



NeXtGenChef

THE STATE AND FUTURE OF THE FOOD SYSTEM

The American food system before, during and after a global pandemic
June 2020

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Welcome

The coronavirus is affecting every link in the U.S. food supply chain. Grocery aisles are empty while millions of pounds of produce are left to rot in the fields. Meat plants have become the hotspots of infections, while meat supply plummeted and meat price soared.

In this NextGenChef survey, we have spoken with eight industry experts across the country, including senior supply chain consultants and CEOs who represent more than 180 organizations to uncover how COVID-19 has changed the food supply chain.

Read on for all the findings from our survey and consider:

- Who are the most negatively impacted and who will emerge stronger from this crisis?
- What does the disruption in the food supply chain mean in the medium- and long-term?
- How are successful organizations adapting to the disrupted supply chain?

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Executive Summary

The COVID-19 pandemic has exposed the weak points in the U.S. food supply chain, raising fears of food shortage among consumers.

The disruptions have drawn widespread attention to the problems that entrench the food industry, simultaneously urging the country to reflect on sustainable alternatives.

From discussions with eight industry experts, six themes emerged:

1. Inefficient conventional agriculture sets the condition for chronic health disease and food waste.
2. Animal agriculture and mass meat production supply cheap meat at the price of poor labor conditions.
3. The lack of distribution between foodservice and retail resulted in slow responses to shifting consumer behavior away from restaurants.
4. There is a rise in direct-to-consumer opportunities, especially for small and local producers.
5. Alternative protein sales accelerated, drawing attention to sustainable, resilient agriculture practices.
6. Agile businesses are quick to embrace adaptive measures, including the adoption of alternative distribution channels and alternative financing.

Key Trends in Food Supply Chain before COVID-19

Topics in Top Food Supply Chain Trends



"The Western diet has created the very **health** conditions that create the environment in which COVID is running rampant," said Robert Egger, Food Security Advisor to the mayor of Santa Fe.

Most of the crops grown in America are not food. Rather, they are animal feed and what goes into fast food, soda, and food processing ingredients, such as high-fructose corn syrup. Large quantities of meat and small quantities of produce set the foundation for obesity, hypertension and type 2 diabetes. Those chronic health conditions become the strongest indicators of a patient who has contracted COVID-19 and will experience severe symptoms. According to the Centers for Disease Control and Prevention, among the hospitalized COVID-19 patients, 49 percent have preexisting hypertension, 48 percent obesity and 28 percent diabetes.

Food **waste** is the single largest contributor to municipal landfills. "About 40 percent of all food that's grown is wasted, a lot of which happens at home," said Dan Kurzrock, CEO at ReGrained, the edible upcycling company. According to USDA, 31 percent of food loss occurs at the retail and consumer levels.

"The important piece is how we define waste," Kurzrock added. "There are a lot of resources that could be food and feed people but are currently being used as food stocks for industrial agriculture or lower uses like energy generation or compost. With technological innovation around processing and culinary art, there is potential to safely create human food ingredients and to put them into best use."

Most of the crops grown in America become animal feed and ingredients for fast food, soda, and processed food, setting the condition for chronic health disease and food waste.

Key Trends in Food Supply Chain before COVID-19

Over a number of years, consumers have been demanding transparency and sustainability from the food companies. Local- and clean labels allow the standardized communication of all of the ingredients and where they are sourced.

"The notion of flying in fruits from New Zealand is not smart," said Björn Oste, Co-Founder of Oatly AB & Good Idea Inc. "Big meat processors are under attack. They are seen as ridiculously oversized, producing **cheap meat** at the expense of animal welfare and treatment of workers."

Modern animal farming is optimized for efficiency, and animals are bred to yield maximum protein as quickly as possible when they are raised with suitable animal feed and pharmaceuticals. Slaughterhouses and meat-packing facilities are also manifestations of uttermost industrial productivity. The modern meat supply chain has transformed meat from a historically luxury good to a commodity that is accessible to mass consumers in the US. Today, an average American consumes more than 9 ounces of meat per person daily.

The federal government heavily subsidizes the meat industry, exempts feedlots from requirements of the Clean Water and Clean Air Acts and publishes dietary guidelines to promote meat consumption. The USDA also encourages meat consumption through ad campaigns.

