



## **Sustainability Toolkit**

Welcome to the Sustainability Toolkit section of our blog. We have outlined a variety of best practices, tools, links and more to help companies define and create successful sustainability initiatives.

### **A. Life Cycle Assessments**

#### **Definition:**

One of the first steps in creating a sustainability plan for your company is to conduct a Life Cycle Assessment (LCA). According to the International Organization for Standardization (ISO), the goal of the Life Cycle Assessment is to compare the environmental performance of products in order to be able to choose the least burdensome. The term 'life cycle' refers to the notion that for a fair, comprehensive assessment, the raw material production, manufacture, distribution, use, and disposal need to be assessed. This is the 'life cycle' of the product. The concept can be used to optimize the environmental performance of a single product or that of a company.

According to the Environmental Protection Agency, "LCA is a technique to assess the environmental aspects and potential impacts associated with a product, process, or service, by:

- Compiling an inventory of relevant energy and material inputs and environmental releases;
- Evaluating the potential environmental impacts associated with identified inputs and releases;

- Interpreting the results to help you make a more informed decision about which products are least burdensome.”

There are four basic stages of conducting a LCA:

- 1) Define the goal and scope for pursuing sustainability initiatives for your company;
- 2) Conduct an inventory analysis;
- 3) Assess the impact of your product and processes on ecological and human health, as well as analyze the extent of resource depletion;
- 4) Interpret the findings by analyzing results, then reaching conclusions, explaining limitations, and providing recommendations.

### Resources:

1) ISO 14040 and 14044 - [www.iso.org/iso/catalogue\\_detail?csnumber=37456](http://www.iso.org/iso/catalogue_detail?csnumber=37456)  
The most universally accepted guidelines for Life Cycle Assessments are the ISO 14040 and 14044 standards. Basic principles and methodology of the ISO standard are based on the Plan-Do-Check-Act methodology. Exact guidelines can be purchased from the above-referenced website.

2) The EPA - <http://www.epa.gov/nrmrl/lcaccess/>

This website offers a step-by-step guide to working through the LCA process as well as additional links and white papers to assist in each phase of the process.

3) The National Agricultural Library LCA Digital Commons  
[http://riley.nal.usda.gov/nal\\_display/index.php?info\\_center=8&tax\\_level=1&tax\\_subject=757](http://riley.nal.usda.gov/nal_display/index.php?info_center=8&tax_level=1&tax_subject=757)

The National Ag Library, part of the USDA, is working to build a life cycle assessment database for North American agriculture. The database will be seeded with data for energy and other crops using North American production practice information.

4) American Center for Life Cycle Assessment <http://lcacenter.org/>

The ACLCA is a non-profit membership organization that is the professional society for Life Cycle Assessment in the United States. The work of ACLCA is primarily carried out through volunteers working in the ACLCA Committees and is a part of the Institute for Environmental Research and Education ([IERE](#)), a 501(c)3 organization.

## **B. Best Practices**

There are many companies and organizations that have created successful sustainability initiatives and comprehensive Corporate Social Responsibility reports and Life Cycle Assessments. We have included links to several.

- 1) [Pork Checkoff's Environmental Sustainability Efforts](#)  
Highlights the checkoff's research in four areas of carbon, water, air and land footprints. One of the ethical principles of the industry's We Care initiative is to protect the natural resources on America's pork farms.
  
- 2) [Sustainable Beef Resource Center](#)  
Provides useful, science-based information about beef technologies and sustainable beef production practices. White papers and fact sheets provide information on how the beef industry produces safe, wholesome, affordable food while using fewer natural resources.
  
- 3) [Innovation Center for U.S. Dairy](#)  
The U.S. Dairy Sustainability Commitment Progress Report demonstrates the industry's progress toward reducing its environmental impact. Additional research on efforts to reduce greenhouse gas emissions in dairy production can also be found here.
  
- 4) [Weyerhaeuser Sustainability Efforts](#)  
Weyerhaeuser conducts life cycle assessments on its products to satisfy business needs. The company conducts some LCAs on its own, and collaborates with industry partners to address common questions.

