



'18

— YEAR IN REVIEW

AgFunder AgriFood Tech

INVESTING REPORT



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AgriFood Tech: 2018 in Review

It was another record breaking year for AgriFood Tech, with \$16.9 billion of funding in 2018.

Driven to a large extent by the big jump in the median deal size for later stage deals, it was also encouraging to see Seed stage deals making a strong comeback after a big drop off in 2017. All those accelerators popping up over the past few years are starting to have an impact. Perhaps on the back of that drop-off, there wasn't a significant increase in Series A funding - just 1% -- although deal activity increased 21% at the stage.

At a country level, China's venture investors continued their love affair with consumer food tech, while virtually ignoring the upstream categories as the country's farmers and archaic supply chains struggle to modernize. Looks like it's going to take a while.

It was a similar story in India, which took the prize for the biggest agrifood tech deal in 2018 with the monster \$1

billion funding for restaurant delivery marketplace Swiggy. That represented 40% of the total invested right across the Indian food system. While we applaud investment in agrifood tech at whatever end of the supply chain it lands, we can't help thinking that great opportunities upstream are being missed and underfunded in the rush to appease consumers.

Balance is required, and that's what the more mature agrifood investment market in the US demonstrated, with strong investment in startups all the way down the pre-consumer supply chain leading to 44% year-over-year growth for upstream startups, the biggest growth rate on record.

2018 ended on a high note with the biggest ever agrifood tech exit when life sciences giant Merck picked up Antelliq from private equity firm BC Partners for \$2.4 billion to add digital animal tech capability to its portfolio.

A vintage year all round and one to be celebrated. Cheers!

**Michael Dean, Founding Partner & The
AgFunder Team**

What is AgriFood Tech?

Agrifood tech is the small but growing segment of the startup and venture capital universe that's aiming to improve or disrupt the global food and agriculture industry.

As with all industries, technology plays a key role in the operation of the agrifood sector, a \$7.8 trillion industry, responsible for feeding the planet and employing well over 40% of the global population. The pace of innovation has not kept up with other industries and today agriculture remains the least digitized of all major industries, according to McKinsey.

The industrial agrifood sector of today is also largely inefficient compared to other industries, with an increasing number of demands and constraints being placed on it. These pressures include a growing global population set to reach 9 billion by 2050; climate change and global warming; environmental degradation; changing consumer demands; limited natural resources; food waste; consumer health issues and chronic disease.

The need for agrifood tech innovation is greater than ever. This creates many opportunities for entrepreneurs and technologists to disrupt the industry and create new efficiencies at various points in the supply chain. Broadly speaking, agrifood tech startups are primarily aiming to solve the following challenges: food waste, Co2 emissions, chemical residues and run-off, drought, labor shortages,

health and sugar consumption, opaque supply chains and distribution inefficiencies, food safety and traceability, farm efficiency and profitability, and unsustainable meat production.

There are many ways to categorize agrifood tech startups highlighting the complexity of the industry. See page 5 for our categorization system, which we developed in consultation with venture capitalists, entrepreneurs, and other industry experts.



AgriFood Tech Category Definitions



Ag Biotechnology

On-farm inputs for crop & animal ag including genetics, microbiome, breeding, animal health.



Agribusiness Marketplaces

Commodities trading platforms, online input procurement, equipment leasing.



Bioenergy & Biomaterials

Non-food extraction & processing, feedstock technology, cannabis pharmaceuticals.



Farm Management Software, Sensing & IoT

Ag data capturing devices, decision support software, big data analytics.



Farm Robotics, Mechanization & Equipment

On-farm machinery, automation, drone manufacturers, grow equipment.



Midstream Technologies

Food safety & traceability tech, logistics & transport, processing tech.



Novel Farming Systems

Indoor farms, aquaculture, insect, & algae production.



Innovative Food

Cultured meat, novel ingredients, plant-based proteins.



In-Store Retail & Restaurant Tech

Shelf-stacking robots, 3D food printers, POS systems, food waste monitoring IoT.



Restaurant Marketplaces

Online tech platforms delivering food from a wide range of vendors.



eGrocery

Online stores and marketplaces for sale & delivery of processed & un-processed ag products to consumer.



Home & Cooking Tech

Smart kitchen appliances, nutrition technologies, food testing devices.



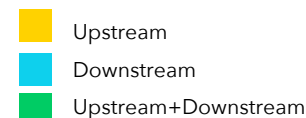
Online Restaurants and Meal Kits

Startups offering culinary meals and sending pre-portioned ingredients to cook at home.



Miscellaneous

e.g. fintech for farmers



Sources & Methodology

Data Sources & Curation

Utilizing new advanced machine-learning algorithms and artificial intelligence to help identify and categorize agrifood tech startups, our knowledgebase has grown to over 29,939 companies, with new startups and historical data being added each day.

The raw data for the AgriFood Tech Funding Report comes from Crunchbase, which gathers publicly available information such as press releases and US Securities and Exchange Filings, as well as crowdsourcing directly from the industry. AgFunder contributes a significant portion of raw data through its own data collection methods that include private communications with investors and companies.

The raw data is then painstakingly curated by the AgFunder (usually taking several months) to ensure that it is relevant, accurate, up-to-date, complete, and categorized according to AgFunder's proprietary tagging system for inclusion in our report.

We believe our database represents the most comprehensive and curated database of agrifood tech companies globally.

While we are happy to share our findings, we reserve all rights with respect to AgFunder research and this report, and require it to be fully and accurately cited when any of the data is used.

Because non-US companies are not required to publicly file financings with their regulator, there may be many financings absent from our analysis.

Undisclosed Financings

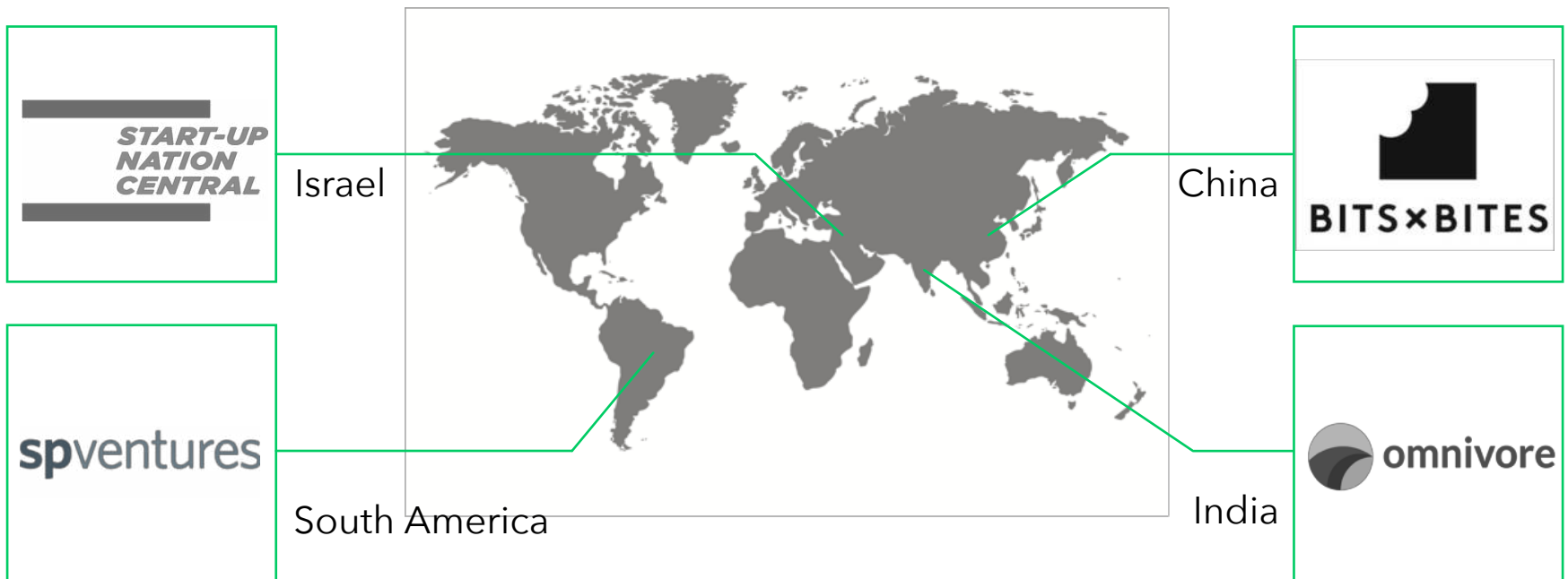
Of the 1450 financings in our curated data set, 327 had undisclosed financings, which could not be determined through research or direct sources. We excluded undisclosed financings when computing averages and median values. In some cases, we were able to confidentially obtain financing figures directly from the investors, on the condition that they only be included in the aggregate figures.

Multiple Financings

In some cases, CrunchBase displayed multiple financings for the same company in the same year. In the case of distinct funding rounds (Seed, A, B,...) or asset classes (debt v. equity), we counted these as separate rounds. Where a company raised capital two or more times within two months, we aggregated the total into one round.

Our International Data Partners

In addition to our partnership with Crunchbase, we've partnered with several groups from around the world to help us collect more international data at a local level to ensure we can present the most comprehensive data set in the industry. Our partners for the 2018 report include Start-up Nation Central in Israel, SP Ventures in Brazil, the BitsxBites Accelerator in China, and Omnivore in India.



Sources & Methodology

Categorization

AgFunder's categorization system is designed to capture broad themes in the agrifood technology landscape (*see page 5 for a list of categories*). As the categories progress through the value chain from farm inputs to the consumer, the mapping becomes complex. The agrifood sector has a wide supply chain spanning industrials, farming, logistics, wholesale distribution, processing, retail distribution, and the consumer. In many cases, technologies such as marketplaces connect different links in the supply chain and so in this report we've chosen to focus on high-level themes. To assist with the categorization and to avoid subjectivity, AgFunder first employs over 150 machine learning and artificial intelligence models to suggest category placement and to help tag the company according to the technology and its place in the supply chain. Finally, the AgFunder team manually reviews the suggestions for each company, often with significant research and debate among our team.

Thank you to all of our data partners across the globe!
(see page 7)

Special Acknowledgement

Special thanks to Tim Li and the rest of the Crunchbase team for their support and assistance.



And thank you to Singapore Management University students Elijah Tan, Ervin Wee, Barry Seah, Ke Jinghao for their help curating the data and co-authoring the report.



UOB-SMU
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Year End Overview 2018



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AgriFood Tech Funding Breakdown 2018

\$16.9bn

INVESTMENT

1450

DEALS

+11%

**INVESTMENT
GROWTH**

+10.5%

**DEAL
GROWTH**

1776

**UNIQUE
INVESTORS**

\$1bn

**LARGEST
DEAL**



Upstream

Ag Biotech, Farm Management SW, Farm Robotics & Equipment, Bioenergy & Biomaterials, Novel Farming, Agribusiness Marketplaces, Midstream, Innovative Food

\$6.9bn

INVESTMENT

+44.3%

GROWTH (\$)

809

DEALS

+12%

GROWTH (#)

1135

UNIQUE INVESTORS

\$450m

LARGEST DEAL

Downstream

In-store Restaurant & Retail, Online Restaurants, eGrocery, Restaurant Marketplaces, Home & Cooking

\$10bn

INVESTMENT

+41.8%

GROWTH (\$)

626

DEALS

+9.6%

GROWTH (#)

909

UNIQUE INVESTORS

\$1bn

LARGEST DEAL

Outliers

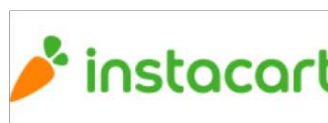
Venture capital is driven by outliers and the agrifood tech sector is no exception. In 2017 the largest venture deals across the food and agriculture supply chain were in the food delivery segment and as the category continues to mature, it was the same in 2018. Here are the biggest deals of 2018 to be aware of as they skew the overall results.

\$1 billion



India's leading online Restaurant Marketplace was said to be valued at \$3.3bn after this round. South African media and entertainment company Naspers led the round investing \$660m, joined by Tencent, another Naspers investment, alongside existing investors DST Global, Coatue Management and Meituan Dianping – Swiggy's Chinese equivalent. The food delivery sector in India has grown rapidly in recent years as Indian incomes rise and urban traffic boosts incentives for ordering food in rather than dining out.

\$600 million



US grocery delivery service Instacart raised a jumbo round in 2017, with a \$400m Series D and followed suit with its \$600m Series E in 2018. Any concerns about the future of Instacart after Amazon acquired one of its main grocery clients Whole Foods have disappeared as the service works with over 15,000 grocery stores across 4,000 cities and reached a valuation of \$7.6bn with this round. Global hedge fund D1 Capital Partners led the round.

\$590m



Restaurant Marketplace iFood's Series G round was the largest venture deal on record for Brazil when it closed it November 2018. The deal also attracted investment from Naspers, which has made several bets in the food e-commerce space, and is an investor in iFood's other lead investor Movile. It's becoming a very involved industry.

Key Insights for 2018

1. AgriFood Tech is Maturing as a VC Industry

AgriFood Tech deals are getting bigger: there was growth at every stage except for Series A in 2018 contributing to the year's record-breaking investment figures.

Growth in the size of later stage deals certainly contributed as the median for Series D deals increased to as much as \$115m in the second half of the year, up from \$44.4m in H2-2017 and \$16.5m in H2-2016. And startups beyond Series D closed 15% more rounds, and raised 76% more dollar funding compared to 2017. Series C stage funding also grew 84%.

Growing deal sizes was a trend seen in the global VC markets across industries, according to Venture Pulse, which indicated that many venture capital firms were acting more like private equity, making fewer bets resulting in a drop in early stage funding activity.

But agrifood tech bucked that trend as seed stage deal activity increased 14.5% with funding reaching \$685m, a 50% year-over-year increase.

And even the median seed stage deal size crept up to \$1.3m, which was higher than the median value across industries in 2018 (\$1.1m), according to VenturePulse.

The size and amount of Series A funding remained little

changed on 2017, which was to be expected considering the 30% drop in seed stage funding activity in 2017. There are cross-industry dynamics at play here but specific to agrifood, startups still have a lot to prove in a complicated industry at this stage, which is making investors way. We've also noticed startups putting off their A rounds on the back of this, to bolster their businesses and lock in a decent valuation at the A round.

2. Upstream Deals Drove Increases at Earlier Stages

Growth in funding for startups operating upstream – from the farm before the retailer – accelerated at its fastest pace on record in 2018 (44%) and dominated the leader boards for Seed, Series A and Series B stage deals. Downstream funding grew at a similar rate (43%) but mostly at the later stages as outliers, such as those detailed on page 12, contributed to the growth.

Robotics, biotech and innovative food startups contributed many of the largest deals at the earlier stages as the most capital-intensive sectors; the second largest deal upstream was microbe engineer Zymergen's \$450m Series C.

There was increasing growth in the Agribusiness Marketplace space too as entrepreneurs globally aim to help connect farmers to markets.

Key Insights for 2018 (Continued)

3. Asia Produces Jumbo Outliers

Reflecting a trend seen across industries, jumbo deals out of Asia contributed agrifood tech's largest deals of the year. There were 11 deals over \$200m from Asian countries India and China, compared to eight from the US.

They included India's Swiggy (\$1bn), eGrocer Dada-JD Daojia (\$500m), agribusiness marketplace Meicai (\$450m), eGrocer MissFresh E-Commerce (\$450m), restaurant marketplace Dianwoba (\$450m) and Bigbasket (\$300m).

The US still dominated the funding landscape but China came second, with \$3.5bn invested across 184 deals.

cooperatives, retailers, and distributors remain keen on accessing or maintaining relationships with growers via digital and precision tools that improve or reinforce seed, chemical, equipment, and other product offerings.

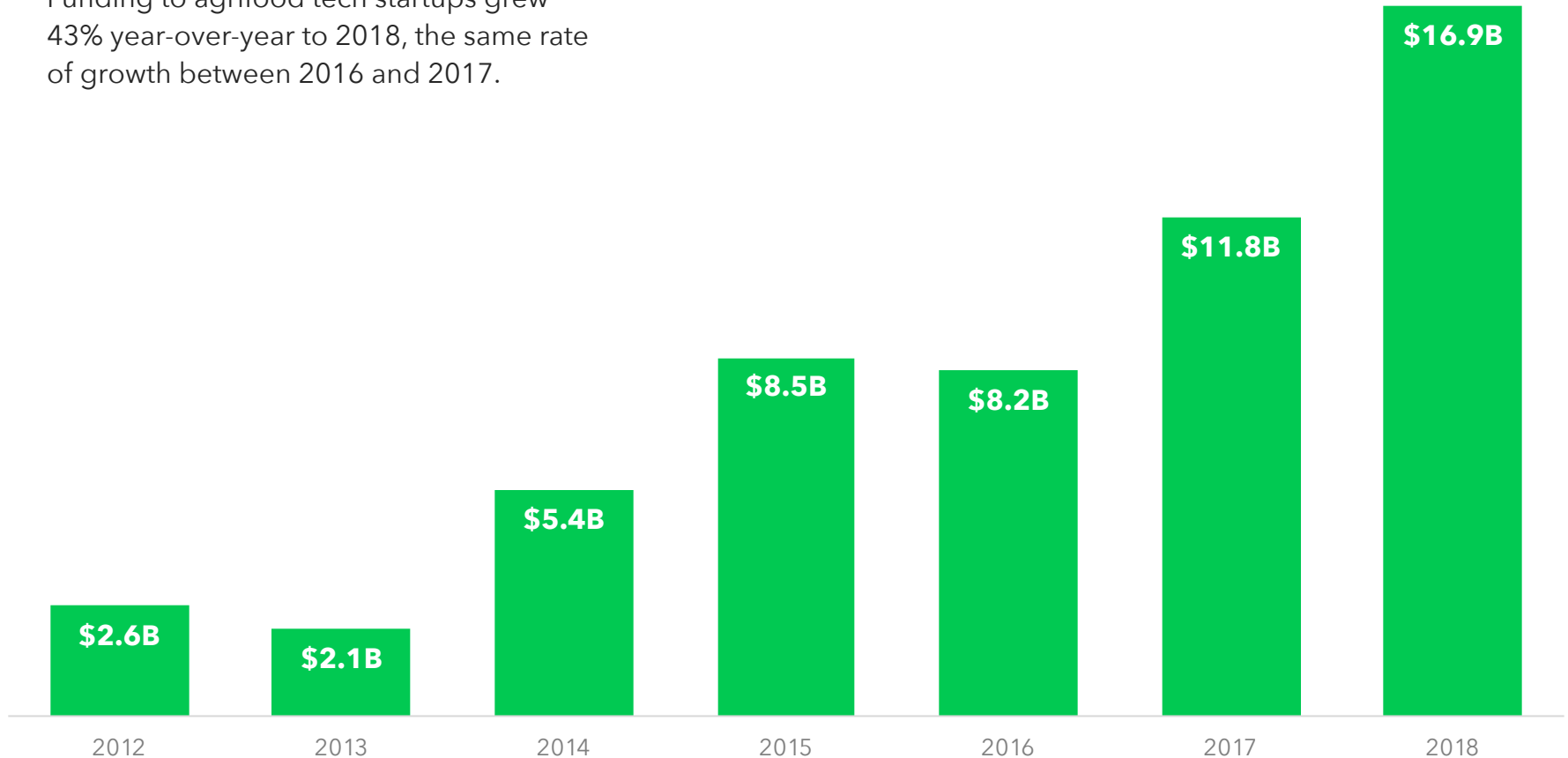
4. M&A Gathers Pace

From page 55, Verdant Partners details growing M&A activity in farm technologies and 2018 saw the largest ever farm tech exit with private equity firm BC Partners selling digital animal health company Antelliq to US pharmaceutical company Merck for \$2.4 billion at the end of the year. The deal highlighted the pharmaceutical company's commitment to the animal health business.