Today, four meat companies supply more than 80 percent of beef cattle in the U.S.; another four companies supply 57 percent of the hogs. A single Smithfield processing plant in Sioux Falls, South Dakota, supplies 5 percent of the pork Americans eat.



“ *Big meat processors are under attack. They are seen as ridiculously oversized, producing cheap meat at the expense of animal welfare and treatment of workers.*”

–BJÖRN OSTE, CO-FOUNDER OF OATLY AB & GOOD IDEA INC

The State of Food Supply Chain in COVID-19

The pandemic has rattled the economy, and financial insecurity propagates food insecurity. According to Feeding America, food banks across the United States experience a 40 percent growth in demand, many of which find it challenging to meet the soaring demand.

"We are recovering twice as much food as we were pre-corona due to the changes in supply chain," said Chandler Henry, manager at Food Shift, the food recovery nonprofit organization. Food Shift recovers food that falls through the distribution cracks and regularly gets tossed to the **waste** stream, due to reasons such as cosmetic blemishes, product being too ripe for grocery stores, surplus, and mislabeling. "Unemployment is skyrocketing. Those who are food insecure now have less income to spend on food, resulting in a lot more people turning to food banks for sustenance. You've seen articles about mile long lines of cars at food banks waiting to receive food, that's the reality we're facing. Food Shift is working hard to get food to our neighbors living in vulnerable communities through our 12+ partner organizations."

On the other hand, **foodservice** restrictions deprived many **farmers** of convenient access to buyers, leading to large quantities of produce being tilled back into the ground and milk spoiling before being processed. As a response, there have been some relief programs that create partnerships across the supply chain. The \$25 million Nourish New York program, launched by New York Governor Andrew Cuomo, distributes surplus farm crops to food banks. The objective of the program is to provide food for New Yorkers in food insecurity and to support farmers, especially dairy farmers, who have been struggling during the supply chain crisis.

Topics in the State of Food Supply Chain



“ There are three big issues: regional farmers can’t sell their food, restaurants are closed, and poor people live paycheck to paycheck. ”

