synthesis Futures

MENU 2033

The Future of Food

What are the most likely scenarios for the future of food? How should F&B businesses prepare for what's to come?

MAY – JUNE 2023 | SYNTHESIS.PARTNERS

WELCOME TO MENU 2033

Menu 2033 is our flagship Futures experiential event. Following a successful event (MENU 2030) last year, this is our second run where we unite 200 forward thinking brands, government agencies, investors to taste the future.

This report is a data inspired simulation of the most plausible futures of food. To help the F&B industry imagine, prepare for and proactively create what's next.

Synthesis specialise in Open Source Intelligence for Brands. Layering the best data from anywhere, for example...

- Patents and academic papers published
- Google Searches
- UN, WHO, Pitchbook, FAO...

...and leveraging innovative modelling and analytical techniques to answer challenging questions of our time, like, **What is the Future of Food?**

We simulated 100,000 versions of the world in 2033 (LEARN HOW HERE) to reveal the four most likely futures of food.

To bring each future to life, we partnered with chefs to transform the data into delicious tasting menus.

The pages that follow, bring it all together. Bon appetit!

THE FUTURE OF FOOD

The years ahead present both enormous challenges and exciting opportunities for F&B.

Projections are clear that we'll see rising populations, rising demand for meat, more animal borne disease, inflated food prices and more extreme weather. **Our relationship with food must change.**

At the same time, the future of food has never been more inspiring and creative. In this report you'll be introduced to real innovations previously reserved to the realms of sci-fi.

From cultivated meat, to a plant-based world beyond soy and oats (enter seaweeds and algae) to air protein. From exploring the wonders of biomass like insects, subterranean mycelium or jellyfish, to new techniques of agroforestry for conventional meat. Sit back and prepare to discover the future of food.

MENU 2033

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A Quick Rewind

To unlock the future of food, we identified and tracked over 30 drivers of change that will impact how food is produced and how people eat and drink.

Since we published our last Future of Food report in 2022, we continue to see the drivers in action. These affect our food supply chain and what people have on their plates.

ERRATIC TRADE RELATIONS

JUNE 2022: 21 countries have implemented 27 food export bans, a surge from Russia's invasion of Ukraine.

RISE OF GEN Z

RISING FOOD PRICES

ACCESSIBILITY TO CLEAN MEAT

NOV 2022: US FDA approves lab-grown meat as safe to eat.

AGEING POPULATION

GROWING INVESTMENTS IN FOOD TECHNOLOGY

CHANGING HOUSEHOLD STRUCTURES

INCREASING REGULATORY FOCUS ON NUTRITION

RISE IN DISEASE OUTBREAK

MARCH 2023: Shortage of local pork feared in the Philippines due to the African Swine Fever (ASF).

RISING APPLICATION OF AI

GROWING ECONOMIC INFLUENCE OF EMERGING MARKETS

MORE EXTREME WEATHER

MAY 2022: India, world's second largest wheat exporter, bans wheat exports as heat waves hurt crops.

The Road Ahead

Fast forward to 2033, we anticipate these drivers of change to continue shaping the future of food:

2023
Lost and Resurrected
World's first lab-grown extinct mammoth Meatball from Vow.

2025
Are Potatoes Next?
Lethal fungus wipes out global banana production, 30 crops at risk.

2030
Era of Entomophagy
McDonald's McCricket sales surge thanks to Gen Alpha's eco-conscious palate.

2033
Menu Personalisation in Progress
You can now scan your biochip to optimise your meal.

The future of food is a challenging and exciting one. From rethinking sourcing to reimagining sustenance, what else can we anticipate and how will we choose to participate?

How would you eat and drink in 2033?

Explore 2033 with us and choose your future food adventure.

The future is not yet cast in stone. When we ran **100,000 simulations**, 4 scenarios emerged. We hope for you to experience not just one, but multiple futures. This helps you better prepare and ultimately invent the future.

synthesis

"To plant a garden is to believe in tomorrow"

CLICK TO DISCOVER PLANT POWER

"The best way to predict the future is to create it"

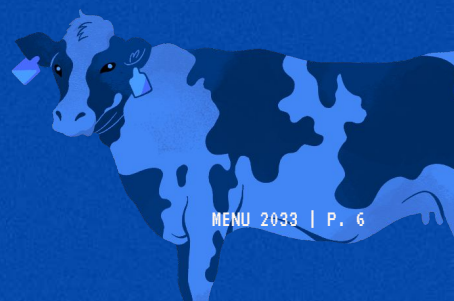
CLICK TO DISCOVER CULTIVATED CUISINE

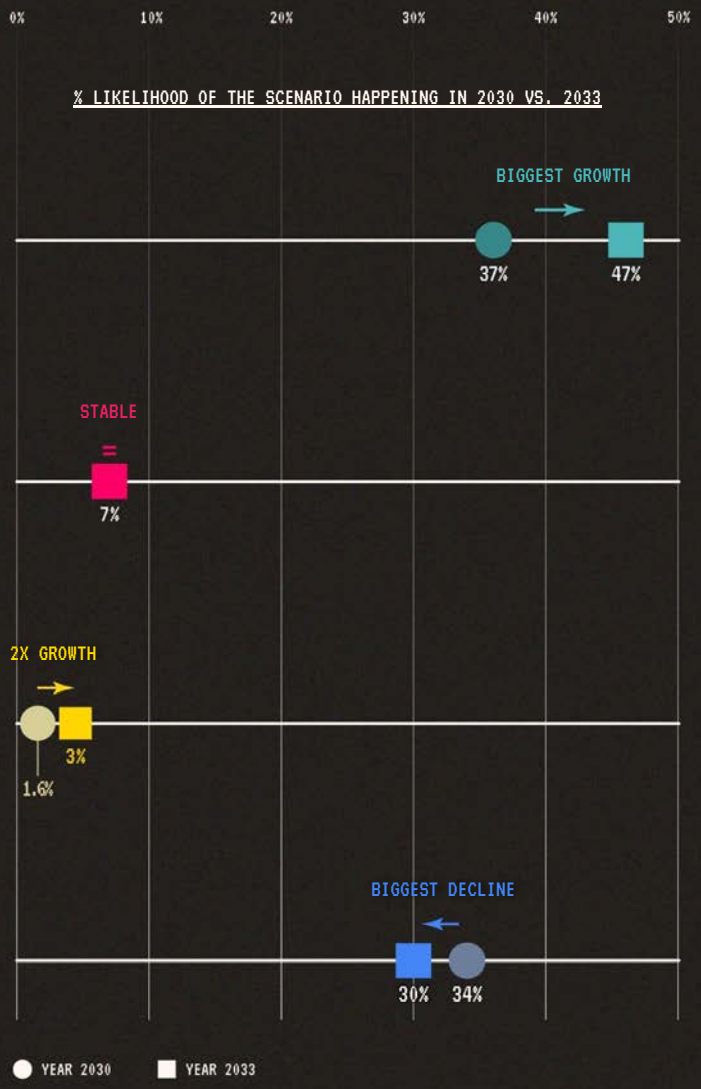
"The limitation of resources is an invitation to creativity"

CLICK TO DISCOVER BALANCING BIOMASS

"The status quo thrives on the comfort of familiarity"

CLICK TO DISCOVER MEATYVERSE





Future of Food Summary

Synthesis Futures continuously monitors the most important drivers of change, to update our model and ensure our partners know which signals to react to.

Plant Power

People incorporate plant-based meat as their primary choice of proteins in their diets. In the next 10 years, there is little to no compromise on taste, texture and price of plant-based meat.

