

# **The MINT:**

## **A Market for Innovation & Transformation**



***Dialog on Sustainability  
Kansas State University***

***19 July 2007***

*Gregory A. Norris*

*Sylvatica / Harvard School of Public Health / New Earth*



## **In 15 minutes...**

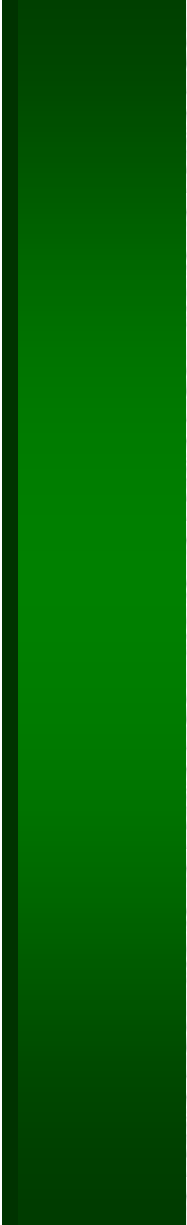
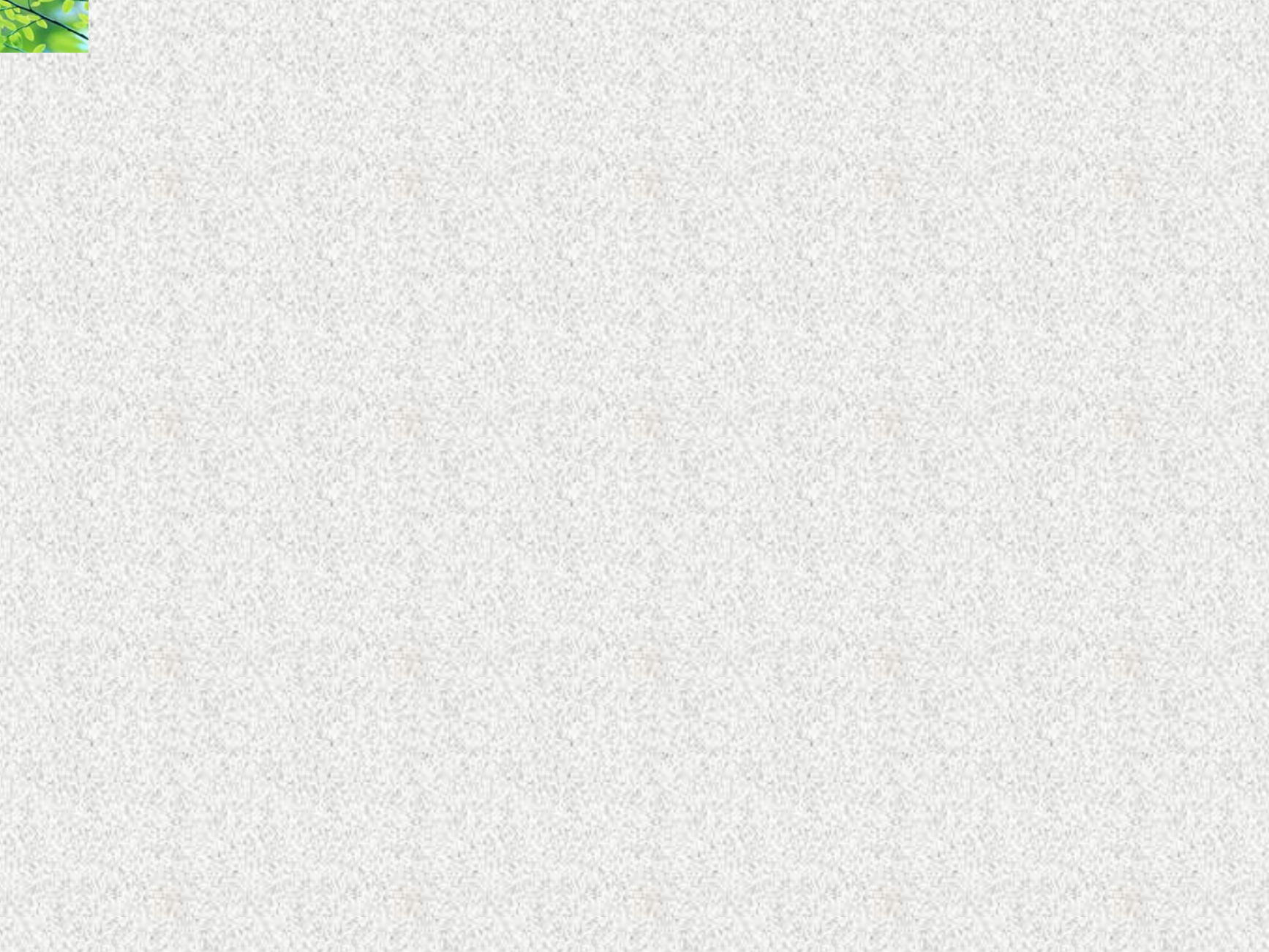
- Life cycle thinking: everything is connected
- Life cycle computing of footprints, via web: free
- We all have footprints
- Beneficence