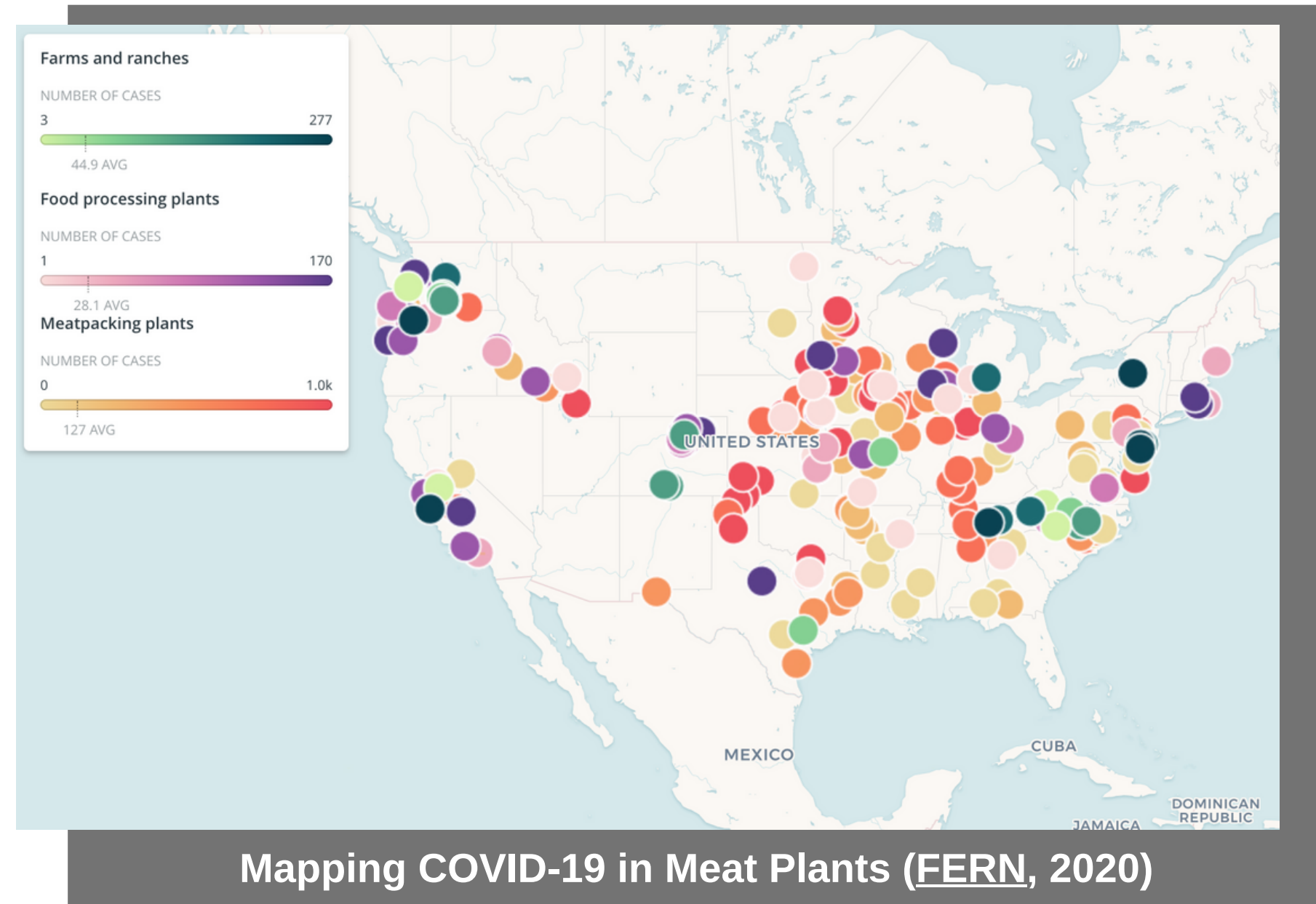
–ROBERT EGGER, FOOD SECURITY ADVISOR

The State of Food Supply Chain in COVID-19

Over the course of two months, the national meat supply had dropped momentarily and quickly returned to the pre-pandemic level after the executive order that classifies meat plants as essential infrastructure. The recovery of meat production has soothed worries of meat shortages in the market.

“We’re seeing a lot of strain on mass meat production but it’s not because of COVID. Rather, it’s the way that the industry is set up,” said Jonathan Packman, Food, Agriculture & Hospitality Consultant. Occupational Safety and Health Administration (OSHA) inspections have long been neglected at meat plants. “The industry depends on a combination of **animals** and **workers** in unhealthy conditions,” Packman noted. Living in high density exposes the animals to high risks of infections which the animals can only fight off when given antibiotics. “It’s unfair for the people who slaughter animals for a living and work in a cold and wet room all day,” he added.

On April 26, Tyson Foods Chairman John Tyson reported that the meat supply chain was broken as outbreaks of COVID-19 struck the industry. On April 28, Donald Trump issued the executive order through the Defense Production Act, declaring meat plants as essential infrastructure that must continue operation. Since then, meat plants have launched protective measures to prevent the spread of the virus including temperature checks, plastic barriers and social distancing. The number of infections, however, related to meat plants has more than doubled, with more than 20,400 infections in 216 plants across 33 states, according to Midwest Center for Investigative Reporting. There have been at least 74 deaths from the virus.



The national meat supply had dropped and then quickly returned to the pre-pandemic level, while outbreaks tied to meat plants continue to grow.

Near Term Impact – Positive

Topics in Positive Impact



Local food systems have proved resilient during recent disruptions. With the rising popularity of community-supported agriculture (CSA), small farmers who used to supply restaurants have found access to new markets. Signups and waitlists for weekly boxes of produce from regional growers are at a record high. Farmer's markets quickly implemented changes under new conditions including social distancing and contact-free payment.

As meat department managers scramble to maintain supplies, the ties many have nurtured over time with **local** and specialty providers in an effort to differentiate their offerings are now paying off in unexpected ways. Kings Food Markets, a 25-store supermarket chain that mostly operates in New Jersey, has been able to avoid having to impose purchase limits on meat or poultry in part because it has been shifting toward local, natural and organic producers.

