



STATE OF THE INDUSTRY REPORT

Message from the CEO

Since we debuted this milestone “State of the Industry Report,” the response has exceeded our expectations. People within the industry – and especially people learning about the industry – tell us they find the data enlightening and our commentary intriguing. That’s as we hoped it would be. The imperatives outlined in this report remain highly relevant to what I am seeing for the future, and we will refresh as substantial changes in numbers or trends warrant.

Thus, the key questions we pose toward the end of this report endure – as does our resolve: The IFPA member community and global fruit, vegetable and floral industry can, and will, make a positive and powerful impact on the world, despite daunting challenges.

Inflation, labor, war, extreme climate events, lagging fresh produce consumption, and what the future of work looks like, are just a few of the industry realities. Not to mention the rise of AI and its forecasted transformation of organizations and societies. Yet, despite this, our future has never been better positioned to solve problems. Health and nutrition security remain in the headlines and fresh fruits and vegetables are at the center of those conversations because the world realizes we can’t ignore or medicate our way through hunger, diseases, and ailments. Our industry proudly produces products that impact the health and well-being of every human on the planet...as well as the planet itself. The fruit and vegetable industry is the sustainable, affordable, and equitable way to health and happiness.

It’s time for the most powerful decision-makers in the world to clear a path for the healthiest products in the world because fresh fruits, vegetables, and floral improve lives.

The data is clear: fruits and vegetables improve lives, but people simply aren’t consuming enough, and we must change things. Not simply for the good of the industry, but for the good of the world.

And in a world constantly searching for new ways to find joy, we have a 5,000-year-old answer: plants and flowers.

IFPA’s purpose is to create a vibrant future for all. My promise to you is that IFPA is committed to building relationships with global allies and our member network to unlock and solve the problems facing our industry and the world. If you are someone interested in driving powerful solutions, we want to hear from you. If you are in the industry and want to explore how these macro trends impact or fuel your business, please reach out as well. As an organization, it is our duty to champion the data, insights, and messages so the world knows that fresh fruits, vegetables and floral truly are the secret to vitality and vibrancy.

The very nature of the products we produce gives our community the enviable position to elevate positive physical and mental health outcomes, and I’ve seen up close the difference our industry can make in individual lives. It is not a small difference. The gap between where things stand today and the differences we need to make tomorrow is what this report is all about.

I hope you are poised to join us as we create that vibrant future for all.

Yours in partnership,
Cathy Burns, CEO, IFPA



Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



By-the-Numbers

VEGETABLES BY-THE-NUMBERS

US \$691.20 B

Expected fresh vegetables global revenue in 2022.

US \$90.80

Expected per person revenues of fresh vegetables (using 2022 population figures).

495,656.7mkg

Expected volume of the fresh vegetables segment by 2027.

3.2%

Expected volume growth of the fresh vegetable segment by 2023.

FRUIT BY-THE-NUMBERS

US \$622.80 B

Expected fresh fruit global revenue in 2022.

US \$81.81

Expected per person revenues of fresh fruits (using 2022 population figures).

272,851.6mkg

Expected volume of the fresh fruits segment by 2027.

2.9%

Expected volume growth of the fresh fruits segment by 2023.

Message from the CEO

By-the-Numbers

Industry Landscape

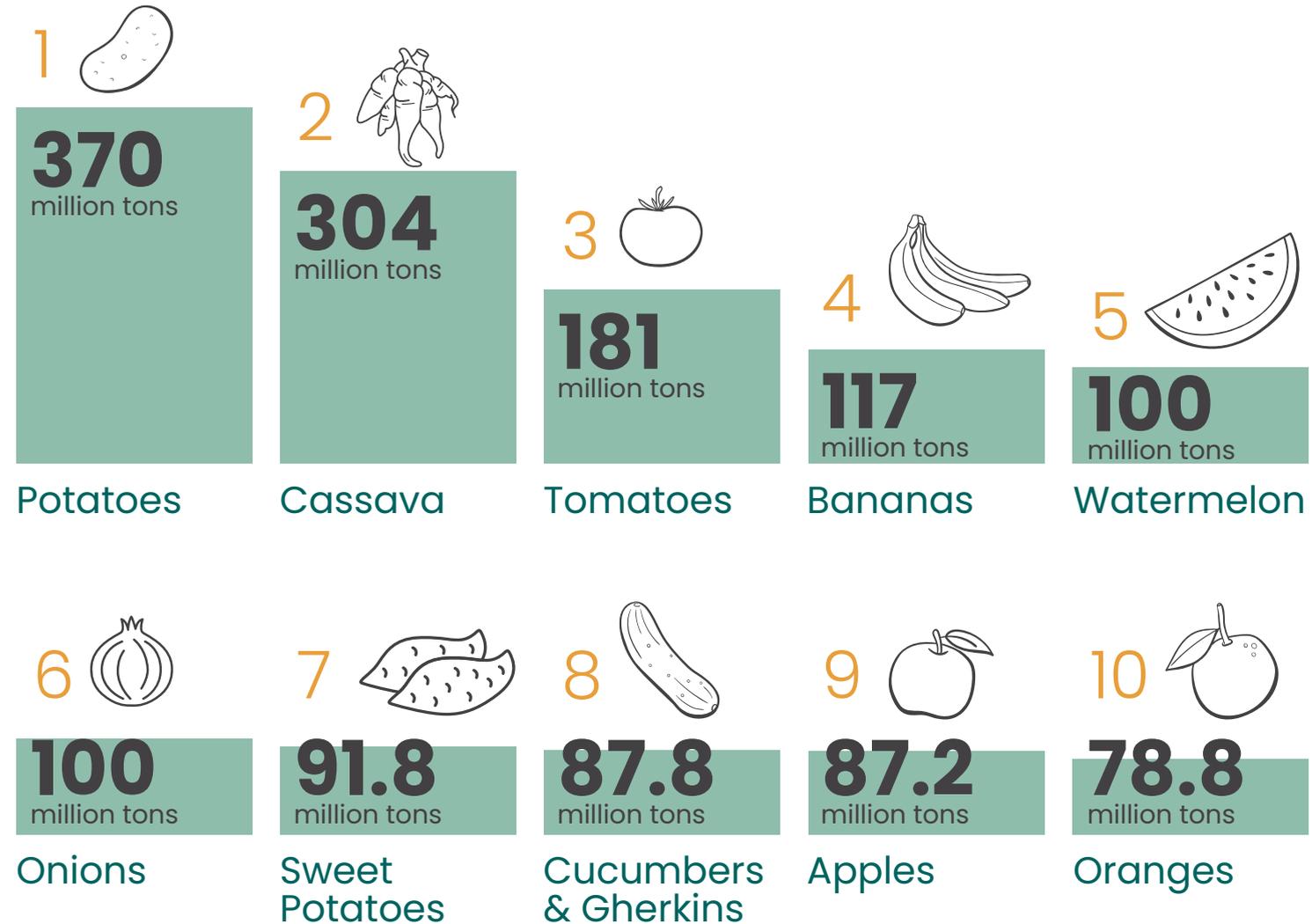
Key Trends

Future Outlook

About Us



Top 10 Commodities – Global Production



Global trade more than doubled between 2000 and 2018, and exports are a driving force behind expansion of the fruit and vegetable sector, according to FAO data.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



Global Fruit and Vegetable Consumption

RECOMMENDED INTAKE

by the World Health Organization



400

grams per person per day

WORLD PRODUCTION



390

grams per person per day

WORLD CONSUMPTION



267

grams per person per day

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



Global Burden of Unhealthy Diets

3 billion

people globally are not able to afford a healthy diet.