# Life Cycle Assessment

- Internationally Standardized (ISO 14040, 14044)
  - Think broadly: Life cycle, cradle-to-next-life
  - Think deeply: Impacts, endpoints
  - Think quantitatively: data
  - Think comparatively: what if we change xyz?
  - Think systematically: standards, transparency



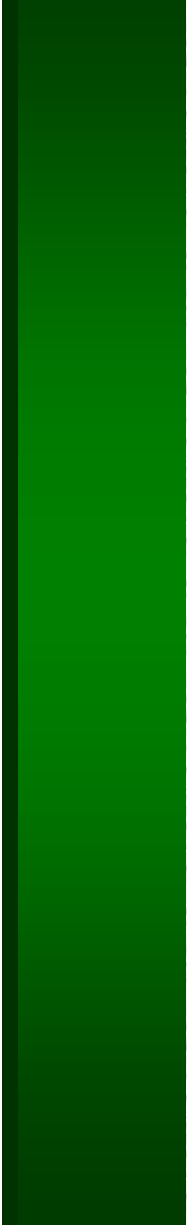
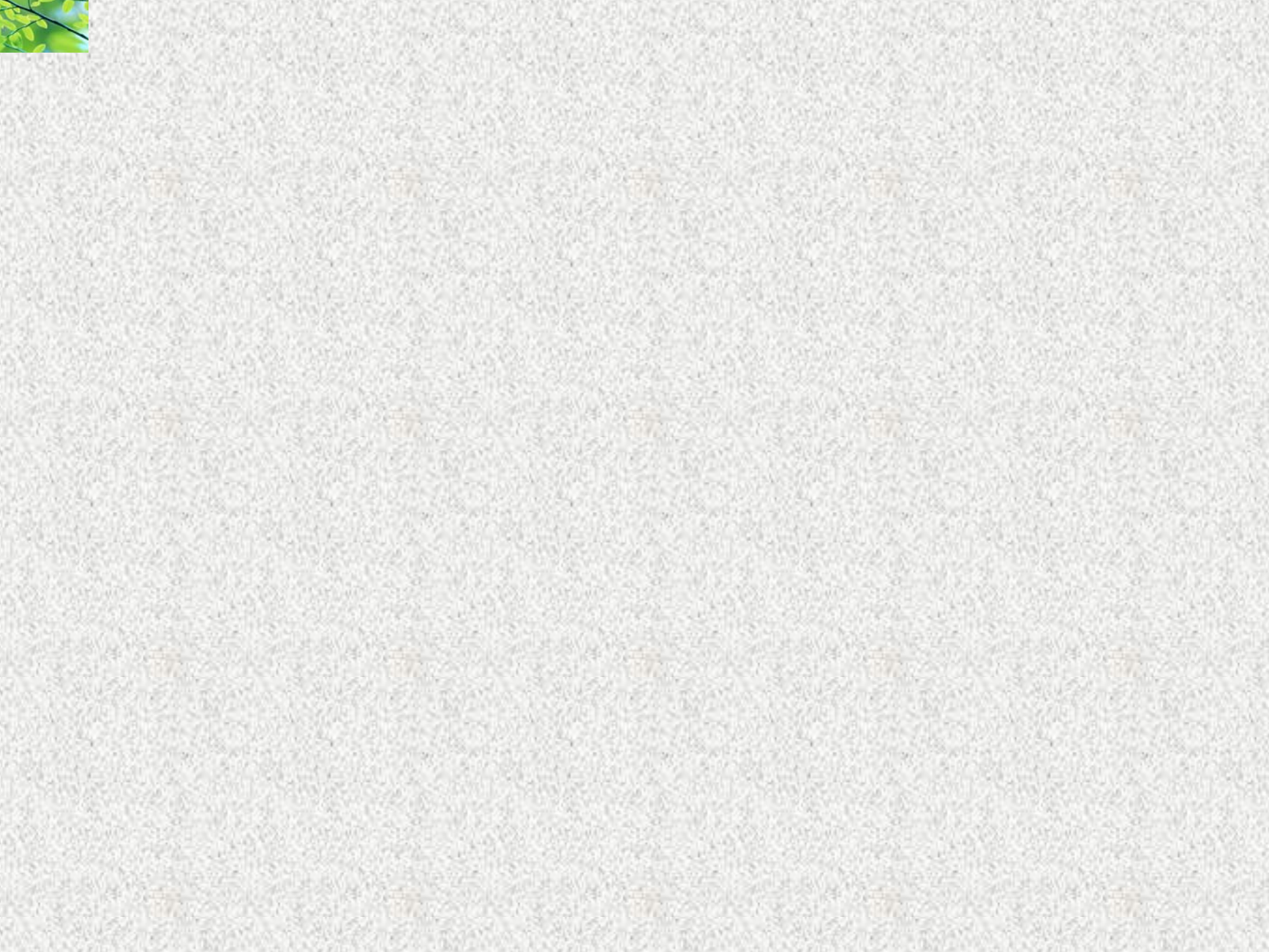




