

IMPOSSIBLE™

MISSION: EARTH

**2018 IMPACT UPDATE
FROM IMPOSSIBLE FOODS**



In 2017, we launched the spacecraft Cassini into orbit. Scientists will be poring over the data from Cassini's mission for years, but most of us will remember it for its images — one in particular: For a brief moment, Cassini cast its eye back at Earth, capturing a photo framed by Saturn's rings. That tiny blue dot:

That's us, that's ours.



Astronauts return to Earth with a profound appreciation and perspective on this beautiful planet; the word they repeatedly use to describe how Earth looks from space is “fragile.” Earth’s atmosphere is incredibly thin — roughly 20 times thinner than the skin of the apple is to an apple. And within that thin, wispy veil of air, surrounding a small, blue planet, is the only tiny place we know in all the vastness of the universe that supports life — and everything and everyone we love. We have to protect it.

This perspective informs and motivates everything we do at Impossible Foods. Our purpose as a company is to protect, preserve and restore the essential natural resources that are being rapidly degraded and destroyed by the world’s most destructive technology — the use of animals to produce food. Raising animals for food has helped build and nourish our societies, but at a dire cost to the climate, water reserves and biodiversity. We intend to eliminate the need for animals in the food system by creating the world’s most delicious, nutritious and affordable meat, fish and dairy foods directly from plants, with a tiny fraction of the environmental impact, giving consumers a better choice. We’re often labeled as a food-tech company, but we are more than that: We are a Planet Company.

We’re also a young company. We’ve made small steps, and we know that there are many giant leaps still to come. Meat made from animals is still a gigantic business with an enormous footprint. Every year in the United States, we produce and consume more than 9 billion pounds of ground beef from cows. Right now, our Oakland manufacturing plant can produce only enough to satisfy .02% of that demand.

That’s now, but we’re planning for and investing in tomorrow. Earlier this year, we expanded to Hong Kong and Macau — our first debuts outside the United States.

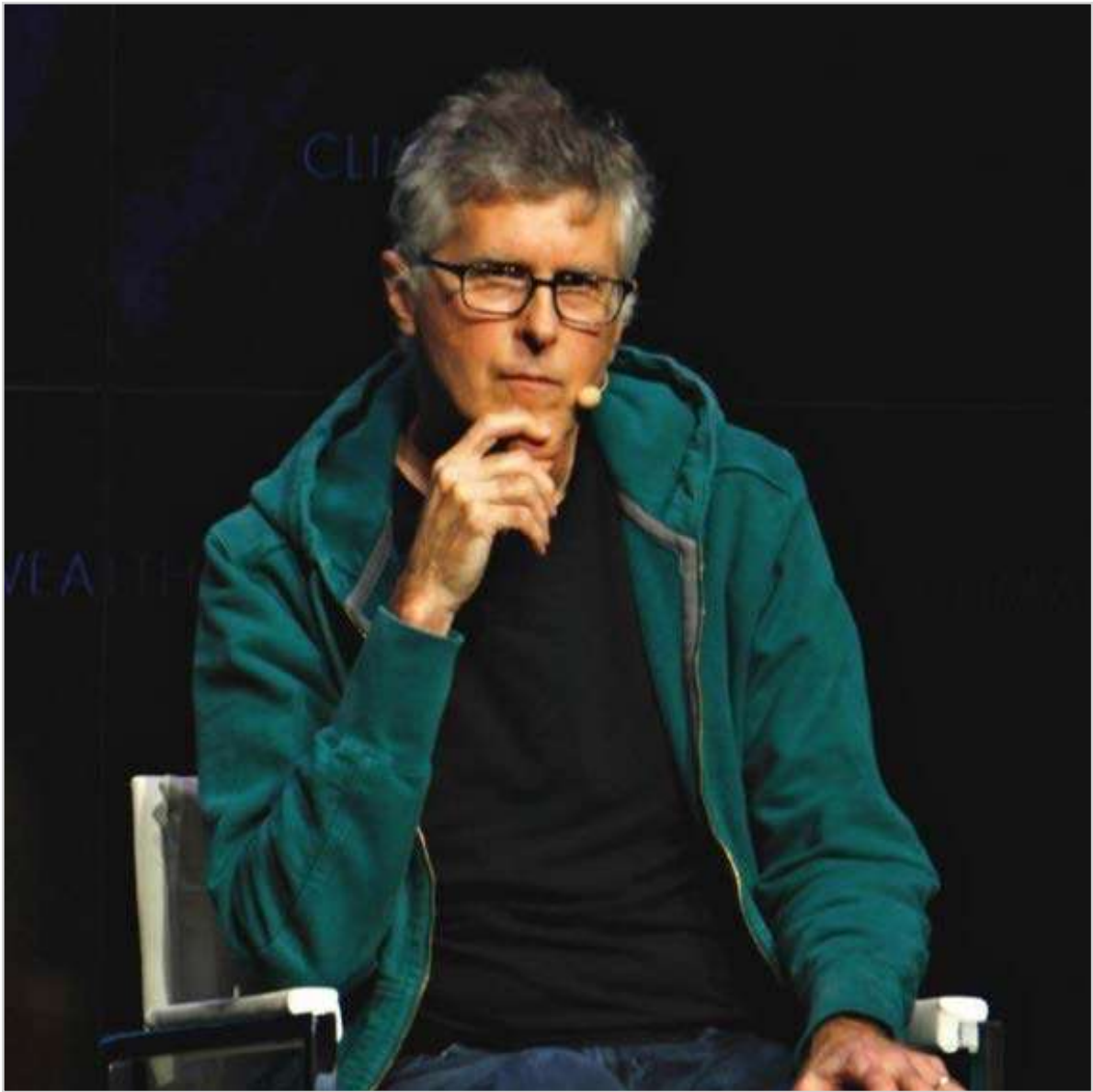
With the help of new distribution partners such as DOT Foods, we have expanded to more than 3,000 restaurants (and counting) across the United States. As we grow, so does our commitment to sustainability at all levels of our business. From supply chain engagement to sustainable packaging, from empowering our employees and customers to zero waste in manufacturing — we’re putting stakes in the ground and setting targets. But our true impact will be in greenhouse-gas emissions prevented, in land and water spared, in ecosystems and wildlife protected and restored, in food security strengthened and in communities served through our success in replacing the world’s least sustainable technology.

We have an environmental imperative to find better, more sustainable ways to feed ourselves now and into the future. This is the beginning of that journey for all of us. Collectively, we are on the cusp of a technology and food revolution. Forget conventional wisdom about what is socially, economically, or technologically possible: What can the world look like if we consciously shape our future?

We live on the best planet in the known universe — the only one known to support life. Our planet has air, water, breathtaking beauty and staggering biodiversity. It’s perfect. But fragile. We, and all future generations, depend on the integrity of all its diverse ecosystems to keep us alive.

We can’t take it for granted. We have to fight to protect Earth’s resources and life-sustaining biodiversity, even if that fight requires us to take on challenges that seem almost impossible today. That’s what we do every day at Impossible Foods.

Sincerely,



Pat Brown
CEO and Founder of Impossible Foods

“BELOW WAS A **WELCOMING PLANET. THERE, CONTAINED IN THE THIN, MOVING, INCREDIBLY FRAGILE SHELL OF THE BIOSPHERE IS EVERYTHING THAT IS DEAR TO YOU, ALL THE HUMAN DRAMA AND COMEDY. **THAT'S WHERE LIFE IS**, THAT'S WHERE ALL THE GOOD STUFF IS.”**

— Loren Acton, astronaut and physicist

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**FOR MILLENNIA, HUMANS HAVE RELIED ON ANIMAL
AGRICULTURE AS THE PRIMARY TECHNOLOGY
FOR CONVERTING PLANTS INTO PROTEIN.
WE CAN DO BETTER**

Most people are unaware of the astonishing scale of our animal-based food system’s destructive impact on the planet and its resources. More than half of Earth’s land is used to raise animals and the crops that feed them. Meat and dairy production generates 1/7 of global greenhouse gas emissions and requires more than a quarter of our global freshwater.¹

The explosive growth of animal agriculture and overfishing has played a dominant role in wiping out half the world’s population of wild mammals, birds, reptiles, amphibians and fish in just the past 40 years.² Today, the world’s cattle alone outweigh, by more than a factor of 10, every wild mammal, bird, reptile and amphibian left on Earth, combined.^{2,3}

Still, there’s room for optimism. Of course this problem isn’t going to go away on its own; in fact, the global demand for meat and dairy is projected to rise by 60–70% over the next 30 years.⁴ But there is still a window of opportunity — and an imperative — to fix the food system and to meet rising demand in new and better ways. We need to act now, and act fast.

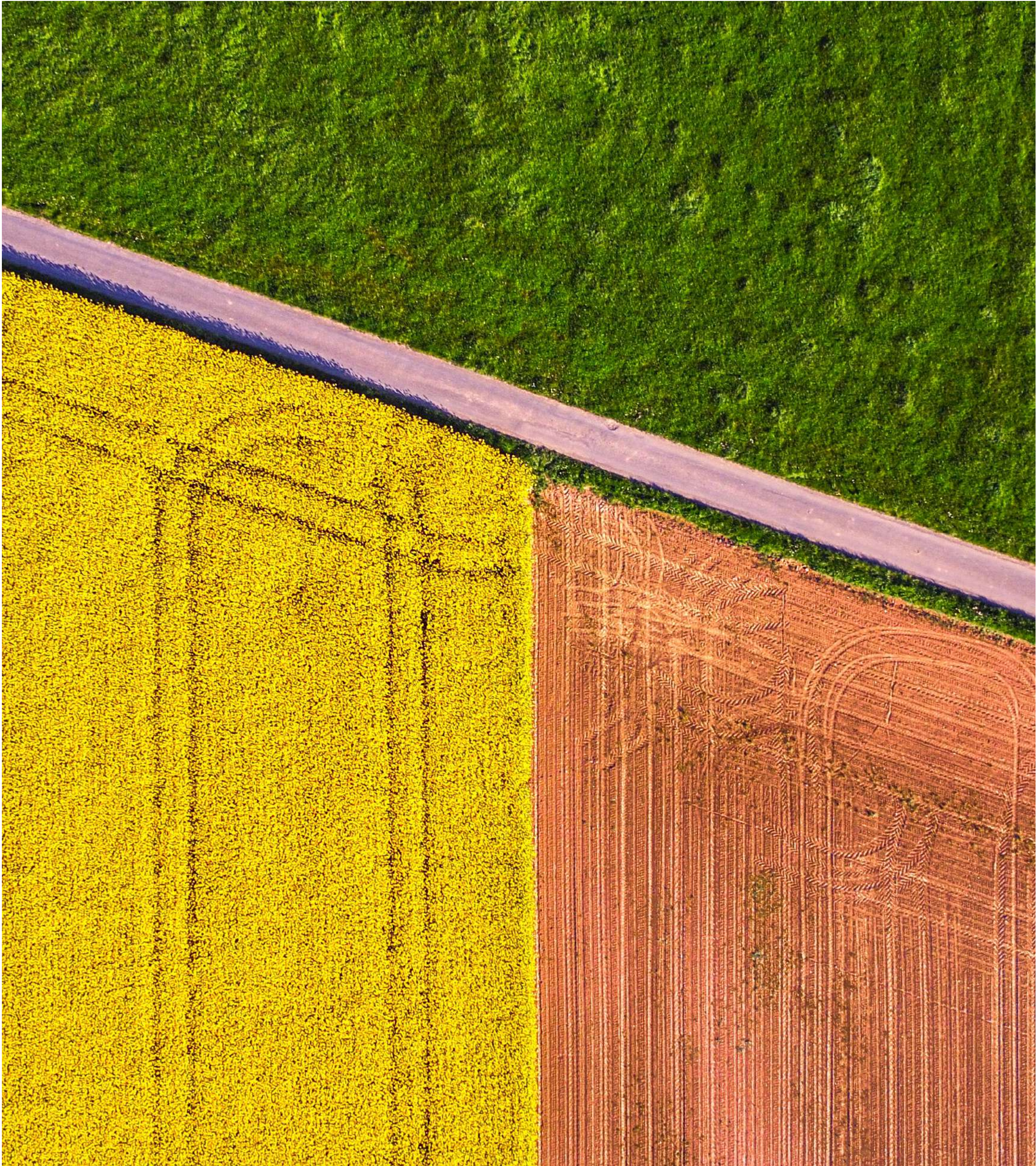
That’s because as a technology, animal agriculture is shockingly inefficient: Only 3% of the plant-based proteins and calories consumed by a cow end up on your plate.⁵ At Impossible Foods, we’ve figured out how to dramatically improve this efficiency by making one fundamental change to the system: bypass the cow entirely. This approach dramatically shrinks the energy, water, land, climate, wildlife and biodiversity impacts associated with livestock. Plant-based meat has the power to reshape our food system from the ground up.

