FOOD FORESIGHT

FOUNDED 1993

2015 Trend Concepts

Presented by:

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A collaboration of Nuffer, Smith, Tucker Inc.
and the California Institute of Food and Agricultural Research,
University of California, Davis

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What is Food Foresight?

- 22-year collaboration with California Institute of Food and Agricultural Research at UC Davis.
- A system to plan for and manage issues.
- Food Foresight is all about systematically anticipating and:
  - Accelerating opportunities
  - Redirecting threats to more mutually beneficial ground and/or
  - Making internal adjustments to adapt to change

Our Challenge:

- A diminishing labor force;
- Finite natural resources (e.g., water, soil, air, habitat);
- Availability of land for farming;
- The high and increasing cost of farming and general business inputs;
- Food safety;
- Managing waste;
- Climate change;
- Declining support for animal agriculture;
- Invasive species, pests and diseases;
- Biofuels — energy versus food;
- Genetically modified organisms (GMOs) and needed new technologies;
- Expanding markets locally, regionally, nationally and globally along with ethnic and generational emphasis;
- Crumbling infrastructure to meet demands (e.g., transportation, municipal water, waste, roads and bridges, utilities);
- Supporting research for innovative solutions to issues;
- Increasing emphasis on the division between "small" and "large," "rich" and "poor," "local" versus "corporate;"
- Replacing aging farmers and others in the agri-food chain with the best and brightest for tomorrow;
- Concurrent issues complicate nutrition's role in healthy eating; and
- Political pressures mounting in all of the areas above.

Preamble: 'Consumer' engagement with food driving more 'public' scrutiny of 'big ag'

- Consumers are increasingly intrigued by the food they eat – where it is grown, what's in it, how it's made and who makes it.
- Consumers desire Norman Rockwell images of farming; reality is more complicated with many of today's farmers looking more like what's been coined "big agriculture," which is less compelling to consumers.
- Activists, especially animal welfare groups, are leveraging consumer interest about food to influence public and corporate policy at retail, foodservice and branded food companies.
- Stakeholders from multiple fronts are demanding that farmers change production practices. Their collective clout can be felt in the regulatory arena and in the growth of consumer marketplace niche businesses.

Preamble: ‘Consumer’ engagement with food driving more ‘public’ scrutiny of ‘big ag’

- There’s continuing pressure in the halls of government to make sure big agriculture does not enjoy more prerogatives than society-at-large is willing to grant.
- Public scrutiny isn’t going away but there is opportunity to win hearts, minds and political support. The key is to acknowledge, respect and address public concerns, and to focus on continuous improvement and earning trust.

Food Foresight 2015 Trends

Preamble: 'Consumer' engagement with food driving more 'public' scrutiny of 'big ag'

1. Where's the next billion dollar start-up venture in agriculture?'
2. Climate change, extreme weather events and water take center stage as the challenges of the century
3. Animal protein demand grows in spite of social and political pressures on U.S. animal agriculture
4. Concurrent issues complicate nutrition's role in healthy eating

Trend 1: 'Where's the next billion dollar start-up venture in agriculture?'

- Outside investors and entrepreneurs, driven by desires to help solve environmental challenges, feed the world, and profit from increasing food demand projections, are investing in agriculture throughout the supply chain.
  - Farmland is the latest hot commodity by domestic and foreign investors;
  - Companies are looking at how to better manage agricultural inputs;
  - New farming methods (like high tech greenhouses) are being explored; and
  - New retail models are gaining traction.

Trend 1: 'Where's the next billion dollar start-up venture in agriculture?'

- "Ag Tech" — the intersection of the Internet of Things, big data, biotechnology and agriculture — is attracting interest from Silicon Valley, agriculture companies and prominent foundations.
- VCs and outside investors may lack experience in agriculture, but provide opportunity for disruptive thinking and innovation.
- Innovation in the areas of food safety, logistics, agricultural inputs, precision farming hardware and software, substitute products and automation are drawing the most interest.

Trend 1: Implications for Agriculture

- Farmers and ranchers are rapidly adopting new systems.
- New innovations will be produced – many by new players.
- New forms of financing are emerging.
- New skillsets may be needed by agricultural workers to adapt to new technologies.
- Farmland is increasingly evaluated as an asset interconnected to its surroundings.

Trend 1: Implications for Agriculture

- Agriculture could have increased, positive economic impact on California economy.
  - Policies could support investments. Likewise, regulatory restrictions could hinder it.
- New partnerships will emerge between ag and other sectors.

