PROCESSED FOODS
Research Brief

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SASB’s Industry Brief provides evidence for the disclosure topics in the Processed Foods industry. The brief opens with a summary of the industry, including relevant legislative and regulatory trends and sustainability risks and opportunities. Following this, evidence for each disclosure topic (in the categories of Environment, Social Capital, Human Capital, Business Model and Innovation, and Leadership and Governance) is presented. SASB’s Industry Brief can be used to understand the data underlying SASB Sustainability Accounting Standards. For accounting metrics and disclosure guidance, please see SASB’s Sustainability Accounting Standards. For information about the legal basis for SASB and SASB’s standards development process, please see the Conceptual Framework.

SASB identifies the minimum set of disclosure topics likely to constitute material information for companies within a given industry. However, the final determination of materiality is the onus of the company.

Related Documents
- Processed Foods Sustainability Accounting Standards
- Industry Working Group Participants
- SASB Conceptual Framework

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INTRODUCTION

Processed foods companies play an essential role in society by supplying consumers with affordable and convenient sources of food that meet various dietary needs. As consumers are becoming increasingly busy, innovations in processed foods have provided for an efficient source of key nutrients in their diet.

Regulatory and societal trends suggest a rising concern over the health and safety of processed food products as well as concerns over the environmental and social externalities that result from the manufacturing and sourcing of products and ingredients, which can threaten a company’s social license to operate.

During manufacturing, environmental impacts arise from the use of energy and water, essential inputs for food production. This reliance on natural resources can contribute to operational risks as the cost of such resources rises, which places an emphasis on efficiency. Additionally, the use of these resources generates greenhouse gas (GHG) emissions and potential water pollution. The industry is highly exposed to and contributes to social and environmental issues within its supply chain. Climate change and water scarcity present challenges for sourcing key ingredients. Additionally, the farming of key ingredients contributes to many environmental and social issues within companies’ supply chains.

The consumer-facing nature of the industry makes the management of key sustainability issues an important driver for long-term company success. The management (or mismanagement) of material sustainability issues, therefore, has the potential to affect company valuation through impacts on sales, profits, reputation, assets, liabilities, and cost of capital.

Investors will obtain a more holistic and comparable view of performance if processed foods companies report metrics on the material sustainability risks and opportunities that could affect value in the near and long term in their regulatory filings. This would include both positive and negative externalities and the non-financial forms of capital that the industry relies on for value creation.

Specifically, performance on the following sustainability issues will drive competitiveness within the Processed Foods industry:

- Improving energy and fleet fuel efficiency;
- Managing water use, particularly for operations in water-stressed areas;
- Ensuring food quality and safety;
- Managing a product’s health and nutrition characteristics to capture shifting customer demand.
• Building customer confidence and trust by maintaining integrity in labeling and marketing practices;
• Packaging lifecycle management and innovation to reduce costs and improve environmental impacts of packaging; and
• Addressing supply chain management risks associated with climate change and water scarcity.

INDUSTRY SUMMARY

The Processed Foods industry includes companies that process and package foods such as bread, frozen foods, snack foods, pet foods, and condiments for retail consumer consumption. Typically, these products are made ready to consume, marketed for retail consumers, and can be found on food retailers’ shelves.1

Globally listed processed foods companies generated revenues of more than $515 billion in 2014. The two largest segments of the industry are Snack Food & Confectionary items and Frozen, Canned & Perishable food, which generated 34 and 27 percent of total industry revenue, respectively.1 The industry’s five largest companies by revenue are PepsiCo Inc., Nestlé, Mondelez International, ConAgra Foods, and General Mills. These companies generated processed food revenues between $16.5 and $45.5 billion, together representing more than 27 percent of global industry revenue in 2014.2

Large companies in the industry generate sales globally, and international opportunities are driving growth. For example, Mondelez International generated more than 80 percent of its revenue outside the U.S. in 2014.3 General Mills has expanded its operations in fast-growing external markets such as China, India, and Indonesia. The company’s international sales have been growing around 10 percent annually, while domestic sales have only grown between one and three percent, which highlights the opportunities of operating internationally.4 Large companies such as Campbell Soup Co. have global manufacturing operations in countries such as China, Australia, France, and Germany, which demonstrates the global footprint that many companies have in this industry.5

Companies in the industry transform raw ingredients into packaged products. For snack food companies like Mondelez and PepsiCo, these raw ingredients include large quantities of sugar, wheat, corn, vegetable oil, flour, oats, potatoes, seasonings, cocoa, and other fruits and vegetables.6 For frozen food producers like ConAgra, raw ingredients include wheat, corn, soybeans, pork, poultry, and beef.7 As a result of the industry’s reliance on agricultural products, company supply chains are susceptible to changing weather patterns, water scarcity, and climate change, which can lead to high degrees of input price volatility.

The largest customers of the Processed Foods industry include grocery stores and large retail chains such as Walmart, which alone made up more than 18 percent of PepsiCo’s total revenue in 2014 and 17 percent of ConAgra’s.8 The industry is driven largely by key external drivers like raw material input prices, the healthy eating index, and consumers’ disposable income and leisure time.9 These external drivers are shaping the industry landscape in a number of ways. For example, consumers are becoming increasingly health conscious, and as a result, they are demanding products made with fewer calories

1 Industry composition is based on the mapping of the Sustainable Industry Classification System (SICSTM) to the Bloomberg Industry Classification System (BICS). A list of representative companies appears in Appendix I.
and less sodium and trans fats, which are typically found in snack foods. Healthy snacks have made up the industry’s fastest-growing segment over the past five years. Demand for healthy products has led to the launch of new companies such as Popchips and SkinnyPop, which specifically target consumer demand for less processed snack foods with fewer artificial additives.

The industry is highly capital intensive, as large investments in equipment, machinery, technology, and buildings are needed to produce processed foods at scale. Additionally, large operational costs include the purchase of raw ingredients used to manufacture food products, which represent roughly 50 percent of the industry’s total costs. Other materials such as packaging represent a large cost for the industry. For example, PepsiCo spends $6.9 billion on packaging, representing 10.5 percent of total sales.

The industry has been facing rising pressure from higher input costs, particularly for raw ingredients, packaging materials, and energy. This has contributed to gross margins remaining relatively flat for larger industry players over the past five years. For example, Mondelez International generated a 36.8 percent gross margin in 2014, a small increase from 2008’s low of 33 percent and in line with pre-recession levels of around 36.2 percent. Industry players recognize the financial risk to operations of these increasing costs, especially if they cannot effectively increase efficiency or pass on rising costs to consumers. Larger companies are better able to pass costs to consumers, as reputation and perceived value over small- to medium-sized companies are greater. This phenomenon has led to a decrease in the number of small- to medium-sized companies in the industry and represents a barrier to entry for smaller companies.

Significant levels of capital are necessary in order to operate heavy equipment and machinery in production, leading to high barriers to entry for new companies. New entrants also face hurdles with establishing key grocery relationships and building a sufficient brand reputation to attract consumer demand.

The Processed Foods industry has seen some levels of consolidation as companies acquire other companies in the industry in order to build economies of scale and cut costs. For example, ConAgra purchased private food label producer Ralcorp in a deal worth $6.8 billion and created one of the largest food companies in the U.S. In 2013, Heinz was acquired in a buyout by Berkshire Hathaway and 3G Capital Management in a deal worth $28 billion, the largest in food industry history. In 2015, Heinz and Kraft agreed to merge operations in a deal estimated to be worth $49 billion. The deal is currently in development and has not been finalized, but would create the fifth-largest food company in the world and would generate combined revenues of more than $28 billion.

Industry outlook remains mixed across the various segments of the processed foods market. Some segments are expected to improve and others to decline in the near future as disposable income and consumer trends shift. Revenue for the cereal segment of the industry is expected to increase marginally at 0.8 percent annually over the next five years to $11.5 billion in the U.S. Healthy alternatives and new establishments are expected to drive future revenue growth in the snack food segment of the industry 2.6 percent annually over the five years leading to 2019, up to $39.4 billion. Consumers’ disposable income is expected to increase, driving demand away from frozen food segments as consumers become able.
to afford to eat out at restaurants more often. Revenue from the frozen food segment of the industry is thus expected to decline marginally by 0.7 percent annually leading up to 2019, to $27.9 billion. For chocolate producers like Nestlé and Hershey, industry revenue is expected to grow one percent annually over five years, reaching $16.3 billion in 2019.

Companies in the industry are typically valued based on financial multiples, such as Price to Earnings or EV to EBITDA. The industry as a whole has been trading at a premium to other industries, as the Processed Foods industry is experiencing a favorable outlook due to large cost cutting initiatives and low commodity prices, which are predicted to boost industry profitability.

In order to protect shareholder value over the long term, companies will have to navigate key competitive pricing trends, along with specific regulations and significant environmental and social issues affecting the industry or its customers. Companies that manage these trends successfully will be able to capture opportunities for growth and attain a stronger competitive position.

**LEGISLATIVE AND REGULATORY TRENDS IN THE PROCESSED FOODS INDUSTRY**

Regulations in the U.S. and abroad represent the formal boundaries of companies’ operations, and are often designed to address the social and environmental externalities that businesses can create. Beyond formal regulation, industry practices and self-regulatory efforts act as quasi-regulation and also form part of the social contract between business and society. In this section, SASB provides a brief summary of key regulations and legislative efforts related to this industry, focusing on social and environmental factors. SASB also describes self-regulatory efforts on the part of the industry, which could serve to pre-empt further regulation.

Existing and emerging regulation in the U.S. and abroad relating to health, obesity, food safety, product labeling, and environmental concerns has the potential to further emphasize the importance of managing material sustainability issues. The following section provides a summary of recent developments that are likely to impact the industry going forward.

U.S. food and beverages industries have all been under pressure by consumers and regulators to address obesity and the nutritional content of food products. Recently, the U.S. Department of Agriculture (USDA) banned multiple forms of snack foods in schools, allowing only products that meet certain limits for sugar and calorie content. Allowable products include foods and snacks in which whole grains, protein, or fruits and vegetables are the primary ingredients, and the amount of calories, sugars, sodium, and fat is limited. Other countries have begun to implement junk food taxes, or “fat taxes,” to address obesity concerns. For example, Mexico approved a five percent tax on unhealthy snack food in 2013 to abate the country’s rising obesity levels and the associated burden on health care costs. Obesity-related health issues cost the country more than $3.2 billion in health care costs in 2008. This is expected to increase to $7.7 billion by 2020, highlighting some ways in which regulatory trends are impacting the industry.

