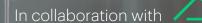
The Swiss Food Tech Ecosystem 2021

A closer look at Swiss FoodTech ecosystem & trends

et's co-create! Are you a part of the Swiss FoodTech ecosystem and missing on the map?

Please fill in this form and make sure you will be on the next version (quarterly update).

accenture





SWISS FOOD & NUTRITION VALLEY





The recipe for this report

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Introduction



Today we see the beginning of a new era in the global food and nutrition sector. Significant shifts in consumer demand and behavior have been driving exponential growth across food production, processing, delivery and disposal and are unlocking frankly unprecedented opportunities for blue-sky innovation. Meanwhile Switzerland, leveraging an already formidable footing within the food industry, looks set to become one of the leaders in redefining and re-imagining food value chains.

This report is the result of a partnership between Accenture and the Swiss Food & Nutrition Valley. Both partners joined forces to map the FoodTech ecosystem of Switzerland - striving to provide deeper insights into the current state and future possibilities.

We have conducted a detailed mapping of the Swiss landscape through the lens of innovative FoodTechs: identifying an impressive 280+ key players spanning large corporates, trailblazing startups, academia, venture capitalists, and governmental organizations, this report shines a spotlight on the Swiss food innovation sector.

Among other findings, you will discover ...

... who the most influential Swiss FoodTech startups and ecosystem partners are and where they sit within the ecosystem of food innovation.

... the emerging trends in food technology and priority areas for Swiss enterprises.

... how Swiss actors are primed to become global shapers in technologies such as precision agriculture and sustainable protein sources.

This is the first version of the mapping, hence neither the map nor any listing in the whole report claims to be exhaustive.

We will update the ecosystem map on a regular basis, which will increase its accuracy. Therefore, let's co-create! Are you a part of the Swiss FoodTech ecosystem and missing on the map? Please fill in this form and make sure you will be on the next version (quarterly update).

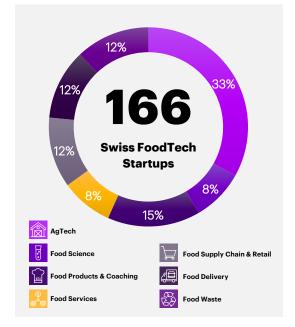
Sincerely,

Swiss Food & Nutrition Valley and Accenture









A closer look at the **Swiss FoodTech** ecosystem & trends/

Providing insights on the current state of the Swiss FoodTech ecosystem. 286 key players (166 Startups + 120 Ecosystem Partners) have been identified and mapped through the lens of innovation in the industry - based on global trends that drive innovation and reflect both food supply chain and consumer demand.

What is the ecosystem?

The ecosystem is mainly composed of Swiss corporates. leading food companies based in Switzerland, academia, investors, governmental organizations, associations, incubators/accelerators, research centers, and startups.

What is FoodTech?

The report defines FoodTech as innovation across the entire food value chain: whether it's producing, delivering, purchasing, enjoying, or disposing of food by leveraging technology to create efficiency and sustainability throughout.

Switzerland – land of innovators and home to global leading food & nutrition companies



Solid Capital Investments

The domestic fundraising climate is growing ever stronger. As many as 25 homegrown VC outfits nowadays invest heavily in FoodTech innovation startups and are fueling the industry's growth.



Leading **Corporates**

Hosting some of the leading players of the global food industry like Nestlé, Givaudan, Firmenich, or Bühler Group - and other global players like Unilever and DSM makes the country #1 worldwide for innovation.



Superior Academia

Superior universities (e.g. ETH Zurich and EPFL) are attracting talent, producing high-quality developments, driving innovation and fostering entrepreneurship with the help of knowledge and technology.



Supportive Institutions

Strong governmental support creates opportunities for growth in the market - with Switzerland as the 3rd best European country for starting a business, despite being one of the most expensive places.



Dedicated R&D Landscape

Dedicated facilities are conducting research and showing a remarkable propensity for international patent filings - the highest per capita of any nation, with FoodTech as the 2nd most patented domain.

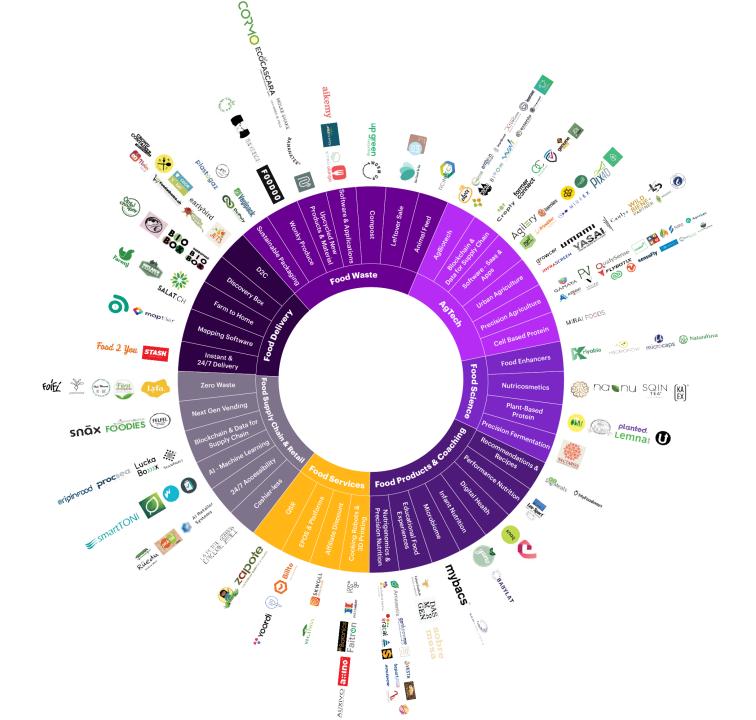


The 2021 Ecosystem mapped across the driving trends

The 280+ FoodTech players identified in this report are represented by their company logos. On the right, 166 FoodTech startups are mapped according to their focus activity within the driving trends and 120 Ecosystem Partners can be found on the following page.

For further reading and insight, please have a look at our <u>dedicated section</u> on key areas & taxonomy.

Let's co-create! Are you a part of the Swiss FoodTech ecosystem and missing on the map? Please fill in this form and make sure you will be on the next version (quarterly update).



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THE WHEEL

The 2021 **Ecosystem** Strong core of enabling entities

The report has identified 120+ **Ecosystem Partners*** empowering and boosting food innovation in Switzerland.

All enablers captured in this report are of Swiss origin, except for some of the global leading food companies like ADM, DSM, etc. that are not Swiss but are headquartered in Switzerland and having a big impact on the ecosystem.

*Active over the last 18 months. Governmental organizations and associations on national level were included and also represent their respective sections on a cantonal level

**ETH Zurich includes two different research centers

7 Governmental Organizations

Swiss governmental initiatives. institutions, agencies at a national level or cantonal level











19 Corporates

Leading food and nutrition companies (Swiss or headquartered in Switzerland) driving growth of innovation in the Swiss food and nutrition landscape

















26 Investors

Entities or individuals investing in startups within the Swiss food and nutrition landscape















6 Research Centers**

Swiss food related institutes (academia

governmental) involved with science

and education focused on the study of food & nutrition as well as sustainable

packaging



11 Academia

Universities or schools providing food & nutrition programs and labs (education, investigation, experimentation, etc.)



















& more...

Event organizers, awards, networks, blogs, festivals, summits, media producers, global organizations, forums, etc.



























17 Incubators & **Accelerators**

Organizations encouraging the creation, development, and implementation of ideas or helping startups in their initial stages to help entrepreneurs grow their business

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FOUNDER

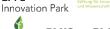
















18 Food Associations

Non-profit (NPO) or non-governmental

organizations (NGO) - as defined by the

Swiss civil code















What is driving innovation in FoodTech?

There are four major trends driving and influencing the Swiss FoodTech industry, which are dominated by sustainability, agriculture efficiency, and transparency of supply chains.

These are heavily influenced by the global trends on the following pages.