This isn’t just a thought experiment: we’re delivering on this promise now.



Ground-breaking research and cutting-edge technology make our products possible. We began by investigating animal foods at the molecular level: What makes animal meats look, feel, cook, taste, and smell the way they do? With that scientific knowledge, we use highly abundant plant proteins to create products that are just as delicious and nutritious as beef, chicken, fish, and dairy — all with a vastly reduced impact on the planet.

**THIS ISN'T JUST
A THOUGHT
EXPERIMENT:
WE'RE DELIVERING
ON THIS PROMISE
NOW**

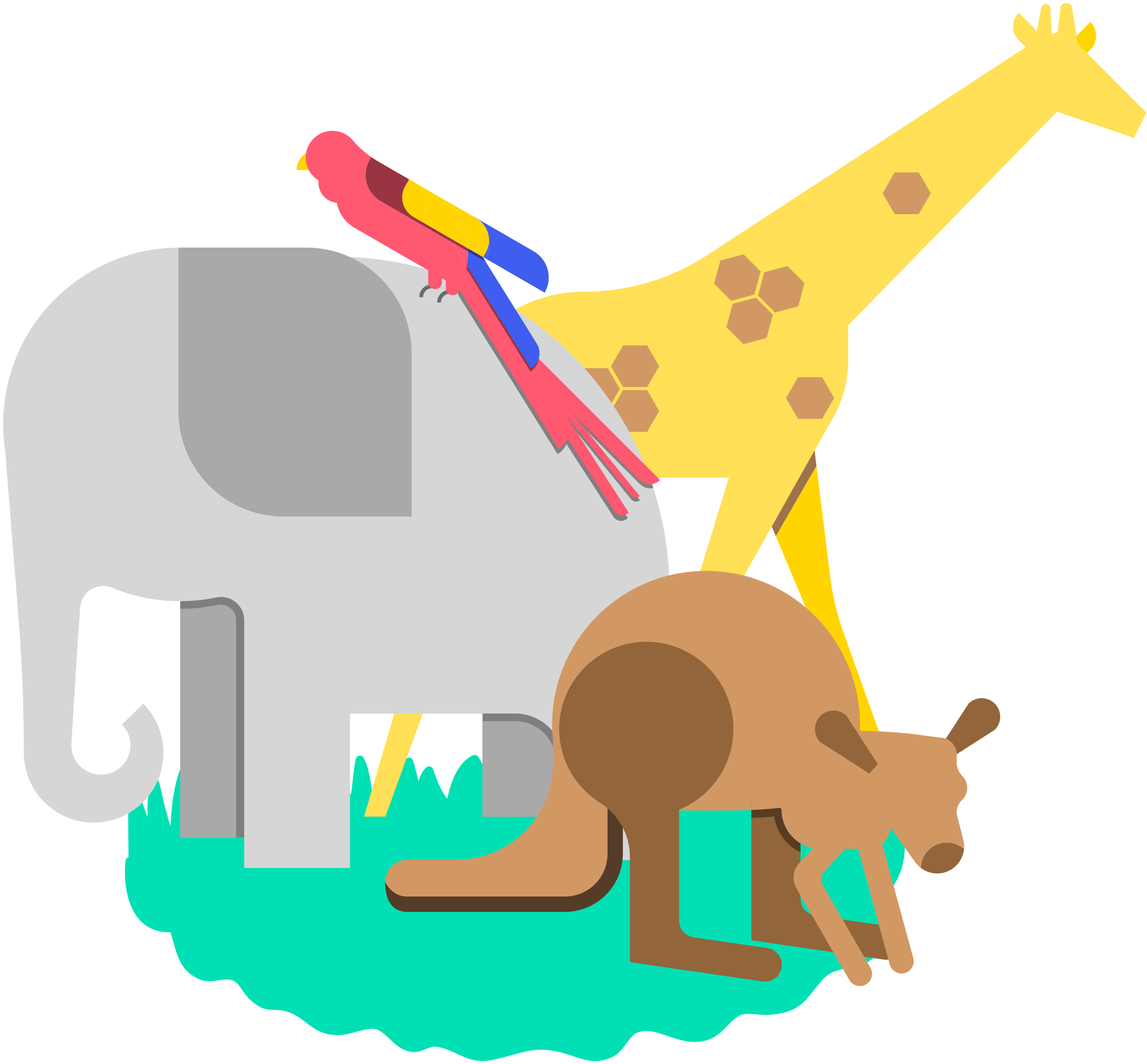


The shift to a plant-based food system is inevitable — making it easy and enjoyable for consumers is the single most important thing we can for the world, but we’re also building a company consistent with our vision of a better future world. This means keeping our environmental footprint small, thinking strategically about responsible scaling, empowering employees, respecting our consumers and creating opportunities for partners and the communities in which we operate to benefit from our innovations.

Our company is young — the perfect time to build sustainability into every choice we make. At this early stage, we have taken the opportunity to embed sustainability thinking not only into our footprint, but also into all of our business decisions. Our products are a powerful tool for customers, consumers and collaborators to positively impact the planet through food choice. We want to make that choice — the right choice — a simple one.

COMPANY

TIMELINE:
DIMINISHING
BIODIVERSITY
10,000 B.C.



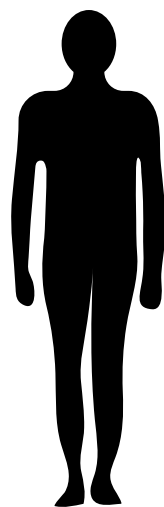
0.2 Million Metric Tons

300 Million Metric Tons

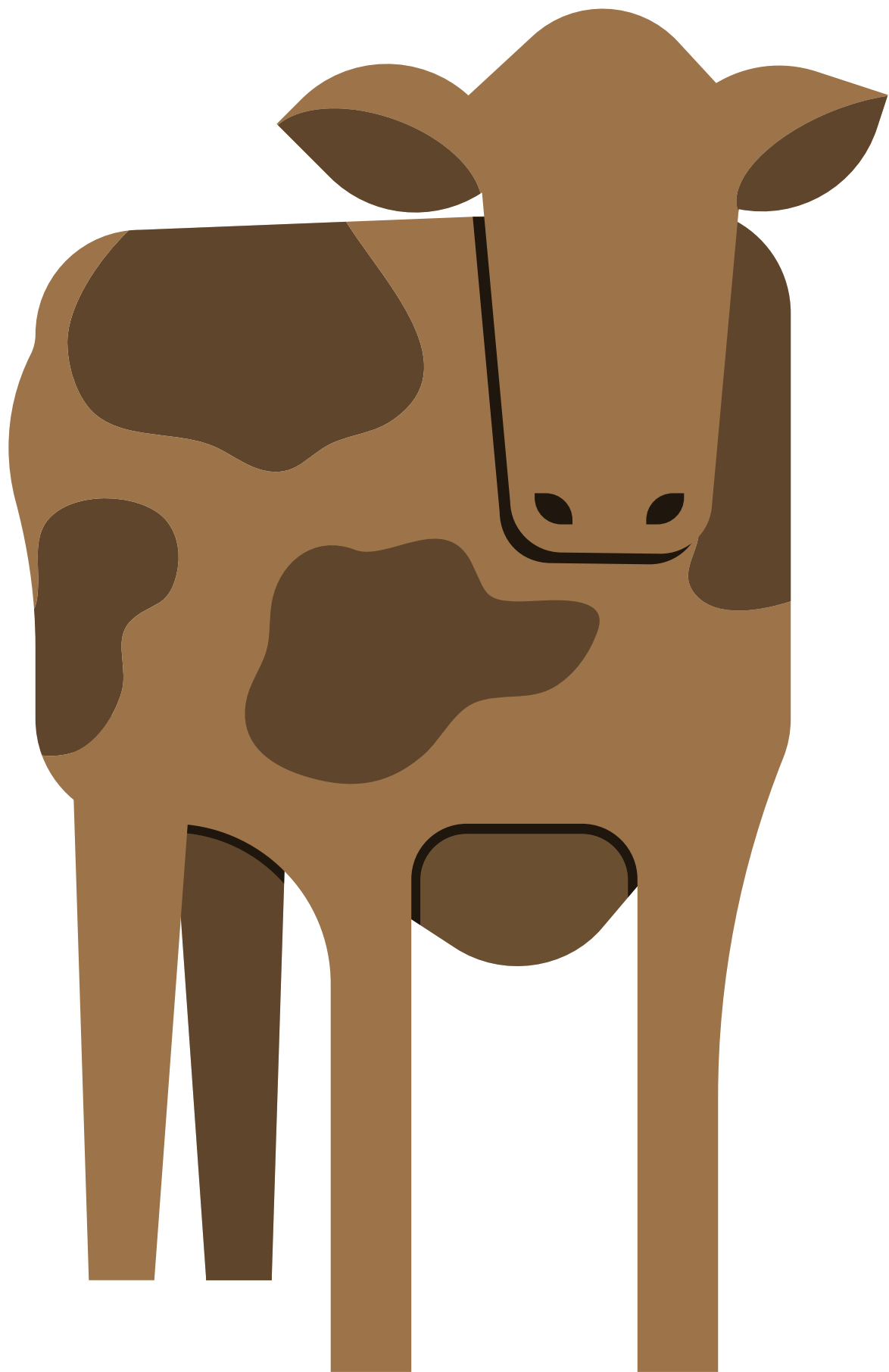
**TIMELINE:
DIMINISHING
BIODIVERSITY**
1976