11 million

estimated global deaths attributable to dietary risk factors.

5 Source: [European Parliamentary Research Service: 2021 International Year of Fruits and Vegetables](https://www.thelancet.com)
[thelancet.com](https://www.thelancet.com)



Industry Landscape

It's important to understand the impact on the industry landscape, as viewed through the lens of the global economy, trade, supply chain and consumption. The experiences highlighted increasing pressure on the global agriculture industry: a growing global population, climate volatility, environmental degradation, limited natural resources, and constantly shifting consumer demand. They also highlighted future challenges and opportunities.

The World Trade Organization (WTO) forecast estimates world GDP (Gross Domestic Product) will grow by 2.8% in 2022 and 2.3% in 2023. But there is a high degree of uncertainty associated with the forecast due to numerous and interrelated risks, including shifting monetary policy in advanced economies and the unpredictable nature of the Russia-Ukraine war.

Progress requires us to know not only where we're going, but also where we're beginning.



As the WTO explains it, "In Europe, high energy prices stemming from the Russia-Ukraine war will squeeze household spending and raise manufacturing costs. In the United States, monetary policy tightening will hit interest-sensitive spending in areas such as housing, motor vehicles and fixed investment. China continues to grapple with COVID-19 outbreaks and production disruptions paired with weak external demand. Finally, growing import bills for fuels, food and fertilizers could lead to food insecurity and debt distress in developing countries."

Food prices in U.S. dollar terms have also risen sharply as a result of the Russia-Ukraine war because both the Russian Federation and Ukraine are major suppliers of grains and fertilizers. This raises food security concerns in many countries, particularly low-income countries that tend to spend a large portion of household income on food. Many currencies have also fallen against the dollar in recent months, making food and fuels even more expensive in national currency terms.

Major central banks are raising interest rates in a bid to tame inflation and slow economic growth until inflation returns to acceptable levels. In the U.S., an acceptable level of inflation is defined as 3% or less. But raising interest rates often tips a nation's economy into recession. Experts are also concerned about high interest rates in advanced economies potentially triggering a transfer of capital from emerging economies, further unsettling global financial flows. Escalation of the Russia-Ukraine war could also undermine business and consumer confidence and destabilize the global economy. An additional risk would be the decoupling of major economies from global supply chains, which would exacerbate supply shortages in the near term and reduce productivity over the longer term, according to WTO analysis.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



Although trade in the first half of 2022 was up 32% compared to 2019, merchandise trade values are growing at double digit rates because of changes in prices, while trade growth in volume terms remains in the low single digits.

As major central banks raise interest rates in a bid to tame inflation there is concern that overcorrecting on tightening could trigger recessions in some countries, which would put pressure on imports. World trade is expected to lose momentum in the second half of 2022 and remain subdued in 2023 as multiple shocks impact the global economy. Economists at the World Trade Organization predict global merchandise trade volumes will grow by 3.5% in 2022 but only by 1.0% in 2023, significantly lower than a previous estimate of 3.4%.

“Policymakers are confronted with unenviable choices as they try to find an optimal balance among tackling inflation, maintaining full employment, and advancing important policy goals such as transitioning to clean energy. Trade is a vital tool for enhancing the global supply of goods and services, as well as for lowering the cost of getting to net-zero carbon emissions,” according to WTO Director-General Ngozi Okonjo-Iweala.

The WTO forecast also highlights the resilience of trade growth in the Middle East and Africa in 2022. These regions can expect small declines in exports in 2023, but imports will remain strong, with each region set to grow by 5.7%. Other regions can expect modest growth in both exports and imports in 2023.

China has become the top trading partner and source of investment

not just in most Indo-Pacific markets but in much of Africa and Latin America as well. Some supply chains have moved out of China due to U.S. tariffs and rising labor costs, but most have not, and many businesses from around the globe are strengthening their trade and investment ties to China. However, the Biden administration has picked up the baton from its predecessor to elevate non-economic concerns, including human rights and national security issues, and other governments around the globe increasingly share these concerns.

While stated intentions to re-shore, near-shore, or friend-shore (decoupling from geopolitically non-aligned countries) seem to be rising, free-trade agreements are still being signed and barriers to trade have been declining in 2022, as demonstrated by the recent proliferation of trade agreements. For example, the Regional Comprehensive Economic Partnership (RCEP) will eliminate tariffs on more than 90% of goods traded among the 15 Asia-Pacific member nations over the next 10-15 years. Additionally, the 11-country Trans-Pacific Partnership (TPP) is attracting new applicants, including the UK, South Korea, Taiwan, and China. Meanwhile, the E.U. now has 46 trade agreements with 78 countries.

By contrast, the United States has just 14 trade agreements with 20 countries and hasn't inked a comprehensive trade pact with a new partner in a decade. To ensure American workers and industries can compete globally, the U.S. Chamber of Commerce is pushing for the United States to get back in the game on trade and negotiate new, market-opening trade agreements. (amchan.org/pe)

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



WHAT IF... ● ● ●

Understanding the global landscape in which we operate informs the decisions we make and actions we take. And asking, “What will come our way?” is an important question. But **“What will we make happen?”** is far more important because as an organization and a community, if we don’t allow ourselves to dream big and act boldly, then our reality will always be small and meek. As you consider the following information, insights and examples, think about the possibilities. What if...?

What if...

produce was considered as not just a commodity but a path to prosperity?

On the regional level, the Food and Agriculture Organization of the UN reports that most fresh fruit and vegetables are traded and consumed locally or nationally as a result of high perishability and competitiveness in export markets. The report finds that while exported quantities are low compared to the produced quantities, the value of trade means that they have the potential to contribute substantially to both the agricultural and gross domestic products of producing countries.