# Grandma's Home-Made Organic



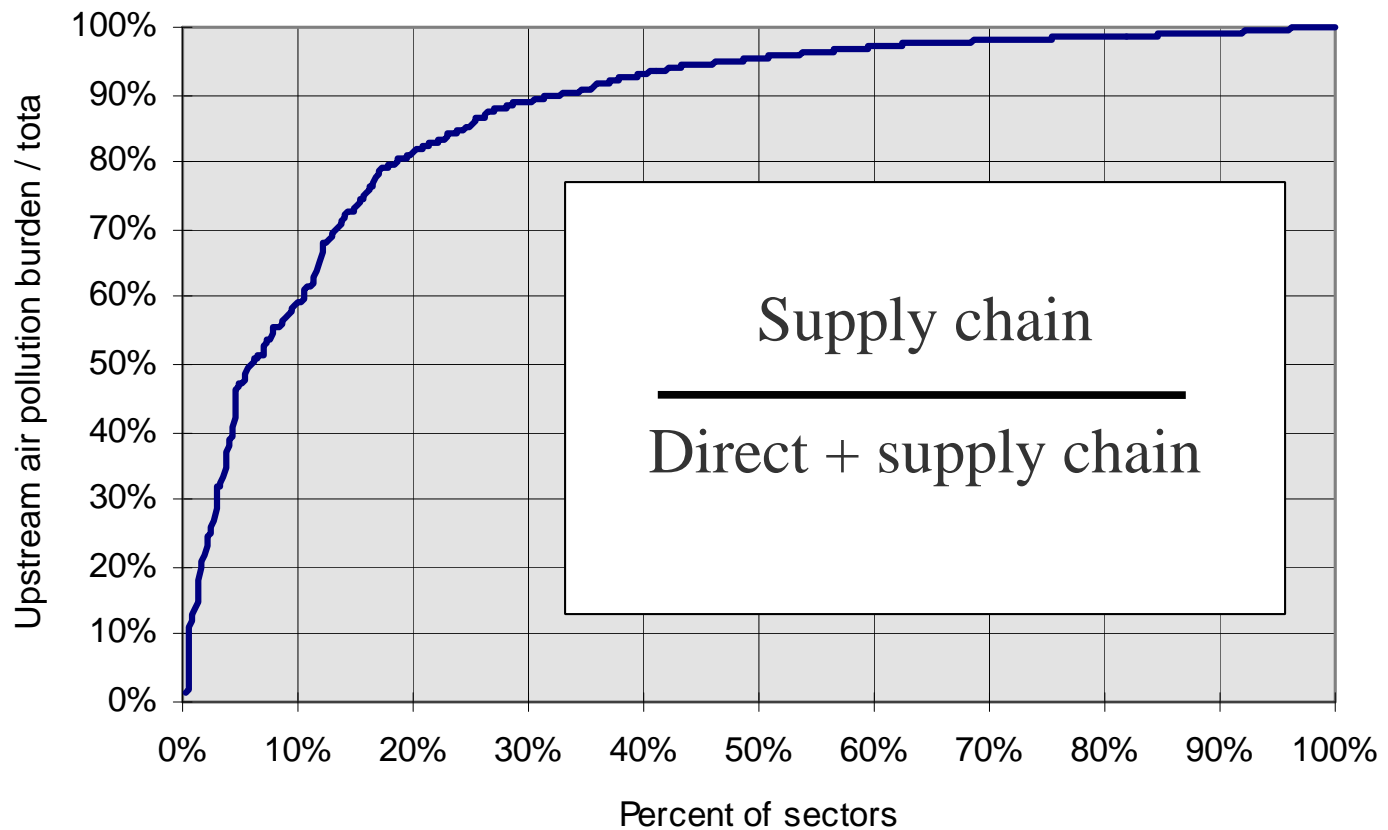
... is dioxin-free, right?





