Creating a Sustainability Plan to Maximize Profits and Create Differentiation

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Emily Johannes
What we will talk about today...

- What is sustainability?

- Who is involved and why?

- What does sustainability mean for agribusiness and commodity buying companies?

- How can a sustainability plan maximize profits and create differentiation in the marketplace?
WHAT IS SUSTAINABILITY?
Definition

sustain’ability:

n., the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.
Various constraints and pressures

- Natural Resources
- Changing Markets and Demographics
- Increased Demand
Crop yields and natural resource pressures

- More extreme temperatures
- Unusual events
- Unpredictable and more extreme precipitation

Despite technological improvements that increase corn yields, extreme weather events have caused significant yield reductions in some years. Source: USGCRP (2009)

Source: EPA
Prolonged Drought

U.S. Drought Monitor

July 15, 2014
(Released Thursday, Jul. 17, 2014)
Valid 8 a.m. EDT

Drought Impact Types:
- Delineates dominant impacts
  S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
  L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
David Miskus
NOAA/NWS/NCEP/CFC

http://droughtmonitor.unl.edu/
Water stress and corn production

High Water Stress Affects One-Third of Global Corn Production

- World: 36% high stress
- United States: 35%
- China: 71%
- Brazil: 1%
- Mexico: 50%
- Argentina: 7%
- India: 65%

852 million tons (corn produced globally)

In highly water stressed regions, over 40 percent of available renewable surface water is withdrawn for use on an average annual basis. These areas must often rely on alternative, non-renewable sources of water during dry years or reduce their water use.

Crop yield response to rising temperatures

Crop Yield Response to Warming in California’s Central Valley

Source: National Climate Assessment
Water footprint of corn in U.S.

Source: Water Footprint Tool
Crop production is affected by many variables
Case study: Iowa

Increasing Heavy Downpours in Iowa

Number of Days with >1.25 Inches of Rain

Year

1880 1900 1920 1940 1960 1980 2000

Source: National Climate Assessment

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Weeds, disease, and pests

• Production losses

• Geographic distribution

• Competition for resources

• Increased need for chemical control

Source: National Climate Assessment
Population of farm operators is aging

Average Age of Principal Farm Operators, 2012

58 YEARS

The average age of a principal farm operator. The average age is generally highest in the south, and lowest in the upper plains.
Farm operator numbers are declining

3.2 MILLION

The number of all farm operators in the U.S. in 2012.

That’s more farmers than the entire population of Iowa.

Down 3% from 2007.

Number of U.S. Farmers, 2007 and 2012

<table>
<thead>
<tr>
<th>Operators</th>
<th>2007</th>
<th>2012</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>2,204,792</td>
<td>2,109,303</td>
<td>-4.3*</td>
</tr>
<tr>
<td>Second</td>
<td>931,670</td>
<td>928,151</td>
<td>-0.4</td>
</tr>
<tr>
<td>Third</td>
<td>145,072</td>
<td>142,620</td>
<td>-1.7</td>
</tr>
<tr>
<td>All</td>
<td>3,281,534</td>
<td>3,180,074</td>
<td>-3.1</td>
</tr>
</tbody>
</table>

*Statistically significant change.

Demographics are shifting

Farms with Female Principal Operator, by County, 2012

The number of Millennial Generation farmers age 34 or younger in the U.S. in 2012. That’s more than 4 times the enrollment of Texas A&M University.

Minority Principal Operators, 2007 and 2012

<table>
<thead>
<tr>
<th>Minority</th>
<th>2007 Census</th>
<th>2012 Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic*</td>
<td>37,851</td>
<td>67,000</td>
</tr>
<tr>
<td>American Indian</td>
<td>34,706</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>33,371</td>
<td>30,599</td>
</tr>
<tr>
<td>Asian</td>
<td>13,669</td>
<td>11,214</td>
</tr>
</tbody>
</table>


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Demand is rising

Global consumption of grains and oilseeds at record levels

Source: USDA PSD database
Sustainability = Resilience

- Constraints and Pressures
- Increasing Population
- Extreme Weather Events
- Expanded Buying Power and Shifting Consumer Preferences

Supply Chain Disruptions
High Volatility
Higher Cost of Doing Business

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How is sustainability defined today?

- Emerging issue
- Primarily environmental goals and metrics
- Continuous improvement on environmental indicators
- Beginning to capture:
  - Social Contributions
  - Economics and Profitability
How sustainability is being measured

Field to Market Members
Field to Market brings together a diverse group of grower organizations; agribusinesses; food, fiber, restaurant and retail companies; conservation groups; universities and agency partners to focus on promoting, defining and measuring the sustainability of food, fiber and fuel production.

For the most current member list, visit www.fieldtomarket.org/members

Sustainability Measurement and Reporting System
Knowledge Products

**COLLECT**
- Category Dossier
  - Collection of evidence on product category and its supply chain, environmental and social hotspots, and improvement opportunities.

**SYTHESIZE**
- Category Sustainability Profile (CSP)
  - Synthesis of product sustainability knowledge and improvement opportunities.

**MEASURE**
- Key Performance Indicators (KPI)
  - Metrics/questions to measure and track product category sustainability.

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Defining sustainability moving forward...

- Environmental performance, social contributions, economic health
- Business viability
- Competitive advantage
- Resilience and reliability
- Brand integrity
Sustainability is not just a label or fad...

- Conventional vs. organic
- Biotechnology
- Natural or Hormone Free
WHO IS INVOLVED AND WHY?
Companies are taking notice

Source: Harvard Business Review April 2014
Increased volatility across commodities

Source: Shelman, July 2014

Development of primary commodity prices since 2000
in US$ per metric ton unless otherwise noted, indices: 2005=100
Facing a Demographic Shift

80 percent of U.S. consumers, use the Internet when they shop.