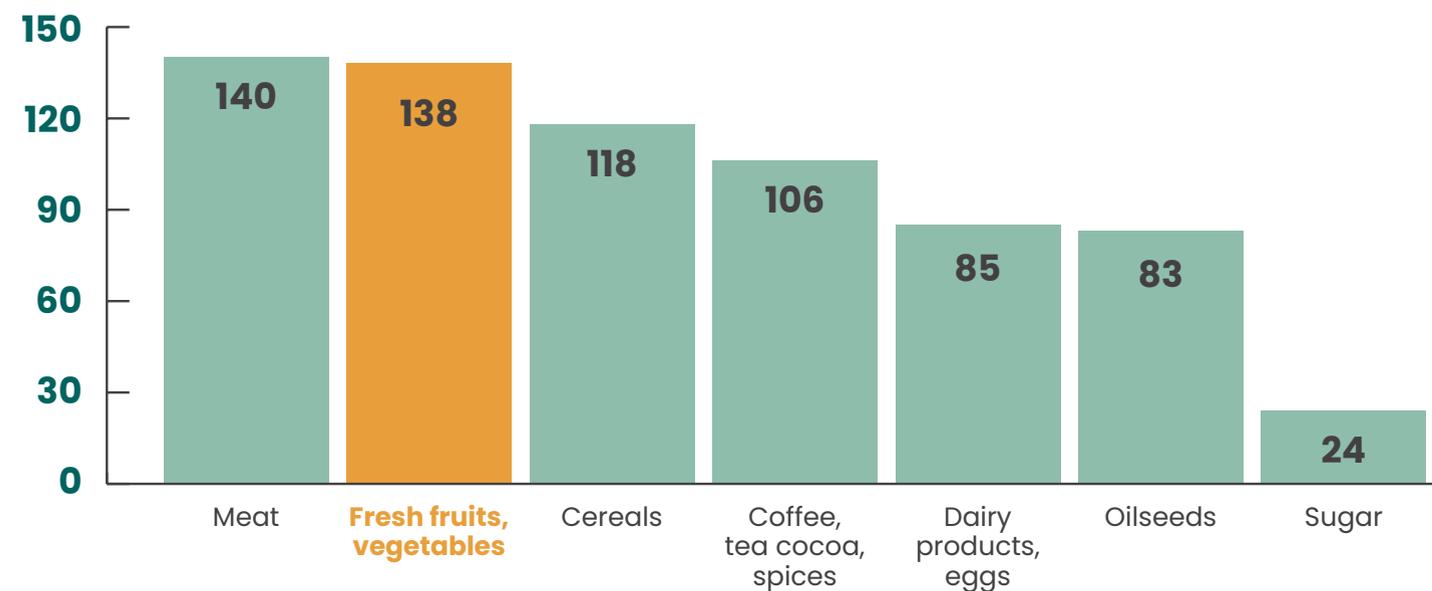
Latin America, the Caribbean, and Asia have established themselves as important exporting regions, where trade in fruit and vegeta-

bles generates important foreign exchange that many low- and middle-income countries can use to import food and other items. Importing countries investing in producer countries, along with bilateral or multilateral agreements, have also stimulated trade.

The expansion in global trade is also impacted by rising demand in high-income countries, particularly in the United States and the European Union, the two largest importing blocs. A preference for safe, good-quality, attractively packed fresh produce and more widespread awareness of the nutritional benefits of fresh fruit and vegetables drive demand.

What if people understood the economic power of produce?

World export value of selected agricultural commodities, 2018, Billion USD



Although it only represents about 7-8% of total global production, fresh fruits and vegetables rank as one of the most valuable crops.*

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



Top Consumption Markets

Top Produce Consumers (ranked)*	#1 Exporter by Value (USD 1,000's)**		#2 Exporter by Value (USD 1,000's)**		#3 Exporter by Value (USD 1,000's)**		#4 Exporter by Value (USD 1,000's)**		#5 Exporter by Value (USD 1,000's)**	
1: China	Thailand	5,753,110	Chile	2,362,390	Vietnam	824,234	New Zealand	641,753	Philippines	626,910
2: India	Afghanistan	304,733	United Arab Emirates	120,272	Iran	105,258	Chile	94,771	Iraq	90,167
3: United States	Mexico	16,577,350	Peru	2,299,263	Canada	2,251,735	Chile	1,964,474	Guatemala	1,688,798
4: Brazil	Argentina	262,780	Chile	75,858	Spain	60,513	China	46,630	Italy	23,667
5: Indonesia	China	1,602,116	Australia	125,317	Thailand	108,179	United States	83,021	New Zealand	54,731

Top Import Markets

Top Produce Importers	#1 Exporter by Value (USD 1,000's)		#2 Exporter by Value (USD 1,000's)		#3 Exporter by Value (USD 1,000's)		#4 Exporter by Value (USD 1,000's)		#5 Exporter by Value (USD 1,000's)	
1: United States	Mexico	16,577,350	Peru	2,299,263	Canada	2,251,735	Chile	1,964,474	Guatemala	1,688,798
2: Germany	Spain	4,711,873	Netherlands	2,677,838	Italy	1,607,609	Morocco	440,804	Costa Rica	412,219
3: China	Thailand	5,753,110	Chile	2,362,390	Vietnam	824,234	New Zealand	641,753	Philippines	626,910
4: Netherlands	Spain	1,415,640	Peru	1,091,162	South Africa	994,197	Belgium	942,196	Germany	805,663
5: United Kingdom	Spain	2,108,429	Netherlands	1,100,296	South Africa	709,476	Morocco	468,406	Peru	377,619

10 Source: *FAOSTAT, 2019 data (2021 NA), **ITC Trademap, 2021 data

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

societies invested in a better food future?

Not surprisingly, developments in the global economy and global trade have taken a toll on global supply chains. While innovations in distribution have reduced some transport costs and delivery times, they have not eliminated all supply chain hurdles. Buckling under the strain of unprecedented demand and constricted logistics capacity, global supply chains have faced three critical challenges: labor shortages, equipment availability, and the ripple effect of global bottlenecks. On average, global container shipping rates have more than quadrupled since 2019, and schedule delays have risen. In some key trading routes, such as Asia to Europe and Asia to North America, the rate spikes are even higher and the delays more frequent.

From April 2022 to August 2022, some key indexes that give insight into the state of global supply chains have dropped, signaling contraction and suggesting that global manufacturing activity has stalled, which could result in slowing of goods traded in 2023. Meanwhile, a sub-index representing prices of inputs and another representing final goods prices, both dropped, suggesting that inflationary pressure, while still high, may have peaked. But combined with seeing reduced delivery times and increased stocks of finished goods, these indicators could point to weakening global demand.

Ongoing scrutiny of the resilience of our global supply chains and centralized distribution has led to debates about the benefits of decentralizing our food systems and producing a greater proportion of our food, such as fresh produce, locally. Some experts have proposed the solution to supply chain bottlenecks could lie in a combination of local market production and “friend-shoring” which refers to “manufacturing and sourcing components and raw materials within a group of countries with shared values”. According to The Guardian, friend-shoring could “safeguard supply chains by reducing their dependence on authoritarian regimes for materials such as rare earth and other minerals, ... and commodities like gas, foodstuffs and fertilizer.” However, economists see friend-shoring as part of a deglobalization process and potentially triggering further supply shocks and higher prices in the short term with lower growth in the long run.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

we were all committed to doing the right thing for people and the planet?

Visibility challenges into supply chains will be more prominent as governments around the world are enacting legislations that will require companies to prove that they operate sustainable and ethical businesses. And experts agree that these new laws are far more comprehensive than past attempts. Effective January 2023, the German Supply Chain Due Diligence Act requires businesses to monitor supply chains for human rights violations and ensure that partners are not causing environmental degradation across their entire supply chain. The European Union has proposed legislation which goes even further than the German Act. Experts warn that these requirements will further exacerbate the ongoing “n-tier problem” that prevents companies from having visibility into risks beyond the 3rd tier in their supply base.