Over 60% of farm tech M&A in 2018 created an exit for investors, according to Verdant who expects to see activity continue into 2019, particularly as strategic input providers,

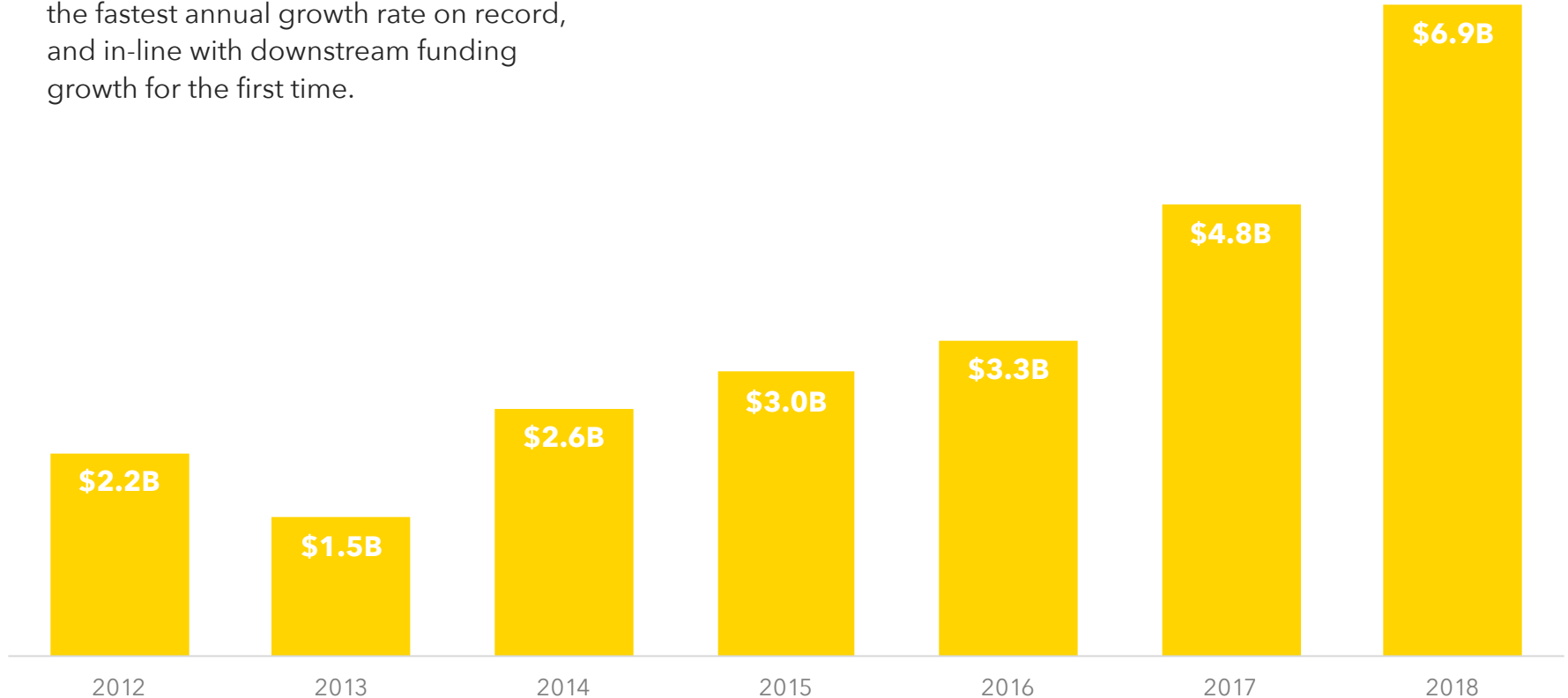
Annual Financings | 2012-2018

Funding to agrifood tech startups grew 43% year-over-year to 2018, the same rate of growth between 2016 and 2017.



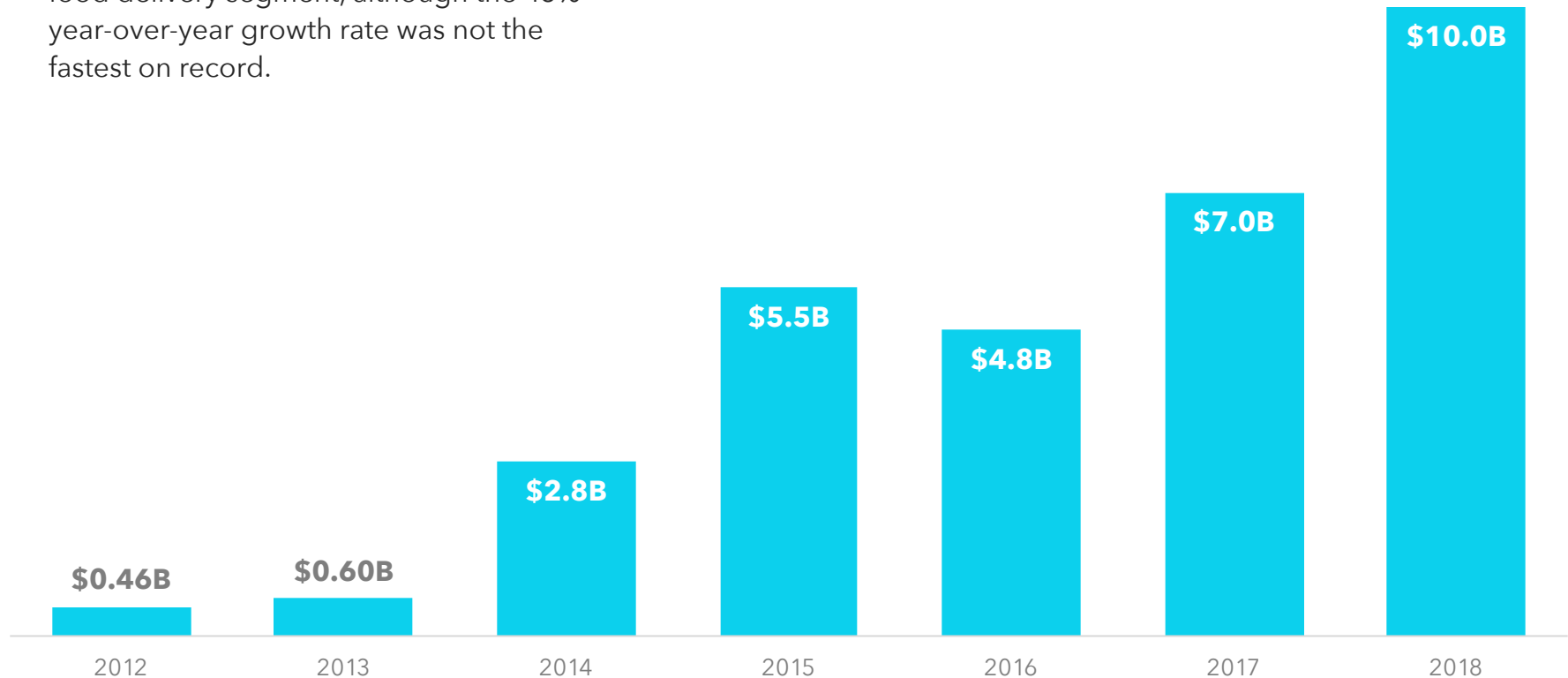
Annual Financings | 2012-2018

Investment to startups operating closer to the farmer grew over 44% year-over-year, the fastest annual growth rate on record, and in-line with downstream funding growth for the first time.

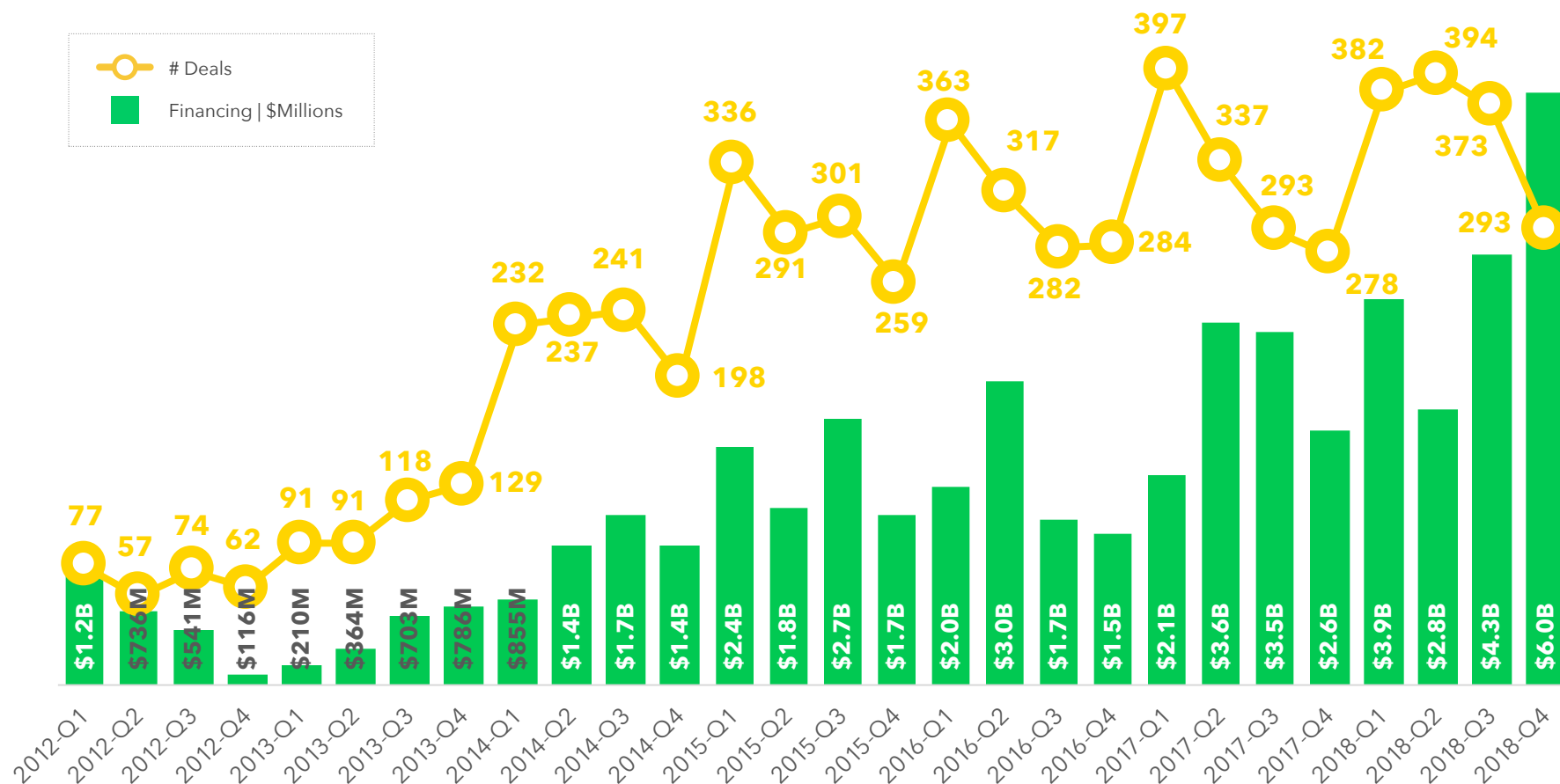


Annual Financings | 2012-2018

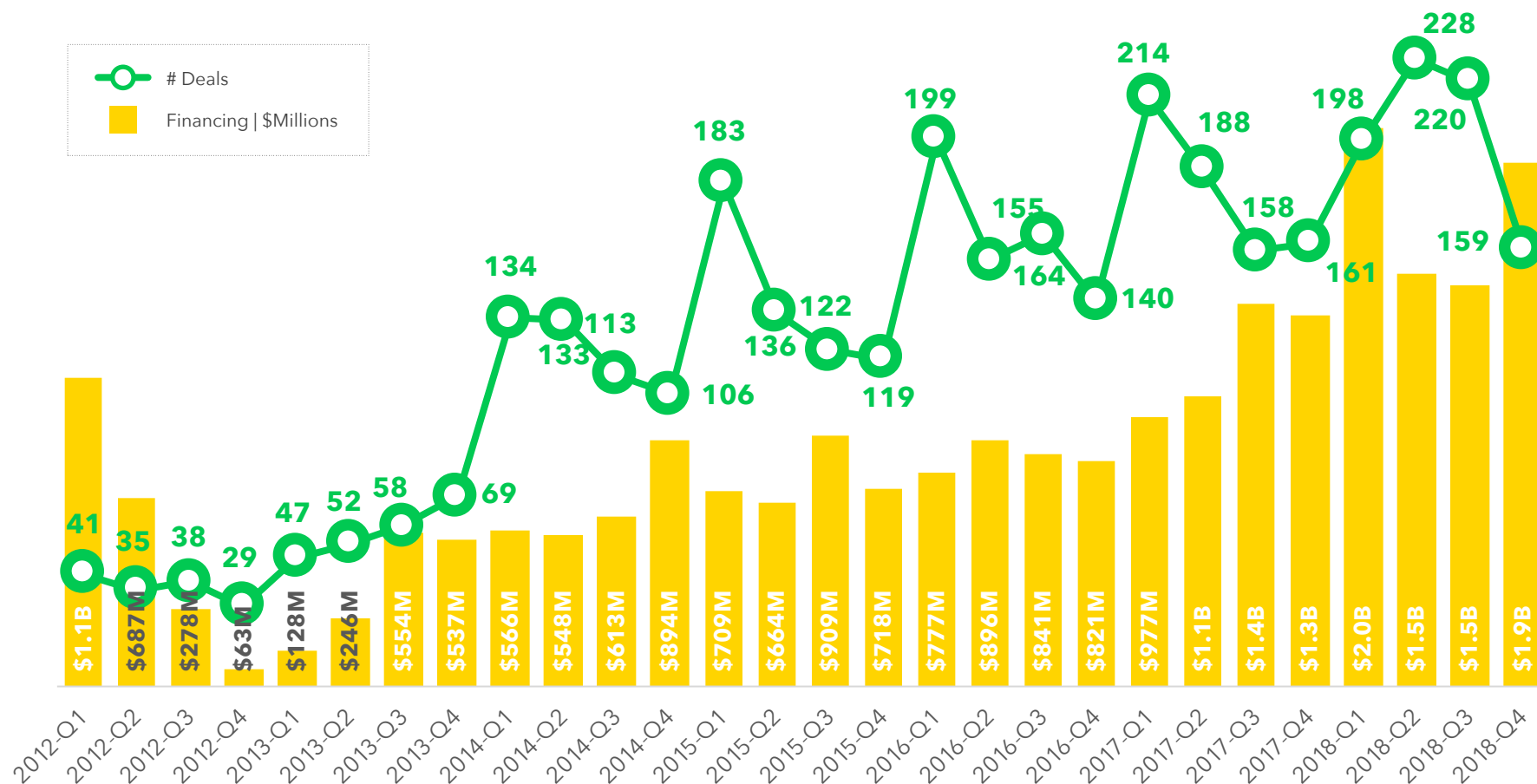
Funding continues to flow into downstream startups dominated by the food delivery segment, although the 43% year-over-year growth rate was not the fastest on record.



