integrated LCA approach to assess environmental impacts of food production in Finland. Agricultural and Food Science, 18(3-4), 460-476.

Usva, K., Nousiainen, J., Hyvärinen H., & Virtanen, Y. (2012). LCAs for animal products pork, beef, milk and eggs in Finland. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 850-851

Väisänen, S., Havukainen, J., Uusitalo, V., Havukainen, M., Soukka, R., & Luoranen, M. (2016). Carbon footprint of biobutanol by ABE fermentation from corn and sugarcane. Renewable Energy, 89, 401-410.

van Middelaar, C. E., Cederberg, C., Vellinga, T. V., van der Werf, H. M., & De Boer, I. J. (2013). Exploring variability in methods and data sensitivity in carbon footprints of feed ingredients. The International Journal of Life Cycle Assessment, 18(4), 768-782.

van Zutphen, J. M., Wijbrans, R. A., & Ng, F. Y. (2012). LCI comparisons of five vegetable oils as feedstock for biodiesel. Journal of Oil Palm, Environment and Health (JOPEH), 2, 25-37

Vergé, X. P., Dyer, J. A., Worth, D. E., Smith, W. N., Desjardins, R. L., & McConkey, B. G. (2012). A greenhouse gas and soil carbon model for estimating the carbon footprint of livestock production in Canada. Animals, 2(3), 437-454.

Virtanen, Y., Kurppa, S., Saarinen, M., Katajajuuri, J. M., Usva, K., Mäenpää, I., ... & Nissinen, A. (2011). Carbon footprint of food–approaches from national input–output statistics and a LCA of a food portion. Journal of Cleaner Production, 19(16), 1849-1856.

VOICE-LIFE (2009) Vegetable Oil Initiative for a Cleaner Environmental Final Report. University of Florence, Florence.

Wardenaar, T., van Ruijven, T., Beltran, A. M., Vad, K., Guinée, J., & Heijungs, R. (2012). Differences between LCA for analysis and LCA for policy: a case study on the consequences of allocation choices in bio-energy policies. The International Journal of Life Cycle Assessment, 17(8), 1059-1067.

Wassmann, R., & Pathak, H. (2007). Introducing greenhouse gas mitigation as a development objective in rice-based agriculture: II. Cost–benefit assessment for different technologies, regions and scales. Agricultural Systems, 94(3), 826-840.

Webb, J., Williams, A. G., Hope, E., Evans, D., & Moorhouse, E. (2013). Do foods imported into the UK have a greater environmental impact than the same foods produced within the UK?. The International Journal of Life Cycle Assessment, 18(7), 1325-1343.

Weiss, F., & Leip, A. (2012). Greenhouse gas emissions from the EU livestock sector: a life cycle assessment carried out with the CAPRI model. Agriculture, ecosystems & environment, 149, 124-134.

Wiegmann, K., Eberle, U., Fritsche, U. R., & Hünecke, K. (2005). Umweltauswirkungen von Ernährung–Stoffstromanalysen und Szenarien. Datendokumentation zum Diskussionspapier Nr. 7. Öko-Institut eV – Institut für angewandte Ökologie, Hamburg.

Woitowitz, A. (2007). Auswirkungen einer Einschränkung des Verzehrs von Lebensmitteln tierischer Herkunft auf ausgewählte Nachhaltigkeitsindikatoren–dargestellt am Beispiel konventioneller und ökologischer Wirtschaftsweise. PhD Thesis. TU München, Munich.

Wood, R., Lenzen, M., Dey, C., & Lundie, S. (2006). A comparative study of some environmental impacts of conventional and organic farming in Australia. Agricultural systems, 89(2), 324-348.

Ahlgren, S., Hansson, P. A., Kimming, M., Aronsson, P., & Lundkvist, H. (2009). Greenhouse gas emissions from cultivation of agricultural crops for biofuels and production of biogas from manure. Swedish University of Agricultural Sciences, Uppsala.

Andersson, K. (2000). LCA of Food Products and Production Systems. International Journal of Life Cycle Assessment 5 (4), 239-248.

Bavec, M., Narodoslawsky, M., Bavec, F., & Turinek, M. (2012). Ecological impact of wheat and spelt production under industrial and alternative farming systems. Renewable agriculture and food systems, 27(03), 242-250.

Berry, P. M., Kindred, D. R., Olesen, J. E., Jorgensen, L. N., & Paveley, N. D. (2010). Quantifying the effect of interactions between disease control, nitrogen supply and land use change on the greenhouse gas emissions associated with wheat production. Plant Pathology, 59(4), 753-763.

Bevilacqua, M., Braglia, M., Carmignani, G., & Zammori, F. A. (2007). Life cycle assessment of pasta production in Italy. Journal of Food Quality, 30(6), 932-952.

Espinoza-Orias, N., Stichnothe, H., & Azapagic, A. (2011). The carbon footprint of bread. The International Journal of Life Cycle Assessment, 16(4), 351-365.

Gan, Y., Liang, C., Wang, X., & McConkey, B. (2011). Lowering carbon footprint of durum wheat by diversifying cropping systems. Field Crops Research, 122(3), 199-206.

Gan, Y., Liang, C., Campbell, C. A., Zentner, R. P., Lemke, R. L., Wang, H., & Yang, C. (2012). Carbon footprint of spring wheat in response to fallow frequency and soil carbon changes over 25 years on the semiarid Canadian prairie. European Journal of Agronomy, 43, 175-184.

Gelaw, A. M., Lal, R., & Singh, B. R. (2014). Carbon Footprint and Sustainability of the Smallholder Agricultural Production Systems in Ethiopia. Journal of Crop Improvement, 28(5), 700-714.

Helling, R. K., Cass, I., & Merrill, J. (2014). Using LCA to Identify Options for Greenhouse Gas Emission Reductions in Australian Wheat Farming. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 549-555). American Center for Life Cycle Assessment, Vashon.

Jensen, J. K., & Arlbjørn, J. S. (2014). Product carbon footprint of rye bread. Journal of Cleaner Production, 82, 45-57.

Khoshnevisan, B., Rafiee, S., Omid, M., & Mousazadeh, H. (2013). Regression modeling of field emissions in wheat production using a life cycle assessment (LCA) approach. Electronic Journal of Energy & Environment, 1(2), 9-19.

Khoshroo, A. (2014). Energy Use Pattern and Greenhouse Gas Emission of Wheat Production: A Case Study in Iran. Agricultural Communications, 2(2), 9-14.

Kim, J., Yalaltdinova, A., Sirina, N., & Baranovskaya, N. (2015). Integration of life cycle assessment and regional emission information in agricultural systems. Journal of the Science of Food and Agriculture, 95(12), 2544-2553.

Lazzerini, G., Migliorini, P., Moschini, V., Pacini, C., Merante, P., & Vazzana, C. (2014). A simplified method for the assessment of carbon balance in agriculture: an application in organic and conventional micro-agroecosystems in a long-term experiment in Tuscany, Italy. Italian Journal of Agronomy, 9(2), 55-62.

Li, X., Mupondwa, E., Panigrahi, S., Tabil, L., & Adapa, P. (2012). Life cycle assessment of densified wheat straw pellets in the Canadian Prairies. The International Journal of Life Cycle Assessment, 17(4), 420-431.

Meisterling, K., Samaras, C., & Schweizer, V. (2009). Decisions to reduce greenhouse gases from agriculture and product transport: LCA case study of organic and conventional wheat. Journal of Cleaner Production, 17(2), 222-230.

Muñoz, E., Montalba, R., & Herrera, J. (2012). Evaluation of two styles of Chilean wheat by means of LCA methodology. In Proceedings 2nd LCA Conference (Vol. 6, p. 7).

O'Donnell, B., Goodchild, A., Cooper, J., & Ozawa, T. (2009). The relative contribution of transportation to supply chain greenhouse gas emissions: A case study of American wheat. Transportation Research Part D: Transport and Environment, 14(7), 487-492.

Pacetti, T., Lombardi, L., & Federici, G. (2015). Water–energy Nexus: a case of biogas production from energy crops evaluated by Water Footprint and Life Cycle Assessment (LCA) methods. Journal of Cleaner Production, 101, 278-291.

Röös, E., Sundberg, C., & Hansson, P. A. (2011). Uncertainties in the carbon footprint of refined wheat products: a case study on Swedish pasta. The International Journal of Life Cycle Assessment, 16(4), 338.

Ruini, L., Ferrari, E., Meriggi, P., Marino, M., & Sessa, F. (2013). Increasing the sustainability of pasta production through a life cycle assessment approach. In IFIP International Conference on Advances in Production Management Systems (p. 383-392). Springer Berlin Heidelberg.

Ruíz-Valdiviezo, V. M., Aguilar-Chávez, Á., Cárdenas-Aquino, M. R., Mendoza-Urbina, L. D., Reynoso-Martínez, S. C., Bautista-Cerón, A., ... & Dendooven, L. (2013). Greenhouse gas emissions from a soil cultivated with wheat (Triticum sp. L.) and amended with castor bean (Ricinus communis L.) or Jatropha curcas L. seed cake: A greenhouse experiment. Plant Soil Environ, 59, 556-561.

Safa, M., & Samarasinghe, S. (2012). CO2 emissions from farm inputs "Case study of wheat production in Canterbury, New Zealand". Environmental pollution, 171, 126-132.

Sastre, C. M., González-Arechavala, Y., & Santos, A. M. (2015). Global warming and energy yield evaluation of Spanish wheat straw electricity generation–A LCA that takes into account parameter uncertainty and variability. Applied Energy, 154, 900-911.

Scacchi, C. C. O., González-García, S., Caserini, S., & Rigamonti, L. (2010). Greenhouse gases emissions and energy use of wheat grain-based bioethanol fuel blends. Science of the total environment, 408(21), 5010-5018.

St Clair, S., Hillier, J., & Smith, P. (2008). Estimating the pre-harvest greenhouse gas costs of energy crop production. Biomass and bioenergy, 32(5), 442-452.

Taghavifar, H., & Mardani, A. (2015). Energy consumption analysis of wheat production in West Azarbayjan utilizing life cycle assessment (LCA). Renewable Energy, 74, 208-213.

Tidåker, P., Sundberg, C., Öborn, I., Kätterer, T., & Bergkvist, G. (2014). Rotational grass/clover for biogas integrated with grain production–a life cycle perspective. Agricultural Systems, 129, 133-141.

Tuomisto, H. L., Hodge, I. D., Riordan, P., & Macdonald, D. W. (2012). Comparing global warming potential, energy use and land use of organic, conventional and integrated winter wheat production. Annals of Applied Biology, 161(2), 116-126.

Turinek, M., Turinek, M., Mlakar, S. G., Bavec, F., & Bavec, M. (2010). Ecological efficiency of production and the ecological footprint of organic agriculture. Revija za geografijo-Journal for Geography, 5(2), 129-139.

Zaher, U., Stöckle, C., Painter, K., & Higgins, S. (2013). Life cycle assessment of the potential carbon credit from no-and reduced-tillage winter wheat-based cropping systems in Eastern Washington State. Agricultural Systems, 122, 73-78.

Zhang, M. Y., Wang, F. J., Chen, F., Malemela, M. P., & Zhang, H. L. (2013). Comparison of three tillage systems in the wheat-maize system on carbon sequestration in the North China Plain. Journal of Cleaner Production, 54, 101-107.

Adler, P. R., Grosso, S. J. D., & Parton, W. J. (2007). Life-cycle assessment of net greenhouse-gas flux for bioenergy cropping systems. Ecological Applications, 17(3), 675-691.

Bacenetti, J., Fusi, A., Negri, M., & Fiala, M. (2015). Impact of cropping system and soil tillage on environmental performance of cereal silage productions. Journal of Cleaner Production, 86, 49-59.

Bernas, J., Moudry Jr. J., Jelinkova, Z., & Kopecky, M. (2014). Greenhouse gasses emissions during maize growing for energy purposes. Mendelnet 2014, 219-223.

Blengini, G. A., Brizio, E., Cibrario, M., & Genon, G. (2011). LCA of bioenergy chains in Piedmont (Italy): a case study to support public decision makers towards sustainability. Resources, Conservation and Recycling, 57, 36-47.

Dendooven, L., Patiño-Zúñiga, L., Verhulst, N., Luna-Guido, M., Marsch, R., & Govaerts, B. (2012). Global warming potential of agricultural systems with contrasting tillage and residue management in the central highlands of Mexico. Agriculture, Ecosystems & Environment, 152, 50-58.

Feng, H., Rubin, O. D., & Babcock, B. A. (2010). Greenhouse gas impacts of ethanol from Iowa corn: Life cycle assessment versus system wide approach. Biomass and Bioenergy, 34(6), 912-921.

Grant, T., & Beer, T. (2008). Life cycle assessment of greenhouse gas emissions from irrigated maize and their significance in the value chain. Animal Production Science, 48(3), 375-381.

Landis, A. E., Miller, S. A., & Theis, T. L. (2007). Life cycle of the corn− soybean agroecosystem for biobased production. Environmental science & technology, 41(4), 1457-1464.

Liska, A. J., Yang, H. S., Bremer, V. R., Klopfenstein, T. J., Walters, D. T., Erickson, G. E., & Cassman, K. G. (2009). Improvements in life cycle energy efficiency and greenhouse gas emissions of corn-ethanol. Journal of Industrial Ecology, 13(1), 58-74.

Masuda, K., & Yamamoto, Y. (2013). Comparison of Environmental Performance Between Conventional and Organic Roughage Production: Grass and Silage Maize. Agroecology and sustainable food systems, 37(10), 1120-1143.

Shi, L. G., Yu, Y., Huai, H. J., Zhou, J. P., Hu, H. T., & Li, C. J. (2014). Carbon Footprint of Spring Maize Production System on State-Operated Farm in Northeast China Plain. In Applied Mechanics and Materials (Vol. 448, p. 4508-4513). Trans Tech Publications.

Wang, H., Yang, Y., Zhang, X., & Tian, G. (2015). Carbon footprint analysis for mechanization of maize production based on life cycle assessment: A case study in Jilin Province, China. Sustainability, 7(11), 15772-15784.

West, T. O., & Marland, G. (2003). Net carbon flux from agriculture: Carbon emissions, carbon sequestration, crop yield, and land-use change. Biogeochemistry, 63(1), 73-83.

Cordella, M., Tugnoli, A., Spadoni, G., Santarelli, F., & Zangrando, T. (2008). LCA of an Italian lager beer. The International Journal of Life Cycle Assessment, 13(2), 133.

Deasy, M. E., & Power, N. (2011). A life-cycle technical assessment of biofuel options for Ireland. Proceedings of the ITRN2011, University College Cork, Cork.

Hospido, A., Moreira, M. T., & Feijoo, G. (2005). Environmental analysis of beer production. International journal of agricultural resources, governance and ecology, 4(2), 152-162.

Kløverpris, J. H., Elvig, N., Nielsen, P. H., Nielsen, A. M., Ratzel, O., & Karl, A. (2009). Comparative life cycle assessment of malt-based beer and 100% barley beer. Novozymes A/S, Bagsværd.

Koroneos, C., Roumbas, G., Gabari, Z., Papagiannidou, E., & Moussiopoulos, N. (2005). Life cycle assessment of beer production in Greece. Journal of Cleaner Production, 13(4), 433-439.

Lantmannen. (2012). Climate declaration for kungsoren pearled barley (EPD®). The International EPD System, Stockholm.

Mattila, T., Helin, T., & Antikainen, R. (2012a). Land use indicators in life cycle assessment. The International Journal of Life Cycle Assessment, 17(3), 277-286.

Mattila, T., Leskinen, P., Soimakallio, S., & Sironen, S. (2012b). Uncertainty in environmentally conscious decision making: beer or wine?. The International Journal of Life Cycle Assessment, 17(6), 696-705.

Melon, R. P., Wergifosse, V., Renzoni, R., & Léonard, A. (2012). Life Cycle Assessment of an artisanal Belgian blond beer. In Proceedings 2nd LCA Conference (Vol. 6, p. 7).

Mobtaker, H. G., Keyhani, A., Mohammadi, A., Rafiee, S., & Akram, A. (2010). Sensitivity analysis of energy inputs for barley production in Hamedan Province of Iran. Agriculture, Ecosystems & Environment, 137(3), 367-372.

Navarro, J., Bryan, B. A., Marinoni, O., Eady, S., & Halog, A. (2016). Mapping agriculture's impact by combining farm management handbooks, life-cycle assessment and search engine science. Environmental Modelling & Software, 80, 54-65.

Saunders, C., Barber, A., & Taylor, G. (2006). Food miles-comparative energy/emissions performance of New Zealand's agriculture industry. Lincoln University. Agribusiness and Economics Research Unit.

Sipperly, E., Edinger, K., Ziegler, N., & Roberts, E. (2014). Comparative Cradle to Gate Life Cycle Assessment of 100% Barley-based Singha Lager Beer in Thailand. King Mongkut's University of Technology, Thonburi, Thailand.

Takamoto, Y., Mitani, Y., Takashio, M., Itoi, K., & Muroyama, K. (2004). Life cycle inventory analysis of a beer production process. Technical quarterly-Master Brewers Association of the Americas, 41(4), 363-365.

Virtanen, Y., Katajajuuri, J. M., & Usva, K. (2007). An analysis of the total environmental impact of barley-malt-beer chain. In 31st EBC Conference, Venice (p. 9).

Williams, A.G., Mekonen, S. (2014). Environmental performance of traditional beer production in a micro-brewery. In Schenck, R., Huizenga, D. (Eds.), 2014. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 1535-1540). American Center for Life Cycle Assessment, Vashon.

McDevitt, J. E., & Milà i Canals, L. (2011). Can life cycle assessment be used to evaluate plant breeding objectives to improve supply chain sustainability? A worked example using porridge oats from the UK. International Journal of Agricultural Sustainability, 9, 484-494.

Andrade, H. J., Campo, O., & Segura, M. A. (2014). Huella de carbono del sistema de producción de arroz (Oryza sativa) en el municipio de Campoalegre, Huila, Colombia. Corpoica Cienc. Tecnol. Agropecu, 15(1), 25-31.

Azarpour, E. (2014). Investigation life cycle assessment emission of varieties rice under traditional and semimechanized farming systems in Iran. International Journal of Biosciences, 4(1), 8-14.

Drocourt, A., Mervant, Y., Milhau, F., Chinal, M., & Hélias, A. (2012). Environmental assessment of rice production in Camargue, France. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 829-830.

Farag, A. A., Radwan, H. A., Abdrabbo, M. A. A., & Heggi, M. A. M. (2013a). Inventory of the greenhouse gas emissions from rice in the Nile delta by using emissions models. Egyptian Journal of Agricultural Research, 91 (2b).

Farag, A. A., Radwan, H. A., Abdrabbo, M. A. A., Heggi, M. A. M., & McCarl, B. A. (2013b). Carbon footprint for paddy rice production in Egypt. Nature and Science, 11(12), 36-45.

Hayashi, K., (2011). Assessing management influence on environmental impacts under uncertainty: A case study of paddy rice production in Japan. In: Finkbeiner, M. ed. Towards Life Cycle Sustainability Management, Springer, Dordrecht, p. 331-340.

Kägi, T., Wettstein, D., & Dinkel, F. (2010). Comparing rice products: Confidence intervals as a solution to avoid wrong conclusions in communicating carbon footprints. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari.

Kasmaprapruet, S., Paengjuntuek, W., Saikhwan, P., & Phungrassami, H. (2009). Life cycle assessment of milled rice production: case study in Thailand. European Journal of Scientific Research, 30(2), 195-203.

Khoshnevisan, B., Rajaeifar, M. A., Clark, S., Shamahirband, S., Anuar, N. B., Shuib, N. L. M., & Gani, A. (2014). Evaluation of traditional and consolidated rice farms in Guilan Province, Iran, using life cycle assessment and fuzzy modeling. Science of the Total Environment, 481, 242-251.

Maraseni, T. N., Mushtaq, S., & Maroulis, J. (2009). Greenhouse gas emissions from rice farming inputs: a cross-country assessment. The Journal of Agricultural Science, 147(02), 117-126.

Maruyama, K., Gocho, N., Moriya, T., & Hayashi, K. (2009). Life cycle assessment of super high-yield and conventional rice production systems: a comparison based on global warming potential and energy consumption. Journal of Life Cycle Assessment, Japan, 5(4), 432-438.

Nabavi-Pelesaraei, A., Abdi, R., Rafiee, S., & Taromi, K. (2014). Applying data envelopment analysis approach to improve energy efficiency and reduce greenhouse gas emission of rice production. Engineering in Agriculture, Environment and Food, 7(4), 155-162.

Pandey, D., Agrawal, M., & Bohra, J. S. (2012). Greenhouse gas emissions from rice crop with different tillage permutations in rice–wheat system. Agriculture, ecosystems & environment, 159, 133-144.

Roy, P., Ijiri, T., Nei, D., Orikasa, T., Okadome, H., Nakamura, N., & Shiina, T. (2009). Life cycle inventory (LCI) of different forms of rice consumed in households in Japan. Journal of Food Engineering, 91(1), 49-55.

Saga, K., Kawahara, T., Sekino, H., Imou, K. (2014). LCA of Small-scale Ethanol Production System from High-yield Rice. Journal of the Japan Institute of Energy, 93, 278-291.

Shafie, S. M., Masjuki, H. H., & Mahlia, T. M. I. (2014). Life cycle assessment of rice straw-based power generation in Malaysia. Energy, 70, 401-410.

Shi, L. G., Huai, H. J., Zhou, J. P., Hu, H. T., & Li, C. J. (2014). Carbon Cost of Rice on State-Operated Farm in Northeast China Plain. In Advanced Materials Research (Vol. 869, p. 1034-1038). Trans Tech Publications.

Shin, J. D., Lim, D. K., Kim, G. Y., Park, M. H., Koh, M. H., & Eom, K. C. (2003). Application of the life cycle assessment methodology to rice cultivation in relation to fertilization. Korean Journal of Environmental Agriculture, 22(1), 41-46.

Shin, J. D., Lim, D. K., Kim, G. Y., Park, M. H., Koh, M. H., & Eom, K. C. (2003). Application of the life cycle assessment methodology to rice cultivation in relation to fertilization. Korean Journal of Environmental Agriculture, 22(1), 41-46.

Weller, S., Janz, B., Jörg, L., Kraus, D., Racela, H. S., Wassmann, R., ... & Kiese, R. (2016). Greenhouse gas emissions and global warming potential of traditional and diversified tropical rice rotation systems. Global change biology, 22(1), 432-448.

Xia, Y., & Yan, X. (2011). Life-cycle evaluation of nitrogen-use in rice-farming systems: implications for economically-optimal nitrogen rates. Biogeosciences, 8(11), 3159-3168.

Yodkhuma, S., & Sampattagul, S. (2014). Life Cycle Greenhouse Gas Evaluation of Rice Production in Thailand. In: Proceedings from ENRIC2014, The 1st Environment and Natural Resources International Conference (2014), Bangkok.

Yoshikawa, N., Ikeda, T., Amano, K., & Shimada, K. (2010). Carbon footprint estimation and data sampling method: a case study of ecologically cultivated rice produced in Japan. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010.

Yossapol, C., Nadsataporn, H. (2008). Life cycle assessment of rice production in Thailand. In: Proceedings from LCA Food 2008, 12-14 November 2008, Zurich.

Hamedani, S. R., Shabani, Z., & Rafiee, S. (2011). Energy inputs and crop yield relationship in potato production in Hamadan province of Iran. Energy, 36(5), 2367-2371.

Khoshnevisan, B., Rafiee, S., Omid, M., Mousazadeh, H., & Rajaeifar, M. A. (2014). Application of artificial neural networks for prediction of output energy and GHG emissions in potato production in Iran. Agricultural Systems, 123, 120-127.

Khoshnevisan, B., Rafiee, S., Omid, M., Mousazadeh, H., & Sefeedpari, P. (2013). Prognostication of environmental indices in potato production using artificial neural networks. Journal of Cleaner Production, 52, 402-409.

Pishgar-Komleh, S. H., Ghahderijani, M., & Sefeedpari, P. (2012). Energy consumption and CO 2 emissions analysis of potato production based on different farm size levels in Iran. Journal of Cleaner production, 33, 183-191.