These all-encompassing legislations will carry significant penalties, with fines up to 2% of annual sales. But perhaps even more concerning is the potential brand damage if a company is prosecuted.

Amidst a backdrop of regulations, inflationary pressure, recession fears, and increasingly price sensitive customers, companies continue to find themselves navigating a climate of persistent unpredictability as they face labor, raw material and transportation shortages. IFPA has committed to helping our members mitigate these challenges through data, recommendations, and best practices delivered in our Virtual Townhalls, live presentations, and reports, as well as our network of membership councils.

This unique portfolio of supply chain offerings enables organizations within and outside of the produce industry to capitalize on IFPA’s value as the global resource for critical information.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

every adult ate their 400 grams of fruits and vegetables daily?

The [World Health Organization](#) recommends people consume 400 grams or 5 servings of fruits and vegetables each day to reduce the risk of disease and promote good health. Although they recognize that fruits and vegetables are important to maintaining a healthy lifestyle, globally, most people are not eating enough of them, and only 1 in 10 Americans consume the recommended number according to the CDC.

RECOMMENDED DAILY SERVINGS OF FRUIT & VEGETABLES:

5 cups or 400 grams



Example: 1 Large Pepper, 12 Grapes, 1/2 Avocado, 1 Apple, 2 medium carrots



3.4 is the average number of fruits and vegetables eaten each day, which falls well below health authority recommendations. This is hard to imagine given the myriad of products, flavor combinations, and cooking techniques that would allow for everyone to get the recommended amount.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



Meanwhile, [IFPA global research](#) conducted in 2022 found that, across the markets of Brazil, China, Germany, the UK and the U.S., more than **75% of consumers overwhelmingly agree that fruits and vegetables are important.**

However, the study also found that consumers:

- underestimate the number of recommended daily servings
- don't regularly follow guidelines
- and are not confident they are getting enough in their diet

	 US	 UK	 Germany	 China	 Brazil
Fruits & Vegetables Play Extremely Important/Very Important Role In Lifestyle	83%	77%	77%	93%	94%
Top 2 Reasons For Eating Fruits & Vegetables	1. Maintain a healthy lifestyle 2. To satisfy my hunger	1. Maintain a healthy lifestyle 2. It is part of my eating habit	1. Maintain a healthy lifestyle 2. It is part of my eating habit	1. Maintain a healthy lifestyle 2. Maintain an appropriate weight	1. Maintain a healthy lifestyle 2. It is part of my eating habit
Perceived Recommended Daily Servings Of Fruits & Vegetables	3 cups / 3 servings	4 cups / 4 servings	3 cups / 3 servings	4 cups / 4 servings	3 cups / 3 servings
Extremely/Very Confident Eating Enough Fruits & Vegetables	29%	25%	29%	76%	45%
Following Dietary Guidelines 5 Days a Week or More	29%	31%	36%	64%	45%

But the confusion consumers express indicates a need for educational messaging about how much they should be consuming because for many, as the following statistics show, their lives depend on it.

As more consumers around the world become more mindful of their relationship with food, fresh fruits and vegetables are in a great position to not only help them maintain a healthy lifestyle, but also provide excitement in terms of new varieties and packaging.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

nutrition security was a basic human right?

The World Health Organization recognizes that consuming a healthy diet throughout a person's lifespan helps prevent malnutrition in all its forms, (including undernutrition and obesity), as well as a range of noncommunicable diseases and conditions. However, according to the Global Nutrition Report, an assessment of the state of global nutrition, poor diet is the leading cause of mortality and morbidity worldwide. Obesity rates have now overtaken hunger rates globally and most of the world's population now live in developed countries where obesity kills more people than undernourishment.

More than half of the world's population will be overweight or obese by 2035.



Across the globe, approximately 2.3 billion people in the world (29.3%) were moderately or severely food insecure in 2021 – 350 million more compared to before the outbreak of the COVID-19 pandemic. Nearly 924 million people, or 11.7 % of the global population faced food insecurity at severe levels, an increase of 207 million in two years. (State of Food Security and Nutrition report)

The most recent edition of the Global Nutrition Report (GNR) found that most countries are off track to achieve the nine voluntary global targets aimed at combating global mortality from non-communicable diseases (NCDs) adopted by the Member States during the World Health Assembly in May 2013.

But our industry is a critical part of the solution to change this, whether feeding a craving or feeding a growing population. Increasing consumption of fresh fruits and vegetables isn't just about growing more of it or improving access to it. Our focus is to clear a pathway for more produce in people's lives by reducing barriers, whether they be environmental, socio-economic, policy or personal.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