WHAT DRIVES THIS WORLD?
- ▲ Plant-based meat accessibility
- ▲ Volatility of global trade
- ▲ Annual investment in plant-based meat

Cultivated Cuisine

Cultivated food is preferred, with high acceptance and affordability. An extensive selection of cultivated products exists to cater to diverse consumer tastes. Conventional meat prices increase.

WHAT DRIVES THIS WORLD?
- ▲ Impact of human & animal disease outbreaks
- ▲ Interest in cultivated meat
- ▼ Real meat accessibility

Balancing Biomass

Meat in all guises (conventional, plant-based, cultivated) declines, driven primarily by lack of availability and high price points. Alternative, highly accessible biomass like jellyfish, squid and insects feature prominently.

WHAT DRIVES THIS WORLD?
- ▲ Impact of human & animal disease outbreaks
- ▲ Increased awareness in low impact diets
- ▼ Annual investment in plant-based meat

Meaty -verse

Conventional meat remains the preferred choice of protein. However, rising disease outbreaks, food prices and sustainability concerns challenge the accessibility to meat.

WHAT DRIVES THIS WORLD?
- ▲ Meat demand
- ▲ Agricultural efficiency
- ▲ Tariffs in food products

Plant Power

Are we ready for a world without rice, wheat, soy or corn on our plates?

Would you still buy your favourite snack if it had an “F” carbon score?

What if we directly liaise with farmers to harvest as we need?

What if community farming is the key to owning a home?

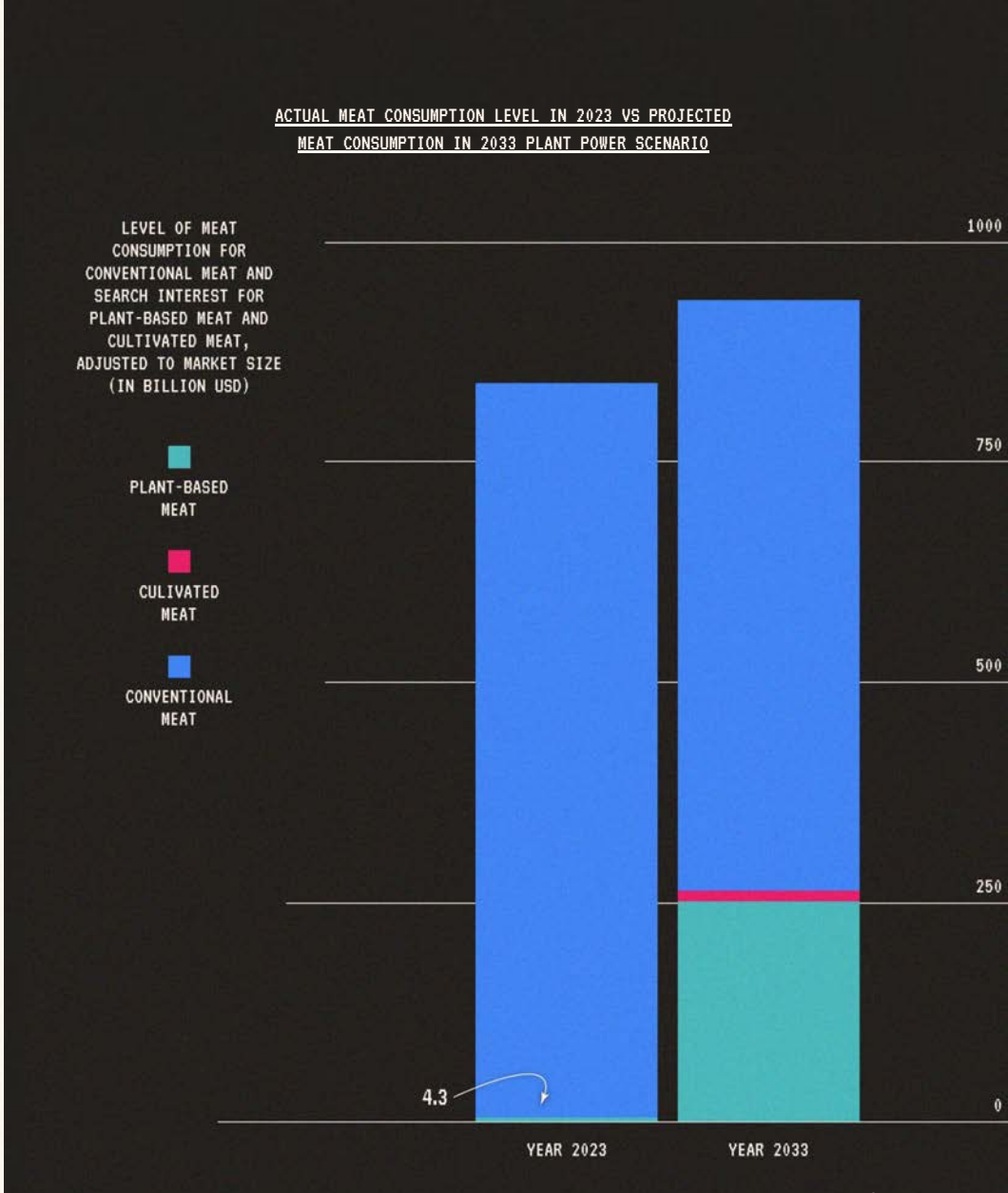
Plant Power

A world where plants begin to outgrow conventional meat.

In 2033, plant-based meat is consumed two days per week vs. two days per year in 2020, accounting for 27% of our protein intake.

It is considered to be healthier, environmentally friendlier, and cruelty-free. Driven by high investment in the industry, breakthroughs in research and development is achieved. Consumers experience little compromise in taste, texture, or price compared to traditional meat.

Conventional meat production continues to grow, to keep up with the demand of a growing population and growing middle class. But its growth rate has slowed, with more people eating a greater share of plant based in their diet. Rising demand for conventional meat, coupled with growing disease outbreaks and trade fluctuations, has also driven up the price of meat, making it less easily accessible to everyone.



What drives this world?

▲ PLANT-BASED MEAT ACCESSIBILITY

Plant based products become more accessible benefiting from regulatory support and competitive pricing vs. other alternative proteins.

▲ GLOBAL TRADE VOLATILITY

Increased trade fluctuations and shifting geopolitics translate into variable meat prices and availability. Countries enact policies of self-reliance to reduce dependence on imports, benefitting local farming industries.

➞ Russia's invasion of Ukraine and rising geopolitical tensions around China have accelerated the impact of this driver.

▲ ANNUAL INVESTMENT IN PLANT-BASED MEAT

Ample investment drives product innovation, research and development. Players offer a wider range of plant-based products with different sensory experiences, nutrition and ingredients to meet growing consumer demands.

% LIKELIHOOD OF THE SCENARIO HAPPENING	37% 2030	›	47%^ 2033

IMAGE SOURCES: SHUTTERSTOCK | REUTERS | NAVDANYA

The Ocean is the New Agricultural Frontier

Algae emerges as a game-changer in plant protein. It is easy to cultivate, grows rapidly and its taste and texture are malleable. Covering 71% of the planet's surface, the ocean presents an unparalleled opportunity to propel the future of plant-based protein.

Swiss researchers, from ETH Zurich, experimenting with microalgae have successfully emulated the taste and texture of shrimp, preempting a vegan seafood boom.

Responsible Core Ingredients

Soy is often vilified as a deforestation crop. Yet, only 7% of soy is directly consumed by humans, the rest is fed to livestock. The most effective anti-deforestation measure remains to eat less meat. The Round Table on Responsible Soy Association promotes sustainable cultivation to ensure environmental and social standards are met.

Tesco & Sainsbury founded The Responsible Commodities Facility (RCF) initiative for deforestation-free soy, which produced 42,000 tons of in its first year.

