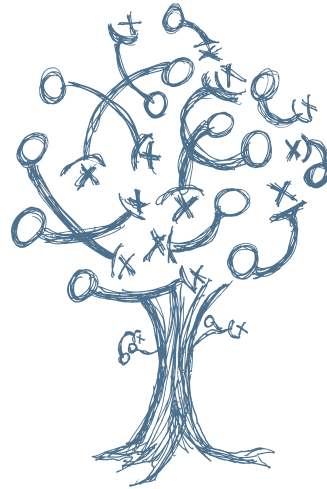


# 10 Principles of Food Industry Sustainability Webinar

*April 30, 2015*



pure | STRATEGIES

# Today's Speakers

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Cheryl Baldwin  
Pure Strategies



Cheri Chastain  
Sierra Nevada



Moderator:  
Bryan Sheehan  
Pure Strategies



# Agenda

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## *Introduction and Logistics*

Bryan Sheehan

## *10 Principles of Food Industry Sustainability*

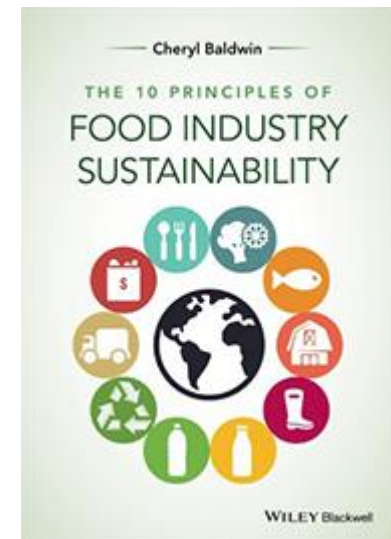
Cheryl Baldwin

## *Farm to Fork Sustainability*

*at Sierra Nevada*

Cheri Chastain

Q&A



<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118447735.html>

# About Pure Strategies

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pure  
ENTERPRISE

- Organizational sustainability, vision & goals
- Enterprise-wide alignment & execution



pure  
PRODUCT

- Insight and strategies to improve product sustainability performance



pure  
SUPPLY

- Supply chain alignment and engagement
- Measuring and motivating performance

# Sample of Clients

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# Agenda

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## *Introduction and Logistics*

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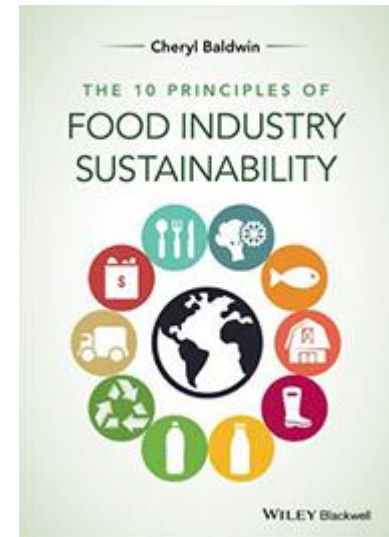
Cheryl Baldwin