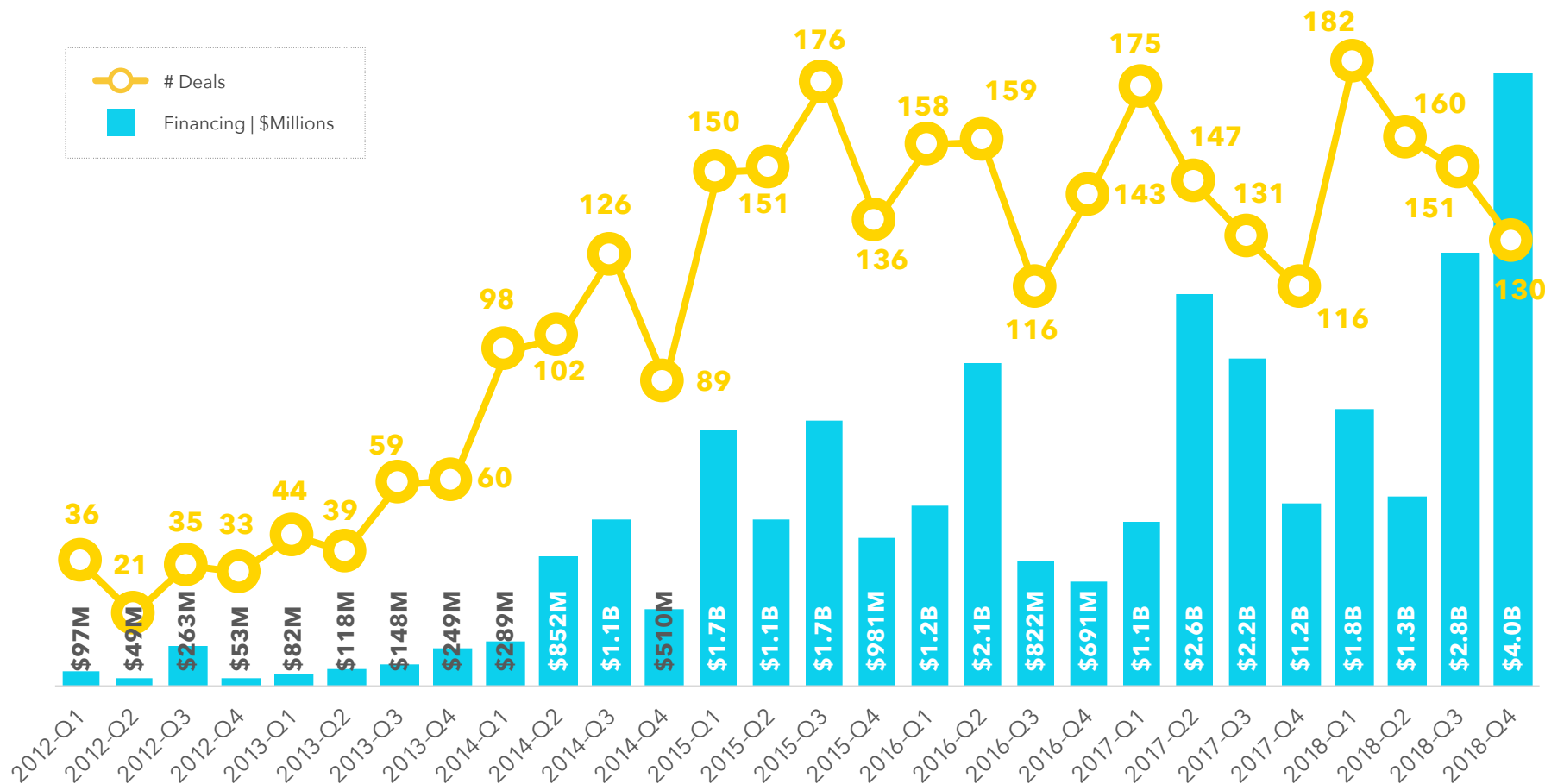
Quarterly Deal Volume and Activity



Quarterly Deal Volume and Activity



Quarterly Deal Volume and Activity





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Setting up your own Corporate Innovation Center here in Silicon Valley can cost well over \$1 million annually. By accessing our investment infrastructure, AgFunder Innovation Services can get you there faster and at a fraction of the cost. Whether you need help setting up your own Corporate Venture Capital unit, or want a team in Silicon Valley to help support your Business Development or Partnerships teams. We can help.

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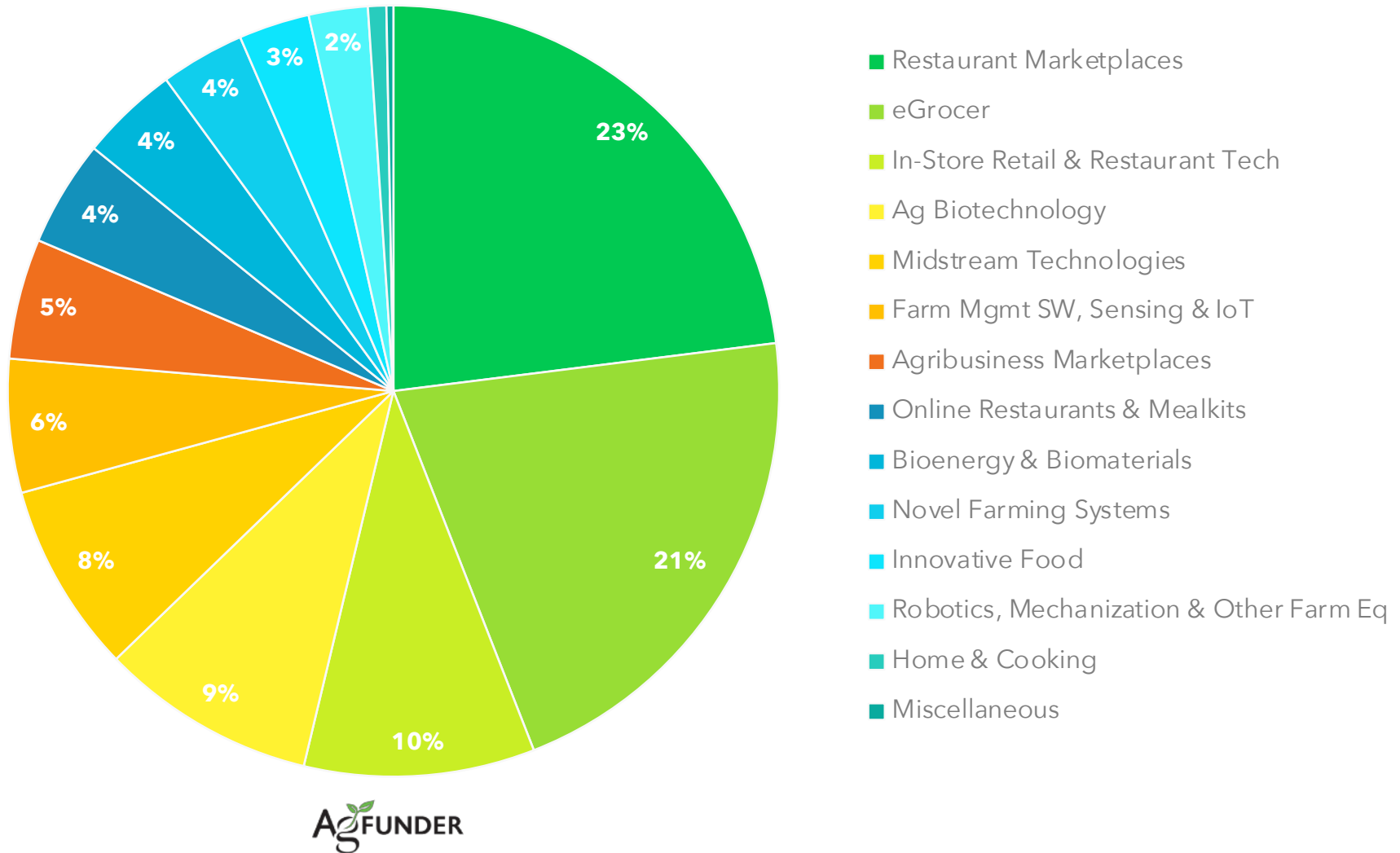


Deals by Category

Key Insights - Category

1. As the agrifood tech sector develops and matures, a combination of increasing deal activity and larger, later stage deals resulted in growth in certain categories.
2. Restaurant Marketplaces continued to bring in the most funding in a global phenomenon triggered by consumer demand for convenience and increased choice. Later stage, jumbo deals in the category helped increase dollar totals year-over-year by 83%. But there was also a 30% increase in the number of deals for the category indicating the creation of new companies in the category, despite the wealth of options on the market and the geographical dominance of some services.
3. Midstream technologies – those operating between the consumer and the producer – gained in popularity among venture capital investors with funding reaching nearly \$1.35 billion across 167 deals. A wide range of companies operate in this category including microbial raw ingredients manufacturers, environmental sensing technologies, food testing and traceability, logistics, and robotics for processors. The supply chain is ripe for disruption as food recalls and fraud continue to plague the industry globally.
4. Despite struggles for Online Restaurants & Meal Kits, grappling with challenging unit economics and competition from Restaurant Marketplaces, funding to the category grew 45% to \$752m, however just under half of this was robotic pizzeria Zume Pizza's \$375m Series C round.
5. Funding for Farm Robotics, Mechanization and Equipment startups jumped 56% as an increasing number of entrepreneurs turned their attention to automation processes on the farm. Some 83 startups closed funding rounds during the year as robotic technology continued to advance across industries.
6. Funding for Novel Farming Systems, including indoor agriculture systems and insect farms, dropped year-over-year with 54 deals getting 8.6% fewer dollars (\$596m). There were 17% fewer deals and also only two deals over \$100 million after the \$200 million record-breaking round for US vertical farm Plenty drove the category in 2017.

2018 AgriFood Tech Investment

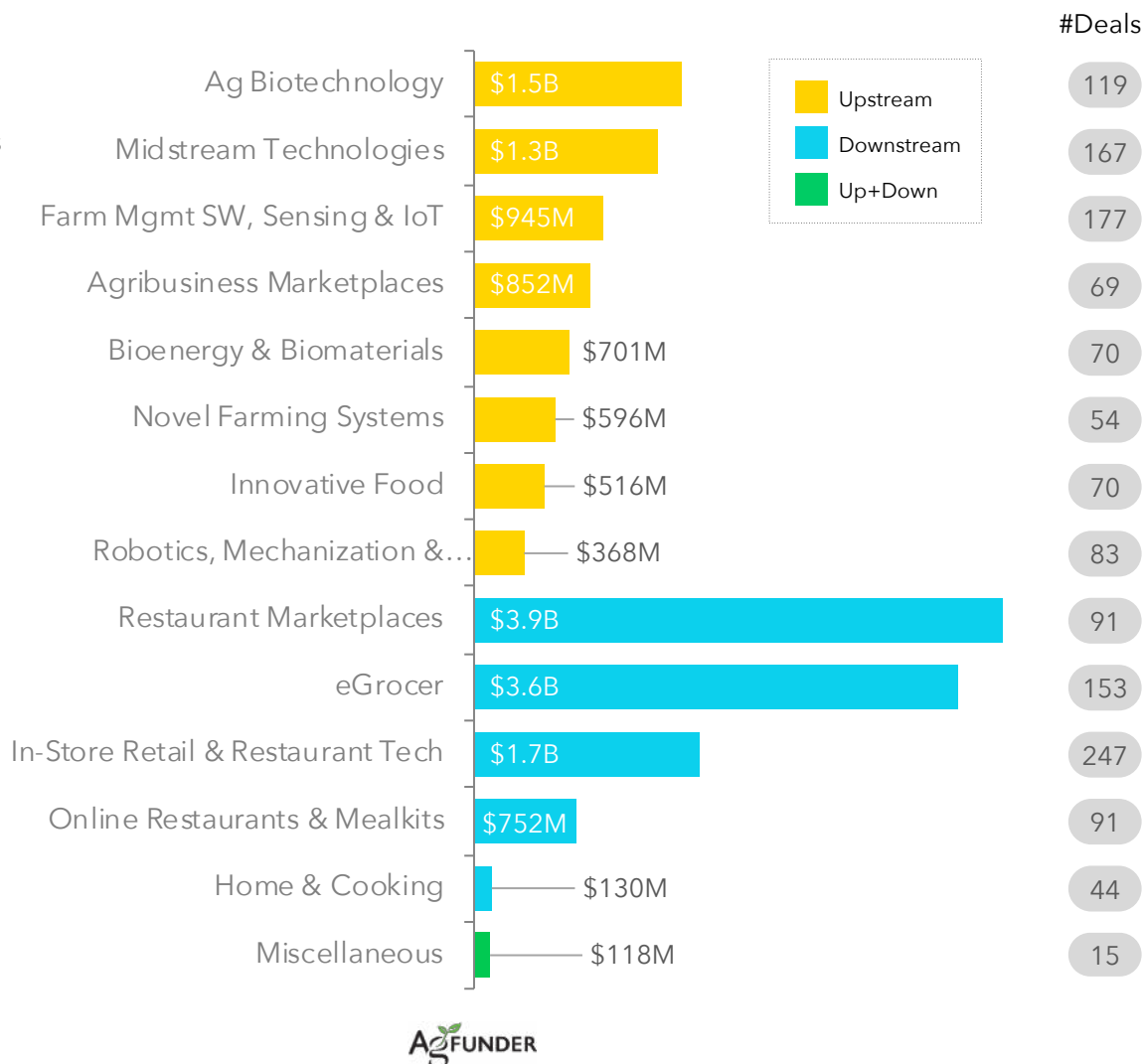


Deal Volume and Activity by Category

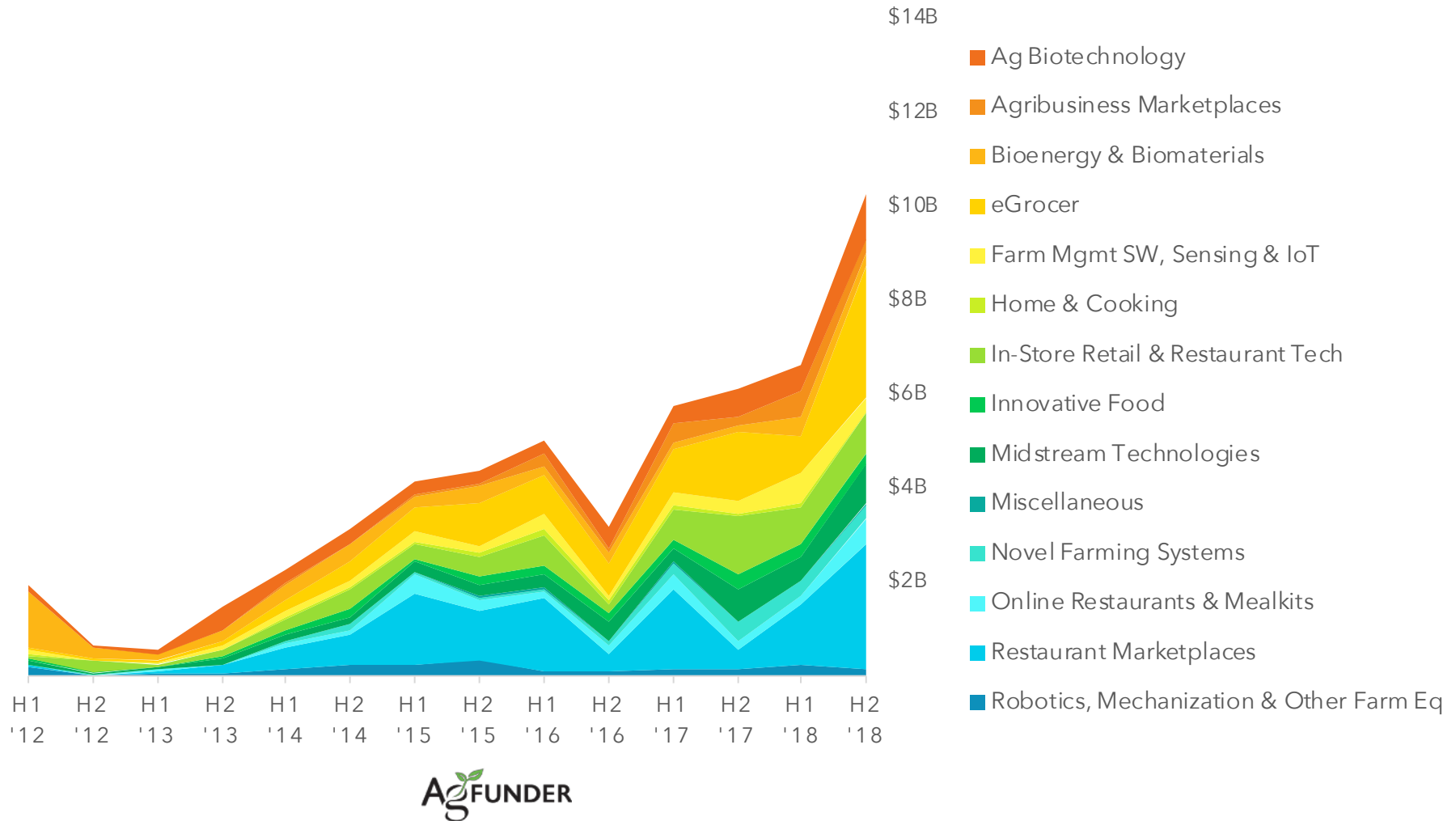
The large deals that pushed Restaurant Marketplace totals up from \$2.1 billion in 2017 included Swiggy's \$1 billion, Brazil's largest ever tech funding with iFood, and US's DoorDash's \$535m.

Investment grew year-over-year in the following categories Ag Biotech (up 59% from \$959m), Agribusiness Marketplaces (up 58% from \$539m), Bioenergy & Biomaterials (up 116% from \$324m), Farm Management Software, Sensing & IOT (up 65% from \$572m), Home & Cooking (up 18% from \$110m), Midstream Technologies (up 44% from \$933m), Robotics, Mechanization & Other Farm Equipment (up 56% from \$268m) and eGrocer (up 50% from \$2.36bn)

Investment dropped for startups in In-Store Retail & Restaurant Tech (down 14% from \$1.9bn), Innovative Food (down 2% from \$527m), and Novel Farming Systems (down 9% from \$648m).



