

# Agri-Startups and Agribusiness for the Development of Agriculture in Maharashtra

**Discussion Paper 14**

MANAGE- Centre for Agricultural Extension Innovations,  
Reforms, and Agripreneurship (CAEIRA)



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## **About the Publication**

This discussion paper is based on the research conducted by Ms. Manisha Ohlan, MANAGE Intern under the MANAGE Internship Programme for Post Graduate students of Extension Education.

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## Director General's message

**Smt. G. Jayalakshmi, IAS**  
Director General, MANAGE

Startups have played and continue to play significant roles in the growth, development and industrialization of many economies of the world over. The start-up ecosystem in India has been evolving rapidly in the past decade. Agricultural startups in India are still at a nascent stage, with about 500+ startups trying to solve multiple emerging problems in the Indian agriculture and agribusiness ecosystem. Agri-Startups are making the most of technology and converting them into easy and sustainable practices, which would make farming a lot simpler and profitable.

The present study highlights the role of Agri-Startups, the need for the development of agriculture, and providing employment opportunities to the youth. The study also focuses on the status of Agri-Startups and the challenges faced by them, the good practices followed for promoting them. The state of Maharashtra has a vibrant startup ecosystem with the majority of them located in Pune and Mumbai. The case studies of few innovative startups such as Earth food, Deals Kount, Orgpick, FarmBee, Agrostar, Rus Organic, Agribazzar, Bombay Hemp Company, Farmlink, Go4Fresh, Circot were mentioned and the change they bring to the farming community with their startup solutions is also highlighted in the study.

I congratulate Ms. Manisha Ohlan, MANAGE intern, and Ph. D Scholar, CCHSAU, Hisar, Haryana for choosing the study entitled "Agri-Startups and Agribusiness for the Development of Agriculture in Maharashtra" and to conduct research highlighting the importance of Agri-startups in Pune, Mumbai, and Nagpur region of Maharashtra State.

**(G. Jayalakshmi)**



## Preface

Agribusiness and agri-startups have become the buzzwords of the day and are prevalent in agricultural biotechnology, online farm-to-consumer connect, farm management software, Remote Sensing and IoT, Robotics, mechanization and precision agriculture, novel farming systems, food safety, and traceability, etc. these startups are making the most of technology and converting them into easy and sustainable practices, which would make farming a lot simpler and profitable. These startups are using mobile apps and the internet to educate and facilitate the farmers.

The present study focuses on how agribusiness and agri-startups assist the development of agriculture in Maharashtra. It attempts to access the knowledge and attitude of founders regarding agribusiness, Agri-startups, and startup incubators. Provides case studies on agribusiness, Agri-startups, and agribusiness incubation Centres in Maharashtra. It is important at this hour to leverage the full potential of technology and innovations to solve the problems in India's agriculture sector with public-private partnership and investment.

The findings of the study will be useful for researchers, practitioners and policymakers engaged in the promotion of agribusiness, Agri-startups and also Agri-Business Incubation Centres.

**(Saravanan Raj)**

Director (Agricultural Extension)

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## Abstract

Agriculture is beholding distraction with the agri-startups providing solutions to help farmers in optimizing the production and improving their livelihood. Agricultural development is important for raising the incomes of the population dependent on agriculture and the growth of the non-agricultural sector. India embraces the record for the second-largest agricultural ground in the world, with about around 60 percent of rural Indian households coming from agriculture and thereby providing an immense opportunity for agricultural start-ups in the region. Agriculture, along with livestock, fisheries and forestry, is one of the largest contributors to the Indian Gross Domestic Product (GDP) which was recorded at \$244.74 Billion in FY'16. In India, a total of 366 agri-based startups have come up from 2013 to 2017 with more than 50 percent of the startups in the last five years starting in 2015 and 2016. More than 90% of all investment is now based on seed and early stage start-ups.. Agri-startups are prevalent in agricultural biotechnology, online farm-to-consumer, farm management software, sensing and IoT, robotics, mechanisation equipment, novel farming systems, food safety, and traceability, etc. New-age farm management approaches combined with technologies have increased farming activities and efficiency, but a lot of the industry still lags in modernisation. Leveraging the full potential of agritech to solve the problems in India's agriculture sector is possible with private capital and this represents a huge potential for innovation, investment and impact.

Agritech in India has become a booming field with numerous startups working with digital technologies such as data analytics, machine learning and satellite imaging, among others, enabling farmers to maximize their output. But along with this, Indian agriculture faced lots of challenges, including starving of financial resources and continuous neglect by the government and is likely to become more difficult over the next few decades as weather patterns, available water, growing seasons shift further and climate change has contributed to the suicides of nearly 60,000 Indian farmers over the past three decades. In contrast to this framework, technology is increasingly being seen as a solution for boosting agriculture. Therefore, agri-tech startups are introducing artificial intelligence, computer vision and aerial imagery analytics to make farming processes more efficient and lead to better decisions for improving yield and productivity. The need for the hour is for all players to come together to take advantage of the potential to turn the agricultural sector from governments to agri-start-ups to investors.

## Executive Summary

Agritech-startups is a versatility tale and a new one. It is about exploiting technologies by the absolute dedication and creating solutions to indigenous issues. The road is less travelled, but it can unravel significant treasures while also pulling the agriculture sector out of the dark. India witnessed deals that are made up for 4.7 percent of the total deals globally and attracted 9.5 percent of the total startup investment amounts raised. Food and beverage, e-commerce, and fintech are three of the exceptionally performing startup sectors in India this year. While seed funding amounts were quite lower than the global average, venture funding amounts were twice the global venture funding figures this year. People are conscious about risk and rewards and India is referred to as a price-sensitive market. Indian markets are largely unorganized and fragmented which creates a roadblock for a startup to succeed. The behavior of Indian consumers changes every 30-50km that makes it really difficult for a startup to create a business or market strategy for their products or services. Most startups generally get stuck in stagnancy and gradually shut down. India is a place of varied culture and taste thus, every product might not be welcomed equally in every region. Appropriate IT-infrastructure has become a need for Indian businesses given the growing number of consumers online. Most startups are self-subsidized with a small workforce, making financial and operating records impossible. Farmers and Agritech startups have evolved rapidly over the past few years due to digital penetration and funding, majorly driving the growth of this sector. Solutions focused on developing a strong supply chain remain a key priority for all stakeholders. B2B is considered to be the biggest revenue-generating stakeholder due to long term business sustainability. Outlook in 2020 should be towards driving innovation, data collaboration, easy working capital and providing digital infrastructure.



## Introduction

“Startups don’t win by attacking. They win by transcending. They are exceptions of course, but usually the way to win is to race ahead, not to stop and fight”

(**Paul Graham**) (<https://startupquote.com/image/104295139271>).

Agriculture is the oldest economic sector in the world (Dutia, 2014) and serves as a primary source of livelihood for about 58 percent of India’s population. With the era of startups in India, things started to change (<https://mahyco.com/how-are-agri-startups-helping-india-grow/>). Startups have undoubtedly driven growth (Krishnan, 2018) and revamping the agriculture sector (Mattoo, 2018).

A successful startup cannot start a business just with passion and an idea. A high level of leadership skills with a clear understanding of the market, excellent communication skills, maturity to see things in the right perspective along with the ability to take calculated risks as well as a team’s strong enthusiasm are required on the part of the entrepreneur (Aggarwal, 2017).

Agricultural startups in India are still at a nascent stage, with about 300 startups trying to solve multiple emerging problems in the Indian agribusiness ecosystem. The combined revenue of all agritech startups in India is estimated to be less than 100 million USD, which is a drop in the ocean in a market worth more than 350 billion USD. Thus, the opportunity to scale and disrupt is huge. India has made a strong name for itself in the global startup community (Agri Start-ups: Innovation for boosting the future of Agriculture in India, pwc-FICCI report 2018).

Agribusiness and agritech startups have become the buzzwords of the day, ever since Prime Minister Shri. Narendra Modi’s announcement of the campaign called “Startup India” on 15th August 2015 (TNN, 2015) and launched on 16th January 2016, which can release countless opportunities for startups and strengthen the supply chain in Indian agriculture (Will Poole) ( Gera, 2015).

It is to be noted that every year more than 800 technology startups are being set up in India. By 2020, it is estimated that around 11,500 tech startups are going to be established with an employment potential of around 2,50,000 technical people (NASSCOM, 2015). It is admirable to note that India is amongst the top five countries in the world in terms of startups with 10,000+ led by the US with 83,000+ comprising 43 percent tech-based firms with 9 percent managed by women entrepreneurs. The number of incubators also has crossed 100 in 2014-15 to give a boost to the startup saga (Thornton, 2015).

In recent years, the Indian startup industry has really taken off and come to its own—driven by factors such as massive funding, consolidation activities, evolving technology and a burgeoning domestic market. The numbers are telling—from 3,100 startups a projection of more than 11,500 by

2020, this is certainly not a passing trend. It's a revolution. And it's going to change the way the markets are working today in India (Sunanda, 2017).

## 1.1 Origin of the Startup Ecosystem

The Indian land is no longer unfamiliar to the concept of business and trade. From trading activities that exploded during the Kanishka Empire from the 1st Century to the 80s where the nation took a stand on commodities like jute, cotton and spices. The idea of owning a 'business' runs in the veins of every Indian.

Nevertheless, then it was in the mid-80s when Prime Minister Rajeev Gandhi declared 'Liberalization of Computer Industry' followed by the commencement of NASSCOM in 1988. From thereon, there was no looking back as the Indian startup's ecosystem progressed gradually.

The emergence of startups, in general, was with the dot-com bubble and this era is the time when the term became popular. The first startups happen to be much older, dating back to the times after the Great Depression of the 1920s/1930s and some even to the times before it. It is also assumed that the first startups are the Silicon Valley companies, like the International Business Machines (better known as IBM and founded in 1911) (<https://www.growly.io/what-is-a-startup-the-historical-background/>).

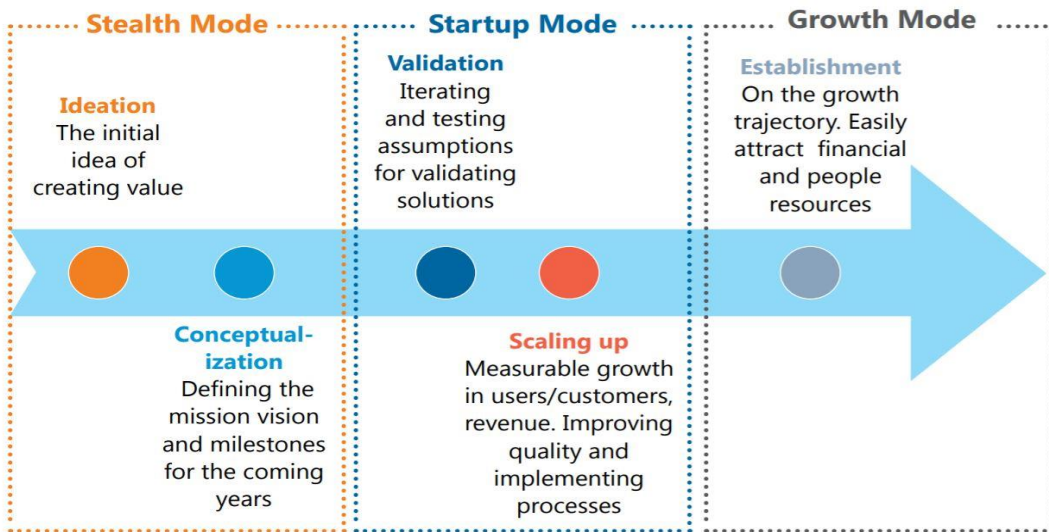
The time was an asset and so, the companies gradually explored the market until mid-2000. However, in 2007-2008, India has witnessed two of its biggest ventures rising up. Flipkart marked its entry in 2007 as the first e-commerce startup and later in 2008, Zomato and Quikr came into the picture. These startups are now over a decade old but still sailing on their first-mover advantage. The economy was not ready then, but the novelty of the idea fetched them high revenues as they progressed.

Moreover, everything followed later on, from MakeMyTrip, Ola, Paytm, to Fresh desk, etc. contributed heavily to gain traction. Looking at the contribution of startups in the economy, various programs were initiated by the agencies and government to boost the economy.

Years 2005-10 showed immense growth in the number of startup stories. Perhaps, the Indian Startup evolution experienced something so specific to their business with the Prime Minister's aim to build systems for enabling ease of business for startups. In August 2015, Indian Prime Minister Narendra Modi announced the "Standup India" campaign to aid startups in getting the bank funding and thereby, encouraging young Indians to take up the entrepreneurial route (<https://www.indianweb2.com/2018/10/07/the-evolution-of-indias-startup-ecosystem/>). "Startup India" was launched on 16th January 2016 and the journey of startups started more rapidly. Now, it is on at its pace nationally and globally also.



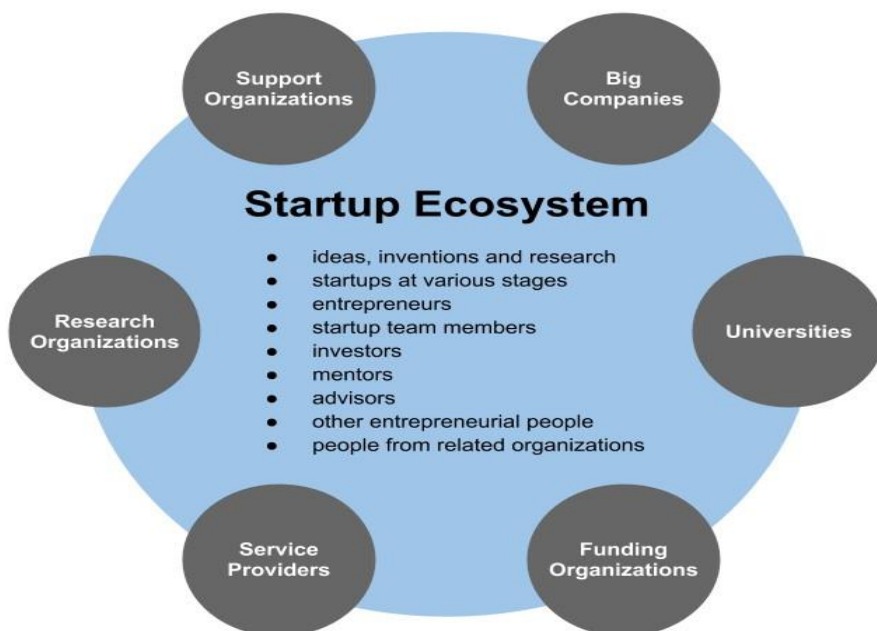
Broadly, a startup is entrepreneurial business seeking to disrupt existing markets or create new ones by a set of founders, cofounders and a passionate team attempting to develop a product or service and will have a lifecycle as follows:



(Source: <http://ficci.in/spdocument/22941/Startup-Report.pdf>)

## Startup Ecosystem

A startup ecosystem is formed by people, startups at various stages and various types of organizations like universities, funding organizations, support organizations (like incubators, accelerators, co-working spaces etc.), research organizations, service provider organizations (like legal, financial services etc.) and large corporations in a location (physical and/or virtual), interacting as a system to create new startup companies (<https://www.startupcommons.org/what-is-startup-ecosystem.html>).



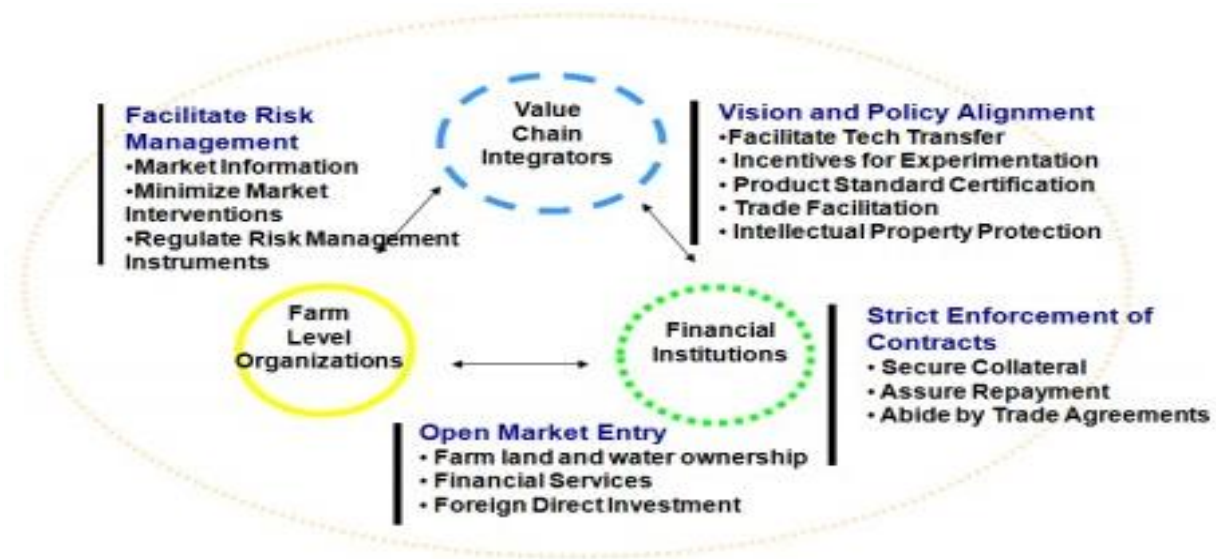
**Fig.1:** Startup Ecosystem

([https://en.wikipedia.org/wiki/Startup\\_ecosystem#/media/File:StartupEcosystem.png](https://en.wikipedia.org/wiki/Startup_ecosystem#/media/File:StartupEcosystem.png))

## 1.2 Dimensions of Agribusiness Ecosystem

The agribusiness ecosystem includes business expansion in the agriculture and rural sector and its chains, from relationships involving value chain integrators, farm-level organizations and financial institutions mainly carried out by the private sector, and producers of the agriculture sector that are sustainable in the long term. In addition to this, it involves risk management, vision and policy alignment, strict enforcement of contracts and open market entry.

(<http://www.fao.org/3/y6001e/y6001e05.htm>)



**Fig. 2: Agribusiness Ecosystem**

([http://www.infodev.org/sites/default/files/m12\\_traineemanual\\_0.pdf](http://www.infodev.org/sites/default/files/m12_traineemanual_0.pdf))

## 1.3 Defining the Terms

### Startup

Adora Cheung defines "Startup is a state of mind," and it's when people join your company and are still making the explicit decision to forgo stability in exchange for the promise of tremendous growth and the excitement of making an immediate impact" (Robehmed,2013).

According to the startup guru Steve Blank, a startup is a "temporary organisation designed to search for a repeatable and scalable business model," while a small business runs according to the fixed business model (Renderforest, 2019).

### Agriculture

Riddell (2018) defined agriculture as, "the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool and other products."

Merriam-Webster defines agriculture as, “the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees, and the preparation and marketing of the resulting products” (<https://www.merriam-webster.com/dictionary/agriculture>).

## **Agribusiness**

Merriam-Webster defines agribusiness as, “an industry engaged in the production operations of a farm, the manufacture and distribution of farm equipment and supplies, and the processing, storage and distribution of farm commodities” (<https://www.merriam-webster.com/dictionary/agribusiness>).

Chen (2018) defines, “Agribusiness is the business sector encompassing farming and farming-related commercial activities. The business involves all the steps required to send an agricultural good to the market: production, processing and distribution. It is an important component of the economy in countries with arable land since agricultural products can be exported.”

## **Agritech**

Wikipedia defines, “Agritech is the use of technology in agriculture, horticulture and aquaculture with the aim of improving yield, efficiency and profitability. Agritech can be products, services or applications derived from agriculture that improve various input/output processes.” (<https://en.wikipedia.org/wiki/Agritech>)

Whatis defines, “Agritech is the use of technology for farming that is developed to improve the efficiency and profitability and most commonly used in horticulture and agriculture. Agritech is also found in forestry, aquaculture and viticulture.” (<https://whatis.techtarget.com/definition/agri-tech>)

## **1.4 Facts about Startups**

**Table 1: Facts about Startups**

Only 20 per cent of agricultural startups are profit-generating
44 per cent of startups in agri-education are looking for funding
62 per cent of startups related to crop production are profitable
87 per cent of startups related to crop production and 55 per cent related to food processing are bootstrapped

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Food processing, automation/technology and agri-education are the major categories in agriculture startups

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Nearly half of the startups dealing in agri-education are looking for funding

---

One-third of the startups are facing challenges in finding adequate talent. Most startups seem to have a team size of fewer than 5 people

---

Earlier in May, in order to fuel the growth of innovative ideas in the agritech sector, Karnataka's agriculture department had set aside about \$1.5 million (INR 10 Cr) fund to be administered by the Information Technology and Biotechnology (ITBT) department.

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Recently, agritech startup Utkal Tubers raised \$4.6 million (INR 30 Cr) from CapAleph Indian Millennium SME Fund and Zephyr Peacock India Fund. Zephyr Peacock is the India-focused PE fund of the US-based Zephyr Management.

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Other firms actively investing in the food agriculture and agritech space include SEAF India, Omnivore Capital, Rabo Equity, DSG Consumer Partners and Aspada.

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In April 2017, Chennai-based fresh produce distribution startup WayCool secured \$2.7 million from an early-stage venture capital firm Aspada Investments. Pune-based agritech startup AgroStar, an m-commerce platform for agriculture, raised \$10 million Series B funding led by Accel India in March this year.

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3 new startups launch globally every second, making up for 11,000 per hour, or 259,200 per day! In the U.S. alone, that number is much lower and usually averages at 3 per minute.

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(Ramalingegowda and Shrivastava, 2014), (Agarwal, 2017)

(<https://codeburst.io/amazing-facts-about-entrepreneurs-73b5a36426a4?gi=59e8a1ca5264>)

## 1.5 Startup India Features

Startup India is an initiative of the Government of India ([https://en.wikipedia.org/wiki/Startup\\_India](https://en.wikipedia.org/wiki/Startup_India)). An action plan for Startup India to build a strong eco-system to nurture innovation and startups in the country was launched on 16th January 2016. (<https://taxguru.in/corporate-law/salient-features-startup-india-scheme.html>)

The salient features of the scheme are as follow:

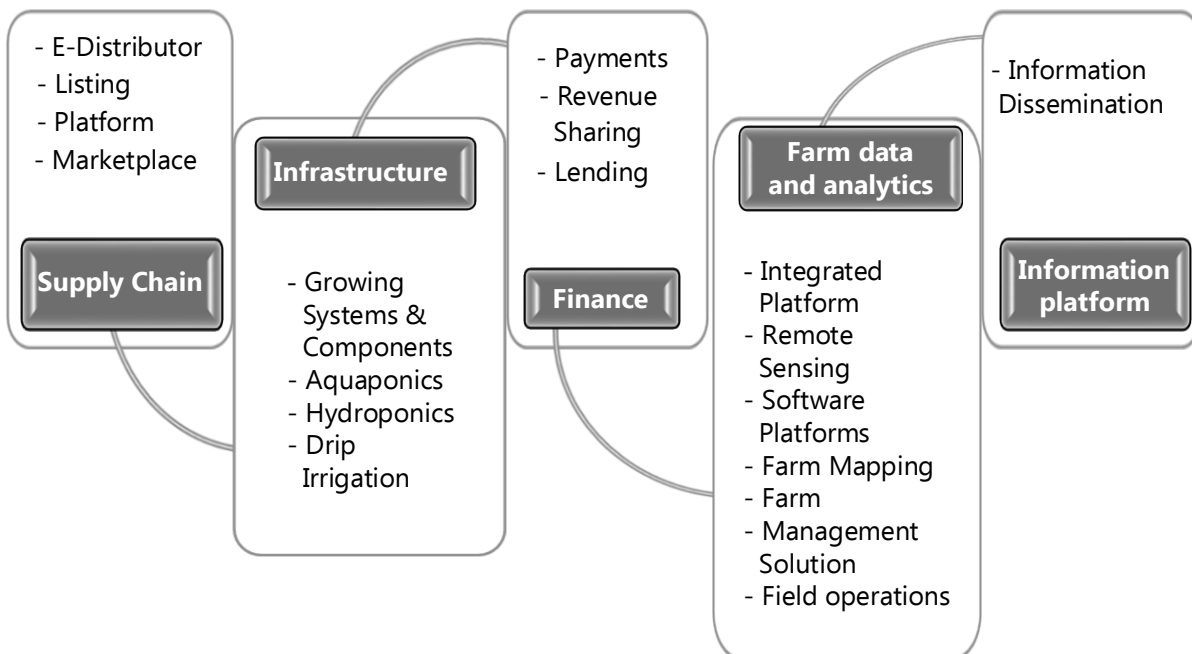


**Table 2: Startup India Features**

STARTUP INDIA	ECOSYSTEM	WHAT'S NEW	RESOURCES
<ul style="list-style-type: none"> <li>• Startup India scheme</li> <li>• States ranking</li> <li>• State's startup policies</li> <li>• Notifications</li> <li>• Tax incentives</li> <li>• FAQs</li> <li>• Contact us</li> <li>• About us</li> </ul>	<ul style="list-style-type: none"> <li>• Startups mentors</li> <li>• Investors</li> <li>• Incubators</li> <li>• Accelerators</li> <li>• Government body</li> <li>• International</li> </ul>	<ul style="list-style-type: none"> <li>• Events &amp; Competitions Agriculture Grand challenge</li> <li>• Indo Dutch #StartUpLinkInFi nIT 20 Startup India Yatra Odisha</li> <li>• Startup India Yatra Uttarakh and Code For The Next Billion</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge Bank</li> <li>• Market Research Reports</li> <li>• Learning &amp;Development Government schemes</li> <li>• Pro Bono Startup</li> <li>• Services</li> <li>• Templates</li> </ul>

(Source: Startup India website link)

## 1.6 Agritech Focus Areas in India



**Fig 3: Agritech focus areas in India**

# Key Findings



(Source: <https://nasscom.in/knowledge-center/publications/agritech-india-emerging-trends-2019>)

## 1.7 Agribusiness Focus Areas in India

**Table 3: Agribusiness focus areas in India**

Production	Production	Production	Trade and Others
<ul style="list-style-type: none"> <li>• Production of high-yielding seeds</li> <li>• Production of high-quality planting material, including the use of tissue culture methods of micro-propagation</li> <li>• Nurseries, including hardening nurseries</li> <li>• Organic farming</li> <li>• Production of microbial cultures</li> <li>• Vermicomposting, and Floriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Processing of herbal and sugarcane for various jaggery products like spiced jaggery, powdered jaggery, and jaggery cubes</li> <li>• Processing of herbal and medicinal plants</li> <li>• Processing of dairy products</li> <li>• Processing of poultry products, including poultry dressing, and</li> <li>• Processing of livestock products and livestock wastes</li> </ul>	<ul style="list-style-type: none"> <li>• Cool chain infrastructure, including cold stores.</li> <li>• Storage and warehousing</li> <li>• Specialized transport services</li> <li>• Packaging infrastructure, including pack houses, and</li> <li>• Agri-clinics and service centres</li> </ul>	<ul style="list-style-type: none"> <li>• Procurement through contract arrangements, including contract farming</li> <li>• Retailing</li> <li>• Supply chain management, and</li> <li>• Capacity building, including human resource development in agribusiness</li> </ul>

(Source: Acharya, 2007)

## 1.8 Strategy to Support Agri-Startups in India

The Government of India has announced a four-point strategy to support agriculture in the country to improve the agricultural productivity and yield of the crops through processing farm wastes, ensuring profitable prices, reducing cultivation costs and creating a non-farm source of income.



(Source: Inc42 Apart from four-point strategy Government of India (GoI) have specifically focused on support startups in this area through startup India)

### Impact of Covid-19 on Agriculture and Agri-Start-ups

Food has always been one of the most important commodities for the survival of life on earth and the outbreak of COVID-19 has helped us to realize the importance of farming and food. The outbreak of pandemic in India leads to a delay in the harvest of Rabi crops, a higher unemployment rate in India as many daily workers/private job employees lost their jobs and huge economic loss to different sectors and enterprises as they ran out of business.

The agriculture sector also faced a huge setback as the supply chain was disrupted. APMC was non-operational for quite some-time and the farmers had to suffer huge economic loss. The lockdown highlighted that despite achieving self-sufficiency in the food-grain production, India has a poor post-harvest mechanism. The agro-tourism will have to go under wraps for some years, and agri-startups are recommended to extend their runway time-period as the generation of new investments will be extremely difficult. Along with the supply chain, the input delivery system has also faced challenges, thereby making way for the alternatives. For example, to tackle the issue of non-availability of laborers, direct-seeded rice was promoted and adopted by the farmers in Punjab. The online delivery system of food items was benefitted during the lockdown as most of the people preferred home delivery over them visiting the market place on their own.

During the unlock phase of the lockdown, several agri-techs were able to generate funds as it became quite evident that the future of farming lies with digitalization, mechanization, and other man-less technology to ensure the safety of the products and the humans.

Jai Kisan, a Mumbai-based fin-tech platform that caters to the financial needs of the emerging rural markets, raised 30 crores as a series funding while another agri-tech startup AgriO2O, a New Delhi-based company which manufactures hydroponics-based farm equipment, secured an angel funding. This sudden increase in the investment in agri-tech companies indicates the increase in awareness of business houses towards the importance of agriculture and food and its life-supporting role. These also signify the creation of jobs and opportunities for youth in agri-techs and will fuel the agripreneurship ideas of young farmers and agriculturists. (Horo, 2020)

## 1.9 Schemes to Support Agritech Startups

The Government of India offers multiple schemes to support agritech startups and a few of them are as follows:

### **ASPIRE**

Aspire has been launched by the Indian government to set up a network of technology centres, incubation centres and to promote startups for innovation and entrepreneurship in the rural and agriculture-based industry. ([https://msme.gov.in/sites/default/files/ASPIRE\\_EN.pdf](https://msme.gov.in/sites/default/files/ASPIRE_EN.pdf))

### **New GenIEDC**

The NSTEDB startup scheme by the Indian government will provide a limited, one-time, non-recurring financial assistance, up to a maximum of INR 25 Lakhs. (<http://www.newgeniedc-edii.in/>)

### **SFAC**

The quantum of SFAC Venture Capital Assistance will depend on the project cost and will be the lowest of the following: >26 per cent of the promoter's equity and >INR 50 Lakhs. ([http://sfacindia.com/Procedure\\_For\\_VCA\\_Scheme.aspx](http://sfacindia.com/Procedure_For_VCA_Scheme.aspx))

### **AIM**

AIM will provide a grant-in-aid of INR 10 Cr to each Atal Incubation Centre for a maximum of five years to cover the capital and operational expenditure cost in running the centre. (<http://niti.gov.in/content/atal-incubation-centresaiscs#Source:Inc42,NASSCOM>).

## 1.10 Role of Agri-Startups in India

The growth of startups in India has the best incubation, consultation, funding, motivation, constant coaching and encouragement destination through the efforts of the government and other

involved stakeholders. Startups have been playing a vital role in writing the growth saga for India, by being very generous towards the economic contribution and job creation.

According to a report by FWC-FICCI in 2018, "Indian startups have begun creating hundreds of high- quality jobs across sectors as they build new products and offer innovative services." Various industry experts estimate that about 16,000 startups in the country are likely to have created more than 100,000 direct jobs and over 300,000 indirect jobs since 2016. The report further states that the jobs rendered by the startups in India are going to cross 300,000 in the year 2020. It indicates the importance of startups in the economy as job creator.

Apart from that, the startups have been uplifting the overall status of living in the country by providing quality services with international standards. Some of the Indian startups have actually inspired many similar startups worldwide (Zomato, the restaurant aggregator has inspired similar startups worldwide). Universities, colleges, schools or even government departments have turned themselves into startup incubators (for example, Wadhvani foundation promoted NEN) to further surface the possible startup ideas, which might make the life of people a bit more easy and convenient while creating values to both the society and economy alike. (<https://qz.com/1033285/as-funding-and-deals-dry-up-in-indias-startup-ecosystem-quality-is-winning-over-quantity/>)

Agri-tech startups are making the most of technology and converting them into easy and sustainable practices, which would make farming a lot simpler and profitable. These startups are using mobile apps and the internet to educate and help farmers (<https://mahyco.com/the-world-of-agri-tech-startups-2/>).