"Any brands that have **direct-to-consumer** capabilities, an existing strong audience or can build a bond through social media (are emerging stronger)," said Divya Demato, CEO at GoodOps, a sustainable supply chain consultancy. "We're seeing some brands are getting a lot of traffic to their site. If they have the logistics available for a direct-to-consumer operation, they are going to see a lot of success. Then, they need to be able to maintain and manage their customer relationship in a way that differentiates them from the normal grocery store experience."

Meal kits are an example. As consumers grow tired of home cooking, brands that offer safety and convenience can expect revenue growths. In addition, the direct-to-consumer aspect of meal kits creates a channel for the brand to be discovered. Demato is working with an ingredient

product that is a discovery item in the grocery store. She suggests that the brand pursues the meal kit model as a way of continuing growth because in-store browsing behavior is on hold, eliminating brand exposure. Among meal kit offerings, heat-and-eat options will have a large share of the market due to busy, overworked families, while cook-and-eat is expected to be the fastest growing segment. Online meal kit platforms are expected to grow fastest at 13 percent from 2020 to 2027.

Local growers and businesses with direct-to-consumer capacities have proved resilient, as the popularity of CSA and meal kits took off.

Near Term Impact – Negative

Topics in Negative Impact



Before the national lockdown, 54 percent of consumer dollars was spent away from home. Since all on-premise dining had been restricted in March, U.S. **restaurant** sales plummeted by \$240 billion and 8 million jobs were lost during March and April; 40 percent of all restaurants have closed, according to the National Restaurant Association. Among the restaurants that remain open and offer delivery and takeout options, the majority are suffering from a deep plunge in sales.

"Many restaurants are pivoting to takeout deliveries but the whole appeal of a restaurant is the atmosphere, the plating and the service," said Chandler Henry, manager at Food Shift. "You can't exactly package those up into a compostable to-go container, so how restaurants are going to come out on this will be a real tell-tale to their leadership."

In addition, as some states are reopening the economy, restaurants are required to operate at 25 to 50 percent of full capacity. According to Restaurant Resource Group, the profit margin for restaurants range from 2- to 6 percent. Such notoriously slim profit margin means that reopening dining on-premise at reduced capacity is financially infeasible for many restaurateurs.

Restaurant restrictions also resulted in the paralysis of large **service distributors**, with sales stopping by 90 percent as quoted by Jonathan Packman, Food, Agriculture and Hospitality Consultant. "I'm concerned about large service distributors like Sysco and Chefs' Warehouse. So much of their businesses are restaurants," Packman expressed. "They were already in trouble before COVID and now they struggle to pivot because of the sheer size of their business."

Due to the complexity of relationships, large service distributors find it impossible to transition from one channel to another. The high-profit margins allow large distributors enough cash flow to survive, and now they are expected to bounce back as restaurants around the country are starting to reopen. The service distributors, however, remain vulnerable to the future with the possibility of a relapse looming over winter 2021.

Across the food system, the foodservice industry and large service distributors have suffered from the most severe impact.

Near Term Impact – Mixed Sentiments

The pandemic has placed farmers at the center of public attention. Industry experts expressed mixed sentiments about the state of farmers, as some suffer from the loss of buyers and mounting financial problems, while others benefit from the ability to be nimble as small players.

René Jacquat, Supply Chain & Logistics Advisor, pointed to farmers as the most negatively impacted stakeholders amidst the supply chain disruptions. "One example is onions. Many farmers have to **dump** onions right now because even though people cook at home, the amount is much lower than foodservice and restaurants," Jacquat noted. "Foodservice is the biggest client of farmers." As orders from schools, universities and restaurants disappeared, and production remains high on the farm level, growers face a crisis of stockpiles and food **waste**.

In addition, the tight labor supply in the agriculture supply chain results in a shortage of pickers during major disruptions. Pre-pandemic, farms were already grappling with thin labor for farming activities from planting and field work to harvest. The situation is exacerbated by the pandemic immigration policy that shuts down borders, since farmers primarily rely on foreign immigrants during harvests. Furthermore, the average age of pickers is over 50 years old, making them highly vulnerable to severe cases of the virus.

Over the past few years, the lending sector has been turned away by the low profitability in farming. Financial problems significantly worsened for farmers during the pandemic, as prices for fresh produce continue to drop across the board.

