

# **Accelerating AgriTech Industry in Israel and USA**

## **A Project of the California-Israel Global Innovation Partnership**

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# AgriTech in Israel



## Israeli AgriTech Companies by Subcategory

Pesticides	59
Water & Irrigation	54
Seeds	44
Livestock	37
Aqua-Agriculture	34
ICT& Precision Ag	33
Post-Harvest	29
Systems Management	28
Food processing	27
Fertilizing	16
Mechanization	5

### Industry

- 53 Seed Stage Start-Ups
- 47 Early Stage Start-Ups
- 273 Mature Companies
- 4 International R&D Centers

### Government

- Ministry of Agriculture
  - Sets the policies around agricultural subsidies and gov't support
  - Supports basic and applied R&D
- Ministry of Economy
  - Supports industrial R&D and knowledge transfer from academia

AgriTech

### Funding for Private Sector

- Venture Capital Firms
- Office of Chief Scientist Fund
- EU and World Bank Funds

### Universities and Public Research

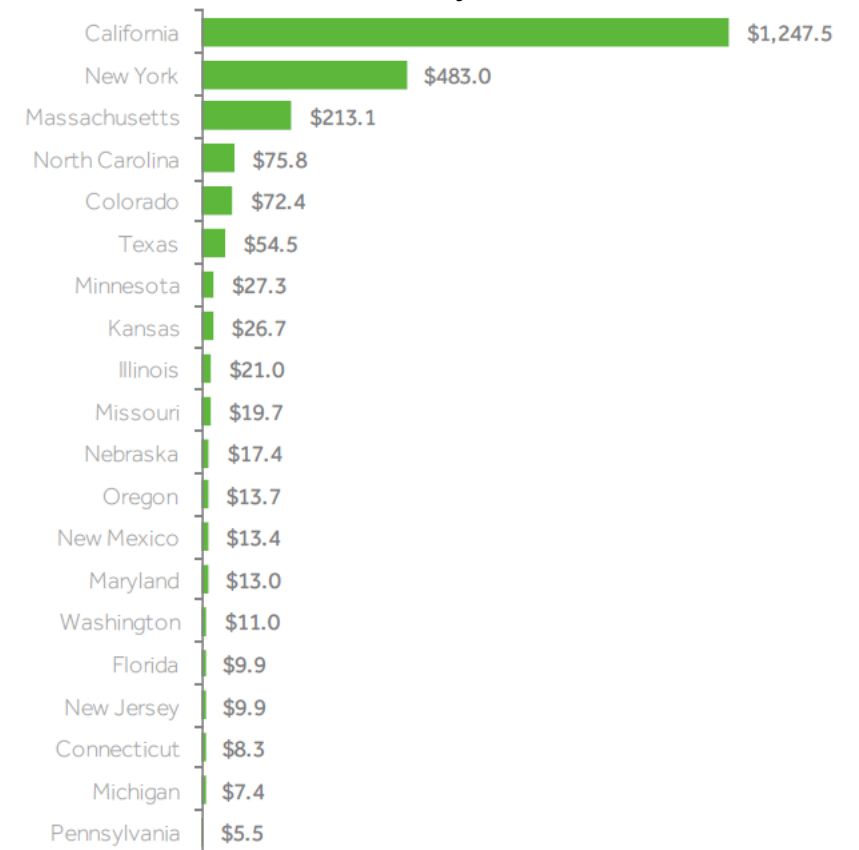
- Universities
  - TTO (Technology Transfer offices)
- Research Institutes
  - Volcani Center

# AgriTech in California



- According to AgriTech website Agfunder.com, California led the U.S in both number of investment deals (seed to series B) and in terms of total value of deals
  - In 2015, 96 out of the 303 companies in the U.S invested in are in California (31%)
  - In 2015 total of \$1.25 billion in investment
- This investment is largely located in Silicon Valley, wherefrom which an estimated 20% of all U.S AgriTech companies who have received funding in the last two years originate