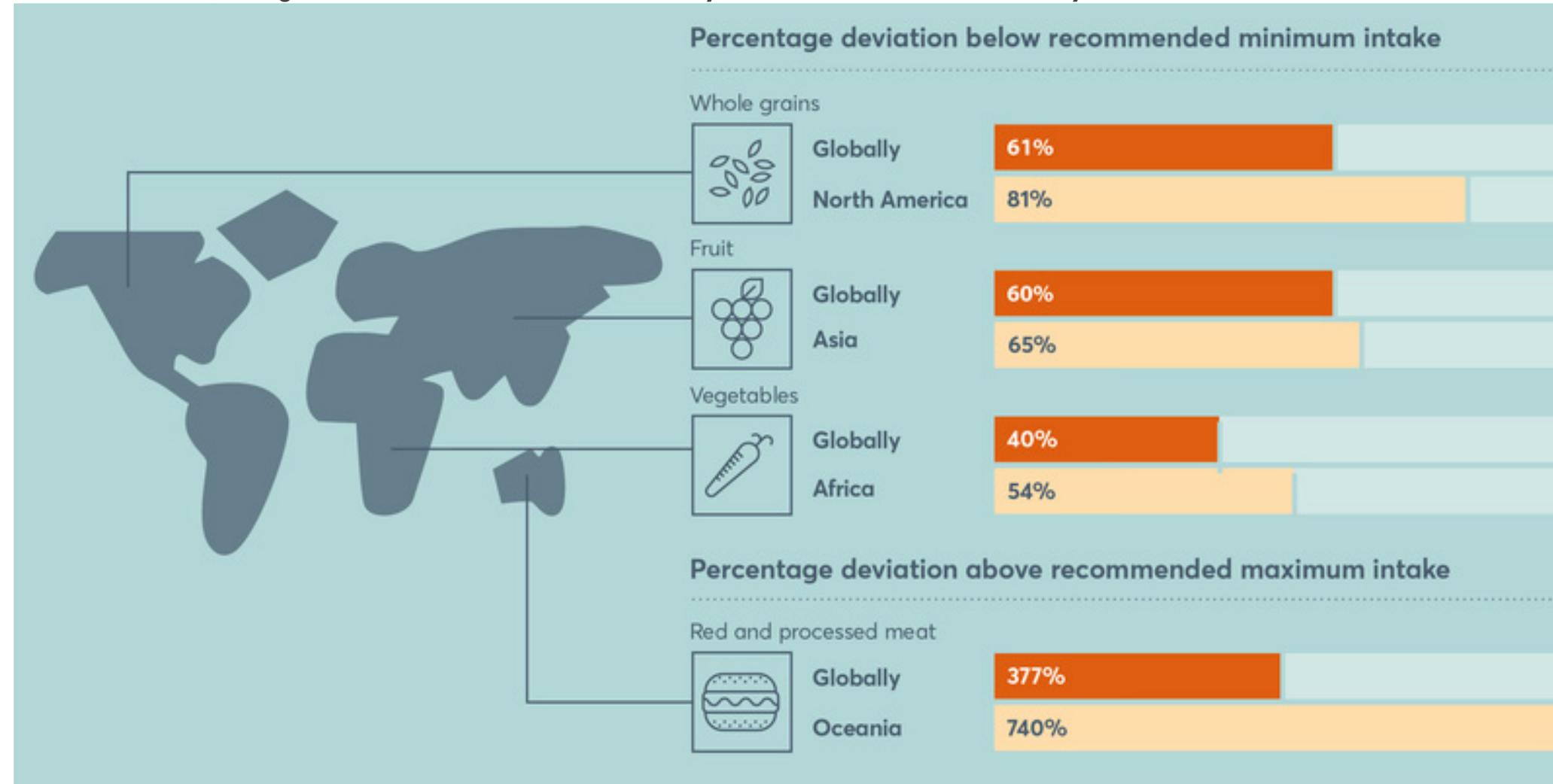
About Us



What if...

we eradicated the myth that health and taste are incongruent?

Around the world, no region meets the World Health Assembly's recommendations for healthy diets



Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

everyone knows that the solution to diet-driven disease is found on your plate and NOT in a pill and changes their eating habits accordingly?

Most countries are off course for meeting all diet-related non-communicable disease (NCDs) targets including adult obesity and diabetes.

On course Off course



Message from the CEO

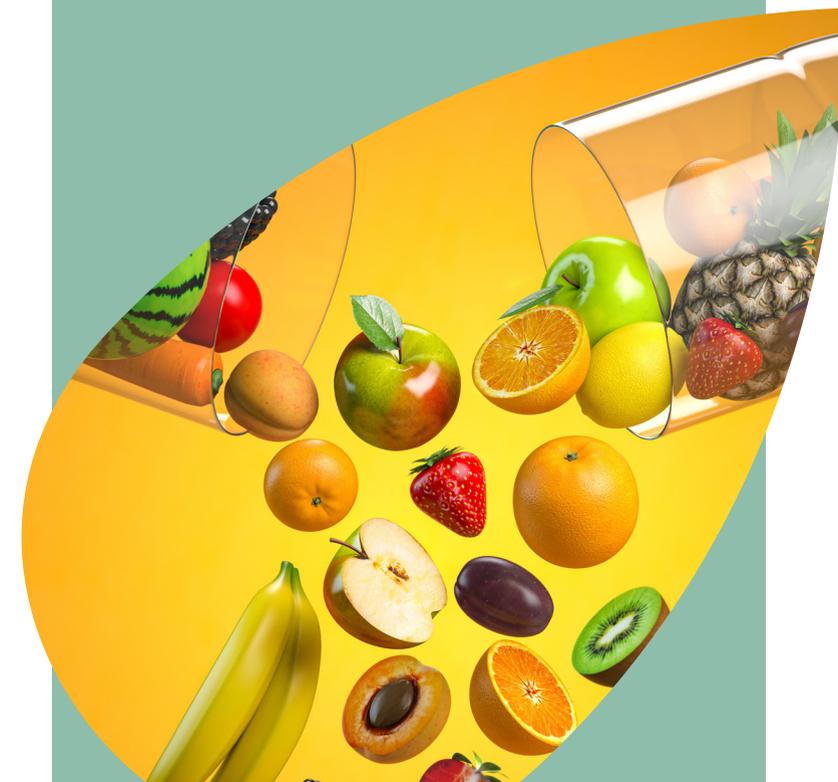
By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



While the many serious health consequences associated with obesity including but certainly not limited to diabetes and cancer are well documented, there is a new serious concern.

According to new research from Stanford University recently published in the Science Translation Medicine journal, the virus that causes COVID-19 can infect and replicate in fat cells causing inflammation, which could help explain why obese people are at higher risk for severe COVID.

While the study's lead authors Tracey McLaughlin, MD, professor of endocrinology and Catherine Blish, MC, PhD, professor of infectious

diseases, caution that more research is needed to fully understand the link between obesity and severe COVID-19, McLaughlin also notes that "With 2 of every 3 American adults overweight and more than 4 in 10 of them obese, this is a potential cause for concern."

"With 2 of every 3 American adults overweight and more than 4 in 10 of them obese, this is a potential cause for concern."

—TRACEY MCLAUGHLIN, MD, PROFESSOR OF ENDOCRINOLOGY

What if people understood the economic impact that produce has on society?

In addition to creating havoc with consumers' physical wellbeing, the global economic impact of unhealthy diets is staggering. According to the most recent figures available, the per capita annual health care costs associated with unhealthy diets were estimated to range from US\$1.4 billion in Australia, to US\$4.4 billion in China, to US\$9.3 billion in the United Kingdom. ([European Observatory on Health Systems and Policies](#)).

But according to the GNR, the total global economic gains to society of investing in nutrition could reach US\$5.7 trillion per year by 2030 and US\$10.5 trillion per year by 2050.

Meanwhile, in the past 50 years, healthcare costs in the U.S have skyrocketed from 7% to 18% of the Gross Domestic Product. Unhealthy diets account for almost 20% of U.S healthcare costs from heart disease, stroke and diabetes, according to research published in [PLOS Medicine](#). This translates into US\$50 billion nationally.

But food as medicine holds promise as one way to reverse this

alarming trend. Food pharmacy programs, which typically are produce-oriented, have resulted in reducing A1C levels in diabetes more effectively than traditional medicines. And precision nutrition plans, especially those that remove specific amino acids, are also helping improve cancer patient outcomes as tumors tend to rely on those amino acids for growth and as a defense against chemotherapy.

Produce prescriptions play a key role in food as medicine because preventable, diet-driven diseases can be addressed by changing what's at the end of your fork and it's becoming ever clearer that the solution to many of our health challenges can be found ON the F-A-R-M, and not IN, the P-H-A-R-M.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

the first question from policymakers is “How much do you want?” and NOT “Who are you and why are you here?” when we advocate on industry issues?

Recently USDA invested \$8M in produce prescription programs. Currently there are 108 produce prescription programs operating in 38 states, but in order to make a real difference, there need to be more – which is why produce prescription programs were part of the national fruit and vegetable moonshot we announced mid-summer to inform the White House’s national nutrition strategy.