5) [EcoTrust Global Salmon Life Cycle Assessment](#)

The Global Salmon LCA is one of the most robust LCAs of a single food product. Lead partners in the project are Dalhousie University, Ecotrust, and SIK — The Swedish Institute for Food and Biotechnology.

6) [Comparative Life Cycle Assessment of Food Commodities Procured for UK Consumption through a Diversity of Supply Chains](#) by DEFRA – Department for Environment, Food and Rural Affairs, a government agency in the United Kingdom.

This project evaluated the comparative life cycle burdens of alternative food supply chains for seven indicator foodstuffs, bought by UK consumers: Tomatoes (Spain); Strawberries (Spain); Apples (New Zealand); Potatoes (Egypt); Poultry and beef (Brazil) and Lamb (New Zealand).

7) Corporate Social Responsibility reports

- [Smithfield Foods Corporate Social Responsibility Report](#)
- [Tyson Foods Sustainability Report](#)
- [General Mills Corporate Social Responsibility Report](#)
- [Campbell Soup Company Corporate Social Responsibility Report](#)

**C. Links Specific to Soy Issues**

1) Natural resource use in soybean production and processing (carbon, water, energy)

- Soybean Life Cycle Assessment  
[http://www.usbthinkingahead.com/docs/Soybean Life Cycle Analysis %20Report.pdf](http://www.usbthinkingahead.com/docs/Soybean_Life_Cycle_Analysis_Report.pdf)
- The Facts About Soy—Soy and The Environment  
[http://www.thefactsaboutsoy.com/faqs.html#faq\\_20](http://www.thefactsaboutsoy.com/faqs.html#faq_20)
- Field to Market: Environmental Resource Indicators for Measuring Outcomes of On-Farm Agricultural Production in the United States  
<http://www.usbthinkingahead.com/docs/KeystoneReport.pdf>

- Soybeans: Producing More With Less  
<http://www.usbthinkingahead.com/docs/soybeans-Producing More With less.pdf>

## 2) Land use in soybean production

- DOE: New Studies Portray Unbalanced Perspective on Biofuels  
<http://members.biodiesel.org/library/communications/articles/Biomass%20Office%20DOE%20response%20GHG%20report%20in%20Science.pdf>
- The Facts About Soy – Impacts on Land Use  
[http://www.thefactsaboutsoy.com/faqs.html#faq\\_21](http://www.thefactsaboutsoy.com/faqs.html#faq_21)

## 3) Biotechnology

- Qualisoy—A Look at Biotechnology  
<http://qualisoy.com/food-manufacturing/section/biotech>
- Impacts of Feeding Biotechnology Derived Soybean Meal to Livestock, Poultry and Aquaculture  
<http://www.farmfoundation.org/news/articlefiles/449-Kimball%20Nill.pdf>
- National Center for Soybean Biotechnology  
<http://www.soybiotechcenter.org/>
- Ingredients and Additives: Soy is Everywhere  
[http://www.gmo-compass.org/eng/grocery\\_shopping/ingredients\\_additives/34.ingredients\\_additives\\_soybeans.html](http://www.gmo-compass.org/eng/grocery_shopping/ingredients_additives/34.ingredients_additives_soybeans.html)
- Council for Biotechnology Information: Frequently Asked Questions about Biotech Soybeans  
[http://www.whybiotech.com/about/faqs\\_soybeans.asp](http://www.whybiotech.com/about/faqs_soybeans.asp)

## 4) Pesticides

- USDA: Agriculture Research Service

<http://arsweeds.cropsci.illinois.edu/soybeans.htm>

- Monsanto: Roundup/Glyphosate Background Materials  
<http://www.monsanto.com/products/Pages/roundup-safety-background-materials.aspx>
- Monsanto: Weed Management Guidelines  
<http://www.monsanto.com/weedmanagement/Pages/weed-management-guidelines.aspx>
- FDA Pesticide Monitoring Program  
<http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/Pesticides/ResidueMonitoringReports/ucm228867.htm>

