

# Israel's FoodTech ecosystem

In-depth partnering guide to a globally leading Foodtech ecosystem



ICDK Outlook No. 06, December 2020

*Published by* Danish Agency for Higher Education and Science  
Haraldsgade 53  
2100 Copenhagen Ø  
Telephone: 7231 7800  
E-mail: ufs@ufm.dk

*Cover* Danish and Swedish start-ups during a five-day acceleration program organised by the Innovation Centre Denmark Tel Aviv working on their start-up pictured with Israeli venture capital firm Jerusalem Venture Partners.  
Klik og skriv tekst.

*Edited by* **Samuel Scheer**  
Innovation Consultant, ICDK Tel Aviv

*Reviewed by* **Ann-Christina Petersen Lange**  
Science Attaché, ICDK Tel Aviv

**Sune Kauer-Pedersen**  
Danish Agency for Science and Higher Education

Publication can be downloaded at [icdk.um.dk](http://icdk.um.dk) and [ufm.dk/publikationer](http://ufm.dk/publikationer).

ISBN (electronic publication): 978-87-93706-92-7

**INNOVATION  
CENTRE  
DENMARK**



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# Abstract

## 1.1 In Danish

Denne rapport giver indsigt i det israelske FoodTech økosystem. Den kortlægger forskellige konkrete "entry points", som danske stakeholders kan gøre brug af i forbindelse med fremtidige samarbejder med partnere fra Israel.

Israel et godt sted for Danmark at kigge til for viden, inspiration og partnerskab. Et samarbejde med de dygtigste og mest dynamiske aktører i Israel kan medvirke til udviklingen af banebrydende forskning og nye teknologiske løsninger. Dette kan bidrage til at understøtte Danmarks internationale førerposition i den globale fødevarersektor.

Israel har en unik adgang til talent og et særligt landskab af aktører inden for fødevarer og landbrug. En særlig styrke er stærke forskningsmiljøer. Både før og efter oprettelsen af staten Israel har landbrugsforskning på universiteterne været en top prioritet, og i dag er der mere end 300 forskningsgrupper med fokus på landbrug. Dette skyldes til dels et behov for at være selvforsynende, men også fordi store dele af landet er ufrugtbare egne.

I de senere år har der været en imponerende vækst i den private sektor, hvor særligt start-up-miljøet har tiltrukket megen international opmærksomhed. Israels stærke start-up-økosystem er blevet styrket heraf, da opmærksomheden har gjort flere israelske aktører aktive i økosystemet. Dette bidrager samtidig til at fremhæve og styrke Israels ekspertise inden for fødevarer og landbrug. Derved er Israel blevet en potentiel global leder inden for FoodTech og et interessant land for en række af de danske aktører på området.


Innovation Centre Denmark, Tel Aviv, kan kontaktes for at få den mest opdaterede viden om igangværende samarbejder og samarbejdsmuligheder inden for Israels blomstrende FoodTech økosystem.

## 1.2 In English

This report provides an overview of the Israeli FoodTech ecosystem. It focuses on concrete entry points, which Danish stakeholders active in the agriculture and food technology sector might make use of in future collaborations.

Israel has great potential for collaboration with Denmark in terms of knowledge exchange, inspiration and partnerships. Collaboration with excellent research environments might lead to development of breakthrough research and new technological solutions. This can support Danish in taking on a leading position in the global FoodTech sector.

Israel has a unique access to talent and well-developed landscape of key actors in both food tech and agriculture. A specific stronghold is Israel's strong research



environments. Even before the establishment of the state of Israel has research within agriculture been a top priority at the universities. Today Israel has more than 300 research groups focusing on agriculture.

In recent years, there has been an impressive growth in Israel's private sector and the vibrant start-up scene has drawn a lot of attention. Over the past few years, several actors in Israel are actively seeking to merge Israel's agricultural capabilities with this start-up scene in order to convert Israel into a global leader within agricultural and food technologies.

Innovation Centre Denmark in Tel Aviv can provide further information on current and future collaborative initiatives with Israel's FoodTtech ecosystem.

## 2. Introduction

The term FoodTech is often described as a variety of technologies and business ventures, which focus broadly on addressing the challenges of the food industry. What many of these technologies have in common is their potential to disrupt the existing food system.

Why is Israel one of the ideal places for the FoodTech industry?

Israel has a unique agricultural knowhow and in combination with a strong background in advanced technologies such as artificial intelligence, robotics and biotechnology, both academia and start-up ventures are able to create globally leading innovations. As a result, venture capital, corporates and international researchers have flocked to Israel to partake in this high-tech ecosystem.

Overall, the FoodTech start-up sector in Israel is still in its nascence when compared to the more traditional high-tech fields such as information technology, cybersecurity, internet of things, defense technologies and life sciences. An estimated 450 companies work in FoodTech with a predominance of seed and early stage ventures.