Along with other nutrition opportunities in that moonshot, we believe embedding produce prescriptions as a covered benefit within the federal health system would reach more than 150 million Americans. Studies show the positive impact produce prescriptions have, with users increasing their fruit and vegetable intake and decreasing their body mass and A1C levels.

But while food as medicine holds promise, it’s important to remember that food is not only deeply personal, but it’s also the connective tissue in society. It brings joy and has the ability to serve as a reminder of moments in our lives, be it through taste, aroma or memories of the people we were with when we enjoyed it.

We’re also addressing nutrition barriers through U.S. policy, including the passage of legislation, specifically in changes to federal feeding programs like school meals. These changes put products into the hands of more than 30 million kids – the next generation of consumers.

Our Foundation for Fresh Produce is another avenue we’re leveraging to overcome nutrition barriers and thanks to the leadership of the Foundation’s Board, it is poised to change the trajectory of human health around the world through appeal, access, and alliances.

- **APPEAL:** Lead transformational change in how people think and feel about fresh fruit & vegetables
- **ACCESS:** Create systemic solutions to enable people around the world to eat more healthfully, especially underserved communities
- **ALLIANCES:** Galvanize industry & strategic partners to come together for the common good

As an organization, it is our duty to champion the data, insights, connections, and messages that create lasting change in consumption so that the world knows fresh produce truly is the secret to vitality and vibrancy. So, whether it’s produce prescriptions, dedicated fruit and vegetable SNAP benefits, or offering more produce in school feeding programs, IFPA will continue to speak with authority when it comes to nutrition and our other priorities.



Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



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What if...

everyone owned a role in sustainability efforts?

Encompassing everything from climate to energy, to production methods to packaging and labeling, sustainability has always mattered but achieving and communicating it matters more than ever.

But there is uncertainty for producers trying to choose how to position their sustainable efforts, given that labels such as regenerative, pesticide free, climate smart, and organic are causing confusion in the marketplace. Producers will have to decide where to invest in production techniques, certifications and the label claims they

choose to make. Meanwhile consumers are making purchasing decisions based on their priorities.

According to Euromonitor International, consumers worried about climate change are reducing the use of plastic, cutting food waste and increasing recycling. Similarly, [IFPA proprietary research](#) found that shoppers across 5 of the world's top consumer markets identified water conservation, energy efficiency, recyclable packaging, zero waste, and healthy soils as the top sustainability-related concerns.

Sustainability has always mattered but achieving and communicating it matters more than ever.

					
	US	UK	Germany	China	Brazil
Sustainability is Very/Extremely Important	32%	32%	26%	33%	65%
Top 3 Issues Considered under Sustainability:	1. Water Conservation 60%	1. Energy Efficiency 67%	1. Recyclable Packaging 75%	1. Recyclable Packaging and Organic Products 58%	1. Water Conservation 84%
	2. Energy Efficiency 52%	2. Recyclable Packaging 65%	2. Water Conservation 66%	2. Regenerative Agric. 55%	2. Recyclable Packaging 82%
	3. Recyclable Packaging 51%	3. Zero Waste 64%	3. Energy Efficiency 64%	3. Water Conservation 54%	3. Zero Waste 75%

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

people saw farmers as part of the solution?

But consumers also expect businesses to reduce their carbon footprint and lower their negative environmental impact, so companies are responding accordingly.

Single-use plastic and Styrofoam™ aren't new environmental problems, but they have bubbled up to top issues as the usage of takeout containers and other forms of delivery packaging increased during the pandemic. According to a report by Greenpeace Korea, globally, 78% of plastic waste comes from food packaging. But many companies are working on alternatives and some companies are turning to cardboard packaging while others are starting to experiment with bioplastics. Even edible packaging options made from rice paper, seaweed, or corn-starch are expected to become more common in the marketplace.

Foodservice operations are likely to be at the forefront of improving packaging options. Experts see them upgrading their delivery packaging to increase durability, make them re-heatable, and use less wasted space to fit food items better. One example from VTT Technical Research Centre of Finland is a compostable multi-layer material made from agricultural and forestry byproducts that mimics plastics. Prosevation in Germany developed a natural alternative to Styrofoam™ using grain husks. The company says it has the same shock-absorbing, insulating and lightweight credentials as Styrofoam™, while being 100% biodegradable. The packaging can be used by food-service for to-go business.

As expectations around sustainable practices increase, there will be continued pressure to reduce plastic waste, use recycled materials and develop recyclable packaging.

When it comes to sustainable production, regenerative farming was recognized by Fast Company as one of its World-Changing Ideas

this year. One approach comes from Kula Bio, which uses microbes in fertilizer to give plants the nitrogen they need to grow quickly. The microbes also capture carbon, and when they die, that carbon stays in the soil, helping make the soil healthier.

We are currently on a path to a global mean temperature rise in the range of 1.5 to 4.5°C by the end of the century. The higher end of this range would push agriculture far beyond manageable thresholds.

In addition to other carbon farming pilots, we are also seeing incentives, such as the \$15 million USDA grant IFPA and our partners received to advance climate-smart projects.

At retail, producers are placing their carbon scores on their products via a new generation of eco-labels that are finding their way into stores. Foundation Earth recently launched a pilot of a 'enviro score' based on four measures: carbon, water usage, water pollution, and biodiversity. Food groups and retailers including Nestlé, Tesco, Sainsbury's, and Marks & Spencer are working with Foundation Earth to explore how environmental labelling can work as a tool to communicate their environmental initiatives with customers. An online start-up, Sustained, is assessing the environmental impact of food choices to help make it easier for customers to understand the story of food and the environmental impact of their choices. The fruit and vegetable industry has an opportunity to further target sustainability minded consumers through eco-labels.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

we treated Ag innovators like media moguls?

Ag-tech is investment rich and pushing new boundaries.

Like sustainability, agricultural technology continues to see steady innovation as well as investment. Last year alone, investors pumped US\$51.7 billion into agri-food tech – an 85% increase over 2020's US\$27.8 billion total. According to AgFunder, this increase indicates “the accelerating and increasingly urgent demand from investors and consumers for technologies that can enable sustainable and resilient food systems.”

The pandemic drove the adoption of technology, and categories ranging from biotechnology to farm mechanization and robotics, to sensors and software comprised 22% of investment deals. Some experts predict that the world market for agricultural robotics is on track to hit US\$99 billion by 2030.

With this level of interest and investment it's not surprising that we're seeing impressive innovations in farming. One example is the work of scientists in Saudi Arabia who grew spinach aeroponically by harvesting water out of the air. This breakthrough suggests that small farms in desert regions can grow their own crops without a water supply.

There's also growing interest in other alternative farming approaches such as agrovoltaics which combines solar energy and agriculture to grow food in soil under solar panels. This approach may hold the potential to be a key part of an energy and climate transition.

But the innovations don't stop with the agri-food tech upstream categories. Investments in consumer facing downstream categories, such as eGrocery, Online Restaurants & Mealkits, In-store Restau-

rants, Restaurant Marketplaces and Home & Cooking, saw explosive growth as well. According to AgFunder, investments in eGrocery ventures grew an astounding 188% year-on-year, claiming more than a third of all agri-food tech funding, fueled by the ongoing need for contactless shopping and convenience.