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*Enterprise value to earnings before interest, taxes, depreciation, and amortization*

*This section does not purport to contain a comprehensive review of all regulations related to this industry, but is intended to highlight some ways in which regulatory trends are impacting the industry.*
billion by 2017, according to estimates. Other jurisdictions have implemented similar taxes on high-fat products. Taxes and bans on snack foods to address obesity concerns are affecting industry profitability and forcing processed foods companies to address health and nutrition concerns about their products.

Food safety is also a major concern for the industry, as millions of Americans are exposed to foodborne illness and thousands are hospitalized every year. On January 4, 2011, President Obama signed into law the Food Safety Modernization Act (FSMA), which allows for Food and Drug Administration (FDA) oversight of food safety issues in the areas of prevention, inspection and compliance, recall response, and traceability. Companies have begun to focus heavily on food safety issues, as failing to do so can result in costly recalls and fines.

The Processed Foods industry is also facing increasing scrutiny from parents and the U.S. government regarding advertising to children under the age of 12. In 2006, a U.S. government task force was established to address the impact of media on childhood obesity. The task force aimed to develop a voluntary industry standard to reduce the amount of advertising for unhealthy food and beverages targeted toward children. The same year, the Better Business Bureau launched the Children’s Food and Beverage Advertising Initiative (CFBAI) to address growing concerns about food and beverage advertising to children, calling for industry self-regulation. The initiative hopes to shift the focus of food and beverage advertising aimed at children under age 12 to healthier options. It currently has 16 members including food companies ConAgra, Kellogg, General Mills, Hershey, Campbell Soup, and Nestlé. Members agree to follow five components, including stipulations that advertising directed solely at children must promote “healthier dietary choices,” companies must not advertise unhealthy snack food products in elementary schools, and companies must not actively seek placement of products in entertainment directed at children.

The U.S. government and consumers are demanding more stringent rules relating to food labeling, advertising, packaging, and other claims. Failure to abide by these laws can seriously impair a producer’s credibility and can result in expensive product recalls that open up producers to civil or criminal penalties. Additionally, there is pending enforcement of new FDA regulations around labeling that would limit food producers’ opportunities to make misleading health claims intended to harm competitors. Producers that respond proactively to regulations may boost their company image and earn credibility and trust among consumers. Concerns over deceptive and false advertising have led to class action lawsuits for processed food producers.

The FDA has jurisdiction over food and food labeling, ingredients, nutritional content, and health claims. Health claims that promote the benefits of a particular ingredient must be substantiated by the FDA for approval in product promotion. The FDA recently placed restrictions on the use of partially hydrogenated oils, trans fats, as they are no longer generally recognized as safe.

The Supreme Court unanimously decided that competing producers may sue for unfair competition if other food and beverage producers make misleading claims, legislation known as the Lanham Act. Additionally, companies operating internationally are exposed to new forms of regulation that influence a
Many companies in the industry have committed to addressing key environmental, social, food quality, safety, and nutritional concerns to comply with regulations. Others have begun implementing sustainability programs as a key strategic initiative to drive overall business success.

**SUSTAINABILITY-RELATED RISKS AND OPPORTUNITIES**

Industry drivers and recent regulations suggest that traditional value drivers will continue to impact financial performance. However, intangible assets such as social, human, and environmental capital, company leadership and governance, and the company’s ability to innovate to address these issues are likely to increasingly contribute to financial and business value.

Broad industry trends and characteristics are driving the importance of sustainability performance in the Processed Foods industry:

- **Health and nutrition**: The industry’s social license to operate is earned by providing society with efficient, healthy, and enjoyable foods for consumption. This license is increasingly threatened by obesity and health concerns related to the consumption of unhealthy food. Shifts in consumer preferences and tastes are materially altering the Processed Foods industry as producers begin to address the health and nutritional value of their current food portfolios.

- **Consumer safety and awareness**: Evolving consumer concerns around product ingredients and food safety are driving regulation to create more transparency in product formulation and
safety performance. These concerns are
driving the industry to adopt new
product formulations and procedures
around safety innovations.

- **Exposure to climate change and
  water scarcity**: Climate change and
water scarcity are fundamentally
affecting the cost of raw materials for the
industry. This exposure presents the
industry with operational financial risks
that threaten long-term profitability.

As described above, the regulatory and legislative
environment surrounding the Processed Foods
industry emphasizes the importance of
sustainability management and performance.
Specifically, recent trends suggest a regulatory
emphasis on product labeling, consumer health,
and food safety, which will serve to align the
interests of society with those of investors.

The following section provides a brief description
of each sustainability issue that is likely to have
material implications for companies in the
Processed Foods industry. This includes an
explanation of how the issue could impact
valuation and evidence of actual financial impact.
Further information on the nature of the value
impact, based on SASB’s research and analysis, is
provided in Appendices IIA and IIB.

Appendix IIA also provides a summary of the
evidence of investor interest in the issues. This is
based on a systematic analysis of companies’ 10-
K and 20-F filings, shareholder resolutions, and
other public documents, which highlights the
frequency with which each topic is discussed in
these documents. The evidence of interest is also
based on the results of consultation with experts
participating in an industry working group (IWG)
convened by SASB. The IWG results represent the
perspective of a balanced group of stakeholders,
including corporate professionals, investors or
market participants, and public interest
intermediaries.

The industry-specific sustainability disclosure
topics and metrics identified in this brief are the
result of a year-long standards development
process, which takes into account the
aforementioned evidence of interest, evidence of
financial impact discussed in detail in this brief,
inputs from a 90-day public comment period, and
additional inputs from conversations with
industry or issue experts.

A summary of the recommended disclosure
framework and accounting metrics appears in
Appendix III. The complete SASB standards for
the industry, including technical protocols, can be
downloaded from www.sasb.org. Finally,
Appendix IV provides an analysis of the quality of
current disclosure on these issues in SEC filings by
the leading companies in the industry.

**ENVIRONMENT**

The environmental dimension of sustainability
includes corporate impacts on the environment.
This could be through the use of natural
resources as inputs to the factors of production
(e.g., water, minerals, ecosystems, and
biodiversity) or environmental externalities and
harmful releases in the environment, such as air
and water pollution, waste disposal, and GHG
emissions.

Companies utilize large amounts of natural
resources, including water and various forms of
energy, to transform ingredients into finished
products. The use of these natural resources may
create environmental externalities that lead to
tangible material risks and opportunities for
processed foods producers. For example, the
heavy reliance on energy as a key input for value creation for the industry has led to pressure on margins from rising energy costs. With risk comes the opportunity to address companies’ use of natural resources, which can improve overall operational efficiency.

**Energy & Fleet Fuel Management**

The Processed Foods industry is highly reliant on energy and fuel as primary inputs for value creation, both in manufacturing food products distributing finished products to consumers. Energy is needed to operate large manufacturing facilities for use in steps such as cooking, refrigeration, packaging, and transporting. Energy production and consumption contributes to significant environmental impacts, including climate change and pollution, which have the potential to indirectly yet materially impact the results of operation of processed foods companies. Material impacts can come in the form of incentives for energy efficiency and renewable energy, rising costs associated with various forms of energy, and the risk of heavy reliance on specific forms of energy that are facing significant regulation. Therefore, energy management, understood as the way in which a company manages its overall energy efficiency, its fuel consumption, its reliance on different types of energy, and its ability to access alternative sources of energy, is becoming increasingly material for the industry.

Energy efficiency in production and distribution can mitigate exposure to volatile energy costs and limit a company’s contribution to direct and indirect GHG emissions. Producers may be able to further reduce the risk posed by volatile fossil fuel energy costs—particularly natural gas, which is used heavily in the industry—by diversifying their energy portfolio across a range of sources. Additionally, companies in the industry rely on third-party distribution as well as directly owned systems to transport their products to consumers. Efficiencies can be gained in fleet fuel management to reduce costs and limit the carbon footprint associated with product transportation. Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Operational energy consumed, percentage grid electricity, and percentage renewable; and
- Fleet fuel consumed, percentage renewable.

**Evidence**

The Processed Foods industry utilizes various forms of energy to transform raw ingredients into finished products. Currently, industry participants maintain an even split between purchased electricity and energy generated directly from purchased fuels, mainly natural gas. For example, ConAgra currently generates roughly 51 percent of its GHG emissions through electricity purchases and 49 percent through direct emissions. A majority of the industry’s direct Scope 1 emissions are released as a result of burning natural gas to generate heat and electricity. Companies use natural gas to power food processing ovens and production facilities. Additionally, some companies manage their own fleet of vehicles to transport finished products, which further contributes to overall energy usage.

Processed Foods industry expenditures on fuel and electricity represent roughly 1.07 and 1.80 percent of total cost of materials, respectively, representing a combined 2.87 percent of costs.
spent on energy. As a result of a relatively high reliance on energy to generate finished products, companies in the industry recognize the risk of rising energy prices and constrained supply as material concerns for their operations in their Form 10-K filings. Specifically, PepsiCo stated in its 2015 form 10-K that “[i]f commodity price changes result in unexpected or significant increases in raw materials and energy costs, we may not be able to increase our product prices or effectively hedge against commodity price increases to offset these increased costs without suffering reduced volume, revenue, margins and operating results.”

Currently, the U.S. food processing sector spends roughly $7 billion annually on energy costs alone, representing significant opportunity for companies to implement projects to improve energy efficiency and generate cost savings. For example, ConAgra received Energy Star ratings for three of its potato processing plants, which utilize 20 percent less energy than comparable food processing plants. Through the company’s initiatives, the three plants are expected to save ConAgra more than $10 million in energy costs each year, equivalent to roughly one percent of its net income in 2014, and reduce annual emissions by 40,000 metric tons.