(Source: Agritech in India – Maxing India Farm Output. 2020. <https://nasscom.in/knowledge-center/publications/agritech-india-%e2%80%93-maxing-india-farm-output>)

## 1.11 Challenges of Startups

A successful startup cannot start a business just with passion and an idea. It faces many challenges too. So, to cope up with the problems of startups one should have a high level of leadership skills with a clear understanding of the market, excellent communication skills, maturity to see things in the right perspective along with the ability to take calculated risks are required on the part of the entrepreneur (Adminplanthy, 2017). Besides, some of the major challenges are listed below:



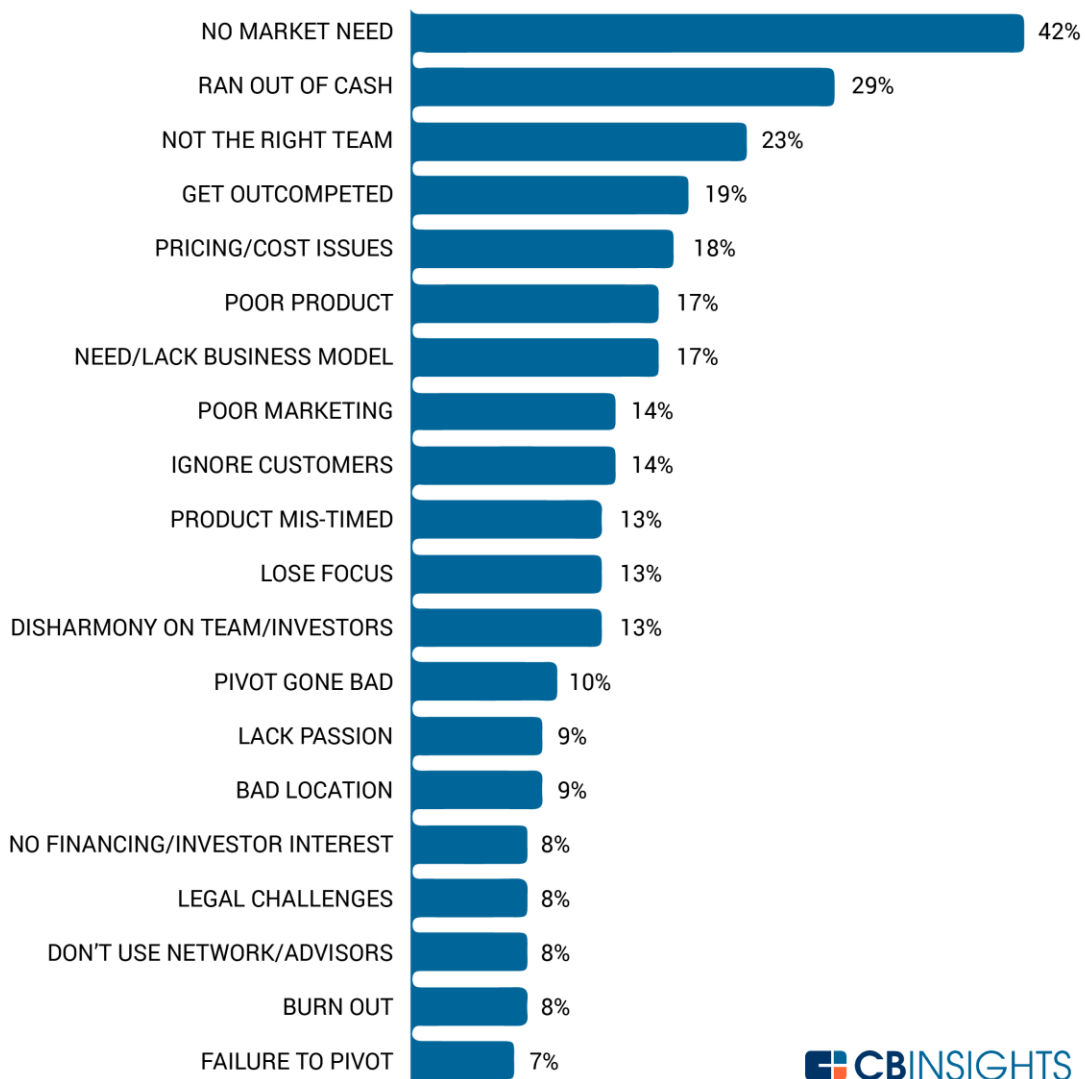
**Fig. 4:** Challenges of Startups

## 1.12 Failure of Startups

A failure is the inability of an entrepreneur to achieve the desired results (Politis, 2009). No one wants to fail, but failure is an essential part of the startup ecosystem and to help in avoiding this fate, the top 20 reasons why startups fail are as follows:

# THE TOP 20 REASONS STARTUPS FAIL

Based on an Analysis of 101 Startup Post-Mortems



CBINSIGHTS

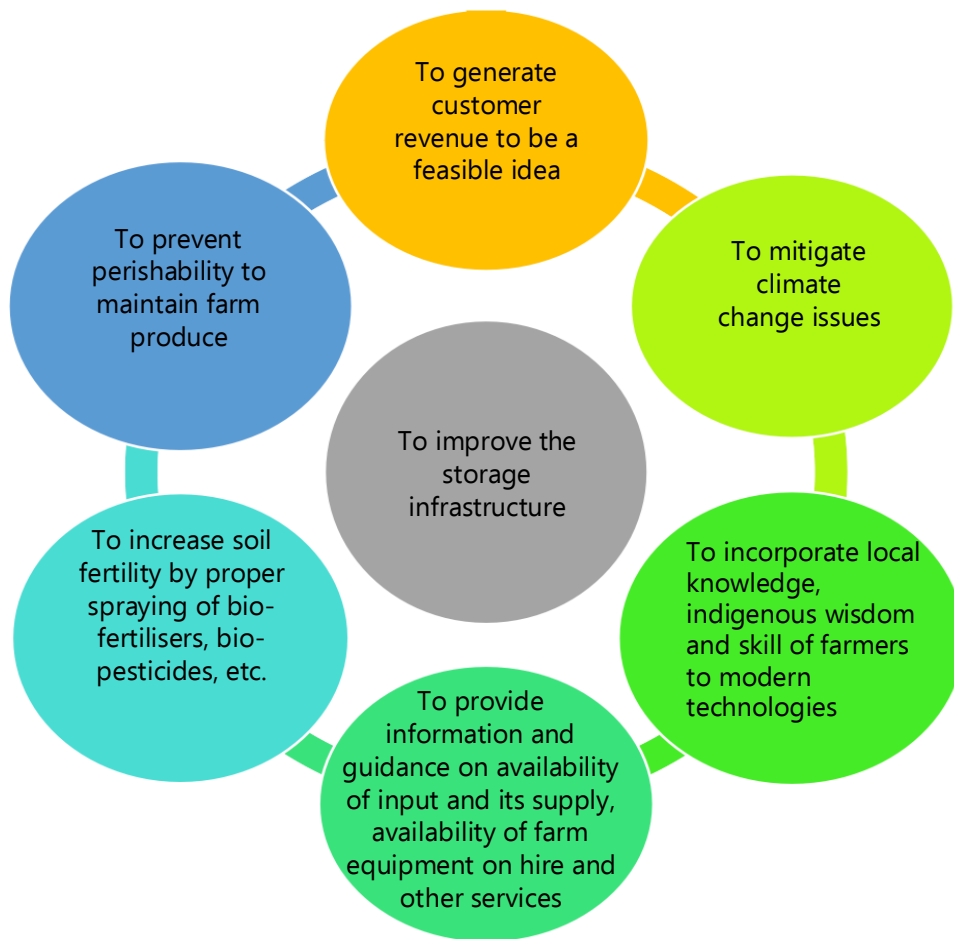
**Fig. 5:** The Top 20 reasons Startups Fail

(Source: <https://s3-us-west-2.amazonaws.com/cbi-content/research-reports/The-20-Reasons-Startups-Fail.pdf>)

## 1.13 Need for Agri-startups

With the increasing mobile penetration and internet access in rural areas, startups are rapidly emerging in the agriculture sector, too, with a focus on solving issues concerning farmers using various technologies. However, it has become the need of the hour; therefore, the need for startups is being felt by innovators/ scientists/ founders in improving the agriculture sector in a sustainable way.





**Fig. 6:** Need for Agri-Startups



## Global Status of Agri-Startups

Top valued startups are based in the United States or China, Latin America, and the Caribbean is currently the most active world region for startups. Approximately, one-third of the population of Ecuador is involved in a business startup, compared to about 13 per cent in the United States. Lebanon, Vietnam and Estonia also boast high levels of early entrepreneurial activity.

Investment in startups has become very popular in recent years, with more and more investors recognising the potential fortune to be made from supporting the right startup. Between 2012 and 2017, startup funding across all industries grew by at least 50 percent, with some industries like advanced manufacturing and robotics reporting nearly 1,400 per cent more funding in 2017 than in 2012. In 2013, the total funding for artificial intelligence startups amounted to about 1.7 billion U.S. dollars, which grew to over 15 billion dollars by 2017.

Although it takes a team to create a successful startup, it is not uncommon for the media to fixate on the founder or the head of a successful startup, such as Steve Jobs, Elon Musk, or Mark Zuckerberg to name a few. Harvard University and Standard University have the highest number of alumni who founded unicorns worldwide. (<https://www.statista.com/statistics/315499/percentage-of-population-involved-in-business-start-ups-in-asia-pacific-and-south-asia/>)

## Status of Startup Ecosystem in Southeast European Countries

**Table 4: Status of Startup Ecosystem in Southeast European Countries**

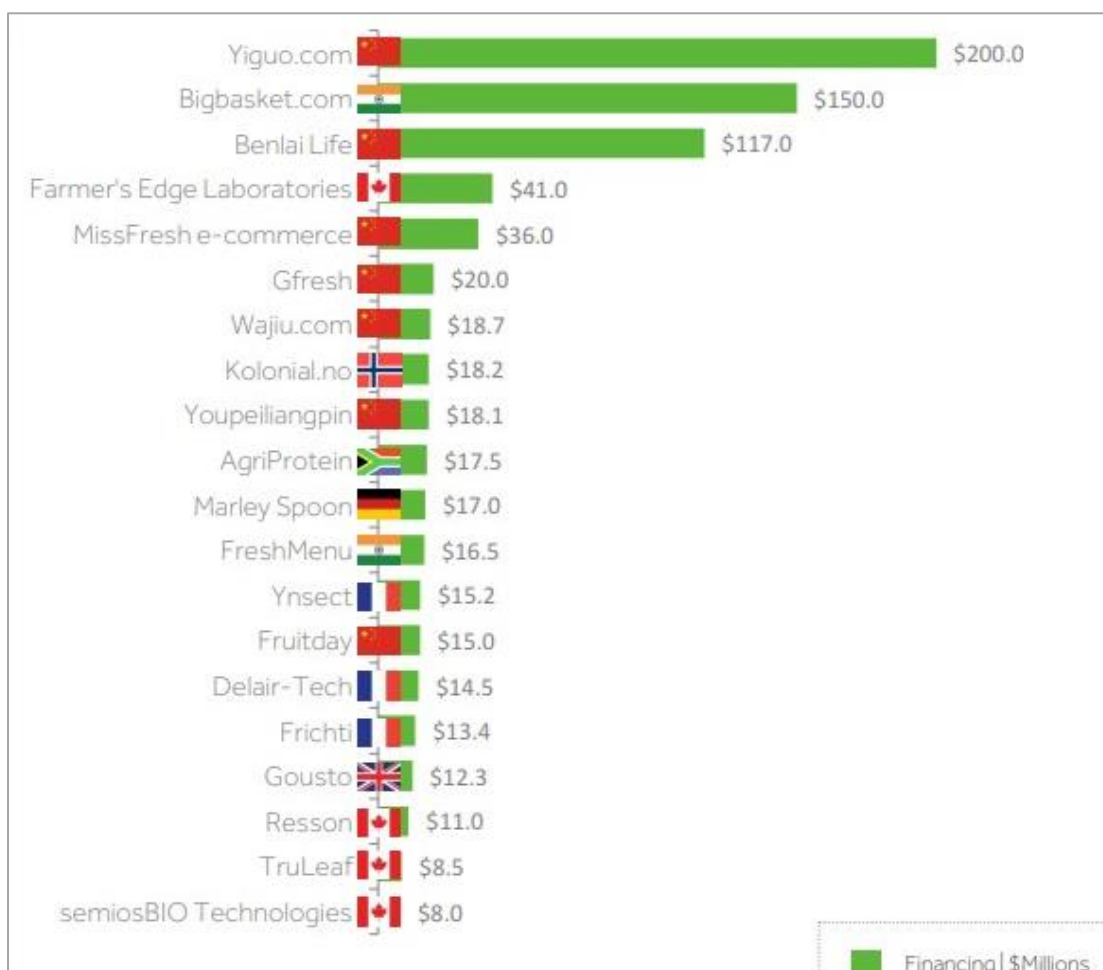
Country	Number of startups (in F6S database)	Population (in million)	Startup density (startups per million inhabitants)	Capital raised (2016, est.)
Albania	160	2,9	55,7	<USD 1 mil
Bosnia and Herzegovina	179	3,8	73,0	<USD 1 mil
Croatia	500	4,2	119,3	USD 15 mil
FYROM	189	2,1	89,7	<USD 1 mil
Kosovo*	58	1,9	30,5	<USD 1 mil
Montenegro	59	0,7	87,0	<USD 1 mil
Serbia (excl. Kosovo)	631	7,1	89,4	USD 1-5 mil
Slovenia	439	2,1	213,1	USD 95 mil

Bulgaria	3012	7,2	420,3	USD 50 – 100 Mil
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(Sources: <http://silicongardens.si/ecosystem2016/>, <http://zipzg.com/investicije-u-hrvatske-startup-timove-2016-infografika-2/>, <https://www.slideshare.net/moldovaictsummit2016/bulgarian-startup-ecosystem> and own calculations)

The above table specifically indicates that Bulgaria has a maximum number of start-ups from the Southeast European countries (3012) with a population of approximately 7,2 million and a start-up density of 420, 3 start-ups per million inhabitants and a capital growth of between USD 100 mil. Followed by, Slovenia having 439 startups with a population of 2, 1 million and have startup density of 213, 1 startup per million inhabitants and raised capital of USD 95mil. To boot, Croatia has 500 startups with a population of 4, 2 million and have startup density of 119, 3 startups per million inhabitants and raised capital of USD15 mil. While, Serbia has 631 startups with a population of 7.1 million and has a startup density of 89, 4 startups per million inhabitants and raised capital between USD 1-5 mil. Moreover, other countries raised capital <USD 1mil.

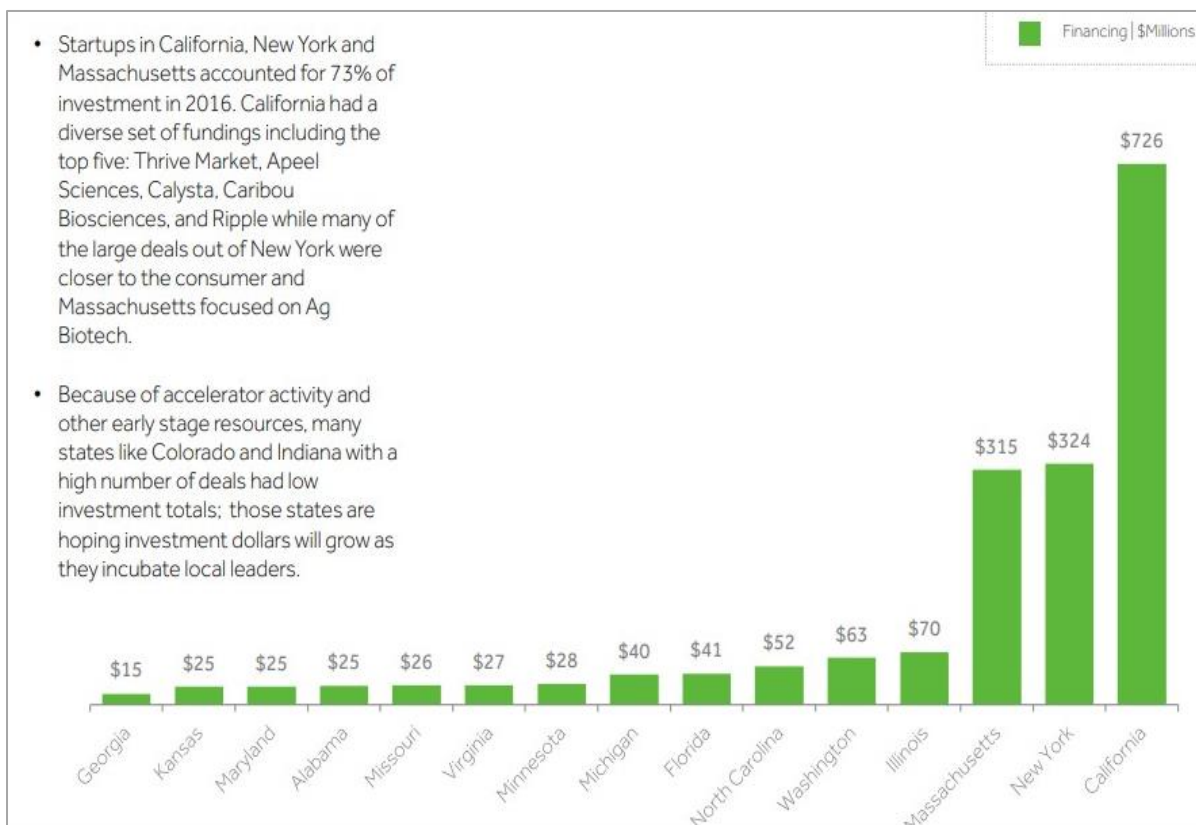
## 2.1 Non-U.S Deals of Agritech Startups by Geography




**Fig. 7:** Non US deals of Agritech Startups by Geography

The non-US deals in Agritech startups depicted in the above figure shows that China accounted for six of the top10 deals, with local Chinese investors leading the rounds for these startups. Ecommerce players Yiguo.com, Benlailife and MissFresh were joined by Supply Chain Technologies, Gfresh and Youpeiliangpina. China focuses on operations, easier food access and transparency in its food system. Investment activity remained local in which investors tended to fund startups in their geographies with smaller investors scattered around boundaries in their geographies. Farmers Edge is one example of a company that attracted investment firm from abroad with a Mitsui and Co trading company investing along with Kleiner Perkins, Caufield & Byers US Venture Capital Company. BigBasket also attracted international investment from Abraaj Capital (Agtech funding report: the year in review 2016 | agfunder.com (pp36)).

## 2.2 Value of U.S. Deals in Agritech Startups (State wise)




**Fig. 8:** Value of US deals in Agritech Startups  
(Ag-tech funding report: year in review 2016 | agfunder.com  39)

## 2.3 Key Insights – Investor Activity

- There is a small universe of dedicated ag-tech funds. As per counting, there are 14 active ag-tech funds with at least a first close, worth over \$850 million combined. That number will increase with a few already established players closing additional funds and a few smaller

funds joining the market with a more thematic concentration in geography or sector. Many funds still find fundraising slow as the sector is immature and investors are hesitant to back the sector for the first time.

- Accelerator activity surged. There has been very strong interest in the earliest stages of ag-tech innovation with sixteen accelerators launched in 2016 across the globe, including in India, China and a number in Europe. Many of these accelerators are acting as early stage funders, contributing to the rise in angel/seed activity during the year.
- Ag-tech is dependent on non-Agri focused investors. Given the small number of dedicated funds, the sector depends on non-Agri focused investors, at the early stage, but particularly at the later stages. Much of this has come from family offices and big name Silicon Valley VCs. In 2016, Google Ventures made five investments across the sector, all at Series B round, while Khosla and Kleiner Perkins, Caufield and Byers both made three each.
- There were some exciting new entrants to the ag-tech market in 2016 too, such as ex-Khosla partner Andrew Chung’s 1955 Capital, the Alaska Permanent Fund and Arielle Zuckerberg. But, with the general market pullback and investor caution, there are concerns that generalist investors are not a reliable source of funding as the sector matures. (Ag-tech funding report: year in review 2016 | agfunder.com  41).

## 2.4 Most Active Venture Funds

**Table 5: Most Active Venture Funds**








Rank	Investor	Location	# Investments
1	New Crop Capital	Washington, DC	9
2	S2G	Chicago, IL	7
3	Anterra Capital	Amsterdam, Netherlands	6
3	Cultivian Sandbox	Chicago, IL	6
3	Middle land Capital	Washington, DC	6
4	GV (Google Ventures)	Mountain View, CA	5
5	Acre Ventures Partners	Santa Monica, CA	4
5	Green soil Investments	Ra’anana, Israel	4
5	Syngenta Ventures	Basel, Switzerland	4
5	Viking Global Investors	Greenwich, CT	4

(Agtech funding report: year in review 2016 | agfunder.com  43)

The above table depicts that New Crop Capital is the most active venture funds from Washington

DC with 9 investments and ranks at 1st, followed by S2G investments (7 investments) from Chicago, IL and ranks at second, Anterra Capital (Amsterdam, Netherlands), Cultivian Sandbox (Chicago, IL) and Middleland Capital (Washington, DC) (6 investments), and ranks at third, each respectively, GV (Mountain View) (5 investments) and ranks at fourth, Acre Venture Partners (Santa Monica, CA), Greensoil Investments (Ra'anana, Israel), Syngenta Ventures (Basel, Switzerland) and Viking Global Investors (Greenwich, CT) (4 investments), and ranks at fifth, each respectively.

## 2.5 Agtech Funds Currently Raising

	FUND NAME	STATUS	AMT. RAISED	STAGE	LOCATION
	AgFunder Opportunity Fund I	Open Targeting \$20m	Undisclosed	Venture	USA
	AquaAgro Fund II	Open Targeting \$100-200m	Undisclosed	Growth	Israel
	Finistere Fund II	Second close. Targeting \$150m	Undisclosed	Venture	USA
	Omnivore	Targeting \$70m	Undisclosed	Venture	India
	Open Prairie Rural Opportunities Fund	Open Targeting \$100m	Undisclosed	*Gov't, rural	USA
	Pontifax Food & Agtech Fund	First Close Targeting \$200m	Undisclosed	Growth	Israel/USA
	Agriculture & Food Fund (Tsing Capital)	Open Targeting \$1Bn	Undisclosed	Growth	China/AUS
	Willow Hill Ventures (Finistere, IFC)	Open. Target Undisclosed	TBA	Growth	USA

**Fig. 9: Agtech Funds Currently Raising**

(Source: Agtech funding report: year in review 2016 | agfunder.com)

## 2.6 Good Practices of Startups Globally

In the area of company incorporation, many good practices have emerged over time. Some offering one-stop shops, most adequate practice economies only charge a fixed registration fee, regardless of company size, that is limited to the administrative cost of providing registration services. Moreover, among all, some of the fine practices of startups globally are as follows:

### USA

The United States is recognized globally for its culture of entrepreneurship, which promotes economic growth and job creation. USA promotes entrepreneurship through several mechanisms, including but not limited to partnering with U.S. companies, non-governmental

organizations and investor groups; advocating for free markets and strong intellectual property protections and creating new initiatives/networks. The Global Entrepreneurship Program (GEP)—works to build direct partnerships that strengthen the overall entrepreneurial eco-system in countries around the world. The Global Entrepreneurship Week (GEW), each year celebrated in more than 250 U.S. embassies worldwide. People-to-People Exchanges - through the Department of State’s Bureau of Educational and Cultural Affairs (ECA) connect entrepreneurs from around the world with U.S. entrepreneurs/businesses so they can share best practices. USAID’s Grand Challenges for Development (GCD) engage entrepreneurs, businesses, researchers, and scientists around specific, international development problems to identify innovative solutions. (Bhatnagar, n. d)

### **South Korea**

South Korea has one of the fastest broadband speeds of all and is investing in 5G. Government promotes its startup economy by funding startups and offering tax breaks for big companies that invest in startups. Bloomberg Global Innovation Index ranked SouthKorea first among all by examining factors such as research and development capability, productivity, tech density, and patent activity. (Bhatnagar, n. d)

### **Israel**

Entrepreneurship spirit comes from the fact that the country itself has been called a startup. With little natural resources and constant political turmoil, Israelis are fighting for better lives by creating alternatives/ innovations. The country has more startups per capita than any other country. (Bhatnagar, n. d)

### **Estonia**

Estonia, one of the three Baltic states so innovative, it has nicknamed “E-stonia.” Internet access is deemed a basic human right and free Wi-Fi is the norm throughout the country. Estonia is said to have the world’s most digitized government and one of the fastest broadband Internet speeds in the world. (Bhatnagar, n. d)

## **China**

The country is only second to the U.S. when it comes to venture capital spending, mostly investing in the technology, media, and telecommunications sectors. Beijing compressed 30 years of startup learning into five years. 3. With its massive population, entrepreneurs in China identify unmet needs and use their resources to provide services/tools to meet those needs. (Bhatnagar, n. d)

## **UK**

Entrepreneur and investor-friendly UK Govt. policies and pro-business climate make the UK particularly attractive for entrepreneurs and investors, particularly at the seed stage. The London Startup Ecosystem-London has a progressive entrepreneurial eco-system that leads the European Market. The city supports a culture of innovation that facilitates new businesses to flourish and provides opportunities for individuals to grow. Many accelerators and incubators flourish and there is a congenial culture for learning/networking opportunities. (Bhatnagar, n. d)

## **Sweden**

High-tax, high-spend country, where employees receive generous social benefits and ample amounts of vacation time. Sweden's impressive Startup record can also be attributed to some broader aspects. Its social safety net, for instance, helps entrepreneurs feel safe to take risks - university education, health care are free. Sweden has a high degree of "intrapreneurship," when co-workers collaborate on projects outside of their usual assignments. eg. Swedish company Ericsson has a division called Ericsson Garage where employees can work on innovative projects. The country's startups benefit from supportive culture -Swedish are cultural traits that make them more likely to collaborate-sharing of knowledge between entrepreneurs makes them each more productive. (Bhatnagar, n. d)



## Current Status of Agritech Startups in India

India is the third-largest Startup hub with the average age of startup founders is 28 years. Among all, 9 percent of the total startup founders are women. In India, total tech startups are expected to increase from 5300 in 2016 to 11500 in 2020. The average number of new technology startups has moved from 480 in 2010 to 1000 in 2016 and expected to increase to 2000 in 2020. Further, the majority of startups and investors are from metro cities. Approximately, 50 percent growth in the share of female entrepreneurs is seen in the last 12 months. Besides, the number of Private Equity and Venture Capital firms has doubled in the last 12 months (Sunanda, 2017).

The prospects for start-up companies in fields such as enhancing nutritional efficiency, sustainable agriculture, raising seed production, reducing waste and developing the overall supply chain are currently attracting a lot of internal and international support in India, as well. Agritech is also growing farmers' connectivity by connecting customers to suppliers. Over \$3.23 billion has been invested in the Agritech companies worldwide and this includes over 53 startups from India Agritech space, amounting an investment of USD 313 million. Internationally, more than 40 percent of the funding was grabbed by food e-commerce or food market places; biotechnology startups came second in the list by grabbing 22 percent of the total funding. Innovative concepts on precision agriculture tech like devices for capturing data and management software for farms grabbed more than USD 405 million. The fourth popular category was Novel Farming Systems, which means companies that are using tech innovatively for the production of agricultural products, with over USD 247 million grabbed by this sector (Sethi,2017).

India houses 366 Agri-based startups, of which more than 50 percent came into existence in 2015 and 2016. The combined revenue of all Agritech startups in India is estimated to be less than USD 100 million, whereas the global market is worth USD 350 billion.

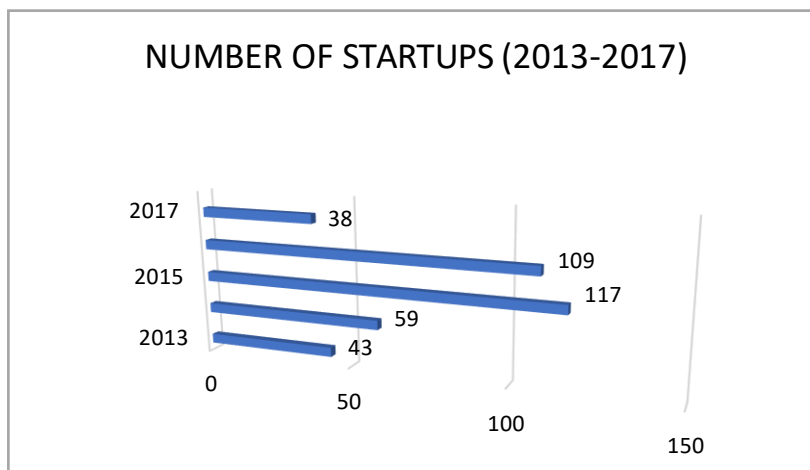
Geographically, Karnataka and Maharashtra together account for almost 50 percent of total Agri startups opened in the last 5 years. New models such as the Farmer-as-a-Service (FAAS), can lead to more sustainable profitability. There is a need for government to help set-up Agritech focused incubators and grants.

To make Agri-startups successful, it is crucial to enable seamless hybridization of relevant technology by building a new age distribution model (<http://ficci.in/pressrelease-page.asp?nid=3276>). It is important to note that more than 25 percent of farmers in India today have the access to smartphones. Only 9 percent of all funding in the last 5 years was focused on growth-stage startups. This emphasizes the need for Corporate and Government accelerators to help Agritech startups grow to the next level. With 350+ active Agritech startups, India ranks 6th globally in this space. Bengaluru, Delhi-NCR and Mumbai form the top three-startup hubs in India, accounting for approximately 60percent of the tech- startups in India.



### 3.1 Statistical Evidence of Startups

The figure shows that more than 50 percent of the startups in the last 5 years got started in the years 2015 and 2016.



**Fig. 10:** Number of Startups (Source: 1Tracxn Data)

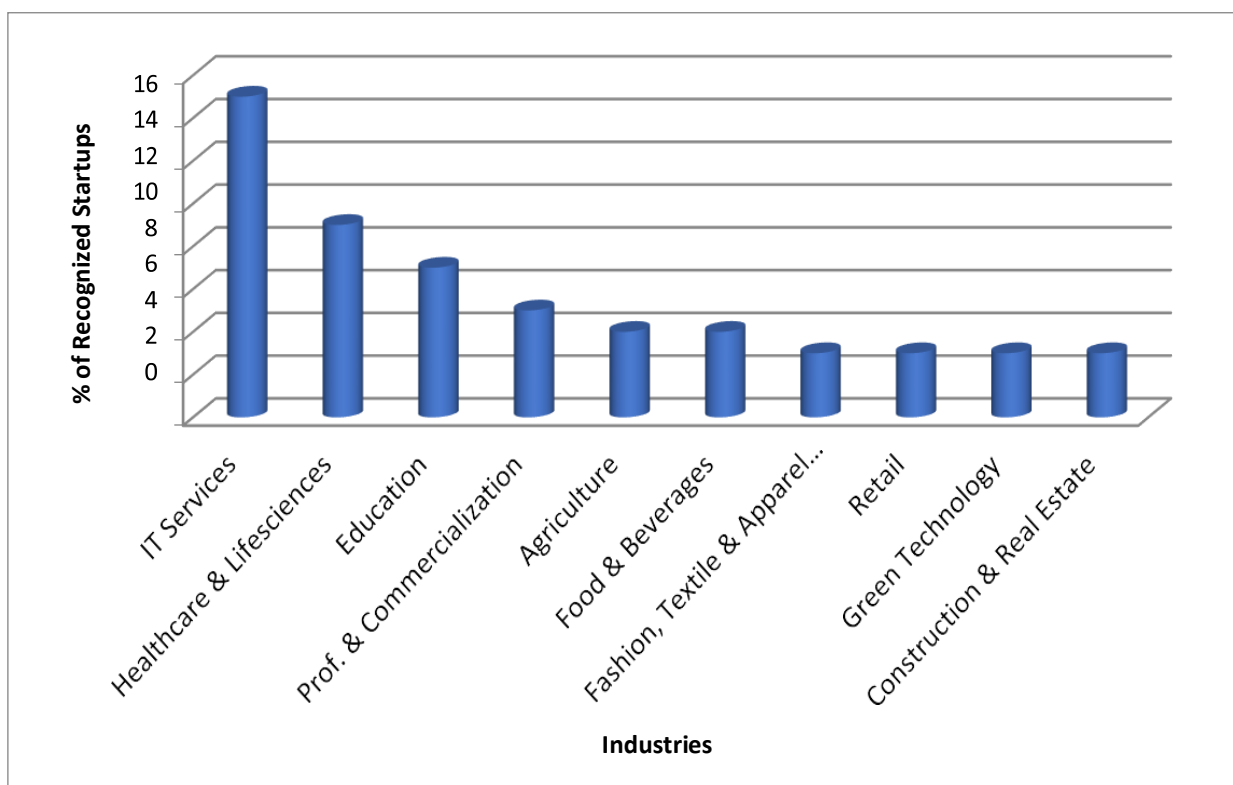
While top metros control the majority share of Startup concentration in the country so, we can see the increasing Startup activity in all States and UTs.

**Table 6: No. of startups in States/UTs (Anonymous, 2018)**

State/UTs	Startups	State/UTs	Startups
Maharashtra	2587	Jammu and Kashmir	63
Karnataka	1973	Goa	61
Delhi	1833	Chandigarh	52
Uttar Pradesh	1129	Himachal Pradesh	27
Telangana	748	Pondicherry	19
Gujarat	712	Manipur	11
Haryana	710	Nagaland	7
Tamil Nadu	709	Andaman and Nicobar Islands	4
Kerala	461	Arunachal Pradesh	4
West Bengal	417	Tripura	4
Madhya Pradesh	384	Dadra and Nagar Haveli	3
Rajasthan	371	Daman and Diu	2
Andhra Pradesh	259	Meghalaya	2
Orissa	251	Mizoram	1
Bihar	178	Sikkim	1
Chhattisgarh	168	Uttarakhand	108

Jharkhand	116	Assam	106
Punjab	102		

Being the 3rd largest Startup ecosystem in the world and one of the largest consumer markets, India has Startups working in industries ranging from Fintech to Food-tech and Robotics to Agritech. The below graph highlights the top 10 industries which are recognized Startups operate (Anonymous, 2018).



**Fig. 11:** Top 10 Industries where startups operate

### 3.2 Good Practices in Startup Policy and Implementation

Nurturing collaboration between a dynamic, outside-the-box Startup Company and the process-driven, goal-oriented culture of a big corporation or large system isn't all fun and games. For this reason, the best practices to get the most out of collaborating with a startup are as follows:

#### Partnerships

**Startup Karnataka Booster Kit:** State Government has partnered with corporates and service providers to design a Startup Karnataka Booster Kit which is a collection of software tools and services available at a special price for young Startups. The Startup Karnataka Booster Kit is available to all Startups registered with the Karnataka Startup Cell. Startups can apply for incentives or package to the Startup Cell to avail of the offers under the

Startup Karnataka Booster Kit. The support to Startups is in various categories such as cloud services, virtual telephony, a pilot with Govt., incubation facilities, marketing and promotion, incentives, mentorship, legal and accounting.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Mentor Network**

**Telangana:** State Government has developed a strong network of over 100 Startup mentors from industry, academia and government. T-Hub conducts mentor connect events from time to time for Startups and mentors to interact with each other. Additionally, potential mentors are given an opportunity to register themselves using T-Hub portal at <https://www.t-hub.co/mentors/>.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Innovation Society**

**Andhra Pradesh Innovation Society:** State has a well-structured and fully functional Andhra Pradesh Innovation Society (APIS). It is also the nodal agency responsible for managing the implementation of Startup initiatives in the State. APIS was constituted in 2014 and is headed by a CEO. The team has 18 full time members overseeing the implementation of the Innovation and Startup Policy. The society also maintains an online portal for the State Startup initiative <http://www.apinnovationsociety.com/index.php>. The innovation society has been actively managing incubators, on-boarding partners, organizing capacity development programs, boot camps and roadshows.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Online System for registration and availing incentives**

**Startup Odisha:** The government of Odisha has developed a dedicated online portal for Startups at [www.startupodisha.gov.in](http://www.startupodisha.gov.in). The online system allows Startups to register under the State Startup initiative and submit an application for various policy incentives. Startups receive their registration certificate through email (or through the dashboard) within 2

weeks from the date of application submission. Over 300 Startups have been registered on the Startup portal. Incentives such as monthly allowance, product development and marketing plan, need based assistance can be directly availed from the online system.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Progress Monitoring**

**Andhra Pradesh:** State has developed a comprehensive online dashboard for monitoring all the startup activities. The status of all activities and events is updated dynamically and the dashboard presents detailed information about each initiative. It monitors the progress of all programs or achieved results against targets set of Incubators, Accelerators, Startups incubated, incubations space to be created, venture capital mobilization, boot camps conducted, hack-a-thon conducted, exhibitions conducted and attended,

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

## **3.3 Startup Funding**

India is in its best-ever phase of the startup ecosystem and the economic environment is favouring the aspiring minds. Funding is an extremely significant aspect in line with meeting the vision of a business. Funding and fundraising, both are fundamental modern business scenarios that support the growth of a startup. Startup funding has seen a high rise from 2015 onwards.