The investments in the FoodTech sector were until recently primarily conducted by small, sector specific, venture capital and investment funds such as Trendlines and Green Soil. Now, the investment community is realizing the growth potential in the field of Foodtech in Israel. There has been an increase in the number of FoodTech ventures and a massive interest from food multinationals and international investors who are actively investing in Israeli FoodTech start-ups.

Even though FoodTech still is a small sub-sector in the Israeli high-tech sector, the interest is growing rapidly and traditional food companies see that they need external help from start-ups and researchers in order to adapt to the rapidly changing needs of the "modern consumer" with a strong focus on sustainability, less additives, green packaging and many more developments.

This report seeks to give actors in the Danish Agrifood sector firstly a bottom up understanding of the make-up of the Israeli Agrifood technology sector. Secondly, it seeks to identify relevant entry points with a view towards potential research collaborations as well as collaborations in the entrepreneurial and start-up sphere that could advance both nations.

More specifically this report aims at:

- advancing Danish universities' staff understanding of with whom and on which topics to collaborate on with Israeli universities and academic colleges with regards to research collaborations and academic entrepreneurship.
- advancing Danish corporate technology and innovation personnel as well as



Danish venture capitalists knowledge of Israeli FoodTech with a view to partner or invest in Israeli start-ups.

- advancing Danish FoodTech incubators and accelerators knowhow on who to potentially partner with in Israel for joint activities.

*Report focus distinction: Agriculture vs. Food Technologies*

Due to the connected nature of the agriculture and food industry, the innovation ecosystem and related actors are of course also working along this value chain. In this report, Agrifood and FoodTech are used interchangeably as the latter has recently become more commonly used.

*Addendum:*

At the time of the writing of this report, COVID-19 has and continues to have major ripple effects on the global economy and as such also on the Food and Agriculture innovation ecosystem. Short-term consequences such as innovation budget freezes and related effects have already taken hold. Nevertheless, start-ups, venture capitalists and other stakeholders remain positive about their medium to long-term outlook and the Agriculture and Food industry have in many instances been redefined to a critical industry within societies and as such receives renewed major attention from the public and government.

# 3. Methodology

This report is based on desk research and more than 25 interviews with professionals and organizations in the food technology industry in Israel. The interviews have been conducted both via phone and in-person, and have been semi-structured, meaning that the questions posed have had the purpose of uncovering the attitudes and capabilities of the organization toward the key issue of international collaboration with the Danish food sector, while also allowing for additional unexpected insights and ideas.

The findings presented in this report do not exhaustively cover the extent of the research that has been conducted. Rather, the knowledge has been sorted and condensed in order to concisely present the best entry points for Danish stakeholders into research and innovation within food tech in Israel. As such, the following report is a mapping of the ecosystem from the perspective of who the most relevant players to engage with are. The report outlines the reasoning behind the inclusion of the organizations and individuals mentioned.



## 4. Mapping the Israeli Food Tech Landscape

The creation of the state of Israel is closely linked to its agricultural pioneering spirit. From malaria-infected wetlands in the 1880s to today's cultivation of vineyards in the desert of southern Israel, agricultural and food innovation has formed one of the core pillars of today's state.

Since the early 1950s, this priority has been enacted by the government both in the public sector through dedicated initiatives and earmarked funding while also subsidising the private sector through taxes on imported foodstuffs and related measures. As a result, the available human capital is of exceptional quality and the research is leading globally.

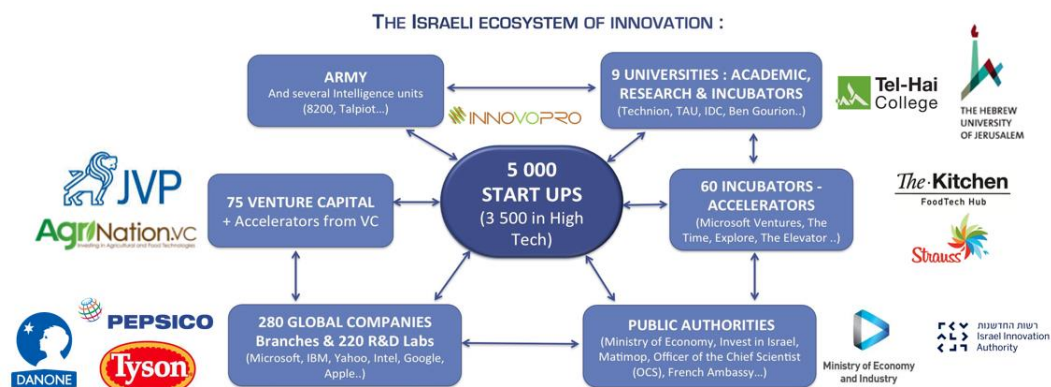
Within academia, there are more than 300 research groups focusing on agricultural and food research in Israel. These include centres or faculties at universities, as well as many localized organizations across the country. The majority focus on pre-harvest agricultural research and technology, while the amount of organizations that include a focus on topical areas that lie within food is significantly smaller. In identifying the Entry Points an initial mapping was carried out (see appendix 1). On this basis further entry points were identified through interviews with professionals and organizations in the food technology industry.