Companies have begun setting goals to reduce energy intensity within operations. For example, General Mills set a goal to reduce energy usage by 20 percent by 2015 from 2005 baseline levels. The company is implementing numerous energy-saving projects, including optimizing machinery such as dryers, ovens, freezers, heating and cooling equipment, and lighting. In 2013, such efforts at seven of the company’s locations saved $3.7 million and reduced electricity usage by six percent. By 2015, the company plans to implement energy-saving processes in 15 of its largest plants and expects to save an additional $20 million in energy costs. These energy-efficiency initiatives are part of a larger cost-saving program that General Mills’ Chief Financial Officer (CFO) believes is a “first line of defense to offset input cost inflation and protect gross margins.” PepsiCo’s energy-efficiency initiatives resulted in $70 million in energy-cost savings in 2012. These initiatives have the potential to provide shareholders with millions in reoccurring cost savings every year, providing significant value to the firm.

Companies have adopted various initiatives to address rising energy costs and GHG emissions, including hedging, efficiency, and renewable energy initiatives. For example, Mars Inc., a popular producer of chocolate candy and pet food products, has launched an initiative to be carbon neutral by 2040 in an effort to limit the company’s carbon emissions and exposure to fossil fuel energy sources. In April 2014, the company invested in a large-scale, 118-turbine wind farm in Texas that will generate more than 100 percent of the electricity needs of the company’s U.S. operations. The project is currently the largest commitment to renewable energy made by any food producer in the U.S. Nestlé is pursuing similar initiatives in Mexico, where it is investing in large-scale wind projects to reduce the company’s energy use by 39 percent per ton of food. Currently, wind power accounts for 85 percent of Nestlé’s operational electricity needs in Mexico. On-site renewable energy makes up 13.3 percent of the company’s total facility energy use. In 2011, Snyder’s-Lance Inc., a pretzel manufacturer, completed the largest solar project in Pennsylvania outside the company’s headquarters. The 3.5 MW solar project is projected to eliminate more than 230 million pounds of CO2 emissions over a 25-year period and save the company an estimated 30
percent annually in energy costs. The company received $4.2 million in federal grants to complete the project.

Improving fleet fuel efficiency is also important for processed foods companies that operate large vehicle fleets to distribute finished products to consumers. Frito-Lay currently operates a fleet of more than 20,000 vehicles, making it the seventh-largest privately owned fleet in the U.S., and the company has a goal of making it the most fuel-efficient fleet in the country. At the end of 2013, the company had more than 269 all-electric trucks, the largest electric fleet in the U.S. This initiative will save the company 500,000 gallons of fuel annually and will reduce GHG emissions by 75 percent compared to diesel trucks. Both Frito-Lay and General Mills have invested in compressed natural gas (CNG) vehicles to reduce carbon emissions and improve operational efficiency. While the network for CNG refueling is sparse in some areas around the U.S., the companies have launched test fleets and invested in CNG infrastructure to improve the reliability of this new form of fuel. General Mills believes there are not only emissions benefits from CNG vehicles, but also cost savings and reduced risk compared to diesel vehicles. Through fuel and transportation efficiency initiatives, the company hopes to reduce its fuel usage rate (fuel use per metric ton of product) by 35 percent by the end of 2015 from 2009 levels. By the end of 2014, the company reduced fuel usage by 22 percent from 2009.

Value Impact

Energy management can have ongoing impacts on operating costs due to volatile energy prices and rising energy consumption associated with increasing processed food production. In the face of rising electricity costs, processed foods companies that develop more energy-efficient methods of production can gain a competitive advantage by offsetting rising costs and protecting margins. In addition to impacts on operating costs, there could be one-time effects on cash flows through capital expenditures for energy-related projects. Through energy efficiency and the use of alternative energy, companies can benefit from significant cost reductions and reduce operational risks arising from fluctuations in fossil fuel prices.

Another source of operational risk is the reliability of future energy supplies, which can influence decisions about generating power on-site and diversifying energy sources versus purchasing electricity from the grid. The more a company relies on purchased fuels and electricity from traditional sources of energy, the more vulnerable it is to cost increases for specific energy sources as well as the indirect impact of utilities’ costs for internalizing carbon prices. The use of independent (non-grid) energy sources also indicates that a company has a degree of control over its energy sources and demonstrates its ability to provide continuous energy for its facilities. The percentage energy generated from renewable sources indicates a firm’s ability to mitigate its environmental footprint and its exposure to energy cost increases as well as its energy independence. Additionally, improving vehicle fleet efficiency can help to reduce operating costs and emissions. Due to the consumer-facing nature of this industry, these initiatives can improve companies’ brand value in the long term.

The probability and magnitude of these impacts could increase in the future as emerging governmental regulations on environmental impacts continue to influence energy costs.
Water Management

Water management is an increasingly material issue for companies in the Processed Foods industry, as large amounts of water are required for cooking, processing, and cleaning finished goods. The total use of water depends on the type of food being prepared. Companies may face additional risks associated with discharging polluted water from the food-making process, which can lead to costly fines and stricter regulations.⁴

As the global population is predicted to grow to 9.2 billion by 2050, the demand for water will increase.⁵⁹ At the same time, increasing pollution and climate change will create major operational risks for processed foods companies, especially those operating in water-scarce regions. Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Total water withdrawn and total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress;
- Number of incidents of non-compliance with water quality and/or quantity permits, standards, and regulations; and
- Discussion of water management risks and description of strategies and practices to mitigate those risks.

Evidence

According to MSCI research data on industries exposed to water-use risk, the packaged food industry ranks sixth behind other industries including brewers, water utilities, paper products, and independent power. While the majority of the risk lies with upstream agriculture operations, processed foods companies also utilize large volumes of water for food processing.⁶⁰ Companies in the industry recognize the risk of changing weather patterns and their impact on the availability of clean water.⁶¹ Specifically, Diamond Foods, a snack food company, stated in its 2014 Form 10-K that “water shortages, raw material shortage or any other reason, whether or not covered by insurance, could interrupt our manufacturing operations, disrupt communications with our customers and suppliers and cause us to lose sales and write off inventory,” and “[i]ncreases in the cost of water, electricity, natural gas, fuel or labor and failure to ship products on time, could increase our costs of production and adversely affect our profitability.”⁶²

Processed foods companies have begun implementing programs to reduce water consumption in order to address these risks in direct operations. For example, in 2007, Heinz was able to reduce water consumption by 50 percent at a plant in Australia as a result of installing motion sensors and new equipment that regulated and turned off water when a line was not in use.⁶³ Campbell Soup Company has set a goal of reducing its water use by 50 percent per ton of food produced by 2020 from 2008 baseline levels. So far, the company’s initiatives have produced savings of more than 20.7 percent and reduced water usage by more than one billion gallons annually. The company reported saving more than five billion gallons since 2009.⁶⁴ Hershey implemented water-efficiency projects in a number of its plants, which the company

⁴ This issue does not cover water scarcity as it relates to the company’s agriculture supply chain, which is covered later in the brief in the Environmental & Social Impacts of Ingredients Supply Chain section.
expects will save more than $900,000 a year starting in 2014. In addition to the cost efficiency of limiting water consumption, companies are recognizing the need to understand the risks of water scarcity throughout their operations. Campbell Soup Company worked with the World Business Council for Sustainable Development to map water-risk exposure for its entire operation. ConAgra assesses water scarcity around its production facilities, and in 2013, the company estimated that 7.4 percent of its operations were located in water-scarce and water-stressed regions, 3.6 percent in medium-stressed regions, and the remainder in low-stressed regions. In 2014, the company reassessed its water-risk exposure and highlighted the fact that 38 locations, representing 37.5 percent of the company’s total water usage, were located in medium- to high-risk regions. Additionally, the company had 10 locations in high-risk regions, representing 3.3 percent of the company’s total water usage. Companies with operations in water-stressed regions can implement water-efficiency initiatives to reduce the risks of shortages and price increases in these regions. For example, Heinz was able to reduce water usage in its San Joaquin, Venezuela, plant, located in a water-stressed region, by 56 percent.

Companies that utilize significant quantities of water must ensure that the water they release meets local quality standards. If companies fail to manage wastewater effectively, they may face significant fines. Seneca Foods, a producer of canned fruits and vegetables, was fined $9 million by the city of Modesto, California, because the level of biochemical oxygen in its wastewater exceeded city regulations. The company has since installed new equipment to properly treat its wastewater in compliance with local limits. Similarly, ConAgra paid a $475,000 settlement for violating the CWA’s Spill Prevention, Control, and Countermeasure requirements. As part of the settlement, the company must submit annual reports verifying compliance. In 2013, ConAgra disclosed that the company received 20 Notices of Violations (NOVs) at 13 of its operating facilities, a 30 percent reduction from the previous year’s violations. In 2014, the company received 36 NOVs and paid a total of $1,109,500 in environmental fines. Half of the NOVs received were associated with wastewater parameters.

**Value Impact**

Water use and contamination can affect ongoing operating costs and can impact cash flows through one-off capital expenditures or regulatory penalties. Additionally, companies may face unexpected capital expenditures, water-treatment costs, regulatory compliance costs, and an increased cost of capital for operations in water-stressed regions. Water-use efficiency can reduce overall costs and improve gross margins.

Disclosure around a company’s total water withdrawal and exposure to water-stressed regions can help identify direct cost savings associated with water efficiency, as well as risks related to operating in water-stressed regions. Additional disclosure around fines and water quality violations can help to identify direct costs from fines as well as identifying corporations that are better at managing compliance risks.

Due to increasing water scarcity and the potential for increases in water prices, the probability and magnitude of the impact of water management on financial results in the Processed Foods industry are likely to increase in the near term.
SOCIAL CAPITAL

Social capital relates to the perceived role of business in society, or the expectation of business contribution to society in return for its license to operate. It addresses the management of relationships with key outside stakeholders, such as customers, local communities, the public, and the government. It includes issues around public health, responsible business practices in marketing, and customer safety.

Consumer preferences and tastes ultimately have the largest influence over the products produced and sold by the Processed Foods industry. The quality and nutritional content of these food products, however, have a direct influence on the health of consumers. Food allergies and adverse health and safety effects of processed food ingredients are shifting consumer purchasing decisions and perceptions of the industry, and if poorly managed, these concerns may lead to erosion of a company’s brand value and social license to operate. Additionally, inaccurate labeling and misleading marketing of products can further erode brand value and a company’s social license to operate, as consumers maintain a certain level of trust in processed food producers to label their products with accuracy and integrity.

