




COMBATING THE GLOBAL FOOD CRISIS


Growing More with Less Land, Water, and Manpower


Worldwide Food Supply Challenges


- 


Global population to reach **9.7B** by 2050
“World Population Prospects,” United Nations (2015),1
- 


Food production must **increase by 70%**
“Global Demand for Food is Rising. Can We Meet It?” Harvard Business Review (April 2016)
- 


Increasing demand for **natural resources**
- 


Land and water **scarcity** and **degradation**
“Land and Climate Change” WRI (2013)
- 

Extreme climate change
- 

Destruction of crops and migration of **pests and diseases**
“Climate Change and Food Security: Risks and Responses” Food and Agriculture Organization (2016)
- 

Food loss and waste throughout the supply chain
- 

30% of global produce
“Food Loss and Waste Facts” Food and Agriculture Organization of the United Nations (July 2015)
- 

High carbon footprint of livestock (14.5% of human-induced GHG emissions)
- 

Environmental hazard
U Martin Persson et al, “Climate Metrics and the Carbon Footprint of Livestock Products: Where’s the Beef?” IOP Publishing (March 2015)

Agriculture Industry Potential

\$7.8T
global industry

10%
of global GDP

1.3B
jobs worldwide

Source: “AgTech Investing Report: Year in Review 2015,” Agfunder (2016)

Unique Strengths of Israeli AgriTech

Innovative methods and technologies

- for growing more with less land, water, and labor
- **Precision Agriculture**—robotics and sensors, biomedical breeding protocols and genetic manipulation, big data analytics, computer vision, and automatic-decision support systems
 - **Drip irrigation and fertigation systems**
 - **Climate-controlled greenhouses**

Ideal beta site

- **Diversity** of **four** climate zones
- **Easy to test** new agricultural methods in different soils, precipitation levels, and temperatures
- **Early adopter farmers:** culture of AgriTech experimentation and implementation

Legacy of Israeli innovation

Resilient seeds—40% of European tomato greenhouses use seeds of a long shelf-life hybrid that was developed and first produced in Israel

“The Israeli AgriTech Sector,” Bank Leumi (2015)

Efficient dairy farming—world’s most productive **cows:** 12,083 kg per cow in 2014 (compared to 10,097 in USA)

Ari Rabinovitch, “Thanks to Innovative Dairy Tech, Israeli Cows Among World’s Most Productive,” Haaretz (2015)

Drip irrigation and water management—75% of crops drip-irrigated (compared to only 5% globally)

“Israeli Water Technology is a Blossoming Industry Helping to Solve the Global Water Crisis,” Jewish Business News (2015).

Novel plants—**Cherry tomatoes, human-collagen-producing tobacco plants**

SUPPORTIVE ECOSYSTEM

Academia - Agriculture Research Organization, The Hebrew University, Weizmann Institute of Science, Technion, Ben-Gurion University

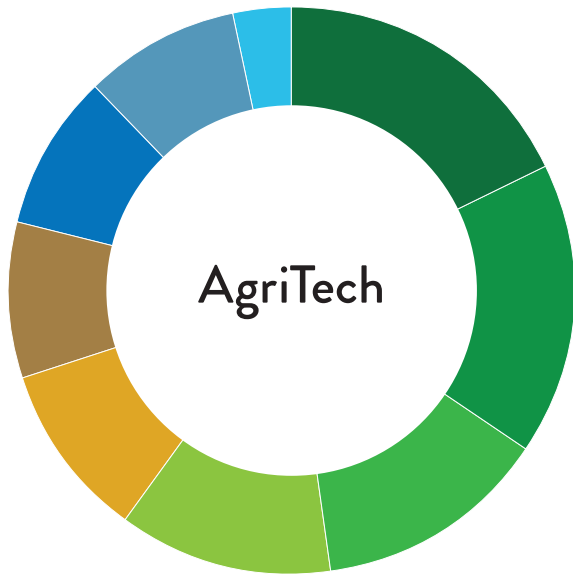
Ag-focused funds - GreenSoil, Trendlines, AgriNation, Copia, Finistere Ventures, Agri-innovation. Pontifax AgTech

General funds investing in Ag - Bessemer, OurCrowd, Innovation Endeavors, Wanaka

MNCs with an Israeli footprint - Bayer, Monsanto, BASF, Syngenta

ISRAEL AGRITECH COMPANIES BY SECTOR

400+ Start-Ups



- BioTech ● Post-harvest ● Irrigation & water management
- Smart farming ● Novel farming systems ● Machinery & robotics
- Livestock & poultry ● Aquaculture ● Special crops

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

Success Stories

TARGETGENE
Biotechnologies

An innovative genome-editing company using RNA-guided gene-editing techniques. In 2016 Monsanto invested in TargetGene to apply their technology to enable the next generation of agricultural innovation.

Groundwork

Develops, manufactures, and commercializes natural mycorrhizal fungi to help crops better absorb nutrients. Raised over \$5M from leading investors including ICV and Middleland Capital.

stk
Stockton Group

Develops and markets plant extract based bio-pesticides. In 2015 Chinese firm Hebang Group acquired 51% of Stockton's shares for \$90M to support Stockton's growth as a global leader in environmentally friendly bio-fungicides.

SCR

Advanced cow monitoring systems, milking solutions and herd intelligence, providing farmers with actionable insights and management systems. Acquired by Allflex for \$250M in late 2014.

TARANIS

A precision agriculture intelligence platform, using deep learning on proprietary data sets to help farmers monitor their fields and make informed, actionable decisions. Raised \$7.5M A round in 2017, led by top investors Finistere and Vertex Ventures.

**START-UP
NATION
CENTRAL**



START-UP NATION CENTRAL IS YOUR BRIDGE TO ISRAELI INNOVATION

Contact Start-Up Nation Central to help you to access the Israeli AgriTech ecosystem, and connect with the relevant start-ups and industry figures.

Jeremie Kletzkiene | Jeremie@sncentral.org | StartupNationCentral.org