So, K. H., Ryu, J. H., Shim, K. M., Lee, G. Z., Roh, K. A., Lee, D. B., & Park, J. A. (2010). Estimation of carbon emission and application of LCA (life cycle assessment) from potato (Solanum tuberosum L.) production system. Korean Journal of Soil Science and Fertilizer, 43(5), 728-733.

Wang, M., Shi, Y., Xia, X., Li, D., & Chen, Q. (2013). Life-cycle energy efficiency and environmental impacts of bioethanol production from sweet potato. Bioresource technology, 133, 285-292.

Nguyen, T. L. T., & Gheewala, S. H. (2008). Life cycle assessment of fuel ethanol from cane molasses in Thailand. The International Journal of Life Cycle Assessment, 13(4), 301.

Nguyen, T. L. T., Gheewala, S. H., & Garivait, S. (2007a). Full chain energy analysis of fuel ethanol from cassava in Thailand. Environmental science & technology, 41(11), 4135-4142.

Nguyen, T. L. T., Gheewala, S. H., & Garivait, S. (2007b). Energy balance and GHG-abatement cost of cassava utilization for fuel ethanol in Thailand. Energy Policy, 35(9), 4585-4596.

Nguyen, T. L. T., Gheewala, S. H., & Garivait, S. (2008). Full chain energy analysis of fuel ethanol from cane molasses in Thailand. Applied Energy, 85(8), 722-734.

Papong, S., & Malakul, P. (2010). Life-cycle energy and environmental analysis of bioethanol production from cassava in Thailand. Bioresource technology, 101(1), S112-S118.

Restianti, Y. Y., & Gheewala, S. H. (2012). Environmental and life cycle cost assessment of cassava ethanol in Indonesia. Journal of Sustainable Energy & Environment, 3(1), 1-6.

Usubharatana, P., Phungrassami, H., (2015). Carbon footprint of cassava starch in north-east Thailand. Procedia CIPR, 29, 462-467.

Aguilar-Rivera, N., Alejandre-Rosas, J., & Espinosa-López, R. (2015). Evaluación emergy y LCA en la agroindustria azucarera de Veracruz, México. Cultivos Tropicales, 36(4), 144-157.

Amores, M. J., Mele, F. D., Jiménez, L., & Castells, F. (2013). Life cycle assessment of fuel ethanol from sugarcane in Argentina. The International Journal of Life Cycle Assessment, 18(7), 1344-1357.

Bordonal, O. R., Figueiredo, E. B., & La Scala, N. (2012). Greenhouse gas balance due to the conversion of sugarcane areas from burned to green harvest, considering other conservationist management practices. GCB Bioenergy, 4(6), 846-858.

Bordonal, R., Lal, R., Aguiar, D. A., de Figueiredo, E. B., Perillo, L. I., Adami, M., ... & La Scala, N. (2015). Greenhouse gas balance from cultivation and direct land use change of recently established sugarcane (Saccharum officinarum) plantation in south-central Brazil. Renewable and Sustainable Energy Reviews, 52, 547-556.

Brizmohun, R., Ramjeawon, T., & Azapagic, A. (2015). Life cycle assessment of electricity generation in Mauritius. Journal of Cleaner Production, 106, 565-575.

Capaz, R. S., Carvalho, V. S. B., & Nogueira, L. A. H. (2013). Impact of mechanization and previous burning reduction on GHG emissions of sugarcane harvesting operations in Brazil. Applied Energy, 102, 220-228.

Cardozo, N. P., de Oliveira Bordonal, R., & La Scala, N. (2016). Greenhouse gas emission estimate in sugarcane irrigation in Brazil: is it possible to reduce it, and still increase crop yield?. Journal of Cleaner Production, 112, 3988-3997.

Cavalett, O., Junqueira, T. L., Dias, M. O., Jesus, C. D., Mantelatto, P. E., Cunha, M. P., ... & Bonomi, A. (2012). Environmental and economic assessment of sugarcane first generation biorefineries in Brazil. Clean Technologies and Environmental Policy, 14(3), 399-410.

Contreras, A. M., Rosa, E., Pérez, M., Van Langenhove, H., & Dewulf, J. (2009). Comparative life cycle assessment of four alternatives for using by-products of cane sugar production. Journal of Cleaner Production, 17(8), 772-779.

Eustice, T., Van Der Laan, M., & Van Antwerpen, R. (2011). Comparison of greenhouse gas emissions from trashed and burnt sugarcane cropping systems in South Africa. Proc S Afr Sugar Technol Assoc, 84, 326-339.

Galdos, M., Cavalett, O., Seabra, J. E., Nogueira, L. A. H., & Bonomi, A. (2013). Trends in global warming and human health impacts related to Brazilian sugarcane ethanol production considering black carbon emissions. Applied Energy, 104, 576-582.

García, C. A., Fuentes, A., Hennecke, A., Riegelhaupt, E., Manzini, F., & Masera, O. (2011). Life-cycle greenhouse gas emissions and energy balances of sugarcane ethanol production in Mexico. Applied Energy, 88(6), 2088-2097.

Gil, M. P., Moya, A. M. C., & Domínguez, E. R. (2013). Life cycle assessment of the cogeneration processes in the Cuban sugar industry. Journal of Cleaner Production, 41, 222-231.

Gopal, A. R., & Kammen, D. M. (2009). Molasses for ethanol: the economic and environmental impacts of a new pathway for the lifecycle greenhouse gas analysis of sugarcane ethanol. Environmental Research Letters, 4(4).

Groot, W. J., & Borén, T. (2010). Life cycle assessment of the manufacture of lactide and PLA biopolymers from sugarcane in Thailand. The International Journal of Life Cycle Assessment, 15(9), 970-984.

Guerra, J. P. M., Coleta Jr, J. R., Arruda, L. C. M., Silva, G. A., & Kulay, L. (2014). Comparative analysis of electricity cogeneration scenarios in sugarcane production by LCA. The International Journal of Life Cycle Assessment, 19(4), 814-825.

Hattori, K., Suzuki, A., Ebashi, T., Ota, M., & Sato, K. (2008). The calculation of carbon dioxide emission intensity from sugarcane to refined sugar [in Japanese]. Proc. Res. Soc. Japan Sugar Refineries' Technol. 56, 29-35.

Khatiwada, D., Seabra, J., Silveira, S., & Walter, A. (2012). Accounting greenhouse gas emissions in the lifecycle of Brazilian sugarcane bioethanol: Methodological references in European and American regulations. Energy Policy, 47, 384-397.

Lestari, R. L., Bohez, E. L., Ciptomulyono, U., & Perret, S. R. (2013). Life Cycle Assessment of Sugar from Sugarcane: A Case Study of Indonesia. Proceedings from the 2nd Asean Academic Society International Conference.

Liptow, C., & Tillman, A. (2009). Comparative life cycle assessment of polyethelyene based on sugarcane and crude oil. Report No 2009:14. Chalmers University, Gothenburg.

Lisboa, C. C., Butterbach-Bahl, K., Mauder, M., & Kiese, R. (2011). Bioethanol production from sugarcane and emissions of greenhouse gases–known and unknowns. GCB Bioenergy, 3(4), 277-292.

Luo, L., Van Der Voet, E., & Huppes, G. (2009). Life cycle assessment and life cycle costing of bioethanol from sugarcane in Brazil. Renewable and Sustainable Energy Reviews, 13(6), 1613-1619.

Moore, C. C. S., Nogueira, A. R., & Kulay, L. (2016). Environmental and energy assessment of the substitution of chemical fertilizers for industrial wastes of ethanol production in sugarcane cultivation in Brazil. The International Journal of Life Cycle Assessment, 1-16.

Nakhla, D. A. H. (2015). Achieving Environmental Sustainability of Sugarcane Industry in Egypt: An Application of Life Cycle Assessment. PhD Thesis. The American University in Cairo, Cairo.

Nguyen, T. L. T., Gheewala, S. H., Sagisaka, M. (2010). Greenhouse gas savings potential of sugar cane bio-energy systems. Journal of Cleaner Production, 18, 412-418.

Ometto, A. R., Hauschild, M. Z., & Roma, W. N. L. (2009). Lifecycle assessment of fuel ethanol from sugarcane in Brazil. The international journal of life cycle assessment, 14(3), 236-247.

Prasara-A, J., & Gheewala, S. H. (2016). Sustainability of sugarcane cultivation: case study of selected sites in north-eastern Thailand. Journal of Cleaner Production, 134, 613-622.

Rein, P. W. (2010). The carbon footprint of sugar. Proceedings - International Society of Sugar Cane Technologists, 27, (pp. 15).

Rein, P. W. (2011). Sustainable production of raw and refined cane sugar. Zuckerindustrie-Sugar Industry, 136(11), 734.

Renó, M. L. G., Lora, E. E. S., Palacio, J. C. E., Venturini, O. J., Buchgeister, J., & Almazan, O. (2011). A LCA (life cycle assessment) of the methanol production from sugarcane bagasse. Energy, 36(6), 3716-3726.

Renouf, M. A., Allsopp, P. G., Price, N., & Schroeder, B. L. (2013). CaneLCA: a life cycle assessment (LCA)-based eco-efficiency calculator for Australian sugarcane growing. In Proceedings of the Australian Society of Sugar Cane Technologists (Vol. 35, p. 1-8). Australian Society of Sugar Cane Technologists.

Renouf, M. A., Pagan, R. J., & Wegener, M. K. (2013). Bio-production from Australian sugarcane: an environmental investigation of product diversification in an agro-industry. Journal of Cleaner Production, 39, 87-96.

Sami, M., Shiekhdavoodi, M. J., Pazhohanniya, M., & Pazhohanniya, F. (2014). Environmental comprehensive assessment of agricultural systems at the farm level using fuzzy logic: A case study in cane farms in Iran. Environmental Modelling & Software, 58, 95-108.

Seabra, J. E., Macedo, I. C., Chum, H. L., Faroni, C. E., & Sarto, C. A. (2011). Life cycle assessment of Brazilian sugarcane products: GHG emissions and energy use. Biofuels, Bioproducts and Biorefining, 5(5), 519-532.

Silalertruksa, T., Gheewala, S. H., & Pongpat, P. (2015). Sustainability assessment of sugarcane biorefinery and molasses ethanol production in Thailand using eco-efficiency indicator. Applied Energy, 160, 603-609.

Tsiropoulos, I., Faaij, A. P. C., Lundquist, L., Schenker, U., Briois, J. F., & Patel, M. K. (2015). Life cycle impact assessment of bio-based plastics from sugarcane ethanol. Journal of Cleaner Production, 90, 114-127.

Yadav, S. K., & Mishra, G. C. (2013). Environmental Life Cycle Assessment Framework for Sukker Production (Raw Sugar Production). International Journal of Environmental Engineering and Management, 4(5), 499-506.

Bazrgar, A. B., Soltani, A., Koocheki, A., Zeinali, E., & Ghaemi, A. (2011). Environmental emissions profile of different sugar beet cropping systems in East of Iran. African Journal of Agricultural Research, 6(29), 6246-6255.

Bennett, R., Phipps, R., Strange, A., & Grey, P. (2004). Environmental and human health impacts of growing genetically modified herbicide-tolerant sugar beet: a life-cycle assessment. Plant Biotechnology Journal, 2(4), 273-278.

Foteinis, S., Kouloumpis, V., & Tsoutsos, T. (2011). Life cycle analysis for bioethanol production from sugar beet crops in Greece. Energy Policy, 39(9), 4834-4841.

Klenk, I., Landquist, B., & Ruiz de Imaña, O. (2012). The Product Carbon Footprint of EU Beet Sugar: Summary of Key Findings. Sugar Industry Journal, 137, 62.

Maravić, N., Kiss, F., Šereš, L., Bogdanović, B., Bogdanović, B., & Šereš, Z. (2015). Economic analysis and LCA of an advanced industrial-scale raw sugar juice purification procedure. Food and Bioproducts Processing, 95, 19-26.

Seabra, J. E., Macedo, I. C., Chum, H. L., Faroni, C. E., & Sarto, C. A. (2011). Life cycle assessment of Brazilian sugarcane products: GHG emissions and energy use. Biofuels, Bioproducts and Biorefining, 5(5), 519-532.

Soheili-Fard, F., & Kouchaki-Penchah, H. (2015). Assessing environmental burdens of sugar beet production in East Azerbaijan province of IR Iran based on farms size levels. Int. J. Farm. Allied Sci, 4(5), 4.

Styles, D., & Jones, M. B. (2007). Energy crops in Ireland: Quantifying the potential life-cycle greenhouse gas reductions of energy-crop electricity. Biomass and Bioenergy, 31, 759-772.

Hillier, J., Hawes, C., Squire, G., Hilton, A., Wale, S., & Smith, P. (2009). The carbon footprints of food crop production. International Journal of Agricultural Sustainability, 7(2), 107-118.

Kontopoulou, C. K., Bilalis, D., Pappa, V. A., Rees, R. M., & Savvas, D. (2015). Effects of organic farming practices and salinity on yield and greenhouse gas emissions from a common bean crop. Scientia Horticulturae, 183, 48-57.

Landquist, B. (2012). Jämförelse av klimatpåverkan förekologiskt resp. IP-odlade grönaärter. SIK-Rapport 838-2012. Swedish Institute for Food and Biotechnology, Gothenburg.

Agyemang, M., Zhu, Q., & Tian, Y. (2016). Analysis of opportunities for greenhouse emission reduction in the global supply chains of cashew industry in West Africa. Journal of Cleaner Production, 115, 149-161.

Beccaro, G. L., Cerutti, A. K., Vandecasteele, I., Bonvegna, L., Donno, D., & Bounous, G. (2014). Assessing environmental impacts of nursery production: methodological issues and results from a case study in Italy. Journal of Cleaner Production, 80, 159-169.

Nayeri, M., Firouzan, A. H., & Azarpour, E. (2014). Greenhouse gas emissions for hazelnut production in forest north of Iran. Advances in Environmental Biology, 289-293.

Sabzevari, A., Kouchaki-Penchah, H., & Nabavi-Pelesaraei, A. (2015). Investigation of life cycle assessment of hazelnut production in Guilan province of IR Iran based on orchards size levels. Biological Forum, 7(1), 807-813.

Nemecek, T., Alig., M., Schmid, A., Vaihinger, M., Schnebli, K. 2011.Variability of the global warming potential and energy demand of Swiss cheese. SETAC Case Study Symposium 28th February. Budapest, Hungary.

Flysjö, A., Cederberg, C., Strid, I. (2008). LCA-databas för konventionella fodermedel - miljöpåverkan i samband med produktion. Rapport nr 772. Swedish Institute for Food and Biotechnology, Gothenburg.

Maciel, V. G., Zortea, R. B., Grillo, I. B., Ugaya, C. M. L., Einloft, S., & Seferin, M. (2016). Greenhouse gases assessment of soybean cultivation steps in southern Brazil. Journal of Cleaner Production, 131, 747-753.

Miller, S. A., & Theis, T. L. (2006). Comparison of Life-Cycle Inventory Databases: A Case Study Using Soybean Production. Journal of industrial ecology, 10(1-2), 133-147.

van Dam, J., Faaij, A. P., Hilbert, J., Petruzzi, H., & Turkenburg, W. C. (2009). Large-scale bioenergy production from soybeans and switchgrass in Argentina: Part B. Environmental and socio-economic impacts on a regional level. Renewable and Sustainable Energy Reviews, 13(8), 1679-1709.

Birgersson, S., Karlsson, B., & Söderlund, L. (2009). Milk vs . Soy milk - A Comparative Life Cycle Assessment Examining the difference in environmental impact between regular milk and soy milk.

Blonk, H., Kool, A., Luske, B. (2008). Milieueffecten van Nederlandse consumptie van eiwitrijke producten (in Dutch, Environmental effects of Dutch consumption of protein-rich products). BMA/VROM, Gouda.

Head, M., Sevenster, M., Croezen, H. 2011. Life Cycle Impacts of Protein-rich Foods for Superwijzer. CE Delft, Delft.

Blonk, H., Kool, A., Luske, B. (2008). Milieueffecten van Nederlandse consumptie van eiwitrijke producten (in Dutch, Environmental effects of Dutch consumption of protein-rich products). BMA/VROM, Gouda.

Broekema, R., Blonk, H., 2009. Milieukundige vergelijking van vleesvervangers. Blonk Milieu Advies BV, Gouda.

Håkansson, S., Gavrilita, P., Bengoa, X. (2005) Comparative Life Cycle Assessment Pork vs Tofu, Ethisch Vegetarisch Alternatief, Stockholm

Head, M., Sevenster, M., Croezen, H. 2011. Life Cycle Impacts of Protein-rich Foods for Superwijzer. CE Delft, Delft.

Sidharta, S., & Ardiansyah, A. (2014). Assessment of Tofu Carbon Footprint in Banyumas, Indonesia - Towards "Greener" Tofu. In Proceeding of International Conference On Research, Implementation And Education Of Mathematics And Sciences 2014. Yogyakarta State University.

Smetana, S., Mathys, A., Knoch, A., Heinz, V. (2014). Meat Alternatives – Life Cycle Assessment of Most Known Meat Substitutes. In Schenck, R., Huizenga, D. (Eds.), (2014). Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Castanheira, É. G., Grisoli, R., Coelho, S., da Silva, G. A., & Freire, F. (2015). Life-cycle assessment of soybean-based biodiesel in Europe: comparing grain, oil and biodiesel import from Brazil. Journal of Cleaner Production, 102, 188-201.

Fontaras, G., Skoulou, V., Zanakis, G., Zabaniotou, A., & Samaras, Z. (2012). Integrated environmental assessment of energy crops for biofuel and energy production in Greece. Renewable Energy, 43, 201-209.

Hou, J., Zhang, P., Yuan, X., & Zheng, Y. (2011). Life cycle assessment of biodiesel from soybean, jatropha and microalgae in China conditions. Renewable and Sustainable Energy Reviews, 15(9), 5081-5091.

Huo, H., Wang, M., Bloyd, C., & Putsche, V. (2008). Life-cycle assessment of energy use and greenhouse gas emissions of soybean-derived biodiesel and renewable fuels. Environmental science & technology, 43(3), 750-756.

Jekayinfa, S. O., Olaniran, J. A., & Sasanya, B. F. (2013). Life cycle assessment of soybeans production and processing system into soy oil using solvent extraction process. International Journal of Product Lifecycle Management, 6(4), 311-321.

Liang, S., Xu, M., & Zhang, T. (2013). Life cycle assessment of biodiesel production in China. Bioresource Technology, 129, 72-77.

Miller, S. A., Landis, A. E., Theis, T. L., & Reich, R. A. (2007). A comparative life cycle assessment of petroleum and soybean-based lubricants. Environmental science & technology, 41(11), 4143-4149.

Morais, S., Mata, T. M., & Ferreira, E. C. (2010). Life cycle assessment of soybean biodiesel and LPG as automotive fuels in Portugal. In Chemical Engineering Transactions, Vol. 19 [4th International Conference on Safety & Environment in Process Industry-CISAP4, SS Buratti, Ed.] (p. 267-272). Italian Association of Chemical Engineering (AIDIC).

Mourad, A. L., & Walter, A. (2011). The energy balance of soybean biodiesel in Brazil: a case study. Biofuels, Bioproducts and Biorefining, 5(2), 185-197.

Xue, X., Collinge, W. O., Shrake, S. O., Bilec, M. M., & Landis, A. E. (2012). Regional life cycle assessment of soybean derived biodiesel for transportation fleets. Energy policy, 48, 295-303.

Arpornpong, N., Sabatini, D. A., Khaodhiar, S., & Charoensaeng, A. (2015). Life cycle assessment of palm oil microemulsion-based biofuel. The International Journal of Life Cycle Assessment, 20(7), 913-926.

Castanheira, É. G., & Freire, F. (2016). Environmental life cycle assessment of biodiesel produced with palm oil from Colombia. The International Journal of Life Cycle Assessment, 1-14.

Castanheira, É. G., & Freire, F. M. (2011). Environmental performance of palm oil biodiesel—A life-cycle perspective. In Proceedings of the 2011 IEEE International Symposium on Sustainable Systems and Technology. IEEE.

Chase, L. D., & Henson, I. E. (2010). A detailed greenhouse gas budget for palm oil production. International Journal of Agricultural Sustainability, 8(3), 199-214.

Chiew, Y. L., & Shimada, S. (2013). Current state and environmental impact assessment for utilizing oil palm empty fruit bunches for fuel, fiber and fertilizer–A case study of Malaysia. Biomass and bioenergy, 51, 109-124.

Cho, H. J., Kim, J. K., Ahmed, F., & Yeo, Y. K. (2013). Life-cycle greenhouse gas emissions and energy balances of a biodiesel production from palm fatty acid distillate (PFAD). Applied energy, 111, 479-488.

Chuchuoy, K., Paengjuntuek, W., Usubharatana, P., & Phungrassami, H. (2009). Preliminary study of Thailand carbon reduction label: a case study of crude palm oil production. European Journal of Scientific Research, 34(2), 252259.

Garcia-Nunez, J. A., Rodriguez, D. T., Fontanilla, C. A., Ramirez, N. E., Lora, E. E. S., Frear, C. S., ... & Garcia-Perez, M. (2016). Evaluation of alternatives for the evolution of palm oil mills into biorefineries. Biomass and Bioenergy, 95, 310-329.

Germer, J., & Sauerborn, J. (2008). Estimation of the impact of oil palm plantation establishment on greenhouse gas balance. Environment, Development and Sustainability, 10(6), 697-716.

Halimah, M., Zulkifli, H., Vijaya, S., Tan, Y. A., Puah, C. W., Chong, C. L., Choo, Y. M. (2014). Life Cycle Assessment for the Production of Oil Palm Seeds. Tropical life sciences research, 25(2), 41.

Halimah, M., Zulkifli, H., Vijaya, S., Tan, Y. A., Puah, C. W., Choo, Y. M, (2010). Life Cycle Assessment for the Production of Oil Palm Seeds. Life cycle assessment of oil palm seedling production (Part 1). J Oil Palm Res, 22, 878–886.

Hansen, S. B., Olsen, S. I., & Ujang, Z. (2012). Greenhouse gas reductions through enhanced use of residues in the life cycle of Malaysian palm oil derived biodiesel. Bioresource Technology, 104, 358-366.

Harsono, S. S., Grundmann, P., & Soebronto, S. (2014). Anaerobic treatment of palm oil mill effluents: potential contribution to net energy yield and reduction of greenhouse gas emissions from biodiesel production. Journal of Cleaner Production, 64, 619-627.

Hassan, M. N. A., Jaramillo, P., & Griffin, W. M. (2011). Life cycle GHG emissions from Malaysian oil palm bioenergy development: The impact on transportation sector's energy security. Energy Policy, 39(5), 2615-2625.

Hayashi, K. (2007). Environmental impact of palm oil industry in Indonesia. In Proceeding of International Symposium on Eco Topia Science (p. 646-651).

Henson, I. E., Rodrigo Ruiz, R., & Romero, H. M. (2012). The greenhouse gas balance of the oil palm industry in Colombia: a preliminary analysis. II. Greenhouse gas emissions and the carbon budget. Agronomía Colombiana 30(3), 370-378.

Hidayatno, A., Zagloel, T. Y. M., Purwanto, W. W., & Anggraini, L. (2011). Cradle to gate simple life cycle assessment of biodiesel production in Indonesia. MAKARA of Technology Series, 15(1).

Ibude, I., Hasan, R., Fargani, H., Ozoemena, M., & Cheung, W. M. (2014). Sustainability analysis of Palm oil vs. Jatropha. Proceedings of the 12th International Conference on Manufacturing Research ICMR 2014, 265-270.

Ito, H., Hayashi, K., & Nakano, K. (2009). Multi-Perspective Assessment considered Life-Cycle on Diesel and Bio-diesel Fuels made from Crude Palm Oil in Indonesia. In Proceedings of the Eastern Asia Society for Transportation Studies (p. 203-203). Eastern Asia Society for Transportation Studies.