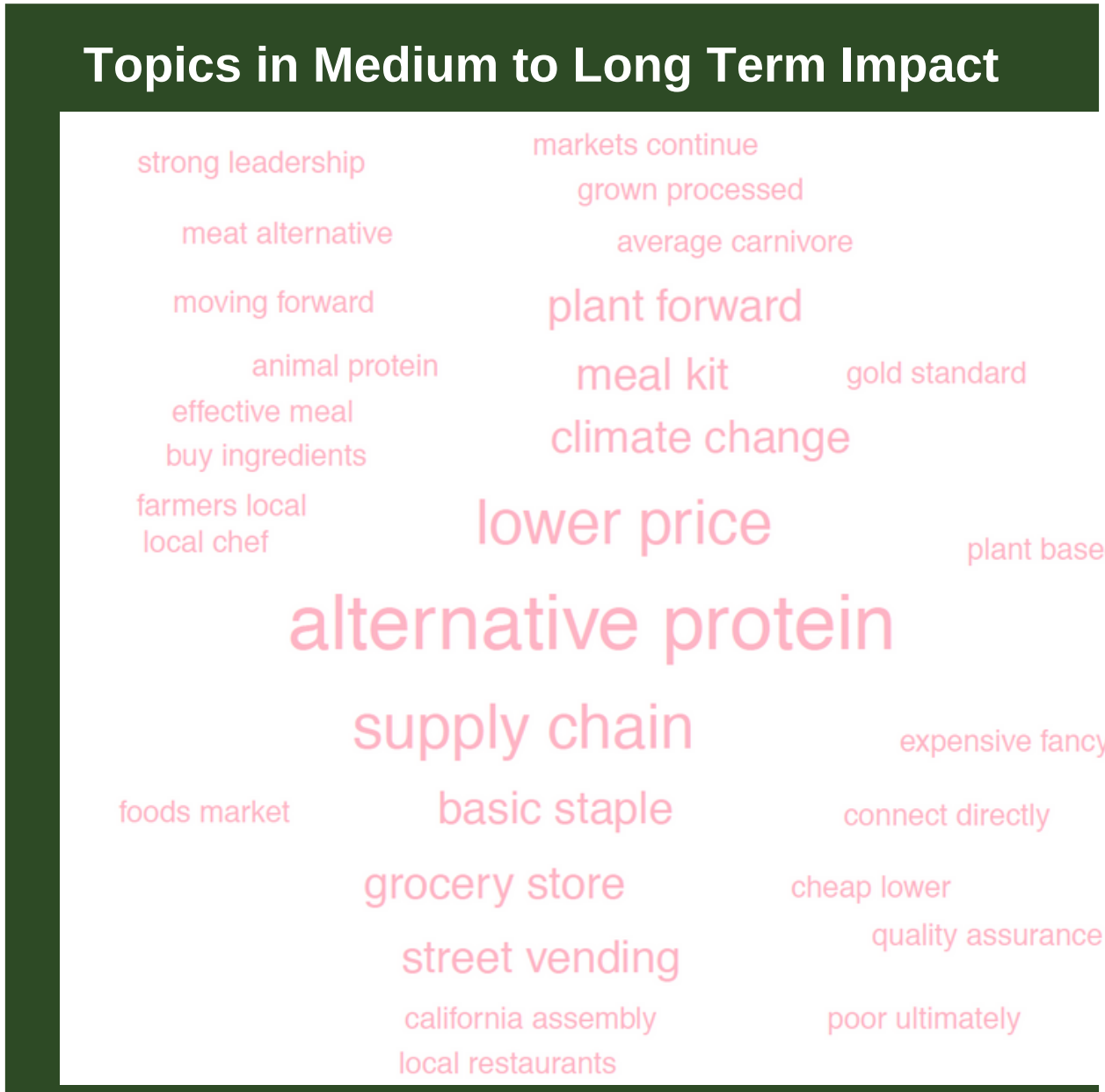
On the other hand, small farms can afford to be more **resilient** during this time. "Small farms are the few ones who find strategies to cope with the tough situation. They occupy a relatively small market share, of course," said Jonathan Packman. "Anybody who has an existing relationship with consumers is benefiting." Rancho Llana Seco is experiencing triple sales mid-March to the end of April thanks to the small scale of the farm and their direct sales channels. Those are important assets as consumers become more conscious of if their food is **local** and wanting to help to prop up a broken system.