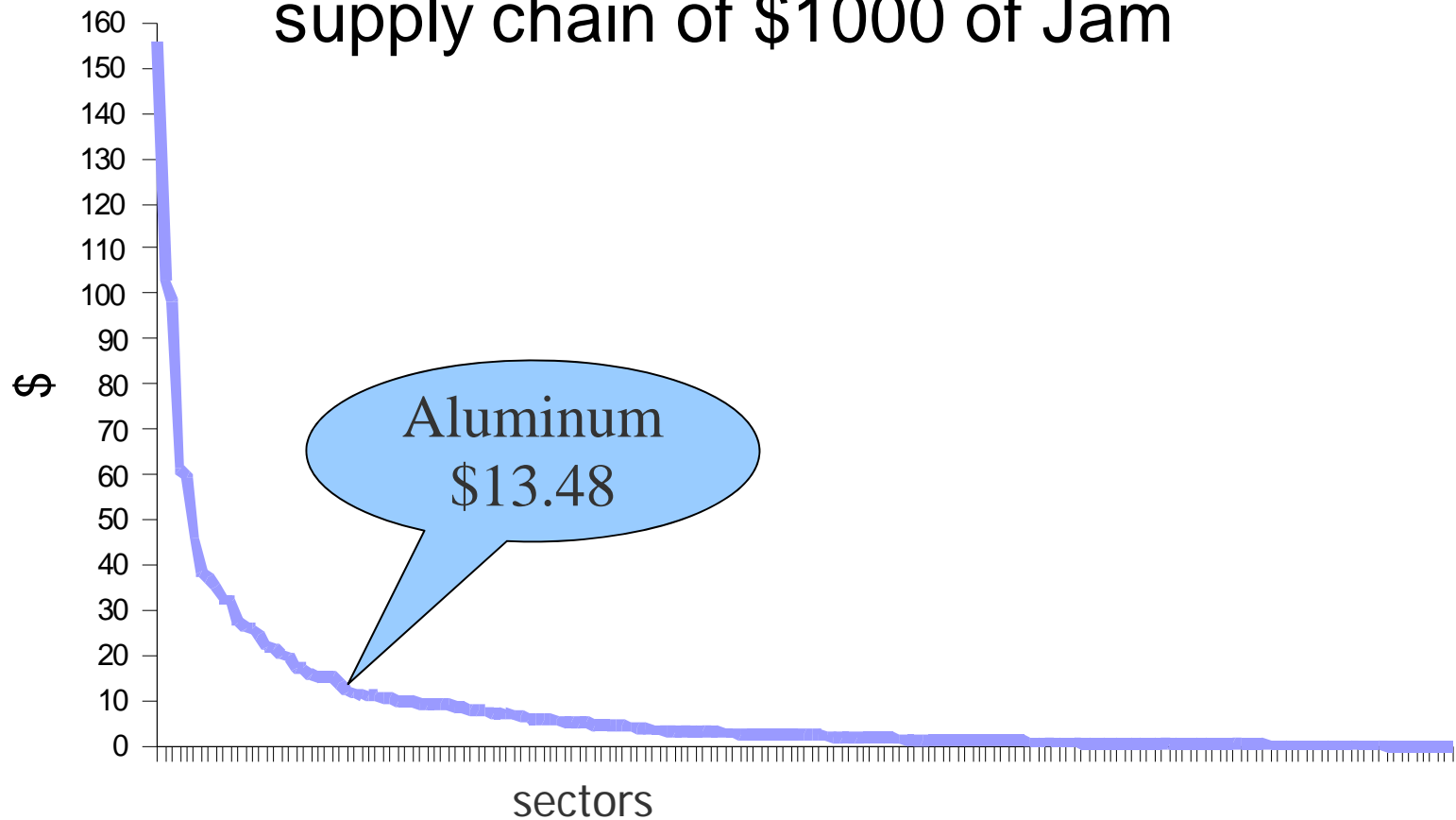
# Supply chains can be huge: Buyer power, and the 80-80 Rule