## *Farm to Fork Sustainability*

*at Sierra Nevada*

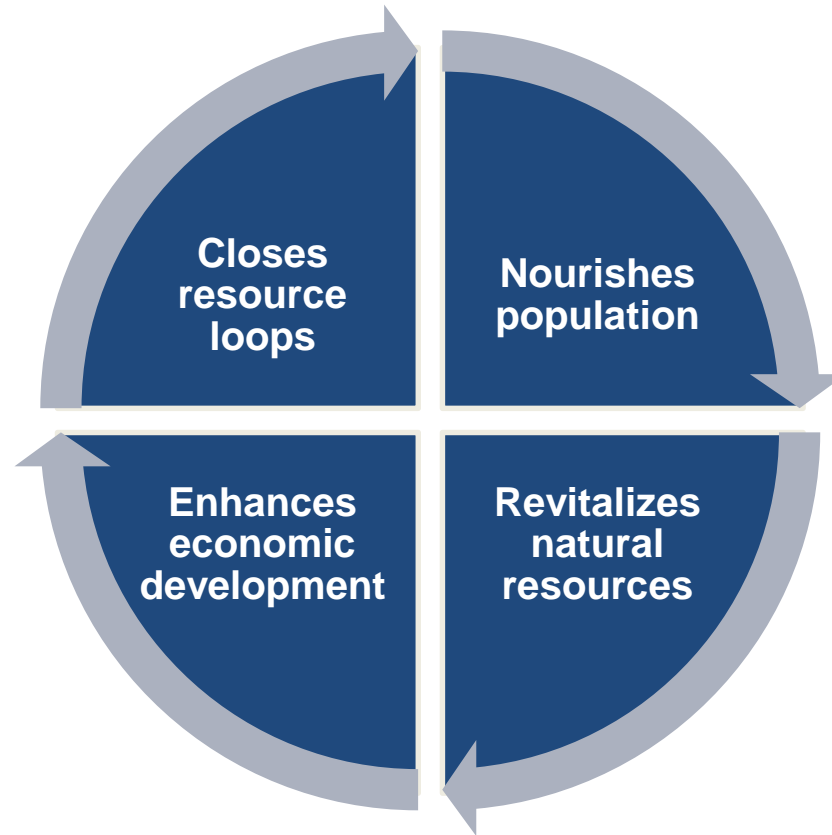
Cheri Chastain

Q&A





# 10 Principles of Food Industry Sustainability



Principles – Practices - Potential



# 10 Principles of Food Industry Sustainability

Production



Processing &  
Distribution



Purchasing &  
Consumption







# 10 Principles of Food Industry Sustainability

**Climate Change**

**Natural Resource Depletion & Degradation**

**Pollution & Toxicity**

**Rural Economy & Development**

**Food Safety & Nutrition**

**Business Benefits**

Reduce costs

Reduce supply and reputational risks

Growth and meeting customer and consumer demand

Improved employee satisfaction and productivity

# Question for the audience

**What part of the food supply has the most food waste in industrialized countries like the U.S.?**

- A. Farm production
- B. Post-harvest handling
- C. Processing
- D. Distribution, retail, and food service
- E. Consumers



# 10 Principles of Food Industry Sustainability



Food and ingredient **waste and loss are prevented** across the supply chain and what cannot be avoided is put to a positive use.



The supply chain and consumers advance **sustainable business and food consumption.**



# 10 Principles of Food Industry Sustainability



Food and ingredient **waste and loss are prevented** across the supply chain and what cannot be avoided is put to a positive use.



The supply chain and consumers advance **sustainable business and food consumption.**



- *Providing consumers with preferable options*
- *Helping consumers select preferable options*
- *Reducing consumer food waste*

# Some numbers to ponder

~7 times more energy is used in the food supply chain than the amount of energy provided from food

~50% of nitrogen fertilizer applied is used by the plant

~40% of water applied is used by the plant



# 10 Principles of Food Industry Sustainability



**Agricultural production beneficially contributes to the environment** while efficiently using natural resources and maintaining healthy climate, land, water, and biodiversity.



Use of animals, fish, and seafood in the food supply **optimizes their well-being and adds to environmental health.**



# 10 Principles of Food Industry Sustainability



**Agricultural production beneficially contributes to the environment** while efficiently using natural resources and maintaining healthy climate, land, water, and biodiversity.



Use of animals, fish, and seafood in the food supply **optimizes their well-being and adds to environmental health.**



- *Responsible sourcing*
- *Producer support*
- *Supplier engagement*

# Question for the audience

**What growers produce the majority of the world's food?**

- A. Industrialized farms in the U.S.
- B. Industrialized farms in other parts of the world
- C. Family farms in the U.S.
- D. Small farms in developing countries





# 10 Principles of Food Industry Sustainability



Producer equity and rural economy and development are strengthened with **fair and responsible production and sourcing**.



Safe and highly-nutritious **food is accessible and affordable** to promote and support a healthy population.



# 10 Principles of Food Industry Sustainability



Producer equity and rural economy and development are strengthened with **fair and responsible production and sourcing**.



Safe and highly-nutritious **food is accessible and affordable** to promote and support a healthy population.



**KEURIG™**  
GREEN MOUNTAIN

- *Focused on priority needs*
- *Building capacity (training, tools)*
- *Providing market access*



# 10 Principles of Food Industry Sustainability



Safe and highly-nutritious food is accessible and affordable to promote and support a healthy population.



Agricultural production beneficially contributes to the environment while efficiently using natural resources and maintaining healthy climate, land, water, and biodiversity.



Use of animals, fish, and seafood in the food supply optimizes their well-being and adds to environmental health.



Producer equity and rural economy and development are strengthened with fair and responsible production and sourcing.



**Safe and suitable working conditions are provided to support employees across the supply chain.**



**Food and ingredient processing generates resources and requires minimal additional inputs and outputs.**



**Packaging effectively protects food and supports the environment without damage and waste.**



Food and ingredient waste and loss are prevented across the supply chain and what cannot be avoided is put to a positive use.



**Food and ingredients are efficiently delivered across the supply chain and to the consumer.**



The supply chain and consumers advance sustainable business and food consumption.