Sentiments about Near Term Impact



As some farmers struggle with financial loss, others benefit from the ability to be nimble.

Medium to Long Term Impact on Food System



"We have seen the rise of **alternative protein** for some time but they are not accessible to everyone," said Merril Gilbert, CEO at TraceTrust. "Now given this opportunity, alternative protein definitely is the future."

Despite the plant-based food & beverage industry having been negatively impacted similar to almost every sector of the economy, alternative proteins in the grocery category have experienced a surge in sales. Concerned about food safety and health due to the pandemic, more consumers are embracing vegan substitutes with the latest data from Nielsen reporting a 265 percent surge in vegan meat sales in the United States over March and April. Björn Oste, Co-Founder of Good Idea Inc & Oatly AB noted the plant-based milk company tripled its sales over the past three years and the growth rate has increased even more during the pandemic.

Instead of turning to anti-farming, corporate pioneers are reducing animal farming through sustainable agriculture. A wave of businesses is committed to helping farmers shift to more environmentally friendly farming practices.

As early as 2017, Oatly launched the farmer transition movement. Oatly recruited a dairy farmer who would transition to growing more oats, which the company uses to produce its line of plant milk and other plant-based products. At the end of the transition, the company observed a decrease in greenhouse gas emissions from the farm and growth in the farmer's profits.

Another industry pioneer is Miyoko's Creamery, who is looking for dairy farms to switch from raising cattle to growing plants for plant-based products. Miyoko's will contribute financially to farms in the process of transitioning to growing potatoes and legumes, the ingredients the company uses to create vegan cheese. In addition, the company will pay the owner of the farm for being involved in the research and development of new vegan products.

Alternative proteins in the grocery category have experienced a surge in sales, while plant-based companies are pioneering the movement to transform agriculture.

Medium to Long Term Impact on Food System

"The future for restaurants is going to be street food, the model of smaller portions, plant-forward and **lower price** point," predicted Food Security Advisor Robert Egger. "Consumers are in debt and haven't been getting paychecks, so they are not going to come roaring back to the \$20 entrée restaurants." Instead, Egger expects restaurants to shift to a focus on \$10, "COVID-strong" prix fixe menus. Customers will have a choice of an appetizer, entrée and dessert for \$10. "I think you're also going to see the explosion of pay-what-you-can restaurants, that model of someone can pay \$2 and somebody can pay \$6," he added.

L.A. was one of the first cities to legalize **street vending**, creating a vibrant economy of brick-and-mortar restaurants, the food trucks and street vendors. Egger believes that street vending can keep a clean cooking surface area and keep people socially distanced. In effect, they can establish and maintain an orderly system where consumers can purchase a fresh meal at lower prices and feel safe.

Recently, food trucks are emerging organically, and they are observing high demand and growth potentials. Trucks and beverage providers create awareness through social media and word of mouth, arrange the dates (typically on a weekday) to visit the neighborhoods, and then set up in driveways or other convenient locations. The consumers are reacting positively to pop-ups, including those who are not the typical food truck customer base. As a result, food trucks are creating new connections and exposure to new customers.

Among brick-and-mortar businesses that operate popups, some are simultaneously selling curbside and delivering locally. Food truck operators are accepting bookings from August to October 2020 and are building waiting lists for new neighborhoods, depending on when they expect foodservice to return to pre-pandemic mode. More than 68 percent of all restaurant businesses are allowed to reopen on-premise service by May 31.



With consumers discretionary spending at a low, the future for restaurants is expected to embrace street food – smaller portions, plant-forward and lower price point.

How Have Companies Successfully Adapted to Disruptions

Topics in Success Strategies and Tactics



Companies that have established a digital presence and a **direct-to-consumer** channel are witnessing tremendous business growth. Those companies tend to be effective in managing the consumer relationship and create conversations, from selling on their own websites to communicating through social media. They keep direct engagement with consumers but also seek other ways of distribution such as direct mail.