Jungbluth, N., Chudacoff, M., Dauriat, A., Dinkel, F., Doka, G., Faist Emmenegger, M., ... & Sutter, J. (2007). Life cycle inventories of bioenergy. Final report ecoinvent data v2. 0 No, 17.

Kaewmai, R., Aran, H., & Musikavong, C. (2012). Greenhouse gas emissions of palm oil mills in Thailand. International Journal of Greenhouse Gas Control, 11, 141-151.

Kaewmai, R., H-Kittikun, A., Suksaroj, C., & Musikavong, C. (2013). Alternative technologies for the reduction of greenhouse gas emissions from palm oil mills in Thailand. Environmental science & technology, 47(21), 12417-12425.

Kittithammavong, V., Arpornpong, N., Charoensaeng, A., & Khaodhiar, S. (2014). Environmental Life Cycle Assessment of Palm oil-based Biofuel Production from Transesterification: Greenhouse Gas, Energy and Water Balances. In International Conference on Advances in Engineering and Technology (ICAET'2014).

Kusin, F. M., Akhir, N. I. M., Mohamat-Yusuff, F., & Awang, M. (2015). The impact of nitrogen fertilizer use on greenhouse gas emissions in an oil palm plantation associated with land use change. Atmósfera, 28(4), 243-250.

Lam, M. K., Lee, K. T., & Mohamed, A. R. (2009). Life cycle assessment for the production of biodiesel: a case study in Malaysia for palm oil versus jatropha oil. Biofuels, Bioproducts and Biorefining, 3(6), 601-612.

Lee, K. T., & Ofori-Boateng, C. (2013). Life Cycle Assessment of Biodiesel from Palm Oil. In Life Cycle Assessment of Renewable Energy Sources (p. 95-129). Springer London.

Lim, S., & Lee, K. T. (2011). Parallel production of biodiesel and bioethanol in palm-oil-based biorefineries: life cycle assessment on the energy and greenhouse gases emissions. Biofuels, Bioproducts and Biorefining, 5(2), 132-150.

Martinez, D., Acevedo, P., & Kafarov, V. (2010). Life cycle assessment for joint production of biodiesel and bioethanol from African palm. In de 19th International Congress of Chemical and Process Engineering, CHISA 2010 and 7th European Congress of Chemical Engineering, ECCE-7, Prague.

Nazir, N., & Setyaningsih, D. (2010). Life cycle assessment of biodiesel production from palm oil and Jatropha oil in Indonesia. In 7th Biomass Asia Workshop. Jakarta, Indonesia (Vol. 29).

Nazir, N., & Setyaningsih, D. (2010, November). Life cycle assessment of biodiesel production from palm oil and Jatropha oil in Indonesia. In 7th Biomass Asia Workshop. Jakarta, Indonesia (Vol. 29).

Patthanaissaranukool, W., Polprasert, C., & Englande, A. J. (2013). Potential reduction of carbon emissions from Crude Palm Oil production based on energy and carbon balances. Applied Energy, 102, 710-717.

Pehnelt, G., & Vietze, C. (2013). Recalculating GHG emissions saving of palm oil biodiesel. Environment, development and sustainability, 15(2), 429-479.

Rasid, N. S. A., Syed-Hassan, S. S. A., Kadir, S. A. S. A., & Asadullah, M. (2013). Life cycle assessment to evaluate the green house gas emission from oil palm bio-oil based power plant. Korean Journal of Chemical Engineering, 30(6), 1277-1283.

Reeb, C. W., Hays, T., Venditti, R. A., Gonzalez, R., & Kelley, S. (2014). Supply chain analysis, delivered cost, and life cycle assessment of oil palm empty fruit bunch biomass for green chemical production in Malaysia. BioResources, 9(3), 5385-5416.

Reijnders, L., & Huijbregts, M. A. J. (2008). Palm oil and the emission of carbon-based greenhouse gases. Journal of cleaner production, 16(4), 477-482.

Rettenmaier, N., Reinhardt, G., Munch, J., & Gartner, S. (2007) Netzwerk Lebenszyklusanalysen Datenprojekt "Nachwachsende Rohstoffe". ifeu - Inst fur Energie Umweltforschung Heidelberg GmbH. p. 1-42

Rodrigues, T. O., Caldeira-Pires, A., Luz, S., & Frate, C. A. (2014). GHG balance of crude palm oil for biodiesel production in the northern region of Brazil. Renewable Energy, 62, 516-521.

Saikkonen, L., Ollikainen, M., & Lankoski, J. (2014). Imported palm oil for biofuels in the EU: Profitability, greenhouse gas emissions and social welfare effects. Biomass and Bioenergy, 68, 7-23.

Sampattagul, S., Nutongkaew, P., & Kiatsiriroat, T. (2011). Life cycle assessment of palm oil biodiesel production in Thailand. International Journal of Renewable Energy, 6(1), 1-13.

Siangjaeo, S., Gheewala, S. H., Unnanon, K., & Chidthaisong, A. (2011). Implications of land use change on the life cycle greenhouse gas emissions from palm biodiesel production in Thailand. Energy for Sustainable Development, 15(1), 1-7.

Silalertruksa, T., & Gheewala, S. H. (2012a). Environmental sustainability assessment of palm biodiesel production in Thailand. Energy, 43(1), 306-314.

Silalertruksa, T., & Gheewala, S. H. (2012b). Food, fuel, and climate change. Journal of Industrial Ecology, 16(4), 541-551.

Siregar, K., Syafriandi & Lubis, A., (2016). Evaluation of Environmental Impact and Energy Consumption for Development of Oil Palm Plantation in Aceh Province. Journal of Environmental Science and Engineering A5, 133-140

Souza, S. P., de Ávila, M. T., & Pacca, S. (2012). Life cycle assessment of sugarcane ethanol and palm oil biodiesel joint production. Biomass and Bioenergy, 44, 70-79.

Subramaniam, V., ChooYuen, M., Muhamad, H., & Hashim, Z. (2014). Malaysia palm oil's life cycle assessment incorporating methane capture by 2020. Journal of Oil Palm, Environment & Health, 5, 49-54.

Subramaniam, V., May, C. Y., Muhammad, H., Hashim, Z., Tan, Y. A., & Wei, P. C. (2010). Life cycle assessment of the production of crude palm oil (Part 3). J. Oil Palm Res, 22, 895-903.

Wicke, B., Dornburg, V., Junginger, M., & Faaij, A. (2008a). Different palm oil production systems for energy purposes and their greenhouse gas implications. Biomass and Bioenergy, 32(12), 1322-1337.

Wicke, B., Sikkema, R., Dornburg, V., Junginger, M., & Faaij, A. (2008b). Drivers of land use change and the role of palm oil production in Indonesia and Malaysia. Overview of past developments and future projections. Copernicus Institute Science, Universiteit Utrecht, Utrecht, The Netherlands.

Wiloso, E. I., Bessou, C., & Heijungs, R. (2015). Methodological issues in comparative life cycle assessment: treatment options for empty fruit bunches in a palm oil system. The International Journal of Life Cycle Assessment, 20, 204-216.

Barontini, F., Simone, M., Triana, F., Mancini, A., Ragaglini, G., & Nicolella, C. (2015). Pilot-scale biofuel production from sunflower crops in central Italy. Renewable Energy, 83, 954-962.

Buratti, C., Barbanera, M., & Fantozzi, F. (2012). A comparison of the European renewable energy directive default emission values with actual values from operating biodiesel facilities for sunflower, rape and soya oil seeds in Italy. Biomass and Bioenergy, 47, 26-36.

Chiaramonti, D., & Recchia, L. (2010). Is life cycle assessment (LCA) a suitable method for quantitative CO 2 saving estimations? The impact of field input on the LCA results for a pure vegetable oil chain. Biomass and bioenergy, 34(5), 787-797.

Harris, T. M., Hottle, T. A., Soratana, K., Klane, J., & Landis, A. E. (2016). Life cycle assessment of sunflower cultivation on abandoned mine land for biodiesel production. Journal of Cleaner Production, 112, 182-195.

Lazzeri, L., D'Avino, L., Mazzoncini, M., Antichi, D., Mosca, G., Zanetti, F., ... & Cosentino, S. (2009). On farm agronomic and first environmental evaluation of oil crops for sustainable bioenergy chains. Italian Journal of Agronomy, 4(4), 171-180.

Nucci, B., Puccini, M., Pelagagge, L., Vitolo, S., & Nicolella, C. (2014). Improving the environmental performance of vegetable oil processing through LCA. Journal of Cleaner Production, 64, 310-322.

Spinelli, D., Bardi, L., Fierro, A., Jez, S., & Basosi, R. (2013). Environmental analysis of sunflower production with different forms of mineral nitrogen fertilizers. Journal of environmental management, 129, 302-308.

Spugnoli, P., Baldi, F., & Parenti, A. (2009). An LCA model to assess the environmental improvement of new farming systems. Journal of Agricultural Engineering, 40(4), 19-25.

Tsoutsos, T., Kouloumpis, V., Zafiris, T., & Foteinis, S. (2010). Life Cycle Assessment for biodiesel production under Greek climate conditions. Journal of Cleaner Production, 18(4), 328-335.

$(S\&T)^2$ Consultants Inc. (2010). Lifecycle analysis canola biodiesel. Delta, Canada.

Boldrin, A., & Astrup, T. (2015). GHG sustainability compliance of rapeseed-based biofuels produced in a Danish multi-output biorefinery system. Biomass and Bioenergy, 75, 83-93.

Borzęcka-Walker, M., Faber, A., Pudełko, R., Jarosz, Z., Syp, A., & Kozyra, J. (2013). Optimisation and risk analysis of greenhouse gas emissions depending on yield and nitrogen rates in rapeseed cultivation. Journal of Food, Agriculture & Environment, 11(3&4), 1002-1004.

Fernández-Tirado, F., Parra-López, C., & Romero-Gámez, M. (2016). Life cycle assessment of biodiesel in Spain: Comparing the environmental sustainability of Spanish production versus Argentinean imports. Energy for Sustainable Development, 33, 36-52.

Finco, A., Bentivoglio, D., Rasetti, M., Padella, M., Cortesi, D., & Polla, P. (2012, August). Sustainability of rapeseed biodiesel using life cycle assessment. In Presentation at the international association of agricultural economists (IAAE) triennial conference, Foz do Iguaçu, Brazil (p. 18-24).

Gasol, C. M., Salvia, J., Serra, J., Antón, A., Sevigne, E., Rieradevall, J., & Gabarrell, X. (2012). A life cycle assessment of biodiesel production from winter rape grown in Southern Europe. Biomass and Bioenergy, 40, 71-81.

González-García, S., García-Rey, D., & Hospido, A. (2013). Environmental life cycle assessment for rapeseed-derived biodiesel. The International Journal of Life Cycle Assessment, 18(1), 61-76.

Grau, B., Bernat, E., Rita, P., Jordi-Roger, R., & Antoni, R. (2013). Environmental life cycle assessment of rapeseed straight vegetable oil as self-supply agricultural biofuel. Renewable energy, 50, 142-149.

Malça, J., Coelho, A., & Freire, F. (2014). Environmental life-cycle assessment of rapeseed-based biodiesel: Alternative cultivation systems and locations. Applied energy, 114, 837-844.

McManus, M. C., Hammond, G. P., & Burrows, C. R. (2003). Life-Cycle Assessment of Mineral and Rapeseed Oil in Mobile Hydraulic Systems. Journal of Industrial Ecology, 7(3-4), 163-177.

Mortimer, N. D., Cormack, P., Elsayed, M. A., Horne, R. E. (2003) Evaluation of the comparative energy, global warming and socio-economic costs and benefits of biodiesel. Report to the Department for Environment, Food and Rural Affairs Contract Reference No. CSA 5982 (2003).

Reinhard, J., & Zah, R. (2011). Consequential life cycle assessment of the environmental impacts of an increased rapemethylester (RME) production in Switzerland. Biomass and Bioenergy, 35(6), 2361-2373.

Richards, I. R. (2000). Energy balances in the growth of oilseed rape for biodiesel and of wheat for bioethanol. Levington Agriculture Report, BABFO, 9-38.

Strange, A., Park, J., Bennett, R., & Phipps, R. (2008). The use of life-cycle assessment to evaluate the environmental impacts of growing genetically modified, nitrogen use-efficient canola. Plant biotechnology journal, 6(4), 337-345.

Ukaew, S., Shi, R., Lee, J. H., Archer, D. W., Pearlson, M., Lewis, K. C., ... & Shonnard, D. R. (2016). Full Chain Life Cycle Assessment of Greenhouse Gases and Energy Demand for Canola-Derived Jet Fuel in North Dakota, United States. ACS Sustainable Chemistry & Engineering, 4(5), 2771-2779.

Avraamides, M., & Fatta, D. (2008). Resource consumption and emissions from olive oil production: a life cycle inventory case study in Cyprus. Journal of Cleaner Production, 16(7), 809-821.

Busset, G. (2014). Approche d'évaluation de la durabilité des systemes guidée par la pensée cycle de vie: application à l'agroindustrie oléicole. PhD Thesis. University of Tolouse, Tolouse.

Busset, G., Belaud, J. P., Montréjaud-Vignoles, M., & Sablayrolles, C. (2014, November). Integration of social LCA with sustainability LCA: a case study on virgin olive oil production. In Proceedings of the 4th International Seminar in Social LCA (p. 19-21).

Cini, E., Recchia, L., Daou, M., & Boncinelli, P. (2008). Human health benefits and energy saving in olive oil mills. In International Conference Innovation Technology to Empower Safety, Health and Welfare in Agriculture and Agro-food Systems, Ragusa, Italy.

Cossu, A., Degl'Innocenti, S., Cristani, M., Bedini, S., & Nuti, M. (2013). Assessment of the Life Cycle Environmental Impact of the Olive Oil Extraction Solid Wastes in the European Union. The Open Waste Management Journal, 6(1).

Feliciano, M., Maia, F., & Gonçalves, A. (2014). An Analysis of Eco-efficiency and GHG Emission of Olive Oil Production in Northeast of Portugal. World Academy of Science, Engineering and Technology. 8(4), 347-352.

Fiore, M., Breedveld, L., Arrivas Bojardi, C., Giaimo, L., & Notaro, A. (2009). Certificazione ambientale di prodotti agroalimentari. ARS, 122, 12-20.

Guzmán, G. I., & Alonso, A. M. (2008). A comparison of energy use in conventional and organic olive oil production in Spain. Agricultural Systems, 98(3), 167-176.

Mohamad, R. S., Verrastro, V., Cardone, G., Bteich, M. R., Favia, M., Moretti, M., & Roma, R. (2014). Optimization of organic and conventional olive agricultural practices from a Life Cycle Assessment and Life Cycle Costing perspectives. Journal of Cleaner Production, 70, 78-89.

Monini S.p.A. (2014a) Dichiarazione Ambientale di Prodotto (EPD®) di Olio Extra Vergine di Oliva "Delicato" S-P-00386. Available at: <http://gryphon.environdec.com/data/files/6/9635/epd386it_2014.pdf>. Accessed 01/01/2017.

Monini S.p.A. (2014b) Dichiarazione Ambientale di Prodotto (EPD®) di Olio Extra Vergine di Oliva "Classico" S-P-00384. Available at: <http://gryphon.environdec.com/data/files/6/9633/epd384it_2014.pdf>. Accessed 01/01/2017.

Monini S.p.A. (2014c) Dichiarazione Ambientale di Prodotto (EPD®) di Olio Extra Vergine di Oliva "Il Poggiolo" S-P-00385. Available at: <http://gryphon.environdec.com/data/files/6/9634/epd385it_2014.pdf>. Accessed 01/01/2017.

Nicoletti, G.M., Notarnicola, B., Tassielli, G., (2001). Comparative LCA of virgin olive oil vs. seed oils, in: SIK DOCUMENT. Presented at the LCA in foods International conference, LCA in foods, SIK, Hanover, Germany, p. 152-156.

Notarnicola, B., Tassielli, G., & Nicoletti, G. M. (2004). Environmental and economic analysis of the organic and conventional extra-virgin olive oil. New medit, 3(2), 28-34.

Nucci, B., Puccini, M., Pelagagge, L., Vitolo, S., & Nicolella, C. (2014). Improving the environmental performance of vegetable oil processing through LCA. Journal of Cleaner Production, 64, 310-322.

Olivieri, G., Neri, P., Bandini, F., & Romani, A. (2007). Life cycle assessment of Tuscany olive oil production. In: Morrison ed. Proceedings of The AGS Annual Meeting, Barcelona, Spain. p. 117-119

Olivieri, G., Neri, P., Bandini, F., & Romani, A., (2007). Life cycle assessment of Tuscany olive oil production, in: Pathways to Our Common Future. Presented at the AGS Annual Meeting 2007, AGS Focus Centre at Chalmers, Barcelone, Espagne, p. 117-119

Proietti, S., Sdringola, P., Desideri, U., Zepparelli, F., Brunori, A., Ilarioni, L., ... & Proietti, P. (2014). Carbon footprint of an olive tree grove. Applied Energy, 127, 115-124.

Recchia, L., Gaertner, S., & Corsi, S. (2010). LCA applied to agro-industrial products: the case of the vegetable oils in Tuscany. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Parallel Session 4B, 259-264.

Russo, C., Cappelletti, G. M., & Nicoletti, G. M. (2009). LCA of Californian black-ripe table olives. In. Nemecek, T. & Gaillard, G. (eds.) Proceedings of the 6th International Conference on LCA in the Agri-Food Sector – Towards a sustainable management of the Food chain. November 12–14, 2008, Zurich, Switzerland, Agroscope Reckenholz-Tänikon Research Station ART, June 2009, p. 103.

Russo, G., Vivaldi, G. A., De Gennaro, B., & Camposeo, S. (2015). Environmental sustainability of different soil management techniques in a high-density olive orchard. Journal of Cleaner Production, 107, 498-508.

Salomone, R., & Ioppolo, G. (2012). Environmental impacts of olive oil production: a Life Cycle Assessment case study in the province of Messina (Sicily). Journal of cleaner production, 28, 88-100.

Taxidis, E. T., Menexes, G. C., Mamolos, A. P., Tsatsarelis, C. A., Anagnostopoulos, C. D., & Kalburtji, K. L. (2015). Comparing organic and conventional olive groves relative to energy use and greenhouse gas emissions associated with the cultivation of two varieties. Applied Energy, 149, 117-124.

Tsarouhas, P., Achillas, C., Aidonis, D., Folinas, D., & Maslis, V. (2015). Life Cycle Assessment of olive oil production in Greece. Journal of Cleaner Production, 93, 75-83.

De Cecco. (2010). Environmental Product Declaration De Cecco Extra Virgin Olive Oil. Available at: <http://gryphon.environdec.com/data/files/6/9226/epd410_Dececco_olive_oil.pdf>. Accessed: 01/01/2017.

Monini S.p.A. (2012). Environmental Product Declaration (EPD®) for "Il Poggiolo" Extra Virgin Olive Oil. Available at: <http://www.monini.com/sites/default/files/image/Festa/News/EPD%20Monini%20Poggiolo%20inglese.pdf>. Accessed: 01/01/2017.

Antón, M. A., Munoz, P., Castells, F., Montero, J. I., & Soliva, M. (2005a). Improving waste management in protected horticulture. Agronomy for sustainable development, 25(4), 447-453.

Anton, A., Montero, J. I., Munoz, P., & Castells, F. (2005b). LCA and tomato production in Mediterranean greenhouses. International Journal of Agricultural Resources, Governance and Ecology, 4(2), 102-112.

Antón, A., Montero, J. I., Muñoz, P., & Castells, F. (2005c). Identification of the main factors affecting the environmental impact of passive greenhouses. Acta Hort, 691, 489-494.

Hayashi, K., & Kawashima, H. (2004). Integrated evaluation of greenhouse vegetable production: toward sustainable management. In XV International Symposium on Horticultural Economics and Management 655 (p. 489-496).

Manfredi, M., & Vignali, G. (2014). Life cycle assessment of a packaged tomato puree: a comparison of environmental impacts produced by different life cycle phases. Journal of Cleaner Production, 73, 275-284.

Martínez-Blanco, J., Muñoz, P., Antón, A., & Rieradevall, J. (2009). Life cycle assessment of the use of compost from municipal organic waste for fertilization of tomato crops. Resources, Conservation and Recycling, 53(6), 340-351.

Medina, A., Cooman, A., Parrado, C. A., & Schrevens, E. (2006). Evaluation of energy use and some environmental impacts for greenhouse tomato production in the high altitude tropics. In III International Symposium on Models for Plant Growth, Environmental Control and Farm Management in Protected Cultivation 718 (p. 415-422).

Muñoz, P., Antón, A., Paranjpe, A., Ariño, J., & Montero, J. I. (2008). High decrease in nitrate leaching by lower N input without reducing greenhouse tomato yield. Agronomy for sustainable development, 28(4), 489-495.

Palma, G., Padilla, M., Saheb, M., Tatar, Y., Tugulay, A., Kellou, I., ... & Fullana, P. (2014). Environmental impact of processed tomato in France and in Turkey. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 948-952). American Center for Life Cycle Assessment, Vashon.

Pluimers, J. (2001). An environmental systems analysis of greenhouse horticulture in the Netherlands - the tomato case. PhD Thesis. Wageningen University, Netherlands.

Ramírez, T., Meas, Y., Dannehl, D., Schuch, I., Miranda, L., Rocksch, T., & Schmidt, U. (2015). Water and carbon footprint improvement for dried tomato value chain. Journal of Cleaner Production, 104, 98-108.

Roy, P., Nei, D., Okadome, H., Nakamura, N., Orikasa, T., & Shiina, T. (2008). Life cycle inventory analysis of fresh tomato distribution systems in Japan considering the quality aspect. Journal of Food Engineering, 86(2), 225-233.

Roy, P., Nei, D., Okadome, H., Nakamura, N., Orikasa, T., & Shiina, T. (2008). Life cycle inventory analysis of fresh tomato distribution systems in Japan considering the quality aspect. Journal of Food Engineering, 86(2), 225-233.

Russo, G., & Scarascia Mugnozza, G. (2004). LCA methodology applied to various typology of greenhouses. In International Conference on Sustainable Greenhouse Systems-Greensys 2004 (p. 837-844).

Sanyé-Mengual, E., Oliver-Solà, J. Antón, A., Montero, J.I., & Rieradevall, J. (2014). Environmental assessment of urban horticulture structures: Implementing Rooftop Greenhouses in Mediterranean cities. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 1169-1178). American Center for Life Cycle Assessment, Vashon.

Taki, M., Abdi, R., Akbarpour, M., & Mobtaker, H. G. (2013). Energy inputs–yield relationship and sensitivity analysis for tomato greenhouse production in Iran. Agricultural Engineering International: CIGR Journal, 15(1), 59-67.

Torrellas, M., Antón, A., Montero, J. I., Baeza, E. J., López, J. C., & Pérez Parra, J. J. (2010). Life cycle assessment of tomato crop production in a Mediterranean multispan tunnel greenhouse. In XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on 927 (p. 807-814).

-

-

-

-

Martínez-Blanco, J., Antón, A., Rieradevall, J., Castellari, M., & Muñoz, P. (2011). Comparing nutritional value and yield as functional units in the environmental assessment of horticultural production with organic or mineral fertilization. The International Journal of Life Cycle Assessment, 16(1), 12-26.

Marton, S., Kägi, T., & Wettstein, D. (2010). Lower global warming potential of cucumbers and lettuce from a greenhouse heated by waste heat. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Parallel Session 4B.

Abasolo, A. O., & Zamora, O. B. (2016). Agro-environmental Sustainability of Conventional and Organic Vegetable Production Systems in Tayabas, Quezon, Philippines. Journal of Environmental Science and Management, 19(1).

Schwarz, J., Schuster, M., Annaert, B., Maertens, M., & Mathijs, E. (2016). Sustainability of global and local food value chains: An empirical comparison of peruvian and belgian asparagus. Sustainability, 8(4), 344.

Shiina, T., Hosokawa, D., Roy, P., Nakamura, N., Thammawong, M., & Orikasa, T. (2010). Life cycle inventory analysis of leafy vegetables grown in two types of plant factories. In XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on 919 (p. 115-122).