Food Safety

Food safety, as it relates to production quality, spoilage, contamination, supply chain traceability, and allergy labeling, can affect company operations through product recalls, lawsuits, fines, and capital expenditures. Food safety recalls can happen for numerous reasons, including packaging defects, food contamination, spoilage, and mislabeling. Adding to the complexity of the issue, food safety issues often arise within a company’s supply chain, yet ultimately end up causing recalls of final products. Because of this, supply chain traceability and inspection of suppliers is beneficial for processed foods companies in order to mitigate the potential reputational risks associated with poor safety performance of suppliers and comply with proposed legislation.

The FDA maintains oversight of the operations of companies that process food in order to ensure that proper procedures are followed and unsafe food is prevented from being distributed. Additionally, the FDA oversees product recalls and procedures to remove and correct issues when they occur, presenting an added layer of regulatory burden for the industry.

Poor management of food quality and safety may lead to recalls and lawsuits that can materially impact a processed foods company’s operations through fines and tarnished brand reputation. Disclosure around the topic of food safety may give investors a better understanding of a company’s operational risk characteristics and the potential impact of recalls on future operations. Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Global Food Safety Initiative (GFSI) audit conformance: major non-conformance rate and associated corrective action rate and minor non-conformance rate and associated corrective action rate;
- Percentage of ingredients sourced from supplier facilities certified to a GFSI scheme;
- Notice of food safety violations received, percentage corrected; and
• Number of recalls issued, total amount of food product recalled.

Evidence

While many companies have procedures in place to address food quality and safety, issues still occur. There about 48 million cases of foodborne illness in the U.S. every year, suggesting that one in six Americans is exposed. According to the FDA, roughly 128,000 cases involve hospitalization and more than 3,000 result in death every year, and many of the illnesses result from improperly canned foods and mishandling during manufacturing.\(^{74}\)

Nearly every company in the Processed Foods industry recognizes the risk of product recalls in their Form 10-K filings, in addition to the potential for product liability claims, which can cost millions in added expenses and tarnished brand reputation.\(^{75}\) Specifically, Mondelez International stated in its FY 2013 Form 10-K that it “could decide to, or be required by law or regulation to recall products due to suspected or confirmed product contamination, spoilage or other adulteration, product misbranding, or product tampering. Any of these events could materially and adversely affect [its] reputation, product sales, financial condition, and results of operations.”\(^{76}\)

According to analysis of recent recalls, the average food recall costs a company $30 million, which drops directly to the bottom line, highlighting the direct business risk that recalls pose to companies.\(^{77}\) Most notably, Kellogg Company, in its Form 10-K, provided insight into the reduction in sales, added expense, and impact on earnings per share that were associated with a product recall resulting from the presence of metal fragments in packages of its Mini-Wheats cereal. The company disclosed that the recall resulted in a reduction of sales by $14 million and increased cost of goods sold by $12 million, a total impact of $26 million. This resulted in a reduction in company value by five cents per share in 2012.\(^{78}\)

Another noteworthy example is a 2007 peanut butter recall by ConAgra. The company engaged in a 100-percent recall of its Peter Pan brand of peanut butter after the product was linked to 600 cases of salmonella. The company spent more than $78 million recalling the product and indemnifying consumers. The recall also resulted in missed opportunities and lost sales of $55 million. When ConAgra identified the source of contamination, it spent an additional $15 million to correct the problem.\(^{79}\) Overall, this recall led to more than $148 million in additional costs and missed opportunities for the company, not including damage to brand reputation. ConAgra has since made progress on food safety initiatives and in 2013 conducted more than 250 audits in both company-owned and supplier operations to ensure compliance with GFSI standards.\(^{80}\) The Peter Pan peanut butter line has recovered since the incident and was the fastest growing peanut butter brand in 2011, according to the company.\(^{81}\) In 2015, the company pled guilty to lawsuits brought by the U.S. Department of Justice for distributing the contaminated peanut butter and settled by agreeing to pay an additional fine of $11.2 million.\(^{82}\) This highlights the long-term impacts that food recalls can have on a company’s operations.

Recalls can be particularly troubling for smaller companies, with costs representing a relatively significant portion of company sales and net income. For example, in Q1 2015, Inventure Foods Inc. voluntarily recalled a portion of its frozen food products after products were exposed to Listeria monocytogenes, a harmful
bacteria. This recall cost the company $15.9 million and represented 20 percent of its $77.6 million quarterly sales, leading to a Q1 loss of $14.6 million. By comparison, the company generated total net income of $10.6 million and $6.6 million in 2014 and 2013, respectively, highlighting the large impact recalls can have on a company’s profitability.

Companies take food safety seriously and appropriate specific budgets for food-safety initiatives. General Mills currently spends three percent of its capital budget every year on food safety initiatives, equating to $15 million in 2013. Currently, General Mills certifies 100 percent of its facilities using globally recognized food-safety criteria to ensure the highest quality of its products. These initiatives may not only help companies prevent safety issues but also position them ahead of future regulation.

As described in the Legislative and Regulatory Trends section of the brief, the FSMA allows for FDA oversight of food safety issues in the areas of prevention, inspection and compliance, recall response, and imports. The FSMA also addresses issues associated with food chain visibility and effectively requires companies to improve the traceability of their supply chain for products and ingredients, from farm to final consumer. Beyond satisfying regulation requirements, an improved level of traceability can also provide a company with direct business benefits. As food safety issues can arise throughout a food company’s value chain, companies that improve the traceability and auditability of their supply chains may be better positioned to avoid and mitigate crises as they occur. These companies will have better vision into the troubled areas of their supply chains and can more quickly make sourcing decisions to mitigate risks and protect their brand reputation.

Appropriate allergy warnings and labeling are considerable concerns for processed food manufacturers, as mislabeling a product’s ingredients can result in costly recalls and harm to consumers. Product mislabeling and undeclared allergens were the second- and third-largest causes of food recalls in the fourth quarter of 2013, each representing 16 percent of total recalls. An estimated nine million adults and nearly six million children have food allergies in the U.S., representing roughly five percent of the population. Currently, there are about eight foods responsible for 90 percent of food allergic reactions, namely milk, eggs, peanuts, tree nuts, wheat, soy, fish, and shellfish. Allergic reactions can be fatal, representing serious risk to companies if products are not appropriately labeled.

**Value Impact**

Food recalls resulting from contamination, packaging defects, or improper labeling can lead to costly recalls and write-downs, directly harming company profitability. This can result in liabilities that lead to significant one-off costs and fines to compensate consumers for harm done. In the long term, recalls can lead to diminished brand reputation, which can result in the loss of customer trust and, ultimately, decreased product demand. This can lead to a decline in sales in the short to long term. Firms that have a high percentage of ingredient suppliers that meet or exceed the GFSI requirements may be seen by investors as lower risk because such companies have a more robust ability to track the ingredients in their products that could lead to recalls.
Companies prone to food recalls and safety issues may be viewed as more risky, resulting in an increased cost of capital. Companies that focus on quality and food safety within their operations and those of their suppliers may be better positioned to avoid costly recalls and strengthen their brand reputation.

Health & Nutrition

Key nutritional and health concerns such as obesity, ingredient safety, and nutritional value are shaping the Processed Foods industry's competitive landscape. Health and nutrition are real concerns for consumers, regulators, and the healthcare system. These concerns about food products can affect a company's license to operate and its ability to provide long-term value to shareholders.

Processed foods producers are recognizing the consequences of consumers' shifting preferences and increased awareness of the health of their products. New regulations or imposed taxes on processed foods such as snack foods have the ability to influence industry profitability and pose risks for industry participants. Studies, as discussed below, have suggested adverse health consequences from consuming large quantities of food with little nutritional value, which can lead to health issues such as higher levels of cholesterol, increased risk for heart disease, and higher levels of obesity.91 These studies have begun to change perceptions of the industry's products, which can lead to long-term shifts in consumer demand. Addressing shifting diet trends may also create new opportunities in the food industry and long-term value for shareholders.

Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Revenue from products labeled and/or marketed to promote health and nutrition attributes;
- Revenue from products that meet Smart Snacks in School criteria or foreign equivalent; and
- Description of the process to identify and manage products and ingredients of concern and emerging dietary preferences.

Evidence

The Processed Foods industry is facing increased scrutiny from consumers and regulators regarding health and nutritional concerns about the industry's products. While there are multiple causes of obesity, including work schedules, lack of exercise, and diet, high-calorie snack foods and other unhealthy foods are targets of regulatory scrutiny due to their high density of calories and lack of nutritional value relative to other options. The consumption of unhealthy food can contribute to high rates of obesity, which place a burden on a country's healthcare system. It is estimated that obesity-related medical costs amount to $190 billion a year, or roughly 20 percent of U.S. healthcare expenditures. In addition to leading to higher medical costs, obesity leads to lost productivity. Research found that obese men and women bear an additional $1,152 and $3,613 a year in medical expenses compared to their non-obese counterparts.92

Avoiding the burden that obesity can have on society overall has been a high priority for many regulators. The USDA banned multiple forms of unhealthy snack foods in schools, allowing only products that are below certain thresholds for
sugar and calorie content. As mentioned previously in the regulatory section, some countries have begun to implement junk food taxes to address obesity concerns. In 2013, Mexico approved a five percent tax on unhealthy snack food to abate the country’s rising obesity levels and the associated burden on health care costs. Other countries and cities have implemented similar taxes on high-fat products. Snack food companies including PepsiCo and Snyder’s-Lance recognize material risks associated with regulation and taxes on their products and ingredients, which can result in increased costs or weakening demand from customers.

Concerns about the long-term health effects of food additives, preservatives, and artificial ingredients are also shaping the Processed Foods industry. Concerns about partially hydrogenated oil, a controversial artificial ingredient that is the primary source of trans fats, have led the FDA to restrict its usage as an ingredient, as studies showed that it is not “generally recognized as safe” for use in processed foods. The restriction requires food companies to seek approval beginning in 2018, before the ingredient can be included in various processed foods. Partially hydrogenated oil is used widely in desserts, popcorns, frozen pizza, snack foods, and other processed foods, largely to improve texture and taste for consumption. Reduction in the intake of trans fats can prevent thousands of heart attacks and deaths, according to the FDA. Negative health effects have also been linked with the consumption of monosodium glutamate (MSG), which is used widely as a flavor enhancer in many processed food products including chips and canned soups. Studies have shown that consuming MSG can lead to obesity and has other negative health effects such as headaches and nausea. Research published in the American Journal of Clinical Nutrition followed 10,000 adults in China for more than five years to monitor their intake of MSG. They found that men and women who consumed the most MSG were 30 percent more likely to become overweight.