A Need to Diversify Our Calories

Our food system heavily relies on four crops - rice, wheat, potatoes, and corn provide 66% of our calories. However, there are over 6000 other crops that remain largely untapped. Embracing more diverse food systems enhances our resilience and minimises impact on the planet.

Navdanya, an Indian-based NGO, has set up 150 community seed banks that host seeds for 4000+ varieties of rice. By preserving often forgotten crops, it aims to diversify the nation's crops and increase its food resilience.

What's on my plate?

A DATA COLLABORATION WITH
Chef Oliver Truesdale-Jutras

"I have tried a lot of vegan desserts and **this is the best I have tasted so far.** It is very interesting and I believe, that because it is Mycelium based, it is also very nutritious."

Didier Chanoeve
KERRY, DIRECTOR OF ALTERNATIVE PROTEINS

Sea-Viche

A plant-based twist on traditional ceviche. Keeping true to its ocean origins, the Tosaka Nori seaweed provides a firm texture that resembles sliced fish. As overfishing depletes fish stocks and sea temperatures rise, nutritious seaweed is predicted to become highly accessible.

Lion's Mane Curry

The mushroom replicates the fibrous texture of meat, while the curry uses OATSIDE milk and chickpeas in place of traditional dairy, giving it a rich and creamy texture. In contrast to the premium 'sea-viche' served as a starter, this plate is inspired by the humble dishes of South Asia, showcasing the versatility and accessibility of plant based dishes.

Myco-Mousse

This is a mycelium, from Bewilder, chocolate mousse paired with aquafaba meringue. Mycelium is a network of mushroom threads, which can be easily grown in small, low-impact urban farms. The meringue is made of aquafaba - the remaining water from the drained chickpeas. Often discarded, here it has been reused to give the meringue an airy texture without eggs.

"Exploring the capabilities of Mycelium and their fruiting bodies (mushrooms) is a never ending rabbit hole."

CHEF OLIVER

Founders of the Future

AN INTERVIEW WITH

Blair Crichton

KARANA, FOUNDER

synthesis

> “We will see more big food companies using more future-forward climate-resilient crops, promoting a better food system.”

TELL US ABOUT KARANA:

"We are a brand aimed at scaling Jackfruit as the next CLIMATE SUPER CROP, promoting a regenerative farming system. The first application is as meat made from jackfruit.

Our current product is a great minced meat made from jackfruit. We saw how consumers pushed back against the first generation of plant-based products, which they saw as having long ingredient lists or being too heavily processed.

And so we respect the plant's origin and don't try and alter them too much to get the whole plant-based nutrition.

Today we offer our jackfruit product platform B2B, to both food-service and other CPG companies.

YOUR VISION FOR FUTURE OF FOOD:

"The discourse around regenerative agriculture will become more important. We will see more big food companies using regenerative future-forward climate-resilient crops, promoting a better food system.

I agree with the plant power scenario. It talks about including more biodiversity, moving away from commodity crops, and having whole foods and natural products. That ties in what we are doing at KARANA as well, which is to leverage these amazing existing crops and bring them to market in exciting and novel ways.

I thought it was great how the scenario was close to a 50% likelihood of happening, but we're obviously working to make that closer to 100%."

HOW DO WE UNLOCK THIS FUTURE:

"To drive the adoption of a plant-powered future, there are four key things to consider.

Firstly, we need to get the taste right. So we need to offer products that taste great.

Secondly, we need to have competitively priced products, particularly as we enter an inflationary environment. People are watching their wallets a lot more so these products must remain affordable.

Thirdly, we need a lot more education of consumers. Currently, there is some awareness but many consumers need help understanding the consequences of their food choices and the need for a more regenerative and biodiverse agriculture system.

The fourth thing is policy. Countries like Singapore are very policy forward, but we currently compete with heavily subsidised meat players that keeps their price low."

Implications

A Plant Powered future is the most likely scenario in 2033 at 47% likelihood of happening. Brands must prepare for the pivot towards the mainstream adoption of plant-based protein.

In order to thrive in this scenario, consider...

PLAYING DIRTY

As sustainability becomes table stakes, ‘cleaner than meat’ claims will no longer be a distinctive driver of choice. Disrupt and play dirty. Go all in and fully dial up the sensory, emotive codes of that moment, rather than playing the role of a cleaner, healthier alternative meat. Greasy goodness or crispy char anyone?

ELEMENTAL EATS

Expand beyond the core ingredients of soy, pea and wheat. Harvest the power of sea and air to unlock new taste profiles and diversify ingredients sourcing. Have you tried algae ice cream or protein from air?

SOWING THE SEEDS

We have convinced the vegans and converted the flexitarians. Make plant-based eating a habit through lobbying for plant-based school nutrition programs and partnering nutrition tracking ecosystems.

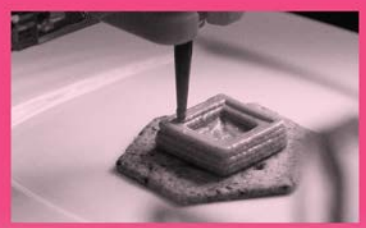
CHOOSE YOUR NEXT FOOD FUTURE

Cultivated Cuisine

What if we could eat T-Rexes and mammoths?

What if you couldn't get chocolate from nature again?

What if conventional meat carried graphic warning labels?



What if restaurants could 3D print your plant-based nuggets with the perfect bite size for you?