Each sector's **upstream** air pollution burden as a percent of its total  
(upstream + direct) air pollution burden





## Output from every sector, \$, induced in supply chain of \$1000 of Jam








## Take-away message?...



“Injustice anywhere is a threat to justice everywhere.”

“Pollution anywhere is a threat to green products everywhere.”

“Pollution anywhere is a chance to green *your* product.”



How about a system that incentivizes *each of us* to improve and innovate, where our actions also incentivize *everyone* to improve and innovate?

...Where we are rewarded whenever anyone connected to us innovates.

...Where my innovations help you, and your innovations help me.



- **An Open Source, Publishing and Analysis Platform For Life Cycle Information about Products**
- Producers: Tell your story, with data
- Improve your products, with supplier selection
- Buyers: Access green markets
- Drive transformation



# Earthster Design Principles

- No cost
- Voluntary
- Open Source
- Use existing standards, work with existing systems
- Report once to serve many audiences
- Makes business sense for user



## Example Co

**Website:** http://example.com

**Email:** info@example.com

**Phone:** +1 (800) EXA-MPLE

**Contact:**

**Address:**

3463 Westminister West Rd  
Suite 1001  
Putney , VT 05301

### Available Products

- **Homemade Bread**
- **Slightly Salted Organic Butter (80% Milk Fat)**
- **Mom's Mango Jam**
- **new product**

### Add Product

Name

Classification

Done

### Certifications

- **Newearth Member:**  
Yes
- **ISO 14000 Certified:**  
Yes
- **FSC Certified:**  
Yes

### Want to show LCA data for your products?

It only takes a few simple steps to add information about your products' enviromental impacts to your listing



## Step 2: Free LCA, Confidential, w/ Benchmark

- Click to download a FREE LCA Calculator.
  - Runs on your computer.
  - Input last year's data:
    - Amounts purchased
    - Amount released
    - Amount sold
- Click for a table of supply chain pollution
- Click to compare your product vs. sector average



Project > Edit Product

[1. Edit Product](#) | [2. Calculate LCA](#) | [3. publish](#)

**Product ID:**

**Product Name:**

**Product Classification:**

**Annual revenue , \$ (this product):**



### Purchases

[\(suggest top 10\)](#) | [\(new\)](#)

#	Product Inputs	Amount Used(\$/Year)	% Total EcoPoints™	Cumulative % EcoPoints
1	<input type="text" value="354: Professional sports clubs and promoters"/>	<input type="text" value="955959"/>	61.7%	61.7%
2	<input type="text" value="302: Other new construction"/>	<input type="text" value="39393"/>	1.4%	63.2%
3	<input type="text" value="373: Royalties"/>	<input type="text" value="3933"/>	0.1%	63.3%
4	<input type="text" value="222: Electric services (utilities)"/>	<input type="text" value="383736"/>	9.8%	73.1%
5	<input type="text" value="379: Sausages and other prepared meat products"/>	<input type="text" value="393930"/>	8.5%	81.6%
6	<input type="text" value="184: Manufacturing industries, n.e.c."/>	<input type="text" value="39387"/>	0.8%	82.4%
7	<input type="text" value="402: Sporting and athletic goods, n.e.c."/>	<input type="text" value="993893"/>	15.6%	98.0%
8	<input type="text" value="87: Eating and drinking places"/>	<input type="text" value="3937"/>	0.1%	98.1%
9	<input type="text" value="272: Natural gas distribution"/>	<input type="text" value="84949"/>	1.2%	99.3%
10	<input type="text" value="363: Real estate agents, managers, operators, and lessors"/>	<input type="text" value="48476"/>	0.7%	100.0%

Project > Edit Product > Calculate LCA

[1. Edit Product](#) | [2. Calculate LCA](#) | [3. Publish](#)