Nowadays, the domestic food market is dominated by several large conglomerates in the fields of super markets and food brands (also representing large foreign brands that have licensed their products to them for local production and/or marketing) as well as a thriving gastronomic scene. Due to the nature of oligopolies, Israeli consumers are used to high food prices while food habits vary widely across different parts of society due to its diversity (from kosher to vegan, hallal and more).

Over the past 10 years, a major change has taken place in that technology has become a major driver of change within the Agrifood industry globally. Always quick to spot global trends, Israeli entrepreneurs, venture capitalists, researchers and corporates have taken it upon themselves to use their technological prowess in the fields of their historical competence (AI, cyber, big data, biotech etc.) and apply them to the Agrifood industry.

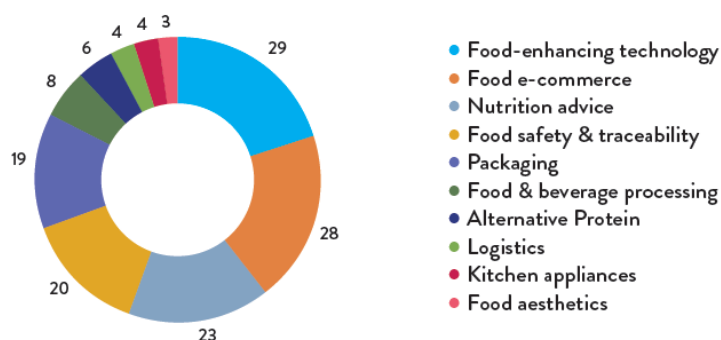
With hundreds of start-ups and billions of dollars invested in Israel in Agrifood alone, global corporates, governments and universities have turned their attention to the country, created partnerships and invested into a more resource efficient, shared

future putting their capabilities to work alongside the Israeli ones. A simplified overview of this innovation ecosystem with examples from the Agrifood area can be found in the graph below:

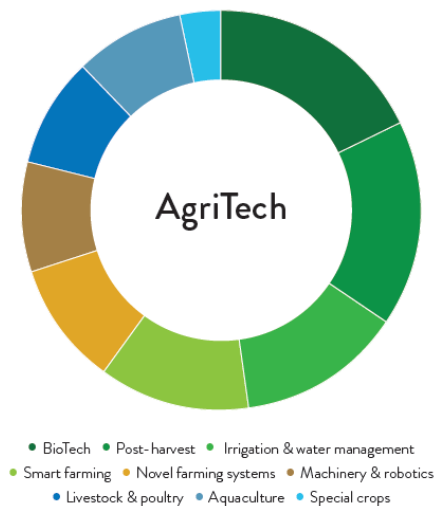


As can be seen from the graph, many stakeholders are involved. As in other innovation hotspots globally, start-ups have become the driving force for the entire innovation ecosystem and the other actors are looking to support, invest, spin out or otherwise be involved with them. Within the Agrifood domain, roughly 500 start-ups form the core of this vertical in Israel. According to Start-up Nation Central, a non-profit organisation tracking Israeli high tech developments, they can be categorized as follows:

#### ISRAELI FOODTECH COMPANIES BY SUBSECTOR



**Notes:** Food-enhancing technology includes food ingredients and dietary supplements (excluding alternative protein).  
 Food eCommerce includes online marketplaces, delivery platforms, and food store/shopping guides.  
 Nutrition advice includes decision-support technologies, virtual nutritionists, and meal plans.  
 Food safety & traceability includes testing and diagnostics tools for allergens, bacteria, and chemicals.  
 Alternative protein includes in-vitro meat, insect-based protein, and algae-based protein.  
 Food aesthetics includes food decoration technologies.



#### Notes:

**BioTech** includes genetics, breeding, bio-organic inputs and treatments

**Smart farming** includes sensors, data analytics & AI, farm management software, smart irrigation, pest management and drones

**Novel farming systems** include greenhouses, hydroponics, indoor farming and home-growing-systems

**Special crops** includes cannabis and biopharmaceuticals

**Post-harvest** includes storage, treatments, packaging and food-safety technologies

**Livestock & poultry** includes animal health, monitoring, feed and structures

From a Danish point of view, the following verticals that are Israeli strongholds seem of particular relevance due to their advanced nature and compatibility with Danish strengths and competencies, often highly in line with the sustainable development goals:

- Foodtech
  - Food safety & traceability
  - Nutrition advice
  - Alternative protein
- Agritech:
  - BioTech
  - Post-harvest technologies such as novel packaging, food safety.
- Value chain technologies enabling farm to farm tracking

It is relevant to note that in terms of the kind of innovation that Israeli start-ups produce, they tend to be primarily technological innovations, not innovations at the consumer level or from a business model point of view. Many can be considered deep technologies such as artificial intelligence for weather forecasting, genetically modified crops, analysing millions of data points in individual's microbiome to make dietary suggestions etc. Most Israeli start-ups produce technologies or food ingredients vis a vis businesses, not consumers.