Alizadeh, A. R., Ghorbani, M., & Ghareghani, M. (2015). Condition Monitoring of Energy usage and CO2 emission for Greenhouse Cucumber in Iran. Biological Forum, 7 (1), 94.

Rothwell, A., Ridoutt, B., Page, G., & Bellotti, W. (2016). Environmental performance of local food: trade-offs and implications for climate resilience in a developed city. Journal of Cleaner Production, 114, 420-430.

Tasca, A. L., Nessi, S., & Rigamonti, L. (2017). Environmental sustainability of agri-food supply chains: An LCA comparison between two alternative forms of production and distribution of endive in northern Italy. Journal of Cleaner Production, 140, 725-741.

Alizadeh, A. R., Ghorbani, M., & Ghareghani, M. (2015). Condition Monitoring of Energy usage and CO2 emission for Greenhouse Cucumber in Iran. In Biological Forum, 7(1), 94.

Yoshikawa, N., Amano, K., & Shimada, K. (2007). Evaluation of environmental load on fruits and vegetables consumption and its reduction potential. Environmental Systems Research, 35, 499-509.

Beccali, M., Cellura, M., Iudicello, M., Mistretta, M., (2009). Resource consumption and environmental impacts of the agrofood sector: life cycle assessment of Italian citrus-based products. Environ. Manag. Springer New York. 43, 707-724.

Beccali, M., Cellura, M., Iudicello, M., & Mistretta, M. (2010). Life cycle assessment of Italian citrus-based products. Sensitivity analysis and improvement scenarios. Journal of environmental management, 91(7), 1415-1428.

Clasadonte, M.T., Lo Giudice, A., & Ingrao, C., (2010b). Life Cycle Assessment of the Sicilian citrus fruit field. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, p. 301-306.

Coltro, L., Mourad, A. L., Kletecke, R. M., Mendonça, T. A., & Germer, S. P. (2009). Assessing the environmental profile of orange production in Brazil. The International Journal of Life Cycle Assessment, 14(7), 656-664.

Knudsen, M. T., de Almeida, G. F., Langer, V., de Abreu, L. S., & Halberg, N. (2011). Environmental assessment of organic juice imported to Denmark: a case study on oranges (Citrus sinensis) from Brazil. Organic Agriculture, 1(3), 167-185.

La Rosa, A. D., Siracusa, G., & Cavallaro, R. (2008). Emergy evaluation of Sicilian red orange production. A comparison between organic and conventional farming. Journal of Cleaner Production, 16(17), 1907-1914.

Nicoló, B. F., De Salvo, M. C., Ramírez-Sanz, C., Estruch, A. V., Sanjuán, N., Falcone, G., & Strano, A. (2015). Environmental Sustainability Of The Clementine Production Systems In Italy And Spain:. An Approach Based On Life Cycle Assessment. WIT Transactions on Ecology and the Environment, 192, 173-184.

Peña, I. J., Apud, M. B., Garolera De Nucci, L. P. G., Salas, H., Mele, F. D. & Nishihara Hun, A. L. (2015). Preliminary environmental study of the citrus industry or Tucuman (Argentina) based on the Life Cycle Assessment. Proceedings of the Sixth International Conference on Life Cycle Assessment - CILCA2015.

Ribal, J., Sanjuan, N., Clemente, G., & Fenollosa, L. (2009). Medición de la ecoeficiencia en procesos productivos en el sector agrario: caso de estudio sobre producción de cítricos. Economía agraria y recursos naturales, 9(2), 125-148.

Sanjuán, N., Ubeda, L., Clemente, G., Mulet, A., & Girona, F. (2005). LCA of integrated orange production in the Comunidad Valenciana (Spain). International Journal of Agricultural Resources, Governance and Ecology, 4(2), 163-177.

Waismoradi, A., Yousefinejad-Ostadkelayeh, M., & Rahmati, H. (2015). Environmental impact assessment of tangerine production using LCA methodology, case study: Guilan province of Iran. International Journal of Farming and Allied Sciences, 4(6), 499-504.

Zarini, R. L., Yaghoubi, H., & Akram, A. (2013). Energy use in citrus production of Mazandaran province in Iran. African Crop Science Journal, 21(1), 61-65.

Craig, A. J., Blanco, E. E., & Sheffi, Y. (2012). A supply chain view of product carbon footprints: results from the banana supply chain. ESD Working Paper Series. Massachusetts Institute of Technology, Cambrige.

Craig, A.J., Blanco, E.E., (2013). Carbon Footprint of Chiquita's North American and European Bananas. MIT Centre for Transportation and Logistics.

Kilian, B., Hettinga, J., Jiménez, G. A., Molina, S., & White, A. (2012). Case study on Dole's carbon-neutral fruits. Journal of Business Research, 65(12), 1800-1810.

Lescot, T. (2012). Carbon footprint analysis in banana production. In Second Conference of the World Banana Forum, Guayaquil, Ecuador (p. 28-29).

Malunjkar, V. S., Balakrishnan, P., Deshmukh, S. K., & Dugad, S. B. (2015) Energy Efficiency of Banana (Musa sp.) Crop under Different Irrigation Methods. International Journal of Innovative Technology and Exploring Engineering, 4(10), 43-47.

MCP - Management Consulting Practice (2009): DOLE carbon neutral fruits. INCAE Business School, Alajuela.

Svanes, E., & Aronsson, A. K. (2013). Carbon footprint of a Cavendish banana supply chain. The International Journal of Life Cycle Assessment, 18(8), 1450-1464.

-

Girgenti, V., Peano, C., Baudino, C., & Tecco, N. (2014). From “farm to fork” strawberry system: Current realities and potential innovative scenarios from life cycle assessment of non-renewable energy use and green house gas emissions. Science of The Total Environment, 473, 48-53.

Girgenti, V., Peano, C., Bounous, M., Baudino, C. (2013). A life cycle assessment of non-renewable energy use and greenhouse gas emissions associated with blueberry and raspberry production in northern Italy. Science of The Total Environment, 458-460, 414-418.

Peano, C., Baudino, C., Tecco, N., & Girgenti, V. (2015). Green marketing tools for fruit growers associated groups: application of the Life Cycle Assessment (LCA) for strawberries and berry fruits ecobranding in northern Italy. Journal of Cleaner Production, 104, 59-67.

Peano, C., Girgenti, V., Giuggioli, N., & Bounous, M. (2010). Strawberry Production Chain: Application of a LCA Model. In XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on the 940 (p. 471-474).

Amienyo, D., Camilleri, C., & Azapagic, A. (2014). Environmental impacts of consumption of Australian red wine in the UK. Journal of Cleaner Production, 72, 110-119.

Aranda, A., Zabalza, I., & Scarpellini, S. (2005). Economic and environmental analysis of the wine bottle production in Spain by means of life cycle assessment. International journal of agricultural resources, governance and ecology, 4(2), 178-191.

Ardente, F., Beccali, G., Cellura, M., & Marvuglia, A. (2006). POEMS: a case study of an Italian wine-producing firm. Environmental management, 38(3), 350-364.

Arzoumanidis, I., Raggi, A., & Petti, L. (2014). Considerations when applying simplified LCA approaches in the wine sector. Sustainability, 6(8), 5018-5028.

Bellon-Maurel, V., Peters, G. M., Clermidy, S., Frizarin, G., Sinfort, C., Ojeda, H., ... & Short, M. D. (2015). Streamlining life cycle inventory data generation in agriculture using traceability data and information and communication technologies–part II: application to viticulture. Journal of Cleaner Production, 87, 119-129.

Benedetto, G. (2013). The environmental impact of a Sardinian wine by partial life cycle assessment. Wine Economics and Policy, 2(1), 33-41.

Bonamente, E., Scrucca, F., Rinaldi, S., Merico, M. C., Asdrubali, F., & Lamastra, L. (2016). Environmental impact of an Italian wine bottle: Carbon and water footprint assessment. Science of The Total Environment, 560, 274-283.

Burja, C., & Burja, V. (2012). Decisions in Sustainable Viticulture using Life Cycle Assessment. Journal of Environmental Protection and Ecology, 13(3), 1570-1577.

Cichelli, A., Pattara, C., & Petrella, A. (2016). Sustainability in Mountain Viticulture. The Case of the Valle Peligna. Agriculture and Agricultural Science Procedia, 8, 65-72.

Civ & Civ. (2008a). Environmental product declaration N° S-P-00109 - Bottled red sparkling wine “Grasparossa Righi”. The International EPD System, Stockholm.

Civ & Civ. (2008b). Environmental product declaration N° S-P-00119 - Bottled red sparkling wine “Fratello Sole”. The International EPD System, Stockholm.

Coleman, T., & Päster, P. (2007). Red, White and “Green”: The cost of carbon in the global wine trade. American Association of Wine Economists Working Paper No. 9.

Falcone, G., Strano, A., Stillitano, T., De Luca, A. I., Iofrida, N., & Gulisano, G. (2015). Integrated sustainability appraisal of wine-growing management systems through LCA and LCC methodologies. Chem. Eng. Trans, 44, 223-228.

Figueiredo, F., Castanheira, É. G., Ferreira, A., Trindade, H., & Freire, F. (2015). Greenhouse gas assessment of wine produced in Portugal. In: Proceedings from Energy for Sustainability 2015, Sustainable Cities: Designing for People and the Planet, Coimbra, 14-15th May 2015.

Gazulla, C., Raugei, M., & Fullana-i-Palmer, P. (2010). Taking a life cycle look at crianza wine production in Spain: where are the bottlenecks?. The International Journal of Life Cycle Assessment, 15(4), 330-337.

Gonzalez, A., Klimchuk, A., Martin, M., (2006). Life Cycle Assessment of Wine production Process. Finding Relevant Process Efficiecy and Comparison to Eco-Wine Production, 1N1800 Life Cycle Assessment, Group 4.

Jiménez, E., Martínez, E., Blanco, J., Pérez, M., & Graciano, C. (2014). Methodological approach towards sustainability by integration of environmental impact in production system models through life cycle analysis: Application to the Rioja wine sector. Simulation, 90(2), 143-161.

Kavargiris, S. E., Mamolos, A. P., Tsatsarelis, C. A., Nikolaidou, A. E., & Kalburtji, K. L. (2009). Energy resources' utilization in organic and conventional vineyards: Energy flow, greenhouse gas emissions and biofuel production. biomass and bioenergy, 33(9), 1239-1250.

Litskas, V. D., Karaolis, C. S., Menexes, G. C., Mamolos, A. P., Koutsos, T. M., & Kalburtji, K. L. (2013). Variation of energy flow and greenhouse gas emissions in vineyards located in Natura 2000 sites. Ecological indicators, 27, 1-7.

Mann, J. C., Abramczyk, M. L., Andrews, M. R., Rothbart, J. A., Small, R. M., & Bailey, R. R. (2010). Sustainability at kluge estate vineyard and winery. In Systems and Information Engineering Design Symposium (SIEDS), 2010 IEEE (p. 203-208). IEEE.

Marras, S., Masia, S., Duce, P., Spano, D., & Sirca, C. (2015). Carbon footprint assessment on a mature vineyard. Agricultural and Forest Meteorology, 214, 350-356.

Neufeldt, H., Schäfer, M. (2008). Mitigation strategies for greenhouse gas emissions from agriculture using a regional economic-ecosystem model. Agriculture, Ecosystems and Environment, 123, 305-316.

Niccolucci, V., Galli, A., Kitzes, J., Pulselli, R. M., Borsa, S., & Marchettini, N. (2008). Ecological footprint analysis applied to the production of two Italian wines. Agriculture, ecosystems & environment, 128(3), 162-166.

Pattara, C., Raggi, A., & Cichelli, A. (2012). Life cycle assessment and carbon footprint in the wine supply-chain. Environmental management, 49(6), 1247-1258.

Penela, A. C., García-Negro, M. D. C., & Quesada, J. L. D. (2009). A methodological proposal for corporate carbon footprint and its application to a wine-producing company in Galicia, Spain. Sustainability, 1(2), 302-318.

Petti, L., Raggi, A., De Camillis, C., Matteucci, P., Sára, B., Pagliuca, G., & EcoLogic, F. E. B. E. (2006). Life cycle approach in an organic wine-making firm: an Italian case-study. In Proceedings Fifth Australian Conference on Life Cycle Assessment, Melbourne, Australia (p. 22-24).

Pizzigallo, A. C. I., Granai, C., & Borsa, S. (2008). The joint use of LCA and emergy evaluation for the analysis of two Italian wine farms. Journal of Environmental Management, 86(2), 396-406.

Renaud, C., Benoit, M., & Jourjon, F. (2012). An approach for evaluation of compatibility between grape quality and environmental objectives in Loire valley PDO wine production. Bulletin de l'OIV, 85(977-79), 339-348.

Rinaldi, S., Bonamente, E., Scrucca, F., Merico, M. C., Asdrubali, F., & Cotana, F. (2016). Water and Carbon Footprint of Wine: Methodology Review and Application to a Case Study. Sustainability, 8(7), 621.

Rugani, B., Niccolucci, V., Pulselli, R.M., Tiezzi, E., (2009). A cradle-to-gate Life Cycle Assessment integrated with emergy evaluation: sustainability analysis of an organic wine production. In: Proceedings of the SETAC Europe 19th Annual Meeting, “Protecting Ecosystem Health: Facing the Challenge of a Globally Changing Environment”, p. 274, Gothenburg.

Soosay, C., Fearne, A., & Dent, B. (2012). Sustainable value chain analysis—A case study of Oxford Landing from “vine to dine”. Supply Chain Management: An International Journal, 17(1), 68–77.

Steenwerth, K. L., Strong, E. B., Greenhut, R. F., Williams, L., & Kendall, A. (2015). Life cycle greenhouse gas, energy, and water assessment of wine grape production in California. The International Journal of Life Cycle Assessment, 20(9), 1243-1253.

Strano, A., De Luca, A. I., Falcone, G., Iofrida, N., Stillitano, T., & Gulisano, G. (2013). Economic and environmental sustainability assessment of wine grape production scenarios in Southern Italy. Agricultural Sciences, 4(05), 12.

Villanueva-Rey, P., Vázquez-Rowe, I., Otero, M., Moreira, M. T., & Feijoo, G. (2015). Accounting for time-dependent changes in GHG emissions in the Ribeiro appellation (NW Spain): Are land use changes an important driver?. Environmental Science & Policy, 51, 215-227.

Zhang, C., & Rosentrater, K. A. (2015). TEA (Techno-economic analysis) and LCA (Life cycle assessment) of small, medium, and large scale winemaking processes. In 2015 ASABE Annual International Meeting. American Society of Agricultural and Biological Engineers. Paper Number: 152188570.

Azarpour, E., Moraditochaee, M., & Bozorgi, H. R. (2014). Potential greenhouse gas emissions for watermelon production in Guilan Province, Iran. International Journal of Biosciences (IJB), 4(8), 100-104.

Barber, A., Poole L., & Mowat, A. (2010). Primary Energy and the Carbon Footprint of Kiwifruit Using Farm Scale Biogas Plants. Available at: <http://www.lcanz.org.nz/sites/default/files/product_lca_studies_3_barber_a_poole_l__mowat_a.pdf>. Accessed: 01/01/2017.

Cerutti, A. K., Bagliani, M., Beccaro, G. L., & Bounous, G. (2010a). Application of Ecological Footprint Analysis on nectarine production: methodological issues and results from a case study in Italy. Journal of Cleaner Production, 18(8), 771-776.

Cerutti, A. K., Bagliani, M., Beccaro, G. L., Peano, C., & Bounous, G. (2010b). Comparison of LCA and EFA for the environmental account of fruit production systems: a case study in Northern Italy. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, 99-104.

Cerutti, A. K., Bagliani, M., Beccaro, G. L., Gioelli, F., Balsari, P., & Bounous, G. (2011). Evaluation of the sustainability of swine manure fertilization in orchard through Ecological Footprint Analysis: results from a case study in Italy. Journal of Cleaner Production, 19(4), 318-324.

Clasadonte, M.T., Matarazzo, A., & Ingrao, C., (2010a). Life cycle assessment of Sicilian peach sector. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, (p. 295-300).

Coelho, C. R., & Michelsen, O. (2014). Land use impacts on biodiversity from kiwifruit production in New Zealand assessed with global and national datasets. The International Journal of Life Cycle Assessment, 19(2), 285-296.

Graefe, S., Tapasco, J., & Gonzalez, A. (2013). Resource use and GHG emissions of eight tropical fruit species cultivated in Colombia. Fruits, 68(04), 303-314.

Xiloyannis, C., Montanaro, G., & Dichio, B. (2010, September). Sustainable orchard management, fruit quality and carbon footprint. In VII International Symposium on Kiwifruit 913 (p. 269-273).

Büsser, S., & Jungbluth, N. (2009). The role of flexible packaging in the life cycle of coffee and butter. The International Journal of Life Cycle Assessment, 14(1), 80-91.

Coltro, L., Mourad, A., Oliveira, P., Baddini, J., & Kletecke, R. (2006). Environmental Profile of Brazilian Green Coffee (6 pp). The International Journal of Life Cycle Assessment, 11(1), 16-21.

Graefe, S., Dufour, D., Giraldo, A., Muñoz, L. A., Mora, P., Solís, H., ... & Gonzalez, A. (2011). Energy and carbon footprints of ethanol production using banana and cooking banana discard: A case study from Costa Rica and Ecuador. biomass and bioenergy, 35(7), 2640-2649.

Hassard, H. A., Couch, M. H., Techa-Erawan, T., & McLellan, B. C. (2014). Product carbon footprint and energy analysis of alternative coffee products in Japan. Journal of Cleaner Production, 73, 310-321.

Humbert, S., Loerincik, Y., Rossi, V., Margni, M., & Jolliet, O. (2009). Life cycle assessment of spray dried soluble coffee and comparison with alternatives (drip filter and capsule espresso). Journal of Cleaner Production, 17(15), 1351-1358.

Maina, J. J., Mutwiwa, U., Githiru, M., & Kituu, G. (2016). Evaluation of Greenhouse Gas Emissions along the Small-Holder Coffee Supply Chain in Kenya. Journal of Sustainable Research in Engineering, 2(4), 111-120.

Mars Drinks/WSP. (2009). Life Cycle Analysis on Flavia Colombia Coffee. In: Mars Drinks (2010) Sustainability Review. Available at: <http://us.myflavia.com/graphics/media/flav/sustainability_review.pdf>. Accessed: 01/01/2017.

Salinas, B. (2008). Life Cycle Assessment of Coffee Production. Available at: <http://luminairecoffee.com/img/lca_paper.pdf>. Accessed 01/01/2017.

Salomone, R. (2003). Life cycle assessment applied to coffee production: investigating environmental impacts to aid decision making for improvements at company level. Food, Agriculture and Environment, 1(2), 295-300.

von Geibler, J., Cordaro, F., Kennedy, K., Lettenmeier, M., & Roche, B. (2016). Integrating resource efficiency in business strategies: a mixed-method approach for environmental life cycle assessment in the single-serve coffee value chain. Journal of Cleaner Production, 115, 62-74.

Ntiamoah, A., & Afrane, G. (2009). Life cycle assessment of chocolate produced in Ghana. In Appropriate Technologies for Environmental Protection in the Developing World (p. 35-41). Springer Netherlands.

Vesce, E., Olivieri, G., Pairotti, M. B., Romani, A., & Beltramo, R. (2016). Life cycle assessment as a tool to integrate environmental indicators in food products: a chocolate LCA case study. International Journal of Environment and Health, 8(1), 21-37.

Asem-Hiablie, S., Rotz, C. A., Stout, R., Dillon, J., & Stackhouse-Lawson, K. (2015). Management characteristics of cow-calf, stocker, and finishing operations in Kansas, Oklahoma, and Texas. The Professional Animal Scientist, 31(1), 1-10.

Alemu, A. W., Doce, R. R., Dick, A. C., Basarab, J. A., Kröbel, R., Haugen-Kozyra, K., & Baron, V. S. (2016). Effect of winter feeding systems on farm greenhouse gas emissions. Agricultural Systems, 148, 28-37.

Battaglise, T., Andrade, J., Schulze, I., Uhlman, B., Stackhouse-Lawson, K., Reagan, J. O., & Rotz, C.A. (2013). Submission for Verification of Eco-efficiency Analysis Under NSF Protocol P352, Part B US Beef–Phase 1 Eco-efficiency Analysis

Becoña López, G., Ledgard, S., & Wedderburn, E. (2013). A comparison of greenhouse gas emissions from Uruguayan and New Zealand beef systems. Agrociencia Uruguay, 17(1), 120-130.

Bell, M. J., Cullen, B. R., & Eckard, R. J. (2012). The influence of climate, soil and pasture type on productivity and greenhouse gas emissions intensity of modeled beef cow-calf grazing systems in southern Australia. Animals, 2(4), 540-558.

Berton, M., Cesaro, G., Gallo, L., Pirlo, G., Ramanzin, M., Tagliapietra, F., & Sturaro, E. (2016). Environmental impact of a cereal-based intensive beef fattening system according to a partial Life Cycle Assessment approach. Livestock Science, 190, 81-88.

Bhandari, B. D., Gillespie, J., Scaglia, G., & Wang, J. (2013). Analysis of Pasture Systems to Maximize the Profitability and Sustainability of Grass-fed Beef Production. Journal of Animal Science, 46, 41-47.

Bonesmo, H., Beauchemin, K. A., Harstad, O. M., & Skjelvåg, A. O. (2013). Greenhouse gas emission intensities of grass silage based dairy and beef production: A systems analysis of Norwegian farms. Livestock Science, 152(2), 239-252.

Briner, S., Hartmann, M., Finger, R., & Lehmann, B. (2012). Greenhouse gas mitigation and offset options for suckler cow farms: an economic comparison for the Swiss case. Mitigation and Adaptation Strategies for Global Change, 17(4), 337-355.

Bystricky, M., Alig, M., Nemecek, T., & Gaillard, G. (2014). Ökobilanz ausgewählter Schweizer Landwirtschaftsprodukte im Vergleich zum Import. Agroscope. Zurich.

Capper, J. L. (2011). The environmental impact of beef production in the United States: 1977 compared with 2007. Journal of animal science, 89(12), 4249-4261.

Cárdenas Gutiérrez, J. M. (2014). Balance de gases de efecto invernadero en fincas ganaderas con y sin PSA, península de Nicoya, Costa Rica. Balance de gases de efecto invernadero y efectividad del pago por servicios ambientales en fincas ganaderas, península de Nicoya, Costa Rica. Escuela de Posgrado. CATIE, Turrialba.

Cederberg, C., & Stadig, M. (2003). System expansion and allocation in life cycle assessment of milk and beef production. The International Journal of Life Cycle Assessment, 8(6), 350-356.

Cerri, C. C., Moreira, C. S., Alves, P. A., Raucci, G. S., de Almeida Castigioni, B., Mello, F. F., ... & Cerri, C. E. P. (2016). Assessing the carbon footprint of beef cattle in Brazil: a case study with 22 farms in the State of Mato Grosso. Journal of Cleaner Production, 112, 2593-2600.

Church, J. S., Raymond, A. F., Moote, P. E., Van Hamme, J. D., & Thompson, D. J. (2015). Investigating the Carbon Footprint of Cattle Grazing the Lac du Bois Grasslands of British Columbia. Journal of Ecosystems and Management, 15(1), 1-14.

Clarke, A. M., Brennan, P., & Crosson, P. (2013). Life-cycle assessment of the intensity of production on the greenhouse gas emissions and economics of grass-based suckler beef production systems. The Journal of Agricultural Science, 151(05), 714-726.

Cooprider, K. L., Mitloehner, F. M., Famula, T. R., Kebreab, E., Zhao, Y., & Van Eenennaam, A. L. (2011). Feedlot efficiency implications on greenhouse gas emissions and sustainability. Journal of animal science, 89(8), 2643-2656.