### Cradle to Gate: Air Emissions (kg)

Name/Purchases	1	2	3	4	5	6
Carbon dioxide	1.87e+5	2.98e+4	869	3.79e+6	5.03e+5	
Carbon monoxide	2.35e+3	407	13.3	2.98e+3	1.10e+4	
Methane	793	87.8	3.11	5.91e+3	6.86e+3	
Nitrogen dioxide	643	93.0	3.01	1.08e+4	0.00	
VOC, volatile organic					0.00	
Sulfur dioxide					0.00	
Ammonia					8.19e+3	
Particulates, < 10 u					4.47e+3	

### Purchases Key

#	Name	Classification
1		354: Professional sports clubs and promoters
2		302: Other new construction
3		373: Royalties
4		222: Electric services (utilities)
5		379: Sausages and other prepared meat products
6		184: Manufacturing industries, n.e.c.
7		402: Sporting and athletic goods, n.e.c.
8		87: Eating and drinking places
9		272: Natural gas distribution
10		363: Real estate agents, managers, operators, and lessors



[Project](#) > [Edit Product](#) > [Review LCA](#) > [Publish](#)

[1. Edit Product](#) | [2. Calculate LCA](#) | [3. Publish](#)

### Publish

Look over the preview of the published data to the right and [click here to publish this LCA Data](#).

**Note:** If you have the product's page open in another browser window you will need to reload the pages to see your changes

### Preview

#### Cradle to Gate: Air Emissions (kg)

Name	Amount
Carbon dioxide	47569.471 kg
Carbon monoxide	458.607 kg
Methane	178.397 kg
Sulfur dioxide	96.804 kg
Nitrogen dioxide	124.582 kg
VOC, volatile organic compounds	120.976 kg
Particulates, < 10 um	12.980 kg

#### Cradle to Gate: Water Pollution (kg)

Name	Amount
Nitrate compounds	11.731 kg
Ammonia	0.194 kg
Manganese compounds	0.175 kg
Phosphorus	8.825 kg
Sodium nitrite	0.087 kg
Methanol	0.058 kg
Barium compounds	0.001 kg



Earthster.org Homemade Bread - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.earthster.org/member\_directory/exampleco/bread

Getting Started Latest Headlines

## Homemade Bread



Category: 33: Bread, cake, and related pro

[Buy Now!](#)

### Our Bread

At the Red Hen Baking Company, the ancient craft of making starters, or levains, guides us

each day.

### Keeping Our Bread

We bake and deliver seven days a week, insuring that every loaf you buy was baked only hours earlier.

In an effort to preserve the crust, we package all of our breads only in paper bags.

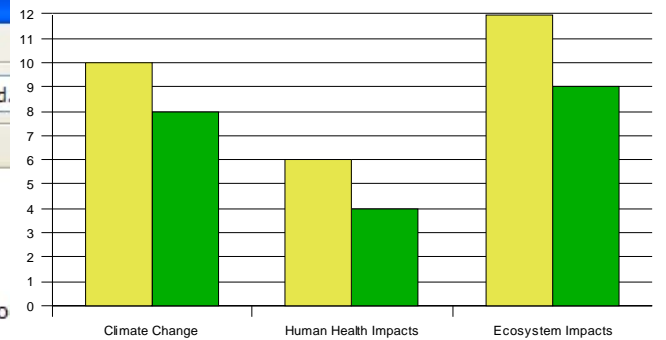
Because our process of natural leavening encourages beneficial acids which act as a natural preservative, our bread will keep for up to two days in its bag.

Our breads also freeze well. After thawing, placing your loaf in a 350 degree oven for 15-20 minutes will rev iver some of the crispiness of the crust.

All of our breads are naturally leavened and made from flour derived from certified organic grains. Each loaf is then formed by hand and baked in a 500 degree hearth oven.

This process results in an interesting, intentional irregularity to the interior hole structure, as well as the dark, crisp crust for which our breads are known - essential to the flavor and style of our loaves.

Environmental impacts of buying brand A or B



### LCA Data

#### Cradle to Gate: Air Emissions (kg)

Name	Amount
Carbon dioxide	2168.133 kg
Carbon monoxide	42.576 kg
Methane	18.622 kg
Particulates, < 10 um	21.106 kg
Nitrogen dioxide	6.81 kg
Sulfur dioxide	4.146 kg
VOC, volatile organic compounds	1.745 kg
Ammonia	1.929 kg

#### Cradle to Gate: Water Pollution (kg)

Name	Amount
Phosphorus	7.502 kg
Nitrate compounds	0.184 kg
Ammonia	0.013 kg
Manganese compounds	0.002 kg
Methanol	0.001 kg
Sodium nitrite	0 kg
t-Butyl methyl ether	0 kg



## Step 4. Link to Supplier Data.

- Click to find out if some of your suppliers have published better-than-average LCIs, or made major gains (reductions in emissions / impact).
- Click to take credit – use their LCI data in place of generic, and recalculate your LCI.
- Call other suppliers.
- Call your customers.