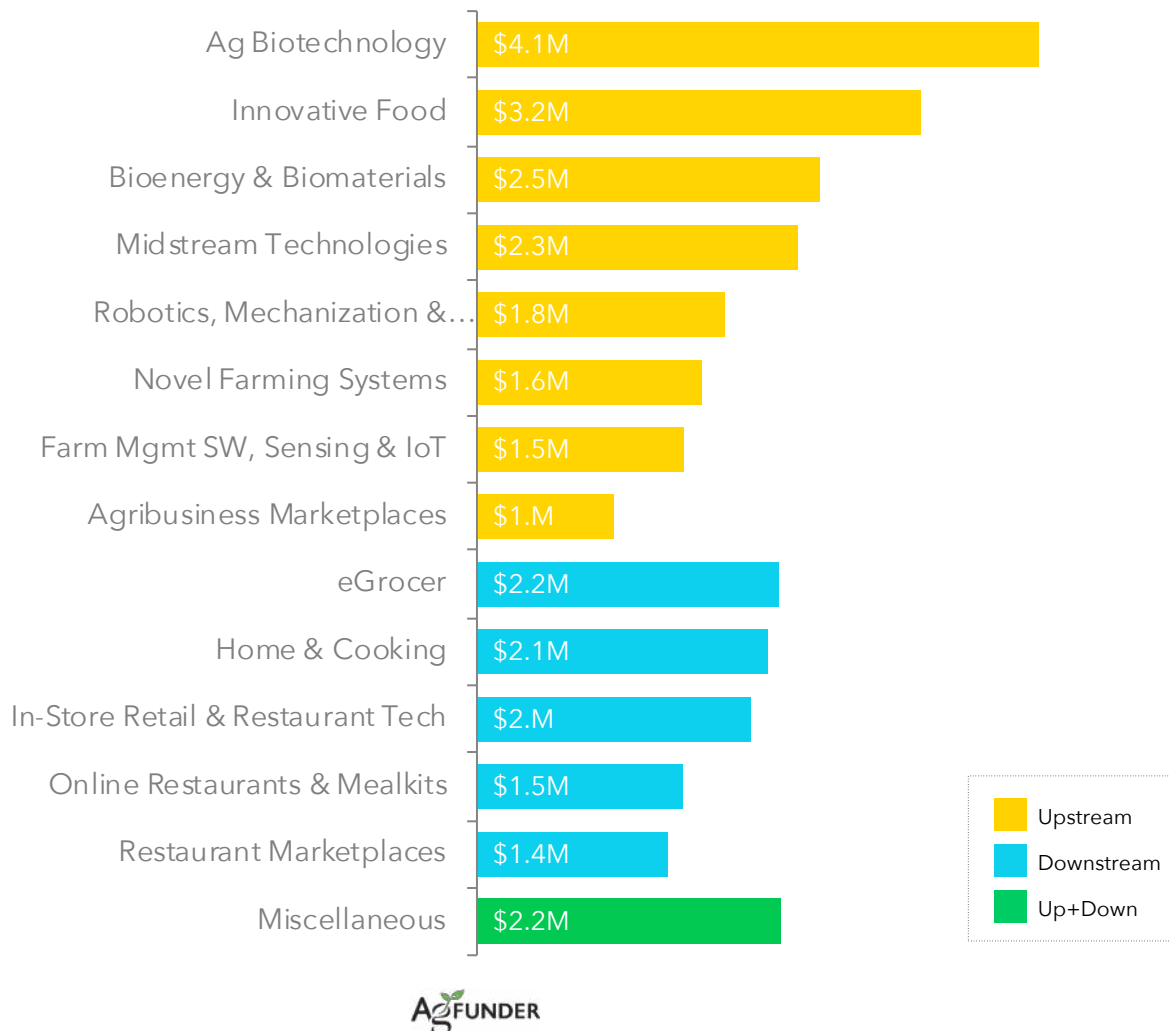
Investment by Category 2012-2018



Median Deal Size by Category

Ag Biotechnology and Innovative Food deals tend to have higher medians values due to the capital-intensive nature of the work. Cultured meat in the Innovative Food category is a clear example, and startups are working hard to bring down the costs of the process, particularly relating to the media used.

Costs for Ag Biotech startups could also start to reduce as companies like Benson Hill Biosystems and Inari create computational breeding platforms and new gene editing tools that can drastically reduce the time-to-market.

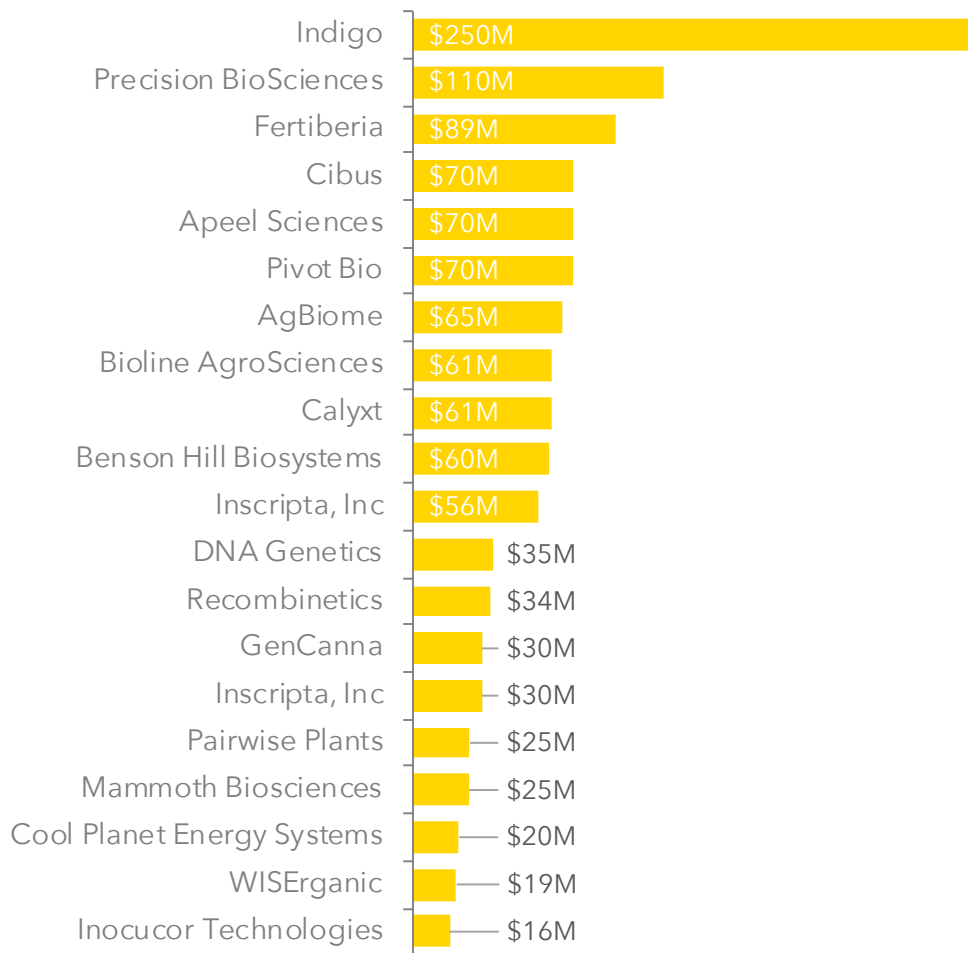


Top 20 Ag Biotechnology Deals

Indigo Ag, the Boston-based microbial crop inputs startup, was top of the leader board in Ag Biotech again, after raising a Series E in September valuing it over \$3bn. It has started to pivot its business model further into the supply chain with an online grain marketplace and logistics business so next year could be recategorized in Midstream Tech.

Pivot Bio gained high profile backing for its nitrogen-fixing microbes including Breakthrough Ventures, a billionaire investor syndicate fund.

Precision BioSciences is a gene-editing startup operating across industries with a food-focused subsidiary developing nutritionally-improved canola, sweeteners, and pulses for protein. Cibus, Calyxt, Inscripta, and Benson Hill Biosystems are also using gene editing techniques in crops. Recombinetics raised this round ahead of spinning off Acceligen, its animal health gene editing business.



Top 20 Farm Management SW, Sensing & IoT

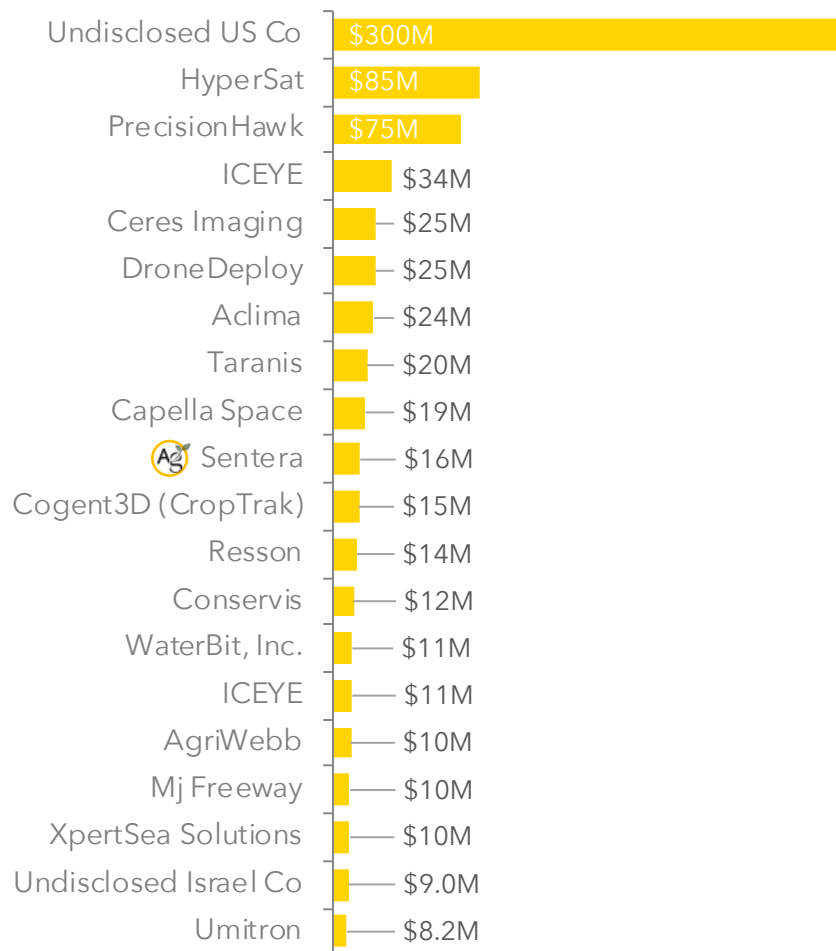
Remote sensing startups dominated the Farm Management Software, Sensing & IoT startup leader board this year including drone services, airplane imagery offerings and satellite imagery analytics.

These startups offer farmers a way to improve parts of their operations and spot issues such as disease or pests, but they are also increasingly offering insights to other clients such as commodity traders, insurance companies, and banks.

Conservis, one of the most mature of the software platforms, partnered with Rabo AgriFinance, for example.

Elsewhere, AgriWebb raised funding for its animal management platform and acquisition of a UK startup FarmWizard.

Mj Freeway offers software for cannabis growers, XpertSea and Umitron help the aquaculture sector and WaterBit offers autonomous irrigation technology.



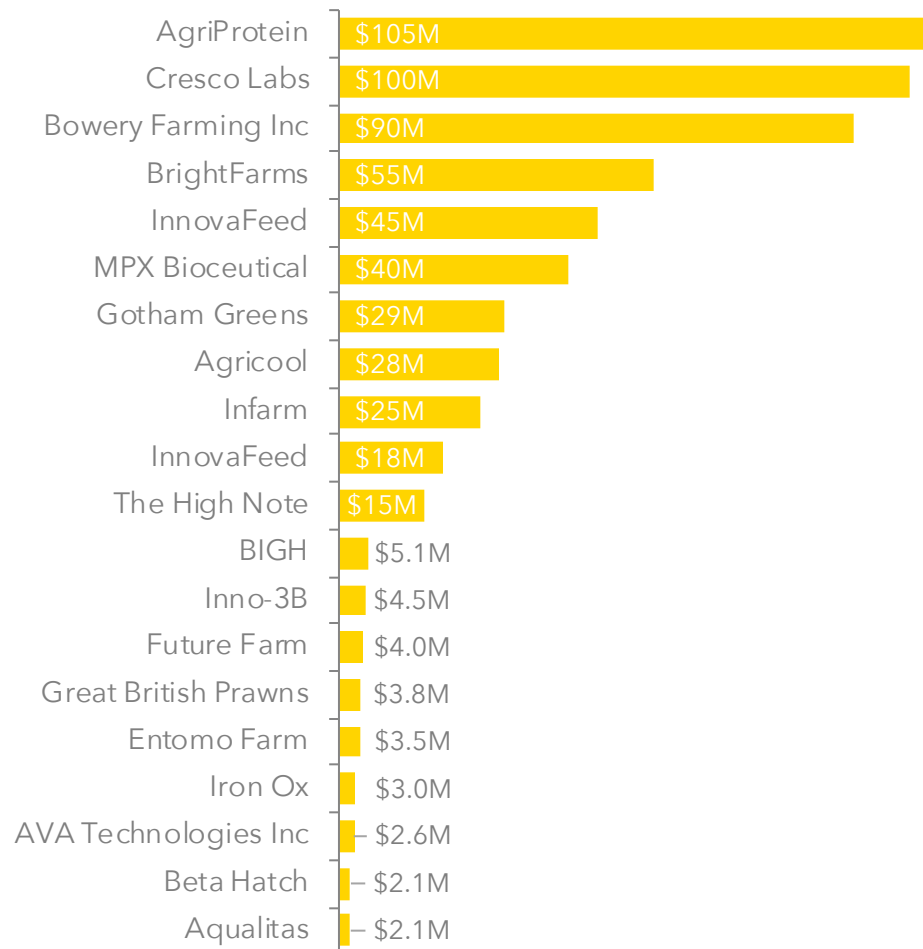
Top 20 Novel Farming Systems Deals



There's a funding race occurring in the insect farming space after AgriProtein raised a \$105m equity and debt round in the largest insect farming deal on record at the time. The UK/South Africa startup raises black soldier flies for livestock feed and is constructing its next generation of farms. During February 2019, however, French mealworm farmer Ynsect raised \$125m at Series C breaking the record.

InnovaFeed and Entomo Farm are two more insect farms in the top 20.

Vertical farming is a major feature of the Novel Farming Systems category and while investment levels were down on 2017, Californian cannabis grower Cresco Labs, Germany's Infarm, and French container farming group Agricoool all raised large rounds.



Top 20 Midstream Tech Deals

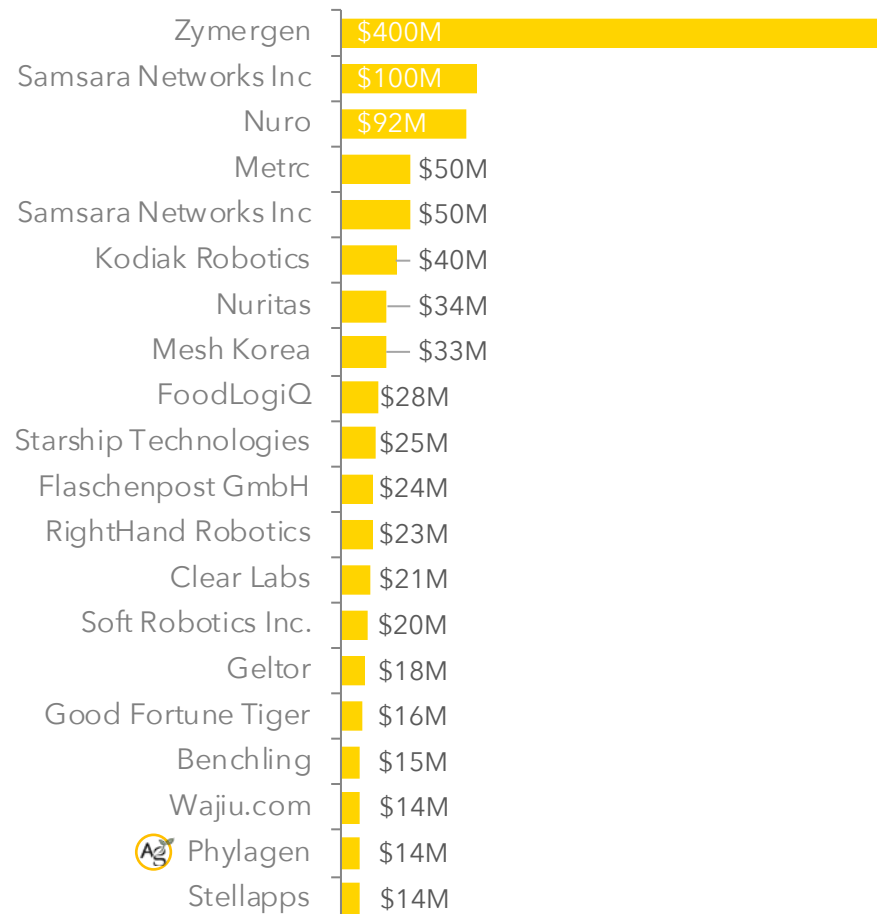


Deal sizes increased dramatically in the Midstream Tech category with the largest deal far surpassing Ginkgo Bioworks' \$275m Series D in 2017. In 2017 there were only three deals over \$45m in value.

Zymergen is also a microbe engineering group like Ginkgo and raised a huge Series C involving SoftBank Vision Fund. Both Ginkgo and Zymergen design and manufacture molecules for industries including food, agriculture and pharmaceuticals.

The number of robotics technologies in this category increased. Some aim to improve efficiencies in transport – Nuro, Starship Tech, and Kodiak – others work on food processing and packing -- RightHand Robotics and Soft Robotics.

Other prevalent startups in this category are tracking and tracing food through the supply chain such as FoodLogiq with its software-as-a-service and Samsara Networks with its environmental sensors.