### **Query Resolution**

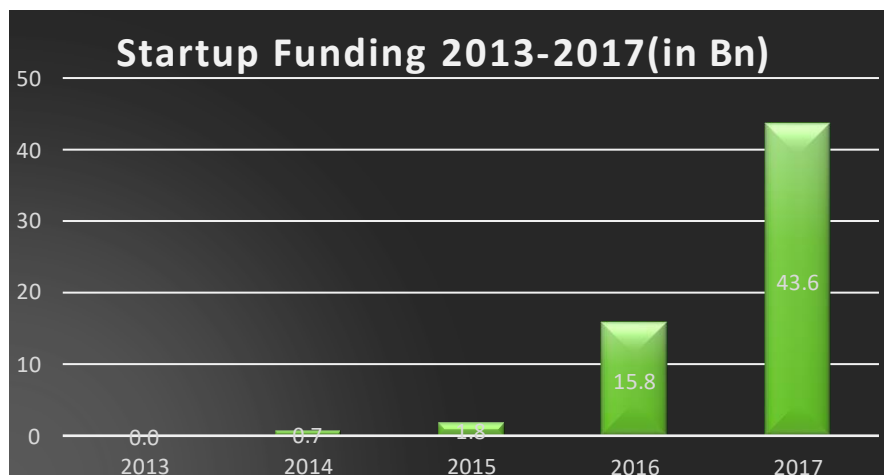
**Bihar:** The government of Bihar has established a dedicated 5-member call center to assist the startups. A dedicated toll-free helpline number (18003456214) and e-mail id (startup.care@bihar.gov.in) has been created for interacting with the call center. The toll-free helpline number and the email id are displayed on the online portal for startups at <http://www.startup.bihar.gov.in/> Specific feedback about the call center responses are captured through the online feedback survey mechanism. The call center system automatically generates a set of feedback questions that is pushed to the mobile number of the user to capture the satisfaction level.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

## Information Wizard

**Gujarat:** 'Know your approvals' is the information wizard available on Gujarat Startup Portal. Startup entrepreneurs can key in answers to a defined set of questions to get complete details of all applicable approvals or clearances required by entrepreneurs to set up and operate a business in the State. A separate tab named 'Exit Business' within Information Wizard also gives complete information on how to close a company.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

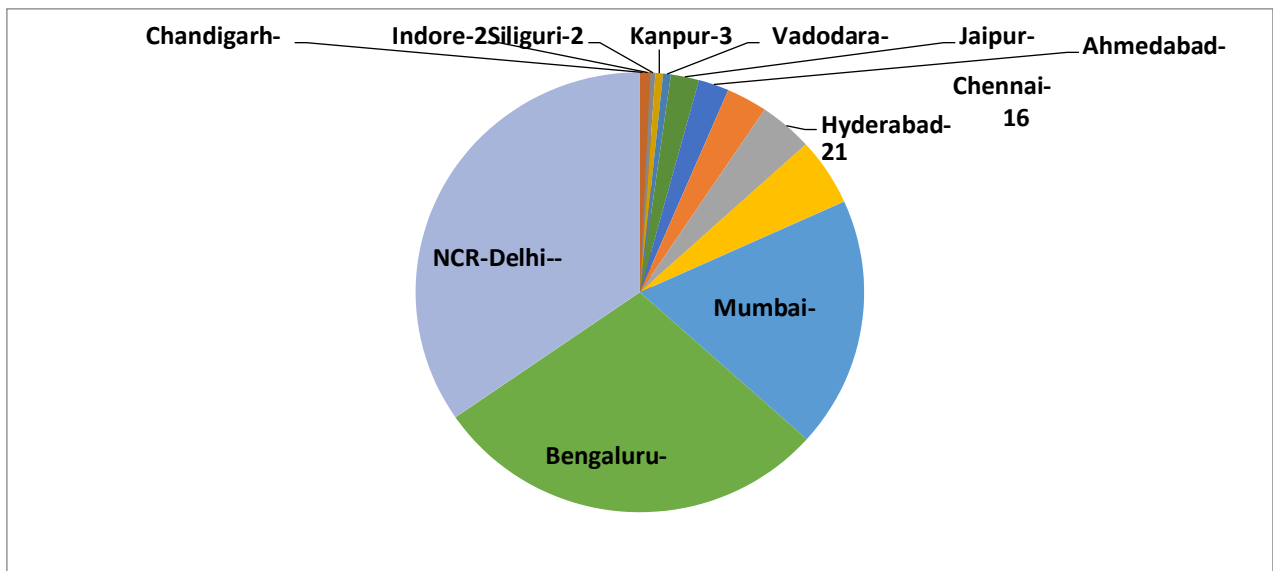


**Fig. 12:** Startup funding (Source: 1Tracxn Data)

The data presented in Figure clearly shows that year 2017 performed very well for Indian Startup funding and able to raise a whopping \$43.6Bn. Although when compared to the previous year of 2016, the Indian tech startups were only able to raise \$15.8 Bn in funding. While, in 2015, the average amount of funding was \$1.8 Bn, it fell to \$0.7 Bn and \$0.0 Bn in 2014 and 2013, respectively.

## Number of Funded Startups across Indian Cities

Indian startups raise \$2.1 billion in H1 2016, a 40 percent decline compared to H1 2015 (<https://yourstory.com/2016/07/funding-roundup-indian-startup-h1>).



**Fig. 13:** Number of funded startups across Indian cities (Amberber and Nair, 2016)

The above figure shows that Bengaluru, NCR-Delhi and Mumbai to be the A-list cities when it comes to venture fund flow. The NCR-Delhi region has seen more number of deals, 184, to be precise but it is ranked second in terms of the amount invested. Ranked number three, Mumbai has seen about 100 deals. Further, Pune, Hyderabad and Chennai share approximately about 20 deals.

### Types of Startup Funding

Most startups usually begin with high hopes and investor confidence. However, a few circumstances can either make or break any business startup. Here are a few options one can adopt, in order to source the required funding for a startup.

**Bootstrapping:** Utilizing personal saved up funds or funding from friends and family and only works for small-scale enterprises.

**Crowdfunding:** Platforms are set up for individuals to pitch their business ideas or challenges to a community of investors or people willing to support their ideas or cause.

**Angel Investment:** People with a huge amount of capital and are willing to invest it on over the edge business ideas and provide lower investment capital to business ideas compared to venture capitalists.

**Venture Capital:** Professionals with an emphasis on searching firms with great opportunities and pursuing large companies with established stable levels and recognisable staff handle funds.

**Business Incubators and Accelerators:** Business incubators nurture business while accelerators fast-track businesses.

**Winning contests:** The source for funds is through engaging in competitions or contests that require entrepreneurs to display or pitch their business module against other competitors vying for the same funding for their businesses.

**Bank Loan:** Banking institutions provide financial backing on loans to individuals who approach them with a solid business plan. The financial provision of banks is in two forms, they are working capital loan and funding.

- **Working Capital Loan:** Designed to traverse one full cycle of revenue generation. Stocks and debtors usually have an advantage on the limit.
- **Funding:** Providing the business plan and concise information of the valuation, alongside the project report on which the loan was sanctioned.

**Microfinance Providers or NBFCs:** Give access to capital to small-scale entrepreneurs that lack access to conventional banking capital or loans.

**Government Programs:** Funding from the government is usually substantial in size, thus providing one with surplus capital to manage the startup and the process of scrutiny, approval and eventual release of funds may take a lot of time due to government bureaucracy. **Product Pre-Sale:** Builds consumer confidence in your brand and allows you to size up the demand for your product before its official launch.

**Selling Assets:** Doing away with assets in your possession that have high financial value, can effectively serve as an immediate source of funding for the startup.

**Credit Cards:** Business credit cards are an instant source of funding. New businesses that incur heavy expenditure can utilize credit cards as long as they fulfill the minimum payment requirement (Anonymous, 2018), (Cleartax, 2019), (Jennifer Post, 2018), (Team Tech Panda, 2013).

### 3.4 Good Practices in Funding Support

Leading practices from various States for angel and venture funding are highlighted below:

#### **Bihar**

Early stage funding support of Bihar Startup Policy 2017 provides the following incentives to promote angel investment in the State based startups:

1. A success fee @2 percent of investment to startups for mobilizing investments from state-registered angel investors towards early-stage funding.

2. Financial assistance equal to the amount invested in Startup by the angel groups and category I alternate investment funds given as loan to the Startup

Bihar Industries Association (BIA) has a key mandate to “search angel investors and tag them with eligible entrepreneurs”. To achieve the objectives, BIA in association with the Indian Angel Network has established the “Venture Park Incubation Centre” in Patna, Bihar.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Karnataka**

The State Government is providing benefits to Angel Investors registered with the Startup Karnataka Portal. Angel Investors are one of the most important sources of funds for startups. The state is incentivizing them in the following manner:

1. Opportunity for Angel Investors to register on the Startup Portal of the State and seamlessly connect with the entire startup ecosystem,
2. For all registered Angel Investors, free entry to all startup and tech events of the State
3. Government shall prioritize and engage with all registered Angel Investors as judges, mentors, observers across all its pitching session, and
4. Government may prioritize certain emerging tech sector startups funded by Angel Investors for matching funds.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Rajasthan**

The government of Rajasthan has introduced INR 500 crores Bhamashah Techno Fund in February 2018 to ensure the robust growth in the investment infrastructure or substructure and encouraging the startup ecosystem. Out of the said fund, INR 100 Crore is be earmarked for Women Startups. Another venture funding mechanism has been established in the form of Rajasthan Venture Capital Fund (RVCF), which is managed by Rajasthan Asset Management Company Pvt. Ltd. The fund invests in early and growth-stage companies with equity exposures ranging from INR 1crore toINR10crore.So far, 36 Startups have been provided venture funding through above mentioned venture funds.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

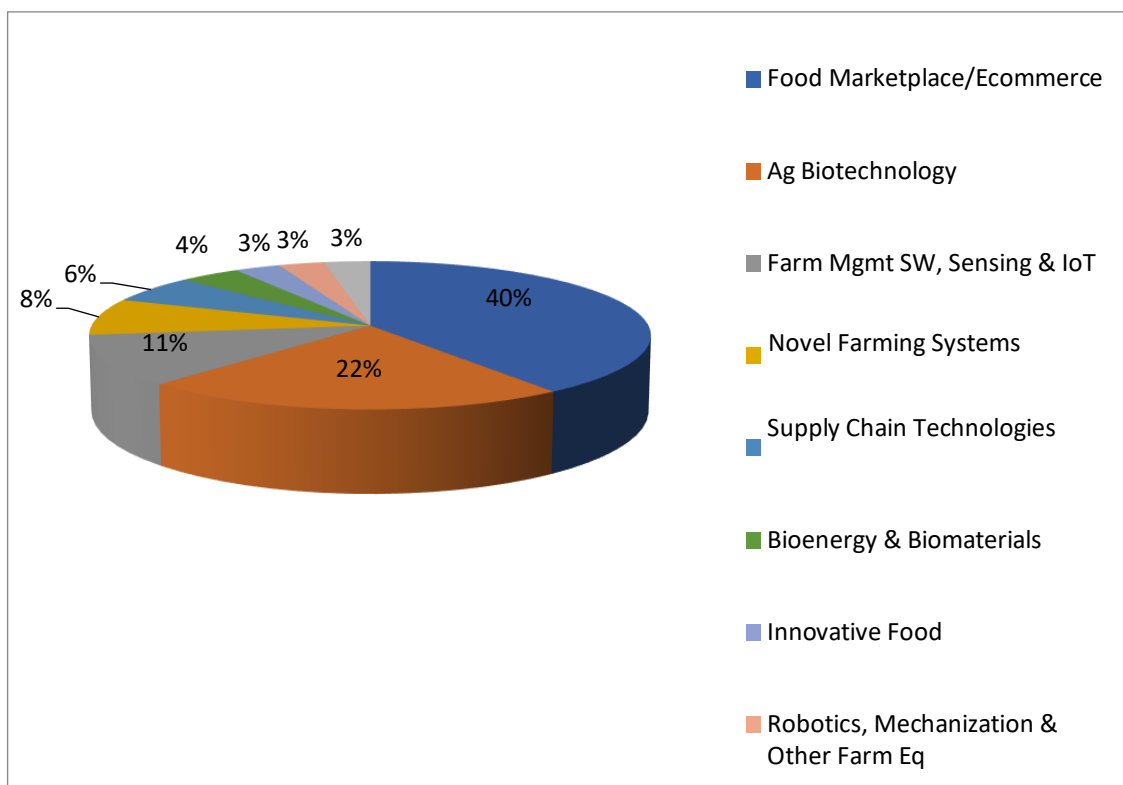


## Kerala

Kerala Startup Mission (KSUM), the nodal agency for the Startup initiative in Kerala has invested in 2 Venture Funds i.e. UNICORN and SEA Fund with a condition that double the amount invested by Govt. of Kerala. The fund operates in a Fund of funds type investment model and has so far entered into a commitment of INR 12.5 crore with the above-mentioned funds. UNICORN has invested a similar amount and SEA resulting in a corpus of INR 25crore for state-based Startups.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### 3.5 Agritech Startup Investors

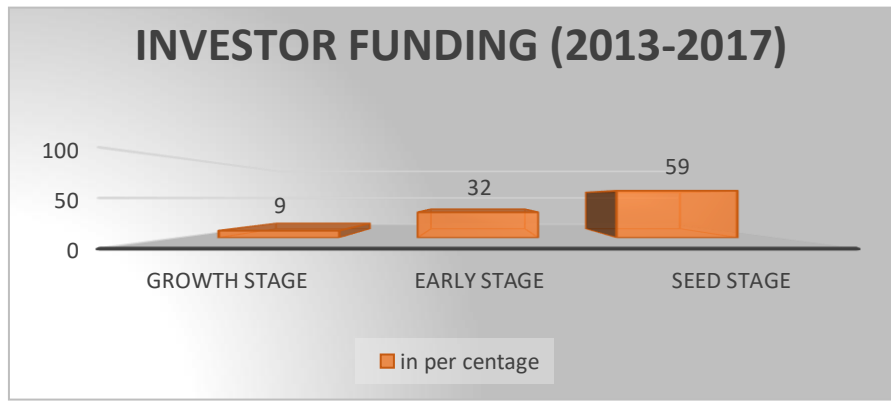


**Fig. 14:** Agritech Startup Investors

The above figure depicts that Food Marketplace/Commerce sector has maximum (40%) agritech startup investors, followed by Ag Biotechnology (22%), Farm Management SW, Sensing & IOT (11%), Novel Farming Systems (8%), Supply Chain Technologies (6%), Bioenergy & Biomaterials (4%), Innovative food; Robotics, Mechanization and Other FramEq (3%) and Other, each respectively ( Agtech Funding Report: Year In Review 2016 | Agfunder.Com; Pp16).

## Investors Funding

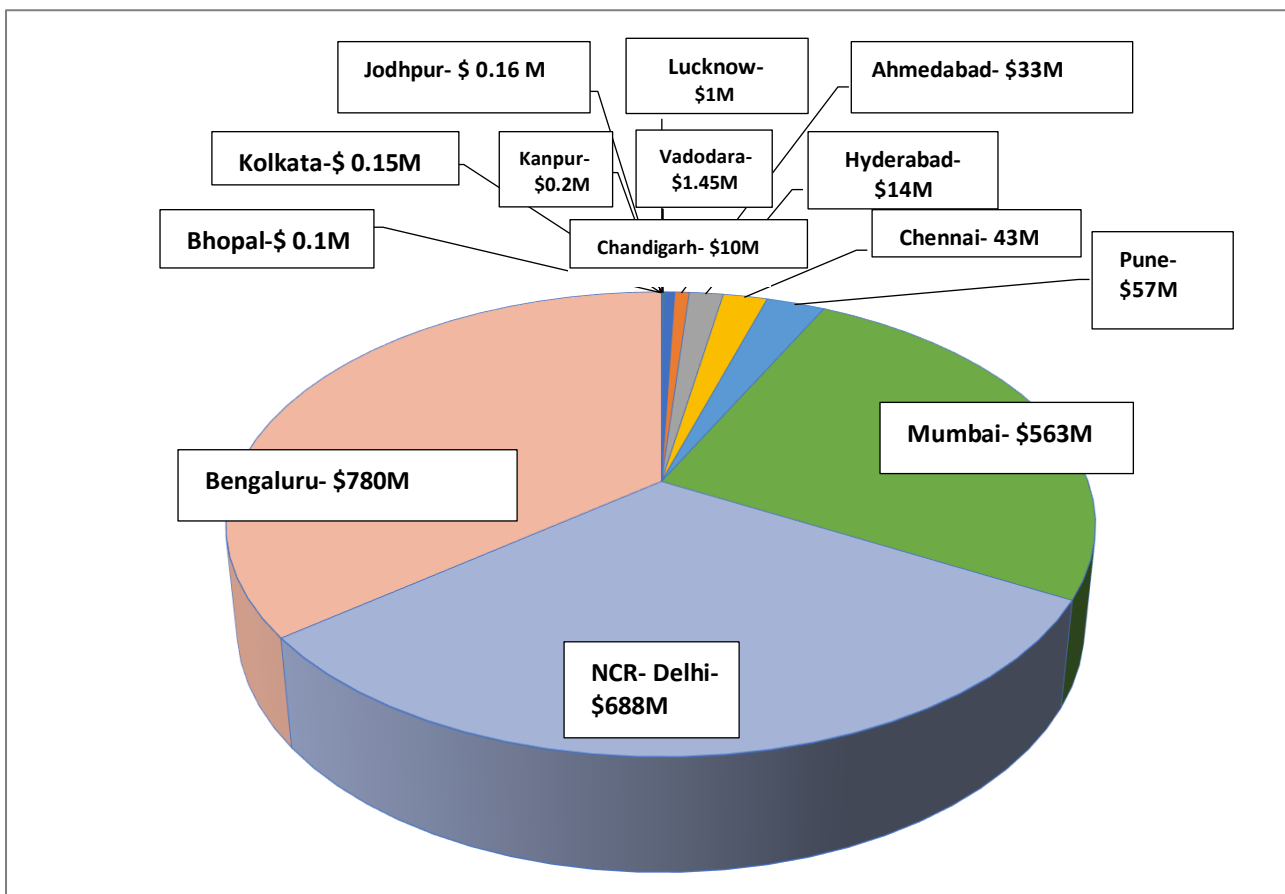
Many Agritech startups are targeting breakeven due to continued interest from investors for further rounds of funding. And, 90%+ of all funding focused on seed-stage and early-stage startups; an increased focus on quality and scale-up.



**Fig. 15:** Investors funding

(Source: Funding analysis is done for only 366 startups based on Tracxn funding data from 2013-17)

## Startup Investment Distribution across Cities



**Fig. 16:** Startup investment distribution across cities (Amber and Nair, 2016)

From the above figure, it is clearly highlighted that Indian startups raise \$2.1 billion in H1 2016, a 40 percent decline compared to H1 2015 (<https://yourstory.com/2016/07/funding-roundup-indian-startup-h1>).

Bengaluru has been the prime destination for talent and capital; there was \$780 million invested in the Garden City, with the primary focus being on marketplace and fintech startups. The second and third spots in the chart were taken up by Delhi with a total investment of \$688M and Mumbai with \$563M. Besides the set of three cities, other major cities such as Mumbai, Pune and Chennai are also gearing up and appear to be quite on track to become good startup hubs for startups in the country.

### 3.6 Agritech Deals by Investors

There are various agritech deals in India which shows the continued interest of investors is as follows:

**Stellapps**, an IOT based dairy farm solution firm has \$14mn from Bill & Melinda Gates Foundation and Indus Age Partners.

**Gobasco**, an agriculture supply chain technology startup raised undisclosed funding from Matrix Partners.

**FarmTaza**, a fresh produce supply management company, has raised \$8mn from Hong Kong based Epsilon Partners.

**AgNext**, a precision agriculture startup raised an undisclosed amount form from Impact venture fund, Omnivore.

**Agricx lab** that uses smartphone imaging to access the quality of agricultural produce raised \$500k funding from Ankur Capital.

**FarmLink**, an end-to-end logistics solutions provider for supplying fruits and vegetables raised \$3 Mn from agro chemical company Syngenta.

**Gold Farm**, an app-based platform for booking farm equipment raised \$2 million in seed funding from Mahindra & Mahindra.

**CropIn**, farm management software and apps creator raised an undisclosed amount from Singapore- based early-stage fund Bee next.

**EM3 Agri Services**, offering on-demand farming services and machinery raised \$10 Mn from

Global Innovation Fund.

**Doodhwala**, a micro delivery startup has raised \$2.2 Mn in a round of Seed funding from VC firm Omnivore Partners.

**Licious**, gourmet meat startup has secured \$10 million in a Series B round of funding led by existing investors Mayfield.

**Skymet**, a weather forecasting service provider raised an undisclosed amount from Insure silence Investment Fund.

**Khethinext**, a digital technology platform raised \$5 Mn from Dubai based firm.

**Gramophone**, a digital information platform provider, raised \$1Mn from Info edge India.

**RML Agtech**, a company providing Agri solutions on mobile phone raised \$4 Mn from Ivy Cap ventures.

**Crofarm**, a startup connecting farm and retail raised \$783K from angel investors and others.

**Utkal Tubers**, producer and marketer of potato seeds raised \$4.6 Mn from Cap Aleph and Zephyr Peacock.

**Ninjacart**, a B2B Agri Marketing Platform Company raised \$5.5 Mn from Nandan Nilekani's NRJN Trust

**Way cool**, a fresh produce distribution startup raised \$2.7 Mn from venture capital firm Aspada investments

**Farmart**, a renting platform for farm equipment raised undisclosed funding from Indian Angel

**Network Agrostar**, m-commerce startup selling agricultural inputs to farmers raised \$10 Mn from Accel Partners .

**Paalak.in**, owned by VDSS Agritech raised an undisclosed amount in seed funding from angel investors (Source: VC Circle, Inc42).

### **3.7 National Startup Policies Started to Show On-Ground Impact**

**Table 7: National Startup Policies started to show on-ground impact**

<b>Policies</b>	<b>Objective</b>	<b>Key Incentives</b>	<b>Impact</b>
<b>Fund of Funds for Startups</b> (Small Industries Development Bank of India)	Provide funding support for the growth of innovation-driven Startups	Rs.10,000 Cr fund to support innovation-driven Startups	Rs. 600 Cr has been released to SIDBI Funding received by 75% Startups.
<b>Atal Innovation Mission (AIM)</b> <b>Atal Tinkering Lab (ATL)</b> <b>Atal Incubation Centres (AIC)</b> (NITI Aayog)	Promote Entrepreneurship and Innovation, Cultivate One Million Innovators in India	For AIC: Rs. 10 Cr. grant to be provided; For ATL: Establishment fund of Rs. 10 lakh; Operational expenses of INR 10 lakh	Approved 13 institutes to establish new incubators with a grant of INR 10 Cr. Each 374 ATIs received Rs. 12 Lakh each
<b>National Initiative for Development and Harnessing Innovations (NIDHI)</b> (Dept. of Science and Technology)	Promote student Startups; Accelerate the journey of idea to prototype	Funding support to Startups Ignition grant/award of Rs. 10 lakh	19 TBIs established; 9 TBIs supported under Seed Support System, 10 NIDHI-PRAYAS and 10 NIDHI-EIR sanctioned
<b>Tax Exemption Schemes</b> (Ministry of Finance)	Provide a better business environment for Startups; Help local Enterprises Grow	Income tax exemption for 3 years Exemption on capital gain up to Rs. 50 lakhs	Simpler taxation Tax credit for startups on purchases
<b>TBI Research Parks Promoting BioTech Incubators</b> (Govt. of India)	Propel successful innovation through an increase in incubation and R&D efforts in academia and industry	Rs. 1 Cr. each to be given to Bio- incubators Funding support to be provided for Incubators & Research Centres	Rs. 17 Cr. disbursed to 11 TBIs 7 Research Parks to be set up 290 Startups received benefits Fund of Funds for Startups

[Note: TBI - Technology Business Incubators, NIDHI - National Initiative for Development and Harnessing Innovations, SIDBI - Small Industries Development Bank of India, AIM – Atal Innovation Mission; AIC - Atal Incubation Centers, ATL - Atal Tinkering Labs; PRAYAS - Promoting and Accelerating Young and Aspiring technology entrepreneurs; EIR – Entrepreneurs-in-residence Illustrative list of Policies included.]

# Key Findings

1

## Impact of COVID-19 on Tech Start-ups:

- COVID-19 is the biggest challenge that India's nascent tech start-up ecosystem has faced
- 30%-40% tech start-ups have temporarily halted their operations or are in the process of closing down
- 70% tech start-ups have runway less than 3 months

2

## New Opportunities for Tech Start-ups

- 54% looking to pivot to new business opportunities
- 40% want to diversify into growth verticals like Healthcare, Edtech
- 50% enhancing focus on emerging tech like AI, IoT, Cloud

3

## Support for Tech Start-ups

- Access to working capital, easing compliances and fiscal policy and funding support – key asks from govt
- Integrated central-state initiatives on procuring Made in India start-up products and solutions
- Ecosystem to help drive collaboration, market access

Note: The analysis is based on 250 survey responses of which over 60% are bootstrapped and over 70% are early and mid-stage tech start-ups

(Source: <https://nasscom.in/knowledge-center/publications/nasscom-start-pulse-survey-q1-2020-reviving-indian-start-up-engine>)

## Agri-Business Incubators

Agriculture and Agribusiness are the mainstays of many economies. An agribusiness incubator is an enterprise development hub that provides a common environment—often physical but in some cases virtual—to nascent agro-based companies, where they have access to shared infrastructure, networking, mentoring and coaching, business and financial services. Agribusiness incubators or agro-based incubators especially nurture newly born agro-based enterprises with high growth and competitive potential. Agribusiness incubators are an effective part of an innovation ecosystem for agricultural development. These can be established as a public body, mostly depending on governmental and donor funds, or as a private body.

### **BOX 1. Small business and incubators in the United States of America**

Small businesses play an important role in generating growth and employment in both developing and developed economies. In the United States of America, for example, small businesses generated approximately 50 percent of grossdomestic product (GDP), 60-80 percent of new jobs and a large portion of American innovation in the economic growth period leading up to 2007. These businesses provide 50.2 percent of all non-farm wages. About half of the five million businesses existing in 2007 were startup companies. Incubators specifically target these companies and support their development (Hoffman and Radojevich-kelley, 2012).

### **BOX 2. Timbali Technology Incubator pre-incubation programme, South Africa**

The Timbali Technology Incubator has established a one-year pre-incubation programme during which clients were walked through a number of assessments needed to ensure the originality and technical, marketing and financial viability of the business idea. The incubator also assists clients to develop their business plan and fill in loan applications. In the pre-incubation stage, utmost attention is paid to mentoring creative ideas, defining technology needs and evaluating the market and financial prospects. For those companies not legally constituted, this is usually the moment to do it (infoDev, 2014 a).

### **BOX 3. Agricultural development centres and agribusiness incubators**

Agricultural development centers are not incubators, but some of their functions are similar. ADCs serve farmers, livestock producers, beekeepers and fishers, as well as the rural

population in general. Their functions embrace agricultural and agribusiness training and extension services; transfer of new technologies and strategies to increase performance and use natural resources more sustainably; support for reducing farm costs and agricultural marketing and management support services, among others. ADCs can also establish demonstration plots in farmers field to illustrate the impact of new technology on improving farm productivity. They offer general agricultural and agribusiness assistance to any farmer or agribusiness firm that contacts them for help, unlike incubators that serve only those selected clients accepted for incubation. Another difference is that ADCs work with any small business at any stage of development and not only with startup companies (FAO, 2007 – A Sourcebook).

#### **BOX 4. AYNAT Agribusiness Incubation Center, Africa**

Designed to train, develop and support young people to set up their own business in the field of the agriculture sector. Objectives include:

1. Strengthen the organizational capacity of AYNAT to manage the Incubation Centre.
2. Establish a Sustainable National and Training Centre Agri business Incubation.
3. Build the capacity of and empower Incubates to sustainably grow their Agri businesses.
4. Market linkages for incubates through strategic partnerships.

(<http://www.aynatafrica.org/ai.html>)

#### **BOX 5. Agri-business Incubation Network programme (ABIN), Burundi, Africa**

**Goal: To establish a network of agribusiness incubation centers in rural areas in Burundi.**

Designed to bridge the gap between the urban-based incubation systems and reach out to marginalized groups in the countryside to help them start agri-businesses in order to improve their livelihoods.

- It has a specific emphasis on women and youth, notably those that do not own land (eg. IDPs, returnees, widows and unmarried women).
- The rural incubators are a first step to decentralize the process of incubation throughout Burundi. The centers are specialized in business planning and agriculture value chain development as well as providing market access for farmers.

(<https://www.spark-online.org/projects/agri-business-incubation-network-program-abin/>)



## **BOX 6. How ABI-ICRISAT incubates the UniBrain network of agro-incubators in Africa**

UniBrain is a programme launched by the Forum for Agricultural Research in Africa (FARA) with financial assistance from DANIDA to support the creation of a network of African agro-incubators aiming to commercialize agricultural technologies. At present, UniBrain supports six agribusiness incubators that offer their services in five countries, following a value chain approach. ABI-ICRISAT incubates UniBrain's incubators. The ABI-UniBrain incubation of incubators model encompasses assistance and support for potential incubator owners in the preparation of business plans, recruitment of staff, preparation of standard operating procedures for the incubator and the provision of technical support and capacity building activities for incubator staff.

FARA is responsible for the coordination of the incubators, management and resource mobilization DANIDA through the UniBrain programme, grants funds to the incubators for pre-implementation activities. The grant is released only upon approval of the incubator proposal, containing a commercially viable business plan. UniBrain's supported incubators have the status of a non-profit organization and are, therefore expected to make trading surpluses that cannot be distributed among consortia members.

The main strengths identified are related to strong partnerships between consortia partners and their high networking capacities. Good performance also seems to be attributable to:

- The willingness of governmental agencies to promote UniBrain incubators;
- Existence of a large market for the process's food manufactured by incubated startups;
- Numerous youth population of African countries;
- Large technology base identified as suitable for African country's needs; and
- High level of entrepreneurship zeal exhibited by young agriculture graduated and post-graduates incubated.

Some constraints are emerging as well, such as longer than expected learning time, unavailability of customized processing machinery in Africa, and attrition among incubators' employees. Another problem relates to the existence of numerous rules and regulations of the various governmental agencies that make it difficult to transfer the corresponding technology.

(Source: As per communication with Mr. SM. Karuppanchetty, Chief Operating Officer, ABI-ICRISAT).

## Map Showing Agribusiness Incubators- State wise (India)

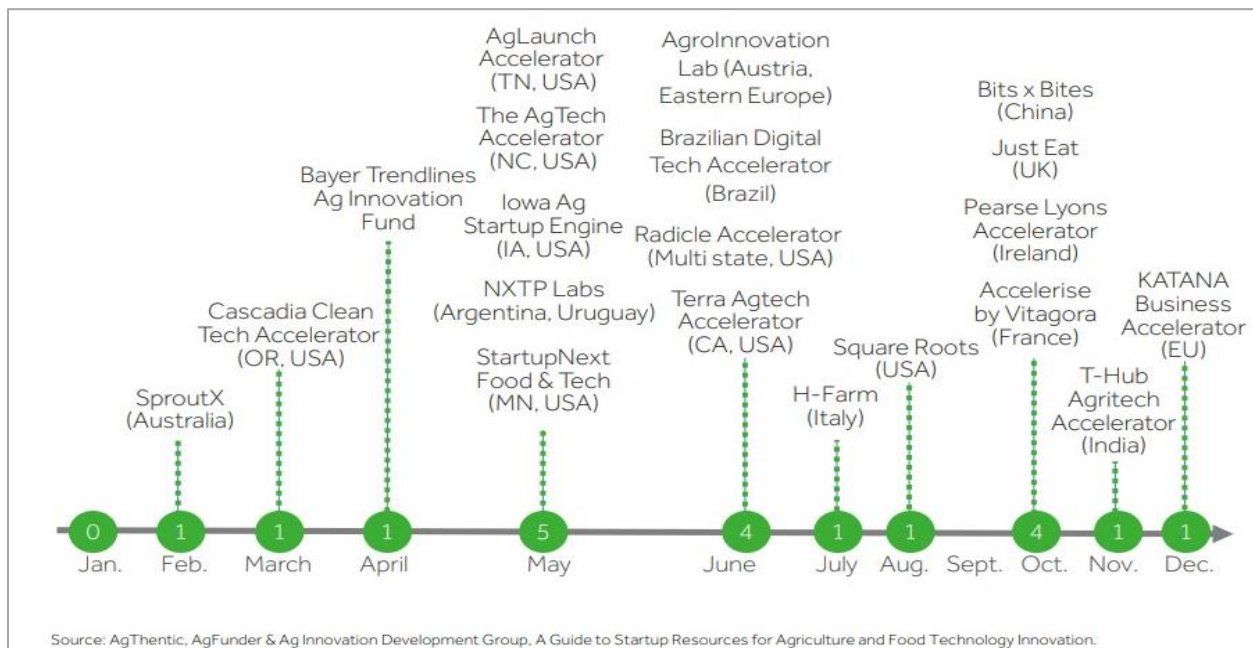
This Map shows the agribusiness incubators in India (state-wise) (Srinivas et al., 2018) which are as follows:

CPRS, Jalandhar; CIPHET, Ludhiana; NDRI, Karnal; IARI, New Delhi; IVRI, Izzatnagar; IVRI, Varanasi; NRCP, Guwahati; ICAR RC NEH, Umlam; NIRJAFT, Kolkata; CIAE, Bhopal; NRRI, Cuttack; CIFA, Bhubaneswar; CIRCOT AND CIFE, Mumbai; NAARM, IIMR, IOR and NRCM, Hyderabad; IIHR, Bengaluru; CIBA, Chennai; CPCRI, Kasargod; IISR, Calicut and CIFT, Kochi.



**Fig. 17:** Map showing Agribusiness Incubators Statewise (India)

## Agtech Accelerators



**Fig. 18: Agtech Accelerators**

### 4.1 PPP Partnerships - For Excellence in Various Fields (Kpmg,2019)

The State Government is expected to broaden cooperation with academic institutions and research and development and the business sector through private public partnerships (PPP) in line with Maharashtra State Innovative Startup Strategy for 2018. Further, the state will collaborate with accelerators and incubators globally in order to develop facilities and facilitate knowledge exchange with the global startup ecosystem.

#### Establishment of incubation facility through PPP model

##### Private incubators

Enterprises and business associations will gain State funding for the creation of incubators relating to their domain. In addition, private sector companies will be assisted in the creation of industry-agnostic co-working facilities.

##### Maharashtra virtual incubation center

In order to assist start-ups in the entire state, the government will create virtual incubation centres, which provide legal, financial, mentoring, etc. facilities. Server accounts, co-working rooms, and certified business functionality tools such as human resources, and accounting are some of the other utilities that would be offered to start-ups.