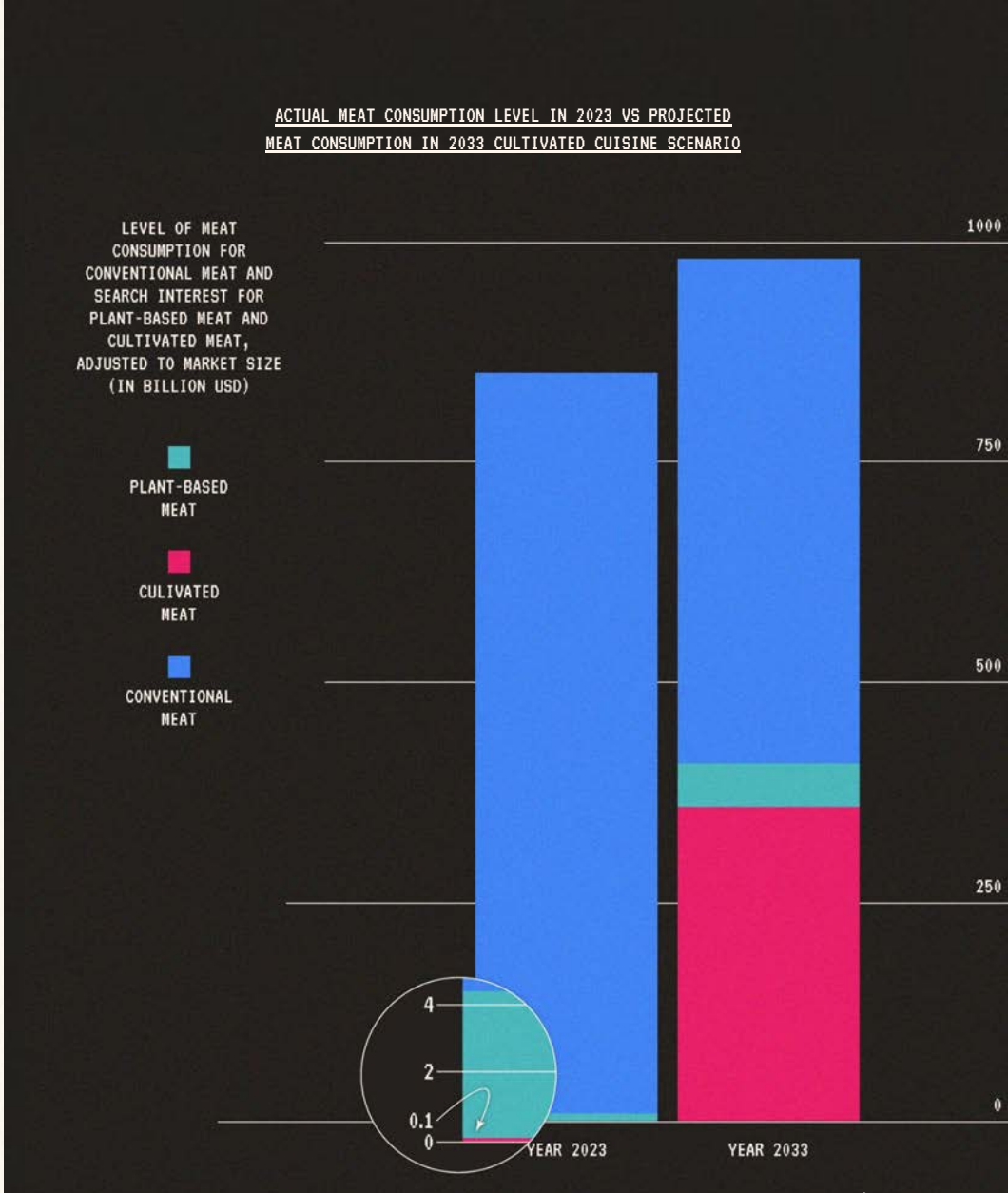
Cultivated Cuisine

A world where cultivated meat usurps plant-based meat.

In this world, cultivated meat is affordable and accessible. This is driven by rapid progress in cellular agriculture and government subsidies.

Cultivated meat accounts for 36% of protein consumed, where innovation has delivered enhanced taste, texture, and nutrition. Economic pressures of cultivated meat, like the ‘endotoxin challenge’ have been resolved, reducing the cost of cell feed, and enabling operations to scale.

Plant-based meat has become a fad, accounting for only 5% of consumed protein and is increasingly perceived as mock meat. While still available on shelves and menus, it is rarely the top choice for consumers. Concerns around additives, high-level processing, and perceived health risks have made many people wary of plant-based meat. It now caters to niche audiences of ‘purist’ vegetarians or those who cannot afford conventional or cultivated meat.



What drives this world?

▲ IMPACT OF HUMAN & ANIMAL DISEASES

Communicable diseases negatively impact meat production, with countries needing to cull livestock at outbreaks. This sways public opinion away from animal consumption, increases shortages and drives up conventional meat pricing.

➞ Avian Flu in East Asia and updated Covid metrics have accelerated the impact of this driver, with more outbreaks expected in the future.

▼ REAL MEAT ACCESSIBILITY

Logistical and supply chain issues have created a shortage of meat and driven up its price, leading consumers to seek out alternatives that best satisfy their demand for the taste and texture. This has opened up a space for the emergence of protein alternatives.

▲ INTEREST IN CULTIVATED MEAT

Consumer interest and demand for meat that is produced through cellular agriculture or lab-grown methods. This is mostly influenced by perceptions of sustainability, animal welfare & food safety.

% LIKELIHOOD OF THE SCENARIO HAPPENING

7% 2030 > 7%= 2033

IMAGE SOURCES: REUTERS

A Range of Hybrid, Exotic and Even Extinct Meats

Tech advancements allow for more diverse meat selection, with cultivated meat offering more health and nutrition benefits than traditional meat. Competition for investment and attention will drive boundary pushing innovation and activations like combining the best traits of many species, including extinct or exotic animals.

Vow made headlines globally when they launched a Wooly Mammoth Meatball in 2023, 4,000 years after it went extinct, to demonstrate the potential of meat grown from cells.

Leveraging Technology to Improve Resilience, Taste and Nutrition

From potatoes enriched with proteins to insect-resistant bok choy, cell-based technologies in this world extends beyond lab-grown meat. Scientists leverage gene editing technology to enhance the flavour, nutrition and endurance of crops by introducing specific genes into the crop's genetic code.

Chinese Shandong Shunfeng Biotechnology had modified two genes in the soy plant, significantly raising the healthy fat oleic acid level. China has approved the gene-edited strain to increase food production through science.

Digital Spaces Become Dining Platforms

Technology has advanced beyond ingredients and preparation of food. Consumers enjoy a wide variety of flavours virtually through a screen. With a few clicks, people have access to a vast library of different scents and flavours, all from the comfort of their own homes.

A Japanese professor has developed the TTTV (Taste the TV) - a "lickable screen" that can recreate food flavours for a multi-sensorial viewing experience.

What's on my plate?

A DATA COLLABORATION WITH
Chef Oliver Truesdale-Jutras

"I was pleased to have tried the Cultivated Cuisine! **Incorporating cultivated quail in Gyoza highlights the versatility of cultivated food products while ensuring familiarity through conventional sentiment.** In the face of rising protein demand and food security concerns,
I am excited to see cultivated foods as part of sustainable food production for the future.
I applaud Vow's achievement on taste and texture for the quail."

Peter Yu
PROGRAM DIRECTOR, APAC
SOCIETY FOR CELLULAR AGRICULTURE

Fowl Play

...is a dumpling filled with Vow's cultivated Japanese quail. As cell-based meat has become popular, food manufacturers can focus on meat forms beyond traditional beef or chicken, occupying more niche taste spaces.

CHEF OLIVER

"The idea that labs could eventually be provided information in order to grow different structures of proteins is a very compelling notion. Information travels easier and far more sustainably than products."

Eggless Chicken and Chickenless Egg

A playful twist pairing lab chicken larb with puffed rice and a plant-based poached egg. In this tech-driven world, eggs will not come from chicken, and chicken will not come from eggs; they'll both originate in labs.

Sweet Inception

A dessert that offers a chocolate indulgence without using any chocolate. Climate change is affecting large-scale cacao plantations, risking the current supply volumes. This is a carob-based dessert augmented with chocolate scent to replicate the chocolate experience, pushing the boundaries of flavour conservation.

Founders of the Future

AN INTERVIEW WITH

George Peppou

VOW, CEO & FOUNDER

> “Some countries, like Singapore, are forward thinking, encouraging cultured meat as a pillar to ensure their long-term food security strategy.”

TELL US ABOUT VOW:

“Vow is a world-leading food company making sustainability irresistible with cultured meat, all from Sydney, Australia.

We’re inventing new products by growing the cells of animals rather than the animals themselves. For us as diners, this means tastier and more nutritious meat – and for the future of our environment, this means a smaller land footprint and a fraction of the greenhouse gases produced by factory farming.

It's the best possible way to make better food available to billions of people.”

YOUR VISION FOR FUTURE OF FOOD:

“At Vow, our obsession is inventing meat products that are tastier, more nutritious, and far more sustainable than meat from animals. So, my vision is very much aligned with the Cultured Cuisine future scenario.

With this technology, we’re able to create entirely new products. We're working a lot on inventing new meats, often by mixing the cells of different species as a way of creating experiences that no single animal could produce. So you can expect really exciting flavors and textures.

Whilst that may sound wild it’s how we buy much of a food. There’s no plant that grows Cheerios or Froot Loops, but we all understand why we would buy these cereals. We are doing the same thing with meat - inventing new products that we will choose selfishly.

That’s a future I’m looking forward to, and one we’re proud to be bringing to life – starting here in Singapore.”

HOW DO WE UNLOCK THIS FUTURE:

“Within the category there are large challenges we and others in the industry are working to overcome to drive mass adoption.

We are trying to scale an extremely sensitive biological system at a lower cost while adhering to extremely stringent safety standards.

Some countries, like Singapore, are forward thinking – encouraging cultured meat as a pillar to ensure their long-term food security strategy.