Subsequent to this general overview, below a succinct overview of the main entry points into the Israeli Agrifood scene can be found. The ones mentioned should be seen as supplementing each other. The FoodTech scene in Israel is characterized by a high degree of collegiality. The people interviewed for this report are very disposed to see areas of collaboration rather than competition. Though Israel is a market economy, the domestic food tech ecosystem seems to broadly apply a "live and let live" philosophy. When asked about their concerns regarding competition from businesses and/or organizations that could be a potential obstacle, many of the organizations that have been asked seem taken aback by the question, as if it is not applicable to their conduct.

This report has identified four main areas of entry points for the Danish stakeholders mentioned in the introduction to this report: university staff, corporate technology and innovation personnel as well as venture capitalists and foodtech incubators.

These are summarized below, and consist of Technology Transfer Organizations, Research Organizations, Incubators and specific people.

Summary of Recommended Main Entry Points	
Technology Transfer Organizations	<ul style="list-style-type: none"><li>• Kidum</li><li>• Yissum</li></ul>
Research organizations	<ul style="list-style-type: none"><li>• Volcani Center</li><li>• Food Institute in Upper Galilee</li></ul>
Incubators	<ul style="list-style-type: none"><li>• The Kitchen</li><li>• Trendlines</li></ul>
Other	<ul style="list-style-type: none"><li>• FoodLab/FoodLab Capital</li></ul>

#### 4.1 TECHNOLOGY TRANSFER ORGANIZATIONS (TTO)

In Israel, all the major universities and research organizations are affiliated with a corresponding Technology Transfer Organizations (TTO). The basic function of these organizations is to 'spin out' commercial companies on the basis of the research being done. There are differences in how independently these organizations operate, with some of them having a strict focus on commercialization, and others liaising with external partners more broadly. One of the primary differences to Danish TTOs is that these are for profit entities owned by the universities but operating independently. Most of their staff are business developers and other commercial functions, lawyers are hired on a case-by-case basis.

##### 4.1.1 YISSUM

Yissum is the TTO for the Hebrew University of Jerusalem, which is Israel's oldest university. One of the main focus areas of the University is agricultural research, with the Faculty of Agriculture employing more than 100 researchers. It is located in Rehovot, approx. 30 km south of Tel Aviv. The Faculty for Agriculture has 8 sub-divisions specialized in certain aspects of agricultural research in the form of departments, institutes or schools, covering areas such as Food Sciences & Nutrition and Plant Sciences. Through licensing agreements of new technologies that emerges from the research from the faculty, it spins out an average of 10 companies per year. Hebrew University as well as the Faculty of Agriculture has a stellar track record in teaching entrepreneurship and has been the birthplace of some of the biggest scientific spin off companies globally (f.e. Mobileye – USD 15 bio. valuation).

In order to secure the viability of the companies that they spin out of the Faculty, Yissum works with the incubators mentioned in section 3 and others. More broadly, Yissum are keen to work with international partners such as Danish corporates and also with Danish universities, in the following specific ways:

- Entering into licensing agreement with Danish companies in order to form a company around research from the Faculty. Licensing agreements are among the first steps to spinning out a company, and would as such present Danish players with an opportunity to get in early on the commercialization of the research.

- Collaborating on joint research and entrepreneurial teaching and academic spin outs through Yisum and Hebrew University more broadly.
- Yisum would like to collaborate with Danish industry players in order to do sponsored research at the Faculty.
- Yisum is also open to collaborations through Requests for Proposals for research or pre-commercialization of research. If a Danish University or company wants something specific, Yisum could work as liaison between the Danish actor and the Faculty to issue a Request for proposal.

#### **Additional information**

Occasionally, Yisum maintains equity in the companies that are spun out, which is determined on a case-by-case basis. Yisum is currently looking into establishing their own accelerator.

Yisum would like to proactively get a firmer understanding of what the strengths and needs of Danish food companies are, so that Yisum may use this knowledge in as early a stage as possible (see point about Requests for Proposals above). Innovation Centre Denmark in Tel Aviv can help to liaise and facilitate this understanding.

#### **4.1.2 KIDUM**

Kidum is the TTO for the Volcani Center (see more on the Volcani center under section 2). Kidum is located together with the Volcani Center in Rishon LeZion, in the vicinity of Tel Aviv. It is the largest TTO within Agriculture and Food in Israel, and commercializes 24 products per year. Due to their size and high volume of companies, they work closely with private funds, and have framework agreements with 3 investment funds.

- Kidum's main interest lies in getting formalized access to larger Danish companies with an international/global reach. Kidum would be very interested in making this access function as an entryway into the European market for the companies that Kidum spins out. Kidum would therefore like the collaboration with the Danish corporates or Agrifood member associations to be in the form of a permanent 'platform' or alliance, which could facilitate this sort of contact on a running basis.