PRECISION FARMING

Changing farming by micro-managing farms with data capturing and analytics while reducing their ecological footprint







Environmentally friendly pest control

Big Data for Agriculture improving efficiency and sustainability

soil moisture content using multi-copter drones



coatings to protect fruits

and vegetables



Western palate



High protein tasty vegan foods with Golden Chlorella algae



Measuring and mapping



planted.

MIRAL FOODS

Cultivating meat from

animal stem cells in a

controlled environment

SUSTAINABLE PROTEIN

fermentation

Creating meat substitutes with pea protein, pea fiber, sunflower oil, and water

Enabling home-breeding of grasshoppers in stackable boxes

🌋 SmartBreed



100% organic infant nutrition as well as plantbased alternative yogurts

RECYCLING & UPCYCLING

Reducing plastic pollution in packaging and chemical PET recycling as well as upcycling food waste to create new materials & products



plastogaz

CORMO

Chemical recycling of PET back to main components

Converting plastic waste into natural gas to be used as fuel or to produce new synthetic materials

Transforming cornfield waste into sustainable materials for specific industrial applications.

MOLKE SHAKE von WOOD & FIELD



Upcycling whey to generate protein shakes by using fermentation

Fabricating 100% biobased planks made from coconut husk fibers

TRANSPARENCY & TRACEABILITY

Improving and streamlining supply chain management through technology to meet the growing demand for transparency of ingredients

New food processing techniques that enable

the production of animal-free protein and

replication, plant-based alternatives and

functional ingredients through cell



Digital platform & service hub to manage farms at 360°



Digital platform & service helping brand owners monitoring the supply chain



Connecting smallholder farmers to the agriculture supply chain



Premium delivery platform options in urban areas



Consumers at the wheel of innovation

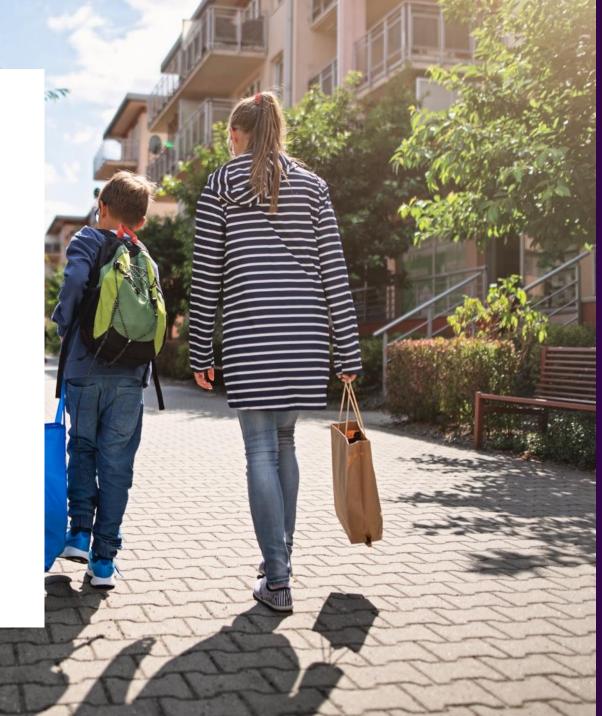
Highlighting aspects of consumer behavior that influence the food and nutrition landscape on a global level

Consumer demands & behavior are driving exponential growth across the food value chain, creating great opportunities to innovate and leverage the Swiss food & nutrition ecosystem.

Environmental awareness and health ethics concerns have great impact on consumer preferences, values, and buying habits, which has consequently encouraged the food & beverages industry to accelerate changes in food products, ingredients, and development processes.

The report takes a closer look at 3 separate findings:

- + Climate change & plastic pollution influence consumer demands
- + Simple & recognizable ingredient lists have become a consumer focus
- + Accessibility & home deliveries become even more crucial



GLOBAL TRENDS

Up until 2019, the Food Delivery category secured the largest investment rounds. In 2020, investments were more distributed across the food value chain.



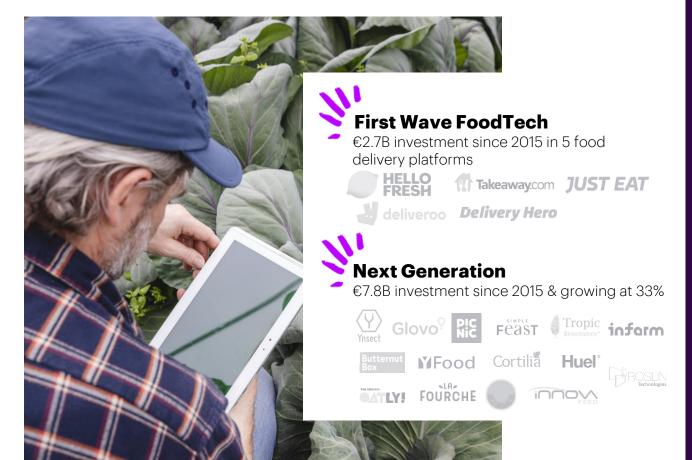
Investing up the value chain

Latest Investments in the FoodTech landscape are shifting from the six-year focus on Food Delivery startups to the upstream value chain of good food for the consumer and the environment.

Factors like consumer demand for more sustainable food sources, a strong focus on production advancement, and a potentially oversaturated delivery market could explain the changing focus of investments.

European FoodTech

With delivery startups reaching maturity in 2020, interest has been placed on the next generation of the FoodTech ecosystem. In line with the global shifts, the new generation is attracting significant investment in offering solutions in AgTech (precision agriculture, robotics, and farm management) and FoodScience (sustainable protein sources) as well as some new delivery models mostly focusing on e-groceries.





INTRODUCTION

Swiss Ecosystem

With a strong positioning in the food & nutrition industry, Switzerland aims to boost and lead food innovation by leveraging world-class research institutes, strong technology know-how, high quality workforce, and leading players across the ecosystem.

Switzerland has long prided itself as a magnet for elite innovators, pioneering technology, and entrepreneurial creativity – and for good reasons. After all, the small landlocked nation continues to amass great accolades as a honeypot of disruptive business ideas and trailblazing tech. The country has ranked #1 globally for

breakthrough innovation for ten consecutive years and was awarded third-best European location for start-ups in 2020. Emblematic of these feats has been Switzerland's rising prominence as a force to be reckoned with in the international food and nutrition sector. Leveraging an already formidable

footing within the agriculture industry, the country now looks set to become one of the leaders in worldwide efforts to radically overhaul, redefine, and reimagine food value chains.



SWISS ECOSYSTEM

Mapping the Swiss Ecosystem

A look at the Swiss food & nutrition landscape through the lens of innovation in the food industry.



SWISS ECOSYSTEM

Mapping The Swiss Ecosystem

The goal of the report is to enable a closer look at the current state of the FoodTech landscape in Switzerland, identify the focus activities, and find out which players are forming a strong core and enabling food innovation.

The report identified relevant players and mapped them through the lens of innovation in the food industry – referred to as FoodTech. FoodTech is in this report defined as innovation across the entire food value chain; from producing, delivering, purchasing, to enjoying and disposing of food by leveraging technology to improve efficiency and sustainability throughout.

While there certainly are many ways to categorize the players within FoodTech, the report categorizes them along driving trends based on the global state of FoodTech. These driving trends can be broken down further into sub-trends that incorporate and reflect both the food supply chain and consumer demand, which are driving both Global and Swiss FoodTech entrepreneurs to innovate.



out

AaTech

Products & solutions that improve farming quality and output using technology

Food Supply Chain & Retail Creating new shopping experiences, digitization of the supply chain in Food Retail (next gen vending)



Food Science Food products that reflect consumer health needs, ingredient transparency, and environmental concerns



Delivery

New ways of addressing delivery challenges and demand in the food industry



Food Products & Coaching Helping customers have a better view on what is "good for me"



Waste

Novel ways of decreasing food waste in the different areas of the food industry



Food Services Reinventing how Hotels, Restaurants and Cafe businesses are managed For further reading and insight, please have a look at our <u>dedicated section</u> on key areas & taxonomy.