180 Million Metric Tons



230 Million Metric Tons

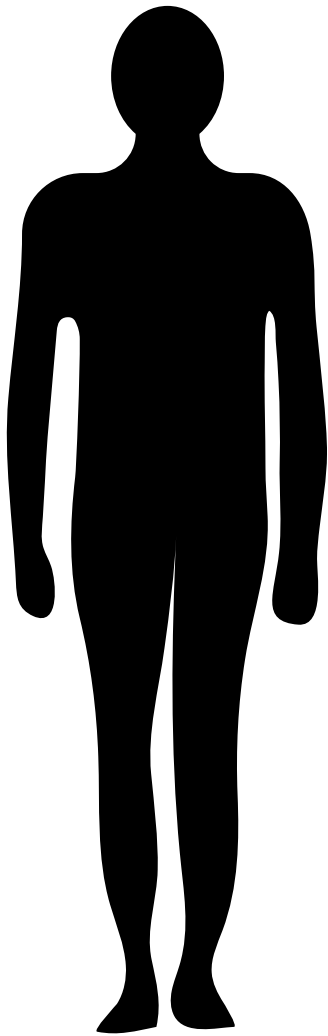


832 Million Metric Tons

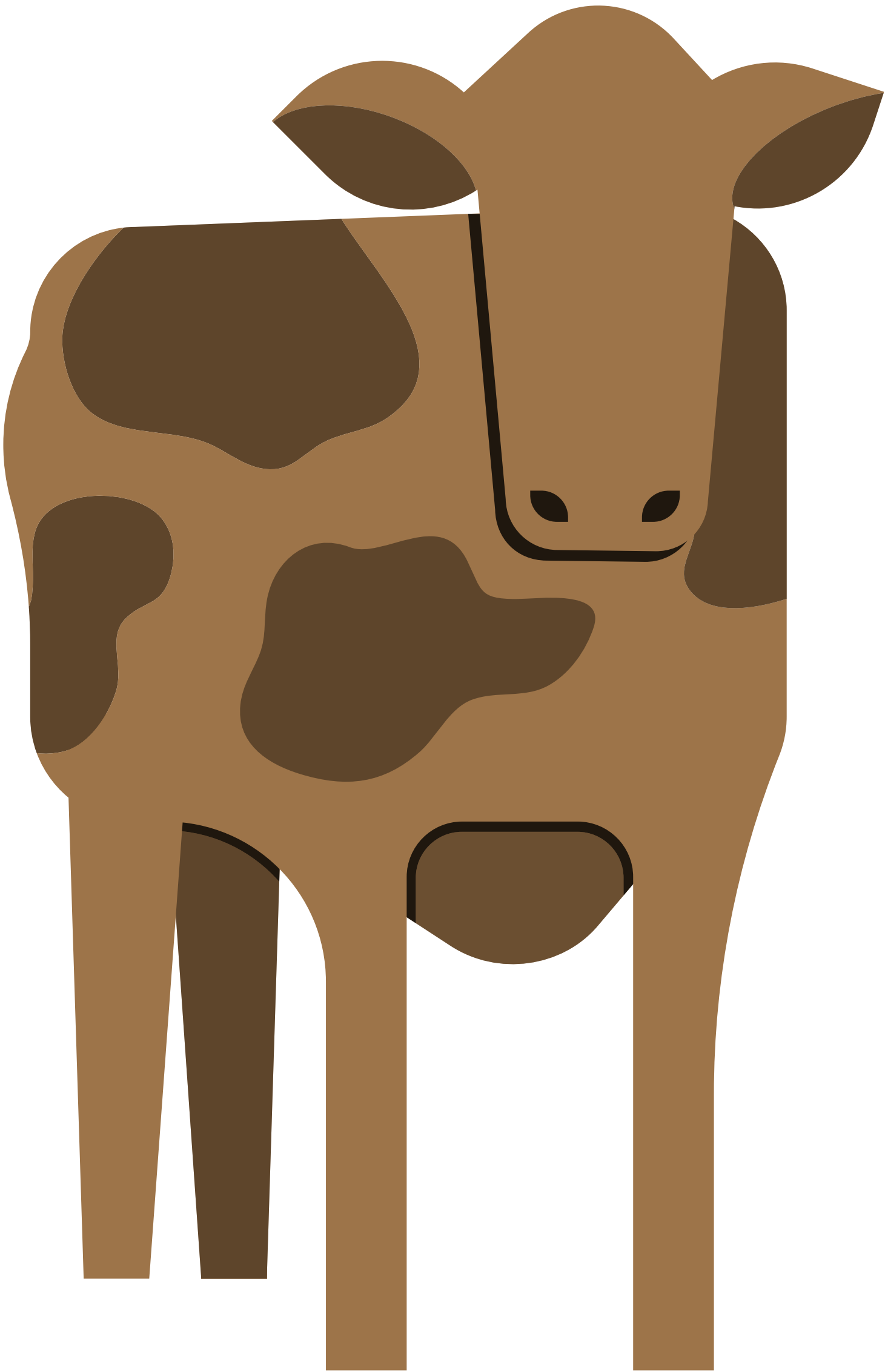
**TIMELINE:
DIMINISHING
BIODIVERSITY**
2018



90 Million Metric Tons

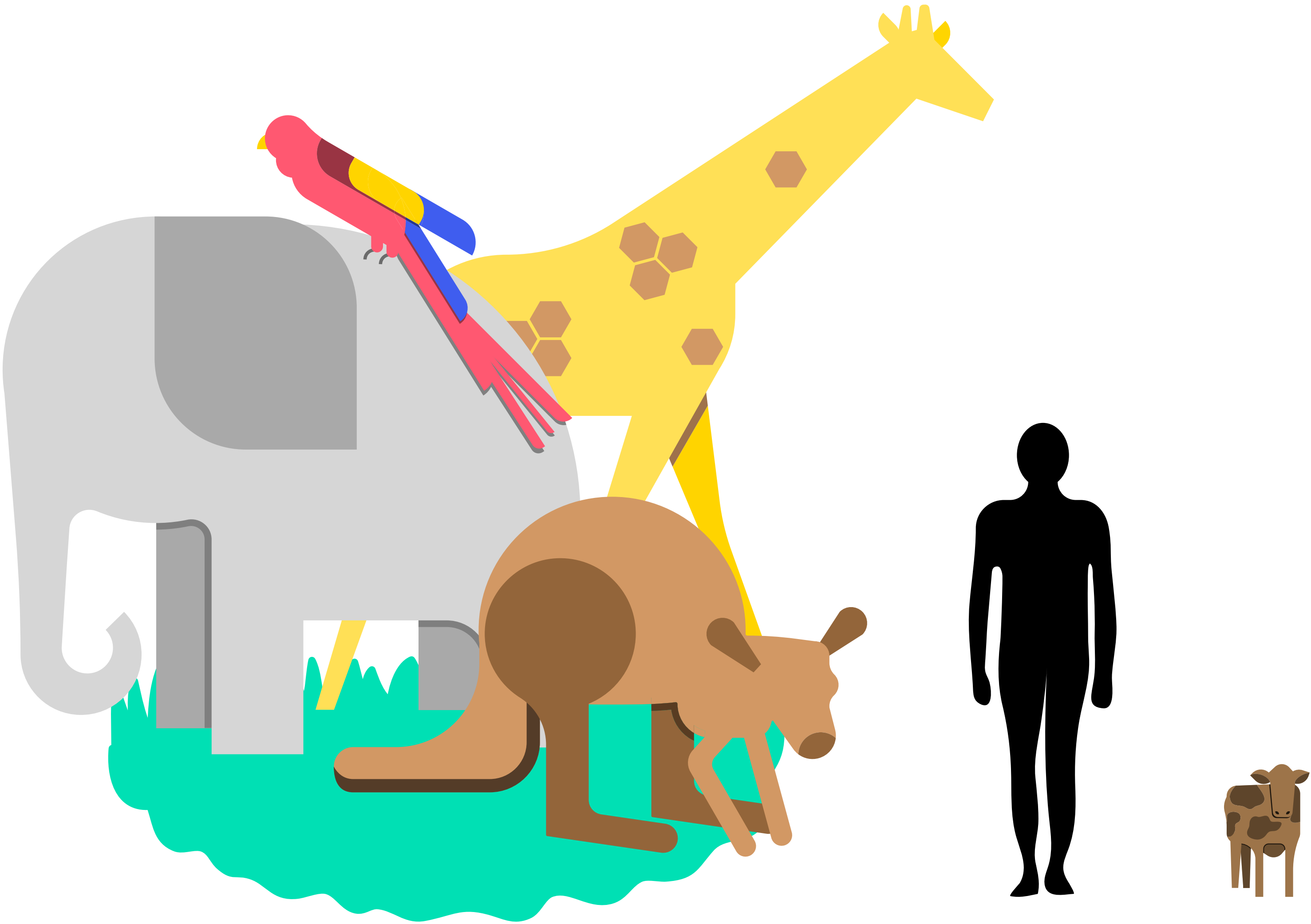


420 Million Metric Tons



1 Billion Metric Tons

TIMELINE:
RESTORING
BIODIVERSITY
2035 & BEYOND



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02

CONSUMER



Expecting people to eliminate or even reduce their consumption of the animal meat, fish and dairy foods they love is completely unrealistic.

Our planet and everyone who lives on it face unprecedented challenges: We must scale our food system to feed more than 10 billion people by 2050 — while coping with extreme weather events and climate destabilization. We must preserve natural resources and reverse catastrophic losses of wildlife and biodiversity.

We could go a long way toward solving these problems by changing how we eat. Avoiding animal-derived meat and dairy products is the single biggest way to reduce our environmental footprint. According to the most thorough analysis to date⁶ of the damage farming does to the planet, switching to a plant-based food system could feed the world and reduce the area needed for agricultural land by more than 75% — an area equivalent to the US, China, European Union and Australia combined.

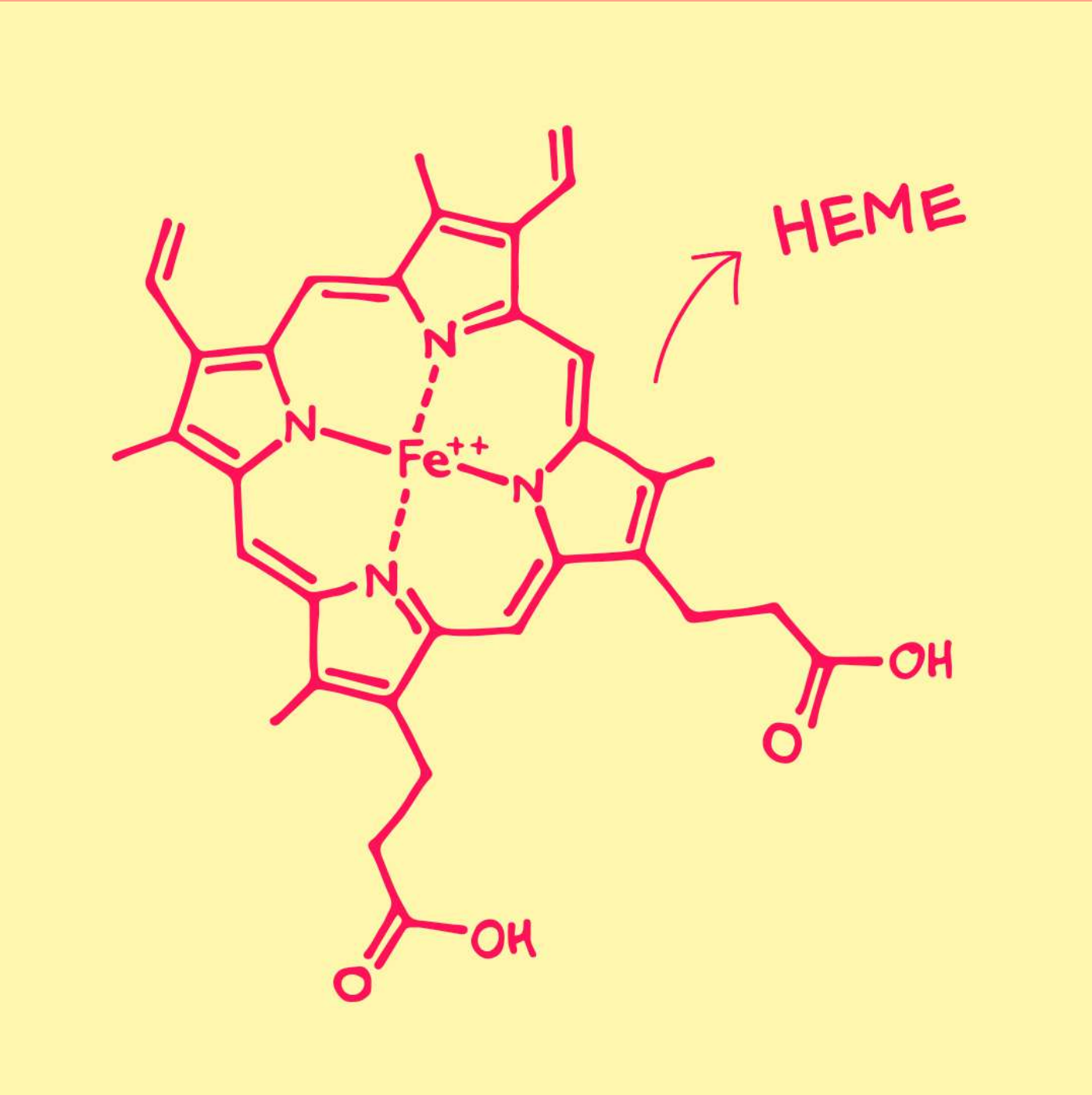
But expecting people to eliminate or even reduce their consumption of the animal meat, fish and dairy foods they love is completely unrealistic. We're not going to solve this problem by pleading with consumers to eat beans and tofu instead of meat and fish. Despite a growing recognition⁷ that animal agriculture is destroying the planet, the global demand for animal-derived food⁴ is surging. We need to solve this problem another way — not by guilt-tripping consumers into changing their diets, but by making delicious, nutritious and sustainable meats that are better than the meats from inefficient, animal-based technology.