The increasing popularity and adoption of eGrocery platforms is expected to drive much of the growth in global online grocery delivery services, which is forecasted to increase by US\$800 billion from 2020-2025. Technavio research predicts that 55% of the market's growth will come from Asia-Pacific with China and Japan generating the fastest growth, fueled by rising income levels and the adoption of western buying habits.

The Cloud Retail Infrastructure category saw investments in ghost kitchen operations, fulfillment and logistics, robotics, and food delivery while the Innovative Food category including alternative proteins and plant-based analogs, experienced 103% growth over 2020.

We need more of these innovative ideas, tools, and solutions to solve major challenges including labor shortages, climate crisis, water, and resource scarcity. IFPA has been at the forefront of the technology movement, providing value through our Fresh Fields Catalyst technology accelerator, weekly podcasts and Virtual Town Halls which often include tech as a focus, and creating a new home for controlled environment agriculture in our network of membership councils, to name a few.

With this rich portfolio of technology offerings, organizations within and outside of the produce industry have the unique ability to capitalize on IFPA's value as a connector to knowledge transfer for radical transformation.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

produce was the center of culture?

Consumers want to embrace protective, culturally relevant, abundant and flavorful foods.

Just as it's helping drive sustainability and technology, we need to apply the same innovative energy to creating demand. With many consumers buying products online, communications platforms such as the Metaverse and other social channels have untapped potential for our industry.

Irish consulting firm Accenture estimates that social media commerce on platforms like Instagram and TikTok is expected to grow to US\$1.2 trillion in just 3 years, up from US\$492 billion in 2021. This growth may not be surprising given that 55% of Gen Z say they bought something after seeing it on TikTok according to IFPA research. And 70% of Gen Z follow a food-driven personality on social media, such as the TikTok creator garnering millions of views by showing how to cook budget-friendly dinners for under US\$10. In the year ahead, we expect to see more food brands working with micro-influencers and creating their own robust strategies on social platforms.

In addition to influencing consumer behavior, these platforms are also outpacing Google as a search engine, especially among Gen Z users according to Google's own data. There is an opportunity for our industry to think about how we could leverage these spaces for building customer relationships.

An overarching theme we see in our research is that now more than ever, consumers want to embrace protective, culturally relevant, abundant and flavorful foods which is great for our industry because the road to a vibrant future is paved with our products.

65% of consumers claim that they shop at grocery stores, dine at restaurants, or purchase brands with values that are mostly aligned with their own. This presents the opportunity for our industry to further align our products with consumer values and purchasing habits – and to meet consumers where they are – physically, emotionally, and virtually.

Younger generations say that their choices are influenced by environmental, social, and governance factors. They are most concerned about company transparency and how a business shows how it cares for all people – employees, customers, and members of their communities.

While these are just a few of the areas we monitor as part of our global insights and analytics practice, the full suite of our research is available on our website, freshproduce.com.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

consumers could purchase the healthy food they wanted and they weren't restricted by their wallets?

Not surprisingly, inflationary pressures and increasing supply chain costs have a negative impact on the produce industry and supply constraints will limit overall industry growth. And inflation, not the pandemic, is now the number one consumer concern, according to IPSOS. Although food prices have continued to rise, McKinsey notes that inflation hasn't stopped consumers from spending—yet. But consumers are stretching every dollar, rand, real, peso, pound, yen, and euro. They are also changing their behaviors and purchasing patterns. Depending on the meal, consumers are moving between value and premiumization, scratch and convenience, national brands and store brands — making grocery patterns more unpredictable than ever.

In spite of that unpredictability, 60% of U.S. retail executives said fresh produce is the category where they expect to have the most success. Not surprisingly, produce was ranked last when it came to

the category they anticipate having the most challenges. However, consumers see things differently, with 73% expressing concern about rising costs of fresh fruits and vegetables and 46% who reported eating less produce compared to one year ago said increased price was the reason why. (Mintel Produce U.S., 2022.)

Fortunately, there are some bright spots. In foodservice, U.S. Marketing firm Acosta found while most consumers are dining out less, about one-third are choosing to trade down rather than trade out — opting for less expensive restaurants and meal options. Additionally, 75% of consumers look forward to new food and bar trends, produce in appetizers and side dishes, and a strong desire to see local and seasonal items on menus.

For more information, visit ou

Message from the CEO

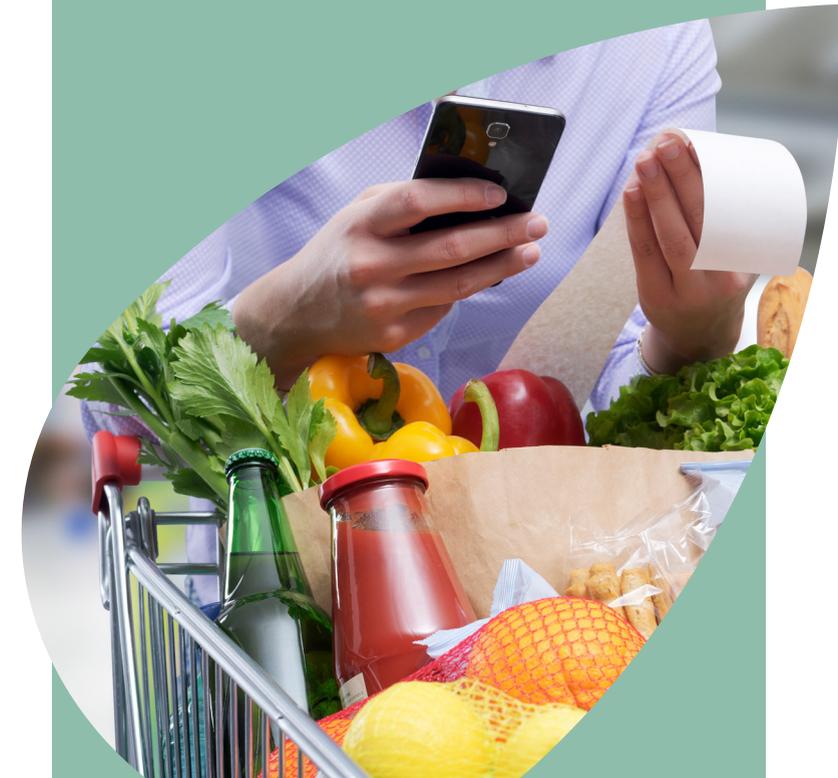
By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

people understood the full scope of industry investments in food safety policies and procedures?

Because pathogens do not discriminate who they infect based on geographic location, food safety is another priority where we have worked to ensure our industry's needs are heard and met. Our food safety team has made inroads with global food safety bodies like Codex Alimentarius and provided guidance on import/export regulations. Additionally, our team collaborates with numerous officials within FDA, CDC, and many other organizations to uncover opportunities to develop preventive approaches as well as offer support during outbreak investigations. We continue to keep the pressure on the FDA and advocate for an efficient, effective, transparent, and collaborative agency that is good for the global supply chain.