## Academic incubators

The state government will identify and collaborate with academic institutions that have already displayed or launched various innovation initiatives, in order to establish business incubators within these institutions. The state will also establish three Centers of Excellence (CoEs) within certain research institutes in Maharashtra. Further, they shall leverage global partnerships in order to provide best-in-class infrastructure and services for startups to flourish.

## 4.2 Good Practices in Incubation Support

States identified as 'Incubation hubs may share inspiration and experience with other States to undertake reforms in incubation support. Some of the good practices from leading States in this pillar have been highlighted to share learning with all states.

### Setting up academic incubator network

**Delhi:** Department of Training and Technical Education, Government of NCT of Delhi launched the incubation policy in March 2016 to provide financial support of INR 1.5 Crore to higher educational institutes in the region for setting up incubation centers. As of 30th April, the Department has provided financial support to 11 academic incubators

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

- Netaji Subhash Institute of Technology
- Acharya Narendra Dev College (AND)
- Delhi Technological University (DTU)
- Delhi Pharmaceutical Science & Research University (DPRSU)
- Ambedkar University Delhi (AUD)
- Shaheed Sukhdev Singh College of Business
- Bhai Parmanand Institute of Business Studies (BPIBS)
- Ambedkar Institute of Advanced communication Tech & Research (AIACTR)
- Indira Gandhi Technical Univ. for Women
- College of Art (COA)
- Indraprastha Institute of IT (IIIT Delhi)

### Setting up or scaling up incubators

**Andhra Pradesh:** Government of Andhra Pradesh has set-up physical infrastructure for creative enterprises and collaborated with renowned Incubators and Accelerators. State

Government has envisioned setting up incubators in its Startup policy. Additionally, operational guidelines for setting up of Incubation centers in educational institutions with Government support have been prepared. The state has supported the following incubators for setting up operations and maintenance of the facility: Sunrise Incubation Centre, Vizag; Incubation tower, Kakinada; Incubation Tower, Anantapuram; Technology Business & Acceleration program, Tirupati and Atal Incubation Centre, Sri Krishnadevaraya University, Anantapuram.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)


**Karnataka:** One of the key objectives of Karnataka Startup policy is to invite the private sector including globally and nationally well-known accelerators and incubators to set up world-class incubation centers and accelerators or expand existing facilities or operations on a PPP basis. The state has been successful in partnering with multiple agencies to set up incubators. The incubators include GOK NASSCOM10K Startups Warehouse with NASSCOM; GOK Incubator for Tech Start-Ups (GIFTS) with 91 SpringBoard; GOK-Mobile 10x Startup Hub with IAMAI; Bangalore Bio-innovation Centre; NASSCOM DeITY IoT-CoE; Common Instrumentation Facilities (CIFs) to be set up by IKP Knowledge Park. The State supports over 1, 20,000 sq. ft. of incubation area. Over 250 Startups have received subsidized incubation in the supported incubators.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

### **Support in setting up large incubation area**

**Gujarat:** State has adopted a formal mechanism to identify and encourage innovations by launching Critical Infrastructure Scheme and Student Startup and Innovation Policy. Under these initiatives, the State Government is providing financial support to 7 incubators in the form of financial grants and/or reimbursement on capital expenditure. The State has also been successful in developing a large incubation facility at iCREATE, Ahmedabad. iCREATE has been funded by the Government of Gujarat under the Critical Infrastructure scheme. The 1, 12,139 sq. ft. incubator provides working space, library, digital innovation centre, design centre, rapid prototyping using a 3D printer, among other facilities.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

**Telangana:** The Government of Telangana is anchoring all its entrepreneurship-related efforts through T- Hub. T-Hub is a unique public private partnership between the government of Telangana, 3 of India's premier academic institutes (IIIT-H, ISB  NALSAR) and key private sector leaders. The state has supported the development of Catalyst, a 70,000 square foot facility, which is one of the largest buildings dedicated entirely to entrepreneurs. The State has also provisioned institutional support by providing capital

investment subsidy. Subsidy of 20 percent of the value of the Capital Expenditure, other than land and building is provided to Incubators. This subsidy is limited to a minimum capital investment of INR 1 Crore and a maximum subsidy of INR 30, 00,000. Additionally, the state has supported Kakatiya Sandbox, a privately held social incubator; TWorks, a hardware product startup incubator, and IT incubation centers at Karimnagar, Warangal, Nizamabad, and Khammam.

(<https://www.startupindia.gov.in/content/dam/investindia/Templates/public/State%20Startup%20Ranking%20Report%202018.pdf>)

## Study in Maharashtra

The state of Maharashtra was formed in 1960 with Bombay as the capital and is situated in the western region of the country, covering an area of 1,18,809 square miles. The state ranks second with a population of 11.42 crores in India and more than half of the population is rural and lives in villages. It is divided into thirty-six districts, 534 towns, 40959 villages, and 353 community blocks.

Maharashtra is the largest producer of sugarcane in India. Jowar (grain sorghum), millet, and pulses (legumes) dominate the total cropped area. Rice grows where rainfall exceeds 40 inches (1,000 mm) and wheat is a winter crop in fields that retain moisture. Cotton, tobacco and peanuts (groundnuts) are major crops in areas with heavy rainfall. Mangoes, cashew nuts, bananas, and oranges are popular orchard crops. The manufacturing of cotton textiles is the oldest and largest industry in Maharashtra. Woolen goods are produced especially in and around Nagpur and Solapur. Other hubs of traditional agriculturally based industry (edible oils processing) include Jalgaon and Dhule. Fruit canning and preservation are important in Nagpur, Bhusawal, Ratnagiri, and Mumbai. Processed forest products include timber, bamboo, sandalwood and tendu leaves—the latter used for rolling bidi.

The national and state governments have promoted both improved agricultural techniques and increased industrialization of the economy. As a result, Maharashtra has been the hub of commercial, financial, and industrial activity in India for decades. Mumbai, one of India's most important ports, handles an enormous foreign trade. It is a hub of manufacturing, finance and administration but also a national centre for motion-picture production. Pune has developed many industries because of its proximity to Mumbai. Nagpur and Solapur have textile and other agriculturally based industries. However, India has the third largest startup base globally and Mumbai ranked seventh in terms of growth in VC deals secured in 2015-2017 (PTI.2019). India has 345 agritech startups, out of which, Pune ranked third with 28 and Mumbai ranked fourth with 24 agritech startups.

### Locale of the study

The present study will be conducted in Maharashtra state, which is selected purposively as the state has a vibrant startup ecosystem and ranks on top with 3,661 startups recognized by the government. As per the Department of Industrial Policy and Promotion (DIPP), Maharashtra with 2,787 startup registrations (out of 14,565), was ranked first in 2018. After, Bangalore and Delhi, Mumbai stands at a third in terms of startups and Pune stands at fourth position that is why the study will be carried out in Maharashtra state.

Mumbai is the capital of the state of Maharashtra and due to the presence of a massive consumer base; an increasing number of co-working spaces and well connectivity with foreign countries has



turned Mumbai into an attractive startup hub ([https://startup.siliconindia.com/startup\\_talks/mumbai-the-financial-hub-as-the-new-city-for-startups-nwid-17022.html](https://startup.siliconindia.com/startup_talks/mumbai-the-financial-hub-as-the-new-city-for-startups-nwid-17022.html)). The city houses a majority of the headquarters of large corporate and financial institutions in the country. In addition, major stock exchanges, commodity exchanges and capital markets of India are situated in Mumbai (Source: SEBI, BSE, NSE, News Articles; <https://www.ibef.org/download/Maharashtra-April-20181.pdf>). There are 24 Agritech startups in Mumbai (Anonymous, 2019).

Another major city in the state has emerged as an educational hub. Pune is also the largest automobile hub of India with over 4,000 manufacturing units in the Pimpri-Chinchwad region alone. Pune is home to large players like Bajaj Auto Limited, Daimler Chrysler Limited, Tata Motors, etc. It is also known as the 'Oxford of the East' due to the presence of several well-known educational institutions. Pune has about 28 Agri-Tech startups.

Nashik is home to one of India's largest multi-utility vehicle manufacturers – Mahindra & Mahindra Limited. It is also known as the 'Wine Capital of India' as it has the largest number of wineries and vineyards in the country. MITRA is the only agritech startup running in the city. So, keeping above all factors in mind, the following study has been undertaken with the following objectives:

## Objectives

1. To assess the knowledge and attitude of respondents regarding agribusiness and agritech startups and agribusiness incubation centres in Maharashtra state.
2. To conduct case studies of selected agribusiness and agritech startups and agribusiness incubation centres in Maharashtra state.

## Selection of respondents

For the selection of respondents to undertake the study, various agribusiness, agritech startups, and agribusiness incubation centers were identified in the cities of Maharashtra. The respondents are the founders/employees of the startups and incubation centres. Thus, a sample size of 11 agribusiness and agritech startups and one agribusiness incubation centre using a random sampling method and snowball- sampling method was selected for the study.

## Tools and collection of data

For data collection, covering both the study's independent and contingent variables, a well-structured interview schedule of closed-ended and open-ended questions was used. The interview schedule contained questions to test the assertions of expertise and attitude. The primary data was collected by conducting face-to-face interviews with the founders/employees of agribusiness and



agritech startups and agribusiness incubation centres. Focus group discussions, observation methods, and case study methods were also employed for the data collection.

## Scope of the study

The present study is an attempt to focus on the role of agribusiness and agritech startups in the development of agriculture in Maharashtra. The study also attempts to access the knowledge and attitude of founders regarding agribusiness and agritech startups and startup incubators. Besides, the study also yields case studies regarding agribusiness and agritech startups and agribusiness incubation centres in Maharashtra. The findings of the study will be of great use for policymakers engaged in the promotion of various agritech startups and agribusiness incubation centres and also for the student scholars.

## Limitations of the study

The study, being a student’s project, will be conducted on a limited geographical area and thus, it is likely to have all the limitations inherent in a student’s research project such as financial, workforce and time. Therefore, the generalization of the findings of the study may be made with these considerations. The tools used for the study have their own limitations and the purpose of the present project was to have estimates generated through different methodologies. Further, the findings of the research study are based on the recall response of the respondent and their personal views. However, considerable care has been exercised in selecting variables and the systematic steps and procedures will be followed to carry out the study systematically so that all the objectives of the study could be fulfilled satisfactorily.

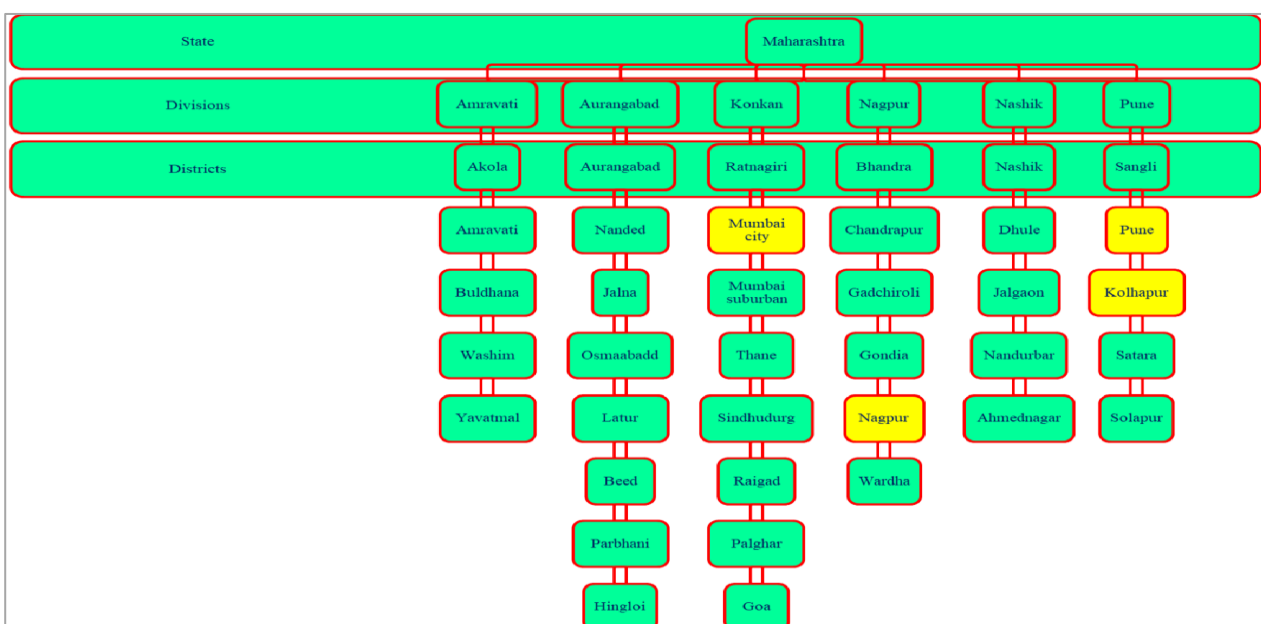


Fig. 19: Sampling procedure

## Results and Discussion

This segment deals with the results of the present investigation in accordance with the objectives, inferred through the use of prescribed methodology and standard tools. The results have been presented under the following heads:

1. Background information about respondents
2. Knowledge and attitude of respondents regarding agribusiness and agritech startups
3. Case studies of agribusiness and agritech startups and agribusiness incubation centres

### Background Information about Respondents

In this section, the distribution of the respondents according to their socio—personal profile has been incorporated.

#### 1.1 Socio-personal profile of respondents

**Table 8: Socio-personal profile of respondents**

Sr. No.	Variables	Category	Pune (n=6) f(%)	Mumbai (n=5) f(%)	Total (N= 11) F(%)
1.	Age (Years)	Below 35	5.00(83.3)	3.00(60)	8.00(72.7)
		36-50	1.00(16.6)	2.00(40)	3.00(27.2)
		Above 50	0.00(00)	0.00(00)	0.00(00)
2.	Sex	Male	5.00(83.3)	4.00(80)	9.00(81.8)
		Female	1.00(16.6)	1.00(20)	2.00(18.1)
3.	Education	Higher Secondary	0.00(00)	0.00(00)	0.00(00)
		Graduation	0.00(00)	1.00(20)	1.00(9.09)
		Post-Graduation	6.00(100)	4.00(80)	10(90.9)
4.	Marital status	Unmarried	2.00(33.3)	2.00(40)	4.00(36.3)
		Married	4.00(66.6)	3.00(60)	7.00(63.6)


### Age

The study revealed that in Pune, the majority of the respondents (83.3%) were below 35 years of age, and nearly 1/6th of the respondents (16.6%) belonged to 36-50 years of age. Whereas, in

Mumbai, more than half of the respondents (60%) were below 35 years of age and 2/5th of the respondents (40%) belonged to 36-50 years of age.

In the case of the pooled sample, 72.7 percent of the respondents were below 35 years of age and more than 1/4th of the respondents (27.2%) belonged to 36-50 years of age.

## Sex

The above table  early shows that in Pune, the majority of the respondents (83.3%) were male and only 16.6 percent were female respondents. However, in Mumbai, more than 3/4th of the respondents (80%) were male and 20 percent of respondents were female.

Thus, in aggregated data, 81.8 percent of the respondents were male and only 18.1 percent were female respondents.

## Education

The level of education of the respondents was measured in terms of the number of years of formal schooling undergone by them. The data in Table 8, indicates that in Pune, cent percent of the respondents were educated up to post-graduation and in the case of Mumbai, the majority of the respondents (80%) were post-graduate and only 20 percent of the respondents were graduated.

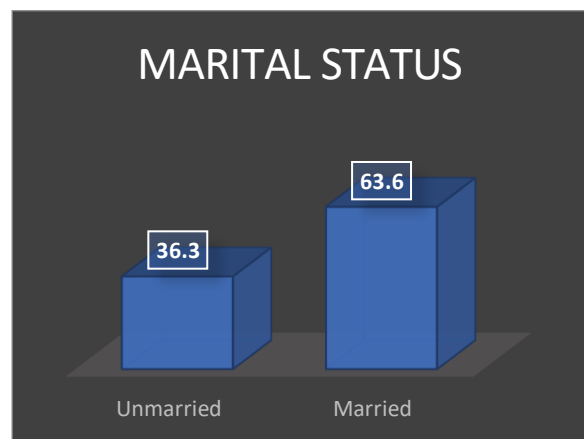
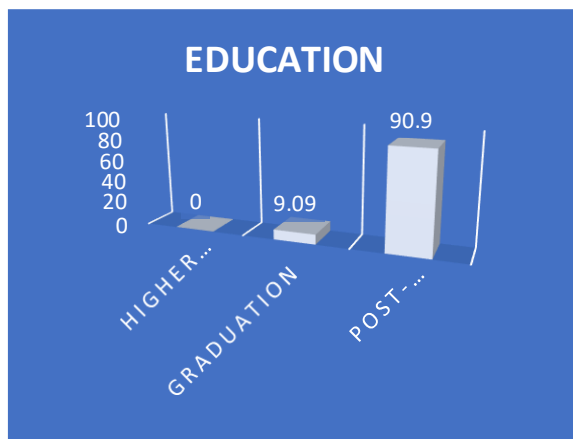
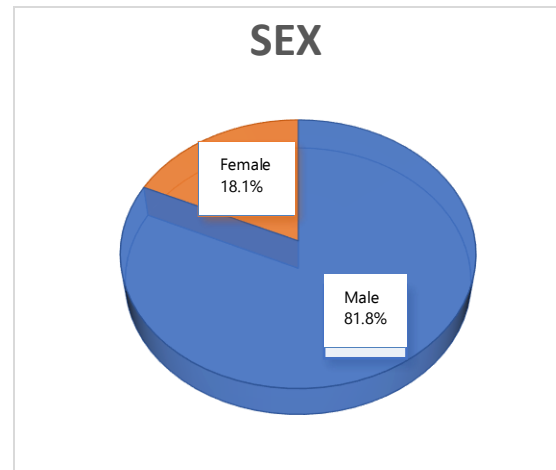
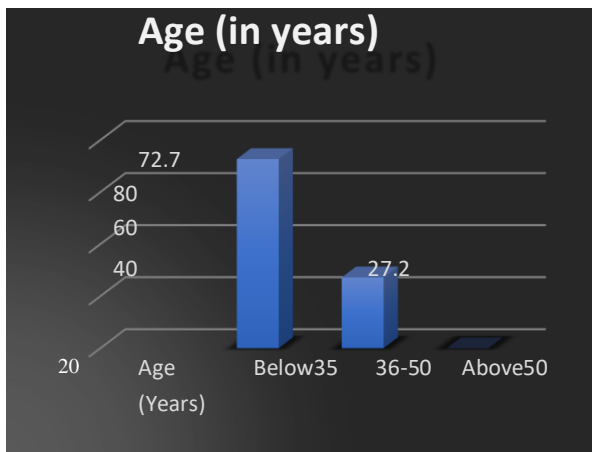
In the case of the pooled sample, the majority of the respondents (90.9%) were educated up to postgraduation and only 9.09 percent of the respondents were graduated.

## Marital Status

The data related to the marital status of the respondents presented in Table 8, reveals that in Pune, 66.6 percent of the respondents were married and nearly forty percent of the respondents (33.3%) were unmarried. While in Mumbai, more than half of the respondents (60%) were married and forty percent of the respondents were unmarried.

Thus, in the pooled sample, 63.6 percent of the respondents were married and nearly forty percent of the respondents (36.3%) were unmarried.

Thus, it can be concluded that the majority of the male respondents were married who were below 35 years of age and educated up to post-graduation.



**Fig. 20** Socio-personal profile of the respondents

## 2. Knowledge of Respondents Regarding Startups

A list of various aspects was compiled for assessing the knowledge of respondents towards these aspects. The data related to knowledge of respondents about startups as presented in Table 9 points out that in Pune, 2/3rd the respondents (66.6%) had started their startup after 2017 and nearly forty percent of the respondents (33.3%) had started their startup between 2012-2017. While, in Mumbai, the majority of the respondents (80%) had started their startup between 2012-2017 and 20 percent of the respondents had started their startup after 2017. In the case of the pooled sample, more than half of the respondents (54.5%) had started their startup between 2012-2017 and 45.4 percent of the respondents had started their startup after 2017.

In Pune, respondents told that half of the startups (50%) had 20-40 employees, followed by 100-120 employees (33.3%) and 80-100 employees (16.6%). Whereas, in Mumbai, respondents told that more than half of the startups (60%) had 20-40 employees, followed by 60-80 and 100-120 employees (20%) each respectively. Thus, in aggregated data, respondents told that more than half of the startups (54.5%) had 20-40 employees, followed by 100-120 employees (27.2%) and 60-80 and 80-100 (9.09%) each respectively.

66.6 percent of the respondents told that they had team members working full time on the project and 33.3 percent of the respondents told that they were looking to build the team in Pune. However, in Mumbai, cent percent of the respondents told that they had team members working full time on the project, followed by respondents (60%) told that their team is comprised of independent service providers and 20 percent (each respectively) of respondents told that they had worked with key members of the team before and also looking to build the team. And, in the case of the pooled sample, the majority of the respondents (81.8%) told that they had team members working fulltime on the project, followed by 27.2 percent (each respectively) respondents told that they were looking to build the team and their team is comprised of independent service providers and only 9.09 percent of the respondents told that they had team members working on full time on the project.

**Table 9: Knowledge of respondents regarding startups**

<b>Statements</b>	<b>Pune (n=6) f(%)</b>	<b>Mumbai (n=5) f(%)</b>	<b>Total (N=11) F(%)</b>
<b>1. Year in which startup started</b>			
a) Before 2012	0.00(00)	0.00(00)	0.00(00)
b) 2012-2017	2.00(33.3)	4.00(80)	6.00(54.5)
c) After 2017	4.00(66.6)	1.00(20)	5.00(45.4)
<b>2. Number of employees in startup</b>			
a) 20-40	3.00(50)	3.00(60)	6.00(54.5)
b) 40-60	0.00(00)	0.00(00)	0.00(00)
c) 60-80	0.00(00)	1.00(20)	1.00(9.09)
d) 80-100	1.00(16.6)	0.00(00)	1.00(9.09)
e) 100-120	2.00(33.3)	1.00(20)	3.00(27.2)
<b>3. About team</b>			
a) Team members working full time on this project	4.00(66.6)	5.00(100)	9.00(81.8)
b) Worked with key members of the team before	0.00(00)	1.00(20)	1.00(9.09)
c) Looking to build for a team	2.00(33.3)	1.00(20)	3.00(27.2)
d) Searching for a technical co-founder	0.00(00)	0.00(00)	0.00(00)
e) Team is comprised of independent service providers	0.00(00)	3.00(60)	3.00(27.2)
f) Have an advisory board	0.00(00)	0.00(00)	0.00(00)
g) Have no team	0.00(00)	0.00(00)	0.00(00)
<b>4. Area is which startup mainly operating in</b>			

a) IT	0.00(00)	1.00(20)	1.00(9.09)
b) Medical and health	0.00(00)	1.00(20)	1.00(9.09)
c) Finance	0.00(00)	0.00(00)	0.00(00)
d) Education	0.00(00)	0.00(00)	0.00(00)
e) Media	0.00(00)	0.00(00)	0.00(00)
f) Travel	0.00(00)	0.00(00)	0.00(00)
g) Food	1.00(16.6)	2.00(40)	3.00(27.2)
h) Environment	1.00(16.6)	0.00(00)	1.00(9.09)
i) Retail	2.00(33.3)	1.00(20)	3.00(27.2)
j) Entertainment	0.00(00)	0.00(00)	0.00(00)
k) Agriculture	5.00(83.3)	4.00(80)	9.00(81.8)

#### 5. Startup selling products/services to

a) B2B	3.00(50)	3.00(60)	6.00(54.5)
b) B2C	4.00(66.6)	1.00(20)	5.00(45.4)
c) B2G	2.00(33.3)	3.00(60)	5.00(45.4)
d) Both B2B and B2C	0.00(00)	0.00(00)	0.00(00)

#### 6. Account of startups on the following social media channels

a) Facebook	3.00(33.3)	5.00(100)	8.00(72.7)
b) Instagram	2.00(33.3)	3.00(60)	5.00(45.4)
c) Twitter	2.00(33.3)	2.00(40)	4.00(36.3)
d) LinkedIn	3.00(50)	5.00(100)	8.00(72.7)
e) YouTube	3.00(50)	2.00(40)	5.00(45.4)
f) Doesn't have social media accounts	0.00(00)	0.00(00)	0.00(00)
g) All of the above	3.00(50)	1.00(20)	4.00(36.3)

#### 7. Rewards received after completing a task

a) Never	3.00(50)	2.00(40)	5.00(45.4)
b) Rarely	1.00(16.6)	0.00(00)	1.00(9.09)
c) Often	1.00(16.6)	2.00(40)	3.00(27.2)
d) Always	0.00(00)	1.00(20)	1.00(9.09)

#### 8. Kind of reward received after completing a task

a) Bonus	1.00(16.6)	1.00(20)	2.00(18.1)
b) Promotion	2.00(33.3)	1.00(20)	3.00(27.2)
c) Public recognition	2.00(33.3)	4.00(80)	6.00(54.5)
d) Holiday package	0.00(00)	1.00(20)	1.00(9.09)

**9. Benefits that startup gives**

a) Nothing	0.00(00)	0.00(00)	0.00(00)
b) Free food/drinks during working hours	3.00(50)	0.00(00)	3.00(27.2)
c) Leisure/sports facilities	2.00(33.3)	2.00(40)	4.00(36.3)
d) Health advisor	2.00(33.3)	3.00(60)	5.00(45.4)
e) Medical facilities	2.00(33.3)	4.00(80)	6.00(54.5)

**10. Prospective of career promotion in the startup**

a) Totally hopeless	0.00(00)	0.00(00)	0.00(00)
b) Little chance	1.00(16.6)	0.00(00)	1.00(9.09)
c) Likely to be promoted further	5.00(83.3)	1.00(20)	6.00(54.5)
d) Always have the opportunity	0.00(00)	4.00(80)	4.00(36.3)

**11. Main revenue sources**

a) Product sales	6.00(100)	5.00(100)	11.0(100)
b) Software licensing	0.00(00)	0.00(00)	0.00(00)
c) Advertising	0.00(00)	0.00(00)	0.00(00)
d) Premium upgrades	0.00(00)	0.00(00)	0.00(00)
e) Sponsorships	0.00(00)	0.00(00)	0.00(00)
f) Technology licensing	0.00(00)	0.00(00)	0.00(00)
g) Don't know	0.00(00)	0.00(00)	0.00(00)

**12. Funding for venture**

a) No funding	0.00(00)	0.00(00)	0.00(00)
b) Self-funded	3.00(50)	3.00(60)	6.00(54.5)
c) Crowdfunding	0.00(00)	2.00(40)	2.00(18.1)
d) Family and friends	0.00(00)	1.00(20)	1.00(9.09)
e) Angel funding	1.00(16.6)	2.00(40)	3.00(27.2)
f) VC funding	4.00(66.6)	1.00(20)	5.00(45.4)
g) Grant	1.00(16.6)	0.00(00)	1.00(9.09)
h) Bank loan	0.00(00)	0.00(00)	0.00(00)

**13. Type of funding round currently seeking**

a) Not seeking funding at this time	1.00(16.6)	1.00(20)	2.00(18.1)
b) Crowdfunding	0.00(00)	0.00(00)	0.00(00)
c) Seed funding	1.00(16.6)	0.00(00)	1.00(9.09)
d) Series A funding	0.00(00)	2.00(40)	2.00(18.1)
e) Series B funding	0.00(00)	0.00(00)	0.00(00)

f) Patent Collateralization	1.00(16.6)	1.00(20)	2.00(18.1)
g) Fully funded already	3.00(50)	0.00(00)	3.00(27.2)

#### 14. Exit strategy

a) Build to sell	3.00(50)	1.00(20)	4.00(36.3)
b) Take public	2.00(33.3)	1.00(20)	3.00(27.2)
c) Build a long term corporation	1.00(16.6)	3.00(60)	4.00(36.3)
d) Not thought about it yet	0.00(00)	3.00(60)	3.00(27.2)

#### 15. Style of communication

a) Formal	1.00(16.6)	3.00(60)	4.00(36.3)
b) Informal	1.00(16.6)	3.00(60)	4.00(36.3)
c) Both	4.00(66.6)	1.00(20)	5.00(45.4)

#### 16. Ways to keep the staff up to date with the working of an organization and teams/ departments

a) Regular training	3.00(50)	2.00(40)	5.00(45.4)
b) Brainstorming sessions	2.00(33.3)	0.00(00)	2.00(18.1)
c) Industrial visits	2.00(33.3)	0.00(00)	2.00(18.1)
d) Seminars/Workshops/Conferences	0.00(00)	0.00(00)	0.00(00)
e) Weekly meetings	0.00(00)	5.00(100)	5.00(45.4)
f) Mail	1.00(16.6)	0.00(00)	1.00(9.09)

#### 17. Ways to reduce employees' stress

a) Parties	4.00(66.6)	2.00(40)	6.00(54.5)
b) Tours	2.00(33.3)	1.00(20)	3.00(27.2)
c) Breaks during working hours	0.00(00)	3.00(60)	3.00(27.2)

#### 18. Characteristics/criteria look for in people to become employees

a) Career-oriented	4.00(66.6)	3.00(60)	7.00(63.6)
b) Learning-oriented	4.00(66.6)	4.00(80)	8.00(72.7)
c) Qualifications as per Job	5.00(83.3)	2.00(40)	7.00(63.6)

#### 19. Methods used for measuring performance

a) Quadrant method	3.00(50)	3.00(60)	6.00(54.5)
b) Feedback	1.00(16.6)	1.00(20)	2.00(18.1)
c) Communication	1.00(16.6)	1.00(20)	2.00(18.1)

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Further, table 9 clearly indicates that in Pune, the majority of the startups (83.3%) were related to agriculture, followed by retail startups (33.3%) and food and environment (16.6%) each respectively.



And, in Mumbai, the majority of the startups (80%) were related to agriculture, followed by food startups (40%) and information technology (IT), medical & health and retails startups (20%) each respectively. Thus, in aggregated data, the majority of the startups were related to agriculture (81.8%), followed by food and retail startups (27.2%) each respectively and information technology (IT), medical & health, and entertainment startups (9.09%) each respectively.

The above table shows that in Pune, 66.6 percent of the startups were selling their product/services from B2B (Business to Business), 50 percent of the startups were selling their product/services from B2C (Business to Consumer/Customer) and 33.3 percent of the respondents were selling their product/services from B2G (Business to Government). While, in Mumbai, more than half of the startups (60%) were selling their product/services from B2B and B2G, only 20 percent of the startups were selling their product/services from B2C. and, in the case of the pooled sample, more than half of the startups (54.5%) were selling their product/services from B2B and 45.4 percent (each respectively) startups were selling their product/services from B2C and B2G.

Data in above table 9 also further shows that in Pune, half of the startups (50%) had an account on LinkedIn, YouTube, Facebook, Instagram, and Twitter and nearly forty percent of the startups (33.3%) had an account on Facebook, Instagram, and Twitter. However, in Mumbai, cent percent of the startups had an account on Facebook and LinkedIn, 60 percent of the startups had an account on Instagram, 40 percent of the startups had an account on Twitter and YouTube and only 20 percent of the startups had an account on all these social media channels. In the case of the pooled sample, nearly 3/4th of the startups (72.7%) had an account on Facebook and LinkedIn, 45.4 percent of the startups had an account on Instagram and YouTube and 36.3 percent of the startups had an account on Twitter and all the social media channels.

For startups, half of the respondents (50%) said that they had never received rewards, and 16.6 percent of the respondents rarely and often received rewards after completing an important task in Pune.

Whereas, in Mumbai, of the total respondents forty percent had never and the other forty percent often received rewards after completing an important task. Only 20 percent of the respondents always received rewards after completing an important task for startups. And, in aggregated data, nearly half of the respondents (45.4%) had never received rewards after completing an important task, 27.2 percent of the respondents often received rewards after completing an important task and only 9.09 percent of the respondents had rarely and always received rewards after completing an important task for the startups.

Further, exploration of Table 9 indicates that in Pune, nearly forty percent of the respondents (33.3%) told that they had received a promotion and public recognition as a reward for their startups and only 16.6 percent of the respondents told that they had received a bonus as a reward

for their startups after completing an important task. While, in the Mumbai, majority of the respondents (80%) told that they had received public recognition as a reward for their startups and 20 percent of the respondents told that they had received a bonus, promotion, and holiday package as a reward for their startups after completing an important task. Thus, it is evident from the above table that in aggregated data, more than half of the respondents (54.5%) told that they had received public recognition as a reward for their startups, 27.2 percent of the respondents told that they had received a promotion, 18.1 percent of the respondents told that they had received bonus and only 9.09 percent of the respondents told that they had received holiday package as a reward for their startup after completing an important task.

In Pune, half of the respondents (50%) told that they got free food/drinks during working hours in startup and 33.3 percent of the respondents told that they got leisure/sports facilities, health-advisory, and medical facilities while working in the startup. And, in the case of Mumbai, the majority of the respondents (80%) told that they got medical facilities while working in a startup, 60 percent of the respondents told that they got health advisor services while working in a startup and forty per cent of the respondents got leisure/sports facilities while working in a startup. In the case of the pooled sample, more than half of the respondents (54.5%) told that they got medical facilities while working in startups, 45.4 percent of the respondents got health advisory services, 36.3 percent of the respondents got leisure/sports facilities and 27.2 percent of the respondents told that they got free food/drinks during working hours in the startup.

As far as in Pune, the majority of the respondents (83.3%) prospective of career promotion in the startup, was likely to be promoted further and 16.6 percent of the respondents told that they had little chance of career promotion in the startup. Whereas, in Mumbai, the majority of the respondents (80%) told that they always have the opportunity of career promotion in the startup and 20 percent of the respondent's perspective of a career in the startup was likely to be promoted further. In aggregated data, more than half of the respondent's (54.5%) prospective of career promotion in the startup was likely to be promoted further, 36.3 percent of the respondents told that they always have the opportunity of career promotion in the startup and only 9.09 percent of the respondents told that they had little chance of career promotion in the startup.

Regarding revenue sources, Table 9 indicates that cent percent of the startups had product sales as revenue sources in Pune, Mumbai and in the pooled sample also. Further, in Pune, more than half of the respondents (66.6%) received venture funding to-date, followed by self-funded (50%), angel funding, and bank loan (16.6%) each respectively. And, in Mumbai, 60 percent of the respondents self-funded their venture to-date, followed by crowdfunding and angel funding (40%) each respectively and family and friends and grant (20%) each respectively. In the case of the pooled sample, more than half of the respondents (54.5%) self-funded their venture to-date, followed by venture funding (45.4%), angel funding (27.2%), crowdfunding (18.1%) and friends& family and grant (9.09%) each respectively.