# 10 Principles of Food Industry Sustainability

	Farmers & Agribusiness	Manufacturing	Distribution & Marketing Channels	Consumers
Take direct action (apply best practices)	X	X	X	X
Collaborate across supply chain	X	X	X	
Support farmer action		X	X	
Change purchasing		X	X	X
Educate and connect consumer to the value of sustainable supply chain	X	X	X	



# 10 Principles of Food Industry Sustainability

**Identify  
Priorities**



**Develop Goals**



**Implement  
Program**



**Monitor &  
Progress**

# The 10 Principles of Food Industry Sustainability



Thank You

Cheryl Baldwin, Ph.D.  
[cbaldwin@purestrategies.com](mailto:cbaldwin@purestrategies.com)

# Agenda

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Bryan Sheehan

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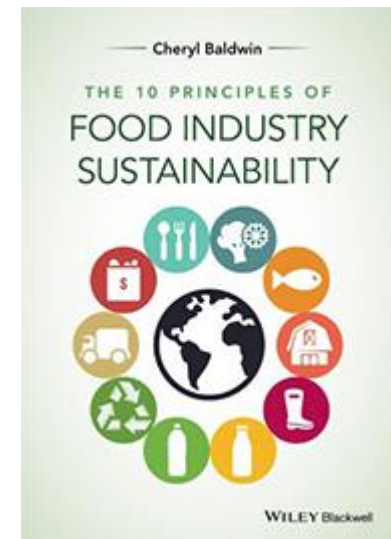
Cheryl Baldwin

## *Farm to Fork Sustainability*

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# BREWING A SUCCESSFUL SUSTAINABILITY PROGRAM



SIERRA NEVADA BREWING CO.  
**BREW ON**











SIERRA

REWERY

**Social Equity**

**Healthy Environment**

**Economic Stability**



# *Sierra Nevada Zero Waste Goal*

- The drivers behind Sierra Nevada's zero waste goal are:
  - To **improve environmental health** by reducing landfill contribution, reducing greenhouse gas emissions, sustaining natural resources, and preventing the release of harmful chemicals into water and air systems.
  - To **save money** by reducing the cost of utilities and resources (energy, water, solid waste management, packaging materials, raw ingredients, etc.) and to provide a revenue stream by selling recyclable materials (spent grain, cardboard, shrink wrap, glass, etc.).

## *Potential Wastes*

- |                              |                       |
|------------------------------|-----------------------|
| ➤ Energy                     | ➤ Water               |
| ➤ Compressed Air             | ➤ Packaging Materials |
| ➤ Employee time/productivity | ➤ Food                |
| ➤ Miscellaneous solid waste  | ➤ Parts/Service       |
|                              | ➤ Money               |

➤ **And most importantly... BEER**

# *Approach to Sustainability*

Focus on Zero Waste

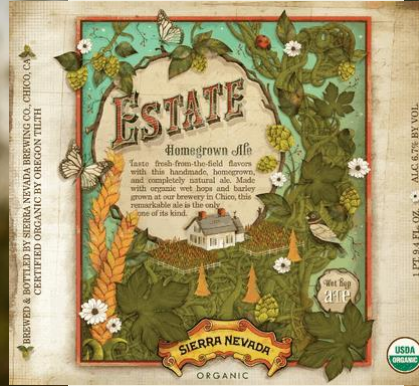
Close All Loops

Auditing/benchmarking/Tracking

Process/behavior change



# Estate Agriculture



# Estate Agriculture





# *Sustainable Menu*

**Local Farms**

**Whole Animals**

**Bulk Cheese**

**All natural, seasonal menu**

**In-house preparations**



# Energy Generation



# Energy Generation



Chico, CA



Mills River, NC



# Energy Efficiency

- Heat recovery
  - Fuel cells
  - Boilers
  - Brew kettles
  - Into fermentation
- Lighting, equipment and electronics upgrades
- Water savings = electricity savings = cost savings
- Education and EMS



# *Water Conservation*

- Automated CIP Systems
- Flow Meters
- Dry lube switch in packaging (from a water based lube)
- Reuse
- Drip irrigation and smart controls
- Cisterns
- **Behavior**