The surest strategy for replacing the most destructive technology on Earth is to deliberately create foods that deliver greater pleasure and value to consumers of meat, fish and dairy foods, then simply offer them as a choice — and let market demand take care of the rest.

The many plant-based meat alternatives available across food cultures do not deliver the full sensory array that omnivores crave. Succeeding in our mission means satisfying omnivores, not just those already eating a plant-based diet. To achieve that, our products must not only match but outperform meat from animals in taste, nutrition and value.



HEME: THE MOLECULE YOU EAT EVERY SINGLE DAY



The key ingredient to making meat sustainably is heme—a molecular building block of life, and most familiar as the molecule that carries oxygen in your blood. The heme molecule is an essential part of the system that enables every plant and animal cell to “burn” calories to generate energy for life. Because animals use far more energy than plants, animal tissues contain correspondingly far more heme. The abundance of heme in animal tissues is responsible for the uniquely craveable flavor associated with meats.

Heme is safe to eat and consumed through almost all foods, and it’s required for life.

To satisfy the global demand for meat at a fraction of the environmental impact, Impossible Foods developed a far more sustainable, scalable and affordable way to make heme and therefore meat, without the environmental impact of livestock. We use leghemoglobin, a heme protein produced in the root nodules of soy plants. Instead of trying to dig up soy plant roots to harvest the nodules, we genetically engineered yeast to produce the same, naturally occurring protein.

Our studies show that we are indeed delighting and winning over the self-declared carnivores. In 2018, Impossible Foods commissioned third party “diner intercept” studies and polls to determine who orders the Impossible Burger. The vast majority (more than 70%) regularly consume animal meat; only 3% of our consumers say they never eat animal-derived foods.

Because the omnivorous consumer is key to our sustainability mission, so are the results of consumer taste tests. In blind tests with meat-eating consumers comparing our burger with burgers from cows, about half of testers preferred our burger on taste alone, a big improvement from less than 10% five years ago. By the end of 2018, our goal is beat burgers made from cows decisively in blind taste tests.

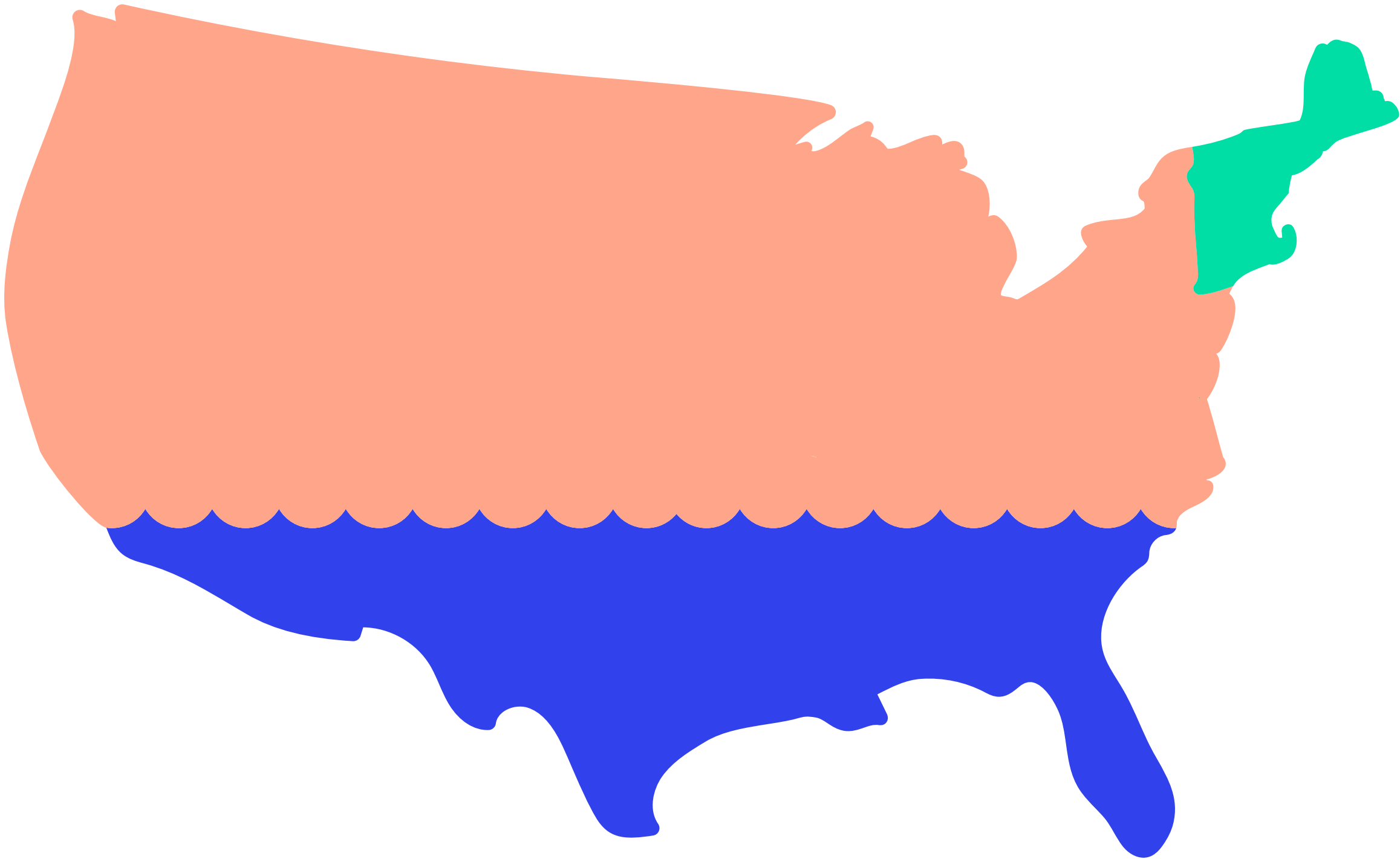
Only 3% of our
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To better understand the impact of switching to plant-based meat, we partnered with researchers at the Technical University of Denmark (DTU) to investigate those impacts at a national scale. The DTU researchers, who have no stake in Impossible Foods, relied on Impossible Foods’ life cycle analysis, the data of which was verified by the third-party auditing firm Quantis.

Their research findings show that if Americans replace 50% of ground beef from cows with Impossible Foods’ plant-based beef, we could:

- Spare the atmosphere of at least 45 million metric tons of carbon — the equivalent of removing all emissions of at least 11 million drivers in the United States for a full year.
- Save at least 3.2 trillion gallons of water — the equivalent to the water used by at least 90 million Americans in one year.
- Release at least 190,000 square kilometers of land now being used for livestock and the crops they consume — a land area the size of New England, or the state of Washington, which could be restored to healthy wildlife habitat, reducing atmospheric carbon in the process.⁸

These estimates are extremely conservative, and they represent just a small fraction of our 2035 vision of removing the need for animal-derived meat entirely.

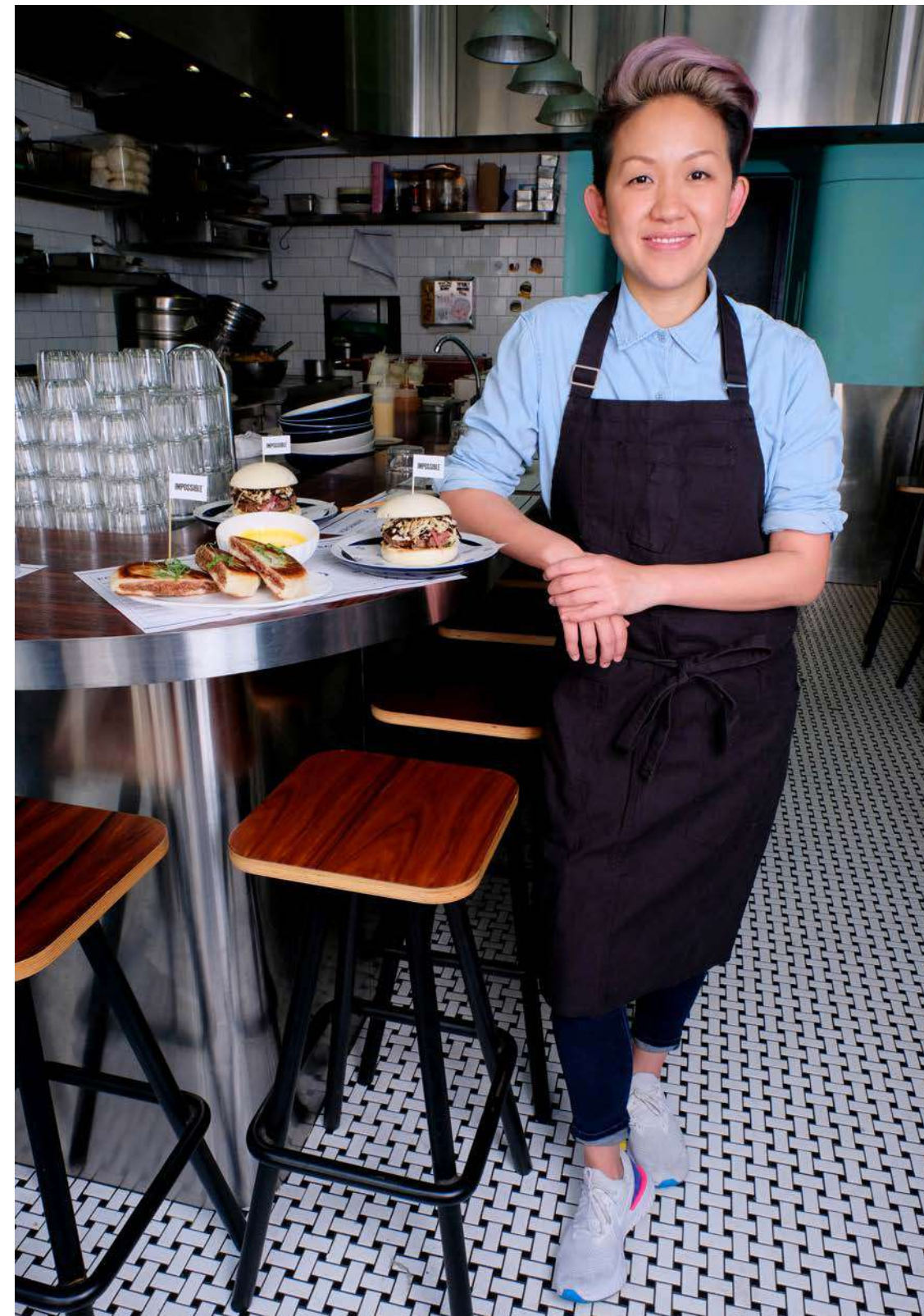


03 CUSTOMER



Beef & Liberty Chili Cheese Fries

Chef Uwe Opocensky



May Chow

Asia's Best Female Chef, 2017

Sales and growth are critical to expand our business and to advance our mission of a more sustainable food future.