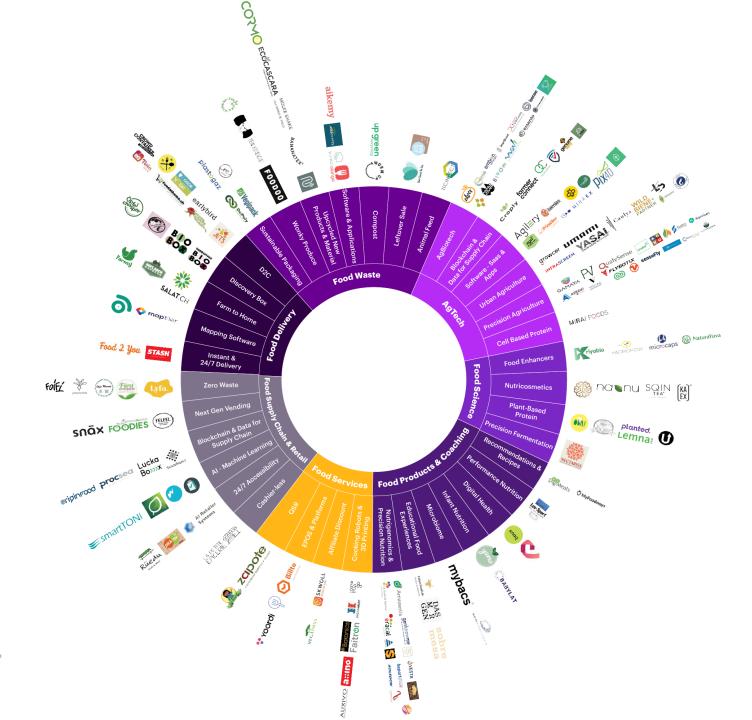
The 2021 Ecosystem mapped based on driving trends

The wheel is divided according to the seven driving trends and sub-trends. All 280+ leading players identified are represented by their company logos and mapped in two groups:

The Swiss FoodTech Startups that continue to disrupt and shape the ecosystem are mapped to the 7 trends and their sub-trends in the wheel. There are 160+ Swiss FoodTech startups mapped according to their focus activity resulting in a clear view of who they are; where they sit in the ecosystem and what the current focus areas are in Switzerland.

The Ecosystem Partners identified in the report have been fundamental in underpinning the success story that is Swiss FoodTech today and are shown on the next page.

Let's co-create! Are you a part of the Swiss FoodTech ecosystem and missing on the map? Please fill in this form and make sure you will be on the next version (quarterly update).



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THE WHEEL

The 2021 **Ecosystem Strong core of** enabling entities

Switzerland has a supportive and robust ecosystem composed of different entities such as governmental organizations, corporates, investors, academia, etc. whom the report categorizes as Ecosystem Partners of Swiss food innovation and FoodTech entrepreneurship.

All enablers captured in this report are of Swiss origin, except for some of the global leading food companies like ADM, DSM, etc. that are not Swiss but are headquartered in Switzerland and having a big impact within the ecosystem.

The report has identified 120+ Ecosystem Partners* empowering and boosting food innovation in Switzerland.

*Active over the last 18 months. Governmental organizations and associations on national level were included and also represent their respective sections on a cantonal level

**ETH Zurich includes two different research centers

7 Governmental **Organizations**

Swiss governmental initiatives. institutions, agencies at a national level or cantonal level







17 Incubators &

Accelerators

their business





Leading food and nutrition companies (Swiss or headquartered in Switzerland) driving growth of innovation in the Swiss food and nutrition landscape



BUHLER

ERNST SUTTER



Coca-Cola
Hellenic Bottling Company

















StartupINVEST INNOFUND.VC



11 Academia

Universities or schools providing food & nutrition programs and labs (education, investigation, experimentation, etc.)















18 Food Associations

Organizations encouraging the creation, Non-profit (NPO) or non-governmental development, and implementation of organizations (NGO) - as defined by the ideas or helping startups in their initial stages to help entrepreneurs grow

DasProvisorium











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6 Research Centers**

26 Investors

Entities or individuals investing in startups within the Swiss food and

nutrition landscape

by SZKB

VAUD

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OOORingier VERVE

Swiss food related institutes (academia, governmental) involved with science and education focused on the study of food & nutrition as well as sustainable packaging











& more...

Event organizers, awards, networks, blogs, festivals, summits, media producers, global organizations, forums, etc.





















biopartner Quantis





THE WHEEL

The 2021 Ecosystem Letting the numbers talk

Having a closer look at the distribution of startups across the seven driving trends of the wheel, we observe a substantial majority in AgTech, which is representing 33% out of 160+ FoodTech startups founded between 2017 and 2020 (incl. notable mentions of startups from 2010-2017).

This matches the global and European development, where AgTech and Food Sciences are the leading trends. In addition, there is a strong focus on sustainable proteins – cell-based and plant-based options with a minor focus in Europe for insect based sustainable proteins.

Switzerland is well represented in both AgTech and Food Science, which together cover 41% of all activities, and has several well-known startups within these driving categories (e.g. AgroSustain in AgTech & Planted Foods AG in Plant-Based Protein).

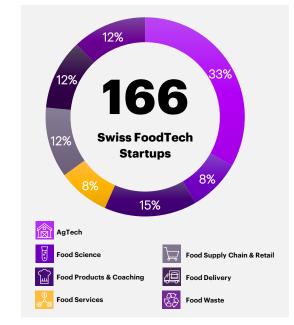
Another notable driving trend is Food Delivery (12%) with about half of the players represented in the mapping being quite early stage (2017-2020) startups focusing on D2C and new delivery models as the pandemic turned convenience into a necessity; the other more mature half is still thriving from the past 6 years' delivery boom, Farmy (2014) being the best example.

For the remaining driving trends, there is almost an even breakdown:

- + Food Waste (12%) focusing on Sustainable packaging and waste management
- + Food Products & Coaching (15%) focusing on Nutrigenomics & Precision Nutrition
- + Food Services (8%) focusing on QSR & Cooking Robots
- + Food Supply Chain & Retail (12%) focusing on accessibility & next-generation vending

For further reading and insight, please have a look at our <u>dedicated section</u>.





SWISS ECOSYSTEM

Switzerland – The hidden gem

A general conclusion of Switzerland as a hub for FoodTech in terms of prerequisites for innovation and its competitiveness in a global context.



An innovative country located at the heart of Europe

Switzerland, an innovative country located at the heart of Europe, is still a hidden but highly competitive FoodTech Hub with a strong food and nutrition ecosystem (from startups to academia to corporates) providing great opportunities for growth in the market.

INNOVATION

Ranked #1 in the world for innovation by the World Intellectual Property Organization (WIPO) for the tenth consecutive year according to the Global Innovation Index (GII) 2020.

FOODTECH STARTUPS

FoodTech is one of the fields that has great potential as it continues to grow – with already 300 identified players in the Food and Agriculture ecosystem.

RESEARCH & DEVELOPMENT

Switzerland is among the highest spenders on R&D in relation to its GDP and has over 26 corporate research centers dedicated to Food technologies, with Nestlé alone having 11 R&D centers.

HIGH QUALITY

Switzerland produces high-quality developments thanks to the help of superior universities, with knowledge and technology driving innovation and fostering entrepreneurship.

LEADING COMPANIES

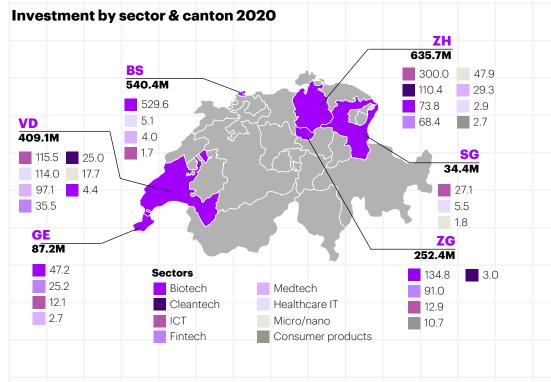
Switzerland has a strong position in the food innovation landscape, being home to global leading food and nutrition companies such as Nestlé, Givaudan, Firmenich, or Bühler Group – and other global players with a major Swiss presence like Unilever and DSM.