U.S Investment: Dollar Value of deals by State



Source: Agfunder Year in review 2015



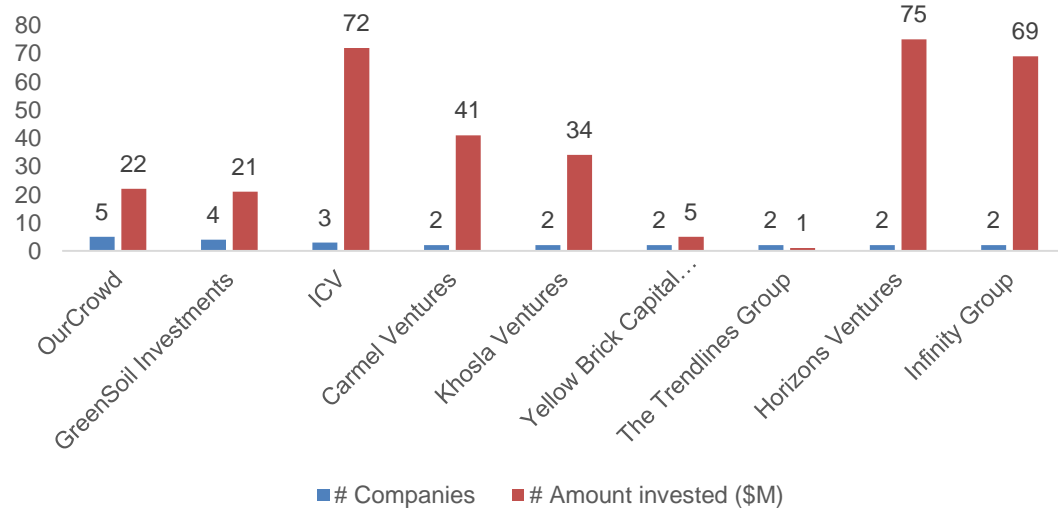
# Israel Agritech Industry Investments Snapshot



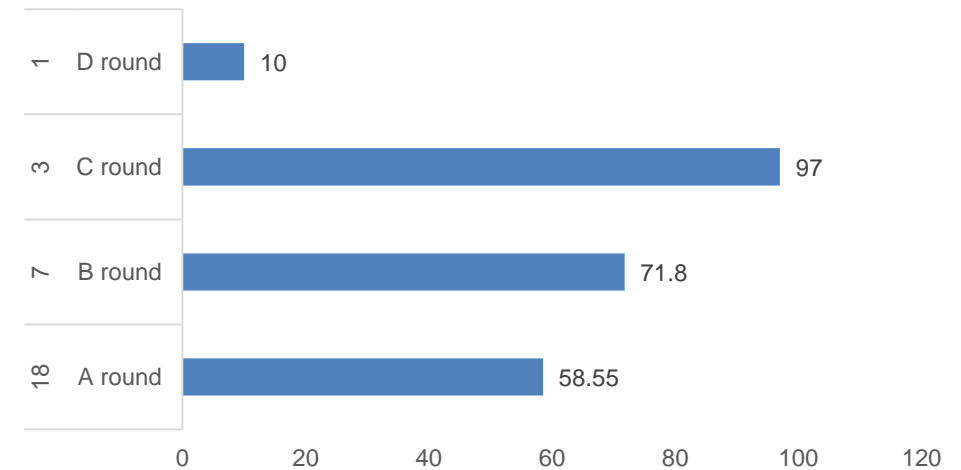
Jerusalem Institute for Israel Studies  
Milken Innovation Center

- Investments done in Israeli AgriTech till date is \$1.7 billion
- Investments done in Israeli AgriTech FY2015 is \$718 million
- 90 investors have invested in various Israeli AgriTech projects till 2015

Investors who invested in more than one company and the amount invested



Funding in \$million at various stages



Other Sources of funding are Crowd funding (\$3.85M in 5 companies) and Debt funding (\$500.9 M in 2 companies)



Source: Start-Up Nation Central

# Why Low investments in AgriTech Industry



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- Long time horizon for R&D
- Low and volatile profit margins
- Lack of knowledge transfer from academia to industry
- Difficulty in reaching out to farmers with the technology
- Low seed level funding to encourage entrepreneurs



# VC industry in Israeli Agritech



- They start investing only when a prototype is built
- Usual financing size in different rounds
  - Series A: 1 to 3 million USD
  - Series B: 5 to 10 million USD
  - Series C: 10 to 15 million USD
- Traditional VC's invest in the later stage of companies where the firm is generating cash flow from its operations
- VC's invest in the product and the technologies as well.
- VC's keen on investing in Smart breeding, Field crops, Shelf life, new ingredients
- Typical Duration of investment in a firm or an idea (5 to 7 years) Life cycle
- VC's typically value a company from 8X to 15X multiple
- Average Premoney valuation : 2 to 8 million USD
- Strategic partners, LPS such as Institutions like insurance, Pension funds who gets a return on their investment if there is an exit (IPO, M&A etc) from the fund