With a more permanent platform in place, Kidum would be particularly interested in collaborating around areas of

- Biotech – gaining access to the biotech sector in Denmark could help scale the biotech innovations of the Volcani Center, which is currently difficult in the Israeli market
- Health Foods
- Innovations in the Dairy sector

#### **Additional information**

Collaboration with Kidum could be achieved through entering into an MoU with the Volcani center that also covers Kidum, for example by the Food & Bio Cluster which represents a large part of the Danish Food industry internationally.

## **4.2 RESEARCH ORGANIZATIONS**

### *4.2.1 Volcani Center*

The Agricultural Research Organization (ARO), Volcani Center is the oldest and largest agricultural research organization in Israel, significantly pre-dating the state of Israel itself. The Volcani Center today operates under the Ministry of Agriculture and Rural Development. By their own estimates, the Volcani center is responsible for roughly 70% of all agricultural research in Israel. The Center focuses on applied agricultural research, e.g. within crops such as wheat and barley. Their broad range of research covers many areas of interest to Danish players, such as health components in food (increasing health and taste of a specific crop or fruit), and a range of research areas dealing with dairy. Hereunder looking into genomic selection in dairy cattle, and making pasteurization more efficient.

- The Volcani Center is very open towards collaboration with Danish stakeholders.
- The main avenue for collaboration that they currently foresee would be within the development of bilateral research programs with Danish universities and/or large corporate players.

### *4.2.2 National Food & Nutrition Research Institute*

The envisioned National Food & Nutrition Research Institute (hereafter Food Institute) located in the Upper Galilee is a highly ambitious vision for a hub for research, innovation and development within food sciences, with an impressive range of key players behind it. The Israeli Government has granted the project 21 million NIS. The Food Institute will be founded upon the existing infrastructure of Tel-Hai College and Migal Research Institute in the city of Kiryat Shmona where a critical mass of research, companies and an emerging group of start-ups can be found. In addition, Tel Hai has already created successful partnerships to leading international food institutes and centers of excellence like Rutgers University in New Jersey, Wageningen University in the Netherlands and Aarhus University in Denmark.

The gap in the ecosystem that the Food Institute is seeking to fill is as a place that can bring together academics, businesses and policymakers around the challenges the Israeli food ecosystem is still facing. This in order to uplift the competitiveness of the Israeli food industry, enable start-ups and innovative SMEs through the provision advanced pilot production facilities for foodstuffs that were out of reach to date or had to be developed abroad and to bring academia and industry even closer together.

Specifically, the current stage of development of the Food Institute and the already established relationship, present an opportune moment for the following Danish players to get involved:

- Food science academia as the envisioned industry-academia collaboration will likely be built upon mutual win-win situations that Danish academia can learn from and be part of in the form of student and researcher exchange as well as sharing its knowledge in regards to production processes and food products development.
- Food corporates and larger SMEs in the business of food processing equipment or food products as there is an ongoing tender for an international business partner where these capabilities would be highly appreciated and would provide the partner first and in-depth access to innovative research developments and start-up activity taking place in and around the national food institute.

In terms of specific needs, the actors behind and in the Food Institute welcome an international partner from the outset, in order to have access to international researchers and companies from the get-go, as well as a global market for the start-ups that will form.

### **4.3 INCUBATORS**

#### *4.3.1 The Kitchen*

The Kitchen is a start-up incubator founded in 2015, which is sponsored by Israel's largest food company, Strauss in collaboration with Israel's innovation authority.

Through intense mentoring and organizational support, The Kitchen incubates between 5 and 7 companies at a time, with a duration of between 18 and 24 months. The companies in The Kitchen cover a range of different solutions within food tech, from meatless meat products, food pathogen detectors and robotics for the food industry. Securing access for Danish corporates and large SMEs to innovative start-ups in Israel is not purely a numbers game – the quality of the businesses matters greatly as well, and this is where The Kitchen delivers a significant value. The businesses present in the Kitchen usually have more than one stamp of approval, having for example been spun out from a TTO such as e.g. Yisum, and the rigorous process behind both their selection as well as their journey in the incubator means that while there may not be a high number of business present in The Kitchen at any one point, the businesses that are there have a high probability of being very successful, with higher benefits to potential Danish partners.

Due to their government subsidized investments, The Kitchen can only invest in Israeli based companies. However, they are able to invest in start-ups that are based on foreign-developed technologies (i.e. based on Danish) research.

The Kitchen would like to play a dual role in a potential partnership with Danish stakeholders:

- The Kitchen would value a landing pad for their incubated companies in Denmark, both in terms of market access and partnerships/investment relations with Danish companies
- The Kitchen would like to be of use in creating awareness about Denmark in the broader food tech ecosystem in Israel, through their different community

events

- The Kitchen would like to get to know specific Danish companies in their fields of activity, in order to proactively match them with the companies they're incubating

More specifically, The Kitchen envisions working together with Danish stakeholders such as the Food & Bio Cluster, food corporates as well as business angel associations and venture capital firms on business delegations and events in Denmark and Israel where business matchmaking and the needs in the respective markets are communicated to the ecosystems. They have been doing something similar with the city of Cincinnati.