PATENT APPLICATIONS

Switzerland has the highest number of international patent applications relative to its population, followed by Japan and Sweden. 8,112 applications have been filed in 2020, making it 966 applications per million Swiss inhabitants.



Swiss startup landscape



Sources: Sources: Swiss Venture Capital Report by Startupticker; SWI,2021; QS World University Rankings; CEO World Magazine; EY's Startup-Barometer Europa 2021

Swiss startups & FoodTech overview

To get a consolidated view on the Swiss startup ecosystem, we looked at various data sets from relevant sources around the world and Switzerland.

Switzerland has seen the emergence of dozens of startups throughout 2018-2020 as it continues to invest in innovation, scoring 4th place in the European ranking behind the United Kingdom, Germany, and France in terms of both number of financing rounds and the investment volume. Switzerland is also ranked 3rd best European country for startups despite being one of the most expensive places due to high costs of labor and living.

The Swiss startup ecosystem developed well, with a steep increase in funding throughout the investment stages (pre-seed to later stage) reaching a total of CHF 5.35B over the past 5 years. The unique mixture of fintech, bio- and medtech, deep tech, and FoodTech companies makes Switzerland an attractive location for innovation and growth. Switzerland is placed 7th in Europe when it comes to startups per capita ahead of the UK and Germany.

FoodTech starts to gain momentum in Switzerland, nonetheless there is still much potential to grow, as it only represents 3% of the total startup investments in 2020. Underlining is the fact that meat alternatives grew 49% YoY peaking in 2020 and reaching a sales volume of 5.7 tons.

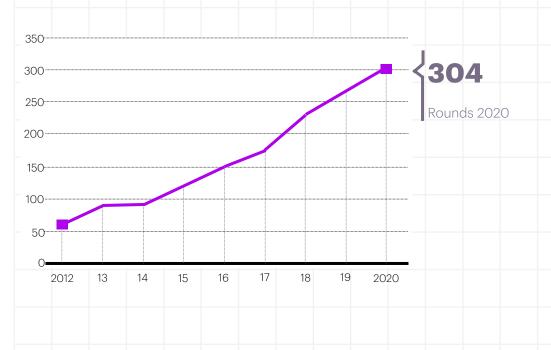
The canton Vaud is actively shaping the scene with several startups creating alternatives to cheese, milk; Together with Fribourg they are noted as FoodTech pioneering hotspots, with several initiatives, their own respective innovation labs, and the Swiss Campus for AgriFood Innovation.

Overall, two trends are driving Switzerland's FoodTech ecosystem:

- + AgTech: particularly in the Precision Agriculture sphere as well as some cellbased protein products
- + Food science: most prominently in the plant-based protein sphere and some in **Nutricosmetics**

Swiss startup landscape

Financing rounds of Swiss startups



Sources: Swiss Venture Capital Report by Startupticker; Innovation-Monitor Extract: Monitor Factsheet 2020; Nimblefins 2020

Innovation is driven locally by HUBs

Working closely with government entities, universities and the private sector, startups benefit from high quality talents, industry knowhow, and financial resources.

Further, Switzerland's innovation approach is decentralized through a HUB-structure such as the Crypto Valley in Zug, FoodTech innovation in the Romandie and Zurich as a Fintech hotspot – disrupting industries at a fast pace.

Zurich also shows the strongest growth with the highest startup founding rate overall, having been ranked the 4th most attractive startup city in Europe in 2020.

Academic drivers of innovation

Strong drivers of innovation with high amounts of spin-off startups are ETH in Zurich and EPFL in Lake Geneva region. Additionally, the Ecole Hôtelière de Lausanne (EHL) ranked number one among hospitality management universities worldwide three years in a row 2019 – 2020 – 2021.

Resilience of Swiss startups

Having strong spin-off structures from world class universities and experienced founders developing relevant innovations, Swiss startups have a higher survival rate after 5 years compared to the rest of Europe. The survival rate of an ETH spin-off after five years is over 90%, compared to the standard of less than 50% worldwide.

SWISS ECOSYSTEM

Ranking Swiss FoodTech startups

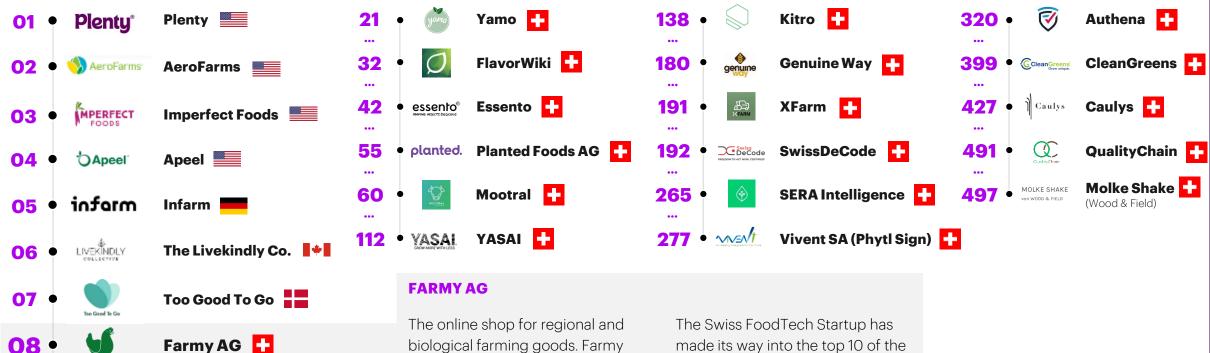
Applying global and national startup rankings to understand the variety of use cases and strength of the Swiss ecosystem.



A global stage for Swiss entrepreneurial talent

The FOODTECH 500 list scores FoodTech startups from all over the world according to business size, digital footprint and sustainability. Switzerland not only ranks under the Top 10 but casts 18 ranks in the full list.





official 2020 FoodTech 500 list,

showcasing its entrepreneurial

Technology, and Sustainability.

talent at the intersection of Food.

places a lot of importance on the

uncompromising focus on quality

selection of producers and its

and transparency.

Source: The 2020 FoodTech 500 by ForwardFooding

NotCo

Green Monday Group



The advancing FoodTech scene is also recognized on a national level

The Swiss Startup Award Top 100 is supported by a strong community, which provides deep insights into the latest proven concepts and establishes new business relationships for and with Swiss startups. So far, these startups have raised CHF 6.1 billion in financing rounds.

Swiss companies in general tend to raise lower early-stage rounds than U.S. startups, which results in smaller exits (e.g. a commonly raised Series A: CHF 1-2M & Series B: CHF 5M).

Even though there are currently no Swiss FoodTech unicorn startups, Swiss FoodTech startups are becoming more and more present in different rankings both nationally and internationally.

The **Top 100 ranking** was launched in 2011 and has now become a benchmark in Switzerland. Within the Top 100 Swiss startups in 2020, the companies ranking best within the FoodTech sub-category are:

- 1. AgroSustain at #14
- **2. YAMO** at #20
- 3. Planted Foods at #37

In addition, Kemiex was named winner of the public voting.













Swiss trends & what's next?

The report analyzes current market developments in the Swiss FoodTech industry and combines these with the insights gained in the ecosystem mapping.

Based on the main findings collected, we derived the underlying key trends and analyzed the respective startups and their focus area (for further reading and insight, please have a look at our <u>dedicated section</u> breaking down the trends).



Precision farming

Changing farming by micro-managing farms with data capturing and data analytics, while reducing their ecological footprint

Sustainable protein

New food processing techniques enabling the production of animal-free protein and functional ingredients through cell replication, plant-based alternatives, and fermentation



Recycling & upcycling

Reducing plastic pollution in packaging and chemical PET recycling as well as upcycling food waste to create new materials & products

Transparency & traceability

Improving and streamlining supply chain management through technology to meet the growing demand for transparency of ingredients

Precision Farming

DESCRIPTION

Precision farming is an agricultural concept for new production and management techniques that make intensive use of data on the respective location and plant stand. Sensor technology and application techniques are used to optimize production processes and growing conditions.

RELEVANCE

We identified 55 AgTech startups. The AgTech trend is powered by 17 startups focusing on precision farming, closely followed by 13 AgBiotech startups.