A follow up to Table 9 clearly shows that in Pune, half (50 percent) of respondents used the exit strategy for selling, 33.3 percent of respondents made it public as an exit strategy, and just 16.6 percent used the long-term business as their exit strategy for respondents. However, in Mumbai, more than half of the respondents (60%) used to build a long-term corporation and have not thought about it yet and 20 percent of the respondents used build to sell and took public as their exit strategy. In aggregated data, nearly forty percent of the respondents (36.3%) used build-to-sell and to build a long-term corporation as their exit strategy and 27.2 percent of the respondents took public, and have not thought about it yet as their exit strategy.

Data in the above table further indicates that in Pune, more than half of the respondents (66.6%) said that they communicate in both formal and informal way and 16.6 percent of the respondents said that they only communicate informal way and also, 16.6 percent of the respondents said that they only communicate in an informal way. However, in Mumbai, more than half of the respondents (60%) said that they communicate only in a formal way and also, 60 percent of the respondents said that they communicate only in an informal way and 20 percent of the respondents said that they communicate in both formal and informal way. A similar trend was followed in the case of a pooled sample.

The table further depicts that in Pune, half of the respondents (50%) organized regular training to keep their staff up to date with the working of an organization and teams/departments, 33.3 percent of the respondents organized brainstorming sessions and industrial visits to keep their staff up to date with the working of an organization and teams/departments and only 16.6 percent of the respondents used the mail to keep their staff up to date with the working of an organization and teams/departments. While, in Mumbai, cent percent of the respondents organized weekly meetings trainings to keep their staff up to date with the working of an organization and teams/departments and 40 percent of the respondents organized regular training to keep their staff up to date with the working of an organization and teams/departments. And, in the case of the pooled sample, nearly half of the respondents (45.4%) organized regular training and weekly meetings to keep their staff up to date with the working of an organization.

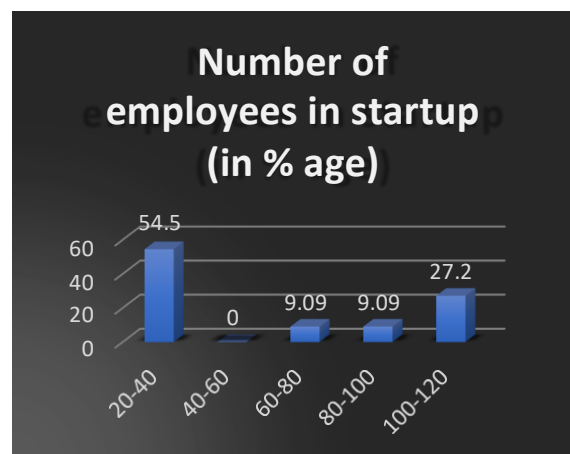
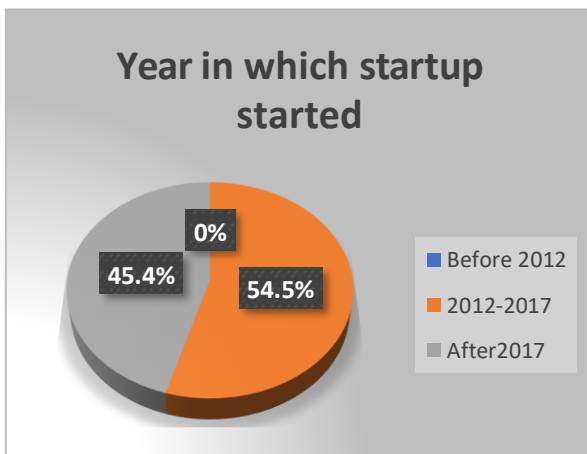
And teams/departments, 18.1 percent of the respondents organized brainstorming sessions and industrial visits to keep their staff up to date with the working of an organization and teams/departments and only 9.09 percent of the respondents used the mail to keep their staff up to date with the working of an organization and teams/departments. The data on ways to minimise the stress of employees recorded in Table 9 highlights that in Pune, more than half of respondents (66.6%) arranged parties to reduce the stress of employees and to reduce the stress of employees.

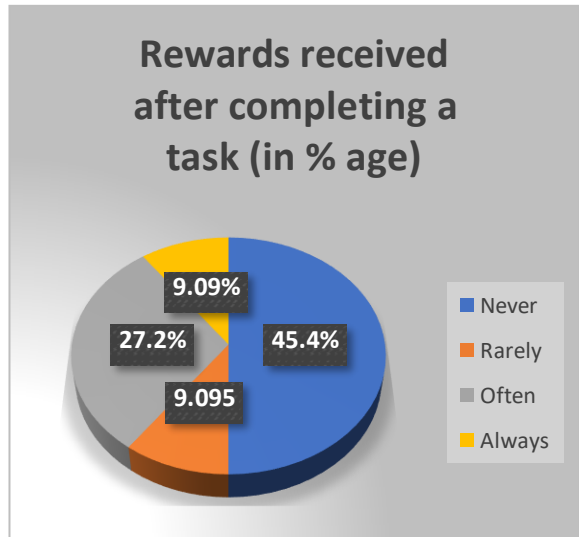
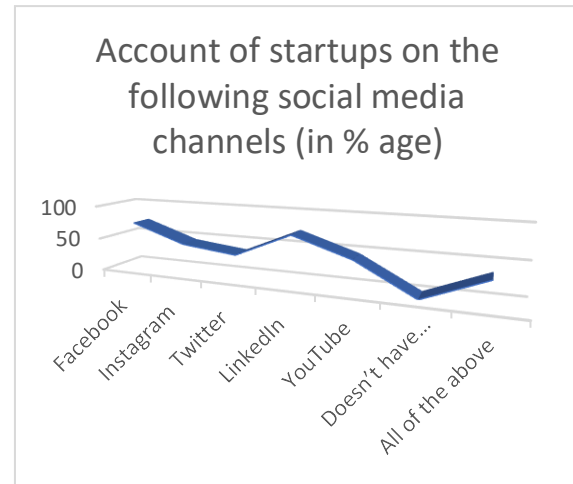
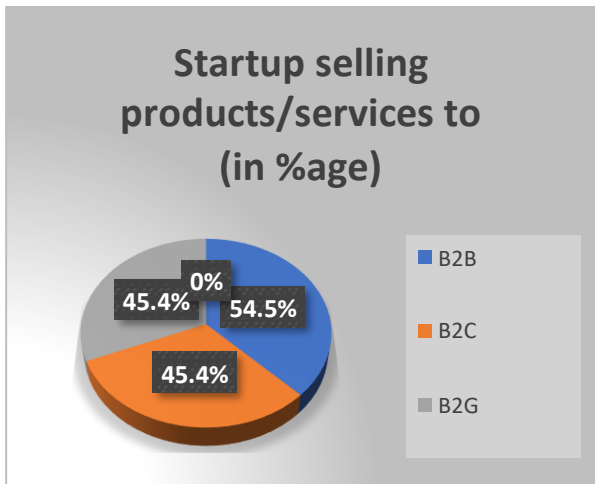
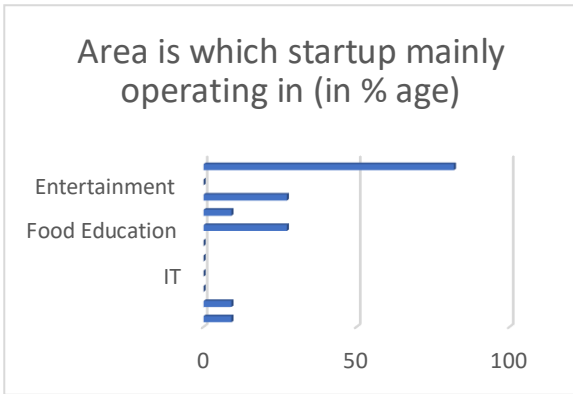
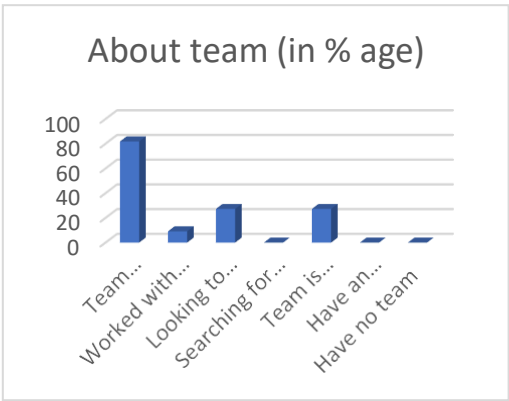
33.3% of respondents arranged staff trips to alleviate their burden. While, in Mumbai, more than half of the respondents (60%) organized breaks during working hours to reduce the stress of the employees, 40 percent of the respondents organized parties and 20 percent of the respondents

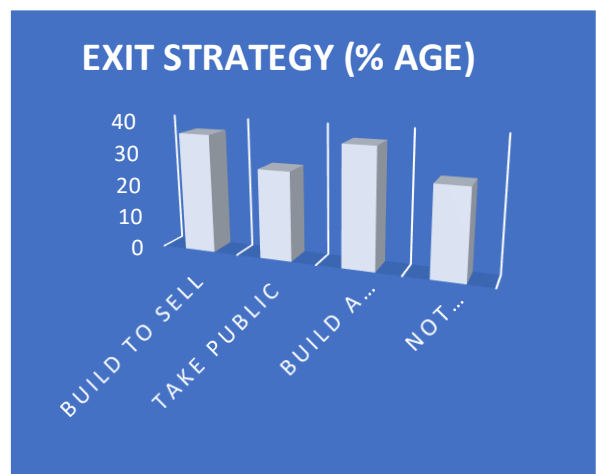
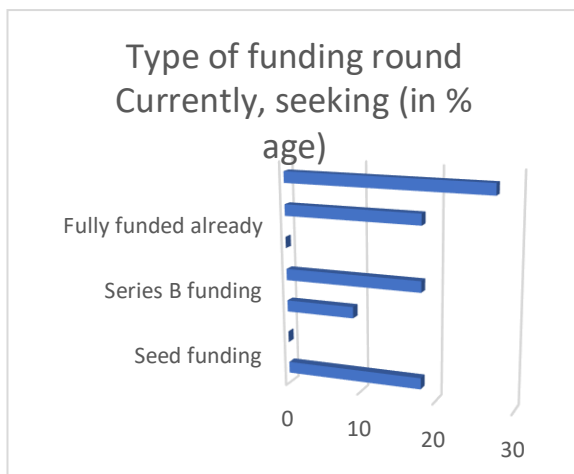
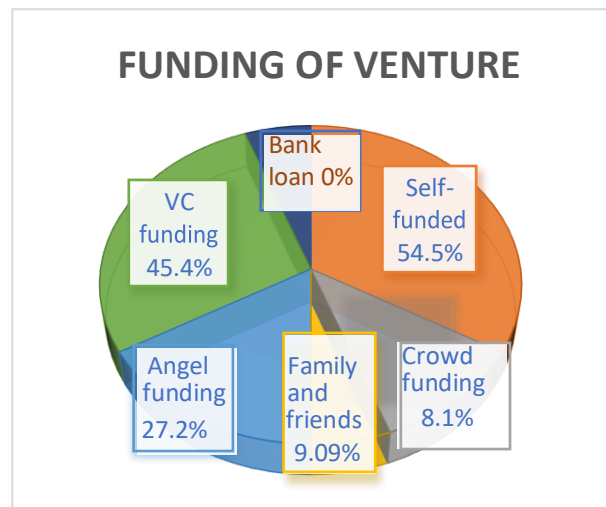
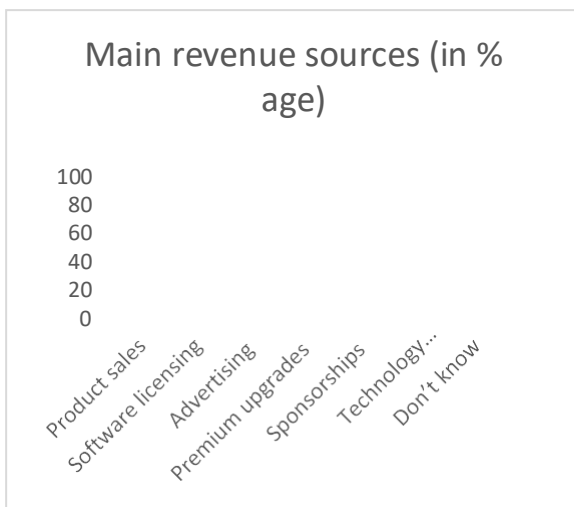
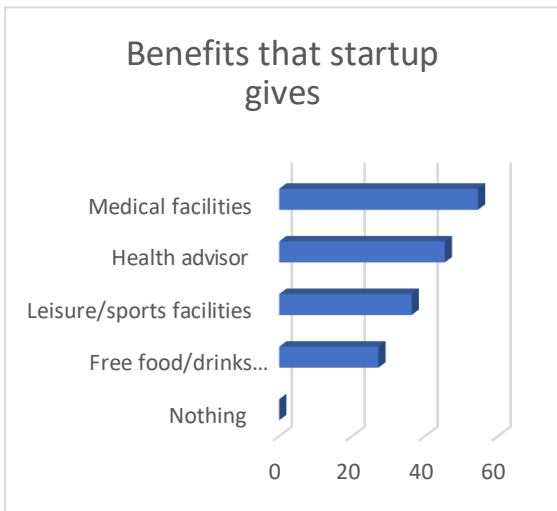
organized tours to reduce the employee's stress. In aggregated data, more than half of the respondents (54.5%) organized parties to reduce the employees' stress and 27.2 percent of the respondents organized tours and breaks during working hours for employees to reduce their stress.

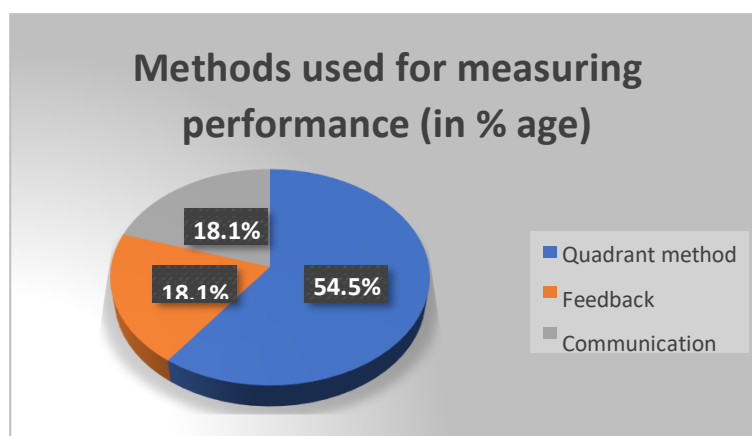
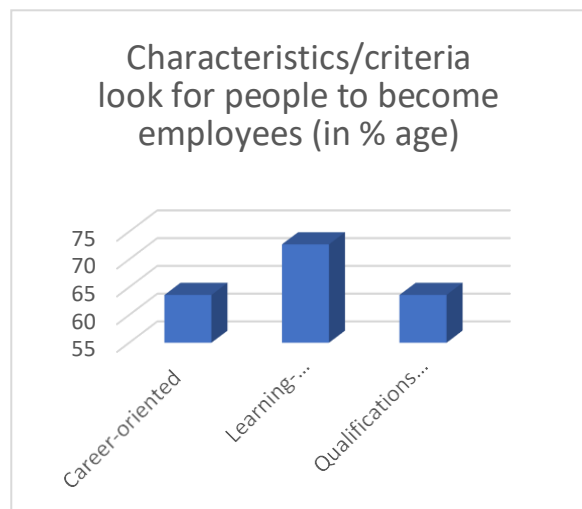
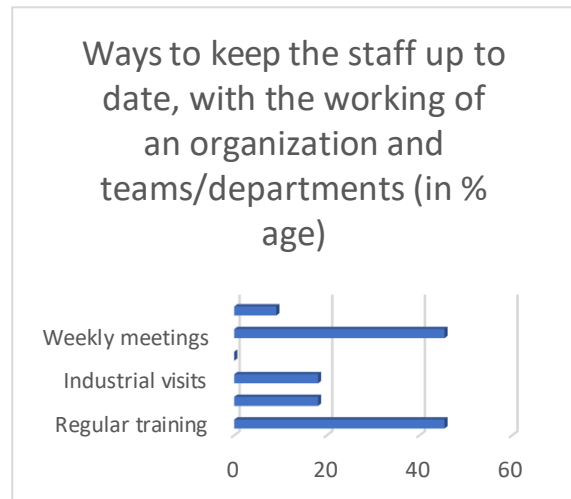
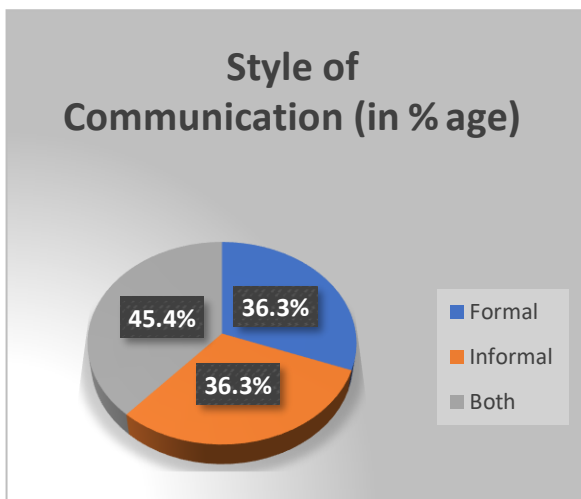
In Pune, the majority of the respondents (83.3%) looked for qualifications in people to become their employees and 66.6 percent of the respondents looked for career-oriented and learning-oriented people to become their employees. Whereas in Mumbai, the majority of the respondents (80%) looked for learning-oriented people to become their employees, 60 percent of the respondents looked for career-oriented people to become their employees and 40 percent of the respondents looked for qualification in people to become their employees. And, in the case of the pooled sample, nearly 3/4th of the respondents (72.7%) looked for learning-oriented people to become their employees and 63.6 per cent of the respondents looked for career-oriented and qualification of the people to become their employees.

The data in Table 9 clearly indicates that in Pune, half of the respondents (50%) used the quadrant method for measuring the performance of the employees and 16.6 percent of the respondents used feedback and communication as a method for measuring the performance of the employees. While, in Mumbai, more than half of the respondents (60%) used the quadrant method for measuring the performance of the employees and 20 percent of the employees used feedback and communication as a method for measuring performance of the employees. A similar trend was observed in case of a pooled sample.









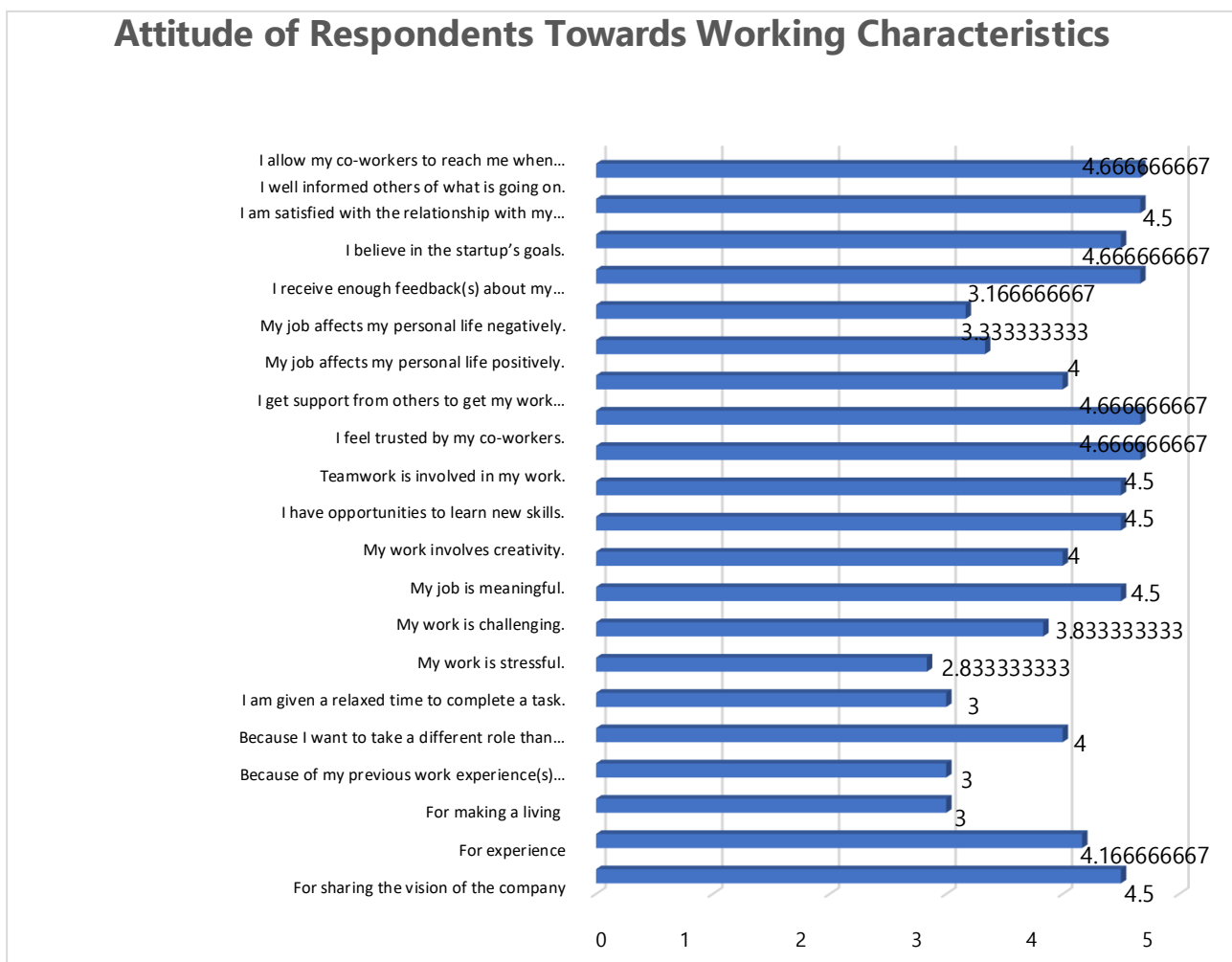
**Fig. 21** Knowledge of respondents regarding startups

## 2.1 Attitude of respondents regarding startups (Pune)

The attitude of respondents is evaluated at quite a high level of agreement with the statements about their working characteristics. There are many statements with the same scores and the difference between each item is tiny. Topping the result are the respondents who allowed their co-

workers to reach them when they had questions/decisions to be made/ideas/need support, well-informed others about what is going on, believed in startup goals, got support from others to get work done and felt trusted by co-workers with the score of 4.6, each respectively (on a scale from 1-5, which is equivalent to Strongly Disagree, Disagree, Neither Disagree nor Agree, Agree and Strongly Agree). On the other hand, respondents were strongly satisfied with the relationship with their colleagues, teamwork in the work, learning new skills, making job meaningful and sharing the vision of the company, which scores 4.5 each respectively.

With the mean score of 4.1, respondents agreed or strongly agreed to share experiences with the employees, while respondents agreed with the statements that their job has a positive effect on their personal lives, work requires creativity and desires to take on a task separate from past work experience, with a mean score of 4. Further, respondents neither agreed nor disagreed about receiving feedback for the performance while the parameters related to job affecting personal life negatively, challenging work, giving relaxed time while working, previous job experience was similar and making a living, with the mean number of 3.8, 3.3, 3.1 and 3 respectively. With the least mean score of 2.8, respondents disagreed and also neither agreed nor disagreed with perceiving the work as stressful.

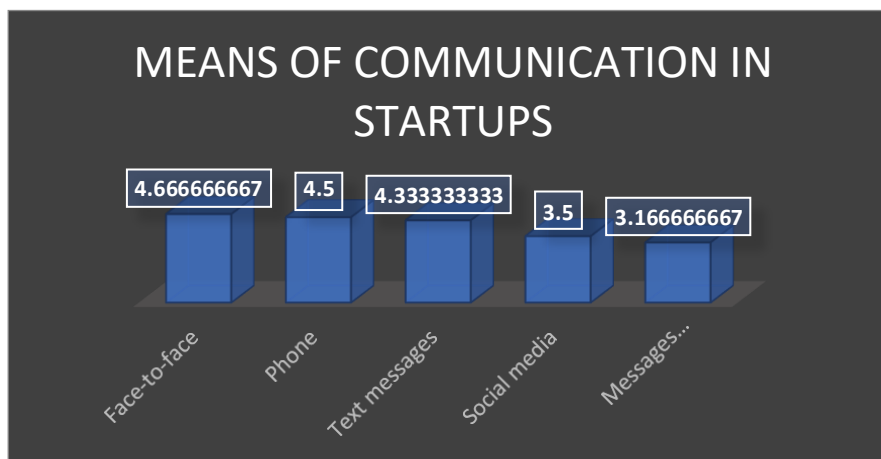


**Fig. 22** Attitude of respondents towards working characteristics



## 2.11 Means of Communication in Startups (Pune)

There is a variability of means of communication used by the startups, which is intensely defined in figure 23. Two utmost widespread ways of communication among startups are the information exchange through phone (Mean: 4.6) and through face-to-face conversation (Mean: 4.5). There are many social media platforms accessible to everyone but information exchange through social media is not favorable among startups, which indicated through the mean value of 3.5 for social media usage and messages through social media (Mean: 3.1). Although technological communication is popular, face-to-face interaction is still in favor, which brings together real human communication with emotions, faster correspondence and more understanding.



**Fig. 23** Means of communication in startups

## 2.11 Ability of Respondents to Apply Their Skills in Startups

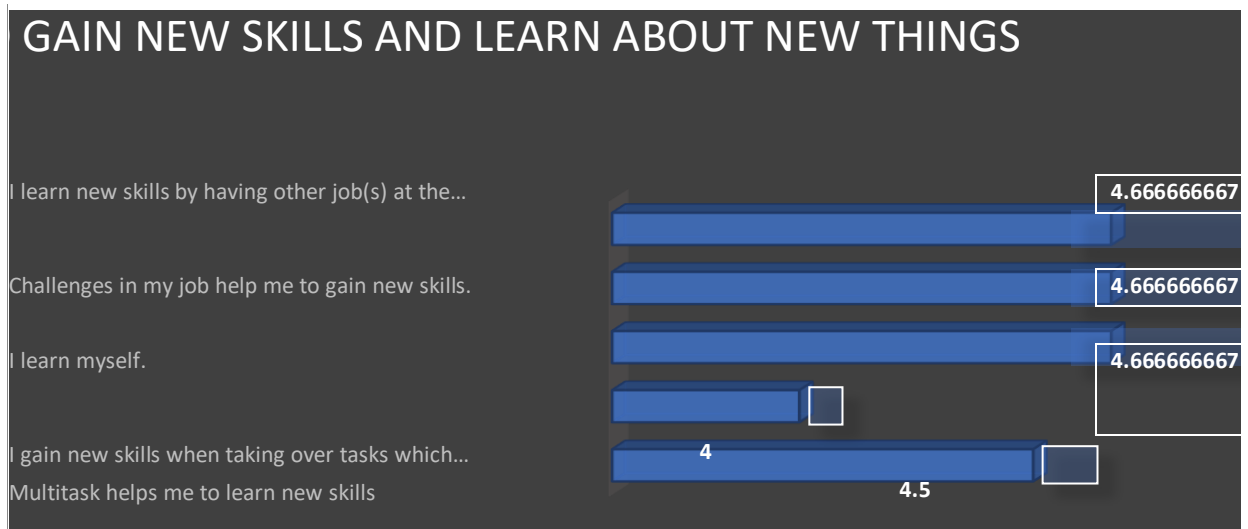
Considering professional skill application, which can be seen in figure 24, almost all the respondents strongly agreed with their skills being relevant, new skills being required and their job is too easy. Working at a startup requires unstoppable learning and doing at the same time to deal with such a harsh workload, especially with a small number of people. Through the bar chart, we can see that the employees, can learn themselves, would become more skillful by taking challenging work, can develop their skills by observing others and can improve their skills through professional training, with the mean score of 4.8, 4.3 and 4 each respectively.



**Fig. 24** Ability of respondents to apply their skills in startups

## 2.12 Ways to Gain New Skills and Learn About New Things

In addition, the survey respondents gain new skills or learn new things by having other jobs at the same time. Working in startups challenges them to gain new skills and learning by themselves (mean value: 4.6, which means strongly agreeing), multitasking (mean value: 4.5, which means strongly agreeing) and agreeing by gaining new skills when taking over tasks that relate to their skills (Mean value:4).



**Fig. 25** Ways to gain new skills and learn about new things

## 2.13 Attitude of Respondents Regarding Startups (Mumbai)

The attitude of respondents evaluated at quite a high level of agreement with the statements about their working characteristics. There are many statements with the same scores and the difference between each item is tiny. Topping the result are the respondents who felt like work involves creativity and a meaningful job, with a mean number of 5 each respectively. Whereas respondents

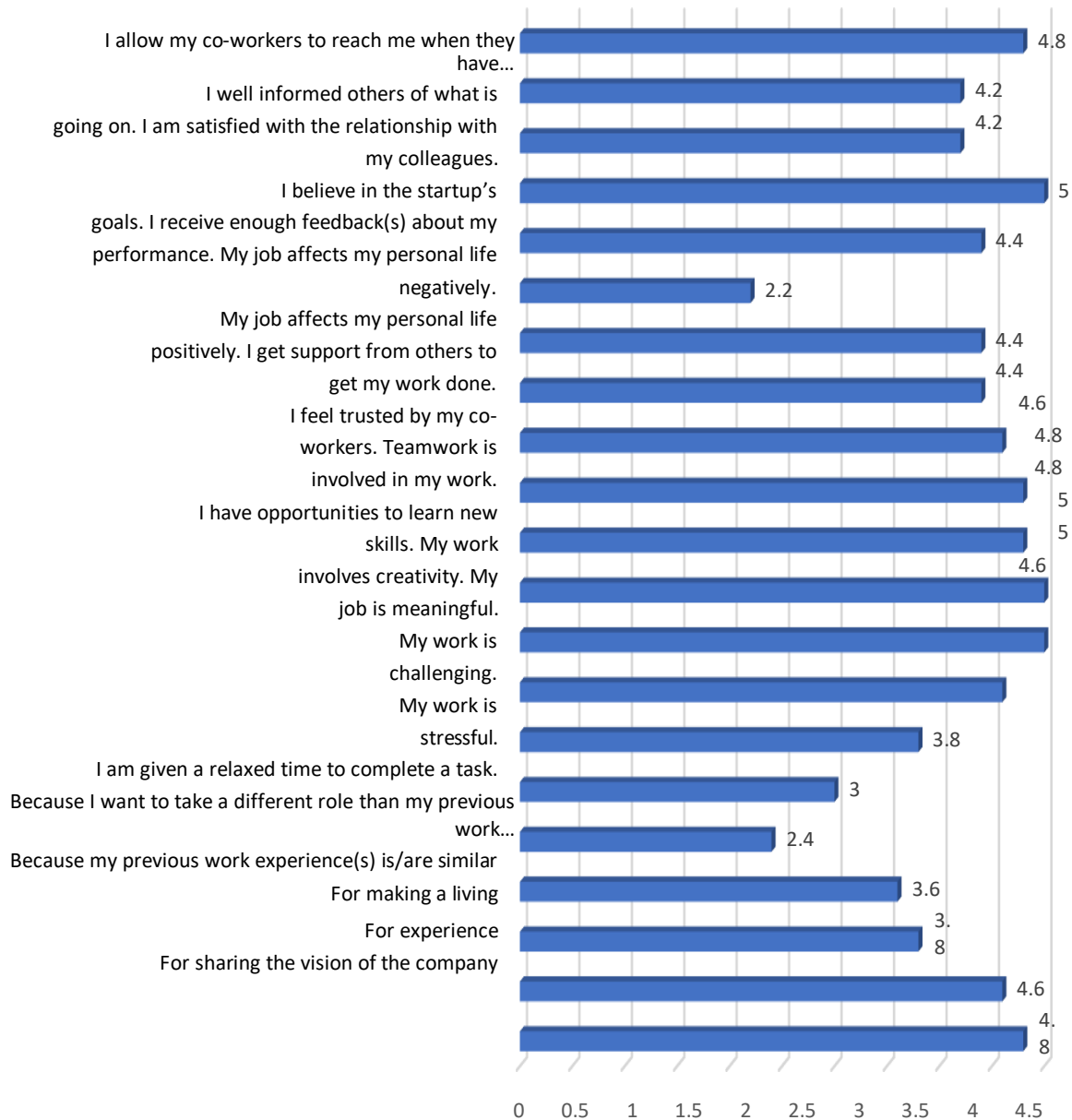
also strongly agree with the statement that they allow their co-workers to reach them when they had questions/decisions to be made/ideas/need support, team work is involved in their work, had opportunities to learn new skills and for sharing the vision of the company, with the mean number of 4.8, each respectively (on the scale from 1-5, which is equivalent to Strongly Disagree, Disagree, Neither Disagree nor Agree, Agree and Strongly Agree). Also, the respondents were strongly agreeing with trusting co-workers, challenging work, feedback about performance, job affects personal life positively and negatively, satisfied with the relationship with the colleagues, which scores 4.6, 4.4, and 4.2 each respectively.

With the mean score of 4.1, respondents agreed or strongly agreed to share experiences with the employees, while respondents agreed with the statements that their job affects personal life positively, work involves creativity and wants to take a different role than previous work experience, with the mean score of 4 each respectively.

On the other hand, the respondents neither agreed nor disagreed about stressful work, given relaxed time while working, previous work experience is similar and for making a living, with a mean of 3.8, 3.6 and 3 each respectively.

With the least mean score of 2.4 and 2.2, each respectively, the respondents disagreed that they wanted to take a different role than their previous work and the job affects their personal life negatively.