But of course, we have to start somewhere. That’s why we recently created the Mammoth Meatball, to starting a global conversation around the future of food. By getting people excited about cultured meat, we hope to bring about the change needed to unlock this future”

Implications

At 7% likelihood of happening, Cultivated Cuisine offers a plausible world where food production dramatically shifts through precision fermentation and molecular farming.

In order to thrive in this scenario, consider...

OWNING YOUR ADVANTAGE

Pivot from taste and texture replication of meat. Set new standards in the F&B category. Lab-grown food unlocks possible claims of “world’s cleanest” or “most personalisable”. Can we tackle dysphagia with easy-to-swallow cultivated meat or make “franken-food” through combining different types of meat cells to enhance nutrition and taste?

BORROWING AN EXPERT

Seek the endorsement of medical professionals and nutrition specialists to instil peace of mind and confidence in the unfamiliar. Mimic the success of toothpaste marketing with their trusted "9 out of 10 dentists" claims. Demystify precision fermentation with a friendly face.

INTERCEPT MEAT HABIT FORMING MOMENTS

In places with a rapidly growing middle class, meat demand always rockets. How might we target consumers to intercept the meat habit with cultivated meat and get ahead of meat players to fill this demand creation moment?

Balancing Biomass

Are you ready to eat the consequences of climate change?

What if long-frozen pathogens “wake up”?

Would you drink cockroach milk for the ultimate protein boost?

What if you could get better memory through your morning coffee?

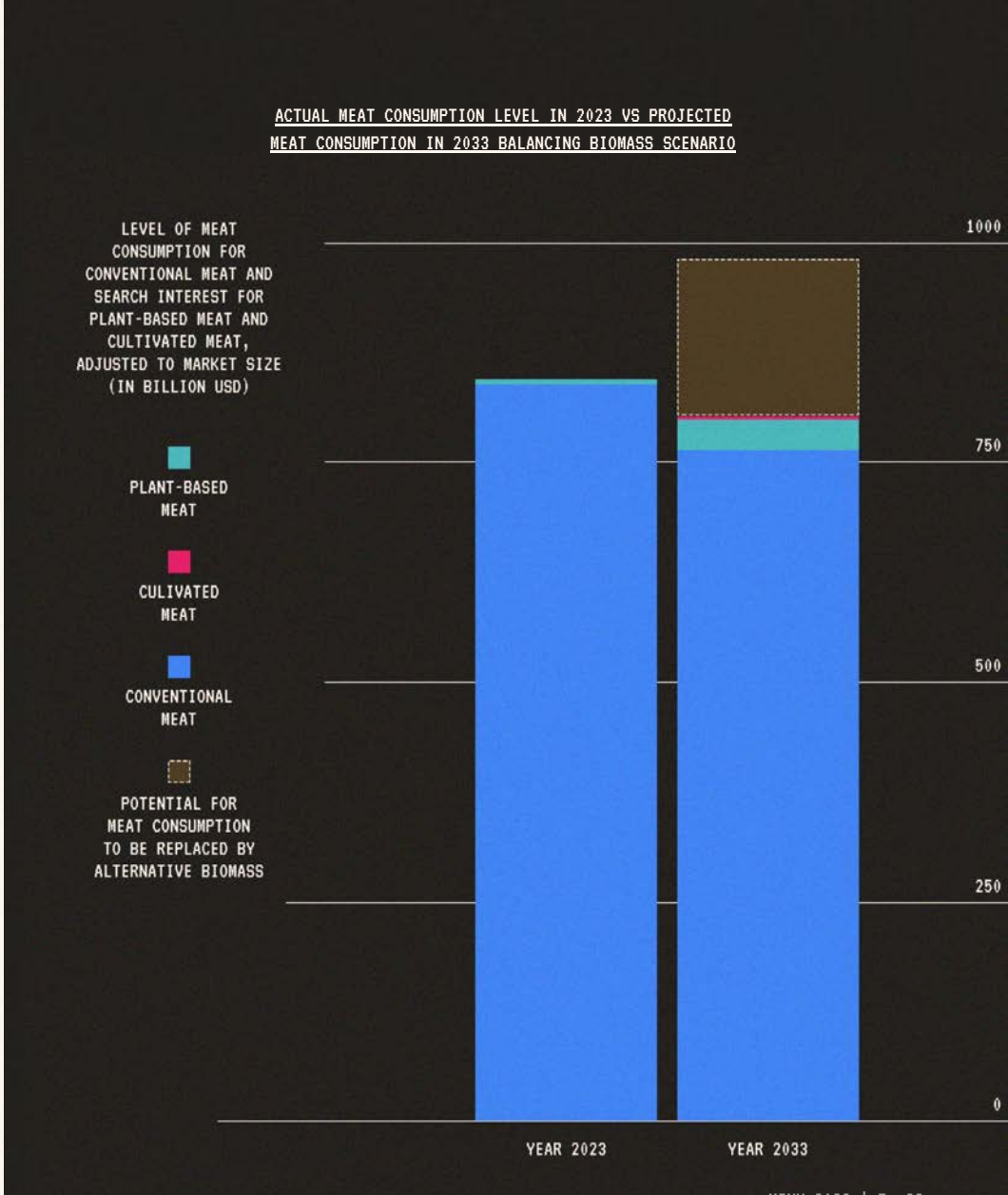
Balancing Biomass

A world where meat is consumed less.

Conventional meat supply has been negatively hit by disease outbreaks. Limited investment in alternative meats boost consumption of plant-based meat and cultivated meat. However, there is an overall decline in market size of the aggregated meat categories.

Climate change related ecological changes result in large jellyfish and squid blooms which make these protein sources widely available. Insect consumption is also on the rise, acting as a low carbon protein source.

While representing the smallest likelihood, the probability of this scenario happening nearly doubled in the past year. The rise speaks to a future where meat demand will still be there, but an overstretched industry will face issues to supply. Enter biomass.



What drives this world?

▲ IMPACT OF HUMAN & ANIMAL DISEASES

Communicable diseases hit meat production, with countries culling livestock and swaying public opinion away from meat consumption.

➟ Avian Flu in East Asia and Covid-19 measures accelerated the impact of this driver.

▲ INCREASED AWARENESS IN LOW IMPACT DIETS

Veganism and vegetarianism increase, but the largest growth is flexitarians. To reduce meat consumption and environmental impact, they are more open to lower impact proteins.

▼ ANNUAL INVESTMENT IN PLANT-BASED MEAT

With lower investment levels, plant-based products fail on taste and sensory expectations. Lower demand translates to limited availability across markets.

% LIKELIHOOD OF THE SCENARIO HAPPENING

1.6% 2030 › 3%^ 2033

IMAGE SOURCES: EUREKALERT | SHUTTERSTOCK | REEF

A Golden Era for Jellyfish

Jellyfish in our diets reduce dependence on overfished species and alleviate pressure on marine ecosystems impacted by blooms.

Researchers from the University of Southern Denmark have developed a method to turn jellyfish into crunchy chips, offering an alternative to traditional preparations while tapping into their low in calories but nutritious nature.

The Rise of Entomophagy

Uptake of insects present several advantages: minimal environmental impact, reduced land and manpower requirements, and high calorie to protein ratio. They require less water, feed, and space for cultivation, making them a sustainable food option.

Hargol FoodTech tackles the ick factor by producing consumer-friendly, insect-based products like falafel and gummy bears. They have also increased production efficiency by feeding grasshoppers with dry feed, reducing feeding costs -97%.

Eating Our Impact

Human activities have introduced non-native species globally, damaging the ecosystems. For example, lionfish, originally from the Indo-Pacific, have proliferated in Caribbean waters, decimating native fish populations. Encouraging the consumption of lionfish can create economic opportunities while limiting their environmental impact.