Top 20 Innovative Food Deals



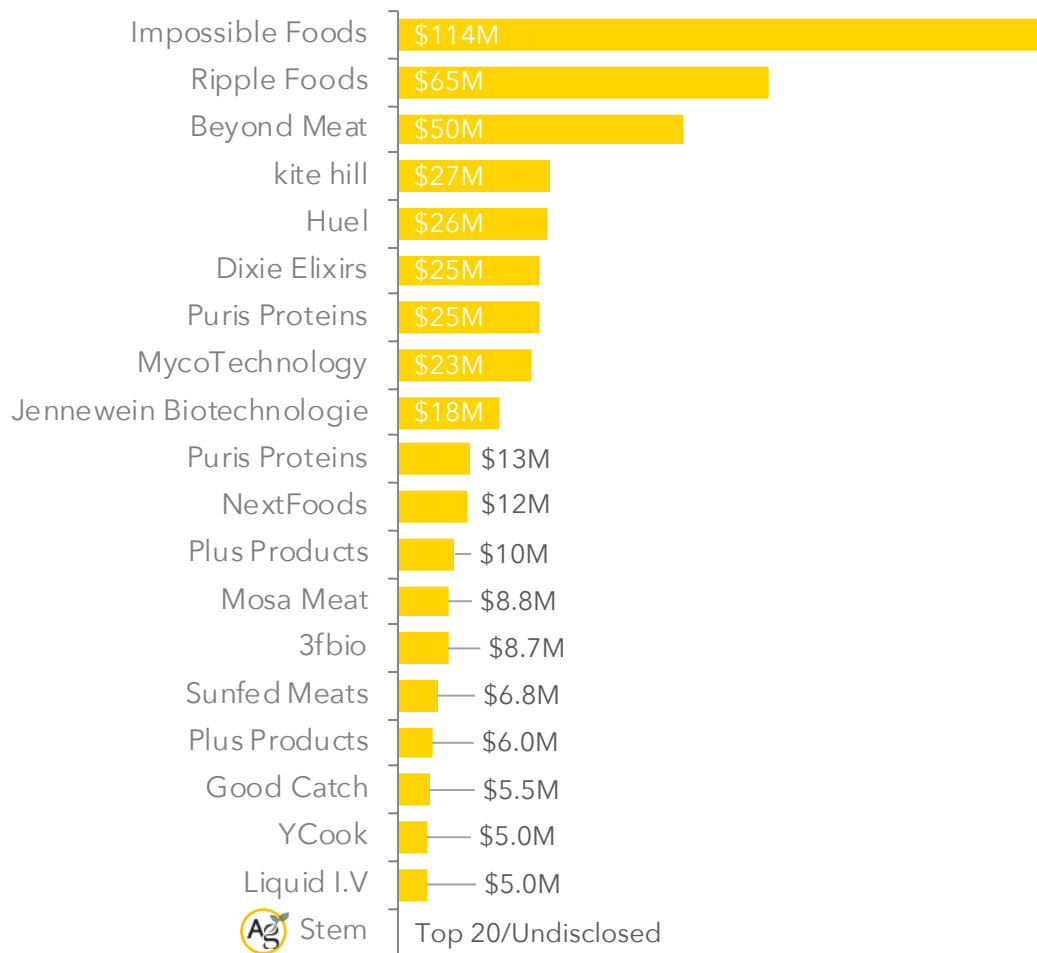
This is still a relatively small category of startups within the agrifood tech sector and while funding decreased a little year-over-year, the number of startups increased.

Impossible Foods, one of the most mature plant-based meat startups, raised a \$114m convertible note bridge round with Singapore state fund Temasek and Sailing Capital. It's unclear if the round is a precursor to an IPO, unlike its peer Beyond Meat, which applied to list on the Nasdaq one month after raising a Series H in October.

Mosa Meats, founded by Mark Post, the first to replicate a burger in a lab, raised Series A funding led by M Ventures.

Ripple Foods and Kite Hill are both creating plant-based dairy alternatives, while Puris Proteins, Stem, and MycoTechnology are manufacturing alternative ingredients.

Sunfed Meats, Good Catch, and Future Meat Technologies are all culturing meat.



Top 20 Retail & Restaurant Tech Deals

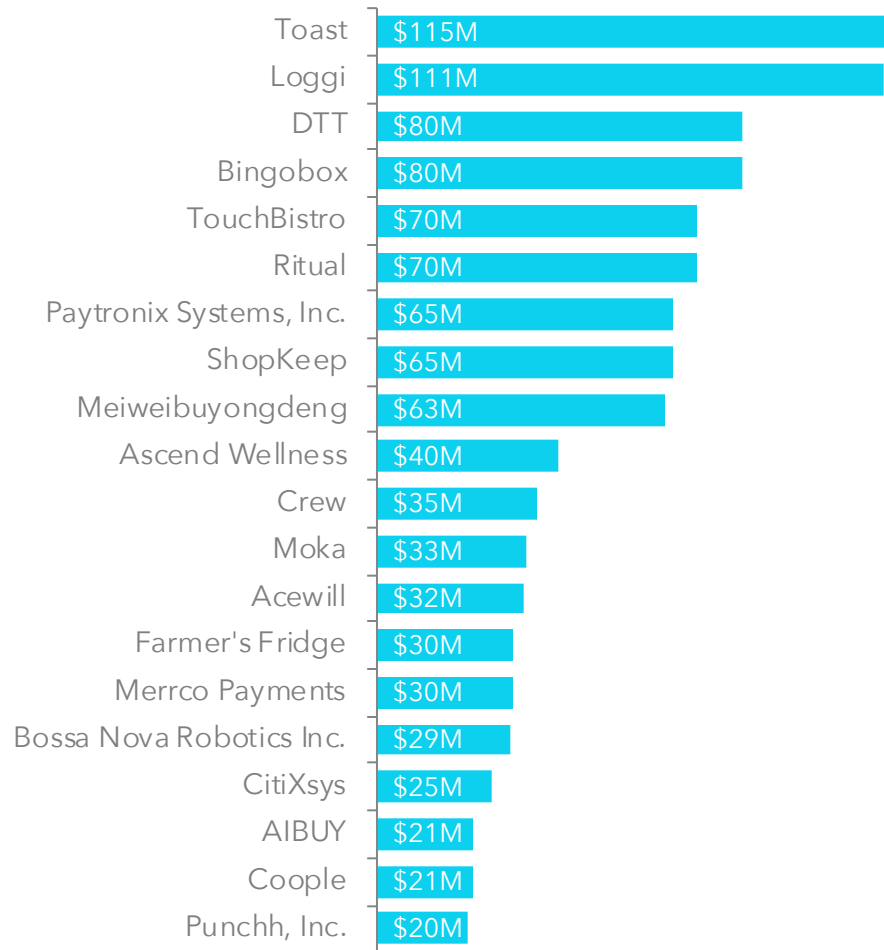


Toast's Series D round led by T. Rowe Price, valued the restaurant management software startup at \$1.4bn. The company is trying to digitize the \$800bn restaurant industry.

DTT (recently rebranded to Dtiq) helps restaurants improve their performance with intelligent video and advanced analytics. It can measure speed-of-service as well as policy compliance and customer satisfaction. It acquired EZUniverse in 2018 to bolster its offering.

Unmanned stores are a big trend in China and Bingbox is one of the country's biggest, dubbed 'China's Amazon Go' with plans to expand internationally. Also bringing automation to retail is Bossa Nova Robotics, the shelf-scanning, autonomous robots for grocery stores.

Ritual is a social food ordering app for workers, promising to help restaurants grow their businesses by serving large companies such as Spotify and Goldman Sachs.



Top 20 eGrocery Deals

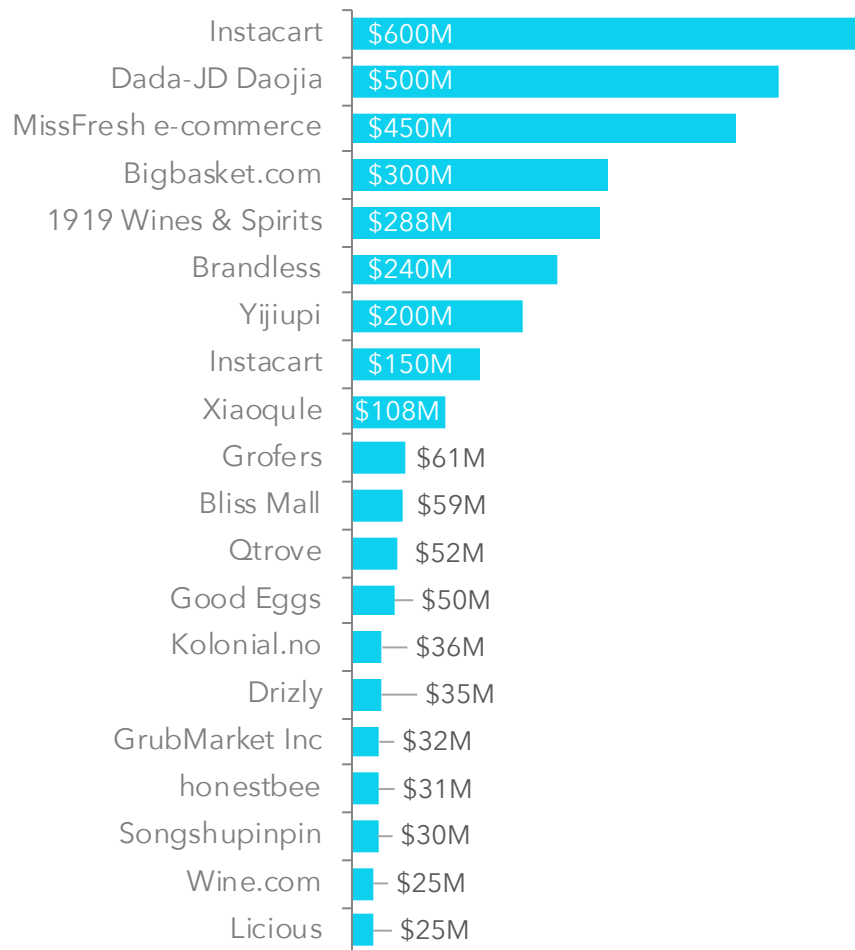


eGrocery contributed some of the year's largest deals as consumers across the globe looked for convenience and to combat the many infrastructural issues inherent in their access to food.

The majority of the largest eGrocery deals were in China and India, where incomes are rising, consumers want more choice and to know where their food comes from.

A US startup still raised the largest round in Instacart and online retailer Brandless also raised a large round for its online store that promises cheaper food and home products due to its simplistic packaging.

The once beleaguered Californian startup Good Eggs turned its business around and raised a Series C round led by leading venture capital firm Benchmark Capital. The turn around is largely attributed to its new CEO Bentley Hall.





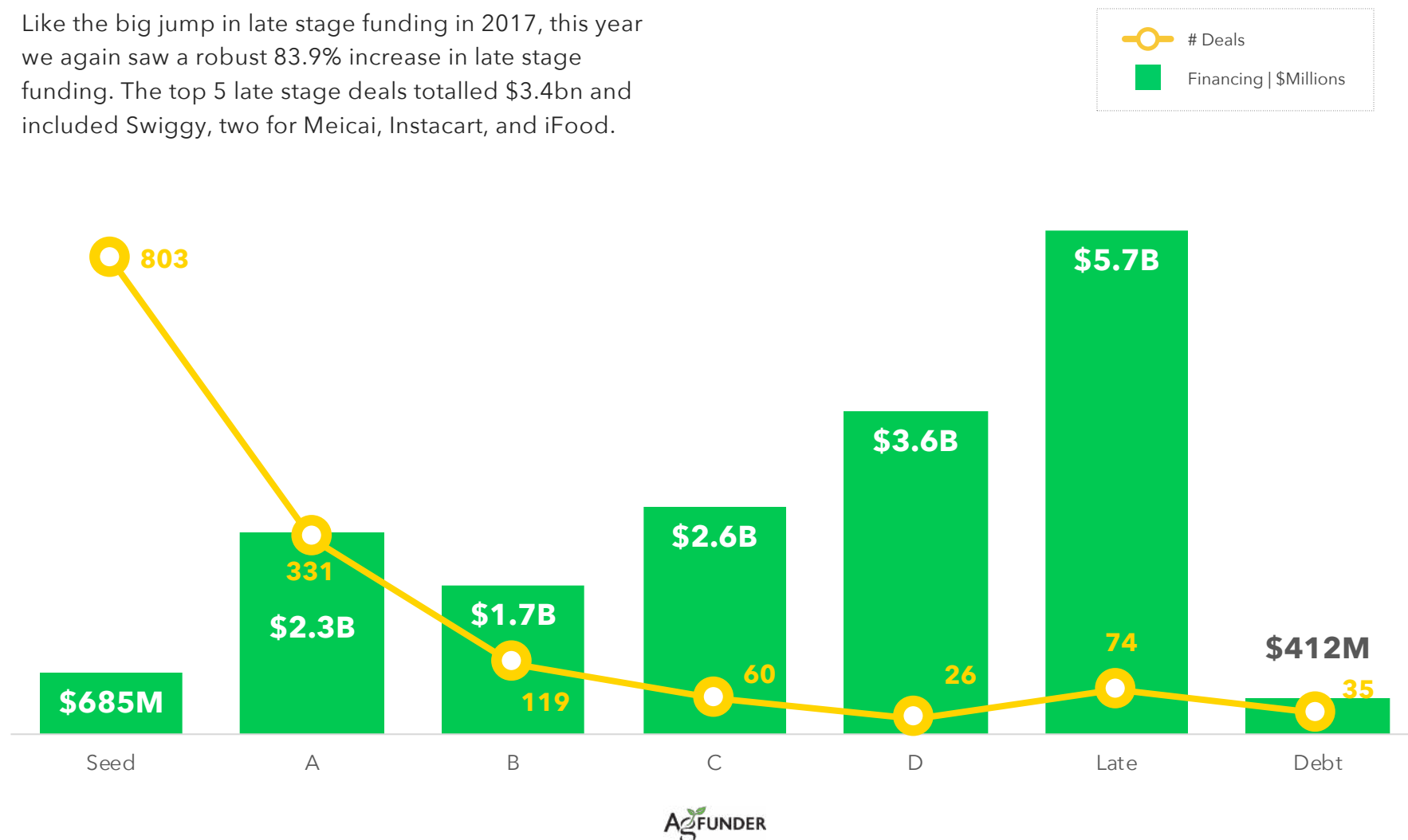
Deals by Stage

Key Insights – by Stage

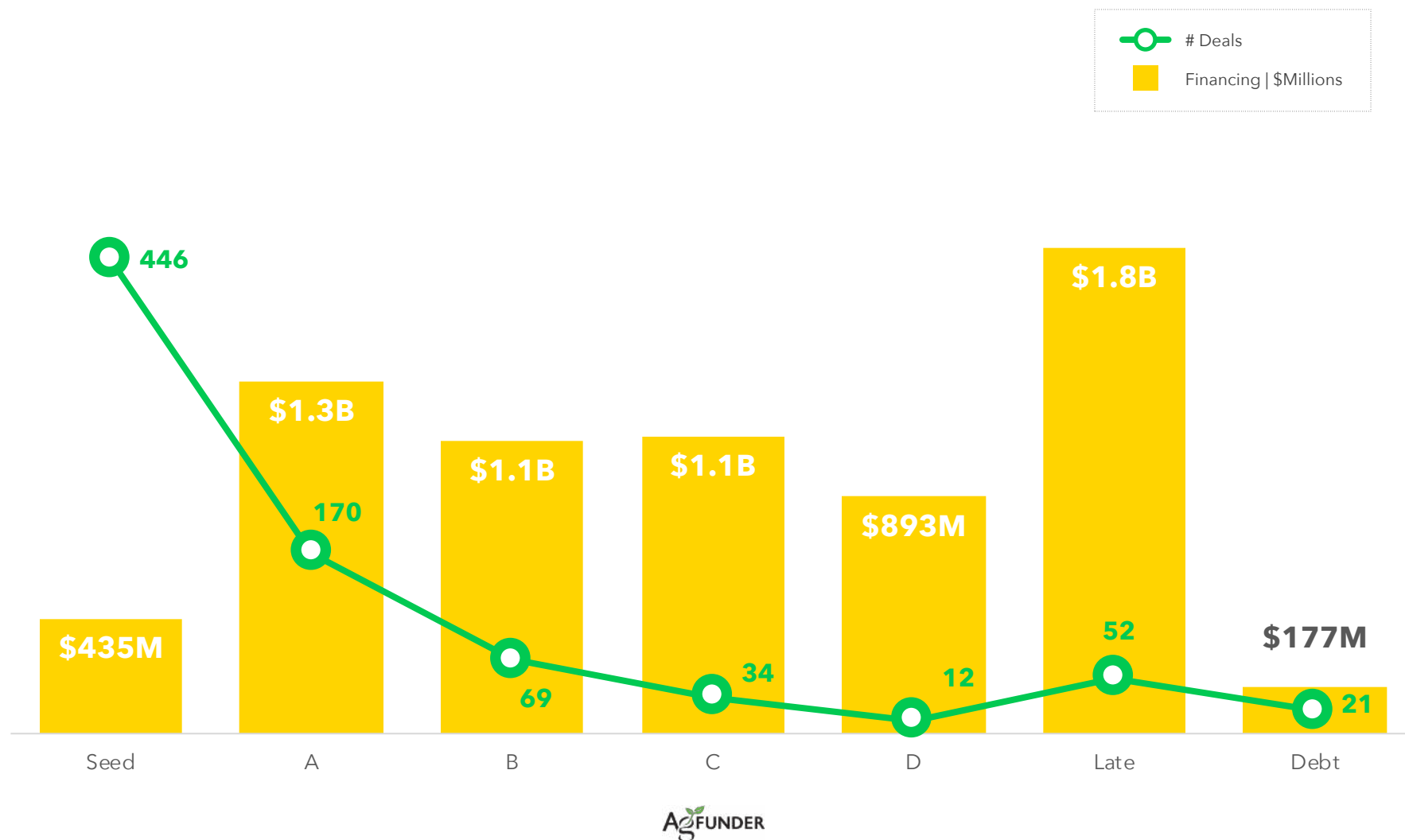
1. Overall agrifood tech deal count increased by 10.3% to 1,440 deals in 2018 and most of that increase was at the seed stage.
2. Seed stage deal activity increased by 14.5% while the median seed deal size increased to \$1.3m from \$1.1m. Seed funding reached \$685m, a 50% year-over-year increase.
3. Much of this increase at the Seed stage occurred upstream with increasing numbers of entrepreneurs realizing the opportunity to innovate technologies away from the consumer. Upstream Seed stage deals raised \$435m during the year across 444 deals compared to a \$238m total downstream across 344 deals. Two upstream outliers in capital-intensive categories drove the upstream Seed stage total up: delivery robot Starship Technologies raised \$25m follow-on Seed funding while insect farming group InnovaFeed raised \$18.5m.
4. Growth in agrifood tech funding was largest at Series C stage where it increased 84% to reach \$2.6 billion from \$1.4 billion. The number of Series C deals also increased to 60 from 47 as well as the median deal size which reached nearly \$26m in the second half of the year up from \$22m in H2-2017 and just \$12m in H2-2016.
5. While there were fewer Series D rounds, the stage raised 76% more funding year-over-year as the median increased to \$115m in the second half of the year, up from \$44.4m in H2-2017 and \$16.5m in H2-2016. There were four deals of \$100m and more and the smallest Series D deal was \$10m. All but two were US companies.
6. Series A stage funding did not move much – under 1% – as the average deal size decreased, despite a 21% increase in the number of Series A deals.
7. Signifying the maturation of the agrifood sector overall, late stage funding jumped 83.9% year-over-year, with a 15% increase in the number of deals. Late stage deals include startups beyond Series D; there were more upstream (53) although downstream late stage deals were much larger as 22 closed \$3.9bn in funding.