Without requiring suppliers to give data, and without divulging supplier identities! Supply-chain-specific LCA



# The Earthster Consortium

- Opportunity to influence the technical and market development of the Earthster system
- Credit and publicity for being a funder and member of the consortium, including display of your organization's logo in the Earthster website
- Opportunity to help shape the governance and systems for validation of data





- We drove or flew here
  - We showered
  - We ate breakfast this morning
  - ...
- 
- Is it a good thing that we were born?



## Making the world better off *with us*

- Reduce our negative impacts as far as possible
- Increase our positive impacts to be at least greater than our negative impacts

Beneficient = Beneficial + efficient



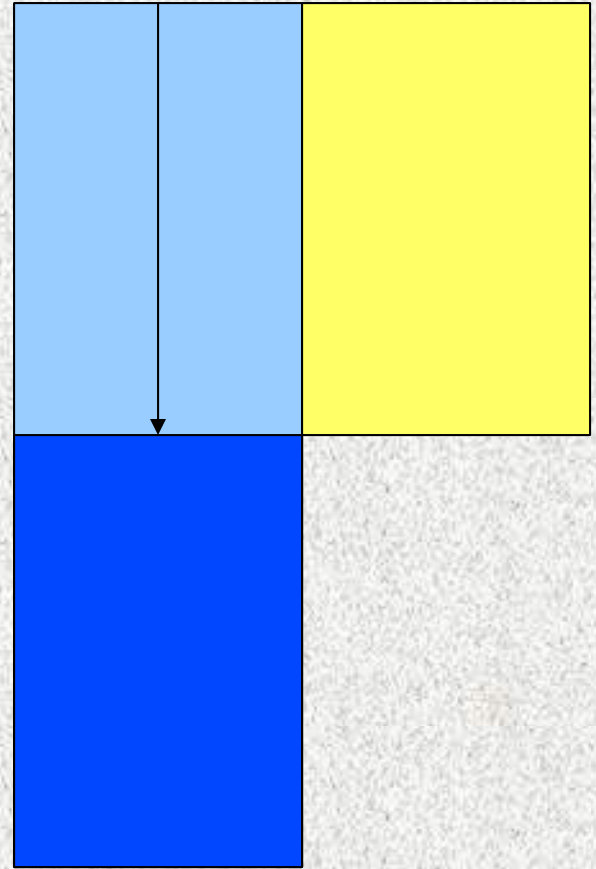
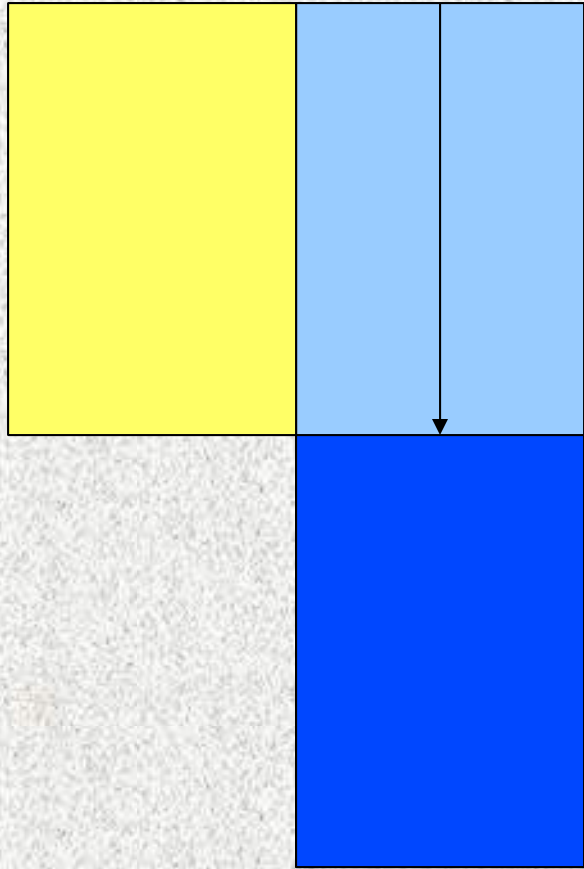
## A market for innovation & transformation