This is in line with the global surge in investments in AgTech companies of 2020. That increase is underpinned by the demand for innovative and sustainable agriculture practices that are required to increase yields due to limited resources – as the production output must increase by 60% by 2030 to feed the growing population.

IMPORTANT PLAYERS

Leading startups in sustainable protein:

Agrarpiloten - Supporting farmers using drones and environmentally friendly pest control.

Gamaya – Using big data for agriculture to improve efficiency and sustainability of farming businesses by offering unique and compelling agronomy robotic solutions.

TerraRad Tech – Deploying a drone-based system to measure and map near root-zone soil moisture content.

Additional key AgTech startups that continue to be listed as disruptors remaking food:

AgroSustain – Offering highly effective, biological fungicides and biological coatings to protect fruits and vegetables from molds and fast ripening from farm to fork.

Essento Insect Food - Providing worm-based meals in Switzerland.

Alver World - Vending a range of high protein vegan foods.













Sustainable Protein

DESCRIPTION

To ensure enough food, the diet must shift towards sustainable proteins derived from plant sources and waste streams, such as peas, potatoes, animal plasma, edible fungi, or insects. New food processing techniques enable the production of animal-free protein and functional ingredients through cell replication, plant-based alternatives and fermentation.

RELEVANCE

Consumers are become more focused on reducing environmental impact, in turn fueling a global trend towards plant-based meat alternatives. 1 in 3 consumers rank sustainability among their top 3 factors in making purchase decisions – Accenture estimates meat substitutes to reach \$24B in global sales by 2023.

In April 2021, Givaudan and Bühler collaborated to launch the first Plant-Based Protein Innovation Center in Singapore dedicated to developing plant-based food that caters to the Asian palate.

IMPORTANT PLAYERS

Leading startups in sustainable protein:

Planted Foods – An ETH spinoff that creates meat substitutes with pea protein, pea fiber, sunflower oil, and water continues to grow and enter different markets. Planted Foods intends to bolster their R&D platform on fermentation technologies and expand beyond DACH.

Mirai Foods - Specialized in the production of real meat from animal stem cells grown in the lab. They aim to accelerate the world's transition to producing food that is environmentally, ethically, and economically sustainable.

Yamo – 100% organic, natural, and additive-free baby purees, made in Switzerland; The company recently added plant-based yogurts and aims to broaden its product range further.

SmartBreed – Enables customers to breed their own grasshoppers from a few kilos to several tons per year using stackable breeding boxes directly at the customer's site.













Recycling & Upcycling

DESCRIPTION

There are two distinctive focuses within this trend: Reducing plastic pollution in packaging by reducing the use of plastics and chemical PET recycling as well as upcycling food waste to create new materials & products.

RELEVANCE

With the rising awareness of plastic pollution and the environmental impact plastic has, consumer demand and companies increasingly focus on using more sustainable ways of packaging for food products.

However, not just packaging is an important issue today, but making the production of food more sustainable. This is achieved by utilizing side streams of food production (e.g. whey in agriculture) to create new products, instead of wasting them.

IMPORTANT PLAYERS

Leading startups in sustainable packaging:

DePoly – An EPFL spinoff developed a novel technology enabling the chemical recycling of PET plastic back to its main two components.

Plastogaz – Develops a technology that converts plastic waste into grid-compatible methane. It specializes in natural gas production from waste synthetic resources to be used as fuel or to produce new synthetic materials.

Leading startups in food upcycling:

Cormo – Specialized in transforming cornfield waste into sustainable tailor-made materials for specific industrial applications.

NaturLoop – A BFH spinoff using coconut husk fibers to create a 100% bio-based panel called Cocoboard.

Molke Shake (by Wood & Field) – Specialized in creating high quality and nutritious food made from side-streams of food productions (whey), as well as innovative and natural premium products and raw materials by using fermentation – generating "value" out of "waste".









MOLKE SHAK



Transparency & Traceability

DESCRIPTION

Improving and streamlining supply chain management through technology to meet the growing demand for transparency of ingredients. Even though there is lower activity compared to the other sub-trends, there are nonetheless notable transparency and traceability startups e.g. using blockchain technology for supply chain management.

RELEVANCE

9 out of 10 consumers globally rate ingredient transparency as important for companies to address and demand transparency. Moreover, the use of big data and Blockchain technology in farming is a growing focus area for Swiss FoodTech startups looking to improve and streamline the food supply chain.

IMPORTANT PLAYERS

Leading startups in transparency & traceability:

xFarm – Offering a digital platform and service hub to manage the farm at 360°. Providing innovative tools that can support farmers and food supply chain's stakeholders in the management of their companies.

Farmer Connect – Provides software to help smallholder farmers connect digitally to the agriculture supply chain using AI and blockchain technology.

ScanTrust – Provider of secure cloud and mobile-based product authentication and supply chain visibility solutions. The company helps brand owners protect against counterfeit goods, monitor their supply chain, and engage with consumers.

LuckaBox Logistics – A premium platform for contemporary delivery options in urban areas, allowing enterprises to easily attract new customers, retain existing customers, and increase sales.









GLOBAL TRENDS

Global trends & what's next?

Right now, profound changes are underway across the food value chain. Keeping the focus on the Swiss ecosystem, we also analyzed the developments on a global scale. On the following pages, we are highlighting two trends that are already having an impact on the local landscape or are creating future opportunities for innovation.



Consumers at the wheel of innovation

Consumer demands & behavior are driving exponential growth across the food value chain, creating great opportunities to innovate leveraging the Swiss food & nutrition ecosystem.



Investments up the value chain

Latest investments in the FoodTech landscape are shifting from the six-year focus on food delivery startups to the upstream value chain of good food for the consumer and the environment.

GLOBAL TRENDS

Consumers at the wheel of innovation

Analysis of changes in consumer demand & behavior and how these influence the FoodTech ecosystem, value chain, and the opportunities within.



Environmental, ethical, and health concerns have great impact on consumer preferences, values, and buying habits, which has consequently encouraged the food & beverages industry to accelerate changes in food products, ingredients, and development processes.

Let's take a closer look at 3 separate findings:







O1 Climate change & plastic pollution influence consumer demand

The loss of both land and marine biodiversity has led consumers to seek more sustainable food sources boosting the demand for alternative sources of proteins and animal products. In addition, packaging manufacturers have made sustainable packaging a focal point to find alternative materials and reduce plastic pollution.

O2 Simple & recognizable ingredient lists have become a consumer focus

As consumers have a more thoughtful and holistic approach to food while paying closer attention to quality of ingredients, nutritional value, production, and origins, simple and recognizable ingredient lists have become invaluable. There is a recognizable consumer demand for transparency and traceability of food ingredients along large parts of the value chain – from the initial food production steps to the consumer's plate.

O3 Accessibility & home deliveries become even more crucial in times of crisis and beyond

The Covid-19 pandemic and the ensuing government ordered lockdowns had great impact on the food industry. Among the many affected, FoodTech startups, restaurants, cafés, and bars were particularly affected by having to close for several months. These events forced the food industry to quickly adapt their offerings, experiences, services, and operating models as consumers turned to e-commerce and home deliveries.

GLOBAL TRENDS

Investments up the value chain

The latest FoodTech investments are shifting up the value chain towards good food for the consumer and the environment.



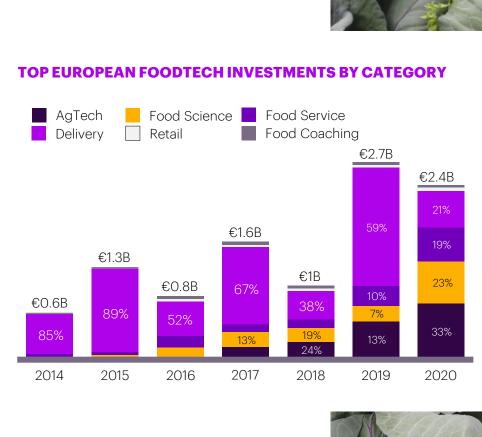
Recent investments in the FoodTech landscape are shifting from the six-year focus on Food Delivery startups to the upstream value chain of good food for the consumer and the environment.