Although Impossible Foods plans to sell in retail outlets, we launched in restaurants. Chefs and restaurateurs are in a unique position to accelerate the shift to a sustainable food system. Their reputations and livelihoods depend on serving great food; they are our best partners to create a new and planet-positive shift. Our product was built for versatility, so that chefs can use it in innovative new recipes to classic burgers. Meatballs, doner kebab, kofta, and bao, they've made it all, and it all helps to lower the water, habitat, and carbon footprint of the kitchens and consumers.

The Impossible Burger is now available in more than 3,000 locations in the United States, Hong Kong and Macau — up from only 40 US restaurants one year ago. We have wide range of customers — from taquerias and food trucks to fine-dining establishments and many of America's most beloved "better burger" concepts. We also reach other businesses like hospitals, stadiums, hotels, and large corporations with food service. Many of our customers have their own goals for sustainability — Impossible Foods products can be a big part of their toolkit.

White Castle, Fatburger, Umami Burger, Marriott Hotels, The Counter, Hopdoddy Burger Bar, Wahlburgers, The Cheesecake Factory and Disney World Parks and Resorts all now serve the product. White Castle is selling Impossible sliders at 140 locations across the Midwest and East Coast. These sliders cost just \$1.99 — an example of how we're working to increase accessibility.

We took our first step toward expanding outside of the United States into the Hong Kong market with Chef May Chow, voted Asia's best female chef, and Chef Uwe Opocensky of Beef & Liberty, serving up their spins on local street food favorites as well as creative, delicious burgers.

Hong Kong is a hotspot for food and among the world's top cities for per-capita animal meat consumption.

Hong Kong, and Asia broadly, are critical consumer markets in the path toward sustainable food futures. Think about the ability to leapfrog the fastest beef consumption rise in the world — and land on the right side of history. The greatest growth in demand in animal products will come from the Asian market, with a growth rate of 70% over the next couple of decades.⁴

If food system innovation can jump consumption from the existing plant based diets into plant based meat. It's a little like if the United States had jumped from horse and buggy straight to shared electric autonomous vehicles.

This year, Americans will eat about 10 billion pounds of ground beef from cows. Of that, they'll eat about half in restaurants, and the other half they will eat at home. We are enthusiastically planning our retail launch so that people can cook Impossible's flagship product at home, at their convenience -- in any of their favorite dishes.



Superfans eat Impossible Sliders at the White Castle launch party in April 2018

The Impossible
Burger is now
available in more
than **3,000** locations

MAKING THE LEAP TO PLANT-BASED



White Owl Burger
White Owl Social Club Portland, Oregon

Matthew Relkin leads the White Owl Social Club, which focuses on fresh, sustainable ingredients. The Portland, Ore., restaurant began selling the Impossible Burger in early 2018. It became an important addition to the menu: Within a few weeks, Relkin decided to eliminate cow- and lamb-derived products due to their high carbon footprint

Can you tell us a bit about the history of White Owl?

White Owl has always been known as a bar that catered to eaters of all types. We’ve always strived to have something for everyone, and to serve food that’s a step above your regular bar fare. We never wanted to be over-refined as far as the type of food you could get here, but we definitely wanted to get the business of everyone ranging from meat-eaters, vegetarians, vegans, gluten-free, etc. We don’t want anyone coming here and being bummed out that there’s nothing for them to eat. I think that having all of those options available has allowed us to build a wide & varying clientele.

How much ground beef were you previously serving in a week?

The average was about 139 burgers (beef and lamb). At 5 oz a burger, that was almost 45 pounds a week.

Do you think most of your customers care about the environmental impact of their food choices?

I think most of our customers do care, but caring and acting on that are two different things. People are comfortable in their ways, especially when it comes to eating.

What made you decide to replace red meat and lamb with plant-based alternatives?

Ultimately, we saw that we could actually help make a difference as a restaurant that sees thousands of people walk through our doors every year. As an individual, there’s only so much one can do to reduce their environmental footprint.

PEOPLE CAN
LEARN AND
CHANGE
THEIR HABITS
TO IMPROVE
OUR WORLD



Making the Leap to Plant-Based Continued:

As a restaurant that was making a good chunk of money off meat, that was a tough decision, but one that we all felt strongly about – enough so that we were willing to risk those sales in order to do something that felt like it was based on living in the present, believing that people can learn and change their habits in order to improve our world.

We didn’t want to fully alienate our meat-eating guests, so we kept chicken and recently added a sustainable cod sandwich as well. It’s not a perfect menu, as we still serve some meat, but it’s miles ahead of where we were before we switched away from beef and lamb.

How is it going since that decision?

Sales have been great. We sell a good amount of Impossible Burgers, but more importantly, people are looking at the menu and trying things they may not have tried if there had been a beef burger there. The complaints were minimal, and definitely drowned out by the people who saw what we were doing and understood why. Again, we are not a meat-free restaurant, but we are working hard to be aware of the environmental cost of what we sell.

Are there any anecdotes you can share about customers’ reactions?

I don’t want to focus on the negative, especially since there was such an outpouring of support for our decision, but one individual’s comments have stuck with me, but not for the reasons she might have intended.

There was a woman commenting that by removing beef burgers, we were taking away her right to choose what she eats. She was upset that we were making the decision for her, when in reality, we were simply making the decision for OURSELVES, as people who run a business that thrives on serving our customers in the best way we know how. We have chosen to do business in a way that we feel is responsible and aware of the reality that we live in.

WORLD ECONOMIC FORUM DOES THE IMPOSSIBLE™

How do we develop a shared vision for improving the world?

Global leaders embrace this challenge each January at the World Economic Forum (WEF) annual meeting in Davos, Switzerland. This year, the menu provided food for thought.

WEF delegates, including religious leaders, business leaders, heads of state and top academics, are increasingly realizing that our mass consumption of animal meat is compromising the planet. Numerous sessions at the 2018 annual meeting dealt with moving toward a sustainable global food system, one that would reduce inequality and create a more inclusive economy for an estimated 10 billion people by 2050.

Impossible Foods' CEO, Founder, and two-time WEF Technology Pioneer Dr. Patrick O. Brown and Impossible Foods' Vice President of Health and Nutrition, Dr. Sue Klapholz, spoke on panels and actively contributed to the Davos dialogue.

For the first time, the 2018 annual meeting included 10 plant-based meals, which Chef Traci Des Jardins created and served to 3,000 of the world's most powerful people.

Delegates feasted on Italian meatballs, Mexican tostadas, Thai larb, Vietnamese phở, French tartare and American burgers — all made with Impossible Foods' plant-based meat. This one change allowed the event to lower its carbon footprint by the equivalent of 29,000 miles in a car, reduce land use by the area of two football fields and reduce water consumption by the equivalent of 200,000 water bottles.



Traci Des Jardins

American Top Chef, serves dinner in Davos, 2018

BREAKING BREAD TOGETHER



Chief Science Officer David Lipman
attends a Kosher certification ceremony

Religious leaders have always spoken out on social and ethical issues in public policy. Pope Francis, in his Laudato si letter stated: “This should spur religions to dialogue among themselves for the sake of protecting nature, defending the poor, and building networks of respect and fraternity.”

Impossible Foods even had a chance to engage in some of that dialogue as part of the Vatican’s “Unite to Cure” conference. CEO and Founder Dr. Patrick O. Brown addressed multi-faith leaders in a first-of-its-kind scholarly session examining the health and environmental benefits of moving to a plant-based diet. For Impossible Foods to best contribute to sustainability, we must ensure that our products are accessible to people of all faiths.

This spring, around the same time as the Unite to Cure conference, Impossible Foods received its official kosher certification from the Union of Orthodox Jewish Congregations of America, the world’s largest kosher certification agency. The certification came after a Rabbinic Field Representative toured the company’s manufacturing facility and confirmed that all ingredients, processes and equipment comply with kosher law.

By the end of the year, Impossible Foods expects to have its halal certification as well, ensuring that our products are accepted under Islamic dietary guidelines

04 OPERATIONS



Our mission is global, and in our journey to achieve that mission, we intend to hold ourselves to the highest standard of sustainability and responsibility.



Our mission is global, and in our journey to achieve that mission, we intend to hold ourselves to the highest standard of sustainability and responsibility. The bigger we grow, the more important it becomes for us to ensure that all of our operations are as efficient and low-impact as possible. Our current operational sustainability efforts focus on waste, energy and water.

We launched our first large-scale production facility in March 2017 in Oakland, California. One year later, we were running the 67,000 square-foot plant at full capacity on a single shift. We are now hiring employees to launch a second shift to double production. We anticipate the Oakland plant will ultimately be able to produce 4 million pounds of meat a month. We're also planning a second factory and mapping out plans to scale up our business far beyond where it is today.

WASTE



Shortly after opening our Oakland factory, we committed to landfill diversion and certification of the facility as zero waste. We are currently on track to meet US Green Building Council Zero Waste standards, targeting 2020 certification. The commitment means that we will divert more than 90% of our waste from landfill and into recycling and compost, year over year.

We also opted into the TRUE Zero Waste program because it helps us address root causes of waste and design waste out, rather than just finding better places to put it. Additionally, it connects us to an educational platform to support our waste-management team and to a peer network of like-minded businesses.