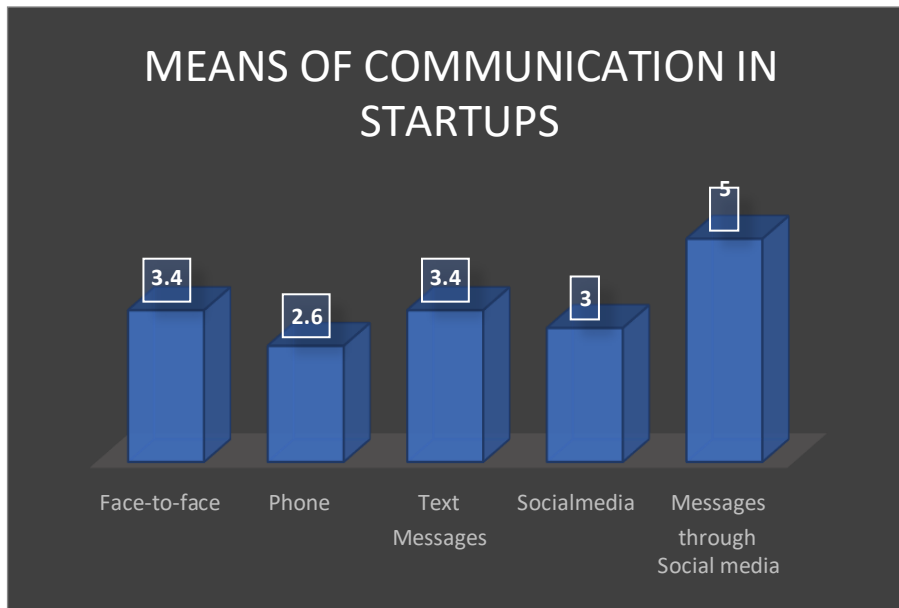
## Attitude of Respondents Towards Working Characteristics



**Fig. 26** Attitude of respondents regarding startups (Mumbai)

### 2.14 Means of communication in startups (Mumbai)

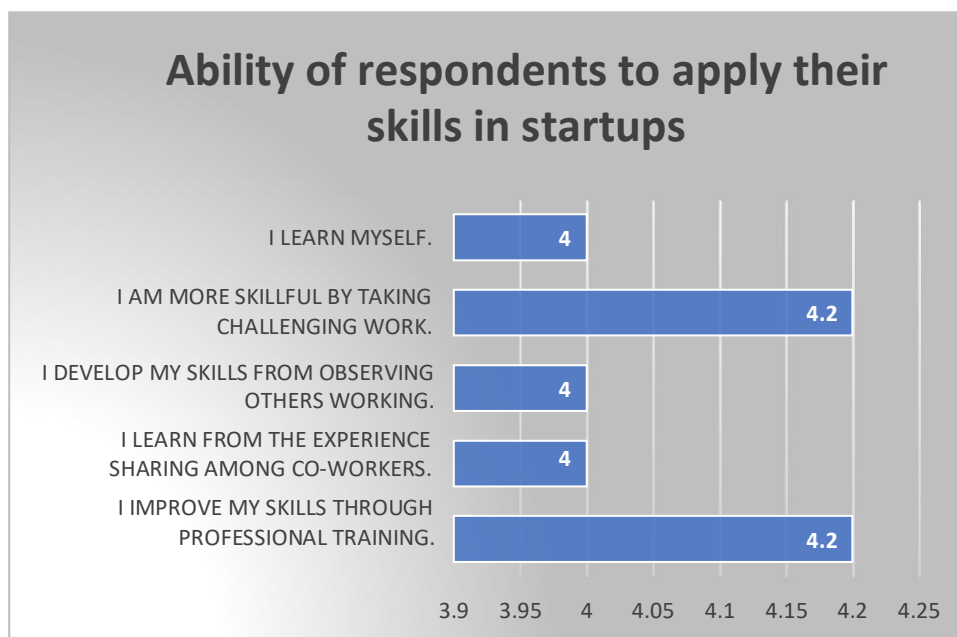
There is a variability of means of communication used by the startups, which is intensely defined in figure 8. The most widespread way of communication among startups was messaging through social media (Mean: 5) and the least one is the exchange of information through a phone with the mean value of 2.6.



**Fig. 27:** Means of communication in startups (Mumbai)

## 2.16 Ability of Respondents to Apply Their Skills in Startups (Mumbai)

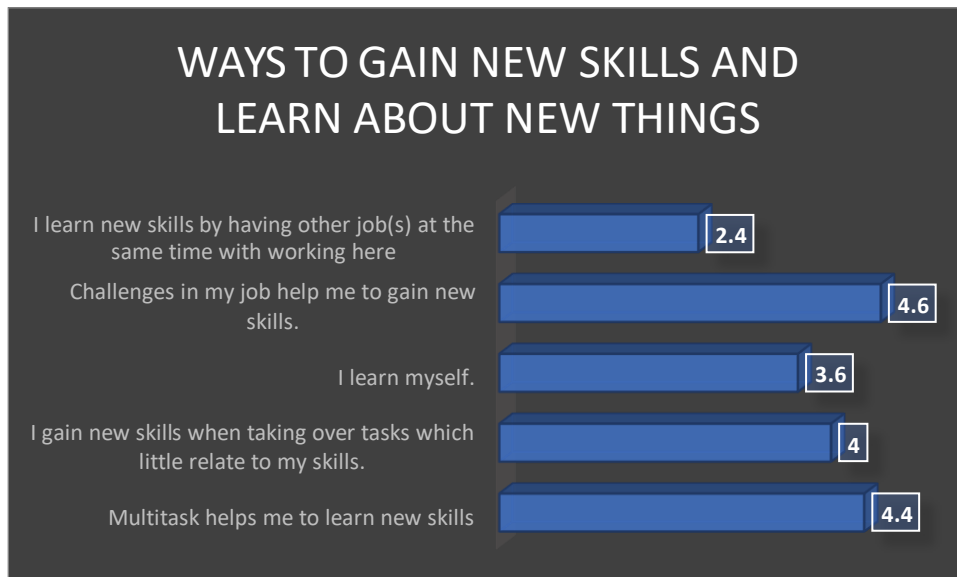
Considering professional skill application, which can be seen from figure 9, almost all the respondents strongly agreed with their skills being relevant, new skills being required and their job is too easy. Working at a startup requires unstoppable learning and doing at the same time to deal with such a harsh workload, especially with a small number of people. Through the bar chart, we can see that the employees who could improve their skills through professional training would become more skillful by taking challenging work, by learning themselves, could develop their skills by observing others with the mean score of 4.2 and 4 each respectively.



**Fig. 28:** Ability of respondents to apply their skills in startups

## 2.17 Ways to Gain New Skills and Learn About New Things (Mumbai)

In addition, the survey respondents gain new skills or learn new things by taking up challenges, by gaining new skills when taking over tasks which relate little to their skills and multitasking (4.6, 4.4 and 4), each respectively, learning by themselves (mean value: 3.6, which means neither agree nor disagree) and learning new skills by having another job at the same time with working in startups (mean value: 2.4, which means disagreeing).



**Fig. 29** Ability of respondents to apply their skills in startup

## Selective Case Studies

After data collection, the primary and secondary data were analyzed concurrently. A case study narrative was constructed to present an in-depth explanation of the startups. The startups are described on various aspects such as year founded, who are the founders, where it is situated, what are the products of the startup, technology used, mode of action, active regions, funding, etc.

### Earth Food

<b>Founded In</b>	2015
<b>Founders</b>	Nilesh Palresha and Siddhartha Khivansara
<b>Headquarters</b>	Pune, Maharashtra
<b>Products' Name</b>	Grocery
<b>Technology Used</b>	Amazon Route 53, Facebook Sharer, and Shopify Hosted
<b>Objective</b>	To sell relatively more affordable 'residue-free' produce (fresh fruits and vegetables)



### Startup Description

Earth Food is 'Farm to fork' in the most ordinary way recognized to man. It has been devoted to offering products in the most sterile and healthy manner, which is produced, grown naturally and in an eco-friendly manner. It uses a healthy mix of traditional means and novelty to keep pollution and surplus to a minimum. It is also slightly touched by humans to avoid adulteration. The products are grown at a 100-acre farm quietly burrowed at the warm foothills of Malthan, Earth Food's vegetables and fruit right from seeding to handpicking, enjoy some of the distinct perquisites of being located further away from the hustle and bustle in the city of Pune.

Its fresh produce includes 40 vegetables like iceberg, broccoli, pokchoy, zucchini, French beans, gawar, ladies' finger and green chilli. Onion and potato are now being introduced and the produce is residue-free. Earth Food safeguards that the eminence of produce is supreme. All operations are handled and managed at Earth Food's estate in Malthan and are finally packed at certified packaging houses that follow universal guidelines in hygiene and nutrition. Earth Food wants Earth Food's consumers to enjoy a wholesome experience when digging into their farm-fresh harvest and is the easiest choice to make.

## Product Portfolio

- All vegetables
- Indian vegetables
- Exotic vegetables



## Mode of Action



<b>Active Regions</b>	Pune, Mumbai, Kolhapur, Bengaluru
<b>Funding</b>	\$949,000
<b>Investors</b>	Rairah Corporation
<b>Website</b>	<a href="http://www.theearthfood.com/">www.theearthfood.com/</a>



## Deals Kount

<b>Founded In</b>	2019
<b>Founders</b>	Joy Chakraborty, Sayandev Ahosh and Atul Phad
<b>Headquarters</b>	Pune, Maharashtra
<b>Products' Name</b>	Grocery
<b>Technology Used</b>	Android



### Objective

To revolutionize the Grocery shopping experience of the consumers with the simplest of the shopping experiences to customers clubbed with the unmatched pace of service delivery and with path-breaking technology as the cherry on the top.

### Startup Description

JARS is a registered company that has been set-up with the strong ideals of 'Make India' at its core. It aims at vesting local businesses with infrastructure that allows them to expand their reach and join the ever-growing online movement. With this, customers are having a hassle-free and pleasing online shopping experience, with the added personal touch and trust factor of interacting with real, local businesses.

It functions with these core values:

- **Trust-based interactions:** Trust, building it and receiving it, is one of the base foundation stones.
- **Convenience with Speed:** Believes in creating solutions that make life easier, but also in a timely manner.
- **Technology-driven:** Being aware and familiar with the latest developments that can innovate and execute the ideas in a better way.
- **Social Consciousness:** Rather than just profit-making, believe in the creation of goodwill. Its vision is to become the destination for grocery and all daily needs for the customers. The one-stop-shop for Goods and Even Local Services. The Numero-Uno market place for all local businesses, helping the businesses to increase their reach and penetration, at the same time helping the consumers to benefit with the best of comfort and convenience. Building a relationship of trust by helping the consumers to buy, what they really need, when they really need it, without any carrots of discount. A business with Heart and Ethos!!!

## Product portfolio

Need veggies... Need kirana... and the list never ends  
 Busy life... Tiring to chase the daily chores...  
 Visit supermarket... Heavy Bills, heavy bags, longer queues, parking woes and so much traffic.  
 Purchase online... But next day delivery and overpurchase in the confusing sea of products...  
 What if we now bring you a solution to all your grocery shopping woes...  
 Bring your daily needs FAST | FRESH | CONVENIENTLY TO YOUR DOORSTEP...

**ab aapka samay sirf apno ke liye...**

Simplyfying Grocery Shopping

**JARS**  
 GOODS. SERVICES. DELIVERY

Special Inaugural offer  
 Free Home Deliveries  
 Lucky Draw Winner  
 Takes Home  
 FREE GROCERY  
 Wroth 2000  
 (Just Shop 500 and  
 Above in Order)

we now bring to you jars

Traditional Shopping Experience... In a New Age Avatar...  
 Our Manrta-Easy Shopping ! Faster Deliveries ! Simple Lives  
 Grocery, Veggies or any products... Whatever You want, JARS Delivers..

**FILL YOUR JAR TODAY**

Find Us on Android app Store as well  
 7249 300 300  
 Just Leave a Missed Call,  
 Time 10 AM to 8 PM  
 To know more Visit us @  
 JARS24.IN  
 order@jars24.in

JARS Delivers:  
 From Your Trusted Local Shops Now On Our Online Platform  
 A Simply Smart Experience, Even Without a Smartphone  
 Easy Ordering Even Crossing The Language Barriers  
 Now just take a snap of your on paper grocery list,  
 send to us via Mobile App or WhatsApp and Relax...  
 We will take care...

Download our app now from  
 Google Play store - JARS Online retails services  
 Apple app store - coming soon

## How it Works

**Call-** Just a Missed call and they will call back to take your order

**WhatsApp-** They are your best WhatsApp buddies ever, just chat with them

**Email-** Just send out your list from the office and before you are home, your goods can be there.

**Mobile App-** Simplest app interface ever. Now, pen down your list on paper in English/Hindi/Marathi- Take a snap - Send to them on the app - DONE - Your ordering complete - Let the magic happen.

**Active Regions** Local area of Pune, Maharashtra

**Funding** 50 lakhs/year

**Investors** Bootstrapping

**Website** [http://bit.ly/App\\_links](http://bit.ly/App_links)

## Orgpick

<b>Founded In</b>	2018
<b>Founders</b>	Mahesh D. Parankar and Santosh Saraf
<b>Headquarters</b>	Pune, Maharashtra
<b>Products' Name</b>	Organic Vegetables, Fruits and Grocery
<b>Technology Used</b>	Android



### Objective

It provides specially handpicked organic products directly from farms to the doorstep and also curates the highest quality organic and non-GMO products.

### Startup Description

Orgpick, as it clearly states, is all about Organic Picks and is built to deliver the best, healthy and certified organic products to its consumers. It is not only a provider of fresh organic produces but also a platform for all sorts of organic products that should be available to everyone. Orgpick believes in TRUST & TASTE that makes every effort and every rupee invested is worth it. It takes pride in being one of the largest producers, suppliers and exporters of premium quality fresh organic produces and other products.

Its vision is to bring back the grace and purity of the environment which is hampered because of many developments that happened over time in the past years. Orgpick is proud to have been supporting organic farmers and manufacturers and help through this small share of effort.

Its mission is to provide a platform to the emerging and settled certified organic farmers and to reach out to the customers. Orgpick aims to reduce the gap between the farmers and the consumers to eliminate the agents and give more benefit to the farmers which they deserve. Also, it helps consumers find everything they need for daily use, on one online platform, with one click and focus to deliver the best quality to consumer's doorstep.

### Product Portfolio

Organic farming, organic products, organic fruits and vegetables, organic personal care, chemical-free products, organic agriculture, USDA certified organic products, and organic natural food and grocery.



**How it Works**

**DIRECTLY PICK FROM FARM**



It's all about the family and freshness here. This family-owned operation is all about good food and good times. None can defeat the taste of fresh vegetables or the flavour of fresh fruits picked directly from the farm. Orgpick is here to erase your efforts for searching and trusting the fresh vegetables and fruits.

- Active Regions** Pune, Maharashtra
- Funding** More than 50 lakhs/year
- Investors** Bootstrapping
- Website** <http://www.orgpick.com>



## FarmBee

**Founded In**

2017

**Founders**

Rajiv Tevtiya

**Headquarters**

Pune, Maharashtra

**Products' Name**

Fruits and Vegetables

**Technology Used**



Hour wise weather, temperature, humidity and wind speed.

## Objective

FarmBee brings technology to every farmer to achieve a sustainable environment and making farming a great business by removing information asymmetry and access to technology.

## Startup Description

By 2050, world food production has to be 2.5 times more than the current level while dealing with rapid loss of agricultural land to urbanization, dramatic changes in climate, deep impact of cancer-causing chemicals as well as changing food habits. If there is one person who deals with these huge challenges on a daily basis, problems that are resourceful and influential individuals, organizations and governments, it is the farmer.

And to think that our food security and the extension of the survival of the species are dependent on the farmer working around these challenges without help, can easily demonstrate the magnitude of the problems staring at us. FarmBee is at the forefront of solving this through the use of digital technology making world class, data-driven precision agriculture solutions available to farmers at a fraction of the cost.

FarmBee is bringing the power of data science for improving the profitability of farmers by impacting production, marketing of produce and guiding farmers in identifying areas of improvement in production and helping them to optimize the supply chain. This will improve farmer's ROI by 3 times. Improving the income of farmers and long term environmental impacts can be achieved by empowering them with digital technology.



## Product portfolio

Precision Agriculture, Technology, Internet, IoT, Data Science, Artificial Intelligence, and Machine Learning



**Active Regions**

Pune, Maharashtra

**Funding**

\$4M

**Investors**

IvyCap Ventures and Thomson Reuters

**Website**

<https://farmbee.in/>

Arming the farmer with data, digital plough

Ashish Rukhaiyar

MUMBAI, MARCH 28, 2017 00:33 IST  
UPDATED: MARCH 28, 2017 11:27 IST

SHARE ARTICLE: f 143 t w e 3 PRINT A | A | A

The image shows a man in the foreground, looking towards the camera. Behind him is a wall densely packed with framed items, including newspaper clippings with headlines like 'ERUCAFALL' and 'ERUCAFALL', as well as photographs of people working in agricultural fields.

## AgroStar

<b>Founded In</b>	2008
<b>Founders</b>	Shardul Seth and Sitanshu Seth
<b>Headquarters</b>	Pune, Maharashtra
<b>Products' Name</b>	Seeds, Fertiliser, Pesticides and Agri-implements
<b>Technology Used</b>	AgroStar Farmer App, AgroStar Doctor App



### Objective

To simplify the whole Agri-Business experience of farmers in rural India by addressing the challenges of Indian farmers through smart and innovative uses of technology.

### Startup Description

AgroStar is India's foremost AgriTech start-up that helps farmers win through the right advisory and solutions, powered by data and technology. Indian farmers face multiple challenges in getting right, timely and actionable agri information as well as in procuring Agri inputs for their farming needs.

AgroStar aims to simplify the whole Agri-Business experience of farmers in rural India by addressing the challenges of Indian farmers through smart and innovative uses of technology. AgroStar's service is powered by over 400 highly motivated employees and a state-of-the-art multilingual customer care center.

AgroStar currently operates in the states of Gujarat, Maharashtra and Rajasthan. Farmers in these states can avail agri solutions for their entire crop life-cycle with a simple mobile-based technology through the company's m-commerce platform and a free to download mobile app 'AgroStar'.

AgroStar focuses on four consumer-centric pillars – agri advisory solutions, quality service, genuine & quality products and fair pricing. AgroStar differentiates itself from conventional players through extensive utilization of technology and data to build scalable systems & processes.

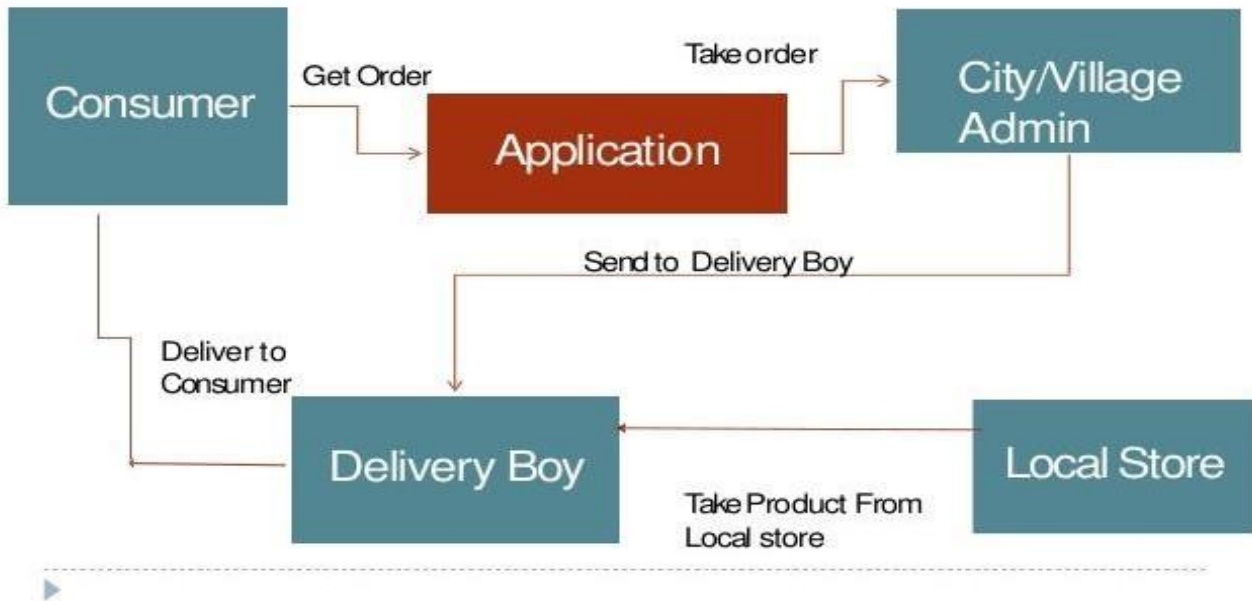
### Product portfolio

AgriTech, Agriculture, Technology, Agribusiness, m-commerce, Farming, Rural e-commerce, AgTech, and Make in India



**How it Works**

**How does Company Works?**



**Active Regions**

Maharashtra, Gujarat and Rajasthan

**Funding**

\$41M

**Investors**

Accel Partners, Aavishkaar Venture Management Services, Bertelsmann India Investments, Chiratae Ventures, Aavishkaar Venture Capital

**Website**

agrostar.in



## Rus Organic Bot Organic

<b>Founded In</b>	2018
<b>Founders</b>	UjvalaVemparala Abirami, Manju Balasubramanian
<b>Headquarters</b>	Mumbai, Maharashtra
<b>Products' Name</b>	Fruit Juices And Fruit Beverages; Fruit Juices And Drinks
<b>Technology Used</b>	Cold press machine, Vegetable washer, HPP machine, Bottling/Capping/Filling, Label machine, Smoothie machines, Bottle washing machine



### Objective

To provide people with the most delicious, nutritious juice to nurture both body and soul. And Rus juices are made with fresh & organic fruits and veggies, cold-pressed into every Rus bottle, with no added preservatives, sugar or water.

### Startup Description

Rüs Juices are made with fresh & organic fruits and veggies, cold-pressed into every Rüs bottle which is delicious, healthy and nutritious juices.

Rüs Organic started as a passion project, a merge between many different loves in life. The passion for organic food grew from the need to maintain a better lifestyle. With health problems on the rise at a young age, the most important thing was to commit to a change in lifestyle and diet; thus, the switch to organic was a no brainer. So they made it, from produce to their soaps, all the way down to the little dogs' food. The attention to these finer details in one life really sees what we were consuming and what we were using. It made us more aware of the surroundings and how exactly we were treating our bodies.

The second was the love of home, motherland, the cultural roots that defined us and lived on with us no matter; India has always been a huge part of my life, from our cultural heritage and identity to my daily customs and traditions. I have always loved this country, I have always been in a situation that has defined me, whether I like it or not. When I first started a smaller scale juicing project in Qatar, my main issues were to find reliable sources of produce.

With the growing difficulties in the region, I decided to turn back to my home to source organic products. Whether it was for my small business personally or supermarkets in the country, the need for affordable organic was there. I also felt an affinity towards farmers in India. Listening to the issues of farming and how GMO seeds and pesticides were killing the farming industry in India, I decided that this was the path to go. Not only was I able to source from India but also I was able to

aid in becoming part of a new system that helped an important source and industry in India. This eventually led me back to coming here and setting up my own business that was 100% Indian, supporting the Make in India cause.

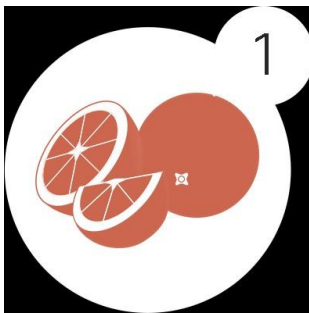
The last was a love for food. As a young teen trying to shed my weight in university, I often tried out different juices and smoothie shops all over New York City. When I decided to visit my dad in Qatar, I realized that there was a huge problem in good food and beverage that was healthy for you. Thus, the idea to create a juicing brand was formed. I tested it on a variety of people, from every shape and size to all ages. I created the best tasting healthy drinks that shined in a very closed off the unhealthy market. Therefore, I soon decided that I needed to shift to India and make my base shine as much as my products do. At Rüs Organic, we plan on taking over the world one juice at a time, and we know you'll be cheering us on every step of the way.

### **Product Portfolio**

There are five available types that are being sold: Sunshine (made with orange, carrot, ginger and lemongrass), Champion (spinach, cucumber, carrot and parsley), Crave (beetroot, apple, carrot, orange and ginger), Beautician (watermelon, carrot, and mint), and Flame (tomato, cucumber, parsley, green chilli, salt). It also includes Organic Products, Organic Contract Farming, and Eco-friendly Packaging.



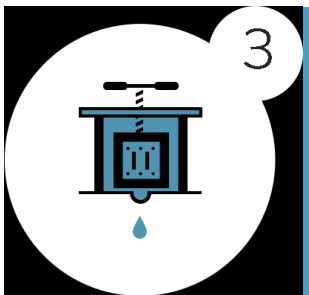
## How it Works



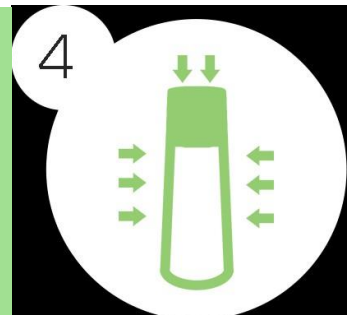
Handpick 100% Certified Organic Fruits and Vegetables



Fruits and vegetables are properly washed for quality check.



Vegetables and fruits are then juiced with cold-press technique



The delicious and nutritious juices are then bottled and placed through High Pressure Processing

### Active Regions

Mumbai, Bangalore, Pune and Bahrain

### Funding

Undisclosed

### Investors

Herself, Family

### Website

<http://www.rusorganic.in>

## Agribazzar

<b>Founded In</b>	2016
<b>Founders</b>	Amit Khandelwal, Suresh Chandra Shyamlal Goyal, Amith Agarwal and Amit Goyal
<b>Headquarters</b>	Mumbai, Maharashtra
<b>Products' Name</b>	Nursery, Agri Products, Crops, Pets, Vegetables, Organic, Flowers, Medicinal Herbs, Services, Live Stock, Jobs, Aquaculture, Fertilizers, Fruits, Machinery & Equipment, Spices & Seeds, Poultry, Miscellaneous
<b>Technology Used</b>	Mobile App



### Objective

Private mandi is an initiative to provide various services to the customers under one roof. Its primary objectives are to eliminate the inefficiencies in the agri value chain by providing quality infrastructure services and access to finance. Also, it aims to provide direct access to farmers to an alternate and efficient marketplace.

### Startup Description

Agribazzar is a one-stop agritech platform that is an intelligent and intuitive system for delivering future-ready solutions to shape Indian agriculture. The cutting-edge technology and tools ensure the dependability, consistency, and sustainability of the fragmented agri-businesses.

With services like precision agriculture, warehousing, agri-trading and finance & payments, Agribazzar spans across geographies and enhances the efficiencies of the entire ecosystem. The first quarter of 2017 was the fortunate beginning of the agritech journey with the aim of breaking all barriers that the farmers and traders face in India in terms of agricultural technology, cost, and support.

In due course, certifications – ISO 22301:2012, ISO 9001:2015, and ISO/IEC/27001:2013 were added on to the innate capability of providing online services for e-procurement, auctions and trade of agri commodities, developing IT tools, IT solutions and services for building an online commodity market for traders, farmers, processors etc.





**Product Portfolio**



Boostry Starter



Groundnut



Rice



Mushroom spawn or mushroom seeds



Coconut fibre dust manure



Orange dwarf coconut plant



Organic cocoa beans



Cashew nuts



Kabuli chana



Solar dehydrated garlic powder



Mobile Motor Starter



Housefly Domo Trap and Lures



Organic farm produce



Forest tree seeds



Black kavuni rice

### Active Regions

Mumbai and Kota, Rajasthan

### Investors

Savings and Family

### Website

<http://www.agribazaar.com>

## Bombay Hemp Company

### Founded In

2013

### Founders

Avnish Pandya, Chirag Tekchandaney, Jahan Peston Jamas, Sanvar Oberoi, Sumit Shah, Yash Kotak.

### Headquarters

Mumbai, Maharashtra

### Products' Name

BOHECO Life (Hemp Health & Nutrition)  
B Label (Natural Hemp Clothing & Accessories)  
Hemp Fabric Lab (Sustainable Hemp Fabrics)  
BOHECO Textiles (Hemp Yarns & Fibres)

### Technology Used

Viewport Meta, iPhone/Mobile Compatible, SPF, Google Analytics, Vimeo, and Google Tag Manager



### Objective

'Educate. Cultivate. Elevate' is the basic mission of the company- Educating the masses about the crop, cultivating it for industrial uses and also processing the same to elevate our existing standard and manner of living.

## Startup Description

Bombay Hemp Company, also known as BOHECO, is a privately held, social enterprise headquartered in Mumbai, India. BOHECO was founded to research and promote industrial hemp, the super crop of our era in India. BOHECO was formally registered under The Companies Act (1956) on 19th January 2013, with their operations ranging from research, cultivation, harvesting, processing, manufacturing, trading, wholesaling, retailing, innovating, advocating, creating a market for and promoting Indian industrial hemp both across the nation and around the world.

They use public-private partnership, contractual farming and processing, subsidiaries and collaborative research models, all with an aim to build an industrial hemp ecosystem or industry here. It goes beyond the realm of a traditional, agriculture centered manufacturing company, owed to direct social engagement with rural communities, besides their on-going work towards creating this industry and the consequent employment generation, along with the revival of Indian agriculture.

BOHECO is an ethically, scientifically and legally driven company that does not promote the misuse of any psychotropic substance, but instead works proactively, with the government to develop, promote and use no/low THC Cannabis sativa plant varieties. In 2017, we were awarded the Second Runner-Up position at the Tata Social Enterprise Challenge, a joint initiative by the TATA group and the Indian Institute of Management (IIM) as well as, The Social Innovation Leadership Award, at the Social Innovation Conference Awards, on World CSR Day.

## Product Portfolio

Hemp is deemed to be the plant kingdom's most sustainable resource and the only seed to produce Edestin Protein- a protein source that is highly soluble by the human body.



Hemp Seed Powder



Hemp Hearts and Hemp Seed Oil



## How It Works



### 1. Seed Breeding and Genetic Development.



### 2. Farming



### 3. Post-Harvest



### 4. Material Science Application



Optimum seeds are vital to ensure standardized output and to advance this project, BOHECO maintains a Public-Private Partnership (PPP) through Athulya Krishi Foundation (AKF) with various government-run scientific institutions. Once the seed is standardised, efficient farming takes flight.

Given hemp's identity as a feral plant in India, BOHECO trying to abide by the Standard Operating Procedures (SOPs) to grow it in an organized manner with a purpose. Drawing from technological advancement and home-grown wisdom, BOHECO perform fibre separation and oil extraction using natural processes that are harmless to the environment. For each hemp application, there is a specific post-harvest technique that ensures the best quality product.

BOHECO is creating a repository of hemp-related information wherein business and scientific acumen is combined to create hemp- building material or powered technology. They have handpicked hemp applications such as eco-friendly hempcrete, carbon nano-sheets to power batteries, and seed research to develop medicine.



<b>Active Regions</b>	Uttarakhand, Kashmir
<b>Funding</b>	\$1.3 M
<b>Investors</b>	Mukhtar Tejani, Ginni International, Nikhil Velpanur, RajanAnandan, Ratan Tata, Yash Kela, MA Tejani, SrinivaasSirigeri
<b>Website</b>	boheco.org

## FarmLink



<b>Founded In</b>	2014
<b>Founders</b>	Avnish Pandya, Chirag Tekchandaney, Jahan PestonJamas, SanvarOberoi, Sumit Shah, Yash Kotak
<b>Headquarters</b>	Mumbai, Maharashtra
<b>Products' Name</b>	Farming Service, Fresh Fruits

### Objective

It aims to transform the way fresh produce is grown and distributed in India by introducing global best practices. In parallel, we empower the farmers by providing knowledge & extension services such as agriculture credit, crop insurance and warehousing.

### Startup Description

Farm Link is India's first 'one-stop-shop' back-end partner for industrial off-takers of fruits & vegetables in India, focused on modernizing and transforming the supply chain across the country. FarmLink, a fruits and vegetable supply chain company, is on a mission to address the biggest challenges in Indian agriculture. The company is modernizing the way fresh produce is grown and distributed by introducing global best & agronomy practices, providing knowledge & extension services to the farmers and building robust supply networks while maintaining the shortest life cycle from production to consumption.

With a focus to develop India's under-served regions, FarmLink is helping Indian farmers to improve the quality and productivity of the product while creating more value and getting a better price from the consumers. FarmLink caters to the vegetables and fruits demand of industrial scale off-takers such as big retail stores, Hotels-Restaurants- Cafes (HORECA) chains, industrial processors and emerging e-commerce food platforms.

It seeks to become the backend supply chain partner (i.e. 'one-stop-shop') and most preferred supplier of value-added fresh produce for the industrial sized customers ensuring end-to-end value chain control, food safety, digitization, farmer engagement and social responsibility.

## Product Portfolio

- Product range includes a wide range of Farming Service for Papaya, Farming Service for Onion, Farming Service for Banana, Farming Service for Potato, Agro Farming Services and Farming Service for Chilli.
- Fresh Fruits

## How It Works

### If you are a Farm Seeker

**Register:** Go to Get Started, then check your email for the prompt to reset your password.

**1. Create a Farm Seeker profile:** Sign In and scroll to the top right corner where you see your email address, hovering there will display the tabs 'My Account', 'My Matches', 'Basic Profile', 'Advanced Profile', 'Inbox' and "Sign Out".

**Basic Profile** – "About Me" biographical info is what appears as the first description on your profile page. Be short, descriptive and be sure to highlight the unique aspect of what you would bring to a farm opportunity. The answers to the following checkboxes will help match your criteria to that of farm opportunities. So, be as precise and realistic as possible.

**Advanced Profile** – Complete each of the four questions in as much detail as possible. Click the blue "I" buttons for tips on what to add.

**My Matches**– This feature suggests the top 20 matches based on your completed profile.

Take time to add as much information as possible such as profiles that include detailed experience, farm vision and include a photo as they get the most traffic. Don't forget to read through the Farm Seeker Primer for tips to help you get ready for land.

Now see who is out there!

Once your profile is created, check out the Farm Opportunities and use the filters to search by province, type of opportunity, acreage and facilities available and more!

### If you are a Farm Opportunity

**Register:** Go to Get Started, then check your email for the prompt to reset your password.

**1. Create a Farm Opportunity listing:** Sign In and select 'Activate Account'. Scroll to the other top right corner where you see your email address, hovering there will display the tabs 'My Matches', 'Manage Listings', 'Inbox' and "Sign Out".

**Manage Listings** – Select '+ New Listing'. Work your way through the short answer and checkbox questions, being as precise, descriptive and honest as possible. Click the blue "I" buttons for tips on what to add.

**My Matches**– This feature suggests the top 20 matches based on your completed profile.

<b>Active Regions</b>	Karnataka, Telangana and Maharashtra
<b>Funding</b>	\$3 million
<b>Investors</b>	Syngenta AG
<b>Website</b>	<a href="http://www.farmlink.in">http://www.farmlink.in</a>



## Go4Fresh

<b>Founded In</b>	2014
<b>Founders</b>	Maruti Chapke and Sarang Vaidya
<b>Headquarters</b>	Mumbai, Maharashtra
<b>Products' Name</b>	Conventional, Organic, Exotic fresh Fruits and Vegetables
<b>Technology Used</b>	Web and App based



### Objective

To bring healthy farm produce to consumers' doorsteps straight from farms that adopt sustainable Agri practices.