# Milestones in the Financial rounds



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## Seed Stage

- Proof of Concept
- Testing in the lab
  - Alpha site test
  - Beta site test
- Regulations
- First Commercial Sale

## Series A

- Revenues generated

## Series B

- Try to expand in operations

## Series C or Private equity

- Later Stage

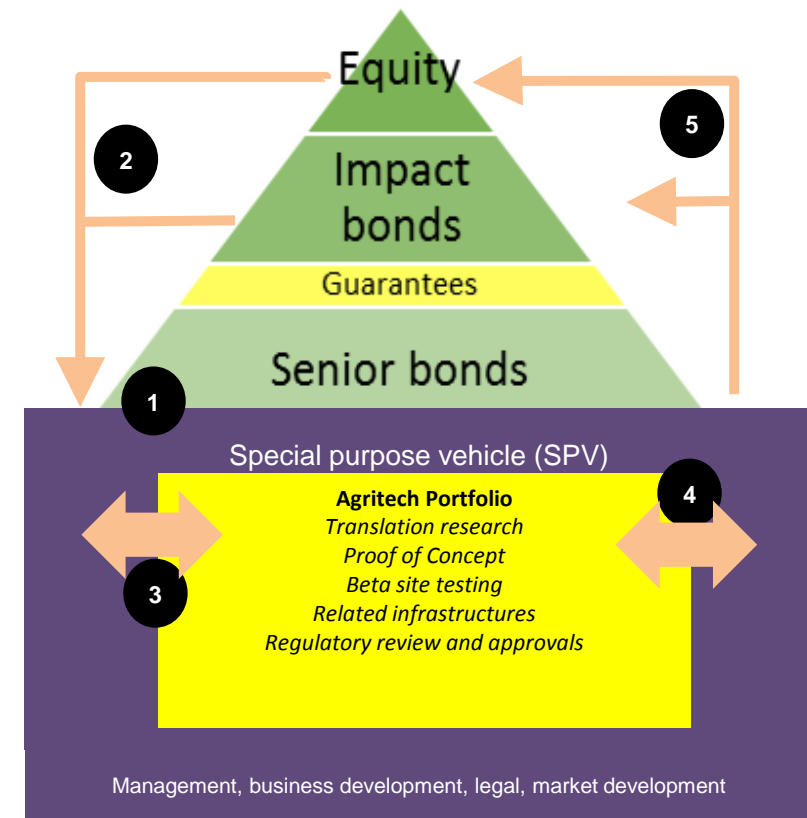


# Proposed Capital Structure of the Fund to be validated and IP's available to market

- IP's available in Israeli Technology Transfer offices are

Technology Transfer Office	Available IPs
Yissum	16
Carmel	2
Yeda TTO	9
Volcani	3
T3 Technion	2
Ramot	4
Total	36

- IP's available with University of California is 142





# Pre Money and Post Money Calculations



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1	Total Number of IP's in Israel (36) and California (142)	178	
2	Probability of IP's that has a potential to be launched	10.00%	
3	Number of IP's to product	18.00	
4	Net Income in 7 years per company	\$7M	Assumption
5	Price Earnings Ratio	12.0x	Industry Standard
6	Total Net Income in 7 years by the companies funded	\$126.00M	
7	Value in 7 years	\$1,512M	(5) * (6)
8	Initial Investment	\$45M	\$2M/company and \$9M Management fee
9	Required Annual Return	50.0%/year	Fund expectation
10	Required return over 7 years	17.09x	
11	Value needed in 7 years	\$768.87M	(8) * (10)
12	Total Companies value in 7 years	\$1,512.00M	
13	<b>% Ownership needed</b>	<b>50.85%</b>	(11)/(12)
14	<b>Post-Money Valuation</b>	<b>\$88.49M</b>	
15	<b>Pre-Money Valuation</b>	<b>\$43.49M</b>	



16	Pre-Investment Share Count Assumption	10,000,000 shares	Assumption
17	Pre-Investment Per Share Price	\$4.35 per share	(15)/(16)
18	Investment Amount	\$45,000,000	
19	Number of New Shares Purchased	10,346,296 shares	(18)/(17)