# Wastewater Treatment - Chico



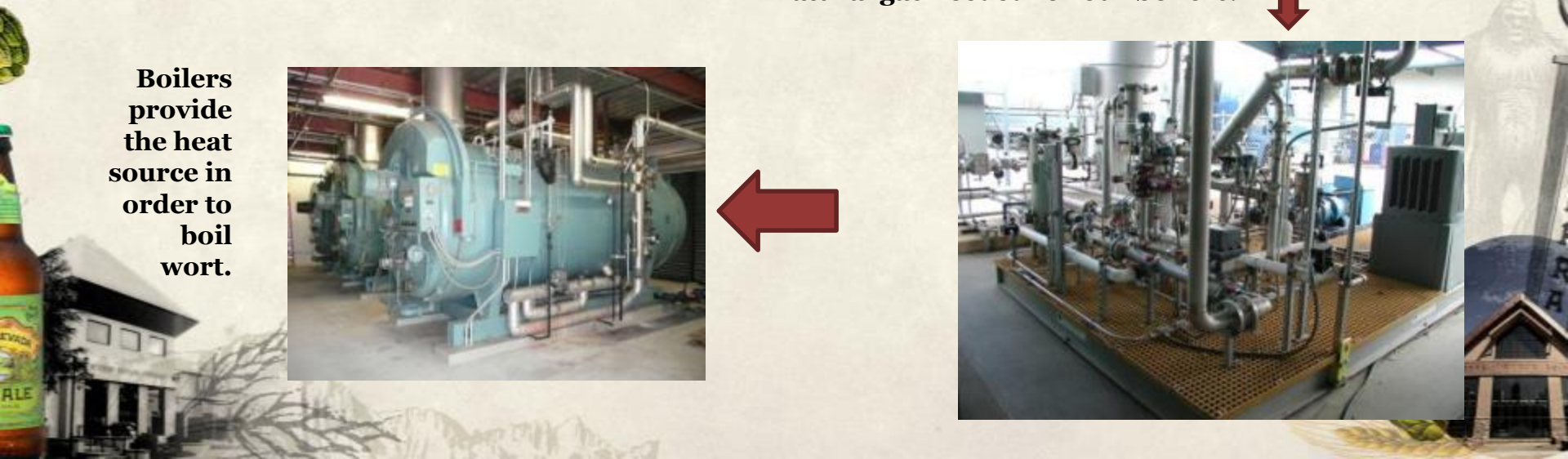
Spent brewing process water is pretreated onsite.



The first treatment phase is an anaerobic digester.

The biogas is recovered, cleaned up, compressed and used to offset the natural gas needed for our boilers.

Boilers provide the heat source in order to boil wort.



# CO<sub>2</sub> Recovery and Reuse



# Reducing our Transportation Impact





# *2014 Resource Recovery*

49,943 tons diverted from landfill

110 tons to landfill = **99.8% diversion**

Avoided ~\$6.2 million in disposal fees

~\$980,000 in revenue





# RECYCLING

SPENT GRAINS, HOPS, & YEAST

# *Recycling*

**Potato/Onion sacks**

**Tin/Aluminum Cans**

**Cardboard**

**Wax Cardboard**

**Paper**

**Plastic Jugs**

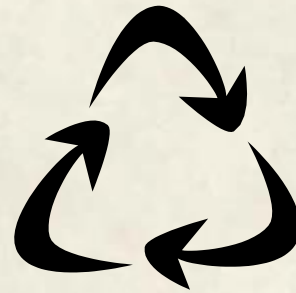
**Glass**

**Plastic Wrap**

**Corks**



# Closed Loop System



# Earning Recognition

## Sierra Nevada Brewing Co. receives first Zero Waste Platinum Certification from USZWBC

by Jason Morgan December 2, 2013



[www.uszwbc.org](http://www.uszwbc.org)

### Overview of Categories & Points

Redesign	o	Leadership	o
Reduce	o	Training	o
Reuse	o	ZW Analysis	o
Compost (Re-earth)	o	Upstream Management	o
Recycle	o	Hazardous Waste Prevention	o
ZW Reporting	o	Closed Loop System	o
Diversion (Min 90%)	o	Innovation	o
ZW Purchasing	o	Total Points	o

# *Cheers!*

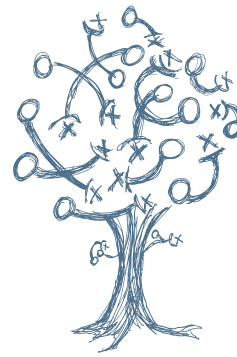


**Cheri Chastain**

**[Cheri@SierraNevada.com](mailto:Cheri@SierraNevada.com)**



# Thank You!



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## Resources:

**Cheryl Baldwin, Ph.D.**

[cbaldwin@purestrategies.com](mailto:cbaldwin@purestrategies.com)

[www.purestrategies.com](http://www.purestrategies.com)

Information about Pure Strategies' work in food:

<http://www.purestrategies.com/documents/food-sustainability.pdf>

Where you can buy the book (hard copy or electronic version):

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118447735.html>

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