These potentially harmful ingredients can present unnecessary risk to both consumer health and corporations that produce processed foods. Nestlé faced a $5 million class action lawsuit for its use of trans fats in frozen pizza products after a mother claimed the product presented unnecessary health risks to her children and other consumers. While the lawsuit was dismissed, it shows the potential liabilities associated with unintended health impacts. The case was dismissed after the plaintiff failed to present evidence of direct harm to her situation, presenting only facts from long-term health studies. The J.M. Smucker Company, producer of Crisco oil and fats and Jif peanut butter, faced several lawsuits over a two-year period as a result of using trans fats in its products while misleading customers about the nutritional characteristics of its products. While the claims were ultimately dismissed, the company reformulated some of its products to remove trans fats. This evidence highlights just a portion of the harmful ingredients used in processed foods and the unnecessary risks they can create for consumers, and ultimately for food producers as well.

Companies in the Processed Foods industry are beginning to recognize these risks as well as opportunities associated with addressing the health and nutritional characteristics of their products. Processed foods companies regularly compete to offer new products that meet the quality, taste, and nutritional value preferences of customers. In their Form 10-K filings, nearly every company in the Processed Foods industry,
including large snack, confectionary, and packaged food companies, recognizes the risk of failing to address shifting consumer demands and tastes as they relate to product health and nutritional preferences. Specifically, General Mills stated in its 2014 Form 10-K that “[o]ur success depends in part on our ability to anticipate the tastes and eating habits of consumers and to offer products that appeal to their preferences. Consumer preferences and category-level consumption may change from time to time and can be affected by a number of different trends and other factors.” The company further states that “demand for our products could be affected by consumer concerns regarding the health effects of ingredients such as sodium, trans fats, genetically modified organisms, sugar, processed wheat, or other product ingredients or attributes.”

In response, companies are shifting their product formulas to introduce healthier and more natural alternatives. For example, Nestlé USA announced a plan to remove artificial ingredients from its candy by the end of 2015, as the company recognizes that consumer preferences are trending toward products with fewer artificial ingredients. Market research conducted by Nielsen found that 60 percent of Americans say the absence of artificial colors and flavoring is important in their food-buying decisions. Frito-Lay, a producer of popular snack foods including potato chips, tortilla chips, and pretzels, has broadened 50 percent of its snack food portfolio to include all-natural ingredients, meaning that these products contain no artificial ingredients, preservatives, or controversial ingredients like MSG. Mondelēz International has launched “mindful snacking” goals for 2020, which include offering 25 percent more of its “better choice” products, reducing sodium and saturated fat by 10 percent, increasing whole grains by 25 percent, and increasing the number of its products that contain 200 calories or less by 25 percent. General Mills stated in its 2015 Sustainability Report that 76 percent of 2014 sales consisted of products that have been “nutritionally improved” since 2005. This includes products that have been reformulated to reduce calories, fat, sugar, and sodium as well as products that have been enhanced with beneficial nutrients such as vitamins, minerals, and fiber.

Additionally, demand for organic products has been a growing trend in the industry, presenting opportunities for companies to capture shifting consumer preferences. Organic packaged and prepared food products that contain no artificial ingredients or additives and do not contain genetically modified ingredients experienced double-digit sales growth from 2005 to 2014, compared to only three percent growth in non-organic food categories, further expressing consumers’ interest in products that address ingredient health concerns. Experts estimate that the organic food segment of this industry will grow 14 percent annually from 2013 to 2018, representing significant opportunity for processed foods companies.

**Value Impact**

Addressing obesity and other health concerns may provide the Processed Foods industry with opportunities to build better reputations and strengthen its social license to operate. Bans and added taxes present material risks for processed food producers, especially if more governments adopt policies to address obesity concerns. Products that contain targeted ingredients may face significant declines in sales volume.

Health characteristics of ingredients can influence public perception, leading to shifts in demand for...
unhealthy products and increasing demand for healthier alternatives. Lawsuits stemming from product health and safety concerns may result in costly fines and settlements as well as negative perceptions and reputational harm, affecting long-term sales. As demand for products that meet higher health and nutritional standards continues to increase, the probability and magnitude of the impact on financial results in this industry are likely to increase in the near term. To capture these growth opportunities, processed foods companies may need to increase their expenses towards research and development of new products.

Disclosure around a company’s approach to improving the health and nutritional profile of its product portfolio can help analysts determine the effectiveness of that company’s approach to addressing consumer health trends, which drives future revenue potential. Additional disclosure around the ingredients used in production can help analysts determine companies’ level of overall risk from customer and regulatory scrutiny.

**Product Labeling & Marketing**

Processed foods producers make product claims aimed at winning customers by demonstrating a perceived benefit of consumption. Companies have often made claims about their products that may have been misleading and untruthful, resulting in fines and litigation that could be materially harmful to operations. Concerns over increasing rates of childhood obesity have also raised questions about the marketing practices of processed foods companies to this sensitive subset of the population. This has led to regulatory initiatives that monitor the marketing of unhealthy food to children, which present new challenges to the industry.

Additionally, new laws and regulations regarding the use and labeling of GMOs have a direct impact on the industry, as many of the ingredients in processed foods are derived from GMO ingredients. Consumers are concerned about the fact that GMO crops are artificially created, which creates trepidation about adverse health effects and increases demand for GMO labeling. These issues can affect the competitive landscape of the industry, as companies may be subject to litigation and criticism if they make misleading statements, advertise toward children, and don’t label their products containing GMOs. Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Number of child advertising impressions made, percentage promoting products meeting the Children’s Food and Beverage Initiative (CFBAI) Uniform Nutrition Criteria;
- Revenue from products labeled as (1) containing genetically modified organisms (GMOs) and (2) non-GMO;
- Notice of violations received for non-conformance with regulatory labeling and/or marketing codes; and
- Amount of legal and regulatory fines and settlements associated with marketing and/or labeling practices.

**Evidence**

The Federal Trade Commission (FTC) and FDA have oversight of the truthfulness of advertising in the food industry, and that includes holding advertisers accountable. The Federal Trade Commission Act requires that “(1) advertising must be truthful and non-deceptive; (2) advertisers must have evidence to back up their claims; and (3) advertisements cannot be
unfair.” Processed foods producers make multiple health claims and advertise their products in unique and sometimes misleading ways in order to capture demand from consumers. For example, foods labeled as “natural” generated more than $40 billion in retail sales during 2013, ranking second only behind foods labeled as “low in fat.” Currently, however, the FDA does not have a consistent definition of the term “natural,” and so the use of this term by companies has led to confusion among consumers. This type of claim can create unnecessary risks for companies and result in costly lawsuits and tarnished brand reputations.

In 2013, it was estimated that there had been more than 100 class action lawsuits over the preceding two years against food and beverage companies as a result of their use of the term “natural” in product labeling. For example, Kellogg’s Kashi product line, known for its health and nutrition claims, faced a class action lawsuit over the use of the term “all natural,” because consumers claimed that the company’s products contained synthetic versions of naturally occurring substances and were not actually natural. While admitting no liability, Kellogg settled and agreed to remove the “all natural” and “nothing artificial” wording from some of its Kashi products. As part of the settlement, Kellogg agreed to pay $5 million to consumers. The Kashi brand faced additional criticism for using genetically modified ingredients, which consumers said was in conflict with the brand’s healthy image. Sales for the line have since suffered due to brand criticism and a weak cereal market, according to company CEO John Bryant. The company is hoping to address the criticism by using more non-GMO ingredients. Campbell Soup Company, Frito-Lay, and General Mills have all been subject to similar lawsuits based on their use of the term “natural.” While the companies maintain no wrongdoing, the risk of tarnishing a brand’s reputation by making misleading or non-scientifically proven claims remains.

Additionally, childhood obesity has tripled since 1980, and there is a growing expectation of non-predatory marketing toward children. New initiatives have been launched by industry participants to voluntarily monitor and control advertising toward children, which is changing industry marketing dynamics. As addressed in the regulatory section of this brief, a U.S. government task force was established in 2006 to address the impact of media on childhood obesity. As addressed in the regulatory section of this brief, a U.S. government task force was established in 2006 to address the impact of media on childhood obesity, and the Better Business Bureau launched the CFBAI to encourage the industry to self-regulate its advertising aimed at children. In 2007, Kellogg Co. stated that advertising to children under 12 represented 27 percent of its advertising spending, or $206 million, according to the company’s total advertising budget. Kellogg has since agreed to self-regulate its marketing aimed at children and advertise only products in which the number of calories and the amount of fat and sugar per serving are limited, potentially altering the advertising mix of its products, which is something investors would be interested in.

Consumers have grown increasingly concerned about the use of GMOs in their food and beverage products. As a result, states around the U.S. have been considering laws requiring companies to label food products containing GMOs. An NPD Group research report found that more than half of American consumers have some level of concern about genetically modified
food products, yet many are still unclear about the definition of GMOs. There are currently 30 states in the U.S. with legislative proposals regarding GMO labeling, and more than 60 countries around the world have restrictions or bans on the use of GMOs. For example, China recently issued GMO labeling policies, as food safety concerns in the country are growing. In 2012, more than 41 percent of Chinese consumers considered food safety a “very big problem.” This number is up from only 12 percent in 2008. The GMO labeling requirement may provide increased demand for premium brands that do not contain GMO ingredients. The European Union also maintains strict GMO legislation that requires safety assessments and clear labeling of all GMO products placed on the market.

Currently, many companies openly oppose GMO labeling. While the safety concerns of GMO consumption are widely debated, these new legislative proposals and bans present pressure for the Processed Foods industry to acknowledge the use of GMOs in its products and label them accordingly. Companies that oppose GMO labeling and fail to recognize the growing trends and concerns regarding the use and labeling of GMO ingredients may expose themselves to unnecessary risks that could materially harm operating results in the future. Conversely, companies that diversify their ingredient portfolio into non-GMO sources may capture additional opportunities to fulfill consumer demand for non-GMO food products.

**Value Impact**

Chronic instances of presenting false or deceptive information when advertising a product could invite additional oversight and litigation, leading to higher one-time costs and increased compliance expenses that harm profitability. Government and legal actions toward companies with poor advertising practices are likely to have a negative impact on reputation, leading to a long-term deterioration of brand reputation and a loss of market share. Conversely, proper management of the issues can lead to new opportunities, as consumers prefer food products that are labeled truthfully and that align with their health and nutritional goals.