#### 5) Food vs. Fuel

- National Biodiesel Board: Setting the Record Straight  
<http://biodiesel.org/resources/sustainability/pdfs/FoodandFuelFactSheet.pdf>
- The Economics of Biodiesel Production and the Effect on Food Prices  
<http://biodieselsustainability.com/faq.html>
- Iowa Soybean Association: Food, Feed and Fuel  
<http://www.iasoybeans.com/whatnew/foodfeedfuel.html>
- Food and Fuel: Meeting the Challenges of Feeding the World and Creating Renewable Fuels  
[http://www.soyconnection.com/soybean\\_oil/pdf/foodvsfuel\\_soy\\_biofuels.pdf](http://www.soyconnection.com/soybean_oil/pdf/foodvsfuel_soy_biofuels.pdf)

#### 6) Use of soy in feed formulations

- Soybean Meal Nutrition Facts  
<http://www.animalag.org/adx/asp/adxGetMedia.aspx?DocID=17,9,1,Documents&MediaID=46&Filename=2FoodSupplyNutriFacts.pdf>
- Animal Agriculture: Food Supply and Nutrition  
<http://www.animalag.org/nutrition.aspx>
- Soy in Aquaculture  
<http://www.soyaqua.org/quickfacts.html>

## **D. Metrics and Reporting**

### 1) Carbon

The Carbon Disclosure Project (CDP) [www.cdproject.net/en-US/Pages/HomePage.aspx](http://www.cdproject.net/en-US/Pages/HomePage.aspx) is an independent not-for-profit organization holding the largest database of primary corporate climate change information in the world. Some 3,000 organizations across the globe measure and disclose their greenhouse gas emissions, water management and climate change strategies in response to CDP's information requests. This data is collected annually on behalf of institutional investors, purchasing organizations and government bodies.

Any organization wishing to publicly report its greenhouse gas emissions, water use and climate change strategies can do so through CDP.

### 2) Water

<https://www.cdproject.net/water-disclosure>

The CDP Water Disclosure provides critical water-related data from the world's largest corporations to inform the global marketplace on investment risk and commercial opportunity.

### 3) Global Reporting Initiative

<http://www.globalreporting.org/AboutGRI/WhatIsGRI/>

The Global Reporting Initiative (GRI) is a network-based organization that pioneered the world's most widely used sustainability reporting framework. This is meant to create a consistent and mainstream disclosure process regarding environmental, social and governance performance.

GRI's Reporting Framework is developed through a consensus-seeking, multi-stakeholder process. Participants are drawn from global business, civil society, labor, academic and professional institutions.

The Sustainability Reporting Framework provides guidance on how organizations can disclose their sustainability performance. The Framework is applicable to organizations of any size or type, from any sector or geographic region, and has been used by thousands of organizations worldwide as the basis for producing their sustainability reports.

## **E. Multi-Stakeholder Industry Initiatives**

### **1) Field to Market [www.fieldtomarket.org](http://www.fieldtomarket.org)**

One of the leading voices in defining, tracking and educating people about sustainability is the Keystone Alliance for Sustainable Agriculture. This group is made up of producers, agribusinesses, food companies, educational institutions and conservation organizations seeking to create sustainable outcomes for agriculture. Field to Market is developing indicators to estimate the environmental, economic, social and health outcomes of agriculture in the United States.

### **2) The Fieldprint Calculator [www.fieldtomarket.org/fieldprint-calculator](http://www.fieldtomarket.org/fieldprint-calculator)**

One of the primary initiatives of Field to Market is the Fieldprint Calculator. This tool helps growers measure how crop production operations impact the sustainability performance of a farm. Currently the calculator can measure energy use, climate impact, soil loss, water use, and economic impacts.

### **3) The Sustainability Consortium - [www.sustainabilityconsortium.org](http://www.sustainabilityconsortium.org)**

The Sustainability Consortium is an independent, member-driven organization of companies, governments and non-government organizations that are working to build a scientific foundation that drives innovation to improve consumer product sustainability through all stages of a product's life cycle. The Consortium offers white papers and research data, gives Life Cycle Inventory data guidance and is creating a comprehensive and standardized set of metrics set to develop, test and implement reporting standards.

## **F. Glossary of Commonly Used Terms**

<http://www.nal.usda.gov/afsic/pubs/terms/srb9902.shtml>

<http://www.interfaceglobal.com/Sustainability/What-is-Sustainability-/Glossary.aspx>

<http://www.naturalstepusa.org/glossary/>