Trend 2: Climate change, extreme weather events and water take center stage as the challenges of the century

- As pressures build to produce more food, fuel and fiber, the unpredictability of the water supply is adding a wrinkle to those producing food.
- The world's water demand is expected to exceed supply by 40 percent during the next 20 years. Meanwhile, the water demands of agriculture are drawing added scrutiny and evaluation for water sustainability measures.
- There are numerous companies that are making sustainable water a priority, including Coca-Cola and Nestle.

Trend 2: Climate change, extreme weather events and water take center stage as the challenges of the Century

- We're seeing the effects of climate change throughout agriculture, from drought to other extreme weather events, including changes in temperatures and rainfalls.
- As a result, we are seeing a rise in what's being called "climate smart agriculture." By one definition, agriculture is Climate Smart if it:
  - Produces food sustainably.
  - Improves resilience to climate change.
  - Reduces carbon footprint.

Trend 2: Implications for Agriculture

- Climate changes will lead to new pests, diseases, weeds and fungi.
- Crops will increasingly need to be drought tolerant and climate smart.
- Agriculture will increasingly be scrutinized for its impact on the environment and use of natural resources.
- The availability of water will impact what foods are grown and where, and may lead to conflict between fellow farmers and urban centers.
- New agriculture centers are likely to emerge.
- Temperatures and extreme weather events will impact crop yields.
- Innovations in water will proliferate.

Trend 3: Animal protein demand grows in spite of social and political pressures on U.S. animal agriculture

- Emerging middle classes demand more meat – growth in China has slowed, but the rest of Asia shows huge potential, including India, Indonesia and Vietnam; sub-Saharan Africa also is showing substantial growth.
  - Demands are met by domestically grown product and importing feed.
  - China's soy imports account for 50 percent of the global soy market.
  - As economies develop, people shift from merely consuming calories for subsistence to consuming a more balanced, nutritious diet.

Trend 3: Animal protein demand grows in spite of social and political pressures on U.S. animal agriculture

- At home, animal agriculture is in the hot seat for issues related to animal welfare, antibiotics, climate change and health.
- Activism is driving change with food companies, retailers and foodservice operators, and in public policy.
  - McDonald's, Arby's, Burger King, Starbucks, Kroger and more are phasing out gestation crates.
  - McDonald's, Subway and others are going "antibiotic free."
  - Nestlé's new animal welfare standards have been described as "the most sweeping food company action to date."
  - Proposition 2 in California requires more room for California's egg laying hens.
  - Advocacy groups are now targeting proxy advisers to pressure companies to disclose financial risks posed by animal welfare standards.

Trend 3: Animal protein demand grows in spite of social and political pressures on U.S. animal agriculture

- Vilification of animal protein is driving demand for alternatives. Soy is king, but other plant proteins, peas, other oil seeds and even algae are being increasingly used in substitute products.
  - Insects are receiving a closer look as a protein alternative, producing 80 times less methane than cattle and requiring six times less feed. Some health advocates argue insects can be valuable source or nutrition.
- Because of all these things, we are seeing push back on whether or not the western diet is the right choice for the rest of the world.

Trend 3: Implications for agriculture

- Global markets, particularly those in developing countries, will impact food demands.
- Supply chains should be evaluated for vulnerabilities.
- Understanding what drives consumers is critical.
- Customers should be kept abreast of issues and potential threats.
- Demonstrate continuous improvement on sustainability and other measures.

Trend 4: Concurrent issues complicate nutrition's role in healthy eating

- There's a new and growing glut of criteria people are using to make healthy food selections. Social issues — animal welfare, food security, the safety of GMOs and sustainability considerations — are adding to traditional criteria such as taste, price convenience and nutrition.
- Consumers tend to "cherry pick" the issues they care about and link them to nutritional value as criteria for making "better" food choices.
- The advisory committee for the U.S. Dietary Guidelines addresses environmental links to food choices for the first time, showcasing the trend.

Trend 4: Concurrent issues complicate nutrition's role in healthy eating

- The anti-GMO movement has picked up steam with some agriculture groups backing national legislation to preempt state measures.
- Agriculture advocates science be the basis for decision making; meanwhile, science is being criticized and questioned.
- All this is happening at a time when personalized nutrition is here — we know more about our bodies and genetic and behavioral drivers of disease than ever before. Cost pressures and other variables dictate a shift from treating disease to optimizing health and wellness with nutrition being a cornerstone.

Trend 4: Implications for agriculture

- Nutrient profiles of products will become increasingly important.
- A variety of stakeholders are engaged in public health discussions.
- It is critical to recognize the increasing interconnectedness of the issues and acknowledge and address public concerns.
- Products that shine with regard to sustainability, should highlight their sustainability contributions.

So What?

What is the role of the state board in issues management?

What is the role of California agriculture in addressing social issues?

How can California agriculture improve people's lives?

Questions or Comments?

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