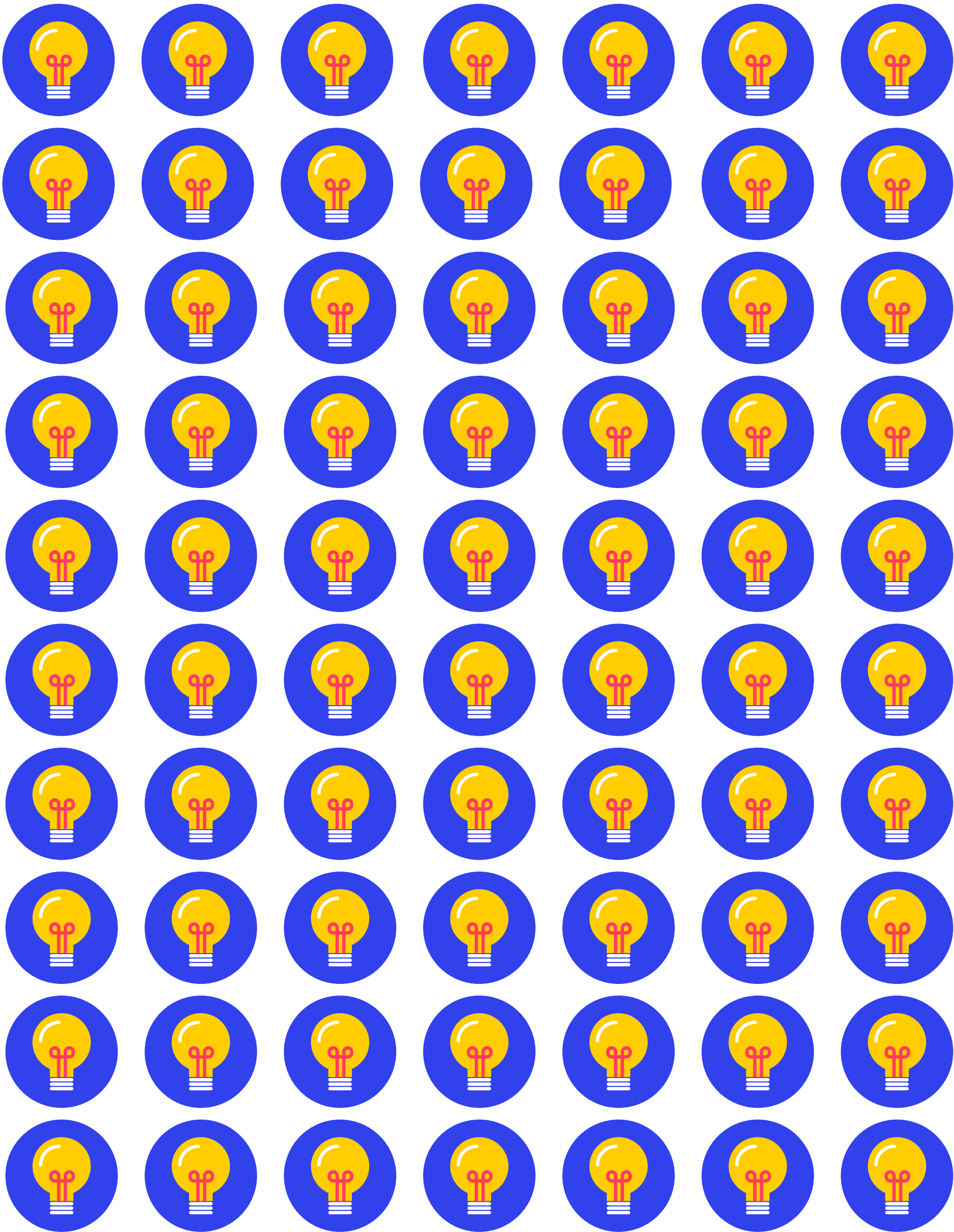
We wanted a zero-waste target from the launch of operations in Oakland. Any substantial remodel and upgrade of a 67,000-square-foot facility generates a lot of waste as the plant gets started.

The ‘commissioning’ process of a plant generates a large amount of up-front waste because engineers are figuring out a process from scratch. But process optimization starts immediately, and the waste rate rapidly drops. In those first weeks of commissioning, our first step was to partner with our local municipal utilities district to collect, store, and move liquid waste to their biofuel center. Those deliveries resulted in more than 70,000 kWh of energy generated for the city of Oakland.

While our plant in Oakland still generates more waste than we want, we are working to reduce it, and we aren’t stopping at our manufacturing site. We prioritize landfill diversion across the board: in our Redwood City, Calif., headquarters and R&D center, we recycle and compost with clear labeling and periodic training for about 250 employees. Recology, our local waste solutions provider, helps us audit our disposal practices so we can keep improving.



Diverted waste has
generated **70,000**
kWh of energy for
our community



Each lightbulb is 1000 kilowatt hours



Manufacturing accounts for the bulk of our facilities-based footprint. We’re tracking energy and GHGs estimated per pound of Impossible Burger produced in Oakland. Since we began steadily manufacturing the product, energy use per pound has dropped by more than half (Figure 1). There is a close correlation between the volume of burger made per month and the energy efficiency associated with each pound. Beyond energy economies of scale, we are also investigating ways we can optimize footprint areas like boilers, HVACs and compressors.

At the start of 2018, we moved our headquarters to another building in the same office park. We gained four times more space for our growing staff — and the move gave us the opportunity to optimize energy efficiency as we retrofitted our new home. We installed passive lighting systems to help keep energy demand down, including adding skylights with sensors that tell the low-energy solar tubes how much supplemental light they should be producing. In meeting rooms, we switched to 100% LED lighting from fluorescents. Motion sensors were installed so unused areas of the building are not wasting energy. Thanks to a Community Choice Energy program, the grid from which we source is powered by 50% renewable and 85% GHG-free sources, which dramatically drops the carbon emissions per kilowatt hours used.

GHG emissions of Impossible Foods manufacturing (lbs CO2e/lb product)

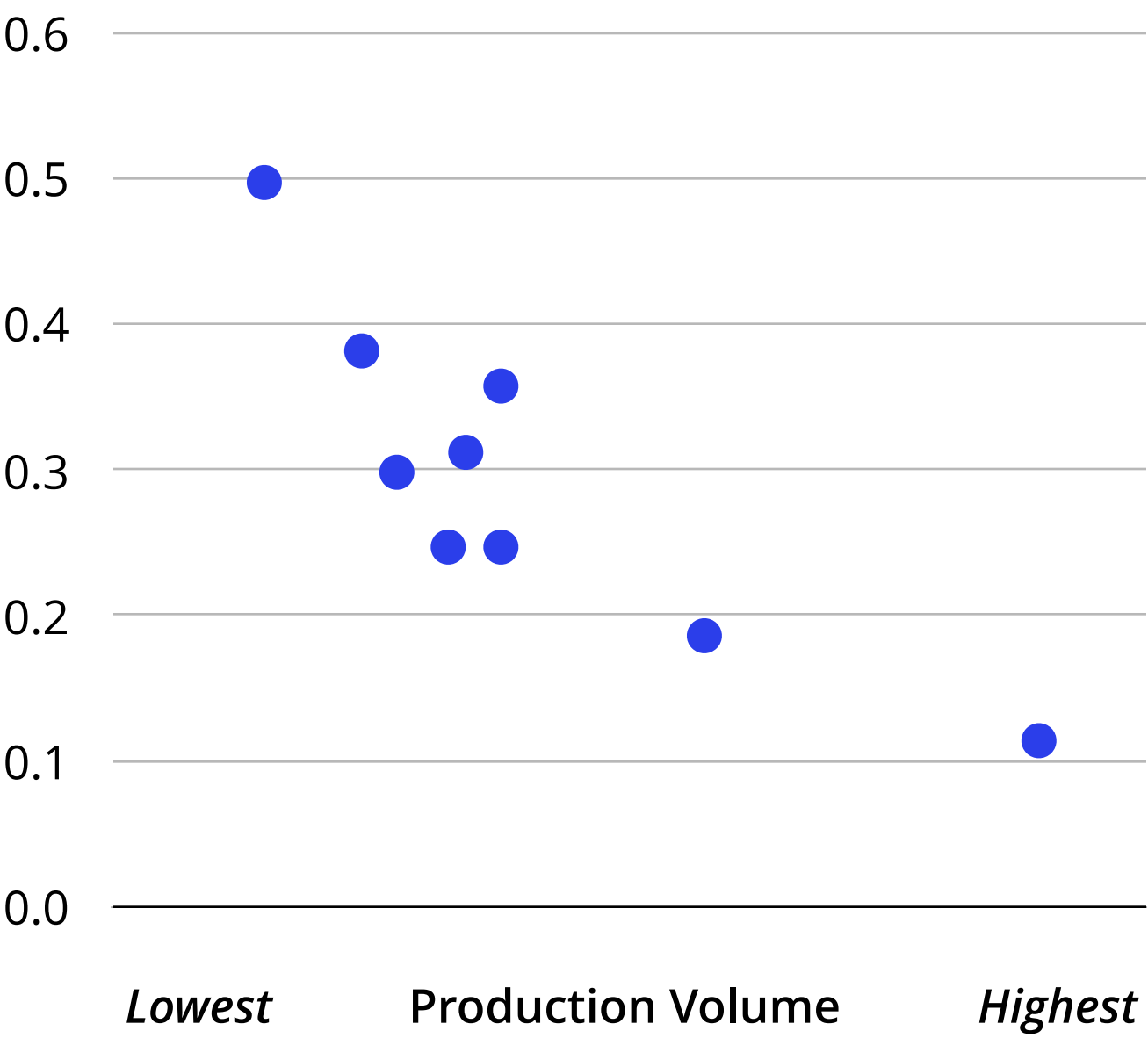


Figure 1

ENERGY



Heme is another focus for improving energy efficiency. The fermentation process by which our yeast make heme is similar to that used to make many beers. Fermentation enables us to make large quantities of heme with a much lower environmental impact than using cows.

But, fermentation is still energy-intensive, and greenhouse gases result from energy generation (at different rates, depending on the source of that energy).

Fermentation requires powering compressors to pump oxygen through the fermentation vats. Our fermentation facility uses cogeneration, the process of capturing and redirecting some of the steam energy generated by fermentation. We estimate that about half of the energy generated for heme fermentation comes from the grid, and about half from the cogeneration practices. While heme isn't the highest contributor of GHGs per pound of product, it does generate more pound-for-pound GHGs per ingredient volume than others, and thus remains a focus area and a major opportunity for further conservation.



CUSTOMER

WATER



As with energy demand, manufacturing makes up the largest portion of our water use and is thus a priority mitigation area. Water data collection is in its early phases at Oakland. This year we are bringing online an operational technology platform that takes real-time data per manufacturing process. We are tracking water use across three categories: total facility, burger forming (hydration of proteins, mixing and forming) and Clean-in-Place (CIP). Our next step is to meter our sanitation processes to capture additional areas for water tracking and future conservation.

CIP — essential for food safety — is the largest manufacturing portion of our Oakland water footprint. It’s a term that refers to a water circulation system that cleans pipes and processes without the need to disassemble all the equipment. As our scale of production has grown, so has the water efficiency of the process. Lower product volumes (the least water efficient manufacturing runs) required about 9 liters of water per pound produced. With the recent growth in our production volume, we are seeing that drop significantly (Figure 2).