Crosson, P., Foley, P. A., Shalloo, L., O'Brien, D., & Kenny, D. A. (2010). Greenhouse gas emissions from Irish beef and dairy production systems. Advances in Animal Biosciences, 1(01), 350-350.

de Figueiredo, E. B., Jayasundara, S., de Oliveira Bordonal, R., Berchielli, T. T., Reis, R. A., Wagner-Riddle, C., & La Scala Jr, N. (2017). Greenhouse gas balance and carbon footprint of beef cattle in three contrasting pasture-management systems in Brazil. Journal of Cleaner Production, 142, 420-431.

Desjardins, R. L., Worth, D. E., Vergé, X. P., Maxime, D., Dyer, J., & Cerkowniak, D. (2012). Carbon footprint of beef cattle. Sustainability, 4(12), 3279-3301.

Dick, M., da Silva, M. A., & Dewes, H. (2015). Mitigation of environmental impacts of beef cattle production in southern Brazil–Evaluation using farm-based life cycle assessment. Journal of Cleaner Production, 87, 58-67.

Dudley, Q. M., Liska, A. J., Watson, A. K., & Erickson, G. E. (2014). Uncertainties in life cycle greenhouse gas emissions from US beef cattle. Journal of Cleaner Production, 75, 31-39.

Dyer, J. A., Vergé, X. P., Desjardins, R. L., & Worth, D. E. (2014). A comparison of the greenhouse gas emissions from the sheep industry with beef production in Canada. Sustainable Agriculture Research, 3(3), 65.

EBLEX. (2012). The beef and sheep roadmap - phase three. Agriculture and Horticulture Development Board, Kenilworth. Available at: <http://beefandlamb.ahdb.org.uk/wp/wp-content/uploads/2013/05/p_cp_down_to_earth300112.pdf>. Accessed 01/01/2017.

Edwards-Jones, G., Plassmann, K., & Harris, I. M. (2009). Carbon footprinting of lamb and beef production systems: insights from an empirical analysis of farms in Wales, UK. The Journal of Agricultural Science, 147(06), 707-719.

Gradiz, L., Sugimoto, A., Ujihara, K., Fukuhara, S., Kahi, A. K., & Hirooka, H. (2007). Beef cow–calf production system integrated with sugarcane production: simulation model development and application in Japan. Agricultural Systems, 94(3), 750-762.

Hacala, S., d'Elevage, R., & Le Gall, A. (2006). Évaluation des émissions de gaz à effet de serre en élevage bovin et perspectives d'atténuation. Fourrages, 186, 215-227.

Harrison, M. T., McSweeney, C., Tomkins, N. W., & Eckard, R. J. (2015). Improving greenhouse gas emissions intensities of subtropical and tropical beef farming systems using Leucaena leucocephala. Agricultural Systems, 136, 138-146.

Harrison, M., Cullen, B., Tomkins, N., McSweeney, C., Cohn, P., & Eckard, R. (2016). The concordance between greenhouse gas emissions, livestock production and profitability of extensive beef farming systems. Animal Production Science, 56, 370-384.

Head, M., Sevenster, M. N., & Croezen, H. J. (2011). Life cycle impacts of protein-rich foods for superwijzer. CE Delft, Delft.

Hengen, T. J., Sieverding, H. L., Cole, N. A., Ham, J. M., & Stone, J. J. (2016). Eco-efficiency model for evaluating feedlot rations in the Great Plains, United States. Journal of environmental quality, 45(4), 1234-1242.

Henry, B. K., Butler, D., & Wiedemann, S. G. (2015). A life cycle assessment approach to quantifying greenhouse gas emissions from land-use change for beef production in eastern Australia. The Rangeland Journal, 37(3), 273-283.

Hirschfeld, J., Weiß, J., Preidl, M., & Korbun, T. (2008). Klimawirkungen der Landwirtschaft in Deutschland. IÖW.

Hocquette, J. F., Botreau, R., Legrand, I., Polkinghorne, R., Pethick, D. W., Lherm, M., ... & Terlouw, E. M. C. (2014). Win–win strategies for high beef quality, consumer satisfaction, and farm efficiency, low environmental impacts and improved animal welfare. Animal Production Science, 54(10), 1537-1548.

Jacobsen, R., Vandermeulen, V., Vanhuylenbroeck, G., & Gellynck, X. (2014). A Life Cycle Assessment Application: The Carbon Footprint of Beef in Flanders (Belgium). In Assessment of Carbon Footprint in Different Industrial Sectors, Volume 2 (p. 31-52). Springer Singapore.

Johnson, D. E., Phetteplace, H. W., Seidl, A. F., Schneider, U. A., & McCarl, B. A. (2003, November). Management variations for US beef production systems: Effects on greenhouse gas emissions and profitability. In Proceedings of the 3rd International Methane and Nitrous Oxide Mitigation Conference (Vol. 17, p. 21). Beijing, China: China Coal Information Institute.

Koch, P., Salou, T. (2015) AGRIBALYSE®: METHODOLOGY Version 1.2. ADEME, Angers, France.

Kohmann, M. M., Fraisse, C. W., Clifford, C. C., & Bohlen, P. J. (2011). The carbon footprint for Florida beef cattle production systems: a case study with MAERC. Florida Cattleman and Livestock Journal, 75(6), 64-66.

Lieffering, M., Ledgard, S.F., Boyes, M., & Kemp, R. (2012). A Greenhouse Gas Footprint Study for Exported New Zealand Beef. Report prepared for the Meat Industry Association, Ballance AgriNutrients, Landcorp and MAF.

Lioy, R., Rabier, F., Echevarria, L., Caillaud, D., Reding, R., Paul, C., & Stilmant, D. (2012). Variabilité des émissions de GES pour des systèmes d'élevages bovins de la Région transfrontalière Lorraine-Luxembourg-Wallonie. Rencontres autour des recherches sur les ruminants, 29-32.

Lupo, C. D., Clay, D. E., Benning, J. L., & Stone, J. J. (2013). Life-cycle assessment of the beef cattle production system for the Northern Great Plains, USA. Journal of environmental quality, 42(5), 1386-1394.

Mackenzie, S. G., Leinonen, I., Ferguson, N., & Kyriazakis, I. (2016). Towards a methodology to formulate sustainable diets for livestock: accounting for environmental impact in diet formulation. The British journal of nutrition, 115(10), 1860.

Mialon, M. M., Lherm, M., Micol, D., Doreau, M., & Martin, C. (2013). Improving animal welfare and economic sustainability in bull-fattening systems in France: A comparison of three different feeding programmes. FAO Animal Production and Health Paper (FAO).

Mieleitner, J., Alig, M., Grandl, F. Nemecek, T. & Gaillard, G.R., (2012). Environmental impact of beef – role of slaughtering, meat processing and transport. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 659-660.

Mollenhorst, H., Berentsen, P. B. M., Berends, H., Gerrits, W. J. J., & de Boer, I. J. M. (2016). Economic and environmental effects of providing increased amounts of solid feed to veal calves. Journal of Dairy Science, 99 (3), 2180-2189.

Morel, K., Farrié, J. P., Renon, J., Manneville, V., Agabriel, J., & Devun, J. (2016). Environmental impacts of cow-calf beef systems with contrasted grassland management and animal production strategies in the Massif Central, France. Agricultural Systems, 144, 133-143.

Nguyen, T. L. T., Hermansen, J. E., & Mogensen, L. (2010). Environmental consequences of different beef production systems in the EU. Journal of Cleaner Production, 18(8), 756-766.

Nguyen, T. T. H., Van der Werf, H. M. G., & Doreau, M. (2012). Life cycle assessment of three bull-fattening systems: effect of impact categories on ranking. Journal of Agricultural Science-London, 150(6), 755.

Ogino, A., Orito, H., Shimada, K., & Hirooka, H. (2007). Evaluating environmental impacts of the Japanese beef cow–calf system by the life cycle assessment method. Animal Science Journal, 78(4), 424-432.

Ogino, A., Sommart, K., Subepang, S., Mitsumori, M., Hayashi, K., Yamashita, T., & Tanaka, Y. (2016). Environmental impacts of extensive and intensive beef production systems in Thailand evaluated by life cycle assessment. Journal of Cleaner Production, 112, 22-31.

Oishi, K., Kato, Y., Ogino, A., & Hirooka, H. (2013). Economic and environmental impacts of changes in culling parity of cows and diet composition in Japanese beef cow–calf production systems. Agricultural Systems, 115, 95-103.

Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., Vellinga, T., Henderson, B. & Steinfeld, H. (2013). Greenhouse gas emissions from ruminant supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Persson, U. M., Johansson, D. J., Cederberg, C., Hedenus, F., & Bryngelsson, D. (2015). Climate metrics and the carbon footprint of livestock products: where’s the beef?. Environmental Research Letters, 10(3), 034005.

Peters, G. M., Rowley, H. V., Wiedemann, S., Tucker, R., Short, M. D., & Schulz, M. (2010). Red meat production in Australia: life cycle assessment and comparison with overseas studies. Environmental science & technology, 44(4), 1327-1332.

Ponsioen, T., Broekema, R., & Blonk, H. (2010). Koeien op gras: milieueffecten van Nederlandse en buitenlandse rundvleesproductiesystemen. Blonk Milieu Advies BV, Gouda.

Rabier, F., Lioy, R., Paul, C., Van Stappen, F., Stilmant, D., & Mathot, M. (2015). Assessment of GHG Emissions and Their Variability of Meat Production Systems in Wallonia Based on Grass and Maize. Agriculture and Agricultural Science Procedia, 7, 223-228.

Ridha, I., (2012). Modeling Greenhouse Gas Emissions from Spanish Dairy and Beef farms: Mitigation Strategies. PhD Thesis. Universitat Autònoma de Barcelona, Barcelona.

Rotz, C. A., Asem-Hiablie, S., Dillon, J., & Bonifacio, H. (2015). Cradle-to-farm gate environmental footprints of beef cattle production in Kansas, Oklahoma, and Texas. Journal of animal science, 93(5), 2509-2519.

Ruviaro, C. F., de Léis, C. M., Lampert, V. D. N., Barcellos, J. O. J., & Dewes, H. (2015). Carbon footprint in different beef production systems on a southern Brazilian farm: a case study. Journal of Cleaner Production, 96, 435-443.

Ruviaro, C. F., da Costa, J. S., Florindo, T. J., Rodrigues, W., de Medeiros, G. I. B., & Vasconcelos, P. S. (2016). Economic and environmental feasibility of beef production in different feed management systems in the Pampa biome, southern Brazil. Ecological Indicators, 60, 930-939.

Samardžić M., Kričković Đ., Valentini R., Andreeva I.V., Vasenev I.I. 2014. Ecological assessment GHG emissions and Carbon footprint in the bovine meat production, processing and consumption. Contemporary Agriculture, 3.

Sanders, K. T., & Webber, M. E. (2014). A comparative analysis of the greenhouse gas emissions intensity of wheat and beef in the United States. Environmental Research Letters, 9(4), 044011.

Schlich, E., Hardtert, B., & Krause, F. (2008). Beef of local and global provenance: A comparison in terms of energy, CO2, scale, and farm management. In. Nemecek, T. & Gaillard, G. (eds.) Proceedings of the 6th International Conference on LCA in the Agri-Food Sector – Towards a sustainable management of the Food chain. November 12–14, 2008, Zurich, Switzerland, Agroscope Reckenholz-Tänikon Research Station ART, June 2009.

Soussana, J. F., Allard, V., Pilegaard, K., Ambus, P., Amman, C., Campbell, C., ... & Flechard, C. (2007). Full accounting of the greenhouse gas (CO 2, N 2 O, CH 4) budget of nine European grassland sites. Agriculture, Ecosystems & Environment, 121(1), 121-134.

Soussana, J. F., Tallec, T., & Blanfort, V. (2010). Mitigating the greenhouse gas balance of ruminant production systems through carbon sequestration in grasslands. Animal, 4(03), 334-350.

Stackhouse-Lawson, K. R., Rotz, C. A., Oltjen, J. W., & Mitloehner, F. M. (2012a). Growth-promoting technologies decrease the carbon footprint, ammonia emissions, and costs of California beef production systems. Journal of animal science, 90(12), 4656-4665.

Stackhouse-Lawson, K. R., Rotz, C. A., Oltjen, J. W., & Mitloehner, F. M. (2012b). Carbon footprint and ammonia emissions of California beef production systems. Journal of animal science, 90(12), 4641-4655.

Stewart, A. A., Little, S. M., Ominski, K. H., Wittenberg, K. M., & Janzen, H. H. (2009). Evaluating greenhouse gas mitigation practices in livestock systems: an illustration of a whole-farm approach. The Journal of Agricultural Science, 147(04), 367-382.

Stewart, A. A., Alemu, A. W., Ominski, K. H., Wilson, C. H., Tremorin, D. G., Wittenberg, K. M., ... & Janzen, H. H. (2014). Whole-farm greenhouse gas emissions from a backgrounding beef production system using an observation-based and model-based approach. Canadian Journal of Animal Science, 94(3), 463-477.

Taylor, C., & Eckard, R. (2016). Comparative analysis of greenhouse gas emissions from three beef cattle herds in a corporate farming enterprise. Animal Production Science, 56, 482-494.

Taylor, C., Harrison, M., Telfer, M., & Eckard, R. (2015). A comparative analysis of Greenhouse Gas Emissions from beef cattle grazing irrigated Leucaena leucocephala (Lam.) de Wit cv. Cunningham crops in northern Australia. Comparative Analysis Report – Draft V2, The University of Melbourne, Melbourne.

Thornton, P. K., & Herrero, M. (2010). Potential for reduced methane and carbon dioxide emissions from livestock and pasture management in the tropics. Proceedings of the National Academy of Sciences, 107(46), 19667-19672.

Tsutsumi, M., Hikita, K., Takahashi, Y., & Yamamoto, N. (2014). Life cycle assessment of beef cow-calf systems with and without grazing on abandoned cultivated lands in Japan. Grassland science, 60(3), 150-159.

Vargas, L. P., & Silveira, V. C. P. (2014). Beef cattle production and quantification of carbon emissions: an analysis in Rio Grande do Sul State, Brazil. Archivos Latinoamericanos de Producción Animal, 23(1-2).

Veysset, P., Lherm, M., & Bébin, D. (2010). Energy consumption, greenhouse gas emissions and economic performance assessments in French Charolais suckler cattle farms: Model-based analysis and forecasts. Agricultural Systems, 103(1), 41-50.

Veysset, P., Lherm, M., & Bébin, D. (2013). Converting Suckler Cattle Farming Systems to Organic Farming: A Method to Assess the Productive, Environmental and Economic Impacts. In Methods and Procedures for Building Sustainable Farming Systems (p. 141-159). Springer Netherlands.

Veysset, P., Lherm, M., Bébin, D., Roulenc, M., & Benoit, M. (2014). Variability in greenhouse gas emissions, fossil energy consumption and farm economics in suckler beef production in 59 French farms. Agriculture, Ecosystems & Environment, 188, 180-191.

Wang, T., Teague, W. R., Park, S. C., & Bevers, S. (2015). GHG Mitigation Potential of Different Grazing Strategies in the United States Southern Great Plains. Sustainability, 7(10), 13500-13521.

White, R. R., & Capper, J. L. (2013). An environmental, economic, and social assessment of improving cattle finishing weight or average daily gain within US beef production. Journal of animal science, 91(12), 5801-5812.

White, T. A., Snow, V. O., & King, W. M. (2010). Intensification of New Zealand beef farming systems. Agricultural Systems, 103(1), 21-35.

Wiedemann, S. G., Henry, B. K., McGahan, E. J., Grant, T., Murphy, C. M., & Niethe, G. (2015d). Resource use and greenhouse gas intensity of Australian beef production: 1981–2010. Agricultural Systems, 133, 109-118.

Wiedemann, S., Davis, R., McGahan, E., Murphy, C., & Redding, M. (2016). Resource use and greenhouse gas emissions from grain finishing beef cattle in seven Australian feedlots: a life cycle assessment. Animal Production Science.

Willers, C. D., Maranduba, H. L., de Almeida Neto, J. A., & Rodrigues, L. B. (2016). Environmental Impact assessment of a semi-intensive beef cattle production in Brazil's Northeast. The International Journal of Life Cycle Assessment. DOI 10.1007/s11367-016-1062-4.

Williams, A.G., Audsley, E. & Sandars, D.L. 2006. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205. Bedford: Cranfield University and Defra.

Williams, A., Chatterton, J., Hateley, G., Curwen, A., & Elliott, J. (2015). A systems-life cycle assessment approach to modelling the impact of improvements in cattle health on greenhouse gas emissions. Advances in Animal Biosciences, 6(01), 29-31.

Wiltshire, J., Wynn, S., Clarke, J., Chambers, B., Cottrill, B., Drakes, D., ... & Foster, C. (2009). Scenario building to test and inform the development of a BSI method for assessing greenhouse gas emissions from food. Defra, London.

Zehetmeier, M., Baudracco, J., Hoffmann, H., & Heißenhuber, A. (2012). Does increasing milk yield per cow reduce greenhouse gas emissions? A system approach. animal, 6(01), 154-166.

Zhang, H., Hortal, M., Dobon, A., Bermudez, J. M., & Lara-Lledo, M. (2015). The Effect of Active Packaging on Minimizing Food Losses: Life Cycle Assessment (LCA) of Essential Oil Component-enabled Packaging for Fresh Beef. Packaging Technology and Science, 28(9), 761-774.

Brock, P. M., Graham, P., Madden, P., & Alcock, D. J. (2013). Greenhouse gas emissions profile for 1 kg of wool produced in the Yass Region, New South Wales: A Life Cycle Assessment approach. Animal production science, 53(6), 495-508.

Browne, N. A., Eckard, R. J., Behrendt, R., & Kingwell, R. S. (2011). A comparative analysis of on-farm greenhouse gas emissions from agricultural enterprises in south eastern Australia. Animal Feed Science and Technology, 166, 641-652.

Browne, N. A., Behrendt, R., Kingwell, R. S., & Eckard, R. J. (2015). Does producing more product over a lifetime reduce greenhouse gas emissions and increase profitability in dairy and wool enterprises?. Animal Production Science, 55(1), 49-55.

Cottle, D. J., & Cowie, A. L. (2016). Allocation of greenhouse gas production between wool and meat in the life cycle assessment of Australian sheep production. The International Journal of Life Cycle Assessment, 21(6), 820-830.

Cottle, D. J., Harrison, M. T., & Ghahramani, A. (2016) Sheep greenhouse gas emission intensities under different management practices, climate zones and enterprise types. Animal Production Science, 56, 507-518.

Dyer, J. A., Vergé, X. P., Desjardins, R. L., & Worth, D. E. (2014). A comparison of the greenhouse gas emissions from the sheep industry with beef production in Canada. Sustainable Agriculture Research, 3(3), 65.

Gac, A., Ledgard, S., Lorinquer, E., Boyes, M., Le Gall, A. (2012) Carbon footprint of sheep farms in France and New Zealand and methodology analysis. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 306-310.

Harrison, M. T., Jackson, T., Cullen, B. R., Rawnsley, R. P., Ho, C., Cummins, L., & Eckard, R. J. (2014). Increasing ewe genetic fecundity improves whole-farm production and reduces greenhouse gas emissions intensities: 1. Sheep production and emissions intensities. Agricultural Systems, 131, 23-33.

Head, M., Sevenster, M. N., & Croezen, H. J. (2011). Life cycle impacts of protein-rich foods for superwijzer. CE Delft, Delft.

Jones, A. K., Jones, D. L., & Cross, P. (2014a). The carbon footprint of UK sheep production: current knowledge and opportunities for reduction in temperate zones. The Journal of Agricultural Science, 152(02), 288-308.

Jones, A. K., Jones, D. L., & Cross, P. (2014b). The carbon footprint of lamb: Sources of variation and opportunities for mitigation. Agricultural Systems, 123, 97-107.

Jones, A. K., Jones, D. L., & Cross, P. (2015). Developing farm-specific marginal abatement cost curves: Cost-effective greenhouse gas mitigation opportunities in sheep farming systems. Land Use Policy, 49, 394-403.

Kenyon, F., Dick, J. M., Smith, R. I., Coulter, D. G., McBean, D., & Skuce, P. J. (2013). Reduction in greenhouse gas emissions associated with worm control in lambs. Agriculture, 3(2), 271-284.

Koch, P., Salou, T. (2015) AGRIBALYSE®: METHODOLOGY Version 1.2. ADEME, Angers, France.

Kopke, E., Young, J., & Kingwell, R. (2008). The relative profitability and environmental impacts of different sheep systems in a Mediterranean environment. Agricultural Systems, 96(1), 85-94.

Ledgard, S.F., Lieffering, M., McDevitt, J., Boyes, M. & Kemp, R. (2010). A Greenhouse Gas Footprint Study for Exported New Zealand Lamb. AgResearch, Hamilton.

Ledgard, S. F., Lieffering, M., Coup, D., & O'Brien, B. (2011). Carbon footprinting of New Zealand lamb from the perspective of an exporting nation. Animal frontiers, 1(1), 40-45.

Mackay, A. D., Rhodes, A. P., Power, I., & Wedderburn, M. E. (2012). Has the eco-efficiency of sheep and beef farms changed in the last 20 years. In Proc. NZ Grassl. Assoc (Vol. 74, No. 11, p. e16).

O'Brien, D., Bohan, A., McHugh, N., & Shalloo, L. (2016). A life cycle assessment of the effect of intensification on the environmental impacts and resource use of grass-based sheep farming. Agricultural Systems, 148, 95-104.

Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., ... & Steinfeld, H. (2013). Greenhouse gas emissions from ruminant supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Ripoll-Bosch, R., De Boer, I. J. M., Bernués, A., & Vellinga, T. V. (2013). Accounting for multi-functionality of sheep farming in the carbon footprint of lamb: a comparison of three contrasting Mediterranean systems. Agricultural Systems, 116, 60-68.

Saunders, C., Barber, A., & Taylor, G. (2006). Food miles-comparative energy/emissions performance of New Zealand's agriculture industry. Lincoln University, Lincoln.

Sneessens, I., Veysset, P., Benoit, M., Lamadon, A., & Brunschwig, G. (2014).Sheep'n'Crop—an integrated whole-farm model to assess environmental and economic performances. Universite Blaise Pascal, Clermont-Ferrand.

Wiedemann, S., McGahan, E., Murphy, C., Yan, M. J., Henry, B., Thoma, G., & Ledgard, S. (2015). Environmental impacts and resource use of Australian beef and lamb exported to the USA determined using life cycle assessment. Journal of Cleaner Production, 94, 67-75.

Williams, A.G., Audsley, E. & Sandars, D.L. 2006. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205. Cranfield University and Defra, Bedford.

Bandekar, P., Leh, M., Bautista, R., Matlock, M. D., Thoma, G., Ulrich, R., ... & Huizen, D. (2014). Life cycle analysis of swine management practices. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 70-77). American Center for Life Cycle Assessment, Vashon.

Basset-Mens, C. H. M. G., Van der Werf, H. M. G., Robin, P., Morvan, T., Hassouna, M., Paillat, J. M., & Vertès, F. (2007). Methods and data for the environmental inventory of contrasting pig production systems. Journal of Cleaner Production, 15(15), 1395-1405.

Binder, M. (2003). Life cycle analysis of DL-methionine in broiler meat production. AminoNews™,4(2), 2-8.

Bonesmo, H., Little, S. M., Harstad, O. M., Beauchemin, K. A., Skjelvåg, A. O., & Sjelmo, O. (2012). Estimating farm-scale greenhouse gas emission intensity of pig production in Norway. Acta Agriculturae Scandinavica, Section A–Animal Science, 62(4), 318-325.

Cederberg, C., & Flysjö, A. (2004). Environmental assessment of future pig farming systems - Quantifications of Three Scenarios from the FOOD 21 Synthesis Work. SIK Report 723 2004. Swedish Institute for Food and Biotechnology, Gothenburg.

Cederberg, C., Wivstad, M., Bergkvist, P., Mattsson, B., & Ivarsson, K. (2005). Environmental assessment of plant protection strategies using scenarios for pig feed production. AMBIO: A Journal of the Human Environment, 34(4), 408-413.

Cherubini, E., Zanghelini, G. M., Tavares, J. M. R., Belettini, F., & Soares, S. R. (2015). The finishing stage in swine production: influences of feed composition on carbon footprint. Environment, Development and Sustainability, 17(6), 1313-1328.