In terms of collaboration with Danish universities, The Kitchen can do licensing agreements if this is desirable.

#### **Additional information**

The Kitchen has a very good relationship with Tel Hai College and are partners in the coming Food Tech Institute in Upper Galilee/Kiryat Shmona. Through their close relationship with Strauss, the Kitchen can be used as an entry point to Strauss. The Kitchen is also one of the main organisers of FoodTechIL, an annual Agrifood technology conference in English with dozens of international delegations taking place around September each year in Israel. Several Danish delegations have already taken part in the past years.

#### **4.3.2 Trendlines**

Trendlines is an innovation commercialization company founded in 1991, which invents, incubates and invests in innovation-based medical and agricultural technologies. Trendlines is involved in all aspects of their portfolio companies, ranging from questions of technology to business development. Trendlines consist of two government-franchised incubators (with one for AgTech), one Singapore-based incubator as well as an in-house innovation lab.

On the agricultural side, Trendlines runs the specific AgTech incubator, which is incubating between 14 and 20 companies at a time. Trendlines is usually the first investor into these companies, and usually maintains a high degree of equity in the companies.

As a government-franchised incubator, Trendlines generally invests about 150.000 USD into each company, with the Israeli Government investing about 850.000 USD.

Though referred to as 'AgTech', the majority of the companies in the trendlines portfolio could just as well be labelled 'FoodTech'. About 50% of the companies in the AgTech incubator come from Israeli TTOs.

Trendlines AgTech is very open towards collaboration with Danish stakeholders. There are two main avenues of mutually beneficial collaboration:

- Connecting Danish Universities with Trendlines in order to license Danish University technology for incubation in the Trendlines incubator (with equity



and ownership for the Danish university). This could be a relevant solution in the short to medium term in areas where Danish universities do not feel that they have sufficient commercialization knowledge and capacities.

- Connecting Danish companies to the companies in the Trendlines portfolio.

#### **Additional information**

Trendlines is host to Agrivest – a large event each year that brings together industry, government and universities in order to bring about opportunities for entrepreneurs and investors.

### **4.4 OTHER ENTRY POINTS IN THE ECOSYSTEM**

#### *4.4.1 FoodLab/ FoodLab Capital / PeakBridge Partners*

The FoodLab is home to a physical lab where food technology companies can test and develop innovative solutions. FoodLab Capital is the associated investment house, which invests in these breakthrough technologies. The key person in both ventures is Nadav Berger. Nadav grew up in the food industry in Israel. He is a pioneer and well connected in the Israeli Food Tech ecosystem. His family produced fats and oils for the food industry in Israel, and Nadav has been a food entrepreneur his whole life. Nadav co-founded the Foodlab and FoodLab Capital, which respectively develops and invests in consumer packaged goods. Currently, Nadav is co-managing several venture funds with his own company PeakBridge Partners (managing strategic venture funds for FoodTech), EIT Food as well as advising ii2020 on their Food endeavours.

# 5. An Israeli FoodTech ecosystem in the making

This chapter seeks to shortly describe the systematic way the Israeli ecosystem goes about building innovation ecosystems built on excellence in research and commercialization along the entire value chain through the example of Foodtech. As such, it may serve as inspiration for similar initiatives that are and could be built in Denmark and the Nordics to foster research excellence, commercialization and start-up growth alongside the associated effects.

As described briefly above in relation to the history of agricultural innovation in Israel, the Israeli government with its innovation focused arms such as the innovation authority in collaboration with several ministries is known to spot private market trends early and subsequently jump start the creation of entire industries by financing innovation across various actors (such as happened in the case of the aerospace industry, the desalination industry, the cybersecurity industry and others).

In the case of FoodTech, the recent boom in start-up activity and related influx of international corporates, the outstanding image of Israeli Agrifood research in the international community and the potential for major commercialization opportunities have created a perfect storm that the various arms of government are looking to capitalize on. As such, several initiatives have been created to catalyse the positive developments on the ground and to provide the financial, infrastructural and human capital environment for cutting edge innovation and commercialization to take place.

Due to the nature of agriculture and food production mostly taking place outside of the urban areas and the explicit desire of the state of Israel to create high quality jobs in the so called periphery (outside of the central Tel Aviv area), one of the major initiatives is taking shape in the northern galilee. For many years, this area has suffered from a severe brain drain and a lack of local high quality jobs. However, around 5 years ago, a number of actors took their fate into their own hands and started to assemble an innovation ecosystem. In close collaboration, the local college teaching food sciences (Tel Hai college), a venture capital fund (JVP), several corporates operating factories in the area and the local politicians set out to redefine their own as well as others' perception of the available innovation capabilities in the area. Nowadays, several years into the journey, a FoodTech incubator is active

(described below), the college has created international research projects and is furthering its scientific accomplishments and the national food institute is in its final stages of creation. While far from a finished endeavour, critical mass has been achieved for this FoodTech innovation ecosystem to continue to thrive. The picture below gives a brief overview of the ecosystem in the making<sup>1</sup>:




In addition, others have witnessed the transformation and created their own related initiatives. The Kinneret Innovation Centre out of Kinneret College in the south galilee now hosts and accelerates Agritech focused start-ups and a grant by several major actors in rural development enabled the building of a several thousand square meter innovation hub there, built in shared ownership of the college, the local industry association and the municipality.