- *If the Management Option Pool will own 15% of the company it will dilute Funds ownership by 15%*
- *To hit Funds 50% target IRR, it needs 50.85% ending ownership AFTER a 15% dilution*
- *The 15% dilution would effectively take their ownership and multiply it by (100% - 15% dilution) = 85% of what it used to be Therefore, before the 15% dilution, this ownership would need to be 50.85% / 85% = 59.8%*
- **VC or Fund should require a pre-option pool ownership of 14,890,922 shares**



# AgriTech Fund Cashflows and Valuations Case 1

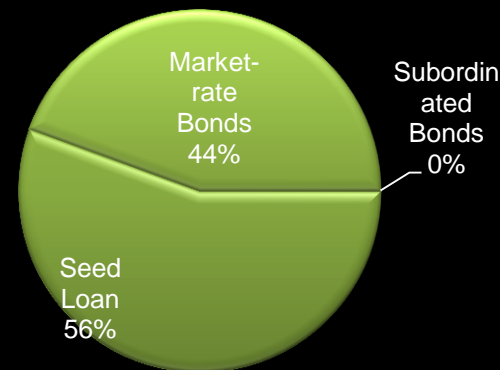


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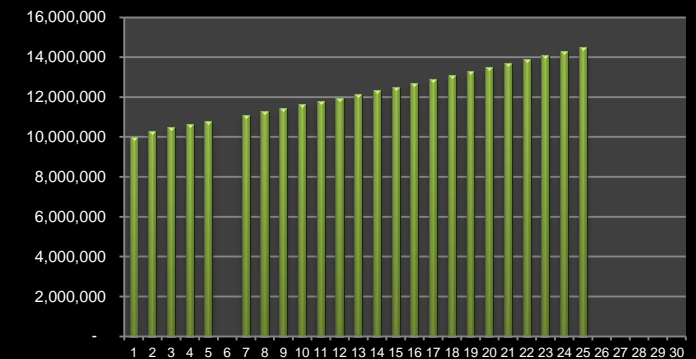
- **Structure**

- Seed Capital or fund \$25,000,000
- Issue 20 year Market Bonds \$20,000,000 at zero coupon rate at 5% interest rate
- Guarantee \$10,000,000 Gov't
- Value exits after 7 years

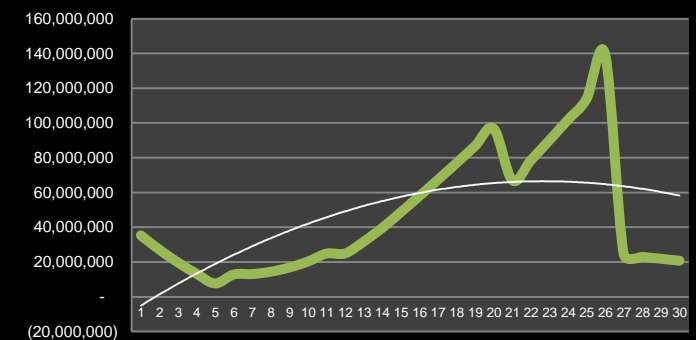
**Capital Sources**



**New Loans**



**Cash Flow**



# Fund Valuation Snap Shot Case 1



<b>Bond Funding - Market</b>	<b>20,000,000</b>
Bond Funding - Submarket	-
Seed Funding	25,000,000
Guarantee (on capital market)	10,000,000
Total Loans	294,055,257
Management Cost	3%
Loss Rate	2.3%
IRR on Seed Funding	9.25%
Total Loan Capital Multiple	6.5
Guarantee Leverage	29.4X
Seed Fund Leverage	11.8X