Factors like consumer demand for more sustainable food sources and a potentially oversaturated delivery market could explain why investments in Europe took a shift away from food delivery in 2020.

Up until 2019, the food delivery category secured the largest financing rounds with some essential players like Deliveroo (UK), Glovo (Spain), or Picnic (Netherlands). In 2020, investments were more distributed across the food value chain.

More companies are moving up the value chain to have increased control across supply chain & traceability. Further prominent reasons could be the European Green Deal launched in 2019 and the Farm to Fork Strategy launched in 2020 by the European Commission. Both initiatives propel sustainability to the core of food and agriculture.

AgTech takes the lead, representing 33% of investments in 2020, followed by Food Science with 23%.



Investment in European FoodTech

A new generation of startups is attracting significant investments – mainly with technology for agriculture and sustainable proteins.

With delivery startups reaching maturity in 2020, interest has shifted to the next generation of the European FoodTech ecosystem. In line with the global shifts, the new generation is attracting significant investment in solutions for AgTech (precision agriculture, robotics and farm management) and Food Science (sustainable protein sources), as well as some new delivery models mostly focusing on e-groceries.

Funding in sustainable protein startups increased from €203m in 2019 to €566m in 2020.

In accordance with the investment shift we can see that sustainable proteins (cell-based, plant-based & insects) made up almost half of the Top 10 deals in 2020 with AgTech and Food Science startups like Ynsect (France), Oatly (Sweden), Innovafeed (France), or Infarm (Berlin), whereas 2018-2019 focused mostly on Food Delivery startups.

€2.7B €2.4B €1.8B €1.4B €1.3B €2.4B €0.9B €2.1B €1.3B €0.6B €0.4B 2016 2017 2019 2015 2018 2020 First Wave FoodTech €2.7B Investment since 2015 in 5 food delivery platforms HELLO Takeaway.com JUST EAT Delivery Hero 🕹 deliveroo **Next Generation** €7.8B Investment since 2015 & growing at 33% Glovo Pic Reast Tropic Inform Butternut **YFood Huel*** CATLY! FOURCHE Cortilia in the Red Cortilia in

 $Source: \underline{Dealroom-The\ State\ of\ European\ FoodTech\ 2021;}\ \underline{DigitalFoodLab-FoodTech\ in\ European\ FoodTech\ in\ European\ Food\ European\ Food\ European\ Food\ European\ Eu$



About the report



A closer look at Swiss FoodTech Ecosystem & Trends accenture.com/ch-en/insights/consulting/foodtech-trends

Are you a part of the Swiss FoodTech ecosystem and missing on the map? Please fill in <u>this form</u> and make sure you will be on the next version (quarterly update).

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Data Sources

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This report is based on raw data from the following sources:

Explore the ecosystem | Foodtech - Dealroom Innovation Monitor (innovation-monitor.ch) Crunchbase: Discover innovative companies and

the people behind them

Startup.ch - The Swiss Startup Radar

Moneyhouse - Handelsregister- &

Wirtschaftsinformationen

Additionally, the report used previous findings of Accenture research as well as publicly available information such as news, press releases, reports, etc.

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Appendix

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Global Ecosystem

Further Details on Taxonomy & Trends

Pg 49-58

Global FoodTech hubs

The FoodTech innovation ecosystem has been strengthened during the pandemic and organizations continued to expand.

In 2018, there were 1,360 FoodTech startups across Europe alone. European FoodTech startups raised €2.7B in 2019 and despite Covid-19 the amount remained the same for the year 2020.

Some places around the world are particularly strong in terms of innovation and FoodTech startup density. In order to understand that, let's take a look at 5 hubs that stand out. **UNITED STATES OF AMERICA**



United States

US FoodTech, having a strong history in agricultural biotechnology, is on a growth spurt. With 27 of the top 64 unicorns, it is clearly the most mature market - the access to a large domestic market is a major advantage.



Netherlands

Known as one of the leading plant-based hubs with strong governmental support, home to the FoodValley and worldclass universities, well-known for its Food and AgTech capabilities - and its ability to foster home-grown talent and attract entrepreneurs.





Connecterra

United Kingdom

With no shortage of talent and London emerging as the central hub, the UK is positioning itself as a leader for FoodTech in Europe. By 2019, there were 46+ startups in food delivery alone with a funding of \$2B. Between the year 2013 and 2018, over a quarter of all venture capital funding went into FoodTech.





Israel

The startup nation Israel ranks #1 for R&D investment, startups, and venture capital investment per capita. With 400 active FoodTech companies, \$432m were invested in 2020. The Covid-19 pandemic stimulated new opportunities - creating a flurry of new startups.



• agrint





Singapore is evolving thanks to government support. The citystate aims to become Asia's FoodTech hub by investing heavily in the sector, and startups from around the world have set up shop here to



take advantage.

Singapore







Global FoodTech Unicorns in 2020

A majority of well-funded startups within food delivery alongside a large flow of investment in sustainable protein

The global unicorn map consists of 48 unicorns across the different driving trend categories.

As a result of the investments made in 2019 the majority (67%) of the current FoodTech unicorns fall under food delivery. Even though large amounts of investments made in 2020 are within the sustainable protein category, very few new startups have reached unicorn status; existing unicorns like Impossible, Beyond, Oatly, or JUST have already been in the market for ten years.

48 Unicorn Food Startups:

19
Unicorns in Americas









€274 billion

FoodTech Unicorns in Europe, Americas & Asia

Huge increase of unicorns in FoodTech across Europe catching up with the US

European FoodTech unicorns are growing fast and have obtained significant presence alongside their peers in the Americas. At the end of 2020 the UK gained two more FoodTech unicorns when Gousto, founded in 2012, reached a \$1B valuation in November & Karma Kitchen secured the largest funding round in Europe of \$318M, putting the UK in the lead once again.

COMBINED COMPANY VALUE OF FOODTECH UNICORNS

(+197% YoY) €193 billion (+101% YoY) Meituan Dianping €204B €92 billion UberEats €46B (+156% YoY) DoorDash €36B Delivery Hero €27B Ele.me €12B Chewy €29B Ocado €17B Takeaway.com €12B Remaining Unicorns Remaining Unicorns Remaining Unicorns IMPOSSIBLE ez cater GRUBHUB SWIGGY GOAJEK GGROFERS THEHUTGROUP' □toast **b**bigbasket Europe **Americas** Asia

Source: <u>Dealroom – The State of European FoodTech 2021</u>



We are seeing vast investments in US startups, with Chinese startups behind at some distance

Which countries are making big investments in FoodTech?

The US is clearly in the lead of the top 20 countries by investments with \$13.2B and 815 deals in 2020, followed by China with \$4.8B and 115 deals.

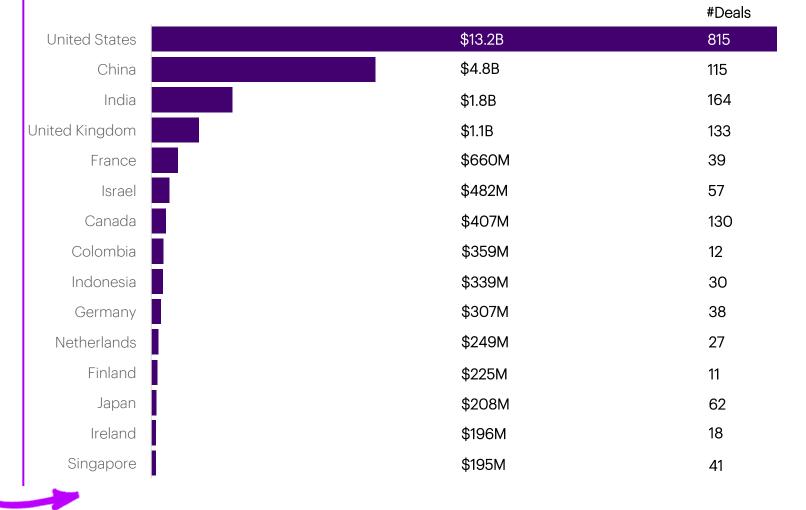
Europe is well represented in the top 20 with the United Kingdom, France Germany, Netherlands, Finland, and Ireland.