Overall Deal Volume and Activity by Stage

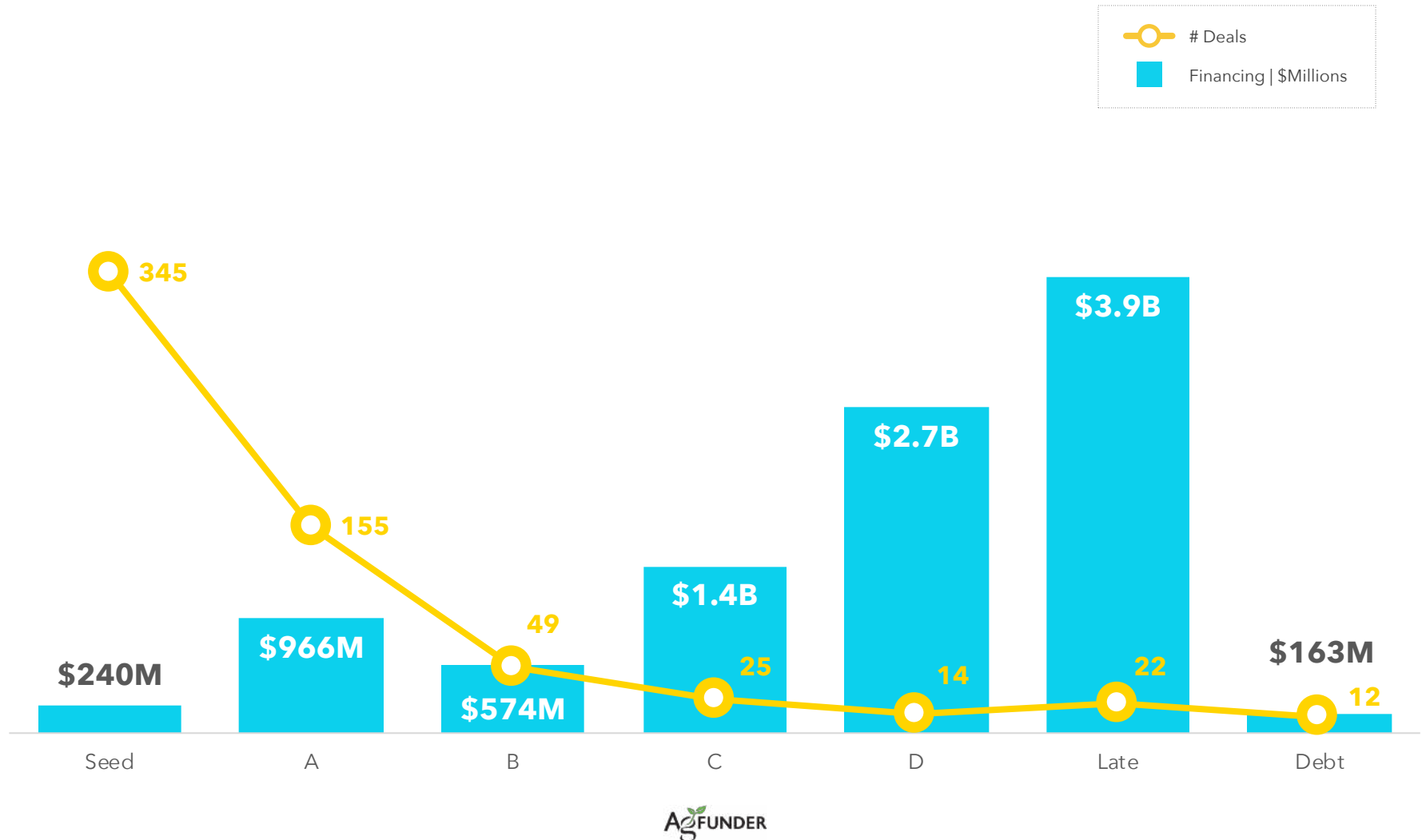
Like the big jump in late stage funding in 2017, this year we again saw a robust 83.9% increase in late stage funding. The top 5 late stage deals totalled \$3.4bn and included Swiggy, two for Meicai, Instacart, and iFood.



Deal Volume & Activity by Stage

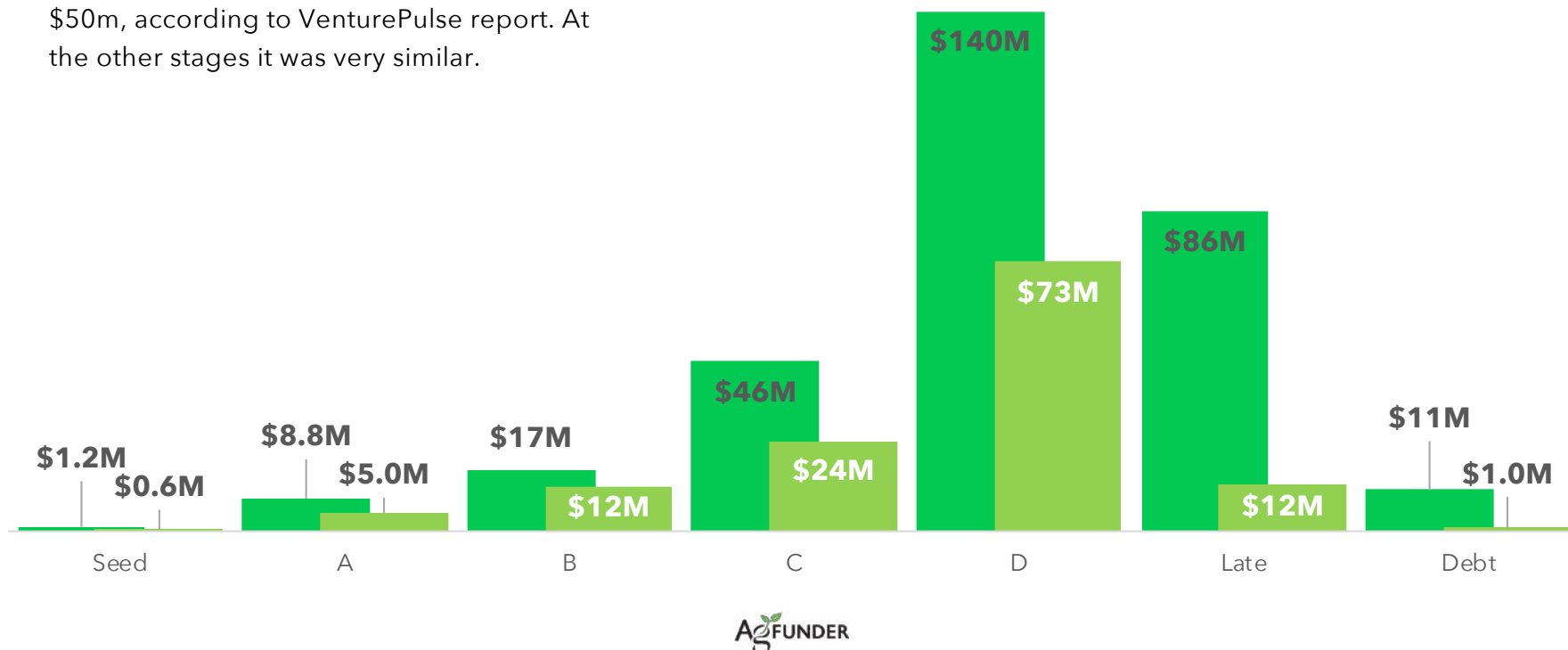


Deal Volume & Activity by Stage



Deal Average and Median by Stage

- It makes sense for there to be divergence between the average and median deal size at the late stage where there were many outliers as mature startups raised jumbo rounds.
- The median deal size at Series D was bigger than in the global VC markets where it was \$50m, according to VenturePulse report. At the other stages it was very similar.



Top 15 Seed Deals

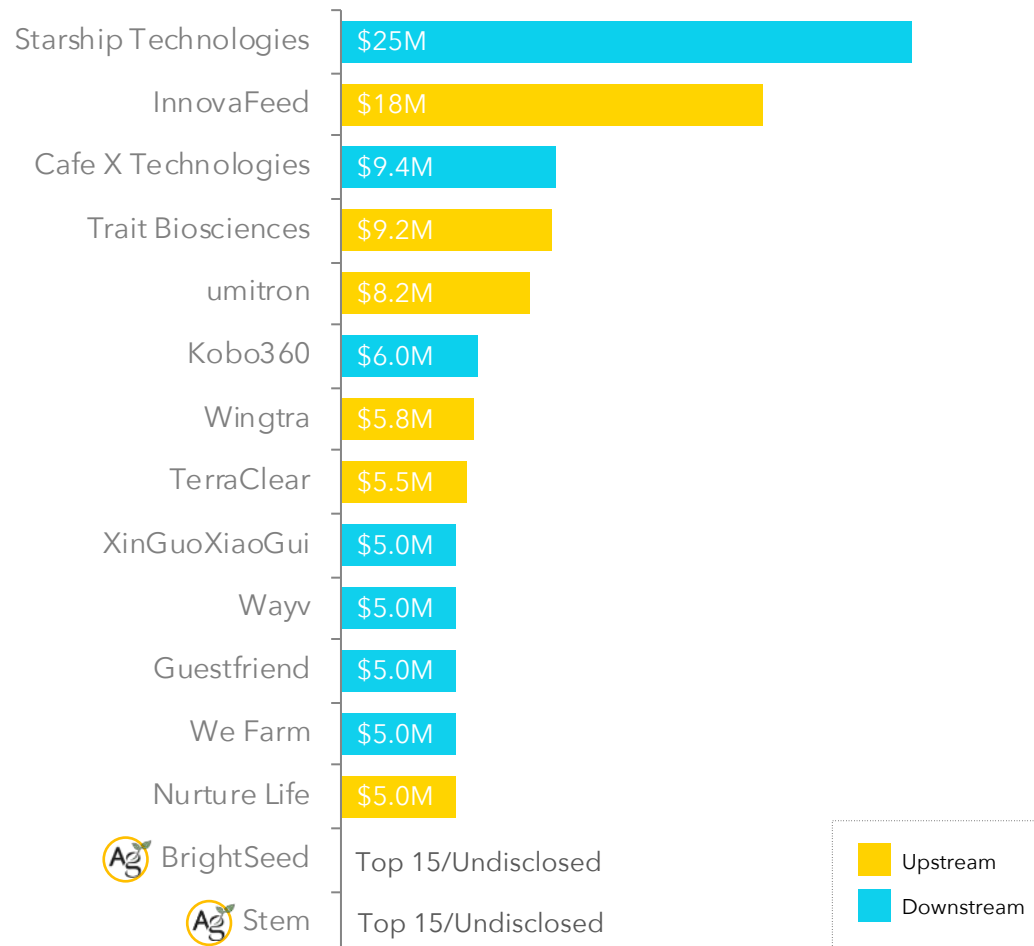
Seed stage funding expanded by 49% to \$685m in 2018 from \$453 million in 2017, while the number of deals increased by 14.5% to 795.

Robotics startups raised some of the largest seed deals including UK delivery tech Starship Technologies, unmanned barista Café X Technologies and drone manufacturer Wingtra.

Insect farming is a capital intensive, real asset-based business so it's unsurprising to see France's InnovaFeed at the top of the list. It is manufacturing mealworm for the aquaculture industry, which Japanese startup Umitron is developing management software for.

Wayv has developed a portable microwave for consumers.

BrightSeed is discovering bioactives in food to combat chronic disease while Stem is making a sugar alternative.



AgFunder

Top 15 Series A Deals

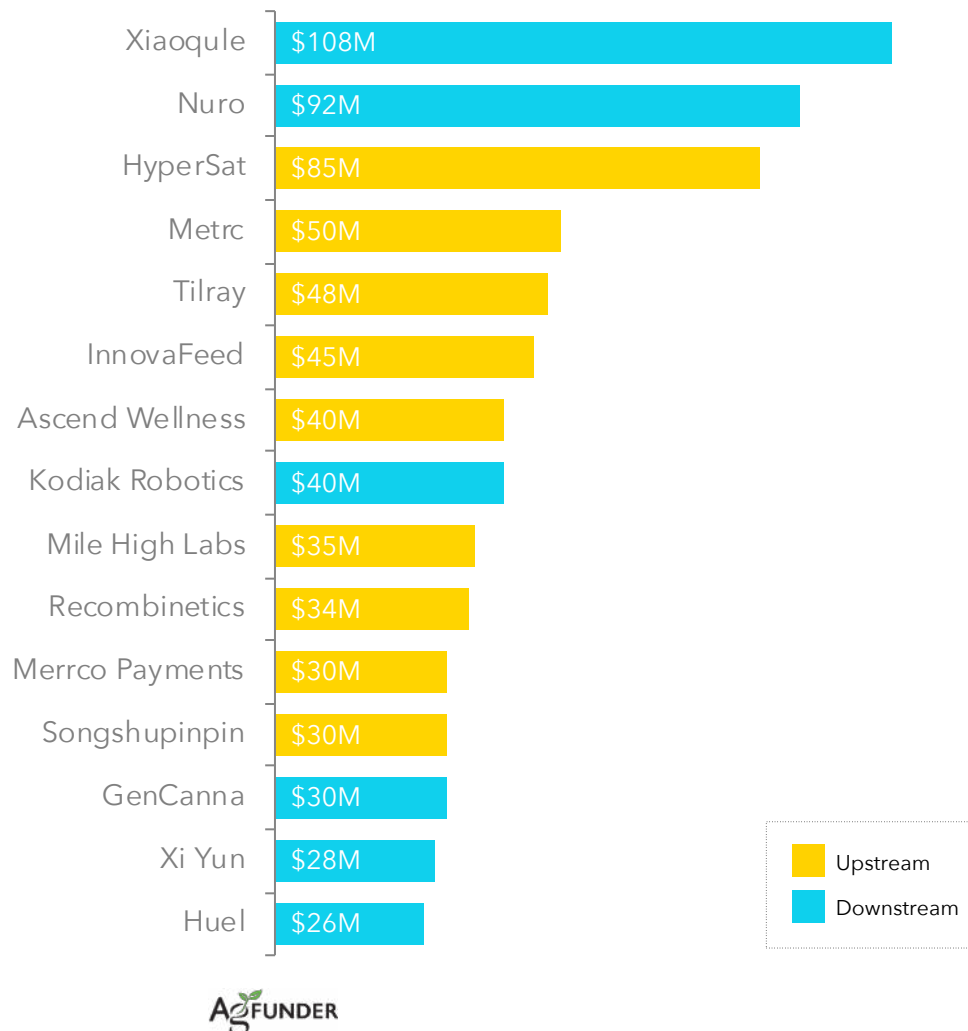
Series A stage funding increased by just 1% in 2018 to \$2.3bn from \$2.28bn in 2017, while deal count increased by 21.4% to 329 from 271.

Xiaoqule is a Chinese community eGrocer with backing from a bevy of high profile venture firms including ZhenFund and GGV Capital.

Otherwise upstream startups dominated the Series A leaderboard including HyperSat, which is launching a constellation of high resolution hyperspectral imaging satellites with plans to target agriculture and other industries.

Many cannabis businesses raised Series A funding including Tilray, before its infamous stock listing, GenCanna, Merrco Payments, Ascend Wellness and Mile High Labs.

Huel is the European meal replacement drink startup competing with Soylent.



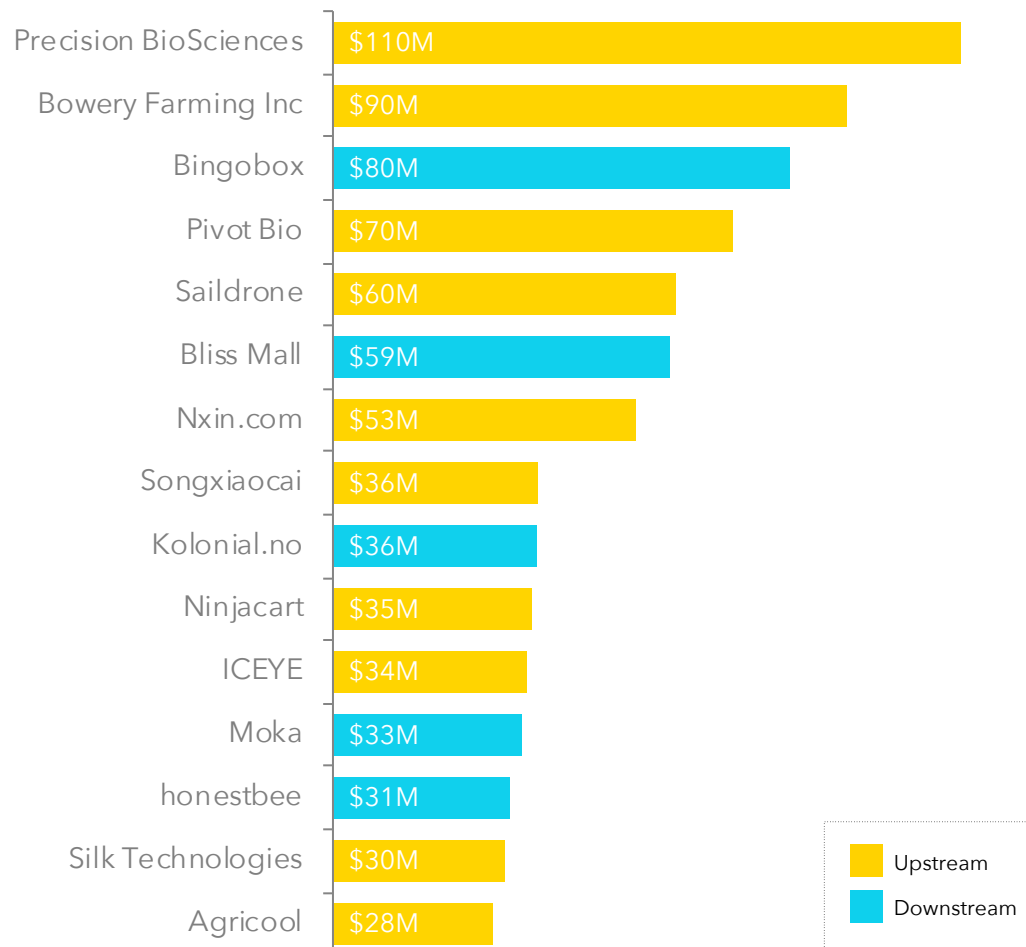
Top 15 Series B Deals

Series B funding dropped 27.9% year-over-year to \$1.68bn from \$2.33bn, while the deal count fell 11% to 119 from 134.