The Florida Fish & Wildlife Conservation Commission launched an annual lionfish hunting competition aimed at ridding the seas of the invasive species and fostering their consumption.

What's on my plate?

A DATA COLLABORATION WITH
Chef Oliver Truesdale-Jutras

"I experienced Balancing Biomass, and it was 'surprisingly normal'. I liked the Zero Waste Pumpkin on top of a jackfruit ragu which tasted like something I would normally eat.

That's the beauty of it, it would fit seamlessly into a normal lifestyle."

Grace Astari

DIAGEO, GLOBAL INNOVATION CREATIVE LEAD

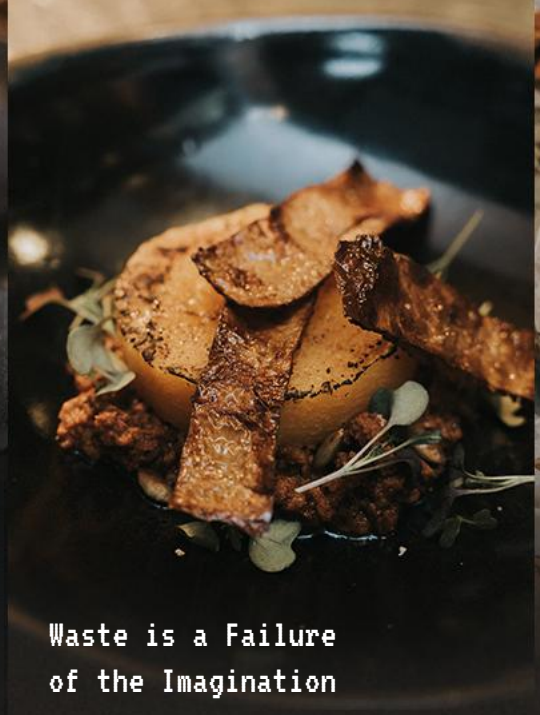
synthesis

Oodled by Noodle

This is a jellyfish & squid-based Korean japchae with a gochujang and sesame dressing. Warmer ocean temperatures are driving both fish to bloom. While common in East Asian dishes, jellyfish has remained largely absent from most cuisines, offering an opportunity and challenge to introduce an unfamiliar protein source.

CHEF OLIVER

"The idea behind making jellyfish and crickets as innocuous and delicious as possible is to force people to confront a certain style of brainwashing, namely what we perceive as "icky" or "delicious" is largely baked into us by society instead of instinctive."



Waste is a Failure of the Imagination

... is the philosophy behind this zero-waste dish. The pumpkin is baked in a crust of upcycled coffee pucks and eggshells. It is topped with pumpkin skin chips, adding an unexpected crunch fully utilising the whole pumpkin. Finally, it is all served on a bed of KARANA jackfruit ragout - made entirely from a climate-resilient, rising crop.

Candy Creatures

... showcases cricket madeleines with truffle ice cream and candied scoby. The madeleines are made with finely ground cricket flour, speaking to mixing insects into our diets to achieve sustainable food security. The scoby is a bacteria-based component from kombucha, highlighting how we can find great taste in uncommon sources.

Founders of the Future

AN INTERVIEW WITH

Christopher Leow

FUTURE PROTEIN SOLUTIONS,
CEO & CO-FOUNDER

> “The beauty of insects as an alternative protein is their exponential growth rate. In the tropics especially, they require a lot less resources to grow, compared to livestock like beef.”

TELL US ABOUT FPS:

Future Protein Solutions is an insect protein company, where we produce and supply clean label insect ingredients to the industry for human food, pet food and animal feed.

YOUR VISION FOR FUTURE OF FOOD:

The Balancing Biomass future is very relevant to me as it forces us to look at alternative protein sources, and to look at what grows really well in our own local environment - especially when we can’t rely on meat imports.

The beauty of insects as an alternative protein is that their growth rate is exponential as they can lay hundreds of eggs. In the tropics especially, they require a lot less resources to grow, compared to livestock like beef.

Insects are a “hack” or “cheat code” in our tropical environment, so it really makes sense to farm them as an alternative protein source in this part of the world.

HOW DO WE UNLOCK THIS FUTURE:

A lot of the challenge today lies in education in terms of flavour. Insects are very very tasty, and have high protein content, so there’s really no reason why people shouldn’t be consuming them.

We need more education and marketing to overcome cultural barriers to eating insects.

Implications

While small in probability, the Balancing Biomass scenario has doubled in 12 months. Are you prepared for emerging consumer preferences for more diversity in their food?

In order to thrive in this scenario, consider...

UNLOCKING CULINARY FRONTIERS

Become a modern-day Trojan Horse and infiltrate consumers' kitchens. Integrate novel ingredients via familiar cuisine formats and dishes. Further fuel the trend by training chefs and using culinary influencers, normalising the consumption of previously unfamiliar ingredients.

GOOD FOR HEALTH, GOOD FOR EARTH

Evolve national and schools' nutrition guidelines to consider beyond nutritional and health aspects. What is the equivalent of "eat more veggies" when it comes to eating for climate resilience. Should nutrition apps count calories, carbon and also biomass diversity?

UNLEASH HIDDEN OPPORTUNITIES

In the face of climate change, be the visionary that taps into unintended consequences, uncovering supply spaces that others have not yet considered. From the proliferation of sargassum in the Caribbean to jellyfish blooms, seize the opportunity to get ahead by harnessing these resources before others catch on.

Meaty

The burp premium: what if beef prices are based on their carbon footprint?

Would you decorate your house with bones & fats?