The United Kingdom continues to lead in the European region with \$1.1B and 133 deals.

A standout among the countries is Colombia, having reached the top 15 and the only country from South America on the list with only 12 deals and \$359M invested. Colombia's FoodTech unicorn Rappi, a delivery platform, raised \$300M in the last funding stage.

Sources: Crunchbase & international data at the local level; Start-up Nation Central in Israel, Bits x Bites in China, ShakeUp Factory in Europe, and Omnivore in India

TOP 20 COUNTRIES BY INVESTMENT



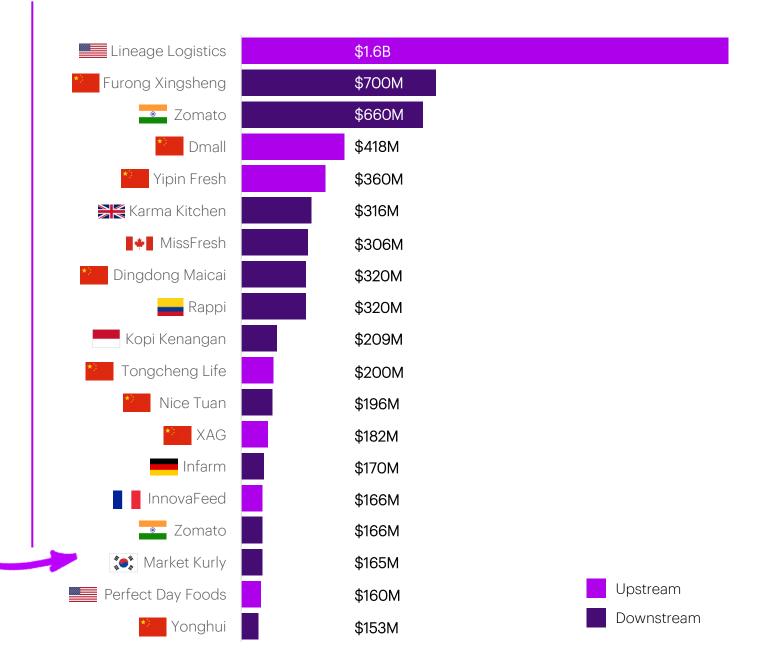
Global FoodTech **Deals in 2020**

We see that US startups lead in Global FoodTech Deals, followed by Chinese companies

Even though the top 20 deals in 2020 were mainly dominated by the food delivery category, Lineage Logistics (US), a warehousing and logistics company that provides temperature-controlled logistics and supply chain solutions took the 1st place.

The following deals are mostly food delivery platforms, with 3 out the top 5 being Chinese companies. Overall, China had the highest number of large investment deals (9) in 2020.

Karma Kitchen (UK) continued to represent Europe among the top companies in the list.



Source: Crunchbase



Investments are shifting from food delivery to the upstream value chain of good food for the consumer and the environment

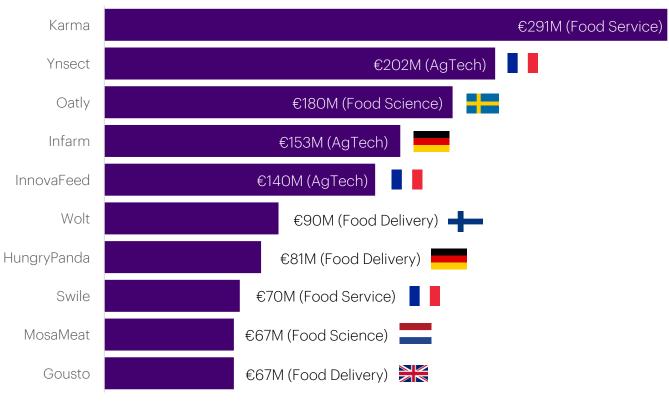
2019 top deals



2018 top deals



2020 top deals



Source: <u>DigitalFoodLab - State of the European FoodTech Ecosystem 2021</u>



FURTHER DETAILS

Key areas & taxonomy

A closer look at the driving trends and description of its respective sub-trends.



A closer look at



AgTech

Products & solutions that improve farming quality and output using technology

AgBiotech: The use of agricultural biotechnology to improve the efficiency of both animal agriculture and crop production via genetic engineering and discovery tools.

Farming – Blockchain & Data Supply Chain: Blockchain technology powered solutions used in trading platforms or Farming as a Service (FaaS) to strengthen traceability of food ingredients throughout the food supply chain and increase food safety, operational efficiency, and transparency for farmers, company owners, and consumers.

Cell Based Protein: Next-gen animal products (meat, dairy, leather) using cellular agriculture by replicating animal cells in labs and growing meat in a sustainable, slaughter-free way.

Precision Agriculture: The use of new technology (big data, drones, robots) to increase efficiency and sustainability in agricultural tasks by reducing the amounts of water, land, insecticides, etc. used today.

Software – Apps & SaaS: Services that allow farmers to track and manage all data during the full lifecycle of their products. Providing traceability, quality management, accessibility, integration, and marketplaces for the development of farm and food systems.

Urban Agriculture: Agricultural practices brought to urban & peri-urban areas to cultivate, grow, process, and distribute food within the city. (urban & vertical farming, urban beekeeping, aquaculture & aquaponics, horticulture).



Food Science

Food products that reflect consumer health needs, ingredient transparency, and environmental concerns

Cooking Robots & 3D Printing: Smart kitchen equipment and appliances that automate cooking, preparing, and serving experiences for customers and improves restaurant management for business owners (cooking robots).

Nutricosmetics: Products and ingredients that act as nutritional oral supplements to enhance one's health and beauty (hair, skin & nails) from the inside out, providing anti-aging benefits.

Plant-Based Protein: New food processing techniques to replace animal protein by using plant-based alternatives as a source of protein and replicating both taste and texture of meat and dairy products.

Precision Fermentation: New food processing technique using genetically modified microbes and customized molecules to produce alternative proteins and functional ingredients that are normally found in meats and animal products (enzymes, hormones, fats & vitamins) to enable the production of plant-based animal-free meat, animal-free egg, animal-free dairy, and palm oil.

Food Enhancers: Encapsulated molecules that generate additional flavors & fragrances tailored to a broad range of food, cosmetics, and pharmaceutical applications.

A closer look at



Food Products & Coaching

Helping customers to have a better view on what is "good for me"

Nutrigenomics & Precision Nutrition: New services that focus on the relationship between genes, nutrition, and health according to DNA, race, gender, health history & lifestyle habits.

Recommendations & Recipes: Food services offering specialist or algorithm-based recommendation of meals, recipes, shopping lists, or wines/alcohol according to customer expectations (preferences, intolerances, and diets).

Educational Food Experiences: Food services that offer a range of food-related interests and experiences by visiting breweries, vineyards, cooking classes, workshops, conventions, etc.

Digital Health: New products using technologies (computing platforms, connectivity, software, sensors) for healthcare & nutrition related uses accessible via cell phones, tablets and computers.

Microbiome: New services and products catering to gut health by offering foods rich in probiotics and prebiotics (e.g. fermented foods) that contain beneficial live microbiota.

Infant Nutrition: Nutrient rich food products focused on babies' and infants' dietary needs and alternatives.

Performance Nutrition: Services offering tailored nutrition to help enhance athletic performance and training ability.



Food Service

Reinventing how hotels, restaurants and café businesses are managed

Affiliate Discount: Providing consumers with a wide selection of food related promotions (restaurants, workshops, cooking classes, retail) and community as part of a membership program.

Cooking Robots & 3D Printing: Cooking robots performing human tasks or creating new food products designed on a computer and printed in a three-dimensional layer-by-layer method.

Ghost Kitchen: Commercial kitchens with more than one restaurant brand under one kitchen designed to operate efficiently without brick-and-mortar dining locations using restaurant delivery platforms for delivery orders only.