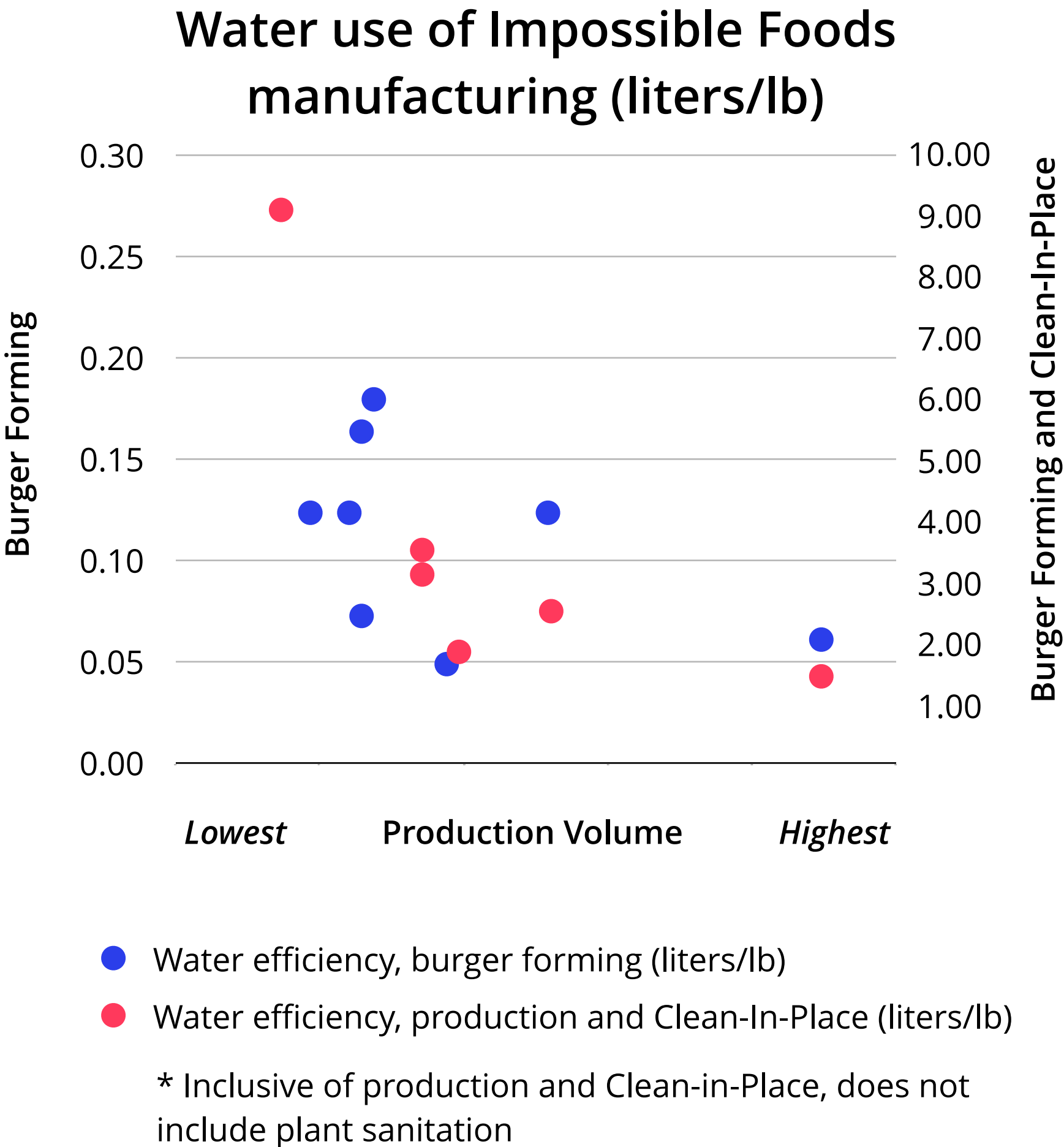


Figure 2

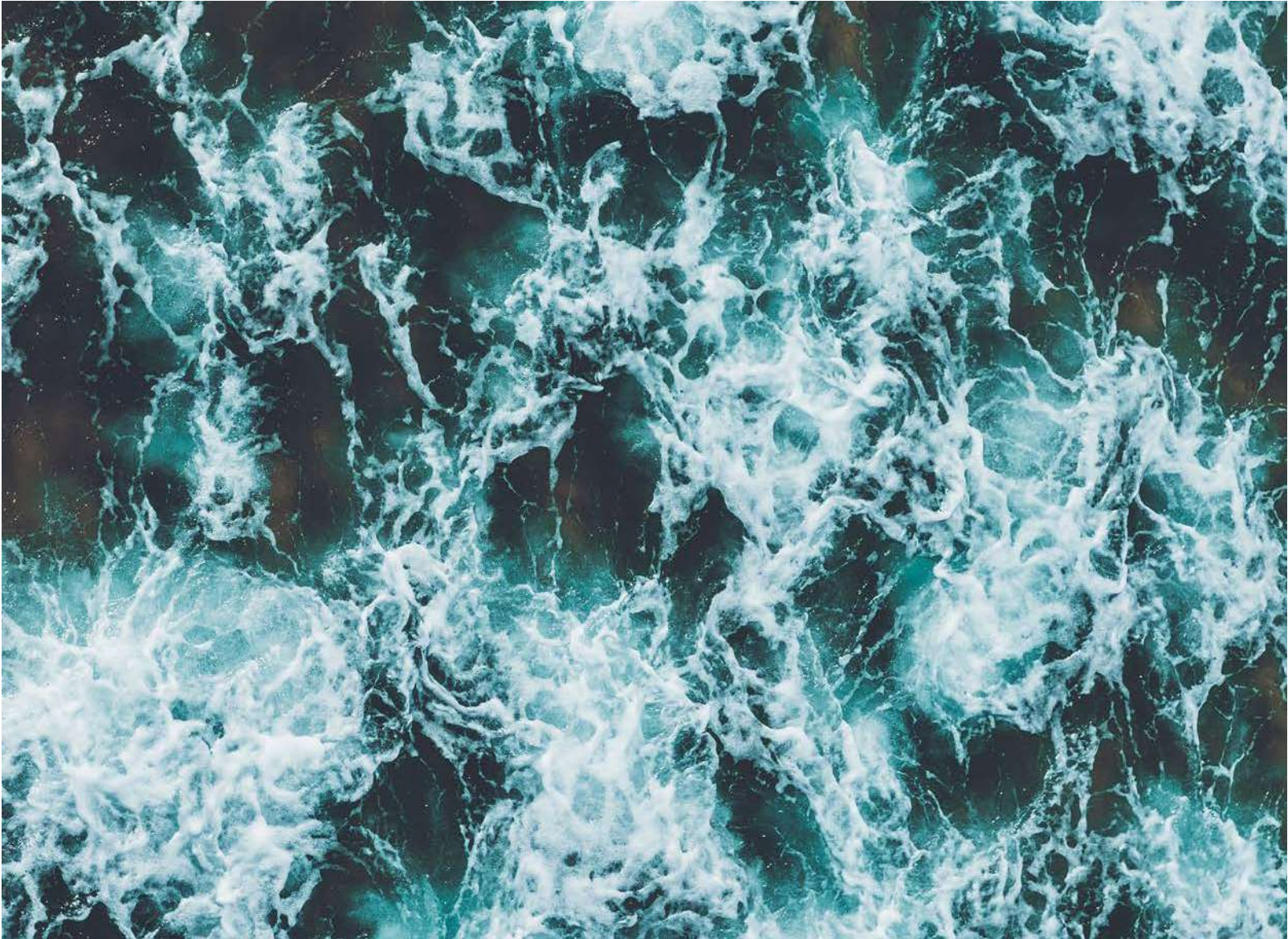
WATER



From a pure pound-for-pound of ingredient standpoint, heme is the most water-intensive of our ingredients. However, because it is used in very low concentrations in the Impossible Burger, it is not the largest fraction of our product footprint. Still, this remains a key conservation target for us. Early figures have allowed us to estimate that heme contributes about 7 liters per pound to the total burger water footprint, about 5-10% of the total.

Since the water footprint of beef from cows ranges from 270 to 800 liters per pound produced (only counting irrigation, not rain for feedstocks),⁹ the plant-based burger remains a far more water-efficient alternative. Yet we are optimistic about reducing our water use further.

We meter our heme protein isolation process to track water use per unit produced, and anticipate large reductions as yield increases, and process is optimized. This year, we are piloting new filtration technologies which, if successful, could allow us to drop total process water use significantly. We look forward to more granular reporting when we have steady-state production in place.



PERSONAL SUSTAINABILITY



Food served to employees can be a huge part of the resource footprint of a business, particularly when the menus include animal products. Impossible Foods provides a free, plant-based lunch to our team four days per work week. Research has shown that an average American lunch containing animal meat has a carbon and water footprint of around 8 pounds of CO₂e and 181 gallons of water.¹⁰

A meatless lunch averages a footprint of around 1-2 pounds CO₂e and 34 gallons of water. If 75% of our employees choose to forgo a meat-based lunch in favor of our plant-based menu during working days, we save 133 MT CO₂e and 6.2 million liters of water each year.

Employee transit is another focal area. Our office is located about two miles from the closest major transit station (CalTrain), and a free shuttle is provided from the station to the office. Still, this can leave our employees with a “last mile” problem in commuting from home to the station or vice versa. To encourage bicycle commuting, we’ve quadrupled the number of bike racks in Redwood City, and employees have access to lockers, changing rooms and showers.

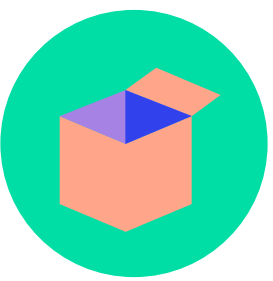
In response to team requests for communication around waste and lighting, we’re launching informational posters around all facilities. These small steps — reminding people to compost paper towels or to bring their water bottles rather than grabbing a biodegradable cup — reduce our environment footprint and help serve our team’s culture of sustainability.

SUPPLY CHAIN

A sustainable product starts with sustainable ingredients. With the exception of heme, which is produced in-house, the main ingredients of Impossible Burgers are purchased through outside vendors. We work closely with each vendor on understanding their sustainability commitments and practices, and to identify opportunities for mutual support on our respective sustainability journeys.

In 2018, we began rolling out a new platform to advance environmental and social considerations within our supply chain.

Our first step has been the (in progress) development of our Supplier Code of Conduct, which goes beyond regulatory compliance to focus on expectations of mutual continuous progress between our business and our suppliers.



PACKAGING

In the spirit of a shared sustainability journey, we put a lot of effort into supply chain packaging. For three out of our four main ingredients, we’ve worked with our vendors to switch to reusable, right-sized packaging that minimizes waste. In 2017, we transported heme in small recyclable buckets; in 2018, we replaced that system with 1,000 kg reusable totes.

Potato protein — another key ingredient — arrives in 1,000 kg reusable containers, which are returned and reused by our supplier. This spring, we worked with our corrugated cardboard supplier to transition to 100% Sustainable Forest Certified product paper and cardboard packaging.

WHEAT TVP

Our wheat textured vegetable protein (TVP) is sourced from conventional wheat grown in the United States. Our wheat vendor has committed to sourcing all facility energy from renewable wind sources — a great example of how one of our biggest suppliers is stepping up with sustainability commitments and adopting new energy technologies.

COCONUT OIL

Our coconut oil starts with coconuts and copra, produced in smallholder systems in the Philippines. Those coconuts are sent to regional mills, then the primary oil is shipped to processors and refined to food-grade coconut oil. Consumers have legitimate concerns with tropical oil products. We have performed deep diligence with our suppliers and with regional industry experts to ensure that the coconut production system from which we source neither drives deforestation nor uses animals in the harvesting of the crop.

POTATO PROTEIN

For more than a century, protein was discarded as a water-polluting byproduct of potato starch production, but new processing technologies pioneered by our supplier allow them to capture and repurpose that protein as a valuable food ingredient. Our potato protein vendors have a strong commitment to sustainability and have made available a full life cycle assessment (LCA) of this ingredient, which we in turn build into our own LCA model to accurately measure our product footprint.

HEME

Heme is our key ingredient. Instead of the heme-containing proteins from animals, we use soy leghemoglobin, a heme-containing protein found in the root nodules of soy plants.

Early on, we tried to harvest leghemoglobin straight from the plant. However, harvesting the whole root system can disturb the soil and release stored carbon, and it’s not very efficient.

So we found a better, more sustainable way. By inserting the leghemoglobin gene from a soy plant into a yeast strain, we enabled the yeast to produce the same leghemoglobin protein far more sustainably by fermentation — no need to dig up nitrogen-fixing soy plants (or to use cows). The yeast produces the protein in fermentation vats, then Impossible Foods uses a series of downstream processing stages to isolate the protein from the fermentation broth.

SAFETY & HEALTH

Impossible Foods has prioritized safety and transparency since the company's founding, going above and beyond strict compliance to provide as much information as possible to consumers, researchers and anyone else who is curious.

The heme molecule in soy roots, and the one we use in the Impossible Burger, is responsible for our burger's delicious taste. It's also a fairly new in the human food system, so we have done an exceptional amount of testing on this ingredient.