Upstream startups dominated the Series B stages, likely contributing to the outsized growth in funding closer to the farmer.

Bowery Farming attracted investment from GV and Singapore state fund Temasek as it promised to expand its robotics-enabled vertical farming business.

Pivot Bio, which recently reported positive results from its nitrogen-fixing microbial crop input, closed this round with the help of Breakthrough Ventures, the VC backed by a bevy of billionaires Bill Gates, Jeff Bezos, Mark Zuckerberg and Richard Branson.



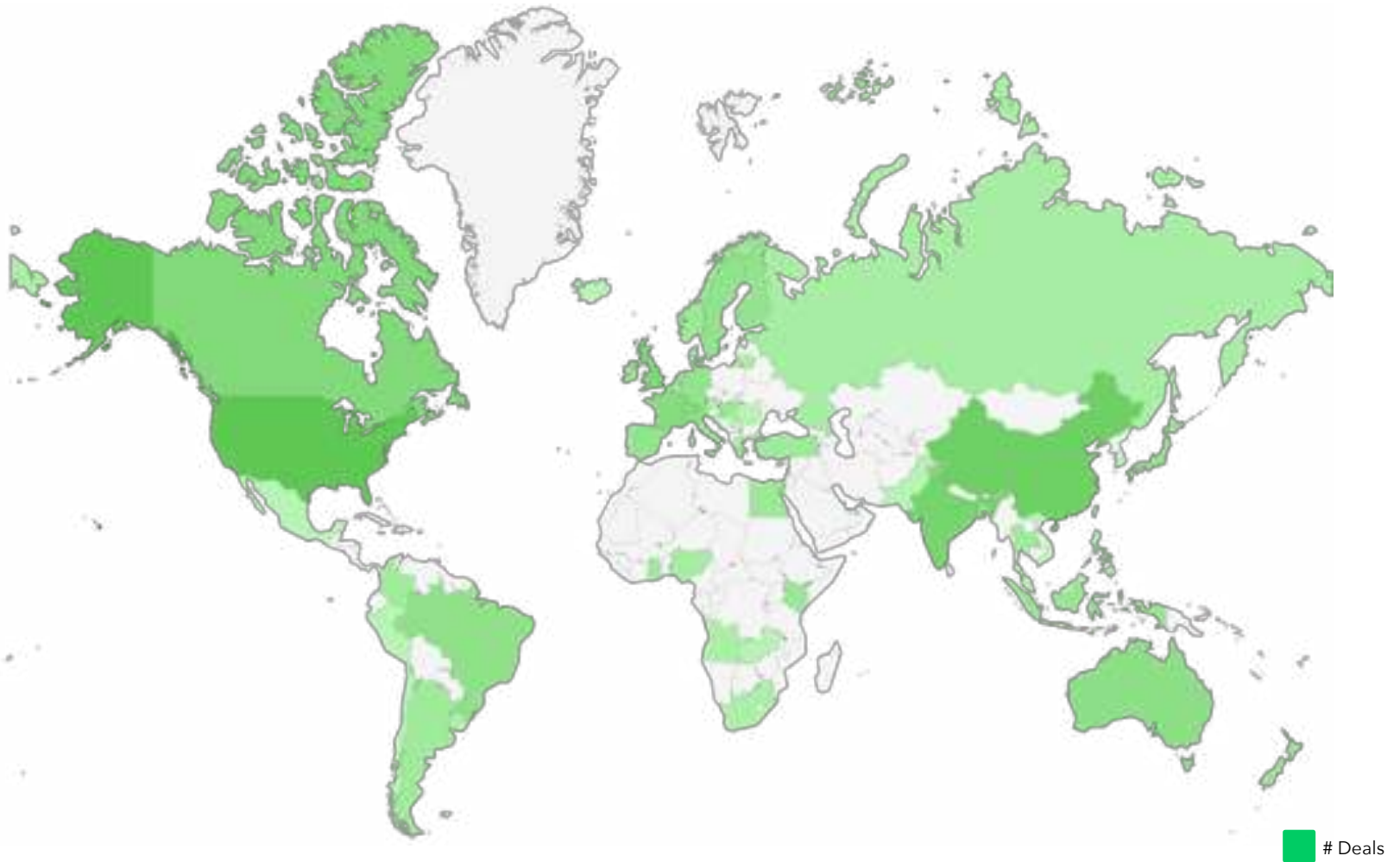
A black and white photograph showing a person in silhouette, holding a flag on a pole. The person is positioned in the foreground, and the Taj Mahal is visible in the background, partially obscured by the person and some foliage. The scene is set in a field of tall grass or reeds.

Deals by Geography

Key insights – by Geography

1. The US continues to dominate the global agrifood technology investment landscape with 567 investments in 2018, a healthy 23% jump on 2017 numbers. Total dollars invested was a 67% increase on 2017 levels to \$7.9bn.
2. China came in second with \$3.5bn invested across 184 deals. Whilst this dollar total was a mere 5% improvement on the 2017 total, the number of deals jumped an incredible 500%, a clear indication of a healthy and rapidly developing agrifood tech ecosystem in China, although we can attribute some of this to the improved discovery of deals by our data partner BitsxBites.
3. Third place again fell to India with \$2.4bn invested, an impressive 280% increase year-on-year. This figure was achieved across fewer deals – down 14% – as capital flowed to fewer, more mature, and mainly downstream startups.
4. Similarly, Brazil recorded its highest ever investment total at over \$700m despite a 50% drop in the number of deals funded.
5. While we applaud the increased investment totals, for such large markets, we'd love to see more early stage startups being funded to ensure future dealflow and development of their agrifood tech ecosystems.
6. Elsewhere the UK saw a 43% drop in investment dollars (\$285m) on identical deal numbers to 2017, while France doubled its investment total (\$222m) on 16% fewer deals.
7. Investment levels in Israel declined by 26% to \$185.5m after a record-breaking year in 2017.
8. Singapore was the clear leader in the ASEAN region recording \$84m of investment last year, a year-over-year jump of 82%.
9. Australia and Ireland recorded marginal increases to \$29m and \$79m respectively.
10. New countries entering the agrifood tech investment space for the first time were Albania, Romania, Serbia, and Zambia.

Global Investment World Map



Top 20 Non-U.S. Deals

China continues to exert dominance over international deal volume.

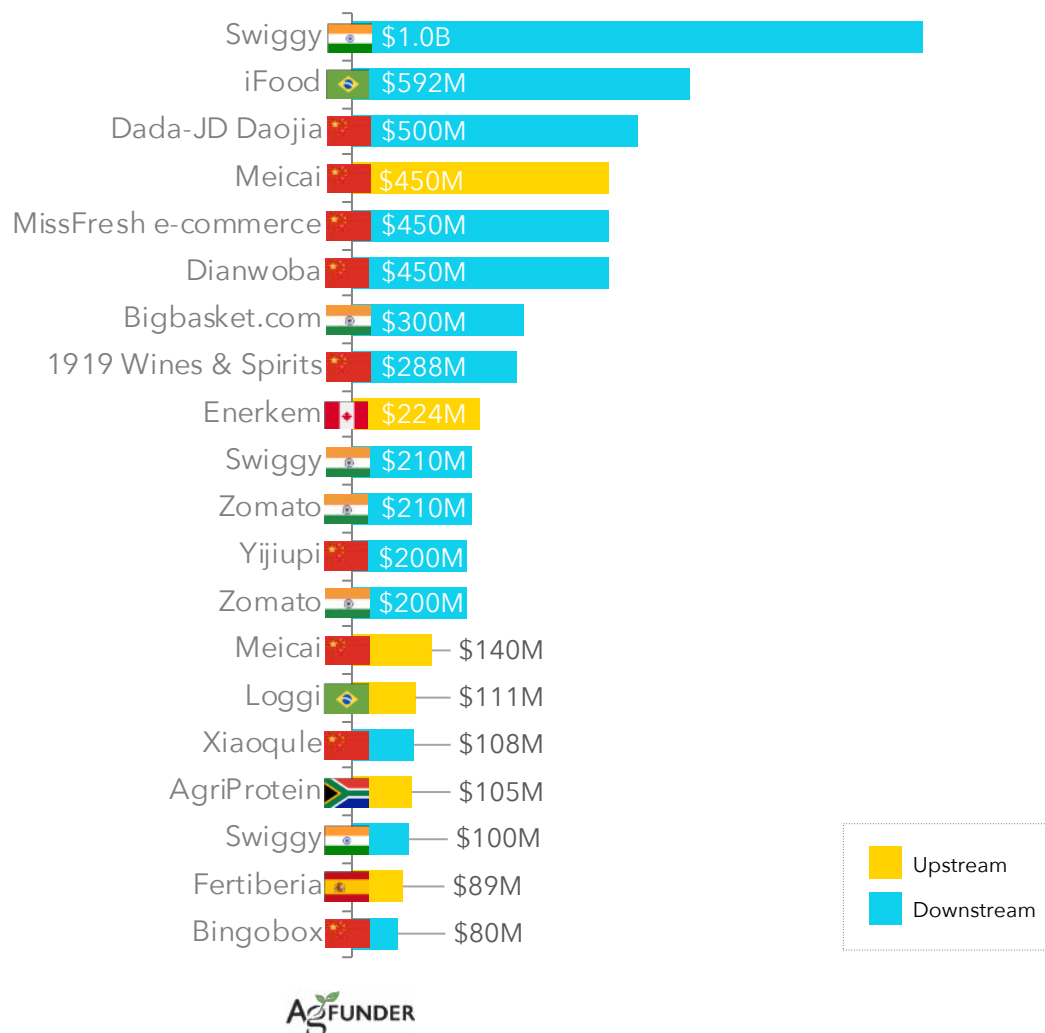
Dada-JD Daojia is an eGrocer that raised funding from JD.com and Walmart.

MissFresh, another eGrocer, raised from Goldman Sachs, Tencent Holdings, and Glade Brook Capital. BingoBox is a leader in the unmanned store space.

There was activity upstream in China too with Meicai, the agribusiness marketplace focused on connecting produce farmers to markets, raising a total of \$590m including a \$140m strategic round.

Indian startups included restaurant marketplace Swiggy, eGrocer Bigbasket, and restaurant delivery service Zomato.

Canada's Enerkem is in bioenergy Brazil's Loggi is a food delivery and payment service for restaurants, and Fertiberia is a Spanish fertilizer company.



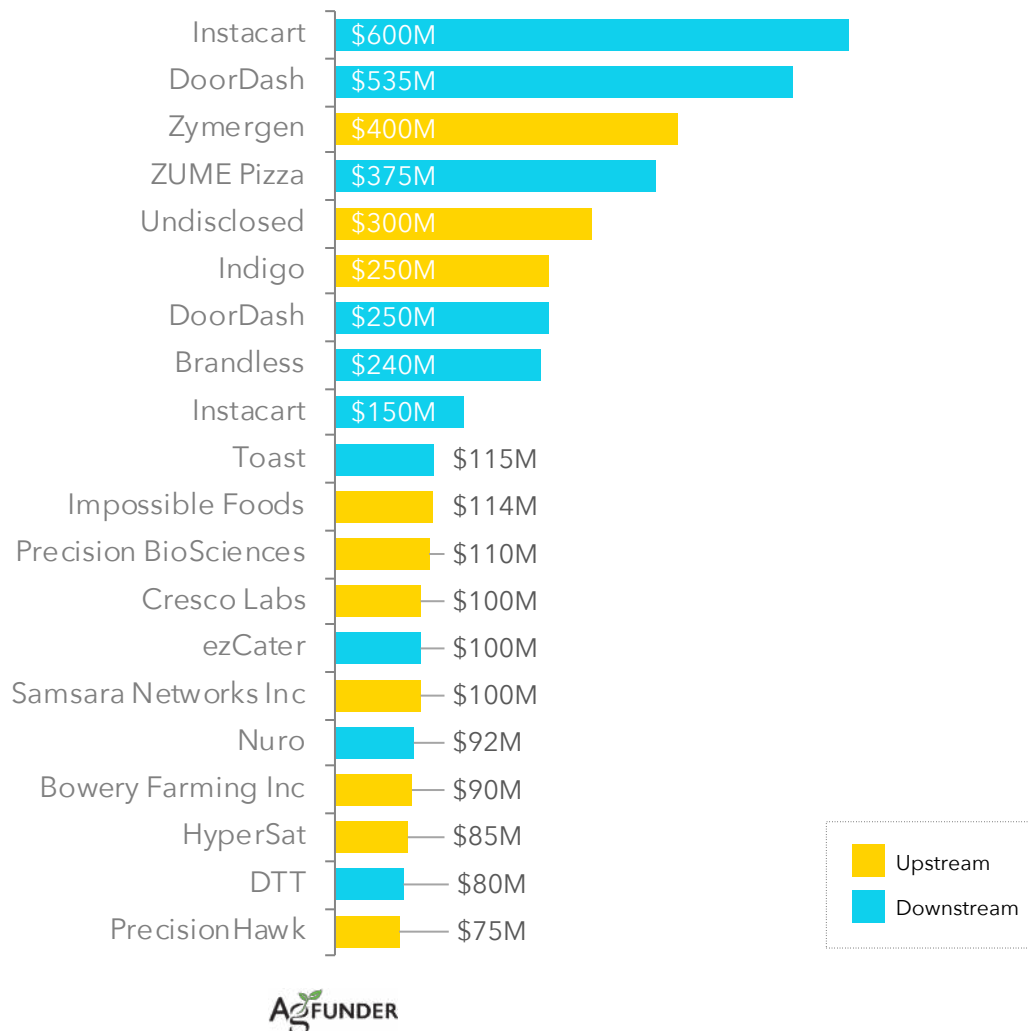
Top 20 U.S. Deals

An eGrocer, restaurant delivery, a microbe manufacturer, a robotic pizzeria, and a satellite imaging startup represent the top five US deals in 2018 highlighting the diversity of the agrifood tech sector but also the strength and multi-talent of the US tech industry.

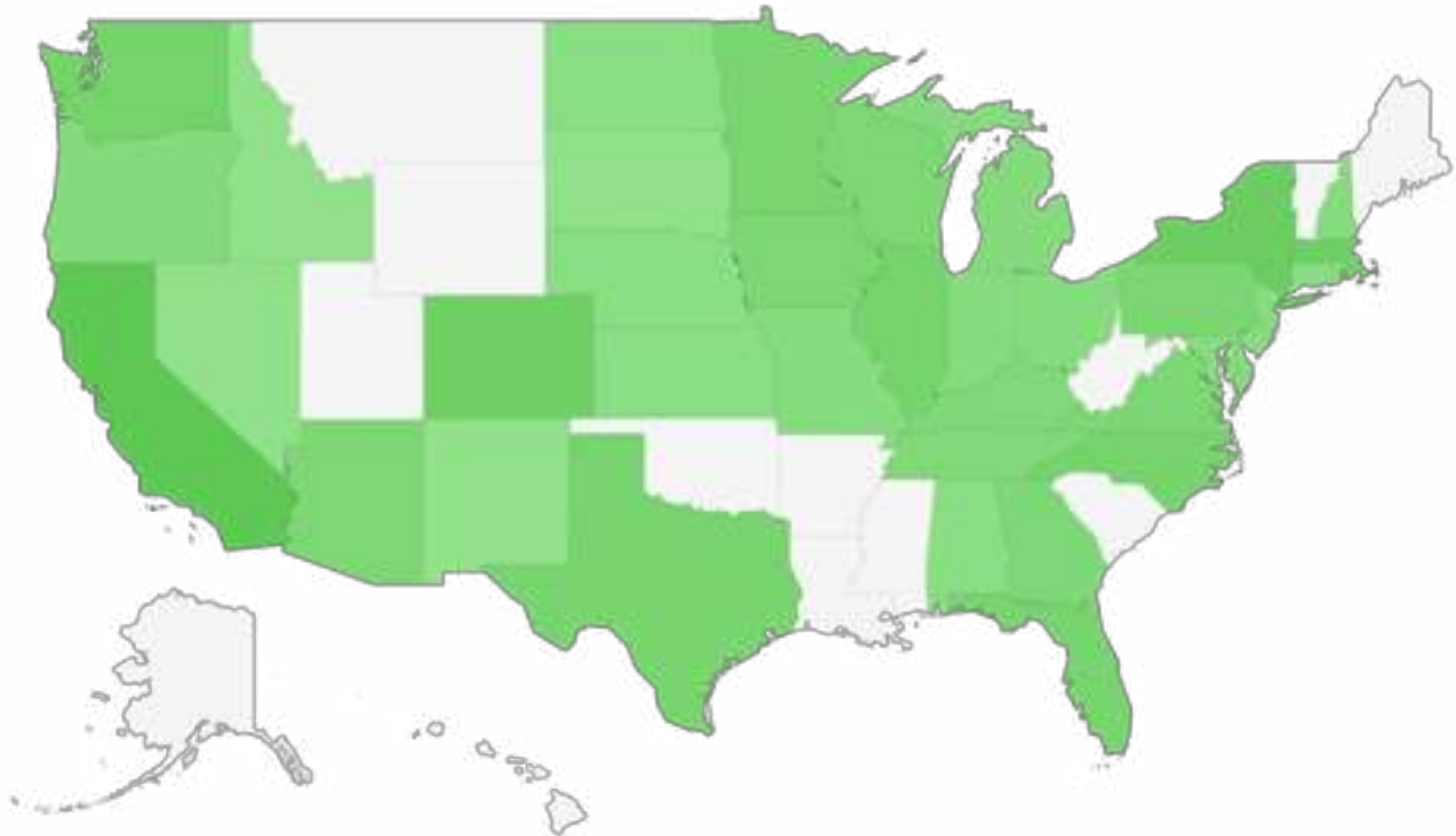
The average deal size of the US top 20 was lower than international deals although the median was higher when international outliers are taken out of the equation.