Quick Service Restaurants (QSR): Improvements on existing quick service restaurants, that offer higher convenience and efficiency (drive-through, curbside service, personalized digital experiences, payment services, loyalty programs, and adoption of plant-based proteins) to cater to current consumer behaviors.

EPOS Payment Systems: Electronic systems managing the point of sale of the restaurant or retail outlet acting as a hub for other services connected to it. Allowing the use of cell phones, tablets, smart watches, etc. This may include supply management tools and ordering platforms.

A closer look at ...



Food Supply Chain & Retail

Creating new shopping experiences in food retail, digitization and optimization of the supply chain

Zero Waste: Shops offering bulk unpackaged wholefoods, natural beauty and cleaning products, encouraging customers to bring their own reusable cloth or glass containers from home or buy reusable containers at the store to fill and refill.

Next-Gen Vending: A new generation of automated vending machines providing groceries, meals, and snacks in different settings (office, shopping-centers, schools, etc.).

24/7 Accessibility: Retailers bringing the farm to you by offering flexibility and access to fresh wholefoods at any time or day of the week.

Al – Machine Learning: Analytical solutions for a better customer experience on food selling sites & applications, which help predict visitor traffic, food orders, and relevant inventory, number of orders needed for a certain period/date, consumer behaviors etc.

Supply Chain Digitization: Solutions used to automate logistics and supply chains providing traceability of food ingredients throughout the food supply chain and increase food safety, operational efficiency and transparency for company owners and consumers (e.g. powered by Blockchain technology).

Cashier-less: Autonomous stores which no longer have cashiers or other employees present to checkout and bill your products.



Food Delivery

New ways of addressing delivery challenges and demand in the food industry

Instant & 24/7 Delivery: Delivery platforms offering more access to food delivery services any day of the week, at longer times of the day, next day deliveries or even within 15min of order placed. Fast quality deliveries.

D2C: Direct to consumer e-commerce. Food suppliers catering directly to specific preferences and lifestyles of the consumers offering convenience and personalization of their order (meal kits/ready to eat).

Discovery Boxes: Food baskets or boxes offered by weight & category instead of individual items (fruits or vegetable or both) delivered to your home. A new way to discover and introduce seasonal produce.

Farm-to-Home: Food platforms focusing on delivering fresh, organic fruits, vegetables, meat, and dairy products from specific local farmers directly to your home.

Mapping Software: Software solutions that help restaurants ensure quality food deliveries using live tracking of the delivery person, estimated times of arrival, and locations.

A closer look at



Food Waste

Novel ways of decreasing food waste in the different areas of the food industry

Wonky Produce: Shops and services that use and normalize naturally misshapen fruit and vegetables as part of their offering.

Leftover Sale: Applications and platforms fighting food waste by connecting customers to restaurants, café, and bakeries who offer leftovers that no longer qualify to be sold as "fresh" but are perfectly edible for a discounted price.

Software & Applications: Software & applications specifically created to combat food waste by monitoring, measures & tracking food waste.

Animal Feed: Bio-converting food waste into sustainably animal feed.

Upcycled Products & Material: The use of food waste or food remains to make biodegradable material for new products and packaging (orange peel, banana peel, coffee grounds, etc.).

Urban Composting: New solutions to enable home composting in urban areas.

Sustainable Packaging: Companies shifting current packaging to sustainable alternatives (less plastic, reduce plastic pollution, petroleumbased plastic and glass).

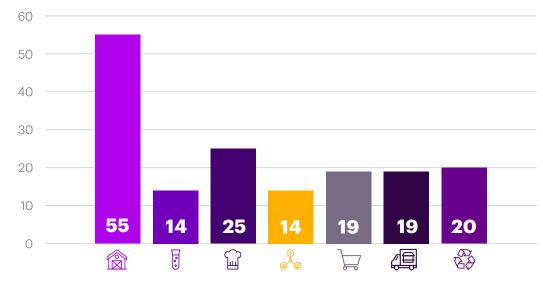
FURTHER DETAILS

Detailed trend breakdown by numbers

A closer look at the driving trends and distribution of the 160+ identified Swiss FoodTech startups across the respective sub-trends.



The Swiss FoodTech ecosystem broken down into 7 driving trends



AgTech

New farming services and solutions aiming to improve farming quality, efficiency, sustainability, and output using technology (such as sensor, drones, management software and automated machinery) to address current challenges. AgTech includes novel farming techniques (urban agriculture, insect breeding, and aquacultures).

Food Science

New food products that leverage innovative food processing techniques to improve food products and ingredients that reflect consumer health needs, as well as addressing ingredient transparency and environmental concerns (plant based, new food appliances, sustainable packaging & transparency).



Food Products & Coaching

New services addressing customer interest in achieving individual health and nutrition goals through a more personalized experience with food selection, consumption, and education.



Food Service

New services improving the hospitality industry by rethinking how hotels, restaurants, and café businesses are managed and cater to customers.



Food Supply Chain & Retail

Retailers creating new grocery shopping experiences & digitization of the supply chain in food retail by leveraging existing capabilities and technologies.



Food Delivery

New delivery services that deliver on demand and direct-to-consumer (speed & availability of same-day delivery, live-tracking, apps & platforms, drones & robots, etc.) in the food industry for both online retail and restaurants.



Food Waste

Novel ways to help decrease food waste along the food supply chain (farms, restaurants, cafés, retail outlets, supermarkets, home) and reduce carbon emissions.

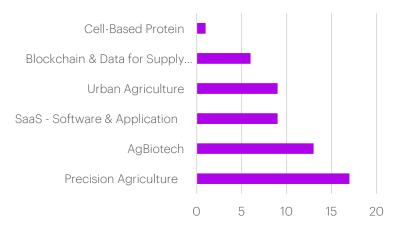




The Swiss FoodTech ecosystem broken down into 7 trend categories

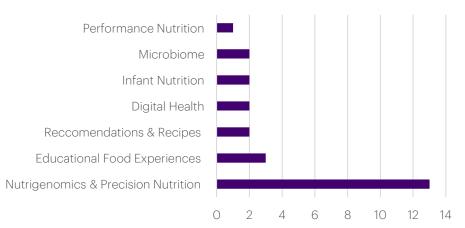
AgTech: 55 startups

Large number of identified players have their focus on Precision Agriculture.



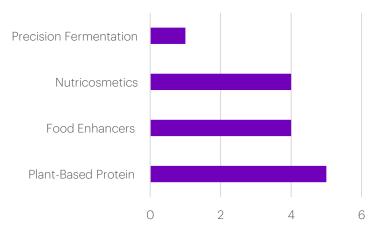
Food Products & Coaching: 25 startups

Identified players largely in Nutrigenomics with other sub-trends increasing



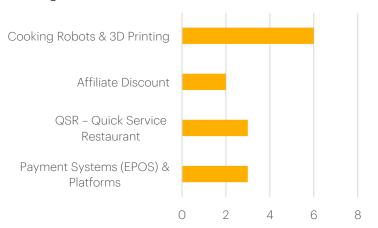
Food Science: 14 startups

Plant-Based Protein leads in numbers of players ahead of Nutricosmetics.



Food Services: 14 startups

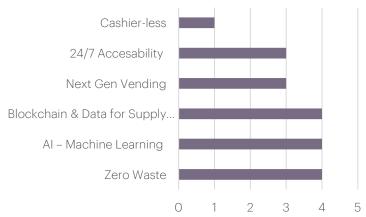
Cooking Robots lead an otherwise even field of 4 sub-trends.



The Swiss FoodTech ecosystem broken down into 7 trend categories

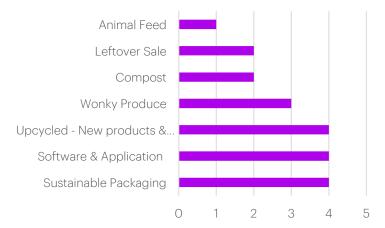
Food Supply Chain & Retail: 19 startups

27% of all identified startups can be found in Zero Waste.



Food Waste: 20 startups

Sustainable Packaging leading the sub-trend but upcycling is growing.



Food Delivery: 19 startups

D2C (delivery) dominates the sub-trend but there is strong growth in the other trends.