By 2017, Millennials will outspend Baby Boomers

Millennials are 262% more likely to be influenced by smartphone apps in shopping decisions

Product preferences are changing and customers are expanding their natural and organic offerings

Millennials are more likely to distrust brand claims – want good pricing and brand integrity

By 2025, Millennials will make up 75% of the workforce

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The Enabling Factor: Big Data
Technology Enabling New Opportunities

On-Farm Data

Natural Resource Data and Trends

Reduced Variability / Increased Profitability

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Enabling Radical Transparency

Who will likely be in business in 10-20 years?

What input costs should be offered to producers with given needs/constraints? Who gets the deal vs who pays more?

Increased ability to see where higher & lower cost production will occur (supply chain implications)

Acceleration of top producer phenomenon where data-enabled producers develop huge advantage over their competitors

Producer Data
WHAT DOES SUSTAINABILITY MEAN FOR AGRIBUSINESS AND COMMODITY BUYING COMPANIES?
Agribusinesses are responding...

- There is a fundamental shift that is leading towards supply-demand imbalance.

- Agribusinesses are responding in order to increase resilience to changing conditions.

- Sustainability = resilience.

Source: Shelman, July 2014
Supply chains are integrating backwards to:

- Manage volatility
- Secure current and future supply
- Guarantee traceability
- Meet sustainability targets
- Protect brand reputation

Source: Shelman, July 2014
Differentiation

• Companies are tailoring products through special traits, sustainable and/or ethical sourcing, and whole chain traceability in order to:

  • Stabilize margins
  • Increase customer willingness to pay
  • Have a basis for branding

Source: Shelman, July 2014
Supply growth

- In addition to company driven or supply-chain responses, investments in land, technology, infrastructure, and training are growing globally in order to:

  - Stimulate production
  - Increase buying options
  - Assure long-term supply
International expansion

• In order to meet demand and correct the imbalance, agribusinesses must enter or grow in new markets:

  • Must counter slow growth in traditional markets
  • Establish global sourcing
  • Spread out risks
Water stress and ethanol production

- Water stress in the high plains region of the U.S.
- Over $1.6 million annual value of ethanol production is at risk.

Source: Ceres, June 2014
Nitrogen pollution and ethanol production

- Sixty corn ethanol refineries with $8.8 billion in annual production capacity are within watersheds of “high” or above delivery of nitrogen pollution to local waterways.

Source: Ceres, June 2014
Reducing risks in corn production → sustainability for corn

- Farming practices that reduce environmental risks
- Measurement processes to assess baseline and continuous improvement

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HOW CAN A SUSTAINABILITY PLAN MAXIMIZE PROFITS AND CREATE DIFFERENTIATION IN THE MARKETPLACE?
What’s happening today?

- Wal-Mart Sustainability Questionnaire
- General Mills’ and Kellogg’s Sustainable Sourcing
- McDonald’s Verified Sustainable Beef (2016)
- Pepsi and Coca-Cola Sustainability Goals

All Farms
What is a sustainability plan?

• Comprehensive measurement and projection of product and non-product attributes.

• Powerful tool for proving your story.

• But it is not:
  – Advertising
  – Outside of or additional to internal business planning
Getting started

• Sustainability plans are rooted in data and science:
  – Peer-reviewed studies to verify outcomes
  – USDA, EPA, USGS, NOAA and other government sources
  – Land grant universities
  – Multi-stakeholder sustainability initiatives
  – Greenhouse gas and other calculator tools
Setting up the strategy

Determine the Issues to Consider

Determine Materiality

Prioritize Issues

Source: Lowitt, 2011
What does a sustainability plan capture?

• Corporate policies

• Baseline assessment:
  – Data collection
  – Business strengths and weaknesses
  – How to aggregate and report data that brings value
  – Financial and profitability strategies

• Projections on:
  – Climate
  – Water
  – Land use, natural resources

• Prioritized plan of action in areas of higher risk
Sustainability topics for biofuel production

Inputs:
- Irrigation (if applicable)
- Fertilizer
- Equipment
- Weed and Pest Mgmt
- Crop Mix

Practices:
- Worker Safety
- Experience
- Facilities
- Practices (on-farm management)
- Practices (plant production)

Outputs:
- Production
- Economic Vitality
- By-Products/Resource Recovery
- Community Involvement

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Integrating sustainability into the business

• Board of Directors / Executive Management Level

• Annual and Strategic Planning

• Procurement requirements and supplier codes

• Budgeting

• Modeling and Projections

What does a plan do for a business?

- Identifies efficiencies, cost savings opportunities
- Links data and information in new ways:
  - Additional value opportunities
  - Brand integrity and reputation
  - Expansion opportunities
  - Improved risk assessment
  - Reduce exposure to risk

‘Triple Bottom Line’
Sustainability → profitability

- 37% of respondents who say sustainability adds profits
- 40%
- 50% (average)
- 55% (average)
- 59%

Number of business model elements changed

3 or 4 when both “target segments” and “value chain processes” are changed

Percent saying sustainability added profit

- 60%

Is there a business case for sustainability?

Yes

200% increase

No

20%


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Leveraging sustainability for brand differentiation

1. Collecting data and information
2. Non-product and product sustainability attributes
3. Meet internal goals and external expectations
4. Enhanced brand value and reputation
Sustainability → differentiation

• Sustainable companies are market leaders.

• Market leaders compete on sustainability.

• Sustainability creates value.

Source: Lowitt, 2011
QUESTIONS