In 2014, years before the company began selling product to restaurants, a panel of leading food safety experts gave the opinion that the soy leghemoglobin used in the Impossible Burger is "generally recognized as safe," or "GRAS." GRAS means that a food is safe to be consumed under US regulations. Having reviewed extensive test data, the FDA declared in July 2018 that it had no questions regarding the safety of soy leghemoglobin in the Impossible Burger.

WE AIM TO BE
THE MOST
TRANSPARENT
FOOD COMPANY IN
THE WORLD

PUBLIC HEALTH

Cattle, pigs and chickens are major sources of food-borne illnesses.¹¹⁻¹³ The overuse of antibiotics in animal agriculture has created a public health crisis¹⁴ by rendering a growing number of bacterial infections in humans resistant to available antibiotics.

A growing body of epidemiological data suggests that eating a lot of “red meat”—the colloquial term for mammalian muscle—may be bad for your health and that replacing animal-derived protein in the diet with plant-derived protein could significantly reduce overall mortality rates.¹⁵

By contrast, the Impossible Burger delivers the same protein and iron as a burger made from a cow—but its protein comes entirely from plants, and it’s produced without the use of hormones or antibiotics, does not create a reservoir for dangerous pathogens, and contains no cholesterol or slaughterhouse contaminants.

OPEN ACCESS

We go above and beyond mere compliance with regulations and have provided additional data about the safety of soy leghemoglobin by submitting all of the results of our tests to the US Food and Drug Administration and publishing them in independent, peer-reviewed scientific journals. You can read our entire FDA submission [online](#).

Also available is a peer-reviewed open-access scientific paper on environmental savings potential of beef replacement led by Denmark Technical University researchers, published in the Public Library of Science journal, [PLOS ONE](#).



05 TEAM



Impossible Foods exists to make the global food system sustainable. And we want to build a sustainable corporate culture, too.

We spend a lot of time recruiting and screening job candidates to build a diverse team of smart, kind, collaborative employees who are committed to our mission and who are looking to build their careers at Impossible Foods. In return, we've made serious commitments to support our employees in their growth and development.

We're a relatively small startup, but we invest in our employees the way many large Silicon Valley companies do. We have a budget for employee education and career development. We also offer four months of paid parental leave upon the birth or adoption of a child, and we expect new parents to take it!

Finally, Impossible Foods offers a robust student internship program each summer, placing undergraduates, recent graduates, and postgraduates into paid positions across our entire array of R&D and business teams. Our interns receive mentorship, build skills, and contribute to hands-on, priority projects. The internship program has served as a pipeline as well; many of our summer students have returned with an offer of a full time position.



Impossible Foods Lab
Redwood City, California

ENGAGEMENT

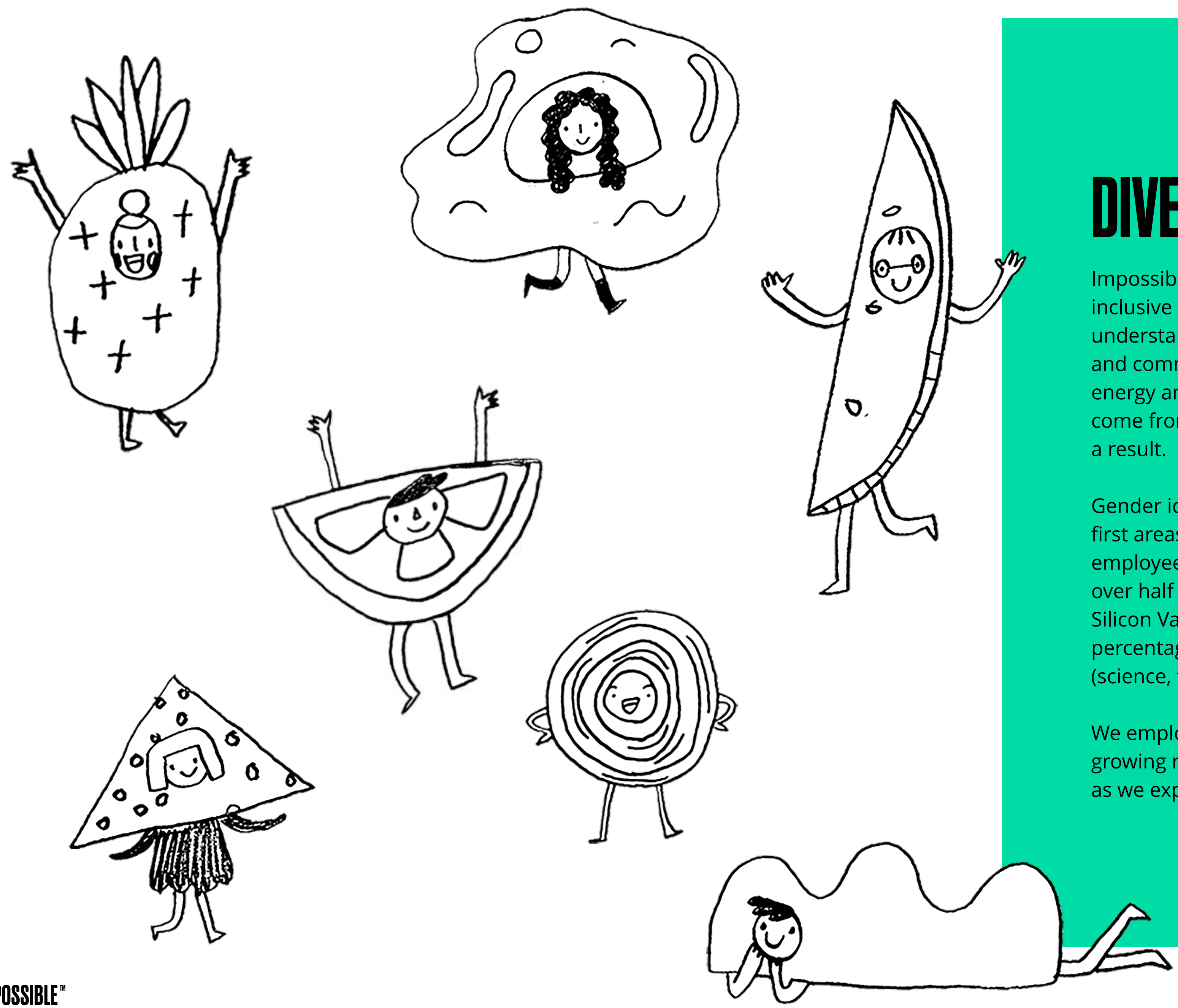
2 DAYS OF PTO TO PURSUE OUR MISSION

In 2018, we added two extra days of paid time off for all employees that offer powerful ways for them to further the Impossible Foods mission outside of regular working hours. The first is a “Get Out, Dig In” day focused on linking Impossible employees to volunteer opportunities. Every quarter, we partner with an environmental or social-impact group that shares our goals of reducing humanity’s impact on the planet and feeding the world. Second, we’ve committed to a “Get Out, Get Inspired” day, providing one day a year for every employee completely devoted to getting out in nature — the places we’re working so hard to preserve.

To engage employees, we regularly bring in outside speakers as part of our weekly all-hands meeting. Our scientists also have additional seminars to update the team about progress, challenges and milestones. All together, we tally more than 100 days of learning and development opportunities each year.



March 2018, Get Out, Dig In
An Impossible Foods crew builds fences and repairs trails in Joaquin Miller Park with non-profit Oakland Trails



DIVERSITY

Impossible Foods recognizes the intrinsic value of a diverse and inclusive team. Transforming the global food system takes an understanding of cultural contexts, regional issues, environmental and community implications — a diverse team creates the magic, energy and fun that helps us achieve our mission. Our employees come from every corner of the world, and our business benefits as a result.

Gender identification and representation has been one of the first areas we've been able to track. Women make up 65% of our employees at or above the VP level, and women account for just over half of our total workforce. This is extremely unusual among Silicon Valley startups, and it's an impressive ratio given the high percentage of our employees with academic degrees in STEM (science, technology, engineering and math).

We employ more than 300 people, and we expect to continue growing rapidly. We hope to maintain and enhance team diversity as we expand: to feed the world, we need to represent the world.

06 COMMUNITY



COMMUNITY

We can't achieve our goals without also being committed to having a positive impact on all the communities in which we operate. That includes the neighborhoods surrounding our facilities and the restaurant communities that sell our products. We plan to expand that commitment to partners and neighbors throughout our supply chain who enable our success.



Impossible Foods sent a food truck to Eastside College Preparatory School so students could have lunch of Impossible™ Burgers.

FOOD BANKS



In January 2018, Impossible Foods partnered with Alameda County Community Food Bank and Second Harvest Food Bank of Santa Clara and San Mateo Counties to provide plant-based meat to San Francisco Bay Area residents who receive assistance from food bank meal programs.

Impossible Foods’ employees are encouraged to volunteer to cook and serve the burger at participating food banks throughout the year. One in seven Americans gets food from food banks, Feeding America, the nation’s largest network of food banks.¹⁶ The rate of food insecurity is even greater in high cost-of-living regions like the San Francisco Bay Area where we operate.

Protein is one of the most expensive and uncommon donations in the food bank system, so Impossible Foods has committed to provide regular deliveries of plant-based meat to our regional food banks. Based on the savings related to Impossible Foods’ donation, the Alameda County Community Food Bank was able to hire a full time employee to their head count, furthering their ability to continue their mission to feed more than one-fifth of the area’s residents.

EDUCATION

Our children inherit the world we leave them. They, in turn, will be its custodians and creators for future generations. No responsibility is more important to us than our responsibility to prepare the next generation to make informed and wise decisions for their own future and for the future of the world.

In response to strong interest from schools and universities about our work and our sustainability efforts, we developed short curriculums on climate and science for K-12 students, aligned with national science standards, focusing on empowering students and promoting the power of individual actions.

Our goal is for students to go home knowing they can make a difference, and understanding what choices they can make and what personal, local and global challenges they can take on to enable our beautiful planet and all its people to thrive.

We’ve also responded to requests from universities by helping individual students with research questions, doing joint research projects, and having our employee ambassadors give lectures, panel discussions and workshops.

Our employees have appeared at Harvard, MIT, Brandeis, the University of California, the University of Chicago, Stanford University, the University of Nebraska, and many of their alma maters. We are always happy to talk about the future of food.



CEO and Founder Pat Brown talks to students at Harvard University about biochemistry, entrepreneurship and making the food system sustainable.

LOCAL ECONOMY

We converted a mothballed industrial plant into a plant-based meat production facility, helping to bring food manufacturing back to East Oakland, Calif. (In the early 20th century, the region was a national leader for food manufacturing, but it fell on harder times late that century.) We created more than 50 jobs — and we intend to hire a second shift to double production by the end of 2018. Every employee gets an equity share in the company and ongoing training opportunities. We're proud to be part of a wave of new industries using cutting-edge technologies to create new manufacturing jobs in the United States.



FARMERS

As we scour the globe to find the best plants for our food, we spend a lot of time working with farmers, who make up the front line for both environmental stewardship and for feeding a growing population. We invest in field trials and long-term research through partnerships with farmers as we work to develop supply chain infrastructure.

We listen closely to what farmers need, what they see as challenges in the food system, what they think is already working and what they believe is broken. Plant-based meat opens up new opportunities for the agricultural community and generate a need for higher-margin crops. We're working to be a good partner to farmers and rural communities in their efforts to both succeed economically and serve as good stewards to the planet.

Technology and nature are not opposing forces. Making the global food system sustainable requires us to blend nature and science in smart ways to restore Earth.

Ultimately, we all share one future, one mission and one planet.

WILL YOU JOIN US?

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