Dai, Y. Y., & Kuo, N. W. (2008). An application of life cycle assessment to pork processing in Taiwan. In Proceedings of the 6th International Conference on LCA in the Agri-food Sector (p. 69).

Dalgaard R. (2007). The environmental impact of pork production from a life cycle perspective. PhD Thesis. Aalborg: Institut for Samfundsudvikling og Planlægning, Aalborg Universitet.

Dalgaard, R., Halberg, N., & Hermansen, J. E. (2007). Danish pork production: an environmental assessment (p. 38). Aarhus Universitet, Det Jordbrugsvidenskabelige Fakultet.

Devers, L., Kleynhans, T. E., & Mathijs, E. (2012). Comparative life cycle assessment of Flemish and Western Cape pork production. Agrekon, 51(4), 105-128.

Djekic I., Radović Č., Lukić M., Stanišić N., Lilić S. (2015). Environmental life-cycle assessment in production of pork products. godina XVII, 469-476.

Dolman, M. A., de Boer, I. J. M., & Vrolijk, H. C. J. (2010). Explaining relations between economic and life cycle assessment indicators for Dutch pig fattening farms. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, 249-254.

Dourmad, J. Y., Ryschawy, J., Trousson, T., Bonneau, M., Gonzàlez, J., Houwers, H. W. J., ... & Morgensen, L. (2014). Evaluating environmental impacts of contrasting pig farming systems with life cycle assessment. animal, 8(12), 2027-2037.

Espagnol, S., Rugani, A., Baratte, C., Roguet, C., Marcon, M., Tailleur, A., ... & Dourmad, J. Y. (2012). Référentiel environnemental et socio-économique des systèmes d'élevage porcin conventionnels français. In 44. Journées de la Recherche Porcine. 2012-02-072012-02-08, Paris, FRA. IFIP-Institut du Porc.

Espagnol, S., Rugani, A., Roguet, C., Loussouarn, A., Ramonet, Y., Dourmad, J. Y., ... & Huizen, D. (2014). Environmental improvement of pig production: construction and assessment of eight models of pig farms for the future. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 372-379). American Center for Life Cycle Assessment, Vashon.

Fry, J., & Kingston, C. 2009. Life Cycle Assessment of Pork Report. Final report prepared for Environmental Resources, AHDBMS, ERM.

Garcia-Launay, F., Van Der Werf, H., Nguyen, T. T. H., Le Tutour, L., & Dourmad, J. Y. (2013). L'incorporation d'acides aminés dans les aliments permet de réduire les impacts environnementaux de la production porcine. Journées Rech. Porcine, 45, 123-128.

Gaudré, D., Wilfart, A., Magnin, M., Planchenault, D., Traineau, O., Espagnol, S. (2015). Impacts environnementaux des aliments porcs: Etat des lieux et possibilités de réduction par le changement de la composition de l'aliment. Journées Recherche Porcine, 47, 99-104.

Groen, E. A., Van Zanten, H. H. E., Heijungs, R., Bokkers, E. A. M., & De Boer, I. J. M. (2016). Sensitivity analysis of greenhouse gas emissions from a pork production chain. Journal of Cleaner Production, 129, 202-211.

Jacobsen, R., Vandermeulen, V., Van Huylenbroeck, G., & Gellynck, X. (2014). Carbon footprint of pigmeat in Flanders. International Journal of Agricultural Sustainability, 12(1), 54-70.

Jones, C., & Cherruault, J. Y.(2011). Comparative LCA of Pork Production for Midland Pig Producers. Sustain, Bristol.

Koch, P., Salou, T. (2015) AGRIBALYSE®: METHODOLOGY Version 1.2. ADEME, Angers.

Lammers, P. J. (2009). Energy and nutrient cycling in swine production systems. PhD Thesis. Iowa State University, Ames.

Lammers, P. J., Honeyman, M. S., Harmon, J. D., & Helmers, M. J. (2010). Energy and carbon inventory of Iowa swine production facilities. Agricultural Systems, 103(8), 551-561.

Lammers, P. J., Kenealy, M. D., Kliebenstein, J. B., Harmon, J. D., Helmers, M. J., & Honeyman, M. S. (2012). Energy use in pig production: an examination of current Iowa systems. Journal of animal science, 90(3), 1056-1068.

Mackenzie, S. G., Leinonen, I., Ferguson, N., & Kyriazakis, I. (2015). Accounting for uncertainty in the quantification of the environmental impacts of Canadian pig farming systems. Journal of animal science, 93(6), 3130-3143.

Mackenzie, S. G., Leinonen, I., Ferguson, N., & Kyriazakis, I. (2015). Can the environmental impact of pig systems be reduced by utilising co-products as feed?. Journal of Cleaner Production, 115, 172-181.

MacLeod, M., Gerber, P., Mottet, A., Tempio, G., Falcucci, A., Opio, C., ... & Steinfeld, H. (2013). Greenhouse gas emissions from pig and chicken supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Meul, M., Nevens, F., Reheul, D., & Hofman, G. (2007). Energy use efficiency of specialised dairy, arable and pig farms in Flanders. Agriculture, Ecosystems & Environment, 119(1), 135-144.

Meul, M., Ginneberge, C., Van Middelaar, C. E., de Boer, I. J., Fremaut, D., & Haesaert, G. (2012). Carbon footprint of five pig diets using three land use change accounting methods. Livestock Science, 149(3), 215-223.

Nguyen, T. L. T., Hermansen, J. E., & Mogensen, L. (2010). Fossil energy and GHG saving potentials of pig farming in the EU. Energy Policy, 38(5), 2561-2571.

Nguyen, T.L.T., Hermansen, J.E., Morgensen, L. 2012c. Environmental costs of meat production: the case of typical EU pork production. Journal of Cleaner Production, 28, 168-176.

Nielsen, P. H., & Wenzel, H. (2007). Environmental assessment of Ronozyme® P5000 CT phytase as an alternative to inorganic phosphate supplementation to pig feed used in intensive pig production. The International Journal of Life Cycle Assessment, 12(7), 514-520.

Noya, I., Aldea, X., Gasol, C. M., González-García, S., Amores, M. J., Colón, J., ... & Moreira, M. T. (2016). Carbon and water footprint of pork supply chain in Catalonia: From feed to final products. Journal of environmental management, 171, 133-143.

Ogino, A., Osada, T., Takada, R., Takagi, T., Tsujimoto, S., Tonoue, T., ... & Tanaka, Y. (2013). Life cycle assessment of Japanese pig farming using low-protein diet supplemented with amino acids. Soil science and plant nutrition, 59(1), 107-118.

Olea, R., Guy, J., Edge, H., Stockdale, E. A., Edwards, S. A., Stockdale, E., & Martindale, W. (2009). Pigmeat supply chain: Life Cycle Analysis of contrasting pig farming scenarios. Aspects of Applied Biology, (95), 91-96.

Pelletier, N., Lammers, P., Stender, D., & Pirog, R. (2010). Life cycle assessment of high-and low-profitability commodity and deep-bedded niche swine production systems in the Upper Midwestern United States. Agricultural Systems, 103(9), 599-608.

Pirlo, G., Carè, S., Della Casa, G., Marchetti, R., Ponzoni, G., Faeti, V., ... & Falconi, F. (2016). Environmental impact of heavy pig production in a sample of Italian farms. A cradle to farm-gate analysis. Science of The Total Environment, 565, 576-585.

Reckmann, K., & Krieter, J. (2015). Environmental impacts of the pork supply chain with regard to farm performance. The Journal of Agricultural Science, 153(03), 411-421.

Reckmann, K., Traulsen, I., & Krieter, J. (2013). Life Cycle Assessment of pork production: A data inventory for the case of Germany. Livestock Science, 157(2), 586-596.

Reckmann, K., Samuel-Fitwi, B., Blank, R., Traulsen, I., & Krieter, J. (2016). Comparative Life Cycle Assessment (LCA) of pork using different protein sources in pig feed. Archives of Animal Breeding, 59, 27-36.

Roffeis, M., Muys, B., Almeida, J., Mathijs, E., Achten, W. M. J., Pastor, B., ... & Rojo, S. (2015). Pig manure treatment with housefly (Musca domestica) rearing–an environmental life cycle assessment. Journal of Insects as Food and Feed, 1(3), 195-214.

Rugani, B., Neri, E., Niccolucci, V., Pulselli, F.M. & Bastianoni, S. (2012). Emergy and life-cycle sustainability of pig meat products. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 673-674.

Salemdeeb, R., zu Ermgassen, E. K., Kim, M. H., Balmford, A., & Al-Tabbaa, A. (2017). Environmental and health impacts of using food waste as animal feed: a comparative analysis of food waste management options. Journal of Cleaner Production, 140, 871-880.

Smith, S. (2013). LCA of British Pork - Final Report. AHDB, Kenilworth.

Stern, S., Sonesson, U., Gunnarsson, S., Kumm, K. I., Öborn, I., & Nybrant, T. (2005). Sustainable Pig Production in the Future: Development and Evaluation of Different Scenarios. Report FOOD 21 No 5/2005. Swedish Institute for Food and Biotechnology, Gothenburg.

Stone, J. J., Dollarhide, C. R., Jinka, R., Thaler, R. C., Hostetler, C. E., & Clay, D. E. (2010). Life cycle assessment of a modern Northern Great Plains US swine production facility. Environmental Engineering Science, 27(12), 1009-1018.

Stone, J. J., Aurand, K. R., Dollarhide, C. R., Jinka, R., Thaler, R. C., Clay, D. E., & Clay, S. A. (2011). Determination of environmental impacts of antimicrobial usage for US Northern Great Plains swine-production facilities: a life-cycle assessment approach. The International Journal of Life Cycle Assessment, 16(1), 27-39.

Stone, J. J., Dollarhide, C. R., Benning, J. L., Carlson, C. G., & Clay, D. E. (2012). The life cycle impacts of feed for modern grow-finish Northern Great Plains US swine production. Agricultural Systems, 106(1), 1-10.

Teixeira, R., Himeno, A., & Gustavus, L. (2013). Carbon footprint of breton pâté production: A case study. Integrated environmental assessment and management, 9(4), 645-651.

Teng, X., Gao, X. & Li, X. (2012). Life cycle inventory analysis of intensive pig production in Heilongjiang province. In 2012 Asia pacific conference on environmental science and technology. Advances in Biomedical Engineering, 6, 409-414.

Thoma, G., Matlock, M., Putman, B., Burek, J., (2013). A Life Cycle Analysis of Land Use in US Pork Production: Comprehensive Report. Available at: <http://research.pork.org/FileLibrary/ResearchDocuments/13-208-Thoma-UofARK.pdf>. Accessed 01/01/2017.

Tsujimoto, S., Takagi, T., Osada, T., & Ogino, A. (2013). Greenhouse gas reduction and improved sustainability of animal husbandry using amino acids in swine, poultry feeds. Animal Science Journal, 84(5), 409-415.

Van der Werf, H. M., Petit, J., & Sanders, J. (2005). The environmental impacts of the production of concentrated feed: the case of pig feed in Bretagne. Agricultural Systems, 83(2), 153-177.

van der Werf, H. M., Tzilivakis, J., Lewis, K., & Basset-Mens, C. (2007). Environmental impacts of farm scenarios according to five assessment methods. Agriculture, ecosystems & environment, 118(1), 327-338.

Vergé, X., Maxime, D., Desjardins, R. L., & VanderZaag, A. C. (2016). Allocation factors and issues in agricultural carbon footprint: a case study of the Canadian pork industry. Journal of Cleaner Production, 113, 587-595.

Wang, X., Wu, X., Yan, P., Gao, W., Chen, Y., & Sui, P. (2016). Integrated analysis on economic and environmental consequences of livestock husbandry on different scale in China. Journal of Cleaner Production, 119, 1-12.

Zhu, X., & Van Ierland, E.C., (2004). Protein chains and environmental pressures: a comparison of pork and novel protein foods. Environmental Sciences, 1(3) 2003/2004.

Bastianoni, S., Boggia, A., Castellini, C., Di Stefano, C., Niccolucci, V., Novelli, E., ... & Pizzigallo, A. (2010). Measuring environmental sustainability of intensive poultry-rearing system. In Genetic Engineering, Biofertilisation, Soil Quality and Organic Farming (p. 277-309). Springer Netherlands.

Boggia, A., Paolotti, L., & Castellini, C. (2010). Environmental impact evaluation of conventional, organic and organic-plus poultry production systems using life cycle assessment. World's Poultry Science Journal, 66(01), 95-114.

Bundgaard, A. M., Dalgaard, R., Gilbert, C., & Thrane, M. (2014). Assessment of the potential of digestibility-improving enzymes to reduce greenhouse gas emissions from broiler production. Journal of Cleaner Production, 73, 218-226.

Castellini, C., Boggia, A., Paolotti, L., Thoma, G. J., & Kim, D. S. (2012). 7 Environmental Impacts and Life Cycle Analysis of Organic Meat Production and Processing. Organic Meat Production and Processing, 53, 1.

Castellini, C., Boggia, A., Cortina, C., Dal Bosco, A., Paolotti, L., Novelli, E., & Mugnai, C. (2012). A multicriteria approach for measuring the sustainability of different poultry production systems. Journal of Cleaner Production, 37, 192-201.

Cherubini, E., Prudêncio da Silva Junior, V., Soares, S.R., Santos, M.A. (2012). EInfluence of allocation methods and system boundaries in LCA of broiler production. In Corson, M.S., van der

Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 680-683.

de Alvarenga, R. A. F., da Silva Júnior, V. P., & Soares, S. R. (2012). Comparison of the ecological footprint and a life cycle impact assessment method for a case study on Brazilian broiler feed production. Journal of Cleaner Production, 28, 25-32.

Ewemoje, T.A., Omotosho, O., & Abimbola, O. P. (2013). Cradle-to-gate LCA of poultry production system in a developing country – The case of Nigeria. International Journal of AgriScience Vol. 3(4): 323-332.

Leinonen, I., Williams, A. G., Waller, A. H., & Kyriazakis, I. (2013). Comparing the environmental impacts of alternative protein crops in poultry diets: The consequences of uncertainty. Agricultural systems, 121, 33-42.

Leinonen, I., Williams, A. G., & Kyriazakis, I. (2014). The effects of welfare-enhancing system changes on the environmental impacts of broiler and egg production. Poultry science, 93(2), 256-266.

Leinonen, I., Williams, A. G., & Kyriazakis, I. (2015). Potential environmental benefits of prospective genetic changes in broiler traits. Poultry science, 00 (1-9).

Leinonen, I., Williams, A. G., & Kyriazakis, I. (2016). Comparing the environmental impacts of UK turkey production systems using analytical error propagation in uncertainty analysis. Journal of Cleaner Production, 112, 141-148.

MacLeod, M., Gerber, P., Mottet, A., Tempio, G., Falcucci, A., Opio, C., ... & Steinfeld, H. (2013). Greenhouse gas emissions from pig and chicken supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

McCarthy, D., Matopoulos, A., & Davies, P. (2015). Life cycle assessment in the food supply chain: a case study. International Journal of Logistics Research and Applications, 18(2), 140-154.

Meda, B. (2011). Une approche dynamique des flux d'éléments et d'énergie des ateliers de production avicole avec ou sans parcours: Conception et application du modèle MOLDAVI. Doctoral dissertation. Agrocampus Ouest.

Michael, D. (2011). Carbon Reduction Benchmarks & Strategies - New Animal Products. RIRDC Publication No. 11/063. Rural Industries Research and Development Corporation, Sydney.

Nielsen, N. I., Jørgensen, M., & Bahrndorff, S. (2011). Greenhouse gas emission from the Danish broiler production estimated via LCA methodology. The Danish Food Industry Agency, Aarhus.

Pardo, G., Ciruelos, A., López, N., González, L., Ramos, S., & Zufía, J., (2012). Environmental improvement of a chicken product through life cycle assessment methodology. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 86-91.

Rajaniemi, M., and Ahokas, J. (2015) Direct energy consumption and CO2 emissions in a Finnish broiler case study - a case study. Agricultural and Food Science, 24, 10-23.

Tongpool, R., Phanichavalit, N., Yuvaniyama, C., & Mungcharoen, T. (2012). Improvement of the environmental performance of broiler feeds: a study via life cycle assessment. Journal of Cleaner Production, 35, 16-24.

Tynelius, G. (2008). Klimatpåverkan och förbättringsåtgärder för Lantmännens livsmedel–fallstudie Kronfågels slaktkyckling. Dissertation. Lunds Tekniska Högskola, Lund.

Vergé, X. P. C., Dyer, J. A., Desjardins, R. L., & Worth, D. (2009). Long-term trends in greenhouse gas emissions from the Canadian poultry industry. The Journal of Applied Poultry Research, 18(2), 210-222.

Wallman, M., & Sonesson, U. (2010). Livscykelanalys (LCA) av svensk kalkonproduktion. Swedish Institute for Food and Biotechnology, Gothenburg.

Wiedemann, S., McGahan, E. J., & Poad, G. (2012). Using life cycle assessment to quantify the environmental impact of chicken meat production. RIRDC Publication No. 12/029. Rural Industries Research and Development Corporation, Barton.

Williams, A.G., Audsley, E. & Sandars, D.L. 2006. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205. Cranfield University and Defra, Bedford.

Alqaisi, O., Hemme, T., Hagemann, M., & Susenbeth, A. (2014a). Nutritional and ecological evaluation of dairy farming systems based on concentrate feeding regimes in semi-arid environments of Jordan. Saudi journal of biological sciences, 21(1), 41-55.

Alqaisi, O., Hemme, T., Latacz-Lohmann, U., & Susenbeth, A. (2014b). Evaluation of food industry by-products as feed in semi-arid dairy farming systems: the case of Jordan. Sustainability science, 9(3), 361-377.

Anastasiadis, S., & Kerr, S. (2013). Mitigation and heterogeneity in management practices on New Zealand dairy farms. Motu Economic and Public Policy Research, Motu Working Paper, 13-11.

Arsenault, N., Tyedmers, P., & Fredeen, A. (2009). Comparing the environmental impacts of pasture-based and confinement-based dairy systems in Nova Scotia (Canada) using life cycle assessment. International Journal of Agricultural Sustainability, 7(1), 19-41.

Asselin-Balençon, A. C., Popp, J., Henderson, A., Heller, M., Thoma, G., & Jolliet, O. (2013). Dairy farm greenhouse gas impacts: A parsimonious model for a farmer's decision support tool. International Dairy Journal, 31, S65-S77.

Baek, C. Y., Lee, K. M., & Park, K. H. (2014). Quantification and control of the greenhouse gas emissions from a dairy cow system. Journal of Cleaner Production, 70, 50-60.

Barber, A., & AgriLINK, N. Z. (2010). On-farm greenhouse gas emissions from 23 surveyed organic and conventional NZ dairy farms. Ministry of Agriculture and Forestry, Wellington.

Basset-Mens, C., Kelliher, F. M., Ledgard, S., & Cox, N. (2009). Uncertainty of global warming potential for milk production on a New Zealand farm and implications for decision making. The International Journal of Life Cycle Assessment, 14(7), 630-638.

Batalla, I., Knudsen, M. T., Mogensen, L., del Hierro, Ó., Pinto, M., & Hermansen, J. E. (2015). Carbon footprint of milk from sheep farming systems in Northern Spain including soil carbon sequestration in grasslands. Journal of Cleaner Production, 104, 121-129.

Belflower, J. B., Bernard, J. K., Gattie, D. K., Hancock, D. W., Risse, L. M., & Alan Rotz, C. (2012). A case study of the potential environmental impacts of different dairy production systems in Georgia. Agricultural Systems, 108, 84-93.

Bell, M. J., Wall, E., Russell, G., Simm, G., & Stott, A. W. (2011). The effect of improving cow productivity, fertility, and longevity on the global warming potential of dairy systems. Journal of dairy science, 94(7), 3662-3678.

Bell, M. J., Eckard, R. J., Haile-Mariam, M., & Pryce, J. E. (2013). The effect of changing cow production and fitness traits on net income and greenhouse gas emissions from Australian dairy systems. Journal of dairy science, 96(12), 7918-7931.

Bell, M. J., Garnsworthy, P. C., Stott, A. W., & Pryce, J. E. (2015). Effects of changing cow production and fitness traits on profit and greenhouse gas emissions of UK dairy systems. The Journal of Agricultural Science, 153(01), 138-151.

Berlin, J., Sonesson, U., & Tillman, A. M. (2008). Product chain actors' potential for greening the product life cycle. Journal of Industrial Ecology, 12(1), 95-110.

Berre, D., Blancard, S., Boussemart, J. P., Leleu, H., & Tillard, E. (2014). Finding the right compromise between productivity and environmental efficiency on high input tropical dairy farms: A case study. Journal of environmental management, 146, 235-244.

Beukes, P. C., Gregorini, P., Romera, A. J., Levy, G., & Waghorn, G. C. (2010). Improving production efficiency as a strategy to mitigate greenhouse gas emissions on pastoral dairy farms in New Zealand. Agriculture, ecosystems & environment, 136(3), 358-365.

Beukes, P. C., Gregorini, P., & Romera, A. J. (2011). Estimating greenhouse gas emissions from New Zealand dairy systems using a mechanistic whole farm model and inventory methodology. Animal Feed Science and Technology, 166, 708-720.

Bonesmo, H., Beauchemin, K. A., Harstad, O. M., & Skjelvåg, A. O. (2013). Greenhouse gas emission intensities of grass silage based dairy and beef production: A systems analysis of Norwegian farms. Livestock Science, 152(2), 239-252.

Browne, N. A., Behrendt, R., Kingwell, R. S., & Eckard, R. J. (2015). Does producing more product over a lifetime reduce greenhouse gas emissions and increase profitability in dairy and wool enterprises?. Animal Production Science, 55(1), 49-55.

Capper, J. L., & Hayes, D. J. (2012). The environmental and economic impact of removing growth-enhancing technologies from US beef production. Journal of animal science, 90(10), 3527.

Capper, J. L., Castañeda-Gutiérrez, E., Cady, R. A., & Bauman, D. E. (2008). The environmental impact of recombinant bovine somatotropin (rbST) use in dairy production. Proceedings of the National Academy of Sciences, 105(28), 9668-9673.

Capper, J. L., Cady, R. A., & Bauman, D. E. (2009). The environmental impact of dairy production: 1944 compared with 2007. Journal of Animal Science, 87(6), 2160-2167.

Cashman, S. (2009). Charting the Course for Sustainability at Aurora Organic Dairy Phase I: Energy & Greenhouse Gas Life Cycle Assessment. Doctoral Dissertation, The University of Michigan, Ann Arbor.

Castanheira, É. G., Dias, A. C., Arroja, L., & Amaro, R. (2010). The environmental performance of milk production on a typical Portuguese dairy farm. Agricultural Systems, 103(7), 498-507.

Cecchini, L., Torquati, B., Paffarini, C., Barbanera, M., Foschini, D., & Chiorri, M. (2016). The Milk Supply Chain in Italy's Umbria Region: Environmental and Economic Sustainability. Sustainability, 8(8), 728.

Cederberg, C., & Stadig, M. (2003). System expansion and allocation in life cycle assessment of milk and beef production. The International Journal of Life Cycle Assessment, 8(6), 350-356.

Cederberg, C., Persson, U. M., Neovius, K., Molander, S., & Clift, R. (2011). Including carbon emissions from deforestation in the carbon footprint of Brazilian beef. Environmental Science & Technology, 45(5), 1773-1779.

Chen, X., & Corson, M. S. (2014). Influence of emission-factor uncertainty and farm-characteristic variability in LCA estimates of environmental impacts of French dairy farms. Journal of Cleaner Production, 81, 150-157.

Chen, G., Orphant, S., Kenman, S. J., & Chataway, R. G. (2005). Life cycle assessment of a representative dairy farm with limited irrigation pastures. In Proceedings fo the 4th Australian Conference on Life Cycle Assessment (p. 1-11). Australian Life Cycle Assessment Society.

Chianese, D. S., Rotz, C. A., & Richard, T. L. (2009). Whole-farm greenhouse gas emissions: a review with application to a Pennsylvania dairy farm. Applied Engineering in Agriculture, 25(3), 431-442.