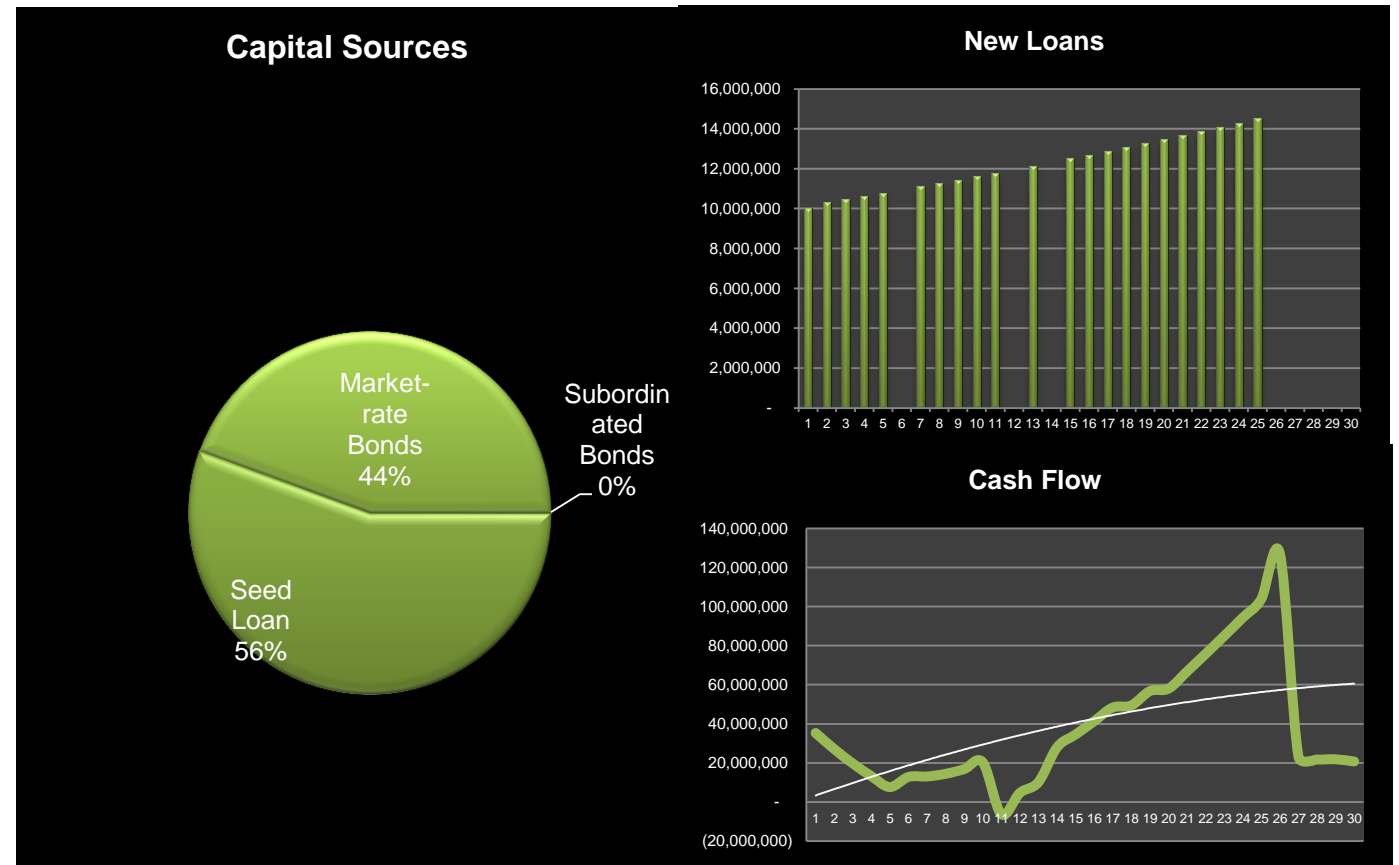


# AgriTech Fund Cashflows and Valuations Case 2



- **Structure**

- Seed Capital or fund \$25,000,000
- Issue 10 year Market Bonds \$20,000,000 at zero coupon rate at 5% interest rate
- Guarantee \$10,000,000 Gov't
- Value exits after 7 years



# Fund Valuation Snap Shot Case 2



<b>Bond Funding - Market</b>	<b>20,000,000</b>
Bond Funding - Submarket	-
Seed Funding	25,000,000
Guarantee (on capital market)	10,000,000
Total Loans	269,781,518
Management Cost	3%
Loss Rate	2.3%
IRR on Seed Funding	8.26%
Total Loan Capital Multiple	6.0
Guarantee Leverage	27.0X
Seed Fund Leverage	10.8X



# Recommendations



- Fund produces positive cash flow and is sustainable.
- Focus on the Seed Stage Funding
- Approach Venture Debt Companies like Silicon Valley Bank to operate in Agritech Space.
- Always try to maintain  $> 50.85\%$  stake in the technologies the fund invests
- Invest more in Precision AgriTech when compared to high turnaround technologies