-verse

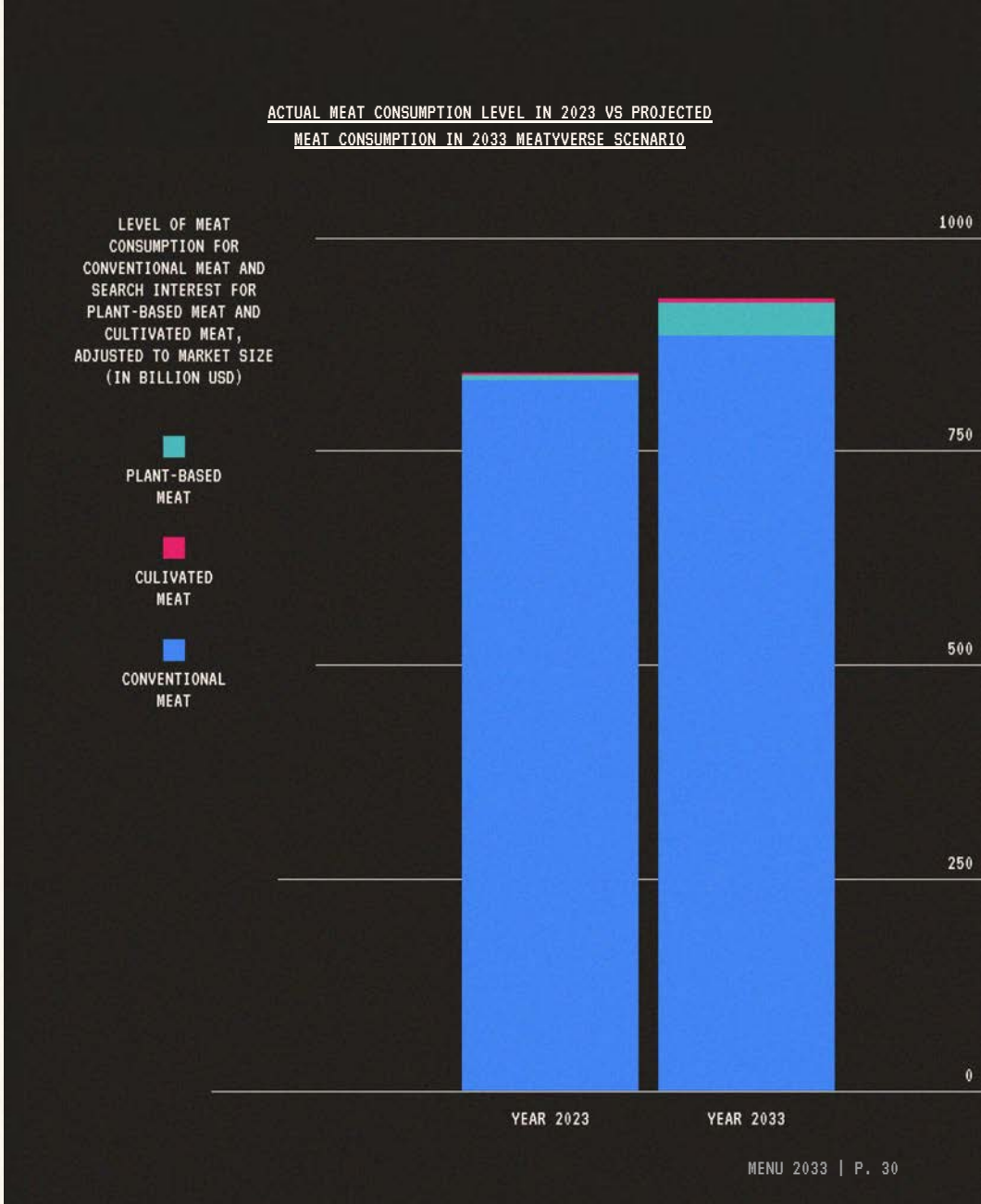
Meatyverse

In this world, conventional meat reigns supreme.

Global meat demand continues to rise as consumers in fast growing emerging markets consume meat more regularly.

However, sustainability concerns double down. Animal welfare and care for the earth drive environmental improvements in the food production systems. Governments actively encourage agroforestry like silvopastoral systems due to their increased food production and reduced impact. Technological advancements open the way for more resource-efficient meat production systems. Businesses also become adept at maximising all animal parts from head to tail to stretch supply.

While conventional meat accounts for 96% of our protein intake, this has decreased from its 99.8% share in 2023. Supply continues to be a challenge with persistent disease outbreaks and higher imposed tariffs. People occasionally choose plant-based meat as a healthier alternative or guilt-free indulgence.



What drives this world?

▲ MEAT DEMAND

Meat consumption is anticipated to increase significantly over the next decade due to the rising global population, improving economic conditions, and changing dietary preferences in emerging markets - where meat is often a status symbol.

▲ AGRICULTURAL EFFICIENCY

Advancements in agricultural technology are expected to boost productivity and efficiency in livestock production. Coupled with increasing consumer demand for high-quality and ethically sourced meat, it will likely result in a rise in meat consumption.

▲ TARIFFS OF FOOD PRODUCTS

Countries take a more protectionist approach to food production due to the effects of climate change. Governments strengthen local food production by imposing import tariffs, while others seek to ensure their population is fed before food is exported and impose export restrictions.

% LIKELIHOOD OF THE SCENARIO HAPPENING

34% 2030 › 30%˅ 2033

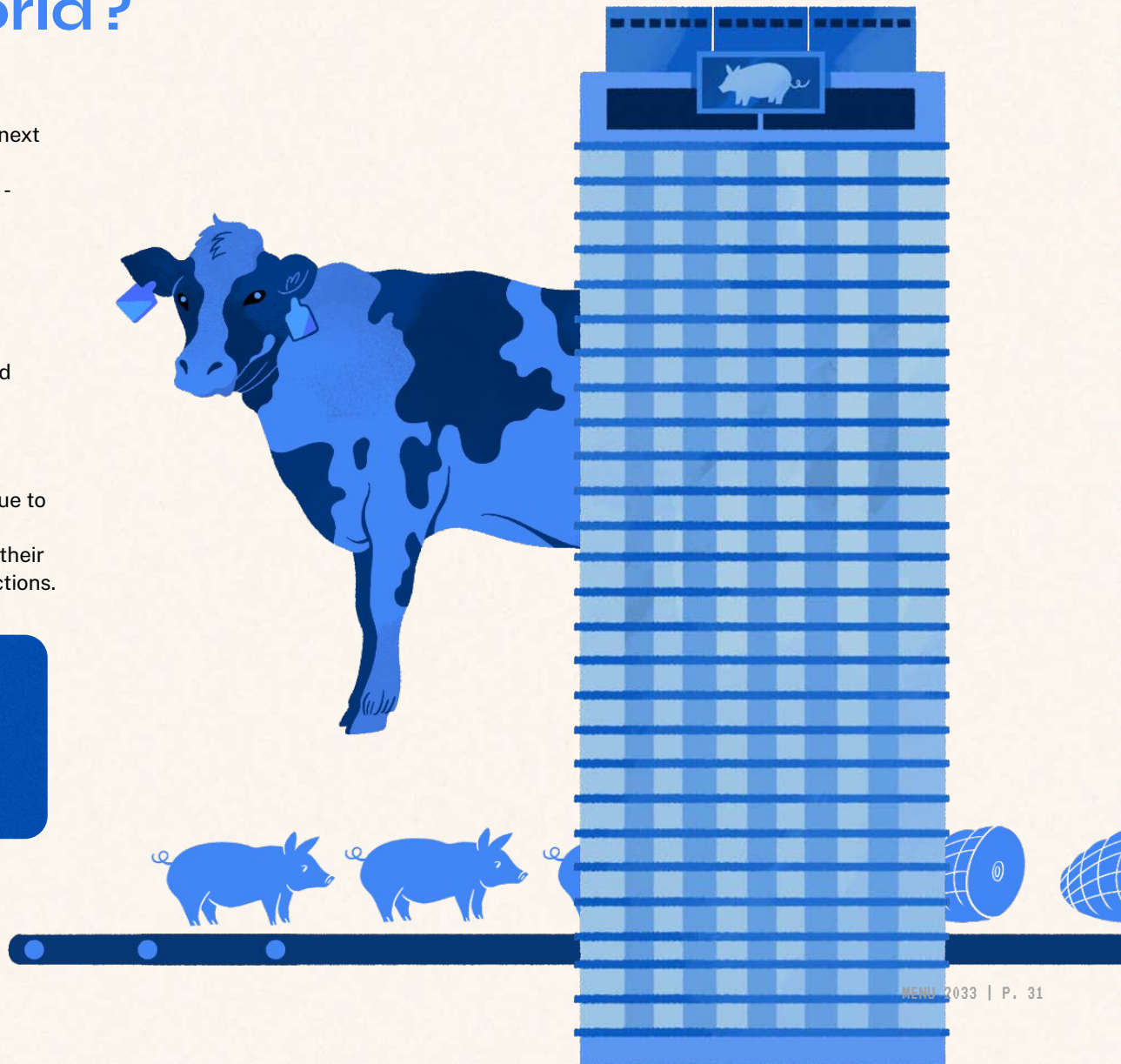


IMAGE SOURCES: EUREKALERT | SHUTTERSTOCK | REEF

Urban Meat Production Systems

“Meat skyscrapers” are the new farms. These vertical farming facilities accommodate large-scale animal production within urban areas, optimising land use and reducing transportation costs. However, such developments require careful consideration of environmental impact, animal welfare, and biosecurity.

China’s 26-story pig skyscraper is the world’s biggest single-building pig farm. Found in Ezhou, in Hubei province, the new urban farm is expected to produce 1 million pigs per year.