Chobtang, J., Ledgard, S. F., McLaren, S. J., Zonderland-Thomassen, M., & Donaghy, D. J. (2016). Appraisal of environmental profiles of pasture-based milk production: a case study of dairy farms in the Waikato region, New Zealand. The International Journal of Life Cycle Assessment, 21(3), 311-325.

Christie, K. M., Rawnsley, R. P., & Eckard, R. J. (2011). A whole farm systems analysis of greenhouse gas emissions of 60 Tasmanian dairy farms. Animal Feed Science and Technology, 166, 653-662.

Christie, K. M., Gourley, C. J. P., Rawnsley, R. P., Eckard, R. J., & Awty, I. M. (2012). Whole-farm systems analysis of Australian dairy farm greenhouse gas emissions. Animal production science, 52(11), 998-1011.

Corson, M. S., & Van der Werf, H. M. G. (2008). Effect of structural and management characteristics on variability of dairy farm environmental impacts. Proceedings of the 6th International Conference on LCA in the Agri-Food Sector – Towards a sustainable management of the Food chain. November 12–14, 2008, Zurich, Switzerland, Nemecek, T., Gaillard, G. eds., Agroscope Reckenholz-Tänikon Research Station ART, June 2009.

Dalgaard, R., Halberg, N., Kristensen, I.S., & Larsen, I. (2004). An LC inventory based on representative and coherent farm types. In. Halberg ed. (2004) Life Cycle Assessment in the Agri-food sector, Proceedings from the 4th International Conference, October 6-8, 2003, Bygholm, Denmark, 98-106.

Dalla Riva, A., Kristensen, T., De Marchi, M., Kargo, M., Jensen, J., & Cassandro, M. (2014). Carbon footprint from dairy farming system: comparison between Holstein and Jersey cattle in Italian circumstances. Acta Agraria Kaposváriensis, 18, 75-80.

Daneshi, A., Esmaili-sari, A., Daneshi, M., & Baumann, H. (2014). Greenhouse gas emissions of packaged fluid milk production in Tehran. Journal of Cleaner Production, 80, 150-158.

de Leis, C.M., da Silva Jr, V.P., Soares, S.R., Olszensviki, F.T., Meireles, S. 2010. Environmental Assessment of Two Dairy Systems in Brazil South. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Session 2A. 185-190.

de Léis, C. M. (2013). Desempenho ambiental de três sistemas de produção de leite no sul do Brasil pela abordagem da avaliação do ciclo de vida. PhD Thesis. Universidade Federal de Santa Catarina, Florianópolis.

de Léis, C. M., Cherubini, E., Ruviaro, C. F., Da Silva, V. P., do Nascimento Lampert, V., Spies, A., & Soares, S. R. (2015). Carbon footprint of milk production in Brazil: a comparative case study. The International Journal of Life Cycle Assessment, 20(1), 46-60.

Del Prado, A., Chadwick, D., Cardenas, L., Misselbrook, T., Scholefield, D., & Merino, P. (2010). Exploring systems responses to mitigation of GHG in UK dairy farms. Agriculture, ecosystems & environment, 136(3), 318-332.

Del Prado, A., Crosson, P., Olesen, J. E., & Rotz, C. A. (2013). Whole-farm models to quantify greenhouse gas emissions and their potential use for linking climate change mitigation and adaptation in temperate grassland ruminant-based farming systems. animal, 7(s2), 373-385.

Dollé, J. B., Agabriel, J., Peyraud, J. L., Faverdin, P., Manneville, V., Raison, C., ... & Le Gall, A. (2011). Les gaz à effet de serre en élevage bovin: évaluation et leviers d'action. Productions Animales, 24(5), 415.

Dollé, J. B., A. Gac, V. Manneville, S. Moreau and E. Lorinquer (2012). Life cycle assessment on dairy and beef cattle farms in France. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 655-656.

Doole, G. J. (2014). Least-cost greenhouse gas mitigation on New Zealand dairy farms. Nutrient cycling in agroecosystems, 98(2), 235-251.

Dutreuil, M., Wattiaux, M., Hardie, C. A., & Cabrera, V. E. (2014). Feeding strategies and manure management for cost-effective mitigation of greenhouse gas emissions from dairy farms in Wisconsin. Journal of dairy science, 97(9), 5904-5917.

Fantin, V. & Pegreffi, R., (2009). Studio di Life Cycle Assessment (LCA) del Latte Alta Qualità a marchio COOP. Centro Ricerche Bologna (ENEA). Interner Bericht.

Fantin, V., Pergreffi, R., (2010). Studio di life cycle assessment (LCA) del latte alta qualità a marchio COOP. Report tecnico per la distribuzione pubblica. Centro Ricerche ENEA Ed., Bologna, Italy

Finnegan, W., Goggins, J., Clifford, E., & Zhan, X. (2015). Global warming potential associated with dairy products in the Republic of Ireland. Journal of Cleaner Production.

Flysjö, A., Cederberg, C., Henriksson, M., & Ledgard, S. (2011). How does co-product handling affect the carbon footprint of milk? Case study of milk production in New Zealand and Sweden. The International Journal of Life Cycle Assessment, 16(5), 420-430.

Flysjö, A., Cederberg, C., Henriksson, M., & Ledgard, S. (2012). The interaction between milk and beef production and emissions from land use change–critical considerations in life cycle assessment and carbon footprint studies of milk. Journal of Cleaner Production, 28, 134-142.

Frank, H., Schmid, H., & Hülsbergen, K. J. (2014). Greenhouse gas emissions of organic and conventional dairy farms in Germany. Building Organic Bridges, 2, 505-508.

Gac, A., Le Gall, A., van der Werf, H.M.G, Raison, C., Dollé, B. Life Cycle Assessment applied to two French dairy systems. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Poster Session D. 198-202.

Gac, A., Ledgard, S., Lorinquer, E., Boyes, M., & Le Gall, A. (2012, October). Carbon footprint of sheep farms in France and New Zealand and methodology analysis. In Corson, M.S., van der Werf, H.M.G. (Eds.), Proceedings of the 8th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2012), 1-4 October 2012, Saint Malo, France. INRA, Rennes, France, p. 310-314.

Gerber, P., Vellinga, T., Opio, C., & Steinfeld, H. (2011). Productivity gains and greenhouse gas emissions intensity in dairy systems. Livestock Science, 139(1), 100-108.

Ghorbani, M., & Motallebi, M. (2009). The study on shadow price of greenhouse gases emission in Iran: Case of dairy farms. Research Journal of Environmental Sciences, 3(4), 466-475.

Ghorbani, M., Koocheki, A., & Motallebi, M. (2008). Estimating the greenhouse gases emission and the most important factors in dairy farms (Case Study Iran). Journal of Applied Sciences, 8 (23), 4468-4471.

Gollnow, S., Lundie, S., Moore, A. D., McLaren, J., van Buuren, N., Stahle, P., ... & Rehl, T. (2014). Carbon footprint of milk production from dairy cows in Australia. International Dairy Journal, 37(1), 31-38.

Granarolo (2012a). Environmental Product Declaration for “Piacere Leggero” fresh milk in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=7378>. Accessed 01/01/2017.

Granarolo (2012b). Environmental Product Declaration for organic milk pasteurized at a high temperature and packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=7375>. Accessed 01/01/2017.

Granarolo (2012c). Environmental Product Declaration for organic semi-skimmed milk packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=8774>. Accessed 01/01/2017.

Granarolo (2012d). Environmental Product Declaration for High-quality pasteurized milk packaged in PET bottles. Available at: <http://www.environdec.com/en/Detail/?Epd=6091>. Accessed 01/01/2017.

Graux, A. I., Lardy, R., Bellocchi, G., & Soussana, J. F. (2012). Global warming potential of French grassland-based dairy livestock systems under climate change. Regional Environmental Change, 12(4), 751-763.

Guignard, C., Verones, F., Loerincik, Y., & Jolliet, O. (2009). Environmental/ecological impact of the dairy sector. Bull. Int. Dairy Fed, 436.

Haas, G., Wetterich, F., & Geier, U. (2000). Life cycle assessment framework in agriculture on the farm level. The International Journal of Life Cycle Assessment, 5(6), 345-348.

Haas, G., Wetterich, F., & Köpke, U. (2001). Comparing intensive, extensified and organic grassland farming in southern Germany by process life cycle assessment. Agriculture, Ecosystems & Environment, 83(1), 43-53.

Hacala, S., d’Elevage, R., & Le Gall, A. (2006). Évaluation des émissions de gaz à effet de serre en élevage bovin et perspectives d’atténuation. Fourrages, 186, 215-227.

Hagemann, M., Hemme, T., Ndambi, A., Alqaisi, O., & Sultana, M. N. (2011). Benchmarking of greenhouse gas emissions of bovine milk production systems for 38 countries. Animal feed science and technology, 166, 46-58.

Havlikova, M., & Kroeze, C. (2010). Reducing environmental impact of dairy cattle: A Czech case study. Integrated environmental assessment and management, 6(3), 367-377.

Havlikova, M., Kroeze, C., & Huijbregts, M. A. J. (2008). Environmental and health impact by dairy cattle livestock and manure management in the Czech Republic. Science of the total environment, 396(2), 121-131.

Hawkins, J., Weersink, A., Wagner-Riddle, C., & Fox, G. (2015). Optimizing ration formulation as a strategy for greenhouse gas mitigation in intensive dairy production systems. Agricultural Systems, 137, 1-11.

Head, M., Sevenster, M. N., & Croezen, H. J. (2011). Life cycle impacts of protein-rich foods for superwijzer. CE Delft, Delft.

Heller, M. C., & Keoleian, G. A. (2011). Life cycle energy and greenhouse gas analysis of a large-scale vertically integrated organic dairy in the United States. Environmental science & technology, 45(5), 1903-1910.

Henriksson, M. (2014). Greenhouse gas emissions from Swedish milk production. Doctoral Thesis, Swedish University of Agricultural Sciences, Alnarp.

Henriksson, M., Flysjö, A., Cederberg, C., & Swensson, C. (2011). Variation in carbon footprint of milk due to management differences between Swedish dairy farms. Animal, 5(09), 1474-1484.

Henriksson, M., Cederberg, C., & Swensson, C. (2014). Carbon footprint and land requirement for dairy herd rations: impacts of feed production practices and regional climate variations. Animal: an international journal of animal bioscience, 8(8), 1329.

Hietala, S., Smith, L., Knudsen, M. T., Kurppa, S., Padel, S., & Hermansen, J. E. (2015). Carbon footprints of organic dairying in six European countries—real farm data analysis. Organic Agriculture, 5(2), 91-100.

Hirschfeld, J., Weiß, J., Preidl, M., & Korbun, T. (2008). Klimawirkungen der Landwirtschaft in Deutschland. IÖW, Germany.

Høgaas Eide, M. (2002). Life cycle assessment (LCA) of industrial milk production. The International Journal of Life Cycle Assessment, 7(2), 115-126.

Hospido, A., & Sonesson, U. (2005). The environmental impact of mastitis: a case study of dairy herds. Science of the total environment, 343(1), 71-82.

Hospido, A., Moreira, M. T., & Feijoo, G. (2003). Simplified life cycle assessment of Galician milk production. International Dairy Journal, 13(10), 783-796.

Hosseinzadeh-Bandbafha, H., Safarzadeh, D., & Ahmadi, E. (2015). Modeling Output Energy and Green House Gas Emissions of Dairy Farms using Neural Networks. Biological Forum, 7(2), 743.

Huysveld, S., De Meester, S., Peiren, N., Muylle, H., Lauwers, L., & Dewulf, J. (2015). Resource use assessment of an agricultural system from a life cycle perspective–a dairy farm as case study. Agricultural Systems, 135, 77-89.

Iepema, G., & Pijnenburg, J. (2001). Conventional versus organic dairy farming. A comparison of three experimental farms on environmental impact, animal health and animal welfare. Doctoral dissertation, Animal Production Systems Group, Wageningen University, Wageningen.

Jan, P., Dux, D., Lips, M., Alig, M., & Dumondel, M. (2012). On the link between economic and environmental performance of Swiss dairy farms of the alpine area. The International Journal of Life Cycle Assessment, 17(6), 706-719.

Jan, P., Dux, D., Lips, M., Alig, M., & Baumgartner, D. U. (2014). Analysis of the determinants of the economic and environmental performance of Swiss dairy farms in the alpine area. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 595-605). American Center for Life Cycle Assessment, Vashon.

Kanyarushoki, C., van der Werf, H.M.G., Fuchs, F., 2010. Life cycle assessment of cow and goat milk chains in France. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Poster Session D. 174-179.

Keeratiurai, P. (2013). Environmental impact assessment of milk production with the life cycle. Journal of Agricultural and Biological Science, 8(10), 719-722.

Kiefer, L., Menzel, F., & Bahrs, E. (2014). The effect of feed demand on greenhouse gas emissions and farm profitability for organic and conventional dairy farms. Journal of dairy science, 97(12), 7564-7574.

Kiefer, L. R., Menzel, F., & Bahrs, E. (2015). Integration of ecosystem services into the carbon footprint of milk of South German dairy farms. Journal of environmental management, 152, 11-18.

Koch, P., Salou, T. (2015) AGRIBALYSE®: METHODOLOGY Version 1.2. ADEME, Angers.

Ledgard, S. F., Basset-Mens, C., McLaren, S., & Boyes, M. (2007). Energy use,"food miles'' and greenhouse gas emissions from New Zealand dairying-how efficient are we?. Proceedings of the New Zealand Grassland Association, 69, 223.

Lehuger, S., Gabrielle, B., & Gagnaire, N. (2009). Environmental impact of the substitution of imported soybean meal with locally-produced rapeseed meal in dairy cow feed. Journal of Cleaner Production, 17(6), 616-624.

Liang, D., & Cabrera, V. E. (2015). Optimizing productivity, herd structure, environmental performance, and profitability of dairy cattle herds. Journal of dairy science, 98(4), 2812-2823.

Lizarralde, C., Picasso, V., Rotz, C. A., Cadenazzi, M., & Astigarraga, L. (2014). Practices to Reduce Milk Carbon Footprint on Grazing Dairy Farms in Southern Uruguay: Case Studies. Sustainable Agriculture Research, 3(2), 1.

Lovett, D. K., Shalloo, L., Dillon, P., & O'Mara, F. P. (2006). A systems approach to quantify greenhouse gas fluxes from pastoral dairy production as affected by management regime. Agricultural Systems, 88(2), 156-179.

Lovett, D. K., Shalloo, L., Dillon, P., & O'Mara, F. P. (2008). Greenhouse gas emissions from pastoral based dairying systems: the effect of uncertainty and management change under two contrasting production systems. Livestock Science, 116(1), 260-274.

Martin, G., & Willaume, M. (2016). A diachronic study of greenhouse gas emissions of French dairy farms according to adaptation pathways. Agriculture, Ecosystems & Environment, 221, 50-59.

Mu, W., van Middelaar, C. E., Bloemhof, J. M., & de Boer, I. J. (2014). Benchmarking the environmental performance of specialized dairy production systems: selection of a set of indicators. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 872-879). American Center for Life Cycle Assessment, Vashon.

Mueller, C., de Baan, L., & Koellner, T. (2014). Comparing direct land use impacts on biodiversity of conventional and organic milk—based on a Swedish case study. The International Journal of Life Cycle Assessment, 19(1), 52-68.

Müller-Lindenlauf, M., Deittert, C., & Köpke, U. (2010). Assessment of environmental effects, animal welfare and milk quality among organic dairy farms. Livestock Science, 128(1), 140-148.

O'Brien, D., Shalloo, L., Grainger, C., Buckley, F., Horan, B., & Wallace, M. (2010). The influence of strain of Holstein-Friesian cow and feeding system on greenhouse gas emissions from pastoral dairy farms. Journal of dairy science, 93(7), 3390-3402.

O'Brien, D., Shalloo, L., Buckley, F., Horan, B., Grainger, C., & Wallace, M. (2011). The effect of methodology on estimates of greenhouse gas emissions from grass-based dairy systems. Agriculture, ecosystems & environment, 141(1), 39-48.

O'Brien, D., Shalloo, L., Patton, J., Buckley, F., Grainger, C., & Wallace, M. (2012). Evaluation of the effect of accounting method, IPCC v. LCA, on grass-based and confinement dairy systems' greenhouse gas emissions. animal, 6(09), 1512-1527.

O'Brien, D., Brennan, P., Humphreys, J., Ruane, E., & Shalloo, L. (2014). An appraisal of carbon footprint of milk from commercial grass-based dairy farms in Ireland according to a certified life cycle assessment methodology. The International Journal of Life Cycle Assessment, 19(8), 1469-1481.

O'Brien, D., Hennessy, T., Moran, B., & Shalloo, L. (2015). Relating the carbon footprint of milk from Irish dairy farms to economic performance. Journal of dairy science, 98(10), 7394-7407.

Ogino, A., Ishida, M., Ishikawa, T., Ikeguchi, A., Waki, M., Yokoyama, H., ... & Hirooka, H. (2008). Environmental impacts of a Japanese dairy farming system using whole-crop rice silage as evaluated by life cycle assessment. Animal Science Journal, 79(6), 727-736.

Olesen, J. E., Schelde, K., Weiske, A., Weisbjerg, M. R., Asman, W. A., & Djurhuus, J. (2006). Modelling greenhouse gas emissions from European conventional and organic dairy farms. Agriculture, Ecosystems & Environment, 112(2), 207-220.

Oliveira, M., & Agostinho, F. (2013). Avaliação Energético-Ambiental de Sistemas de Produção de Leite na Região Sul de Minas Gerais: Extensivo Versus "Minas Leite". In Proceedings of 4th International Workshop Advances in Cleaner Production, São Paulo.

Opio, C., Gerber, P., Mottet, A., Falcucci, A., Tempio, G., MacLeod, M., ... & Steinfeld, H. (2013). Greenhouse gas emissions from ruminant supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Oudshoorn, F. W., Kristensen, T., Van der Zijpp, A. J., & De Boer, I. J. M. (2012). Sustainability evaluation of automatic and conventional milking systems on organic dairy farms in Denmark. NJAS-Wageningen Journal of Life Sciences, 59(1), 25-33.

Palmieri, N., Forleo, M. B., Zurlo, N., & Salimei, E. 2014. Life cycle assessment of conventional and organic milk production. Procedings of the 50th SIDEA Conference.

Pardo, G., Martin-Garcia, I., Arco, A., Yañez-Ruiz, D. R., Moral, R., & del Prado, A. (2016). Greenhouse-gas mitigation potential of agro-industrial by-products in the diet of dairy goats in Spain: a life-cycle perspective. Animal Production Science, 56(3), 646-654.

Pastorutti, O., Cortabarría, C., Schein, L., Saucede, L. 2010. Life Cycle Assessment of milk production in Argentina: one first approach. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Poster Session D. 209-214.

Paulsen, H. M., Frank, H., Hülsbergen, K. J., Rahmann, G., Schmidt, H., & Warnecke, S. (2014). Klimagase und deren Minderung bei der Milchproduktion. Available at: <http://orgprints.org/27127/1/27127_paulsen.pdf>. Accessed 01/01/2017.

Pirlo, G., Terzano, G., Pacelli, C., Abeni, F., & Care, S. (2014a). Carbon footprint of milk produced at Italian buffalo farms. Livestock Science, 161, 176-184.

Pirlo, G., Carè, S., Fantin, V., Falconi, F., Buttol, P., Terzano, G. M., ... & Pacelli, C. (2014b). Factors affecting life cycle assessment of milk produced on 6 Mediterranean buffalo farms. Journal of dairy science, 97(10), 6583-6593.

Plassmann, K., & Edwards-Jones, G. (2009). Where Does the Carbon Footprint Fall?: Developing a Carbon Map of Food Production (No. 4). IIED Report, Bangor University, Bangor.

Rafiee, S., Khoshnevisan, B., Mohammadi, I., Aghbashlo, M., & Clark, S. (2016). Sustainability evaluation of pasteurized milk production with a life cycle assessment approach: An Iranian case study. Science of The Total Environment, 562, 614-627.

Reisinger, A., & Ledgard, S. (2013). Impact of greenhouse gas metrics on the quantification of agricultural emissions and farm-scale mitigation strategies: a New Zealand case study. Environmental Research Letters, 8(2), 025019.

Rendón-Huerta, J. A., Pinos-Rodríguez, J. M., García-López, J. C., Yáñez-Estrada, L. G., & Kebreab, E. (2014). Trends in greenhouse gas emissions from dairy cattle in Mexico between 1970 and 2010. Animal Production Science, 54(3), 292-298.

Röös, E., Patel, M., Spångberg, J., Carlsson, G., & Rydhmer, L. (2016). Limiting livestock production to pasture and by-products in a search for sustainable diets. Food Policy, 58, 1-13.

Röös, E., Patel, M., & Spångberg, J. (2016). Producing oat drink or cow's milk on a Swedish farm—Environmental impacts considering the service of grazing, the opportunity cost of land and the demand for beef and protein. Agricultural Systems, 142, 23-32.

Rossier, D., & Gaillard, G. (2001). Bilan écologique de l'exploitation agricole - méthode et application à 50 enterprises. Office fédéral de l'agriculture. Switzerland.

Rotz, C. A., Montes, F., & Chianese, D. S. (2010). The carbon footprint of dairy production systems through partial life cycle assessment. Journal of dairy science, 93(3), 1266-1282.

Salvador, S., Corazzin, M., Piasentier, E., & Bovolenta, S. (2016). Environmental assessment of small-scale dairy farms with multifunctionality in mountain areas. Journal of Cleaner Production, 124, 94-102.

Saxena, R. (2002). Life cycle assessment of Milk production in India. The International Journal of Life Cycle Assessment, 7(3), 189-190.

Schmidt, J.H. & Dalgaard, R. (2012). National and farm level carbon footprint of milk - Methodology and results for Danish and Swedish milk 2005 at farm gate. Arla Foods, Aarhus.

Schoeneboom, J., Carton, S., Hosotte, V., Frank, M., Saling, P., Rehl, T. 2014. Life Cycle Sustainability Assessment of Dairy Farming at the Grignon Farm. In Schenck, R., Huizenga, D. (Eds.), 2014. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the

Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA, (p. 1234-1243). American Center for Life Cycle Assessment, Vashon.

Sefeedpari, P. (2012). Assessment and Optimization of Energy Consumption in Dairy Farm: Energy Efficiency. Iranica Journal of Energy and Environment, 3(3), 213-224.

Shortall, O. K., & Barnes, A. P. (2013). Greenhouse gas emissions and the technical efficiency of dairy farmers. Ecological indicators, 29, 478-488.

Sintori, A., & Tsiboukas, K. (2010, March). Modeling Greenhouse Gas Emissions on Diversified Farms: The Case of Dairy Sheep Farming in Greece. In 84th Annual Conference of the Agricultural Economics Society, Edinburgh, 29–31 March 2010.

Soltanali, H., Emadi, B., Rohani, A., Khojastehpour, M., & Nikkhah, A. (2015). Life Cycle Assessment modeling of milk production in Iran. Information Processing in Agriculture, 2(2), 101-108.

Sonesson, U., & Berlin, J. (2003). Environmental impact of future milk supply chains in Sweden: a scenario study. Journal of Cleaner Production, 11(3), 253-266.

Sonesson, U., Cederberg, C., & Berglund, M. (2009). Greenhouse gas emissions in milk production. Decision support for climate certification. Klimatmärkning för mat Report, 2009, 3.

Taufiq, F. M., & Padmi, T. (2016). Life cycle assessment of dairy farms. Reviews on environmental health, 31(1), 187-190.

Thoma, G., Popp, J., Nutter, D., Shonnard, D., Ulrich, R., Matlock, M., ... & Adom, F. (2013a). Greenhouse gas emissions from milk production and consumption in the United States: A cradle-to-grave life cycle assessment circa 2008. International Dairy Journal, 31, S3-S14.