This persistence has resulted in these agencies and NGOs seeing the value we bring to these conversations, not just for U.S. food safety issues, but for issues and advancements around the world. In addition to our produce safety immersion courses and commodity-specific work, we have supported our country councils on food safety issues and provided expertise on important issues like the proposed ag water rules, GAPs harmonization, and continued to deepen industry research via the Center for Produce Safety.

Food safety knows no borders.



Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

there is so much new talent choosing to help us change the world that we can't hire them all?

Companies around the world continue to deal with the impacts of what The Great Resignation and Quiet Quitting. According to Human Resource Consulting firm Randstad, there is a high level of job openings throughout the world, with employers in Europe struggling to fill over 1.2 million open positions, while Australia has nearly 400,000 vacant positions. And the U.S. Bureau of Labor Statistics reports that U.S. employers were trying to fill nearly 11 million job vacancies in 2022.

By 2030, there will be an estimated shortage of 85 million workers around the globe which is expected to spur investments in automation to overcome the current and foreseeable labor shortage. During our Executive Leadership Summit in March, industry leaders told us they believe talent attraction and corporate reinvention were the two most important trends dominating the world of work and would have the most impact on an organization's success this year.

When it comes to leading, the power of purpose and culture can not be overstated. Purpose is an organization's North Star to align employees and drive an organization forward.

Low employee engagement costs the global economy \$8.8 trillion. That's 9% of global GDP.

Corporate reinvention and the evolution of workplace dynamics may be best captured by the Fast Company headline "Turnover is the wrong metric. Leaders need to establish a passion index instead." The idea behind this is that, given what we've experienced the past two years, we're using outdated metrics to measure engagement, productivity, and happiness. It suggests that we apply the same rigor

with our employees when it comes to how they engage with – and feel about – our brand as we do our customers.

With all the changes to the workplace that have occurred, understanding how people interact both virtually and in person is critical to understanding what cultural elements need addressing. Passion comes with commitment, endurance, and ownership, and these elements are key to a company's long-term success.

As leaders, we must get better at how we create moments that matter – moments that connect to a company's mission, vision, and its people. These could be anything from a career conversation, to an offsite training, to mentorship, or an individual or group celebration. The key is to measure outcomes from these moments after they occur.

It's up to us to make this happen.

The key is to measure outcomes from these moments after they occur.

1. What activities result in employees being most engaged?
2. Are employees more satisfied?
3. How do they see themselves as part of your future?
4. Are they more productive as a result?



Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



What if...

the best and brightest fought for jobs in agriculture?

Fast Company reported that two ways employers can better compete for talent this year are to build a culture that matters and show your work in diversity, equity, and inclusion. Culture will be especially important in hybrid workplaces where flexibility is desired as well as recognition for productivity and success.

With regard to DEI, employers are urged to be transparent about their efforts here, rather than sell an idealistic image. Today, a multitude of online platforms on workplaces and employers make it very easy for prospects to find out anything – good or bad – about who they may work for.

72% of college seniors said they strongly expect or require employers to be committed to diversity, equity, and inclusion in hiring practices.



not always plentiful, and if the talent exodus has taught us anything, it's that people leave for two reasons – compensation or culture. And IFPA has resources to help you address both.

Our Online Learning Academy and in-person development programs offer a suite of courses that cut across multiple business functions. Taking advantage of these programs may raise your company's passion index! Additionally, our [compensation study](#) can help members compete in today's labor market. This is important because, as Harvard Business Review points out, organizations are struggling with fairness and equity as they wrestle with flexible work issues and compensation, especially when inflation is considered. Our study allows members to benchmark salary and benefit packages against other companies of similar size and type so they can be the employer of choice.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



A person wearing a red cap, a plaid shirt, and jeans is walking away from the camera through a field of large green plants, likely tobacco, towards a bright sunset. The sky is filled with soft, golden light and scattered clouds. The person is walking on a dirt path between the rows of plants.

Our head winds
are **STRONG.**

Our tail winds
ENCOURAGING.

Our opportunities
VAST.

What if...

wishes were plans?

The sheer scope of the industry's activity and impact combined with the fact that we have come through the worst of the global pandemic with such vigor is nothing short of inspiring. That activity and impact is indicative of an industry mindset committed to continuous improvement.

Yet the "swirl" of forces we're facing paints an enigmatic picture: a hard road ahead, but so many forces are in our favor. And our opportunities are vast. Our industry has never been stronger and that is proof of our ability to achieve even more.

The stars have aligned. Time and purpose are linked for us to create and lead what happens next for our industry. It's time to chart our course as we look ahead to our future, where new opportunities lie. Those opportunities center around clearing a pathway so that more people can have more produce in their lives.

Whether it's addressing nutrition barriers to change the trajectory of human health, attracting the best talent to ensure the industry's success, advocating for the industry to ensure the flow of product remains open and unrestricted, advancing-climate smart projects to ensure the industry remains sustainable, launching the IFPA Fresh Produce Research Center to bring investment to produce research, or leveraging the Fresh Fields Catalyst technology accelerator to bring the best technology in the world to the best industry in the world, we are just getting started.

IFPA is not in this to simply change the game. We are in it to change the world. And together with our member community, the produce industry, and our industry allies, we will.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us



**DREAM
BIG &
ACT
BOLDLY**



What if...

you joined us in 2024?

DATE	EVENT	LOCATION
February 27	The Floral Conference Anaheim	Anaheim, CA
March 24-28	Executive Leadership Development Program at Cornell University	Ithaca, NY
April 7-9	Women's Fresh Perspectives Conference	Orlando, FL
April 29-May 1	Consumer Connection Conference*	Phoenix, AZ
May 1-3	Retail Conference & Golf Tournament	Phoenix, AZ
May 21-23	The Mexico Conference	Gudalajara, MX
June 3-5	Hort Connections	Melbourne, Australia
June 10-12	The Washington Conference	Washington DC
June 18	The Floral Conference Miami	Miami, FL
July 25-26	The Foodservice Conference	Monterey, CA
August 5-7	The Southern Africa Conference	Cape Town
August 7-8	The Brazil Conference	São Paulo
October 17-19	The Global Produce & Floral Show	Atlanta, GA
December 3-7	Emerging Leaders Program	Tucson, AZ

ABOUT IFPA

The International Fresh Produce Association is the member-driven association that advances the global fresh produce and floral industries and addresses their business needs. IFPA:

- Unites our global member network and allies around the world to create a strong community
- Connects with people, companies, ideas, and insights to bolster your business and take advantage of opportunities
- Advocates for a strong business climate and increased consumption globally to grow a healthier world and healthier sales
- Guides members and our global allies with resources, thought leadership, and expertise to help solve challenges facing your business, our industry, and the world

And we are guided by the best and brightest of the industry – our **Board of Directors**.

Message from the CEO

By-the-Numbers

Industry Landscape

Key Trends

Future Outlook

About Us