Policies for responsible marketing toward children present opportunities for companies to build stronger brand reputations and strengthen their social license to operate, while avoiding negative regulation and litigation aimed at the company’s products. As newer or more stringent FTC and FDA regulations are implemented, the probability and magnitude of these impacts are likely to increase in the near to medium term.

Additionally, regulation around the labeling of GMOs could impact revenue and market share, as consumers may be less inclined to purchase products with genetically engineered ingredients. Outright bans on GMO ingredients present supply chain risks that may result in increased prices for raw materials, harming processed foods companies’ profitability. Companies that fail to address growing concerns about the use of GMO ingredients may suffer from missed opportunities and diminishing customer demand.

Disclosure around a company’s labeling and marketing violations can help analysts determine financial costs and risks associated with misleading marketing policies, which harm a company’s reputation. Disclosure around a company’s use of GMOs can help analysts determine the company’s exposure to risks associated with pending and future regulation that requires labeling of these ingredients. Additionally, understanding of the company’s
practices regarding marketing geared toward children can help analysts determine the exposure to potential regulation and public outcry.

**BUSINESS MODEL AND INNOVATION**

This dimension of sustainability is concerned with the impact of environmental and social factors on innovation and business models. It addresses the integration of environmental and social factors in the value-creation process of companies, including resource efficiency and other innovation in the production process. It also includes product innovation and efficiency and responsibility in the design, use-phase, and disposal of products. It includes management of environmental and social impacts on tangible and financial assets—either a company’s own or those it manages as the fiduciary for others.

Emerging environmental and social trends, stricter regulatory requirements, and increased scrutiny of the disposal of food containers and packaging are creating new innovation and business opportunities for the industry. The Processed Foods industry produces hundreds of millions of disposable containers, which end up in landfills, creating environmental externalities. Industry participants are utilizing multiple opportunities and innovative solutions to address their packaging’s lifecycle impacts, which can improve operating efficiency and long-term brand value.

**Packaging Lifecycle Management**

Purchasing packaging materials represents a major business cost and contributes to the environmental footprint of processed foods companies. Each stage of a package’s lifecycle, including design, transportation, and disposal, presents its own unique environmental challenges and opportunities that should be considered by processed foods companies. Environmental benefits can include reducing the resources needed for packaging materials, reducing GHG emissions in transportation, and reducing the amount of solid waste consumers send to landfills, as food containers and packaging are responsible for a significant amount of waste in the U.S. every year.\(^\text{127}\)

While many processed foods companies do not manufacture their own containers and packaging, they are often responsible for designing and sourcing them, which provides them an opportunity to engage suppliers to reduce the negative environmental externalities associated with packaging manufacturing and end-of-life waste. Processed foods companies can also be directly affected by legislation around end-of-life treatment of containers.

The demand for packaging products is increasingly driven by the use of materials that require less energy and fewer non-renewable resources, as well as packaging innovations that require less material. While the sustainability performance of packaging depends largely on the type, use, and ultimate disposal of materials, companies that effectively manage the sustainability characteristics of their product packaging may be better positioned to capture shifting consumer demand, while also potentially reducing input and transport costs.

Processed foods companies can work with packaging manufacturers to improve the environmental characteristics of their packaging through better design, which helps build a better brand reputation and generate cost savings.
Innovations such as light-weighting materials can result in cost benefits during the purchasing and transportation phase for processed food products. Other innovations can result in better end-of-life management, e.g., through use of recyclable or compostable materials.

Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Total weight of packaging sourced, percentage made from recycled or renewable materials, and percentage that is recyclable or compostable; and
- Description of strategies to reduce the environmental impact of packaging throughout its lifecycle.

**Evidence**

Processed foods companies can spend a considerable amount of resources on packaging. PepsiCo spent more than $6.9 billion, or 10.5 percent of its sales, on packaging for its beverage and snack food segments in 2013, representing a significant expense for the company. Pinnacle Foods stated in its Form 10-K that packaging costs represent more than 21 percent of the company’s cost of goods sold. Other companies recognize the risk of increasing materials costs and the importance of packaging design in the competitive food industry.

Companies are setting packaging innovation goals to improve efficiencies and reduce the negative environmental impacts of packaging. ConAgra has a research and development team dedicated to sustainable packaging and improving the company’s packaging and environmental performance. Through multiple initiatives, the company has reduced its use of packaging material by 7.8 million pounds, which, combined with other initiatives such as water and waste management, saved the company more than $30 million in 2013. The company has set goals to reduce packaging by 10 percent per pound of product, increase the amount of packaging made with renewable resources, and increase the amount of recycled content in packaging by 25 percent from 2009 baseline levels. Nestlé’s packaging initiatives reduced the company’s use of packaging materials by more than 133 million pounds, leading to more than $170 million in cost savings in 2013.

Even small changes in packaging design can translate to real business value. For example, General Mills redesigned its Bisquick package by removing a handle, which reduced the amount of material needed. This small design feature saves the company more than $900,000 in material and logistics costs a year. These costs savings are largely permanent, recurring every year, representing significant value for shareholders.

Additionally, as companies compete to create appealing packaging, more companies are beginning to experiment with new packaging technology to meet environmental performance goals. Heinz partnered with Coca-Cola to produce ketchup in bottles using Coke’s PlantBottle plastic packaging technology. Up to 40 percent of the resin used to make the PlantBottle comes from bio-based renewable plant materials, and the bottles are believed to be better for the environment than traditional fossil fuel-based plastic containers.

Currently, packaging generates nearly 33 percent of the total non-industrial solid waste sent to landfills every year, a significant amount of waste that contributes to methane emissions from landfills. Processed foods producers are
responsible for much of this waste, namely paper and paperboard, which are key to protecting food products and which represented 28 percent of total discarded municipal solid waste in 2011. The industry as a whole may be at risk from extended producer responsibility laws, which essentially require companies to internalize the cost of disposing of their packaging at the end-of-life stage. Companies have also been targeted by shareholder resolutions seeking to improve the recyclability of packaging. For example, Mondelez International utilizes various disposable packaging materials that are sometimes unrecyclable. This spurred a shareholder resolution vote in 2014 to improve packaging recyclability, which received more than 28 percent support, representing more than $11 billion in shareholder value. Walmart recently launched a $100 million Closed Loop Fund to improve the recycling infrastructure for many of the products it sells, including food packaging. Many large processed foods companies signed on to support Walmart’s initiative, including Kellogg, Campbell Soup Company, General Mills, and PepsiCo. Companies are also implementing new voluntary programs, such as the How2Recycle Label, in order to help improve the recycling rates for their product packaging. This labeling gives consumers convenient information about the recyclability a product’s packaging, including boxes and plastic liners used to protect cereal, and the availability of recycling centers. The program, led by GreenBlue, has been found to be easy to understand and leads to recycling action by consumers while also improving the reputation of companies and their products.

**Value Impact**

Collaborating with packaging partners to develop innovations in material technology and light-weighting may provide producers with opportunities to address environmental concerns and capture recurring cost savings by reducing material usage. This effectively lowers the cost of goods sold and can improve margins.

Companies that voluntarily improve and account for the environmental impacts of their products’ containers across their lifecycle, especially during end-of-life stages, may be better positioned to build stronger brand reputation with customers and avoid burdensome recycling legislation that can hinder industry profitability. The level of material impact on companies is likely to increase in the future as the public becomes more environmentally cautious.

Disclosure around packaging efficiency, the percentage of packaging that is recycled, and the amount that is made from renewable sources can help analysts evaluate a company’s cost-saving potential and assess its exposure to potential regulations associated with end-of-life management.

**LEADERSHIP AND GOVERNANCE**

As applied to sustainability, governance involves the management of issues that are inherent to the business model or common practice in the industry and are in potential conflict with the interest of broader stakeholder groups (government, community, customers, and employees). They therefore create a potential liability, or worse, a limitation or removal of license to operate. This includes regulatory compliance, lobbying, and political contributions. It also includes risk management, safety management, supply chain and resource management, conflict of interest, anti-competitive behavior, and corruption and bribery.

Processed foods companies’ ingredient supply chains are exposed to risks from climate change.
Companies also potentially contribute to environmental and social injustices, which can present long-term operational risks. Companies in the industry are beginning to engage suppliers to improve the resiliency of their supply of raw ingredients and ensure ingredients are ethically sourced. Through engagement with suppliers, companies may limit their exposure to shifting weather patterns that can cause ingredient supply disruptions.

Environmental & Social Impacts of Ingredient Supply Chains

Companies in the industry utilize a significant amount of agricultural inputs that are susceptible to shifts in weather patterns, many of which are produced in areas affected by drought. This exposure can lead to price inflation and can affect company profitability. Ultimately, climate change, water scarcity, and land-use restriction present risks to a company’s long-term ability to source key materials and ingredients. Companies are recognizing these risks and engaging with key suppliers to implement sustainable agricultural practices in order to generate a more resilient supply of key ingredients. As defined by the USDA, sustainable agriculture entails farming systems “capable of maintaining their productivity and usefulness to society indefinitely. Such systems must be resource-conserving, socially supportive, commercially competitive, and environmentally sound.”

Additional, companies are continually competing on ethical sourcing practices and certifications for their products, which address labor issues and worker rights. Responsible sourcing and fair trade practices have the potential to offer companies opportunities to capture growing demand from socially conscious consumers, while also securing a steady supply of key ingredients.

Managing a company’s exposure to these environmental and social risks can lead to improved supply chain resiliency and enhanced reputation, which provide value to shareholders.

Company performance in this area can be analyzed in a cost-beneficial way through the following direct or indirect performance metrics (see Appendix III for metrics with their full detail):

- Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress;
- Percentage of food ingredients sourced that are certified to third-party environmental and/or social standards, by certification scheme;
- Suppliers’ social and environmental responsibility audit conformance: major non-conformance rate and associated corrective action rate and minor non-conformance rate and associated corrective action rate; and
- List of priority food ingredients and discussion of sourcing risks due to environmental and social considerations.