### Startup Description

Go4fresh is a social enterprise integrating sellers with buyers of fresh fruits and vegetables. It aggregates demand and delivers a wide range of regular, exotic and organic produce directly from farms to stores of B2B customers - retailers, wholesalers, food processors, restaurants, exporters

and institutional kitchens. We support local produce, local communities and small farmers on crop planning in alignment with market places, upgrading farm side infrastructure and transition to sustainable practices. It leverages technology to assure smooth order execution from farms to stores while organizing quality checks, distribution and traceability. It also offers value added services like custom packaging, labelling and shelf life extension of fresh produce.

## Mission



- To make available rightly sourced and safe food by adopting sustainable practices & effective use of technology.
- To offer convenience through effective use of technology.
- Be a preferred fresh produce category interface to our customers.
- Develop an accessible marketplace for farmers, food processors and entrepreneurs in the produce supply chain.
- Create value for the customers, producers, employees and all stakeholders by optimizing resources.

## Vision



To support 1 million F&V farmers in India and cut annual F&V waste by 1 million MT by the year 2030.

## Product Portfolio





## How It Works

### Integrating Sellers and Buyers of Fresh Fruits & Vegetables



It eliminates the presence of middlemen in the procurement process, reduces the burden on farmers to arrange for transport to reach government-operated auction houses or 'mandis', enables farmers to realize prices upfront and reduces post-harvest losses stemming from lengthy procurement and distribution activities.

Buyers place orders on the Go4Fresh platform, which then conveys this information to its Farm Collection Centers two days prior to the order delivery date. The team then visits farmers on their fields and procures all their produce for an upfront price. The produce is then sorted, graded and packaged at the farm gate, and transported to buyers. Farmers dealing directly with the enterprise are paid immediately. Farmers who are associated with aggregators receive payment in a two-step process – Go4Fresh pays the aggregators within 15 days, who then pay the farmers.

<b>Active Regions</b>	Mumbai, Pune, Hyderabad and NCR region
<b>Funding</b>	\$1.2 M
<b>Investors</b>	Angel Investors and TATA Trust
<b>Website</b>	<a href="http://www.go4fresh.in/">http://www.go4fresh.in/</a>

### (Customers Services)





**(Farmers Services)**



**CIRCOT**

**Founded In**

1924

**Director**

Dr. P. G. Patil

**Headquarters**

Mumbai, Maharashtra

**Services**

- Testing Service
- Consulting Service
- Calibration Cotton Standards
- Library
- Databases

**Technology Used**

- Ecofriendly preparation of absorbent cotton for medical & hygiene products
  - Antimicrobial
  - UV protection
  - Water repellency Nano finishing technologies for cotton textiles
- Cotton rich blends for functional textile applications
- Innovative finishing processes for garments & home textiles: mosquito repellent, pesticide protection cloths & denim
- Software module for non-metameric color matching in textiles
- CIRCOT calibration cotton for global outreach
- Sustainable business model for cotton at the village level:
  - Quality based trading



- Supply chain logistics (custom hiring) for chipped cotton stalk supply
- Value addition to cotton biomass
- CIRCOT mini card for sliver preparation
- Microbial De gossypolisation of cottonseed meal for poultry, fish & piggery sectors
- Enhancing farmers and other stakeholders' income by Cotton value chain through startup & entrepreneurship development
- Cotton Trading based on Quality Parameters for better price & remuneration to Farmers

## **Facilities**

- Modern Ginning & Allied Machinery (at GTC Nagpur)
- High Volume Instrument(HVI)
- Advanced Fibre Information System(AFIS)
- Scanning Electron Microscope
- X-Ray Diffraction
- Universal Tensile Tester, Tensorapid, Evenness and Hairiness Tester
- Vibroscope
- Miniature & Full Scale Spinning Machines
- DREF Spinning System
- Core & Compact Spinning Systems
- Banana Fibre Spinning Machines
- Circular Knitting Machines
- Computerised Sample Weaving Machine
- Compression Moulding Machine
- Kawabata Evaluation System(KESF)
- Contact Angle Tensiometer
- Gas Chromatography with Mass Spectrometer(GC-MS)
- High-Performance Liquid Chromatography(HPLC)
- Fast Protein Liquid Chromatography(FPLC)
- Atomic Force Microscope(AFM)
- Thermo Gravimetric Analyser & Differential Scanning Calorimeter
- Fourier Transform Infrared Spectrometer(FTIR)
- Atomic Absorption Spectrometer(AAS)
- Plasma Reactor for Textile Materials
- UPF Analyser
- Ultra-High Pressure Homogenizer
- Nano Particle Size Analyser
- Pulp, Paper and Board Making and Testing Facilities
- Scientific Cotton Seed Processing Pilot Plant (at GTC Nagpur)
- Data analysis software (SAS & MATLAB)

## Objective

- Incubation and business development in cotton and its by-products.
- Techno-entrepreneurial activities in cotton value chain for building prospective clientele.
- Skill development in selected stakeholders related to the cotton sector.

## Description

A premier constituent institute of the Indian Council of Agricultural Research is engaged in carrying out basic and strategic research in the processing of cotton & its agro-residues, development of value-added products and quality assessment of cotton.

The institute extends effective technological support to the country's cotton breeding programme for varietal development with improved productivity and quality that suits industry needs. CIRCOT is an ISO 9001:2008 certified institute and is an accredited laboratory under NABL (ISO 17025:2005), functioning as Referral Laboratory for cotton textile.

The institute has a vibrant Agri-Business Incubation Centre, promoting sustainable startups based on post-harvest processing technologies developed in the institute. CIRCOT plays a vital role in human capacity building in the sector through its skill development initiatives by offering need-based expert training programmes. The institute has implemented the Cotton Technical Assistance Programme to strengthen the cotton value chain and capacity building in selected African Countries.

CIRCOT also provides consultancy services to its stakeholders in the area of ginning, scientific processing of cottonseed, textile processing and application of nanotechnology in textiles and agriculture. Through its services, CIRCOT has created effective linkage with farmers, industries, machinery manufacturers, and institutions at the national and international levels.

This centre envisages facilitating incubation of new startups/entrepreneurs & enterprises for innovative technologies by providing need-based physical, technical, business and networking support, facilities and services to test and validate their venture before the successful establishment of enterprises. Presently, the ICAR-CIRCOT-ABI centre is promoting entrepreneurs in fields of antimicrobial textile finishing, degossypolised cottonseed meal for poultry feed, cotton rubber composite batons for police force, various applications of nano cellulose in paper and composites.

## Vision

Global Excellence in Cotton Technology





## Mission

To provide scientific and managerial interventions to postharvest processing and value addition to cotton and other natural fibres and utilization of their by-products to maximize economic, environmental and societal benefits.

## Our Core Areas:

**Core Area I:** Pre-Ginning and Ginning

**Core Area II:** Mechanical Processing, Technical Textiles and Composites

**Core Area III:** Characterization – Cotton and Other Natural Fibers, Yarns and Textiles

**Core Area IV:** Chemical And Biochemical Processing & Biomass & By-Product Utilization

**Core Area V:** Entrepreneurship & Human Resource Development

## Service Portfolio



## How It Works



**Website**

<http://circot.res.in/circot/>



## Summary and Conclusion



A successful startup cannot start a business just with passion and an idea. It faces many challenges too. So, to cope up with the problems of startups, one should have a high level of leadership skills with a clear understanding of the market, excellent communication skills, maturity to see things in the right perspective along with the ability to take calculated risks are required on the part of the entrepreneur (Adminplanthy, 2017).

India is currently hosting more than 450 agritech startups, according to the National Association of Software and Service Companies (NASSCOM) report (12 August 2019) and India is growing at a rate of 25 percent, year on year and has witnessed some global and sector-focused funds directly investing in agritech startups over the recent years. This sector has received more than \$248 million in funding, a rise of 300 percent as compared to the previous year. With more and more local farmers accepting innovative startup solutions, there has been a considerable shift witnessed from B2C to B2B startups.

It is estimated that by 2020, the agritech sector will be at the centre stage of innovation and will lead India's journey towards overall transformation. Therefore, the ecosystem needs to focus on driving innovation, data collaboration, easy working capital and providing digital infrastructure to enable real-time access to farmers across the country. Therefore, keeping these factors in mind the present study was planned with following the objectives:

1. To assess the knowledge and attitude of respondents regarding agribusiness and agritech startups and agribusiness incubation centres in Maharashtra state.
2. To conduct case studies of selected agribusiness and agritech startups and agribusiness incubation centres in Maharashtra state.

## Methodology

The study was conducted in Pune, Mumbai and Nagpur region of the Maharashtra state which was selected purposively. A total of 11 agribusiness and agritech startups and one agribusiness incubation centre was selected purposively. Independent variable includes socio-personal variables and two dependent variables viz., knowledge and attitude of respondents regarding agribusiness and agritech startups and agribusiness incubation centres were selected. Also, case study was prepared of selected agribusiness and agritech startups and agribusiness incubation centre.

A well-structured interview schedule was used as a tool for data collection including all the variables of the study. Data were collected personally by the researcher from the founder/employees of the startups and incubation centres. Statistical tools applied for data analysis such as frequency, percentages and weighted mean.

## Major Findings

### Profile of respondents

The socio-economic personal profile of the respondents revealed that in Pune and Mumbai, the majority of the male respondents were below 35 years of age, educated up to post-graduation and were married.

### Knowledge of respondents regarding agribusiness and agritech startups

#### Pune

- Most of the respondents had started their agritech startup after 2017 which comprised of 20-40 employees and their team members are working on a full-time project. The selling of products/services was from B2B. They had accounts on LinkedIn, YouTube, Facebook, Instagram and Twitter and had never received rewards after completing an important task. They got free food/drinks during working hours in startups.
- The majority of the respondents' perspective of career promotion was likely to be promoted further and their revenue source was product sales. They used to build to sell as their exit strategy and communicated in both formal and informal ways with the other employees.
- Regular trainings were organized to keep their staff up to date with the working of an organization and teams/departments. Also, parties were organized to reduce the stress of the employees. The majority of the respondents looked for qualifications in people to become their employees. For measuring the performance of the employees, the quadrant method was used by the respondents.

#### Mumbai

- The majority of the respondents had started their agritech startup from 2012-2017, comprising of 20-40 employees and their team members are working on a full-time project. The selling of products/services was from B2B and B2G. They had accounts on Facebook and LinkedIn and had never received rewards after completing an important task. They got medical facilities during working hours in startups.
- The majority of the respondents told that they had the opportunity of career promotion in the startup and their revenue source was product sales. More than half of the respondents used to build a long-term corporation as their exit strategy and communicated only in a formal way. Weekly meetings were organized to keep their staff up to date with the working of an organization and teams/departments. Also, breaks were given to employees to reduce their stress levels. The majority of the respondents looked for learning-oriented people to become their employees. For measuring the performance of the employees, the quadrant method was used by the respondents.

### **Attitude of the respondents regarding agribusiness and agritech startups**

#### **Pune**

- The majority of the respondents strongly agreed that they allowed their co-workers to reach them when they had questions/decisions to be made, well informed others of what is going on, believed in startup goals, supported by others to get work done and felt trusted by their co-workers. The widespread ways of communication among startups were the information exchange through phone and through face-to-face conversation.
- Almost all the respondents strongly agreed with their skills that they could learn by themselves and would become more skillful by taking challenging work. Most of the respondents strongly agreed that they could gain new skills or learn new things by having a job at the same time working in startups; challenges help them to gain new skills and also learning by themselves.

#### **Mumbai**

- The majority of the respondents strongly agreed that they allowed their co-workers to reach them when they had questions/decisions to be made, teamwork was involved in their work, had opportunities to learn new skills and sharing the vision of the company. The widespread way of communication among startups was messaging through social media.
- Almost all the respondents strongly agreed with their skills that they could improve their skills through professional training and would become more skillful by taking challenging work. Most of the respondents strongly agreed that they could gain new skills or learn new things by taking challenges.



## Case Studies of Agribusiness and Agritech Startups and Agribusiness Incubation Centres

- The case studies of startups made were Earth Food, DealsKount, Orgpick, NinjaCart, FarmBee, AgroStar, Rus Organic Bot Organic, Agribazaar, Bombay Hemp Company, FarmLink and Go4fresh.
- The startups used to deliver fruits, vegetables, organic fruits and organic vegetables, seeds, fertilizers, pesticides, agri-implements, crops, flowers, medicinal herbs, livestock, aquaculture, spices, poultry, BOHECO Life, B Label, Hemp Fabric, BOHECO Textiles and farming services to the customers.
- Startups were using various technologies for products/services such as Amazon Route 53, Facebook Sharer, Shopify Hosted, Android, Mobile Apps, Cold press machine, Vegetable washer, HPP machine, Bottling/Capping/Filling, Label machine, Smoothie machine, Bottle washing machine, Viewport Meta, SPF, Google Analytics, Vimeo and Google Tag Manager.
- They aimed at 'zero wastage', 'residue-free' produce, eliminating middleman and delivery of products directly from farms that adopt sustainable agri practices to customer's doorstep, bringing smart and innovative technologies to every farmer for simplifying their challenges, educating the masses about the crop, cultivation and processing and empowering of farmers by providing knowledge and extension services.
- The funding of startups ranges from less than \$10 lakh to \$150 M and investors were Rairah Corporation, Bootstrapping, Accel Partners, Nandan Nilekani, Mistletoe, Tiger Global, Syngenta, M&S Capital Partners, Trifecta Capital, Neoplux, ABG Capital, Clark Valberg, Steadview Capital, Walmart, IvyCap Ventures, Thomson Reuters, Aavishkar Venture Management Services, Bertelsmann India Investments, Chiratae Ventures, Mukhtar Tejani, Ginni International, Rajan Anandan, Ratan Tata, Yash Kela and Srinivas Sirigeri.
- CIRCOT, Mumbai was the agribusiness incubation centre that provided testing services, consulting services, calibration cotton standards, library and databases. It used various technologies such as antimicrobial, UV protection, water repellency nano finishing technologies for cotton textiles, cotton-rich blends for functional textile applications, mosquito repellent, pesticide protection clothes and denim, quality based trading, supply chain logistics, CIRCOT mini card for silver preparation, microbial degossypolisation of cotton seed meal for poultry, fish and piggery sectors and cotton trading based on quality parameters for better price and remuneration to farmers.
- Also, CIRCOT provided various facilities such as modern ginning and allied machinery, high volume instrument, advanced fibre information system, scanning electron microscope, X-ray diffraction, vibroscope, banana fibre spinning machines, circular knitting machines, computerized sample weaving machine, compression moulding machine, contact angle tensiometer, atomic force microscope, atomic absorption spectrometer, ultra-high pressure homogenizer, nanoparticle size analyzer, data analysis software.
- The incubation process started from the admission of incubating, technological mentoring,

facilities and services, product prototype development, test marketing of the product through CIRCOT facilities/outsourcing on a pilot scale and intellectual property protection and management.

## **Recommendations**

- Rewards should be given to the employees after completing an important task in order to encourage them for future.
- Leadership building trainings should be organized for the employees to develop their talent in their organizations.
- Group discussions should be held among the startup colleagues to develop better mutual understanding and also helps in enhancing their personality.
- Outings and trips should be organized to reduce the stress of the employees so that they will perform better in their field.



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## Annexure-I (Agritech Startups- Globally)

Startup's Name	Location	Founders	Funding	Investors	Services and Technology Used
FarmOp Capital, 2017	St. Paul, Minnesota	Darwin Melnyk and Keir Renick	Undisclosed	Undisclosed	Focuses on farmer's ability to grow an efficient crop, rather than the value of the land they grow it on, as the basis for working capital loans.
Trace Genomics, 2016	San Francisco, California	Diane Wu and Poornima Parameswaran	\$13 million	Undisclosed	Highly scalable software and analytics platform that uses gene sequencing, artificial intelligence and a growing database of microbial species to identify and profile the soil microbiome.
EarthSense	Champaign, Illinois	Chinmay Soman and Girish Chowdhary	\$50,000	Undisclosed	EarthSense is developing ultra-compact autonomous robots (TerraSentia) that use machine learning to monitor and manage problems in the field, specifically to identify weeds and chemical-free methods of reliably eradicating weeds.
Solinftec, 2007	Sao Paulo, Brazil, and West Lafayette, Indiana	Britaldo Hernández Fernández, Anselmo del Toro Arce, George Víctor Díaz Calderin, Lázaro Víctor Quintana García, Enrique Ponce Caballero, Genrry Pérez Rey, Leslie González Gonzáles Alfonso	Undisclosed	Undisclosed	Uses a suite of apps that tell equipment operators where and when they need to be.  It can also provide a verifiable harvest record and trace product from the farm to the point of sale without any human input.

TeleSense, 2017	Sunnyvale, California	Naeem Zafar, Nick Garner, and George Zafirooulos	\$6.5 million	Undisclosed	<p>Through its proprietary sensor that collects data on the grain's condition, TeleSense is using the Internet of Things (IoT) to continuously monitor temperature and moisture in stored grain.</p> <p>Artificial intelligence is used to predict how to make decisions based on data – such as when to sell grain, when to hang on to grain, when to move grain, when to fumigate grain and when to blend grain.</p>
Understory, 2012	Madison, Wisconsin	Alex Kubicek and Bryan Dow	\$17 million	Undisclosed	<p>Developed weather stations that collect hyperlocal weather data like hail, wind, rainfall and temperature, which can be placed in fields to assist in data-driven field decisions</p>
Pivot Bio	Berkeley, California	Alvin Tamser and Karsten Temme	\$86.7 million	Undisclosed	<p>Unpredictable weather and other environmental factors can prevent up to half of the synthetic nitrogen fertilizer applied to fields from being efficiently used by plants.</p> <p>Pivot Bio PROVEN adheres to corn roots and applies nitrogen daily throughout the growing season.</p>
American Robotics, 2016	Marlborough, Massachusetts	Reese Mozer, Eitan Babcock, and Vijay Somandepalli	\$3 million	Undisclosed	<p>Developed a fully automated, self-charging drone system that is capable of functioning independently for multiple seasons.</p> <p>Once the startup's DB1 Drone Stations are installed, a fleet of connected weatherproof Scouts functions autonomously in the field, seamlessly delivering health reports regularly and reliably.</p> <p>The Scout View software allows customers to schedule surveys, review imagery and manage alerts.</p>
EcoRobotix, 2011	Swiss	Aurelien G. Demareux		Undisclosed	<p>Created a smart weeding solution; an autonomous machine that can efficiently detect and destroy weeds among row crops.</p> <p>It is powered by solar energy; the robot can work for 12 hours without</p>



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				recharging and can be remotely controlled using a smartphone.
				EcoRobotix's solution allows farmers to use 90 percent less herbicide, improving yields for farmers.
VisualNacer Spain t, 2014	Mercedes Iborra		Undisclosed	Uses technology including sensors, drones, satellite imagery, geolocation and Big Data to help farmers manage all aspects of their farms in an all-in-one platform. Farmers can use the platform to create work orders and control costs and stock, track their crop cycles and plan harvests and register the activities performed on each plot.
Connecterra, Netherland 2014	Yasir Khokhar	\$1.8 Mn	Undisclosed	Uses an intelligent dairy farmer assistant to apply IoT to food, in what it calls, the "Internet of Food".  Its app, Ida, monitors cow behaviour and activity and allows farmers to detect health issues in livestock to improve dairy farming and milk production. Ida measures each cow's eating behavior and milk yield, helping farmers to identify which cows are most productive and why. Using this data, farmers can make better decisions regarding fertility, breeding, milk yield and heat detection
Ignitia, 2015 Sweden			Undisclosed	Provides accurate, hyper-local weather forecasts to small farmers in tropical climates.  Ignitia's forecasts are 84 percent accurate – twice as accurate as global models.  Ignitia's precise forecasting allows local tropical farmers to increase yields and profits.  Farmers don't need a smartphone – forecasts are delivered by SMS and pay using their phone credit.

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Agroptima, 2014	Barcelona	Emilia Vila	USD 3M	Athos Capital, ESADE Alumni, Tandem Capital and 3 other Investors	<p>Using the app, farmers can track jobs, fields, products, workers and machinery.</p> <p>The app records daily farm operations such as sowing, fertilising and harvesting and farmers can access all of the data on its web-based platform. Agroptima's software also provides farmers with personalised reports based on this data.</p>
InFarm, 2012	Berlin	Erez and Guy Galonska	\$134.1M	Astanor Ventures, Balderton Capital, Triple Point Capital, Atomico, Cherry Ventures, Quadia, Mons Investment, Local Globe	<p>Controls the farms remotely using IoT, Big Data and cloud analytics.</p> <p>Developed a vertical indoor farming system that can be implemented in supermarkets, restaurants, local distribution warehouses, or even schools – allowing businesses to grow their own fresh produce on-site to deliver to customers.</p>
Semios, 2010	Vancouver (Canada)	Michael Gilbert	USD 9M	FedDev Ontario, Sustainable Development Technology Canada, Government of Canada and 1 Other Investor	<p>Uses M2M technology to provide data and analytics that increase crop value for fruit and vegetable growers.</p> <p>Enabling precision crop management focusing on integrated pest management including real-time insect pressure tracking and improved bio-pesticide delivery.</p> <p>Provides a proprietary system of in-crop wireless networks coupled with remote sensors, real-time pest monitoring and variable rate biological pest control.</p>
WeFarm, 2015	London	Kenny Ewan	\$7.9M	Undisclosed	Provides peer-to-peer knowledge sharing platform for smallholder farmers and SMS service based around peer-to-peer, crowdsourcing of knowledge.

Plenty, 2013	San Francisco (United States)	Matt Barnard	USD 226M	Innovation Endeavors, Bezos Expeditions, Data Collective and 8 Other Investors	<p>Developing a farming facility for hydroponic cultivation of green leafy vegetables and salads.</p> <p>Developing its facility in a 51,000 square foot warehouse, the company claims that its facility would yield 350 times more per square foot and would use only 1% of water as compared to the conventional farming methods.</p> <p>Claims that it would use advanced technological tools such as integrated machine learning and automation systems in its facility.</p>
Perfect Day, 2014	San Francisco (United States)	Perumal Gandhi	USD 61M	Temasek, Horizons Ventures, Continental Grain and 6 Other Investors	<p>Producer of dairy-free milk.</p> <p>Used 3D printing technology to modify the DNA sequences of a bovine breed cow and then added it to yeast to produce animal-free milk.</p>
Swift Navigation, 2012	San Francisco (United States)	Timothy Harris	USD 48M	Forest Baskett, Greg Papadopoulos, First Round Capital and 12 Other Investors	<p>Product Piksi is a low-cost, high-performance GPS receiver with Real-Time Kinematics functionality for centimetre level relative positioning accuracy.</p> <p>Its small form factor, fast position solution update rate, and low power consumption</p> <p>Make Piksii deal for integration into a variety of applications like agriculture, drones and construction and autonomous transportation.</p> <p>Piksi's open source firmware allows it to be easily customized to the particular demands of end-users applications, easing system integration and reducing host system overhead.</p>

GrubMarket, 2014	San Francisco (United States)	Mike Xu	USD 32M	GGV Capital, Fusion Fund, Great Oaks Venture Capital and 25 Other Investors	<p>Connects consumers with locally sourced and organic food from nearby farms and producers in several cities.</p> <p>Do not have warehouse or distribution centers, rather they focus on optimizing routes and pickup locations to increase efficiency.</p>
Memphis meat, 2015	San Francisco (United States)	Uma Valeti (CEO), Nicholas Genovese (CSO), and Will Clem	USD 20M	Tyson Foods, DFJ, Bill Gates and 13 Other Investors	<p>Developing cultured meat in the lab to produce food products. The company uses the technology of cellular agriculture to synthesize meat in the lab.</p> <p>The product is expected to be available for commercial sale by 2021.</p> <p>Claims that this process will remove harmful risks such as antibiotics, fecal matter, pathogens and other contaminants.</p>
Nima, 2013	San Francisco (United States)	Shireen Taleghani Yates	USD 13M	Foundry Group, Upfront Ventures, SK Ventures and 4 Other Investors	<p>Re-branded from 6 Sensor Labs is a designer &amp; developer of IoT for diagnosing the presence of certain food constituents.</p> <p>Designed a connected device that can test the presence of gluten in the food.</p> <p>The sensor sends the data to the user's smartphone via Bluetooth and allows the user to record and store the results of each meal.</p>
WaterBit, 2015	San Francisco (United States)	Manu Pillai	USD 11M	New Enterprise Associates, Heuristic Capital Partners, TJ Rodgers and 3 Other Investors	<p>Provider of IoT based solution for precision agriculture.</p> <p>Offers patent-pending micro blocks, a granularity sensing system consisting of WaterBit Carbon, ready-to-use nodes for connecting sensors and probes to micro blocks; and Soil Moisture Probe that monitors pressure, flow, leakages, nutrients etc. Sends data from multiple field locations to one central network gateway hub. The gateway uses the AT&amp;T Global SIM card to securely send data to the WaterBit cloud. The</p>

					<p>data is updated every 15 minutes, allowing users to access it and control irrigation using a smartphone application or PC.</p> <p>Offers wireless block valve controller that retrofits to pressure-actuated valves for turning the water supply off/on.</p>
Full Harvest, 2015	San Francisco (United States)	Christine Moseley	USD 11M	Spark Capital, Adam Zeplain, Jennifer Fleiss and 8 Other Investors	<p>B2B marketplace which connects farmers to retailers and bulk buyers for the sale of surplus substandard usable food produce at discounted prices. Technology is focused on the reduction of wastage of edible food products.</p> <p>Works on an asset-light model and third party contracts are used for logistics handling.</p>
Farmwise, 2016	San Francisco (United States)	Sébastien Boyer	USD 6M	Playground Global, Felicis Ventures, Basis Set Ventures and 5 Other Investors	<p>Developing various autonomous robotic equipment for automating basic farming operations.</p> <p>Claims to be using various artificial intelligence algorithms such as machine vision and autonomous vehicle control for developing its products.</p> <p>Products are positioned towards weeding and data gathering operations on vegetable farms.</p>
Amfora, 2016	San Francisco (United States)	Jonathan Burbaum	USD 5M	Spruce Capital Partners, CSIRO, Malaysian Life Sciences Capital Fund	<p>Development of technology platforms for the enhancement of nutritional content of food and feed crops. The company has identified two nutritional components - protein content and energy density and has also obtained exclusive licenses to technologies to develop products.</p> <p>Developing high-protein crops such as corn and alfalfa to be used as animal feed, thus reducing feed cost by eliminating the requirement of protein supplements such as soybean and cottonseed.</p>

Bowery, 2014	New York City (United States)	Irving Fain	USD 125M	GV, First Round Capital, GGV Capital and 16 Other Investors	<p>Engaged in the cultivation of leafy greens using the autonomous aeroponic system.</p> <p>Its indoor farms grow organic produce such as lettuce, arugula, kale, basil, etc.</p> <p>Has its own proprietary software system, which uses vision systems, automation technology, and machine learning to monitor plants and all the variables.</p> <p>Claims to use zero pesticides, 95% less water, and are 100+ times more productive on the same footprint of land than traditional agriculture.</p>
LeafLink, 2015	New York City (United States)	Ryan Smith	USD 14M	Casa Verde Capital, Lerer Hippeau Ventures, Brand New Matter and 6 Other Investors	<p>Provides a marketplace and order management software for cannabis dealers. Its online marketplace allows dealers to access market information on available products, new product discovery, receive sample requests, and more.</p> <p>Integrated tools to carry out inventory management, review open orders and generate sales reports, and contains additional features like CRM tools with integrated order history, real-time updates on order status etc.</p> <p>Users can also use the platform to reach their products to new clients such as dispensaries.</p>
Finless Foods,	New York City, United States	Mike Selden	USD 4M	Draper Associates, Break Off Capital, U- Start 11 other investors.	<p>Cellular agriculture company that plans (as of May 2017) to use synthetic biology culture fish meat for human consumption.</p> <p>Plans to isolate stem cells obtained from fish and culture them in a brewery-like environment into a fish fillet shape.</p>

Gro Intelligence, 2012	New York City (United States)	Sara Menker	USD 4M	TPG, Data Collective, Echo VC Partners and 3 Other Investors	<p>Gathers, aggregates and processes data using proprietary algorithms to unlock crucial insights into weather patterns, trade flows, pricing dynamics and production.</p> <p>Provide users actionable agricultural data to drive higher productivity and greater access to capital.</p>
Agrilyst, 2015	New York City (United States)	Allison Kopf	USD 3M	iSelect Fund, Argonautic, Horizons Ventures and 11 Other Investors	<p>SaaS based platform for helping indoor, small-scale farmers make informed, data driven decision.</p> <p>Provides real-time analytics and recommendations and the entire data is available on the cloud and hence accessible from anywhere.</p> <p>Aims to help indoor-farmers get better profitability out of their produce.</p>
FarmersWeb, 2011	New York City (United States)	David Ross	USD 1M	Undisclosed	<p>B2B marketplace that connects local food producers with wholesale buyers. Its platform enables greater and more efficient access to local farm-fresh products for chefs, restaurants, schools, country clubs, institutional kitchens, and retail stores.</p> <p>Buyers can shop from all producers that deliver or have a pick-up location nearby.</p>
Greensbury, 2007	New York City (United States)	Todd Horowitz	USD 450K	Jillian Michaels, Scout Ventures, MDT Ventures	<p>Farm-to-table e-commerce platform that procures and curates farm to table, organic meats and seafood for health conscious consumers.</p> <p>Raised organic grass-fed beef, organic chicken, organic pork, and sustainable seafood from our network of vetted farmers and fisherman.</p>



WorldCover, 2015	New York City (United States)	Christopher Sheehan	USD 120K	Musha Ventures, Credit Ease, Y Combinator and 5 Other Investors	<p>P2P crop insurance &amp; investment platform. Connects farmers and investors through a P2P investment platform.</p> <p>Investors get a return on their investment and their investment funds the insurance for people in developing countries against weather risks. Uses remote sensing to monitor weather risks and trigger payments.</p> <p>Partners with institutions, online marketing and financial advisors for investors and channel partners, input suppliers and mobile operators to acquire farmers.</p>
Re-Nuble, 2011	New York City (United States)	Tinia Pina	USD 100K	Thrive Agtech, SOSV, SVG Partners and 1 Other Investor	<p>Developed a technology that uses biologicals to transform food waste into organic liquid nutrients which it claims can be used in soil-less farming and can boost hydroponic yield sat a fraction of the cost of chemically-based alternatives.</p> <p>Its portfolio includes 2 products Away We Grow which is a liquid fertilizer for hydroponic use and Booster Shot which is made up of seaweed extracts and targets the plant's root zone for efficient absorption.</p>
FarmDrop, 2012	London (United Kingdom)	Ben Pugh	USD 24M	Bell town Power, Atomico, Impact Ventures UK and 2 Other Investors	<p>The online market linkage between consumers and local (nearby) farmers.</p> <p>Consumers can place an order for the produce, the platform aggregates the orders and pushes them to respective farmers who cultivate and harvest the same and deliver to the respective consumer.</p> <p>Produce across fruits, vegetables, dairy and livestock is available on the platform.</p>

Agrivi, 2013	London (United Kingdom)	Matija	USD 1M	South Central Ventures	<p>Cloud based Farm Management ERP software.</p> <p>Includes modules for Farm Management, Field utilization, Inventory, Finance, Employee Database, Mechanization, Calendar, Centralized Documents, Collaboration, Reports, Dashboard and Weather Forecast.</p> <p>Provides central management of company farms and cooperatives. Major customers are enterprise farmers.</p>
Earth Rover, 2017	London (United Kingdom)	James Arthur and Sergio Martinez	Seraphim Capital.	Par Equity, Seraphim Capital	<p>It has been founded in 2017.</p> <p>Earth Rover develops and offers an autonomous farming robot. It offers an autonomous vehicle to assist farmers in scouting, weeding and selective harvesting.</p> <p>Claims to utilize ExoMars Rover space technology in robots. The company has been partnered with Harper Adams University and the RAL Space Autonomous Systems Group to develop farming robots.</p>
Pycno, 2013	London (United Kingdom)	Gaurav Tyagi	Undisclosed	Rocket Space, SOSV	<p>Pycno Agriculture Sensors offers integrated solutions using sensors for recording various agricultural data and support decision making.</p> <p>Sensors are capable of recording solar radiation, air temperature &amp; humidity, soil temperature and soil humidity.</p> <p>Data is recorded over the cloud for the farmer to access.</p> <p>Mobile platform helps in data visualization, crop analytics, weather forecast, monitor soil temperature and predictions based on the data collection.</p>

Opal Crest, 2013	London (United Kingdom)	Pravin Chandrasekaran	Undisclosed	Red Dot Ventures	<p>Provides big data solutions for the agriculture industries.</p> <p>Offers satellite imagery analytics, risk management solutions, and supply chain analytics for agribusinesses.</p> <p>Claims to utilize the proprietary data science platform with deep learning capabilities to serve corporations, banks and multilateral agencies of commodities industries.</p> <p>Claims to launch its own satellites to offer satellite imaging services to the clients.</p>
Robotic Plus, 2013	Tauranga (New Zealand)	Steve Saunders	USD 10M	Yamaha, Yamaha Motor Ventures & Laboratory Silicon Valley	<p>Developed robotic equipment for horticulture produce handling.</p> <p>Products use machine vision and machine learning.</p> <p>Its first product is autonomous apple packing system targeted at apple agribusinesses. Its second product is robotic harvester typically used for picking fruits like kiwis.</p> <p>Also, it developed Quad Duster for autonomous kiwi pollination.</p>
Halter, 2016	Auckland (New Zealand)	Craig Piggott	USD 8M	Data Collective, Founders Fund, Promus Ventures and 4 Other Investors	<p>Develops an integrated hardware and software platform for livestock herd management. The hardware consists of GPS collars for animals which are equipped with solar chargers and sound and shock producers.</p> <p>The software and hardware are integrated through the IoT node. The software can be used for mapping the area for each animal. The collars can guide animals to stay within their area with a combination of stimuli - shock and sound.</p>
CropLogic, 2010	Christchurch (New Zealand)	JAMES COOPER-JONES	USD 3M	Hunter Capital Advisors, Powerhouse Ventures, Callaghan	<p>Provides Integrated Hardware and Software Platform for Yield Forecasting, Input Prescriptions, and Input Schedule for farmers.</p> <p>Collects field sensor data for soil</p>

				Innovation and 1 Other Investor	<p>parameters, weather data and aerial images. The data captured is processed in the cloud and delivers the daily input prescription in the format of farmers' choice.</p> <p>The software platform provides yield forecasting based on the inputs used today, input prescriptions, inputs schedule, maps, and machinery instructions.</p>
Agrimap, 2006	Auckland (New Zealand)	Andy Lowe	USD 580K	Undisclosed	<p>ERP software for all purposes farm management.</p> <p>Provides a software solution for multiple farm management needs of the farmer including record keeping, task management, interactive farm maps, team collaboration and reporting.</p>
Regen, 2010	Wellington (New Zealand)	James Ehrlich	USD 350K	NZVIF, Pacific Channel, Angel HQ	<p>Developed mobile applications for planning or resource deployment on the farm including nitrogen and water.</p> <p>The farmer has to feed certain parameters in these apps and it calculates and projects the outcome of this deployment.</p> <p>Also, it developed a data gathering (through soil sensors) and analytics system (cloud based) for monitoring and studying the effluent output and irrigation management.</p>
Cortilia, 2011	Milan (Italy)	Marco Porcaro	USD 2M	P101, Boox, dPixel and 1 Other Investor	<p>Online marketplace for genuine and fresh food from local farmers. They select farmers and connect them directly with consumer through their website and home delivery service. Products are seasonal and come directly from the nearest producers.</p>

RevoTree, 2016	Milan (Italy)	Cosimo Calciano	Undisclosed	L Venture Group	<p>Provides an integrated platform for automation or remote control of irrigation operations in farm fields.</p> <p>The system has an on-field device that monitors the soil and climatic parameters on a real-time basis. Data is analyzed in the RevoTree software's analytics platform and water required is dispensed through the system.</p> <p>Farmers can remotely control the irrigation operation through a mobile application.</p>
Wallfarm, 2015	Rome (Italy)	Stephen Wolfram	Undisclosed	Startup boot camp	<p>Develops and supplies automated hydroponic farming systems for urban farming in Italy.</p> <p>Each farming system is based on a control unit called LIA that includes automated sensors for water, LED lights and liquid microdosers.</p> <p>The status of farming system can be checked by the owner through the mobile application on IOS, Android and Windows platform.</p>
SensorAide, 2013	Eindhoven (Netherlands)	Evanthia Valera	Undisclosed	Startup boot camp	<p>Cloud based remote monitoring platform for agriculture.</p> <p>SensorAide collects data streamed from on-field wireless sensors and stores it on the cloud and provide visual meaningful and actionable real-time representations.</p> <p>Uses proprietary business intelligence processes to provide historical and spatial statistics and reports.</p>
Taranis, 2014	Tel Aviv (Israel)	Ofir Schlam	USD 30M	Finistere Ventures, Vertex Ventures, Our Crowd and 11 Other Investors	<p>Developed an analytics engine that analyzes the field data related to crop production cycle and weather and suggests perfect time and locations to deploy agrochemicals, it predicts and alerts about weather calamities like hailstorm/drought, disease outbreak, and also suggests irrigation deployment by analyzing field levels and historical rainfall data.</p>

Saturas, 2013	Misgav (Israel)	Anat Halgoa Solomon	USD 5M	Torres, Gefen Capital and 4 Other Investors	<p>Developed sensors can be embedded into the stem of the crops from where they can determine the actual water content in the crop and stream it to the cloud.</p> <p>This data which is also called Stem Water Potential (SWP) is useful for determining the actual water need of the crops and precision irrigation.</p>
Sencrop, 2015	Lille (France)	Martin DuCroquet	USD 11M	Bpifrance, Breega Capital, Demeter and 7 Other Investors	<p>Provides sensor network solutions for real-time monitoring of farm parameters such as soil humidity, temperature etc.</p> <p>The captured data is stored in a cloud and can be viewed in real-time on the software platform.</p> <p>The data can be shared with other users.</p> <p>Based on the data analysis, it provides forecasts and comparisons with historical data.</p> <p>Notifications regarding the problems are pushed to the mobile of the farmer.</p>
RapidAIM, 2018	Brisbane (Australia)	Dr. Nancy Schellhorn, Darren Moore and Laura Jones	USD 891K	Main Sequence Ventures	<p>Provides precision pest management solutions.</p> <p>Provides real-time information on the presence and location of pests.</p> <p>Offers a solution for the detection and control of fruit fly through its smart traps.</p> <p>The traps detect the presence of an insect, send the data to the cloud for analytics and generate an alert for the user via low power area-wide networks</p>
Cloud Farm, 2013	Beijing (China)	Tarun Garg	USD 26M	Legend Holdings	<p>Operates an online trading platform that sells fertilizers, seeds, pesticides, and agricultural machinery.</p> <p>A network of 300+ centers and reaches 25,000 village service stations across 13 provinces, including core</p>

					agricultural sites in the provinces of Shandong, Henan, Jiangsu and Anhui.
FarmFriend, 2016	Beijing (China)	Yang Yu	USD 17M	YI Capital, Shunwei Capital, GGV Capital and 3 Other Investors	Mobile-only marketplace for connecting farmers and agricultural drone service providers. Claims to have more than 200 flight service, farm mapping, and precision ag variable rate deployment service providers subscribed on the platform as of July 2016.