Thoma, G., Popp, J., Shonnard, D., Nutter, D., Matlock, M., Ulrich, R., ... & Adom, F. (2013b). Regional analysis of greenhouse gas emissions from USA dairy farms: A cradle to farm-gate assessment of the American dairy industry circa 2008. International Dairy Journal, 31, S29-S40.

Thoma, G., Jolliet, O., & Wang, Y. (2013c). A biophysical approach to allocation of life cycle environmental burdens for fluid milk supply chain analysis. International Dairy Journal, 31, S41-S49.

Thomae, D. (2013). Klimarelevanz von Prozessketten zur Bereitstellung von Trinkmilch: von der Landwirtschaft bis zum Handel. PhD Thesis. Justus-Liebig-Universität Gießen, Giessen.

Toma, L., March, M., Stott, A. W., & Roberts, D. J. (2013). Environmental efficiency of alternative dairy systems: A productive efficiency approach. Journal of dairy science, 96(11), 7014-7031.

Torquati, B., Taglioni, C., & Cavicchi, A. (2015). Evaluating the CO2 Emission of the Milk Supply Chain in Italy: An Exploratory Study. Sustainability, 7(6), 7245-7260.

van der Meulen, H. A. B., Dolman, M. A., Jager, J. H., & Venema, G. S. (2014). The impact of farm size on sustainability of dutch dairy farms. International Journal of Agricultural Management, 3(2), 119-123.

van Middelaar, C. E., Berentsen, P. B. M., Dijkstra, J., & De Boer, I. J. M. (2013). Evaluation of a feeding strategy to reduce greenhouse gas emissions from dairy farming: The level of analysis matters. Agricultural Systems, 121, 9-22.

van Middelaar, C. E., Dijkstra, J., Berentsen, P. B. M., & De Boer, I. J. M. (2014a). Cost-effectiveness of feeding strategies to reduce greenhouse gas emissions from dairy farming. Journal of dairy science, 97(4), 2427-2439.

van Middelaar, C. E., Berentsen, P. B. M., Dijkstra, J., Van Arendonk, J. A. M., & De Boer, I. J. M. (2014b). Methods to determine the relative value of genetic traits in dairy cows to reduce greenhouse gas emissions along the chain. Journal of dairy science, 97(8), 5191-5205.

van Middelaar, C. E., Berentsen, P. B. M., Dijkstra, J., Van Arendonk, J. A. M., & De Boer, I. J. M. (2015). Effect of feed-related farm characteristics on relative values of genetic traits in dairy cows to reduce greenhouse gas emissions along the chain. Journal of dairy science, 98(7), 4889-4903.

Vellinga, T. V., Gerber, P., & Opio, C. (2013). Greenhouse gas emissions from global dairy production. Sustainable Dairy Production, 9-30.

Vergé, X. P. C., Maxime, D., Dyer, J. A., Desjardins, R. L., Arcand, Y., & Vanderzaag, A. (2013). Carbon footprint of Canadian dairy products: Calculations and issues. Journal of dairy science, 96(9), 6091-6104.

Viira, A. H., Ariva, J., Põldaru, R., & Roots, J. (2015). Medium-run projections for greenhouse gas emissions arising from agriculture: the case of milk production in Estonia. Agricultural and Food Science, 24(4), 300-312.

Weiske, A., Vabitsch, A., Olesen, J. E., Schelde, K., Michel, J., Friedrich, R., & Kaltschmitt, M. (2006). Mitigation of greenhouse gas emissions in European conventional and organic dairy farming. Agriculture, ecosystems & environment, 112(2), 221-232.

Widi, T. S. M., Udo, H. M. J., Oldenbroek, K., Budisatria, I. G. S., Viets, T., & van der Zijpp, A. J. (2014). Life cycle assessment of local and crossbred cattle production systems in Central Java, Indonesia. In Proceedings of the 16th AAAP Congress Asian Australian Animal Production.

Wilfart, A., Duchène, D., Barbier, J., van der Werf, H.M.G., Corson, M.S. & Aubin, J. 2010. Using LCA in a forecasting method for reducing environmental impact of dairy farms. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Poster Session D. 221-226.

Wilfart, A. D., J. Duchene, J. Barbie, H. M. G. Van der Werf, M. S. Corson and J. Aubin (2010). Using LCA in a forecasting method for reducing environmental impact of dairy farms. In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari, Poster Session D. 221-226.

Williams, A.G., Audsley, E. & Sandars, D.L. 2006. Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. Main Report. Defra Research Project IS0205. Cranfield University and Defra, Bedford.

Williams, S. R. O., Fisher, P. D., Berrisford, T., Moate, P. J., & Reynard, K. (2014). Reducing methane on-farm by feeding diets high in fat may not always reduce life cycle greenhouse gas emissions. The International Journal of Life Cycle Assessment, 19(1), 69-78.

Woods, V. B., Ferris, C., & Morrison, S. (2010). Calculating the Greenhouse Gas Footprint of Dairy Systems: a Preliminary Analysis of Emissions from Milk Production Systems in Northern Ireland, and Some Practical Mitigation Strategies. Agriculture Branch, Hillsborough. Chicago.

Yan, M. J., Humphreys, J., & Holden, N. M. (2013). The carbon footprint of pasture-based milk production: Can white clover make a difference?. Journal of dairy science, 96(2), 857-865.

Yan, M. J., Humphreys, J., & Holden, N. M. (2013). Evaluation of process and input–output-based life-cycle assessment of Irish milk production. The Journal of Agricultural Science, 151(05), 701-713.

Zervas, G., & Tsiplakou, E. (2012). An assessment of GHG emissions from small ruminants in comparison with GHG emissions from large ruminants and monogastric livestock. Atmospheric Environment, 49, 13-23.

Aguirre-Villegas, H. A., Milani, F. X., Kraatz, S., & Reinemann, D. J. (2012). Life cycle impact assessment and allocation methods development for cheese and whey processing. Transactions of the ASABE, 55(2), 613-627.

Basset-Mens, C., McLaren, S., Ledgard, S., (2007). Exploring a comparative advantage for New Zealand cheese in terms of environmental performance. Proceedings 5th International Conference LCA in Food. The Swedish Institute for Food and Biotechnology, Sweden, p. 84–87.

Berlin, J. (2005). Environmental improvements of the Post-Farm Dairy Chain: production management by systems analysis methods. PhD Thesis. Chalmers University of Technology, Gothenburg.

Berlin, J., & Sonesson, U. (2008). Minimising environmental impact by sequencing cultured dairy products: two case studies. Journal of Cleaner Production, 16(4), 483-498.

Berlin, J., Sonesson, U., & Tillman, A. M. (2007). A life cycle based method to minimise environmental impact of dairy production through product sequencing. Journal of Cleaner Production, 15(4), 347-356.

Berlin, J., Sonesson, U., & Tillman, A. M. (2008). Product chain actors' potential for greening the product life cycle. Journal of Industrial Ecology, 12(1), 95-110.

Briam, R., Walker, M. E., & Masanet, E. (2015). A comparison of product-based energy intensity metrics for cheese and whey processing. Journal of Food Engineering, 151, 25-33.

Djekic, I., Miocinovic, J., Tomasevic, I., Smigic, N., & Tomic, N. (2014). Environmental life-cycle assessment of various dairy products. Journal of Cleaner Production, 68, 64-72.

Flysjö, A., Thrane, M., & Hermansen, J. E. (2014). Method to assess the carbon footprint at product level in the dairy industry. International Dairy Journal, 34(1), 86-92.

González-García, S., Hospido, A., Moreira, M. T., Feijoo, G., & Arroja, L. (2013a). Environmental life cycle assessment of a Galician cheese: San Simon da Costa. Journal of Cleaner Production, 52, 253-262.

González-García, S., Castanheira, É. G., Dias, A. C., & Arroja, L. (2013b). Environmental performance of a Portuguese mature cheese-making dairy mill. Journal of Cleaner Production, 41, 65-73.

Granarolo (2013b). Environmental Product Declaration of Mozzarella made from high quality milk. Available at: <http://www.environdec.com/en/Detail/?Epd=6103>. Accessed 01/01/2017.

Guinard, C., Verones, F., Loerincik, Y., & Jolliet, O. (2009). Environmental/ecological impact of the dairy sector: Literature review on dairy products for an inventory of key issues, list of environmental initiative and influences on the dairy sector. Bulletin of the International Dairy Federation, 436, 60.

Head, M., Sevenster, M. N., & Croezen, H. J. (2011). Life cycle impacts of protein-rich foods for superwijzer. CE Delft, Delft.

Kristensen, T., Søegaard, K., Eriksen, J., & Mogensen, L. (2015). Carbon footprint of cheese produced on milk from Holstein and Jersey cows fed hay differing in herb content. Journal of Cleaner Production, 101, 229-237.

Ledgard, S. F., Basset-Mens, C., McLaren, S., & Boyes, M. (2007). Energy use,"food miles'' and greenhouse gas emissions from New Zealand dairying-how efficient are we?. Proceedings of the New Zealand Grassland Association, 69, 223.

Lundie, S., Feitz, A., Jones, M., Dennien, G., Morian, M. (2003) Evaluation of the environmental performance of the Australian dairy processing industry using life cycle assessment. Dairy Research and Development Corporation, Canberra

Nemecek, T., Alig., M., Schmid, A., Vaihinger, M., Schnebli, K. (2011).Variability of the global warming potential and energy demand of Swiss cheese. SETAC Case Study Symposium 28th February. Budapest.

Nielsen, P. H., & Høier, E. (2009). Environmental assessment of yield improvements obtained by the use of the enzyme phospholipase in mozzarella cheese production. The International Journal of Life Cycle Assessment, 14(2), 137-143.

Paragahawewa, U., Blackett, P., & Small, B. (2009). Social life cycle analysis (S-LCA): some methodological issues and potential application to cheese production in New Zealand. AgResearch, Christchurch.

Sonesson, U., Wallman, M., Nilsson, K. 2013. Life Cycle Inventories of three Norwegian post-farm food supply chains – dairy, meat and bread. SIK Report SR859. Swedish Institute for Food and Biotechnology, Gothenburg.

Vergé, X. P. C., Maxime, D., Dyer, J. A., Desjardins, R. L., Arcand, Y., & Vanderzaag, A. (2013). Carbon footprint of Canadian dairy products: Calculations and issues. Journal of dairy science, 96(9), 6091-6104.

Wiltshire, J., Wynn, S., Clarke, J., Chambers, B., Cottrill, B., Drakes, D., ... & Foster, C. (2009). Scenario building to test and inform the development of a BSI method for assessing greenhouse gas emissions from food. Defra, London.

Xu, T., Flapper, J., & Kramer, K. J. (2009). Characterization of energy use and performance of global cheese processing. Energy, 34(11), 1993-2000.

Fournel, S., Pelletier, F., Godbout, S., Lagacé, R., & Feddes, J. (2011). Greenhouse gas emissions from three cage layer housing systems. Animals, 2(1), 1-15.

Granarolo (2013a). Environmental Product Declaration of Fresh Organic Eggs. Available at: <http://environdec.com/en/Detail/epd127>. Accessed 01/01/2017.

Leinonen, I., Williams, A. G., & Kyriazakis, I. (2014). The effects of welfare-enhancing system changes on the environmental impacts of broiler and egg production. Poultry science, 93(2), 256-266.

MacLeod, M., Gerber, P., Mottet, A., Tempio, G., Falcucci, A., Opio, C., Vellinga, T., Henderson, B. & Steinfeld, H. (2013). Greenhouse gas emissions from pig and chicken supply chains–A global life cycle assessment. Food and Agriculture Organization of the United Nations (FAO), Rome.

Nielsen, N.I., Jørgensen, M. & Rasmussen, I.K. (2013). Greenhouse Gas Emission from Danish Organic Egg Production estimated via LCA Methodology. Knowledge Centre for Agriculture, Aarhus.

Taylor, R. C., Omed, H., & Edwards-Jones, G. (2014). The greenhouse emissions footprint of free-range eggs. Poultry science, 93(1), 231-237.

Wiedemann, S., & McGahan, E. (2011). Environmental assessment of an egg production supply chain using life cycle assessment. Australian Egg Corporation Limited, North Sydney.

Adhikari, S., Lal, R., & Sahu, B. C. (2013). Carbon footprint of aquaculture in eastern India. Journal of Water and Climate Change, 4(4), 410-421.

Aubin, J., & Van der Werf, H. M. (2009). Pisciculture et environnement: apports de l’analyse du cycle de vie. Cahiers Agricultures, 18(2), 220-226.

Avadí, A., & Fréon, P. (2015). A set of sustainability performance indicators for seafood: direct human consumption products from Peruvian anchoveta fisheries and freshwater aquaculture. Ecological Indicators, 48, 518-532.

Besson, M., Aubin, J., Komen, H., Poelman, M., Quillet, E., Vandeputte, M., ... & de Boer, I. J. M. (2016). Environmental impacts of genetic improvement of growth rate and feed conversion ratio in fish farming under rearing density and nitrogen output limitations. Journal of Cleaner Production, 116, 100-109.

Bosma, R., Anh, P. T., & Potting, J. (2011). Life cycle assessment of intensive striped catfish farming in the Mekong Delta for screening hotspots as input to environmental policy and research agenda. The International Journal of Life Cycle Assessment, 16(9), 903-915.

Boyd, C. E., Polioudakis, M., & Hanson, T. (2011). Carbon Footprint of US Farm-Reared Catfish. Report to US Catfish Farmers Association, Jackson, Mississippi.

Gronroos, J., Seppala, J., Silvenius, F., & Makinen, T. (2006). Life cycle assessment of Finnish cultivated rainbow trout. Boreal environment research, 11(5), 401.

Hagos, K. W. (2013). Life Cycle Analysis of Fish Farming:Carbon and Water Footprints: Resources use Assessment of Fish Farming Systems and Estimation of Carbon and Water Footprints using Life Cycle Analysis. LAP LAMBERT Academic Publishing, Saarbrücken.

Hall, S. J., Delaporte, A., Phillips, M. J., Beveridge, M., & O’Keefe, M. (2011). Blue frontiers: managing the environmental costs of aquaculture. The WorldFish Center, Penang, Malaysia.

Hartikainen, H., Silvenius, F., & Katajajuuri, J. M. (2014). Critical review of allocation rules–the case of Finnish rainbow trout. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Henriksson, P. J., Heijungs, R., Dao, H. M., Phan, L. T., de Snoo, G. R., & Guinée, J. B. (2015a). Product carbon footprints and their uncertainties in comparative decision contexts. PloS one, 10(3), e0121221.

Henriksson, P. J., Rico, A., Zhang, W., Ahmad-Al-Nahid, S., Newton, R., Phan, L. T., ... & Little, D. C. (2015b). Comparison of Asian Aquaculture Products by Use of Statistically Supported Life Cycle Assessment. Environmental science & technology, 49(24), 14176-14183.

Huysveld, S., Schaubroeck, T., De Meester, S., Sorgeloos, P., Van Langenhove, H., & Dewulf, J. (2013). Resource use analysis of Pangasius aquaculture in the Mekong Delta in Vietnam using exergetic life cycle assessment. Journal of Cleaner Production, 51, 225-233.

Kluts, I. N., Potting, J., Bosma, R. H., Phong, L. T., & Udo, H. M. (2012). Environmental comparison of intensive and integrated agriculture–aquaculture systems for striped catfish production in the Mekong Delta, Vietnam, based on two existing case studies using life cycle assessment. Reviews in Aquaculture, 4(4), 195-208.

Ohgaki, K. Oki, Y., & Inaba, A.(2014). GHG Emissions from an Aquaculture System of Freshwater Fish with Hydroponic Plants. In: Proceedings of the 9th International Conference on Life Cycle Assessment in the Agri-Food Sector (LCA Food 2014), 8-10 October 2014, San Francisco, USA. American Center for Life Cycle Assessment, Vashon.

Papatryphon, E., Petit, J., Kaushik, S. J., & van der Werf, H. M. (2004). Environmental impact assessment of salmonid feeds using life cycle assessment (LCA). AMBIO: A Journal of the Human Environment, 33(6), 316-323.

Papatryphon, E., Petit, J., Van der Werf, H. M. G., Kaushik, S. J., & Saint-Pée-sur-Nivelle, F. (2004). Life Cycle Assessment of trout farming in France: a farm level approach. In. Halberg ed. (2004) Life Cycle Assessment in the Agri-food sector, Proceedings from the 4th International Conference, October 6-8, 2003, Bygholm, Denmark, 71-77.

Pelletier, N., & Tyedmers, P. (2007). Feeding farmed salmon: Is organic better?. Aquaculture, 272(1), 399-416.

Pelletier, N., & Tyedmers, P. (2010). Life Cycle Assessment of Frozen Tilapia Fillets From Indonesian Lake-Based and Pond-Based Intensive Aquaculture Systems. Journal of Industrial Ecology, 14(3), 467-481.

Pelletier, N., Tyedmers, P., Sonesson, U., Scholz, A., Ziegler, F., Flysjo, A., ... & Silverman, H. (2009). Not all salmon are created equal: life cycle assessment (LCA) of global salmon farming systems. Environmental Science & Technology, 43(23), 8730-8736.

Pongpat, P., & Tongpool, R. (2013). Life cycle assessment of fish culture in Thailand: case study of Nile tilapia and striped catfish. International Journal of Environmental Science and Development, 4(5), 608.

Recchia, L., Cini, E., Parisi, G., & Secci, G., (2010). The LCA approach as a tool to improve the environmental sustainability of the aquaculture sector . In: Notarnicola, B., Settanni, E., Tassielli, G., Giungato, P. (Eds.), Proceedings of LCA Food 2010. Bari. p. 396-401.

Samuel-Fitwi, B., Schroeder, J. P., & Schulz, C. (2013a). System delimitation in life cycle assessment (LCA) of aquaculture: striving for valid and comprehensive environmental assessment using rainbow trout farming as a case study. The International Journal of Life Cycle Assessment, 18(3), 577-589.

Samuel-Fitwi, B., Meyer, S., Reckmann, K., Schroeder, J. P., & Schulz, C. (2013b). Aspiring for environmentally conscious aquafeed: comparative LCA of aquafeed manufacturing using different protein sources. Journal of Cleaner Production, 52, 225-233.

Samuel-Fitwi, B., Nagel, F., Meyer, S., Schroeder, J. P., & Schulz, C. (2013c). Comparative life cycle assessment (LCA) of raising rainbow trout (Oncorhynchus mykiss) in different production systems. Aquacultural engineering, 54, 85-92.

Yacout, D. M., Soliman, N. F., & Yacout, M. M. (2016). Comparative life cycle assessment (LCA) of Tilapia in two production systems: semi-intensive and intensive. The International Journal of Life Cycle Assessment, 21(6), 806-819.

Ziegler, F., Winther, U., Hognes, E. S., Emanuelsson, A., Sund, V., & Ellingsen, H. (2013). The carbon footprint of Norwegian seafood products on the global seafood market. Journal of Industrial Ecology, 17(1), 103-116.

Aubin, J., Papatryphon, E., Van der Werf, H. M. G., Petit, J., & Morvan, Y. M. (2006). Characterisation of the environmental impact of a turbot (Scophthalmus maximus) re-circulating production system using Life Cycle Assessment. Aquaculture, 261(4), 1259-1268.

Ayer, N. W., & Tyedmers, P. H. (2009). Assessing alternative aquaculture technologies: life cycle assessment of salmonid culture systems in Canada. Journal of Cleaner Production, 17(3), 362-373.

Ayer, N., Martin, S., Dwyer, R. L., Gace, L., & Laurin, L. (2016). Environmental performance of copper-alloy Net-pens: Life cycle assessment of Atlantic salmon grow-out in copper-alloy and nylon net-pens. Aquaculture, 453, 93-103.

Buchspies, B., Tölle, S. J., Jungbluth, N. (2011). Life Cycle Assessment of High-Sea Fish and Salmon Aquaculture. ESU-services Ltd., Uster.

Grönroos, J., Silvenius, F., Kankainen, M., Silvo, K., & Mäkinen, T. (2012). Life cycle environmental impacts of different fish farming alternatives in the Baltic Sea. Available at: <http://www.ices.dk/sites/pub/CM%20Doccuments/CM-2012/Q/Q0312.pdf>. Accessed 01/01/2017.

Iribarren, D., Moreira, M. T., & Feijoo, G. (2012a). Life cycle assessment of aquaculture feed and application to the turbot sector. International Journal of Environmental Research, 6(4), 837-848.

Iribarren, D., Dagá, P., Moreira, M. T., & Feijoo, G. (2012b). Potential environmental effects of probiotics used in aquaculture. Aquaculture international, 20(4), 779-789.

Liu, Y., Rosten, T. W., Henriksen, K., Hognes, E. S., Summerfelt, S., & Vinci, B. (2016). Comparative economic performance and carbon footprint of two farming models for producing Atlantic salmon (Salmo salar): Land-based closed containment system in freshwater and open net pen in seawater. Aquacultural Engineering, 71, 1-12.

McGrath, K. P., Pelletier, N. L., & Tyedmers, P. H. (2015). Life cycle assessment of a novel closed-containment salmon aquaculture technology. Environmental science & technology, 49(9), 5628-5636.

Strazza, C., Magrassi, F., Gallo, M., & Del Borghi, A. (2015). Life cycle assessment from food to food: a case study of circular economy from cruise ships to aquaculture. Sustainable Production and Consumption, 2, 40-51.

White, A. (2013). A comprehensive analysis of efficiency in the Tasmanian Salmon Industry. PhD Thesis. Bond University, Queensland, Australia

Winther, U., Ziegler, F., Hognes, E. S., Emanuelsson, A., Sund, V., & Ellingsen, H. (2009). Carbon footprint and energy use of Norwegian seafood products. SINTEF Fisheries and aquaculture.

Aubin, J., Baruthio, A., Mungkung, R., & Lazard, J. (2015). Environmental performance of brackish water polyculture system from a life cycle perspective: A Filipino case study. Aquaculture, 435, 217–227.

Baruthio, A., Aubin, J., Mungkung, R., Lazard, J., & Van der Werf, H. M. (2009). Environmental assessment of Filipino fish/prawn polyculture using life cycle assessment. In. Nemecek, T. & Gaillard, G. (eds.) Proceedings of the 6th International Conference on LCA in the Agri-Food Sector – Towards a sustainable management of the Food chain. November 12–14, 2008, Zurich, Switzerland, Agroscope Reckenholz-Tänikon Research Station ART, June 2009, p. 242-247.

Cao, L., Diana, J. S., Keoleian, G. A., & Lai, Q. (2011). Life cycle assessment of Chinese shrimp farming systems targeted for export and domestic sales. Environmental science & technology, 45(15), 6531-6538.

Mungkung, R., De Haes, H. U., & Clift, R. (2006). Potentials and limitations of life cycle assessment in setting ecolabelling criteria: A case study of Thai shrimp aquaculture product (5 pp). The International Journal of Life Cycle Assessment, 11(1), 55-59.

Mungkung, R., Gheewala, S. H., & Tomnantong, A. (2012). Carbon footprint of IQF peeled tail-on breaded shrimp (Litopenaeusvannamei): How big is it compared to other aquatic products. Environment and Natural Resources Journal, 10, 31-36.

Orozco, J. E. H., & Ramírez, C. B. G. (2015). Desempeño ambiental de la camaronicultura en la región Caribe de Colombia desde una perspectiva de Análisis del Ciclo de Vida. Gestión y Ambiente, 18(2), 29.

Tantipanatip, W. (2014). Carbon massflow of pacific white shrimp, giant freshwater prawn and giant perch meat production from fishery farm to develop carbon footprints in Trang, Songhla and Phatthalung province, Thailand. PhD Thesis. Suranaree University of Technology, Nakhon Ratchasima, Thailand.

Tantipanatip, W., Jitpukdee, S., Keeratiurai, P., & Thanee, N. (2015). Carbon Massflow from Pacific White Shrimp (Penaeus vannamei) Production Using Life Cycle Assessment in Songkhla Province, Thailand. International Journal of Advances in Agricultural & Environmental Engineering, 2(1), 13-17.

Teah, H. Y., Fukushima, Y., & Onuki, M. (2015). Experiential Knowledge Complements an LCA-Based Decision Support Framework. Sustainability, 7(9), 12386-12401.