Evidence

As processed foods producers are large direct purchasers of many agricultural ingredients, they have a vested interest in the operations and performance of key ingredient suppliers. The Processed Foods industry recognizes that climate change and water scarcity in the supply chain can have a material impact on ingredient prices. Nearly every company in the industry recognizes the key risk of supply chain disruptions and increasing prices of raw materials as a result of climate change and water scarcity in their Form 10-K filings. Specifically, ConAgra states in its 2014 Form 10-K that “[t]here is growing concern that carbon dioxide and other greenhouse gases in the atmosphere may have an
adverse impact on global temperatures, weather patterns, and the frequency and severity of extreme weather and natural disasters. In the event that such climate change has a negative effect on agricultural productivity, we may be subject to decreased availability or less favorable pricing for certain commodities that are necessary for our products, such as corn, wheat, and potatoes.”

A recent report by Oxfam states that the price of Kellogg’s Corn Flakes and General Mills’ Kix cereals could rise 44 and 24 percent, respectively, over the next 15 years due to ingredient supply disruption caused by climate change. General Mills has identified more than 10 ingredients that are crucial to its success, with which the company can have the greatest impact through sustainable sourcing strategies. These ingredients include palm oil, wheat, oats, sugar beets, vanilla, cocoa, corn, and sugarcane. Through company partnerships and supply chain analysis for individual ingredients, General Mills hopes to sustainably source 100 percent of its 10 priority ingredients by 2020, representing more than 50 percent of annual raw material purchases. This effort may help the company secure a long-term supply of key ingredients, providing it with a competitive advantage relative to its peers.

Currently, 87 percent of corn produced in the U.S. is grown in regions with high or extremely high water stress, which highlights the challenges and potential supply disruptions for industries that depend on the crop. The price of corn has risen dramatically over the past 10 years, increasing from $2 per bushel in 2005 to around $4 per bushel in 2007, and again in 2012, reaching an all-time high of $8 per bushel after severe droughts. The price of corn has since stabilized after a record harvest in 2013, pushing prices down to between $4 and $5 per bushel, yet the risk remains for high levels of price volatility in the future due to drought concerns, presenting significant risks for processed foods companies. General Mills and ConAgra both disclose their direct and supply chain exposure to water-stressed regions in their sustainability reports. For example, ConAgra stated that more than 42 percent of its “tier-1” suppliers are located in regions with medium to high water stress. This sort of disclosure may give investors a better understanding of the inherent risks in the company’s supply chain.

Beyond the risks of external exposure to climate change, the farming of agricultural ingredients has large environmental impacts, such as pollution, heavy water usage, and GHG emissions. By purchasing sustainably farmed ingredients, engaging with suppliers, and harnessing innovations in sustainable agriculture, processed foods companies can have a direct influence on their supply chains in order to address many of the environmental impacts of their ingredients. For example, companies may choose to purchase organic ingredients that are produced without synthetic pesticides and fertilizers, helping to protect soil and local ecosystems, or they can seek more direct involvement in the growing process. H.J. Heinz Company has developed its own proprietary tomato seeds through traditional, non-genetically modified breeding techniques that are adaptable to various climates around the world. These seeds produce higher yields that are more resistant to disease, remain ripe longer, and require less water, improving the overall quality and cost of the company’s main ingredient. Heinz maintains an influence on the planting and cultivation process, allowing the company to improve product quality and farmer well-being, thus further strengthening its supply of tomatoes. The company currently distributes its seeds to more
than 30 countries and believes that more than 30 percent of the world’s tomatoes are grown using HeinzSeed. Mars Inc. has been recognized for its supplier engagement efforts to improve cocoa yields in Africa. The company hopes to engage with more than 150,000 farmers in Ivory Coast in order to triple cocoa yields in the region, a task the company believes is feasible, requiring only better plant materials, fertilizer resources, and farmer training, which Mars will provide.

Responsible sourcing initiatives can lead to direct environmental, social, and business benefits for companies in the Processed Foods industry. The demand for palm oil rose after the FDA implemented trans-fat labeling requirements, as palm oil is a viable replacement for trans fats in many food products. Palm oil is now the most-produced edible oil in the world. The rising demand for palm oil has led to an increase in the rate of deforestation and increased GHG emissions in Indonesia. As a result, Indonesia is now the third-largest GHG emitter in the world. The expansion of palm oil plantations in Southeast Asia has also contributed to harming endangered species and local communities in the region. Companies in the Processed Foods industry are recognizing these externalities and addressing them through responsible and sustainable sourcing initiatives. Nearly every major user of palm oil in the Processed Foods industry is setting goals to responsibly source 100 percent of palm oil. For example, General Mills and Kellogg have both set full traceability and 100-percent responsible sourcing goals for their palm oil supply chains, aiming to use only palm oil that is from legal sources and is produced in a way that preserves high-value lands and meets company supplier codes of conduct. These companies are looking to comply with various certifications through the Roundtable on Sustainable Palm Oil (RSPO) principles.

Responsible sourcing initiatives also cover other ingredients and various social and environmental externalities. Chocolate companies, for example, are also recognizing the need to address child labor concerns in their supply chains, as these may tarnish brand reputation. Nestlé is leveraging its purchasing power to address child labor concerns in African cocoa regions. The company has partnered with the Fair Labor Association to address the issue, which can be harmful to children and local communities in the region. Mondelēz International has invested more than $400 million in its “Cocoa Life” initiative to address many of the social and environmental externalities of cocoa farming, including improving farming techniques, promoting community well-being, eliminating child labor, and protecting the environment.

**Value Impact**

While many of these companies do not have direct control over farming practices, utilizing their purchasing power to engage with farmers enables them to influence and improve agriculture conditions that improve their supply of key ingredients. These efforts can help companies address issues such as climate change and water scarcity in their supply chain, which can affect the availability of key raw ingredients that impacts a company’s cost of sales and ability to generate revenue in the medium to long term.

Additionally, investors may benefit from disclosure around a company’s exposure to environmental and supply chain risks from climate change and water scarcity, which can drive a firm’s long-term competitiveness and influence its total risk profile. Addressing responsible sourcing issues through programs and certifications may provide processed foods producers, particularly those that use palm oil and cocoa, with opportunities to capture greater...
demand, improve their brand reputation, and strengthen their risk profile.

Disclosure around the percentage of ingredients sourced from water-stressed regions can help to identify the level of risk associated with supply chains, such as a company’s ability to procure ingredients effectively and volatility in ingredient prices. Additionally, further disclosure around other social and environmental considerations in the supply chain can help analysts determine reputational risk associated with a company’s supply chain.

Evolving regulations focused on addressing environmental externalities are likely to become more stringent, making probability and magnitude of the aforementioned impacts higher in the future.
APPENDIX I
FIVE REPRESENTATIVE PROCESSED FOODS COMPANIES

<table>
<thead>
<tr>
<th>COMPANY NAME (TICKER SYMBOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mondelez International (MDZ)</td>
</tr>
<tr>
<td>ConAgra Foods (CAG)</td>
</tr>
<tr>
<td>General Mills (GIS)</td>
</tr>
<tr>
<td>Campbell Soup Co (CPB)</td>
</tr>
<tr>
<td>Hershey Co (HSY)</td>
</tr>
</tbody>
</table>

\(^V\) This list includes five companies representative of the Processed Foods industry and its activities. This includes only companies for which the Processed Foods industry is the primary industry, companies that are U.S.-listed but are not primarily traded over the counter, and for which at least 20 percent of revenue is generated by activities in this industry, according to the latest information available on Bloomberg Professional Services. Retrieved on April 15, 2015.
# APPENDIX IIA

## EVIDENCE FOR SUSTAINABILITY DISCLOSURE TOPICS

<table>
<thead>
<tr>
<th>Sustainability Disclosure Topics</th>
<th>EVIDENCE OF INTEREST</th>
<th>EVIDENCE OF FINANCIAL IMPACT</th>
<th>FORWARD-LOOKING IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HM (1-100)</td>
<td>IWGs</td>
<td>EI</td>
</tr>
<tr>
<td>Energy &amp; Fleet Fuel Management</td>
<td>53*</td>
<td>83</td>
<td>5</td>
</tr>
<tr>
<td>Water Management</td>
<td>70*</td>
<td>86</td>
<td>4</td>
</tr>
<tr>
<td>Food Safety</td>
<td>67*</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td>73*</td>
<td>86</td>
<td>2</td>
</tr>
<tr>
<td>Product Labeling &amp; Marketing</td>
<td>57*</td>
<td>93</td>
<td>3t</td>
</tr>
<tr>
<td>Packaging Lifecycle Management</td>
<td>20</td>
<td>83</td>
<td>6</td>
</tr>
<tr>
<td>Environmental &amp; Social Impacts of Ingredient Supply Chains</td>
<td>53*</td>
<td>93</td>
<td>3t</td>
</tr>
</tbody>
</table>

**HM**: Heat Map, a score out of 100 indicating the relative importance of the topic among SASB’s initial list of 43 generic sustainability issues. Asterisks indicate “top issues.” The score is based on the frequency of relevant keywords in documents (i.e., 10-Ks, 20-Fs, shareholder resolutions, legal news, news articles, and corporate sustainability reports) that are available on the Bloomberg terminal for the industry’s publicly listed companies. Issues for which keyword frequency is in the top quartile are “top issues.”

**IWGs**: SASB Industry Working Groups.

**%**: The percentage of IWG participants that found the disclosure topic likely to constitute material information for companies in the industry. (-) denotes that the issue was added after the IWG was convened.

**Priority**: Average ranking of the issue in terms of importance. 1 denotes the most important issue. (-) denotes that the issue was added after the IWG was convened.