There's a greater mix of upstream and downstream startups in the US, compared to internationally.

Zume Pizza raised \$48m last year, breathing life into the robotics-for-retail space in the US, behind China where unmanned stores are more established.



U.S. Investments: Number of Deals By State Map



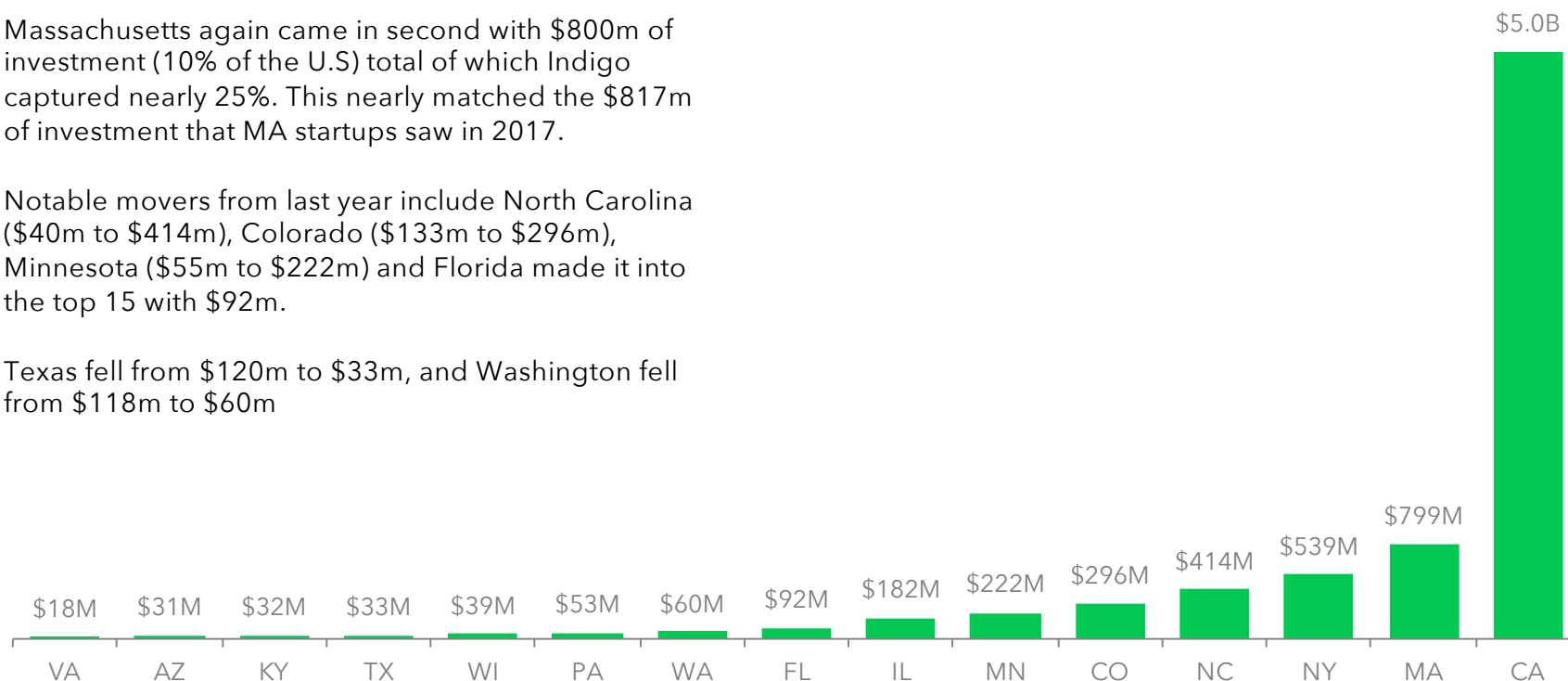
U.S. Investments : Value of Investments by State

US agrifood tech startups took in \$8bn in venture capital in 2018, nearly half the total worldwide. Of those, California agrifood tech startups were a dominating force, capturing around 30% of global investment capital and 63% of all US investment. This is more than double the figures we saw in 2017 when California startups took in \$2.2bn of investment.

Massachusetts again came in second with \$800m of investment (10% of the U.S) total of which Indigo captured nearly 25%. This nearly matched the \$817m of investment that MA startups saw in 2017.

Notable movers from last year include North Carolina (\$40m to \$414m), Colorado (\$133m to \$296m), Minnesota (\$55m to \$222m) and Florida made it into the top 15 with \$92m.

Texas fell from \$120m to \$33m, and Washington fell from \$118m to \$60m



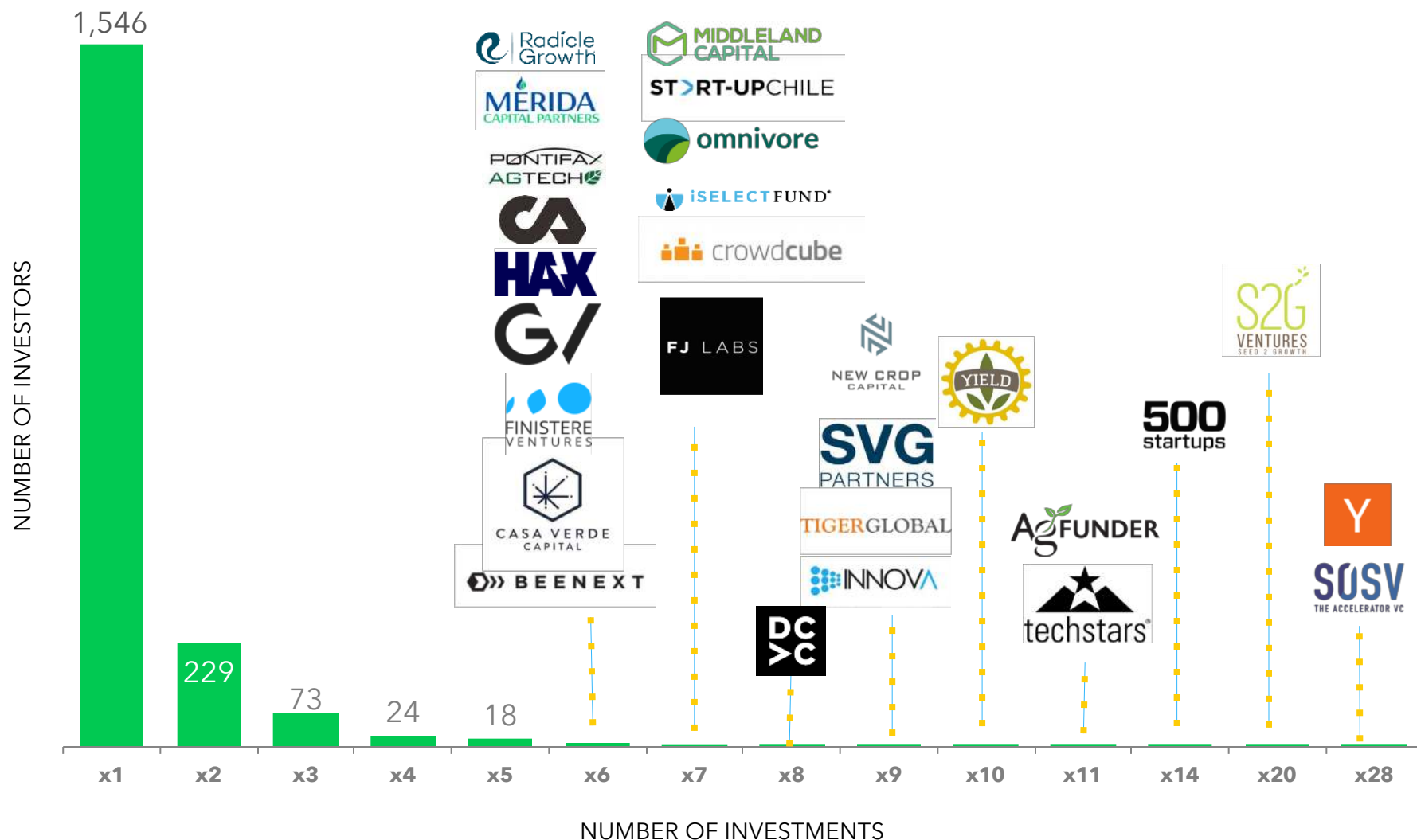


Investor Activity

Key insights – Investor Activity

1. By their nature, accelerators are often the most active investors, as they invest little and often, many with multiple cohorts each year. This year we've split them out from pure venture capital funds to make a more relevant comparison.
2. SOSV – which has three accelerator programs – was still top of the leader board in 2018, despite making 13 fewer investments than in 2017. And this year Y Combinator caught up, also investing in 28 rounds. There were some similarities in the types of startups they invested in including biotech engineering, robotics, Novel Farming Systems and software.
3. Chicago-based agrifood tech venture capital fund S2G Ventures had a busy year, almost acting like an accelerator by making 20 investments in 19 startups. The VC invests across the supply chain with investments in Farm Robotics, Ag Biotech, Midstream Technologies, Innovative Food, eGrocery, and Farm Management Software. This broad supply chain approach has gathered pace as funds that initially focused purely upstream has started to find opportunities in foodtech – closer to the consumer. This is why we changed our reporting from “agtech” to “agrifood tech” last year.
4. AgFunder – yes that's us! – had a busy first full year of investing, also making 11 bets into startups ranging from Innovative Food and ingredients and Midstream Tech to Farm Management Software and Ag Biotech.
5. The most active venture funds are still in the US with the exception of Omnivore, India's leading VC focused on the industry. The leading accelerators in the sector spanned every continent of the globe, however.
6. It was a break-out year for cannabis startups – (dedicated report coming soon!) promoting the presence of cannabis-focused investor – and Snoop Dogg's fund – Casa Verde Capital on the leader board.
7. The number of investors has steadily increased every year since AgFunder records began – this year 1447 -- demonstrating the increasing interest in the agrifood tech space. The group is diversifying and looking more and more in line with more traditional tech investing as generalist VCs catch on to the potential of agrifood tech. A syndicate of billionaires, including Jeff Bezos, Bill Gates and Richard Branson are investing in the space via Breathrough Ventures.

Number of Deals by Investors & Accelerators



Most Active Accelerator Funds

RANK	INVESTOR	LOCATION	# INVESTMENTS
1	Y Combinator	Mountain View, CA	28
1	SOSV	Princeton, NJ	28
3	500 Startups	San Francisco, CA	14
4	TechStars	Global	11
5	The Yield Lab	St Louis, MO, Rosario, Argentina	10
6	Innova Memphis	Memphis, TN	9
6	SVG Partners	Los Gatos, CA	9
8	SproutX	Melbourne, Australia	8
9	Start-Up Chile	Santiago, Chile	7
10	Hax Accelerator	Norway	6
10	Radicle	San Diego, CA	6

Most Active Venture Capital Fund Managers

RANK	INVESTOR	LOCATION	# INVESTMENTS
1	S2G Ventures	Chicago, IL	20
2	AgFunder	San Francisco, CA	11
3	Tiger Global Management	New York, NY	9
3	New Crop Capital	Washington DC	9
5	Data Collective	San Francisco, CA	8
6	FJ Labs	New York, NY	7
6	Omnivore	Mumbai, IN	7
6	Middleland Capital	Washington DC	7
6	iSelect Fund	St Louis, MO	7
10	GV	San Francisco, CA	6
10	Casa Verde Capital	Los Angeles, CA	6
10	Finistere Ventures	San Diego, CA	6
10	Pontifax Agtech	Los Angeles, CA	6

M & A

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Farm Tech M&A Insights

- The pace of consolidation in the Ag Technology sector increased in 2018, notably amongst those companies demonstrating an ability to improve decision-making, reduce risks, and increase profitability for producers.
- Over 20 acquisitions were made in the FarmTech sector in 2018. Nearly all of these acquisitions were companies focused on farm management technologies, a considerable amount of which were imagery analytics platforms. Over 60% of FarmTech transactions during 2018 resulted in an exit for venture capital, private equity, and other investors.
- Strategic input providers, cooperatives, retailers, and distributors remain keen on accessing or maintaining relationships with growers via digital and precision tools that improve or reinforce seed, chemical, equipment, and other product offerings. These groups realize an inability to quickly create innovative products at the pace of startups and as a result have relied on acquisitions to bolster internal programs. This past year was a further verification of strategic player's appetites for agtech acquisitions, where major agribusinesses represented nearly half of the buyers in FarmTech deals.
- Consolidation in the FarmTech sector is expected to continue in 2019. The technology development and marketing strategies by large agribusinesses appears incomplete in the interim, which might be an opportunity for sellers with novel offerings. Further, recovery in the commodity markets, resulting from international trade and policy changes, might improve producer willingness to adopt technologies, which in turn could merit a greater emphasis on agtech development and/or M&A by major agribusinesses and larger technology participants.
- Meanwhile, many startups continue to face challenges, including: 1) single-season crop cycles to trial and market products; 2) slow adoption rates from producers with constrained earnings; and 3) tight internal budgets with pressure from investors to generate returns. The demand for technology improvements at the farm gate remains high. Strategic providers in the segment competing to deliver new and innovative tools will consider acquisitions as a way to gain competitive leverage in FarmTech, and the challenges for many participants in the space could create willing sellers.

Blake Croegaert, Verdant Partners

**Verdant does not track livestock technologies in their entirety*

Farm Tech Mergers & Acquisitions | 2018

Target	Target Country	Acquirer	Technology	Select Investors
Agren, Inc.	USA	Land O'lakes	Soil Health Software	Ag Ventures Alliance, Plain Angels, USDA, Square One
Agrible, Inc.	USA	Nutrien Ltd.	Predictive Analytics	8+ Investors
Agribotix	USA	AgEagle Aerial Systems	Aerial Imaging Analytics	Village Cap, Innosphere, Others
Antelliq	France	Merck	Digital Animal Management	BC Partners
ATP Nutrition	Canada	Inocucor / Concentric	Agriculture Biologicals	
FarmShots	USA	Syngenta	Satellite Imagery Analytics	Y Combinator, Piedmont
FarmWizard	USA	AgriWebb	Digital Animal Management	
Geosys (Land O'Lakes)	USA	UrtheCast Corp	Satellite Imagery	
Grainbridge, LLC	USA	Cargill & ADM Joint Venture	Grain Marketing Support	
Harvest International	USA	Clean Seed Company	Precision Planting Equipment	
Mavrx	USA	Taranis	Aerial Imagery Analytics	30+ Investors
OnFarm Systems	USA	SWIIM System	Farm Management SW & IOT	15+ Investors
ProductionWise	Australia	FluroSat	Satellite Imagery	
Spensa Technologies Inc.	USA	DTN	Pest Detection	8+ Investors
SST Software	USA	Proagrica	Precision Agriculture	Raven Industries
Strider	Argentina	Syngenta	Field Monitoring & Scouting SW	Monashees, Qualcomm, & Barn Investments
TellusLabs	USA	Indigo Ag	Satellite Imagery Analytics & AI	6+ Investors
Trecker	Germany	Yara International	Farm Management SW	Target Partners, Hubraum
Veritas Farm Management	Canada	Deveron	Agronomic Data Analytics	
Waypoint Analytical, Inc.	USA	Nutrien Ltd.	Soil Testing Software	
Weather Decision Tech.	USA	DTN	Weather Analytics and GIS	5+ Investors

Farm Tech Mergers & Acquisitions | 2018

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Agren, Inc.	USA	Land O'lakes	Soil Health Software	Ag Ventures Alliance, Plain Angels, USDA, Square One
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ProductionWise	Australia	FluroSat	Satellite Imagery	
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Trecker	Germany	Yara International	Farm Management SW	Target Partners, Hubraum
Veritas Farm Management	Canada	Deveron	Agronomic Data Analytics	
Waypoint Analytical, Inc.	USA	Nutrien Ltd.	Soil Testing Software	
Weather Decision Tech.	USA	DTN	Weather Analytics and GIS	5+ Investors

Top Farmtech Exits | 2012-2018

Target	Target Country	Acquirer	Description	Year	Amount
Antelliq	France	Merck	Digital Animal Management	2018	\$2.4bn
The Climate Corporation	USA	Monsanto	Farm Management SW	2013	\$930m
Agraquest	USA	Bayer	Biopesticide	2012	\$425m
Blue River Technologies	USA	Deere and Company	Robotics & Computer Vision	2017	\$305m
Granular	USA	DuPont	Farm Management SW	2017	\$300m
Oxitec Ltd.	UK	Intrexon	Biopesticide	2015	\$160m
Gavita Holland	Netherlands	Scott's Miracle Gro	Indoor Growing	2016	\$136m
Pasteuria Biosciences	USA	Syngenta	Biological Nematicides	2012	\$113m
Wolf Trax	USA	Compass Minerals	Fertilizer Micronutrients	2014	\$85m
Agribile, Inc.	USA	Nutrien Ltd.	Predictive Analytics & Decision SW	2018	\$63m
640 Labs	USA	Climate Corporation	Data Analysis and Optimization	2014	N/A
Farmeron	Croatia	Virtus Nutrition	Performance Analytics SW - Livestock	2016	N/A
proPlant	Germany	Bayer	Farm Management SW	2016	N/A
Adapt-N	USA	Yara International	Nitrogen Management SW	2017	N/A
AgSolver	USA	EFC Systems	Agronomic Planning & Sustainability	2017	N/A
VitalFields	Estonia	Climate Corporation	Full-Service Farm Mgmt.	2017	N/A
Geosys (Land O'Lakes)	USA	UrtheCast Corp	Satellite Imagery	2018	N/A
Mavrx	USA	Taranis	Satellite Imagery Analytics	2018	N/A
Strider	Argentina	Syngenta	Field Monitoring SW	2018	N/A



Are We Missing Your Data?
Don't forget to send it to us!



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