Pre-pandemic, food and beverage company e-commerce sales averaged around 3 percent of total sales and during the peak of the pandemic, some retailers have seen that amount surge to 20-25 percent. According to FMI's COVID-19 tracker, every one in five shoppers has tried online grocery shopping for the first time, and among the shoppers who had shopped groceries online occasionally some have turned to online channels exclusively.

Some companies, however, are struggling to grow their operations enough to meet the surge in demand. "What I would advise is for any company to be strategic about **supplier relationship**," said Divya Demato. "Whether they're supplying ingredients or they're manufacturing, every supplier in your supply chain is a critical piece and an extension of your business. The most important thing is that you look at your suppliers as a real partner in your rebuilding and recovery, and work with them on the challenges that they're having as opposed to forcing what is no longer an option." The ability to be agile comes from the knowledge of the company's strengths, what is the supplier's capacity, and how to manage and improve the relationship. A robust supply chain lies in the strong foundation around safety at supplier facilities, better wages, and ensuring workers' wellbeing at the facilities.



The most important thing is that you look at your suppliers as a real partner in your rebuilding and recovery, and work with them on the challenges that they are having. "

-DIVYA DEMATO, CEO & CO-FOUNDER AT GOODOPS

How Have Companies Successfully Adapted to Disruptions

While the pandemic predominantly impacts emerging food and beverage brands negatively, successful businesses find silver linings by focusing on the most essential business operations.

“As an emerging food technology company, our focus hasn't been on revenue or profitability. We were doing a lot of research and development. We built a machine and got patented. We built a factory. Those are very expensive,” said Dan Kurzrock, CEO at ReGrained. “Our priorities have been to **focus** on the fundamentals – how to grow sales and cut cost.”

Due to the recent disruptions, ReGrained immediately switched to survival mode. The company transitioned to their direct-to-consumer channel sooner than it would have otherwise. Before the pandemic, ReGrained had some pre-existing infrastructure for direct-to-consumer capacities, which helped the company to complete the transition successfully. Kurzrock remains positive about the outlook of the near future, “after survival mode comes recovery mode, then growth mode when we will be creative with launching new products.”

In addition, successful emerging brands have sought alternative ways to raise funds. During the past few years, start-ups have enjoyed a friendly environment to access funds. The rattled market, however, has frozen the flow of institutional money.

“A very tangible strategic and tactical response we will do is an Equity Crowdfunding round, or Regulation CF, where non-accredited investors can invest starting from as little as a hundred dollars,” Kurzrock noted. “We did a really successful one in 2018 and we are planning to do a second one. It is the ultimate democratization of a venture capital where private placements that are previously not available to the public can be made available. It allows the community and the customers to own the business with you.”



For emerging brands in food and beverage, the top priority is to focus on the most essential business operations. Those who seek to raise funds should consider alternative channels.

Demographics and Methodologies

The report has used primary and secondary research to collect both publicly available information and original qualitative data. It illustrates a credible and original view of how the pandemic has impacted the American food system across its multiple links.

The interview data was created to assess industry perception between April 25 and May 10. The baseline assessment spanned from March to April to assess the state of key stakeholders in the food supply chain during the COVID-19 pandemic.

The interview data was explored through text mining packages in R. The analysis accounts for the most frequently discussed topics, as well as the positive and negative sentiments that occur around the experts' and entrepreneurs' responses. Among the eight food and beverage experts NextGenChef interviewed, six are senior supply chain consultants and two are C-level executives experienced in overseeing the company's supply chain. Collectively, the interview data represents the state of 180+ organizations.

The scope of the research covers the key trends in the food supply chain before the pandemic, the current state of the food supply chain and medium- and long-term implications. The findings are shared in this white paper in the hope of empowering food business decision-makers as well as educating consumers to encourage a more robust food system.

NextGenChef

NextGenChef is a pinnacle resource for everyone in food. Our platform bridges professional networking and consumer outreach. We bring together food entrepreneurs, thought leaders and consumers interested in local, affordable and regenerative food.

Through a combination of online office hours, Lunch and Learn and more relaxed Mix-it-up presentations, NextGenChef members gain access to:

- A community of mission-aligned entrepreneurs, mentors and consumers
- Tools and resources to build a better-for-you food business
- Opportunities to promote products and company story

Community | Education | Innovation

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