**EI**: Evidence of Interest, a subjective assessment based on quantitative and qualitative findings.

**EFI**: Evidence of Financial Impact, a subjective assessment based on quantitative and qualitative findings.

**FLI**: Forward-looking Impact, a subjective assessment of the presence of a material forward-looking impact.
## APPENDIX IIB

### EVIDENCE OF FINANCIAL IMPACT FOR SUSTAINABILITY DISCLOSURE TOPICS

<table>
<thead>
<tr>
<th>Evidence of Financial Impact</th>
<th>REVENUE &amp; EXPENSES</th>
<th>ASSETS &amp; LIABILITIES</th>
<th>RISK PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revenue</td>
<td>Operating Expenses</td>
<td>Non-operating Expenses</td>
</tr>
<tr>
<td></td>
<td>Market Share</td>
<td>New Markets</td>
<td>Pricing Power</td>
</tr>
<tr>
<td>Energy &amp; Fleet Fuel Management</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
</tr>
<tr>
<td>Water Management</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
</tr>
<tr>
<td>Food Safety</td>
<td>⬤</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td>⬤ ⬤ ⬤</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>Product Labeling &amp; Marketing</td>
<td>⬤</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging Lifecycle Management</td>
<td>⬤</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>Environmental &amp; Social Impacts of Ingredient Supply Chains</td>
<td>⬤</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MEDIUM IMPACT**  **HIGH IMPACT**
## APPENDIX III
### SUSTAINABILITY ACCOUNTING METRICS | PROCESSED FOODS

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>ACCOUNTING METRIC</th>
<th>CATEGORY</th>
<th>UNIT OF MEASURE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy &amp; Fleet Fuel Management</td>
<td>Operational energy consumed, percentage grid electricity, percentage renewable</td>
<td>Quantitative</td>
<td>Gigajoules (GJ), Percentage (%)</td>
<td>CN0103-01</td>
</tr>
<tr>
<td></td>
<td>Fleet fuel consumed, percentage renewable</td>
<td>Quantitative</td>
<td>Gigajoules (GJ), Percentage (%)</td>
<td>CN0103-02</td>
</tr>
<tr>
<td>Water Management</td>
<td>(1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress</td>
<td>Quantitative</td>
<td>Cubic meters (m³), Percentage (%)</td>
<td>CN0103-03</td>
</tr>
<tr>
<td></td>
<td>Number of incidents of non-compliance with water quality and/or quantity permits, standards, and regulations</td>
<td>Quantitative</td>
<td>Number</td>
<td>CN0103-04</td>
</tr>
<tr>
<td></td>
<td>Discussion of water management risks and description of strategies and practices to mitigate those risks</td>
<td>Discussion &amp; Analysis</td>
<td>n/a</td>
<td>CN0103-05</td>
</tr>
<tr>
<td>Food Safety</td>
<td>Global Food Safety Initiative (GFSI) audit conformance: (1) major non-conformance rate and associated corrective action rate and (2) minor non-conformance rate and associated corrective action rate</td>
<td>Quantitative</td>
<td>Rate</td>
<td>CN0103-06</td>
</tr>
<tr>
<td></td>
<td>Percentage of ingredients sourced from supplier facilities certified to a Global Food Safety Initiative (GFSI) scheme</td>
<td>Quantitative</td>
<td>Percentage (%) by spend</td>
<td>CN0103-07</td>
</tr>
<tr>
<td></td>
<td>Notice of food safety violations received, percentage corrected</td>
<td>Quantitative</td>
<td>Number, Percentage (%)</td>
<td>CN0103-08</td>
</tr>
<tr>
<td></td>
<td>Number of recalls issued, total amount of food product recalled*</td>
<td>Quantitative</td>
<td>Number, Metric tons (t)</td>
<td>CN0103-09</td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td>Revenue from products labeled and/or marketed to promote health and nutrition attributes</td>
<td>Quantitative</td>
<td>U.S. Dollars ($)</td>
<td>CN0103-10</td>
</tr>
<tr>
<td></td>
<td>Revenue from products that meet Smart Snacks in School criteria or foreign equivalent</td>
<td>Quantitative</td>
<td>U.S. Dollars ($)</td>
<td>CN0103-11</td>
</tr>
<tr>
<td></td>
<td>Description of the process to identify and manage products and ingredients of concern and emerging dietary preferences</td>
<td>Discussion &amp; Analysis</td>
<td>n/a</td>
<td>CN0103-12</td>
</tr>
</tbody>
</table>

* Note to CN0103-09—Disclosure shall include a description of notable recalls, such as those that affected a significant amount of product or those related to serious illness or fatality.
## SUSTAINABILITY ACCOUNTING METRICS | PROCESSED FOODS (CONTINUED)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>ACCOUNTING METRIC</th>
<th>CATEGORY</th>
<th>UNIT OF MEASURE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Labeling &amp; Marketing</td>
<td>Number of child advertising impressions made, percentage promoting products meeting the Children’s Food and Beverage Initiative (CFBAI) Uniform Nutrition Criteria</td>
<td>Quantitative</td>
<td>Number, Percentage (%)</td>
<td>CN0103-13</td>
</tr>
<tr>
<td></td>
<td>Revenue from products labeled as (1) containing genetically modified organisms (GMOs) and (2) non-GMO</td>
<td>Quantitative</td>
<td>U.S. Dollars ($)</td>
<td>CN0103-14</td>
</tr>
<tr>
<td></td>
<td>Notices of violations received for non-conformance with regulatory labeling and/or marketing codes</td>
<td>Quantitative</td>
<td>Number, Percentage (%)</td>
<td>CN0103-15</td>
</tr>
<tr>
<td></td>
<td>Amount of legal and regulatory fines and settlements associated with marketing and/or labeling practices**</td>
<td>Quantitative</td>
<td>U.S. Dollars ($)</td>
<td>CN0103-16</td>
</tr>
<tr>
<td>Packaging Lifecycle Management</td>
<td>(1) Total weight of packaging sourced, (2) percentage made from recycled or renewable materials, and (3) percentage that is recyclable or compostable</td>
<td>Quantitative</td>
<td>Metric tons (t), Percentage (%)</td>
<td>CN0103-17</td>
</tr>
<tr>
<td></td>
<td>Description of strategies to reduce the environmental impact of packaging throughout its lifecycle</td>
<td>Discussion &amp; Analysis</td>
<td>n/a</td>
<td>CN0103-18</td>
</tr>
<tr>
<td>Environmental &amp; Social Impacts of Ingredient Supply Chains</td>
<td>Percentage of food ingredients sourced from regions with High or Extremely High Baseline Water Stress</td>
<td>Quantitative</td>
<td>Percentage (%) by spend</td>
<td>CN0103-19</td>
</tr>
<tr>
<td></td>
<td>Percentage of food ingredients sourced that are certified to third-party environmental and/or social standards, by certification scheme</td>
<td>Quantitative</td>
<td>Percentage (%) by spend</td>
<td>CN0103-20</td>
</tr>
<tr>
<td></td>
<td>Suppliers’ social and environmental responsibility audit conformance: (1) major non-conformance rate and associated corrective action rate and (2) minor non-conformance rate and associated corrective action rate</td>
<td>Quantitative</td>
<td>Rate</td>
<td>CN0103-21</td>
</tr>
<tr>
<td></td>
<td>List of priority food ingredients and discussion of sourcing risks due to environmental and social considerations</td>
<td>Discussion &amp; Analysis</td>
<td>n/a</td>
<td>CN0103-22</td>
</tr>
</tbody>
</table>

** Note to CN0103-16—Disclosure shall include a description of fines and settlements and corrective actions implemented in response to events.
APPENDIX IV: Analysis of SEC Disclosures | Processed Foods

The following graph demonstrates an aggregate assessment of how representative U.S.-listed Processed Foods companies are currently reporting on sustainability topics in their SEC annual filings.

![Graph](image)

**TYPE OF DISCLOSURE ON SUSTAINABILITY TOPICS**

<table>
<thead>
<tr>
<th>Processed Foods</th>
<th>NO DISCLOSURE</th>
<th>BOILERPLATE</th>
<th>INDUSTRY-SPECIFIC</th>
<th>METRICS</th>
</tr>
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<tbody>
<tr>
<td>Energy &amp; Fleet Fuel Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health &amp; Nutrition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Labeling &amp; Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging Lifecycle Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental &amp; Social Impacts of Ingredient Supply Chain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*IWG Feedback* *(Percentage of IWG participants that agreed topic was likely to constitute material information for companies in the industry.)*
REFERENCES

1 Data from Bloomberg Professional service, accessed on April 14, 2015, using the BICS <GO> command. The data represents global revenues of companies listed on global exchanges and traded over-the-counter (OTC) from the Processed Foods industry, using Levels 3 and 4 of the Bloomberg Industry Classification System.

2 Author’s calculation based on above data, April 14, 2015.

3 Data from Bloomberg Professional service, accessed on June 12, 2014, using the MDLZ FA SEG <GO> command. The data represents global revenues for Mondelez International Inc., broken down by geographic regions.


10 IBISWorld, IBISWorld Industry Report 31191 Snack Food Production in the US, April 2014, p. 27.

11 Ibid., p. 9.


26 Author’s calculation based on above data, April 14, 2015.


31 White House Task Force on Childhood Obesity, Solving the Problem of Childhood Obesity Within a Generation, May 2010, p. 29.


44 Author’s calculation based on data from Bloomberg Professional service, accessed on April 14, 2015, using the BICS <GO> command. Industry revenue represents global revenues of companies listed on global exchanges and traded over-the-counter (OTC) from the Processed Foods industry, using Levels 3 and 4 of the Bloomberg Industry Classification System.

45 Author’s calculation based on data from Bloomberg Professional service, accessed on May 20, 2015, using the CAG FA US EQUITY <GO> command.


65 Hershey Corp, 2013 Corporate Sustainability Report, p. 38.


67 ConAgra Foods, 2013 Corporate Sustainability Report, p. 86.


72 ConAgra Foods, 2013 Corporate Sustainability Report, p. 86.


77 Pricewaterhouse Coopers, Brand enhancement: The 'hidden' benefit of implementing food chain visibility, July 2012, p. 3.


84 Data from Bloomberg Professional service, accessed on May 8, 2015, using the SNAK FA IS <GO> command. The data represents company revenue and income from Inventure Foods Inc, for 2014 and 2013 fiscal years.

85 General Mills, 2013 Corporate Sustainability Report, pp. 3-5.


87 Pricewaterhouse Coopers, Brand enhancement: The 'hidden' benefit of implementing food chain visibility, July 2012, p. 2.

88 Ibid., pp. 3, 6.


93 Boland, “USDA Bans Junk Food in Schools - Will Salty Snacks Move to Black Market?”

94 Martin, "Mexico Tackles Obesity Epidemic With Tax on Junk Food."


99 Marcus, “MSG linked to weight gain.”


119 White House Task Force on Childhood Obesity, Solving the Problem of Childhood Obesity within a Generation, May 2010, p. 29.


153 Hershey Co., 2013 Corporate Sustainability Report, p. 27.