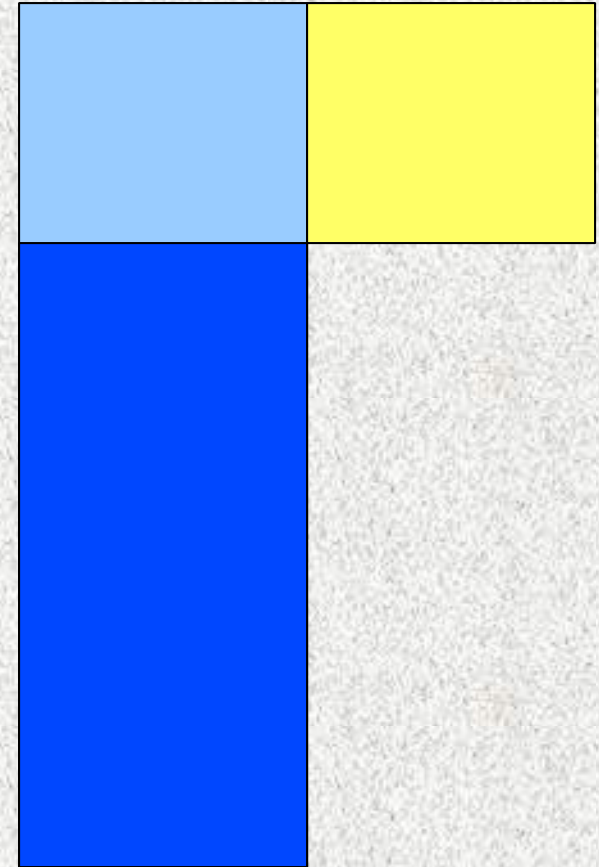
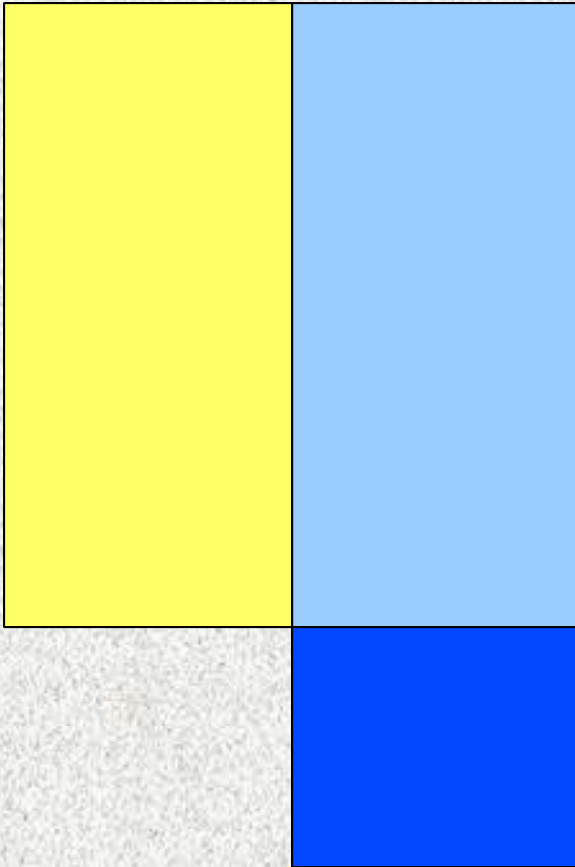
- Use systems such as Earthster to
  - Quantify last year's footprint, impacts
  - Quantify potential benefits of changes
  
- Use the web to
  - Offer the changes for sale



You sponsor this much  
transformation  
elsewhere, offsetting  
your remaining burden.









## It's OK...

- **Everyone** gets into the act
  - Households
  - Organizations
  - All companies
- No exclusion of “non-additional” (cost-effective)
- Your supply chain making you greener... benefits you!
- You sell innovative green things? Market them!
- Cap & trade = we only do as good as the cap, and innovation finds the least-cost solution
- Beneficient market for transformation =  
we go as far as we can figure out how, and desire  
= river clean-up



## Taking the leap

- Saying: We can't do this alone.
- Saying: I don't know how to get there.
- Putting yourself at the mercy of humanity's (nature's) creativity
- Getting there. Together.

