Crop Production Sustainability Trends in North America

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A little about me ...
A brief history of the sustainable agriculture movement

Images: Wikimedia Commons, Valmont, U.S. Fish and Wildlife Service
Sustainability ... defined

Continuous improvement within three focus areas:

- **Profit**: Economic viability to ensure management decisions are practical and protect livelihoods with long-term financial stability
- **People**: Ensuring social responsibility and equity
- **Planet**: Environmental stewardship to safeguard the environment and productivity of the land

Regenerative Agriculture
Soil health * Biodiversity * Livestock integration
## Sustainability drivers: then and now

<table>
<thead>
<tr>
<th>THEN</th>
<th>NOW</th>
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</thead>
<tbody>
<tr>
<td>Yield</td>
<td>Resource efficiency/ROI</td>
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<tr>
<td><em>Feeding</em> the planet</td>
<td><em>Healing</em> the planet</td>
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<tr>
<td>Convenience</td>
<td>Customization</td>
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<td>Least-cost formulation</td>
<td>Lifestyle enhancing</td>
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<tr>
<td><em>Consistent</em> product</td>
<td><em>Hyper-local</em> product</td>
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<tr>
<td>Big is <em>progress</em></td>
<td>Big is <em>bad</em></td>
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Change Accelerators

• Social media (tribes, transparency)
• Pace of technology adoption
• Climate change/hypoxia zone awareness
• Animal welfare concerns
• Short news cycle
• Venture capital
Key consumer sustainability trends intersecting with agriculture

- Circular economy
- Sustainable nutrition
- ‘Planetary Health’
- Soil health & biodiversity
- Data-based decision making
- Blockchain
- Food chain engagement
- Climate & ecosystems services initiatives
- Impact investing
- Human & social capital

Image: Shutterstock
#1: The circular economy

• Changes in China
• Food waste: $1 trillion/year
• Sustainable packaging
• Pre-cycling

Images: The Economist, Rind Snacks, H&M
#2: Sustainable nutrition

- Childhood obesity up 10X
- Salt, sugar, fat as villains
- Finger pointing at food marketing

*Images: Getty, Food Dive, Food Foundation*
#3: Planetary Health

(MADE FROM PLANTS)

IMPOSSIBLE™ BURGER

Love meat? Eat meat. Impossible™ delivers all the flavor, aroma and beefiness of meat from cows. But here’s the kicker: It’s just plants doing the Impossible. See how our original recipe is made below.

EAT-Lancet says you can save the planet on its diet. I tried it for a week.

#4: Soil health & biodiversity

More than 99% of our food comes from the soil.

That’s why General Mills is on a mission to bring soil back to life. Learn more about our work at generalmills.com/regenag
#5: Data-based decision-making

Images: Syngenta, Technology Networks, Food Tank
#6: Blockchain

- Track and trace
- ABCD’s have signed on to digitize international grain trading
- Still in early phase
- Estimated $400MM within 5 years

Images: FAO/JavaCoin News, Food Dive
#7: Food chain engagement

Report: Consumers want increased transparency from retailers and brands

The Agricultural Supply Chain

Images: Field to Market, Food Dive, PrecisionAg
#8: Climate & Ecosystem Services initiatives

- Carbon, water credits
- Cost-sharing
- Voluntary markets

Images: Ecosystem Services Market Consortium, Meine Landwirtschaft, Middle Cedar Watershed Management Authority
#9: Impact investing: CSR & the SDGs
#10: Human and social capital

The Farmworkers Who Pick Your Halo Mandarins Just Organized a Massive Labor Strike

Nearly 1,800 fruit pickers—many undocumented—spontaneously walked out of The Wonderful Company’s citrus orchards earlier this year to oppose a pay cut and third-party labor contracts.
Challenges and Opportunities

Challenges
• Metrics
• Financing
• Partnerships

Opportunities
• Non-farm audiences care
• Better tools
• Resource efficiency gains
• Shared value
Thank you