A prominent part of the northern FoodTech ecosystem is the incubator. Due to its highly innovative way of financing private sector innovation, the Israel Innovation Authority's incubator model as it is applied to FoodTech is subsequently described. The new incubator is located in the northern part of Israel in the district of Safed. The purpose of this incubator is to promote FoodTech companies who are focusing on the next generation of food and beverages; optimizing the food-growing process while maintaining sustainability; shortening the supply chain in order to preserve food safety and freshness; optimizing supply methods and manufacturing in order to streamline food distribution and prevent surplus production and waste; and growing healthier food and adapting it to consumer tastes. Furthermore, the incubator is focusing on fostering local entrepreneurship and joining strategic partners, startups and local players to help build a FoodTech innovation ecosystem.

The incubator consists of a consortium of Tnuva, Tempo Beverages, the crowdfunding platform OurCrowd and Us AgriTech and FoodTech fund Finistere. 100 million NIS (approx. 200 mio. DKK) will be funded by the government to the incubator over an eight-year period. In addition, the incubator will receive annual subsidies of 600,000 NIS for operational costs. The startups joining the FoodTech incubator program will receive grants of up to 5 million NIS. For start-ups the FoodTech incubator provides great value. This includes access to R&D facilities,

<sup>1</sup> Courtesy of Israel's Ministry of Economy and Industry – Industrial Administration



business and technological guidance with focus on product-market fit, follow-on investments and additionally the incubator can serve as a gateway to the international market.

## 6. Future Danish-Israeli Collaboration

Over the past 3 years, numerous collaborations between Israeli start-ups and Danish corporates, between Danish and Israeli research institutions, between Israeli and Danish investors and between the food clusters have been established. While these continue to thrive, steps are being taken by the Innovation Centre to further elevate the strategic collaborations on a national and regional level. To that end, the proactive approach in the creation of innovation ecosystems is certainly be applicable to environments with similar building blocks in Denmark. In addition, through having worked with dozens of Danish Agrifood start-ups, it has become clear that Danish Agrifood start-ups are not always as commercially competent as their Israeli counterparts and that the lack of access to risk and venture capital is a major growth inhibitor for Danish start-ups to thrive when compared to their Israeli peers. This is another area where major work is overdue. This includes further strengthening of the Danish FoodTech ecosystem and making Danish Agrifood start-ups more internationally competitive. Attracting Israeli and other international FoodTech investors to Denmark is another major pillar of ICDK's work going forward so that Danish start-ups will be able to thrive globally. Lastly as the foundation of successful start-ups often lies in university environments, it has become evident that Israeli universities are extremely proficient in technology transfer and fostering entrepreneurship also within the Agrifood domain. Helping transfer these learnings and implement structures, courses and the knowhow within the Danish universities working in Agrifood will continue to be another major area of activity.

Compared to other leading countries within Agrifood, this report shows the potential for engaging in joint Danish-Israeli collaborative projects. Israel has great expertise in the area and has established a range of new and developing initiatives. Denmark might not only learn from Israel but may also contribute with knowledge and expertise to establish a developing eco-system. In this way, Danish research and expertise reach a broader audience and outreach to key international stakeholders and players in an area that the Danish government has announced as a high-priority field in this newly published green research strategy.

Based on the current three years of bilateral research collaboration taking place in this area, future joint collaborative initiatives might take the form of strategic projects, which will ensure a high level of commercialization, research to

research collaboration and start-up activities.

To get the most up-to-date information on currently ongoing collaborations and information on how to tap into Israel's thriving FoodTech scene, you are welcome to contact the Innovation Centre Denmark Tel Aviv:

Innovation Centre Denmark Tel Aviv

Royal Embassy of Denmark

Museum Tower, 11th floor, Berkowitz Street 4, 6423806 Tel Aviv, Israel

Website: <https://israel.um.dk/en/innovation-centre/>

Contact: <https://israel.um.dk/en/innovation-centre/contact/>

Twitter: [https://twitter.com/ICDK\\_TLV](https://twitter.com/ICDK_TLV)

LinkedIn: <https://www.linkedin.com/showcase/tel-aviv---innovation-centre-denmark>

*To learn more, the following resources are recommended:*

Regarding Innovation Centre Denmark activities:

- Overall partnership information
- [Danish Food Cluster and other key stakeholders involved](#)
- [Israeli Foodtech ecosystem overview](#) (podcast)
- [Panel on future of meat technologies at TechBBQ](#)
- Start-up activity impressions:
  - [TechSavvy](#)
  - [Danish Food Cluster](#)
  - [Mandag Morgen](#)