Agroforestry is the New Green

Meat players are encouraged to adopt silvopastoral and agroforestry systems. These approaches integrate trees, livestock, and crops, promoting biodiversity, carbon sequestration, and soil health. By adopting these practices, the industry aims to reduce deforestation, enhance disease resilience, and provide diversified income opportunities for farmers.

Brazilian beef giant Marfrig is building on its commitment to deliver a deforestation-free supply chain. It aims to reach net zero emissions by 2030 through adopting regenerative agriculture practices.

Technology to Mitigate Environmental Ills

Accompanied by innovations such as precision farming, improved waste management systems, and sustainable feed practices, the meat industry is better equipped for more sustainable and efficient production. Technology now offers solutions to optimise resource utilisation, minimise pollution and improve animal welfare.

Ruminant BioTech has developed a capsule solution that could reduce methane emissions from livestock by 70% and has recently received a NZ$7.8 million grant in support from the NZ government.

CHOOSE YOUR NEXT FOOD FUTURE

Behind the Scenes

Hello, we are synthesis Futures!

At Synthesis Futures, we are big on making futures work tangible.

If the future is dynamic,
why plan it in a static way?

We do simulations, not predictions. We model drivers of change to understand thousands of ways of how they will evolve and interact with each other. This allows us to go beyond vague ‘what if’ predictions to solid ‘what is’ scenarios. Reach out to interact with the future and beta-test our client-facing Scenarios Simulator.

The future is best experienced, not read.

Menu 2033 is a testament to the power of futures brought to life. We are a team of futurists, data scientists, and creatives that translates scenarios and trends into immersive experiences. Contact us for a Menu 2033 presentation or to organise a tasting session for your organisation.

Make your future tangible:

- Future-proof your view on the future of your audience, market and category
- Embed foresight capabilities in your organisation
- Design futures experiences to inspire strategy and innovation planning

Get in touch at

futures@synthesis.partners

Methodology

How we shape these futures.

- Identify drivers of change that will impact supply and demand of food in the next 10 years
- Apply Futures Cognitive Mapping to understand the causal relationship between key drivers through machine learning modelling of historical and projected data
- Simulate 100,000 futures with Monte Carlo Simulation to randomise the change drivers based on future probability distribution
- Identify and size scenarios based on aggregated outcomes and top critical uncertainties
- Enrich our scenarios with our Early Signal Radar tool that aggregates and discovers pre-commercial signals from patents, academic papers and startups
- Storytell how the scenario will impact the way people live, nourish and play in the future, translating them to experiences

We're invested in the future too.

Year on year, we refresh our database and improve our foresight tools for our scenarios to be sharper and smarter. In the past year, our Futures team innovated continuously to unlock.

MORE SIMULATIONS

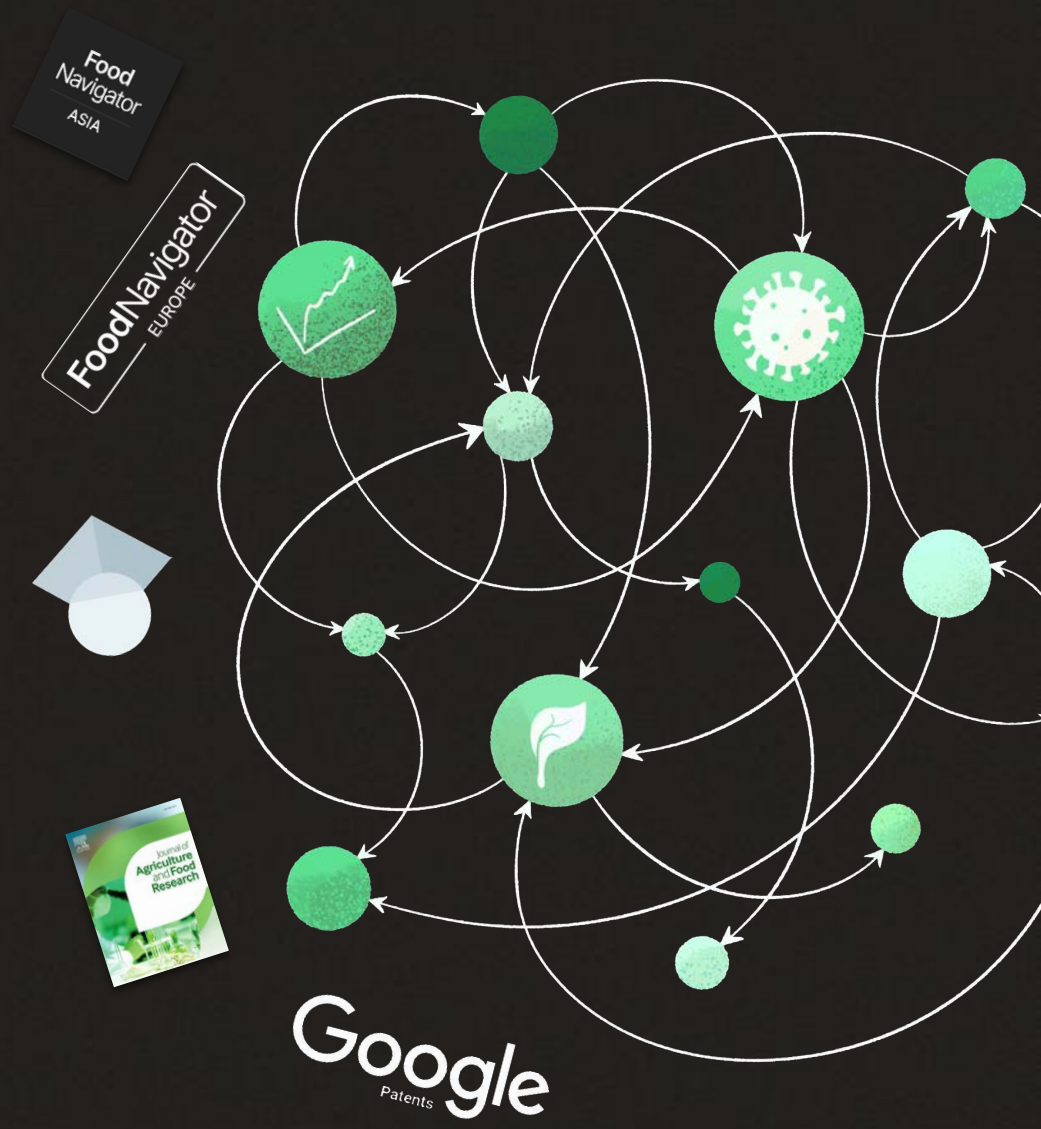
We now run 100,000 vs. 27,000 simulations. This means a widened aperture to capture unknowns and spot black swans.

FASTER OUTCOMES

We achieve our simulation modelling in under 2 minutes vs. 24 hours. This enables teams to flexibly use the simulator in workshops and planning sessions to test their hypotheses of tomorrow.

SHARPER SCENARIOS

We reduced our unclassified simulations from 22% to 13%. This provides a clearer definition of our scenarios with sharper accuracy on their likelihood of happening.



PHOTOS FROM MENU 2033 EVENT

Open Source Intelligence for Brands

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About Us

Synthesis does Open Source Intelligence for Brands.

Data scientists, cultural strategists and creatives supporting partners to prepare for change and activate decisively.

Widen your aperture of the future, to arrive prepared. Monitor important signals that shape your industry.
FUTURES@SYNTHESIS.PARTNERS

synthesis Futures

Know when and how to activate shifting consumer demands. Be at the forefront & shape category change.
TRENDS@SYNTHESIS.PARTNERS

synthesis Trends

Create unbreakable connections to retain your core. Acquire the next wave of growth consumers.
AUDIENCES@SYNTHESIS.PARTNERS

synthesis Audiences

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