Other resources

- [IVC start-up overview & articles by key stakeholders](#)
- [Start-up Nation Central Agrifood focus](#)
- [Deloitte Report on Israel's Agrifood Tech](#)
- [Israeli Foodtech start-ups within top 50 globally](#)
- [International food corporate M&A activity in Israeli Foodtech](#)
- [Global Crowdfunding towards Israeli Foodtech start-ups](#)
- [Israeli VC on effects of COVID-19 on Foodtech ecosystem](#)

# 7. Appendix

Universities	
Tel Aviv University	Israel's largest university. Food focus: Manna Center Program for Food Safety & Security under the faculty of life sciences.
Bar-Ilan	Israel's second largest university. Doesn't have food focus. Closest thing is Ecology and Plant science.
Hebrew University of Jerusalem	Israel's third largest university. Strong food focus. Has a large Faculty of Agriculture, Food & Environment, with several department focusing on different functional areas of food and agriculture.
Technion	Technical University. Home to the Food Industries R&D Center, and Israeli anchor point for EIT Food.
Ben-Gurion University of Negev	No specific food focus, but strong desert focus that intersects with food and historic agricultural practices and their relevance in present times.
Weizmann Institute of Science	Very prominent basic research institution. Is involved in food tech, but is generally far from applied research. Nevertheless several notable spin offs such as Day Two and Aleph Meats have been spun out.
Haifa University	No food focus.
Open University of Israel.	Focused on issuing degrees, rather than research.
Technology Transfer Organizations (TTOs)	
T3	TTO of Technion
Yissum	TTO of the Hebrew University.
Kidum	TTO of the Volcani Center
Gavish	TTO of Migal
Incubators	
The Kitchen	Established in 2015 by Strauss.
Trendlines AgTech	Part of the Trendlines Group.
Ministries	
The Ministry of Agriculture and Rural Development	The Ministry of Agriculture plans the growing and distribution of farm produce. The Ministry helps rural settlements develop agriculturally and economically, and manages Israel's lands.
The Ministry of Health's National Food Service	Tasked with regulatory matters such as ensuring food safety and issuing import permits.
Public Research Institutes	
Volcani Center (ARO)	Israel's largest agricultural research organization.
Migal Galilee Research Institute	Applied research organization specializing in biotechnology, environmental and agriculture science. Migal is a partner in the envisioned National Food &

	Nutrition Research Institute in Upper Galilee, together with Tel-Hai College
<b>Other public bodies</b>	
Israel Innovation Authority	An independent public entity responsible for the country's innovation policy. IIA advises on, and awards grants for innovation broadly, including a strong focus on nurturing entrepreneurship. As an umbrella organization for innovation in Israel, the IIA touches somewhat on all sectors. For food specifically, the IIA runs an incentive program called Business R&D in Agriculture, which encourages development of agricultural products intended for export.
<b>Rural and local development and research organizations</b>	
<ul style="list-style-type: none"> <li>Southern Arava R&amp;D</li> <li>Central and Northern Arava R&amp;D</li> <li>Gadash Organization</li> <li>Zemach Nisyonot</li> </ul>	Israel is home to many agricultural development centers located around the country. These are highly specialized and localized organizations conducting applied research in order to help local farmers make the most of their specific land conditions.
<b>Private companies</b>	
Strauss	An international company whose home base is in Israel, Strauss is considered the largest Food & Beverage company in Israel. The Company's brands in all its core categories command a leading position in the Israeli food market and include many of the Israeli public's favorite and most nostalgic products.
Frutarom	An Israeli-based company that specializes in the production and distribution of extracts for flavor and fragrance.
Kaiima	Kaiima Bio-Agritech is a genetics and breeding technology company that develops innovative platforms that advance and improve plant productivity for large scale, modern agricultural systems.
Evogene	A leading computational biotechnology company developing novel products for life science markets through the use of a unique Computational Predictive Biology ('CPB') platform.
AquaMaof	A company of a new generation of fish farmers; aquaculture and technology experts with years of experience and a passion for the industry. Working with nature, we leverage next generation techniques to develop a cost-effective, land-based indoor aquaculture technology.
<b>Not for Profits</b>	
ii2020	A very prominent initiative led by prominent investor and politician Erel Margalit. Food focus includes focus on medical foods with the National Food & Nutrition Research Institute in Upper Galilee.



# About ICDK Outlook

ICDK Outlook is written by the Danish Ministry of Higher Education and Science's Innovation Attachés.

The Innovation Attachés are a part of Innovation Centre Denmark which is a partnership between Denmark's Ministry of Foreign Affairs and the Ministry of Higher Education and Science. Together the two ministries manage seven centres in Brazil, China, India, Israel, Korea, Germany and the USA. ICDK Outlook is a concept where the attachés provide new knowledge and inspiration about opportunities or trends within a given topic with relevance for stakeholders within higher education, research and innovation. Find out more about Innovation Centre Denmark on [www.icdk.um.dk](http://www.icdk.um.dk), where you also can find all ICDK Outlooks.