## Annexure-II (Agritech Startups- India)

Startup's Name	Location	Founders	Funding	Investors	Services and Technology Used
Aibono, 2014	Bengaluru	Vivek Rajkumar	\$2.5 Mn	Menterra Venture Advisors, Silicon Valley-based Milliways Venture, Zurich-based Artha Ventures, Japanese fund Rebright Partners and Mohandas Pai-backed 3one4 capital	Fresh Food Aggregator
CropIn, 2010	Bengaluru	Krishna Kumar	\$2,000,000	Sophia Investment ApS	Provide users with real-time data and insights of farm management, monitoring and analytics solutions to improve the financial and operational aspects of agriculture with an aim to increase efficiency, scale productivity and strengthen sustainability.
Fasal, 2018	Bengaluru	Ananda Verma and Shailendra Tiwari	Friends and family: \$45,000, Zeroth.ai pre-seed funding: \$120,000	Mistletoe, Zeroth. AI, Mind Fund, Artesian VC	An artificial intelligence startup that helps farmers to increase productivity by using advanced IoT and machine learning technologies.



Gobasco, 2017	New Delhi	Vedant Katiyar and Abhishek Sharma	Undisclosed	Matrix Partners India	<p>Focuses on better operational efficiency, improved realizations for farmers, reduced wastage and enhanced price and market discovery for agro-commodities.</p> <p>Uses Data-driven identification and treatment of the sources of inefficiencies with the use of AI-powered processes and pipelines.</p>
VillFarm, 2009	Bangalore	Mohan Venkateswaran, Sundarraj Mahadevan, Jagadeesh Sunkad	Undisclosed	Unitus Seed Fund, Rianta Capital, R Ramaraj, Sunil Edwards	Founded in 2009
KrishiHub, 2016	Bangalore	Bhoopendra Kumar, JyotiskaKhasnabish	Undisclosed	INVENT accelerator, Villgro Innovation Fund	Founded in 2016
Intello Labs, 2016	Bengaluru	Nishant Mishra and HimaniShah	\$2Mn	Nexus Venture Partners, Omnivore	<p>Aims to revolutionise agriculture by enabling farmers, traders, millers, retailers and end-users to communicate through images for product quality, infestation, plant health or even soil conditions.</p> <p>Two key agri products are used for crop inspection and agricultural product grading.</p> <p>Both the products read images and give quality parameters based on the input data.</p> <p>Leverages emergent technologies-deep</p>

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					learning, AI and IoT to help farmers scale their business effectively.
Stellapps, 2011	Bengaluru	Ranjith Mukundan and Venkatesh Seshasayee	\$14 Mn	Bill and Melinda Gates Foundation, Indus Age Partners, Qualcomm Ventures, Omnivore, Blume Ventures, Venture Highway, BEENEXT	Works by using technology such as IoT and data analytics while acquiring data via sensors that are embedded in milking systems, animal wearables, etc.
SatSure, 2016	Bengaluru	AmardeepSibia	Undisclosed	Undisclosed	<p>SatSure, derived from two words-Satellites &amp; Assurance, has built its own geospatial Big Data platform delivers such geospatial information as APIs, SDKs, or over a web-based Software-as-a-Service (SaaS) dashboard, with capability to ingest, store and analyze multi-sensor batch and stream datasets from satellites, IoT devices, drones, weather, M2M devices, cadastral land records, and commodity prices.</p> <p>SatSure is creating products such as crop risk scores, farmer credit rating and irrigation scheduler, that can be directly used by its end customers.</p>

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Crofarm, 2016	Delhi	Varun Khurana and Prashant Jain	\$1,500,000	Mukul Singhal, Rohit Jain, Himanshu Aggrawal, Ashish Gupta, Sunil Goyal	<p>Procures fresh fruits and vegetables from farmers and delivers them to both online (Big Bazaar, Metro Cash &amp; Carry, Bigbasket, Grofers) and offline retailers (neighborhood fruit and vegetable shops).</p> <p>Using AI, it able to predict demand from the data they have collected, thus, allowing them to trim waste.</p>
Goldfarm, 2015	Bengaluru	Abhilash Thirupathy and Karthic Ravindranath	\$2,000,000	Mahindra & Mahindra, Infuse Ventures	<p>Based on Farming as a Service(FaaS) model Aim to provide farmers the access to book any farm equipment according to their requirement through a mobile application and a call center service.</p> <p>Provide solar water-pumps for farmers working in power deficit regions in India.</p>
Farm Taaza, 2015	Bangalore	Kumar Ramachandran	\$8,000,000	Epsilon Venture Partners, IL&FS Investment Managers	B2B agritech startup.
EM3AgriServices, UP 2013		Adwitiya Mal and Rohtash Mal	\$10,000,000	Global Innovation Fund, Soros Economic Development Fund, Aspada	<p>Pioneering a model it calls Farming-as-a-Service, where equipment and services are rented out and charged as pay-per-use (typically based on hours or area of the farm).</p> <p>Farmers can access their services through the mobile app "Samadhan Kendra".</p>

Agrowave, 2018	Gurgaon	Anu Meena	Undisclosed	Daffodil Software	<p>Aims to optimise agriculture supply chain using research, analytics and technology to match demand and supply, by predicting the demand using previous data (volume, products, frequency, etc.).</p> <p>Procures fresh fruits and vegetables from farmers and distributes them directly to businesses.</p>
Airwood, 2014	Chennai	Vivek Rajkumar	Undisclosed	StartupXseed Ventures	<p>Patent-pending drones are retrofitted with multispectral cameras and fly around plantations capturing real-time data on weather, water availability and crops.</p> <p>Provides advanced nutrient testing and soil measurement services.</p>
Farmizen, 2017		Shameek Chakravarty, Sudaakeran Balasubramanian, Gitanjali Rajamani	Undisclosed	Venture Highway, Mohit Agarwal, Anuj Gupta, Alok Mittal	Provides organic farming platform to the customers.
Ninjacart, 2015	Bengaluru	Thirukumaran Nagarajan, Kartheeswaran KK, Sharath Loganathan, Ashutosh Vikram, Sachin P J and Vasudevan Chinnathambi	\$5,500,000	Accel Partners, NRJN Trust, M&S Partners, Qualcomm Ventures, Mistletoe	<p>India's Largest agri marketing platform or B2B Fresh Produce Supply Chain Company solving one of the toughest supply chain problems through technology.</p> <p>Connect vegetables and fruits farmers directly with businesses.</p>

Utkal 2016	Tubers,	Bengaluru	Mukul Gulati and George Thomas	\$4,600,000	CapAleph Indian Millennium SME Fund, Zephyr Peacock India	<p>Focuses on developing new varieties of seed potato.</p> <p>Working to improve access to good quality seed potatoes at an affordable price through a variety innovation and significant investment in high grade seed production with modern aeroponic facilities.</p>
DeHaat, 2012		Patna	Shashank Kumar and Manish Kumar	\$4 Mn	Omnivore	<p>An online platform that connects small farmers with a network of micro entrepreneurs – suppliers of various farm input and equipment – who procure various inputs such as seeds, fertilizers and even equipment, as well as offer crop advisory and market linkages.</p>
Tartan 2015	Sense,	Bengaluru	Jaisimha Rao	Rs 15 crore	Omnivore Partners, Blume Ventures, and BEENEXT	<p>Builds robots for small farms.</p> <p>Bots use artificial intelligence (AI)-assisted computer vision and robotics to build precision sprayers for weed, insect and disease control by saving costs and leaving less chemical residue on fruits and vegetables consumed.</p>

Gramophone, 2016	Indore	Nishant Vats and Tauseef Khan	\$1,000,000	Info Edge	<p>Provides one-stop solution for all kinds of inputs on farming.</p> <p>Provides assistance to farmers via its toll-free helpline number- farmers can contact them by just giving a missed call and can get solutions to all farming-related problems.</p>
Paalak.in, 2016	Noida	Swapnil Tripathi and Vishal Salgotra	Undisclosed	Vishwadeep Bajaj, Harsh Kundra, Nand Kumar Rane, LN Buddharaju, Anupam Tyagi	Create a supply chain that brings farm-fresh produce to end-consumers and B2B buyers directly from farmers, in under 14hours.
Oxen Farm Solutions, 2016	New Delhi	Vishwajeet Sinha	Undisclosed	Undisclosed	<p>Using IOT to gather information from sensors in machinery and generating valuable data on machinery performance.</p> <p>Uses satellite imagery and big data analysis to analyse crop health, crop progress and harvesting status.</p>
FarMart, 2015	Gurgaon	Mehtab Singh Hans, Alekh Sanghera and Lokesh Singh	Undisclosed	Ambarish Raghuvanshi	<p>Provides access to a larger customer base of farmers by leveraging the existing market supply of machinery rather than investing in procuring machinery, therefore making the model highly scalable.</p> <p>Reach out to farmers by organizing roadshows, self-help groups and gram panchayats.</p>

khethinext, 2015	Hyderabad	Phanidhar Palakoti	\$5,000,000	Undisclosed	Based on agritech based platform.
Ravgo, 2016	Gurgaon	Vikas	Undisclosed	Undisclosed	An agri-equipment rental marketplace for the agriculture sector, it aims to bring access to modern technology for small farmers who cannot afford ownership of expensive machinery.
WayCool, 2015	Chennai	Karthik Jayaraman and Sanjay Dasar	\$2.7 million	Aspada	Aims to distribute fruits and vegetables to multiple end-use segments spanning small local shops, modern retail outlets.
Aarav Unmanned Systems, 2013	Bengaluru	Vipul Singh, Suhas Banshiwala and Yeshwanth Reddy	Undisclosed	Grow X Ventures, 500 Startups, Startup Xseed, 3ONE4 Capital	Developed its own commercial-grade drones with the first indigenous PPK-enabled drone-INSIGHT- PPK - in India.  According to the founders, the PPK drone is three times more accurate and two times faster than most commonly used solutions available in the market.
Licious, 2015	Bengaluru	Vivek Gupta and Abhay Hanjura	USD 64M	Nichirei, 3one4, Bertelsmann India Investments and 22 Other Investors	Delivers hand-cut individually vacuum-sealed, packed fresh, marinated or cold cut meat.  Has a central processing plant and a number of storage units in each city to ensure delivery within 90 minutes.  Offers a subscription model that allows pre-set delivery dates and products. Partnered with Grofers to scale up its reach.



Jumbotail, 2015	Bangalore	S. Karthik Venkateswaran	USD 10M	Kalaari Capital, Nexus Venture Partners	An online platform for wholesale buyers/retailers to procure their groceries, fruits, and vegetables from producers/manufacturers.
Eruvaka, 2012	Vijayawada	Sreeram Raavi	USD 7M	Omnivore Partners, Nutreco	<p>Manufactures on-farm diagnostic equipment for aquaculture farmers to reduce their risk and increase productivity.</p> <p>Offerings include integrated sensors, mobile connectivity and decision tools for affordable aquaculture monitoring and automation.</p> <p>Real-time alerts for quality drops, aerator control for energy efficiency and cloud-based analytics to adjust feed based on water quality data are a few of the offerings.</p>
Vahdam Teas, 2015	Delhi	Bala Sarda	USD 4M	Fireside Ventures, Mumbai Angels, Singapore Angel Network and 49 Other Investors	<p>An online retailer of tea. It sources its products directly from tea plantations, processes &amp; packages the sourced products, and delivers the packaged products to consumers.</p> <p>Claims to deliver its products in 76 countries.</p> <p>It sources its products from the plantations of Darjeeling, Assam, Nilgiri, Kangra, and Bihar in India as well from the plantations of Nepal.</p>

ZappFresh, 2015	Delhi	Deepanshu Manchanda	USD 4M	SIDBI Venture Capital, Amit Burman, Mohammad Arif Khan and 17 Other Investors	Developing an online platform offering fresh meat delivery service. Sells fresh meat procured from partnering farms in and around the city.
Weather Risk Management Services Pvt Ltd., 2004	Delhi	Sonu Agrawal	USD 2M	United Phosphorus (UPL), Jayant Chatterjee, Vijay Mahajan and 2 Other Investors	<p>Provides weather based risk management solutions.</p> <p>Using data analytics and technology to predict climate changes/weather data forecast and provide subsequent insurance, loss on adjustment, risk assessment, etc. The company is also into energy audits, smart irrigation systems and smart grid applications.</p> <p>Clients include corporates like Pepsico, Bayer, etc., farmers and insurance companies.</p> <p>It has its own retail network and weather data stations.</p>
VegFru, 2015	Delhi	Anil Chopra	Undisclosed	Wingify	Connecting the Indian farmers and traders (who act as suppliers) to importers from around the world, foodservice operators including restaurants, caterers, etc. Also, a B2B marketplace platform for consultancies, technical and financial advisory to the farmer, post-harvest services, distribution and logistics services and production facilitation to the producers, for

					export/import, freight forwarding and clearing, quality control and certification, packaging, machinery supplies and cold storage spaces.
Kisan Network, 2015	Delhi	Aditya Agarwalla	Undisclosed	Y Combinator, Venture Highway, Funders Club	<p>An online B2B marketplace for the farmers in India to connect directly to the retailers and bulk buyers rather than selling their produce in mandis.</p> <p>A farmer can register and list their produce on the platform through the mobile app, toll-free number or miss call on the designated number. A buyer can register and put up a selling request through mobile app, emails, toll-free number or miss call on the designated number.</p> <p>Provides the integrated services including grading and sorting of crops and packaging, transportation delivery of crop upon the receipt of an order.</p>
FreshWorld, 2013	Bangalore	Joby Joseph	USD 434K	Indian Angel Network, Sharad Junghare, Bikky Khosla and 5 Other Investors	<p>Sells farm-fresh fruits and vegetables (FnV) with a street vending model using electric carts.</p> <p>Operates over 20 customised-and battery operated vehicles that are equipped with a tablet, printer and communication</p>

technologies to provide a receipt, track inventory and analyse data to understand customer purchase behaviour.

### Annexure-III (Agritech Startups- Maharashtra)

Startup's Name	Location	Founders	Funding	Investors	Services and Technology Used
ReutersMarket Light, 2007	Mumbai	Rajiv Tevtiya	\$4,000,000	Ivy Cap Ventures	Provides cutting edge Data Analytics and Information in the agriculture sector that has a huge impact on the entire agriculture value chain.
Hummingbird, 2007	Mumbai	-	USD 206K	Ritu Shah, Ranjit Barthakur, RohanShah	<p>An artificial intelligence business provides advanced crop analytics to its customers by using proprietary Machine Learning algorithms applied to remote sensing captured imagery (<a href="https://hummingbirdtech.com/">https://hummingbirdtech.com/</a>).</p> <p>Services include decision support system, commodity risk management, real-time market intelligence services, crop estimation and forecasting. Clientele includes Future Group, Sab Miller India, IFMR Ventures, Nestle, General Mills, Pulse Growers and others (<a href="https://tracxn.com/explore/AgriTech-Startups-in-Mumbai/">https://tracxn.com/explore/AgriTech-Startups-in-Mumbai/</a>).</p>

Agribazaar, 2011	Mumbai	Venkata Narasimha rao Chowdula	Undisclosed	Undisclosed	<p>Solve the Agri Trade problem keeping in mind simplicity with unmatched access to commodity auctions/deals, transparent pricing, secure payment and quality assurance options.</p> <p>Mobile app based marketplace for Agro commodities, which provides an online marketplace for connecting farmers, agribusinesses and traders of agricultural commodities and buyers.</p>
Agniket, 2016	Mumbai	-	Undisclosed	Undisclosed	<p>Manages the supply chain of fresh produce from farmers to businesses, especially retailers.</p> <p>Farmers can contact the company for selling their produce with a yield estimation done before harvesting. The company simultaneously contacts retailers with an offer to sell. The retailers can book the produce and pay online.</p>
Proximal Soil Sen S, 2015	Mumbai	-	Undisclosed	Undisclosed	<p>Develops solar-powered. The data collected can be stored in the cloud or on mobile using GSM.</p> <p>The users can automate the irrigation process from the mobiles (<a href="https://aim2flourish.com/innovations/sensor-based-smart-irrigation-system-and-its-impact-on-the-agriculture-industry">https://aim2flourish.com/innovations/sensor-based-smart-irrigation-system-and-its-impact-on-the-agriculture-industry</a>).</p>

ManasOrganics, 2001	Mumbai	-		Undisclosed	Undisclosed	<p>Engaged in the supply of organic farm produced food products through its online platform.</p> <p>Claims to have partnerships with farmers to supply them with organic produce and the company then processes the produce using traditional food processing techniques and markets it under the brand name of "Manas Organics".</p> <p>Its product portfolio includes organic groceries, vegetables, pulses, herbs and spices and dairy products.</p>
FreshVnF, 2018	Mumbai	Atul Kumar, Vikas Dosala, Sumit Rai and Aashish Krishnatre,	\$2 Mn		Equanimity Ventures	<p>Aims to provide fresh farm produce to the end customer within 16 hours of harvesting.</p> <p>Uses machine learning (ML) to connect farmers with HoReCa (hotels, restaurants and cafes) thereby enabling an optimised farm-to-fork supply chain.</p> <p>One can order and procure fresh fruits and vegetables online with the data-driven inventory and replenishment platform (Nair, 2019).</p>

Miklens Bio, 2016	Mumbai	Santosh Nair	\$5,000,000	ASLE Technology	<p>Offers bio-based agri inputs that aid alternative, chemical-free farming.</p> <p>This is set to transform the agricultural sector by increasing yields, reducing costs and environmental impact, thereby increasing profit margins.</p> <p>Miklens Bio's revolutionary Agri Microbial Technology (AMT) offers farmers residue free agri-inputs such as Mik Naturals, Mikdew, Mikpower.</p> <p>pH regulator: MIKROOT for Maharashtra to prevent pest attacks (Kashyaap,2017).</p>
FarmLink, 2014	Mumbai	Sreeram Chellappa	\$3,000,000	Pioneering Ventures, Syngenta	<p>Modernizing the supply chain from farm to shelf using socially responsible practices and empower the farmers by providing knowledge and extension services such as agriculture credit, crop insurance and warehousing.</p> <p>Procures fruits and vegetables directly from their farmers through a network of collection and service centres with world-class infrastructure and then delivers the produce to industrial scale off-takers such as big retail stores, Hotel-Restaurant-Cafe (HORECA) chains, industrial processors, and emerging e-commerce food</p>



					platforms (Mannan, 2017).
Bombay Hemp Company, 2013	Mumbai	Avnish Pandya, Chirag Tekchandaney, Delzaad Deolaliwala, Jahan Jamas, Sanvar Oberoi, Sumit Shah, Yash Kotak	\$1.3 Mn	Ratan Tata, Rajan Anandan, MA Tejani, Srinivaas Sirigeri, Nikhil Velpanura and Yash Kela	<p>Carrying out R&amp;D, product development and market creation for cannabis products.</p> <p>The Indian startup is working on everything from hemp clothes to R&amp;D of medicines related to the treatment of breast cancer and epilepsy.</p> <p>Helps local farmers cultivate their fields by providing optimum seeds, feedback on cultivation techniques and using new agro-products (<a href="https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/">https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/</a>).</p>
AgroStar, 2017	Pune	Shardul and Sitanshu Sheth	USD 15M	Accel Partners, Aavishkaar, Chiratae Ventures and 3 Other Investors	<p>Aims to scale its services across India, is trying to solve the last-mile logistics problem in rural India so as to enable better delivery of services.</p> <p>Boosted the deliveries done by its own field team (as against using an intermediary like India Post) to make sure the packages are delivered on time (<a href="https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/">https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/</a>).</p>

MeraKisan, 2014	Pune	Prasanth Patil	USD 1M	Mahindra Agri Solutions	<p>An online digital tool that helps Indian consumers to connect with local farmers.</p> <p>Farmers can list on the platform, create a profile, add agro products and build an online presence.</p> <p>Consumers can search farmers by location, by-products they like to purchase like apple, cotton and by using keywords.</p> <p>Customers can then contact the farmer of their choice based on the information provided on the site and purchase the produce directly from the farmer (Anonymous,2019).</p>
Digichorus, 2015	Pune	Santosh Kumar	Undisclosed	TLabs	<p>Offers a mobile first platform Agro-beans, for connecting buyers and sellers of agricultural produce.</p> <p>Provides support services through the platform like delivering agricultural produce samples from the farmer's place to the buyer, quality test solutions for crop samples and contract farming (Anonymous,2019).</p>
Jai Kisan,2017	Pune	Arjun Ahluwalia and Adriel Maniego	Undisclosed	Undisclosed	<p>Provides an integrated input and product supply chain solution for farmers.</p> <p>Offers a fintech platform connecting farmers with finance providers facilitating timely and low-cost finance solutions.</p>

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					<p>Provides an agriculture marketplace for the users to buy agriculture inputs at wholesale prices and market linkages with buyers to buy the farmer's produce at fair prices.</p> <p>Offers advisory services on agriculture practices (<a href="https://tracxn.com/explore/AgriTech-Startups-in-Pune/">https://tracxn.com/explore/AgriTech-Startups-in-Pune/</a>).</p>
Opulent, 2013	Pune	-	Undisclosed	Undisclosed	<p>Offers two products- Smart Kheti and Outshine. Smart Kheti is a mobile app for drip irrigation system.</p> <p>The app can remotely schedule water timings, provide automatic modulation in valve timings, and receive and send notifications.</p> <p>Outshine is a skill-based recruitment solution (<a href="https://tracxn.com/explore/AgriTech-Startups-in-Pune/">https://tracxn.com/explore/AgriTech-Startups-in-Pune/</a>).</p>
Krushiking Agrotech, 2013	Pune	-	Undisclosed	Undisclosed	<p>Offers an online platform for dissemination of agronomic information including farm-related information, market rates and trends to farmers.</p> <p>Provides information by using its mobile application to the farmers and also publishes a bimonthly magazine for farmers focusing on market intelligence, domestic and international market trends and digital business services via SMS (<a href="https://tracxn.com/explore/AgriTech-Startups-in-Pune/">https://tracxn.com/explore/AgriTech-Startups-in-Pune/</a>).</p>

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					re/AgriTech-Startups-in-Pune/).
Kheti Gaadi, 2016	Pune	Pravin Shinde and Vishnu Dhas	Undisclosed	Undisclosed	<p>An online platform for P2P and B2P buying, selling and renting agricultural equipment.</p> <p>Financial credit providers are also listed on the platform for facilitating the purchase of new or used agricultural equipment.</p> <p>Major categories of the equipment listed on the platform include tractors and implements.</p> <p>Equipment of renowned brands such as Mahindra, Tafe, Swaraj, John Deere, Sonalika, New Holland, Massey Ferguson, Eicher, etc is listed on the platform. (<a href="https://tracxn.com/explore/AgriTech-Startups-in-Pune/">https://tracxn.com/explore/AgriTech-Startups-in-Pune/</a>)</p>
EarthFood, 2015	Pune	Nilesh Palresha and Siddhartha Khinvasara	Rs. 64 Mn	Rairah Corporation	<p>Aims to sell relatively more affordable 'residue-free' produce (fresh fruits and vegetables).</p> <p>EarthFood is produced and grown naturally and in an eco-friendly way (<a href="https://yourstory.com/2017/06/earth-food">https://yourstory.com/2017/06/earth-food</a>).</p>
MandiApp, 2015	Pune	Santosh Kumar	USD 9M	Sandeep Bhammer, Ravikant Banka, Shailaja Reddy and 23 Other Investors	<p>A platform, which facilitates buying, and selling wholesale agri-commodities such as vegetables, fruits, spices, cereals and pulses along with transportation.</p>

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					<p>Help to create a private network for users enabling them to be notified for any events occurring in their private network (<a href="https://www.linkedin.com/in/santosh-kumar-93550a8/?originalSubdomain=in">https://www.linkedin.com/in/santosh-kumar-93550a8/?originalSubdomain=in</a>).</p>
FarmBee, 2009	Pune	Rajiv Tevtiya	\$4 Mn	IvyCap Ventures, Thomson Reuters	<p>An online portal that provides agricultural data-driven applications that provide farmers with agricultural content, crop markets, weather data and personalised advice. Provides knowledge on different methods of cultivation based on data obtained from farmers who cultivate the same crop.</p> <p>Offers access to the tools such as inventory planning tool, cost analysis, practice history etc. for decision-making and offers knowledge API solutions, VAS for Telecom and commodity price analytics solutions for enterprises (<a href="https://farmbee.in/">https://farmbee.in/</a>).</p>
Agricx Lab, 2016	Pune	Ritesh Dhoot, Saurabh Kumar	\$500,000	Ankur Capital, Centre for Innovation Incubation and Entrepreneurship (CIIE)	<p>Developed a mobile app that uses artificial intelligence (AI) and computer vision on images to yield objective, accurate and faster quality assessment of agri-produce.</p> <p>Developed an artificial intelligence (AI) and machine learning (ML)-based SaaS solution to simplify the grading system and eliminate variability in the quality</p>

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					of produce sourced. (Kashyaap, 2018)
Ugao, 2015	Pune	Sidhant Bhalinge	USD 447K	Namdeo Umaji	Gardening and farming platform launched in late 2015 that focuses on the gardening and landscaping market. The startup has been working closely with farmers and provides them with high-quality organic seeds, among other products, through its online platform. ( <a href="https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/">https://inc42.com/features/startup-watchlist-10-agritech-startups-to-look-out-for-in-2019/</a> ).
KisanHub, 2018	Pune	Sachin Shende, Giles Barker	\$2,430,000	Notion Capital, IQ Capital, Calibrate Management	An agricultural technology startup helping the farmers in improving the yield of crops per hectare.
MITRA, 2012	Nashik	Devneet Bajaj	\$50 million	Omnivore Capital	M.I.T.R.A develops spraying machines to serve farmers for growing "high-value crops" such as fruits and vegetables.  Its vision is to develop best-in-class, technologically advanced agricultural implements for domestic and global markets which had a life-changing effect in the lives of farmers ( <a href="https://mitraweb.in/">https://mitraweb.in/</a> ).

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## Annexure-IV (Startup Incubators in Maharashtra)

Name	Thrust Area	City	Address	Website Link	Contact Details
Science And Technology Park	<ul style="list-style-type: none"> <li>Open Source &amp; Open Platform Technology</li> <li>Renewable Energy &amp; Clean Technology</li> <li>Pharma &amp; Biotechnology</li> <li>Mobile Computing</li> <li>Project Management Data Centers Social Incubation IT/ITES Education</li> <li>Agri &amp; Food Processing Technology</li> <li>Remote Sensing &amp; GIS Electronics &amp; Telecommunications</li> <li>Cyber Security</li> <li>Health</li> </ul>	Pune	Savitri bai Phule Pune University Campus, Ganesh khind Road, Pune -411007	<a href="http://scitechpark.org.in/">http://scitechpark.org.in/</a>	Dr.Rajendra. P.Jagdale, Director Genstp@scitechpark.org.in T: +91-20-699206/25693449
Venture Center	<ul style="list-style-type: none"> <li>Agnostic</li> </ul>	Pune	Venture Center, National Chemical Laboratory 100 NCL Innovation Park National Chemical Laboratory Campus Pune-411008	<a href="http://www.venturecenter.co.">http://www.venturecenter.co.</a>	Dr. V. Premnath Fax: 9-20-2589-3104 Phone: 020 2590-2986, 020-6401-1024
NASSCOM 10000 StartUps Warehouse-Navi Mumbai	<ul style="list-style-type: none"> <li>IT and enabled Technologies</li> </ul>	Mumbai	Unit no. 304, Bldg2,Sector1, Millennium Business Park, Navi Mumbai, Maharashtra 400710	<a href="http://10000startups.com/10k-program/">http://10000startups.com/10k-program/</a>	Sahil Gupta, Deputy Manager sahil@nasscom.in T: 022-27784414
UnLtdIndia	<ul style="list-style-type: none"> <li>Social Startups</li> </ul>	Mumbai	Block no 1, Flat No 1&2, Baitul Karim building, 4 BoranRoad,	<a href="http://www.unltdindia.org/">http://www.unltdindia.org/</a>	

				Bandra (W), Mumbai 400 050		
MITCON Technology Business Incubation Centre (A Division of MITCON, Consultancy & Engg. Services Ltd.	<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• Ayurveda</li> <li>• Bio-medicine</li> <li>• Renewable Energy</li> <li>• Environment</li> <li>• IT</li> <li>• Engineering electronic sectors</li> </ul>	Pune	Near DIC, Agriculture College Campus, Shivaji nagar, Pune-411005	<a href="https://www.mitconbiopharma.com">https://www.mitconbiopharma.com</a>	Dr. Pradeep Bavadekar, Managing Director md@mitconindia.com T:020-66289452 M: 08308809265	
SINE (Society for Innovation & Entrepreneurship)	<ul style="list-style-type: none"> <li>• Agnostic</li> </ul>	Mumbai	3 <sup>rd</sup> Floor CSRE Building, IIT Bombay Campus, Powai- 400076	<a href="http://sineitb.org/sine/home/">http://sineitb.org/sine/home/</a>	Mr. Rakesh Rajiv, <a href="mailto:sine@sineitb.org">1) sine@sineitb.org</a> <a href="mailto:rakesh@sineitb.org">2)rakesh@sineitb.org</a> T: +912225767016 Fax: +91 22 2572 1220	
DKTE Technology Business Incubator	<ul style="list-style-type: none"> <li>• Clothing and textile technology</li> </ul>	Kolhapur	D.K.T.E.Society's Textile & Engineering Institute P.O. Box-130Rajj ada_ Ichalkaranji- 416 115.Dist- Kolhapur, Maharashtra	<a href="http://www.dkteitbi.com/">http://www.dkteitbi.com/</a>	Prof.(Dr.) P.V. Kadole, Principal pvkadole@gmail.com T: 0230-2421300	
NASSCOM 10000 Startup Warehouse Pune	<ul style="list-style-type: none"> <li>• IT</li> <li>• Soft ware</li> </ul>	Pune	NASSCOM 10000 Startup Warehouse, 4 <sup>th</sup> Floor, 406, MIDC IT tower, Kharadi, Pune, 411014	<a href="http://www.10000startups.com">www.10000startups.com</a>	Darryl Zuzarte darryl@nasscom.in M: 9850813443	
Lemon Ideas	Innovation, Incubation, Mentoring, Advisor, Awareness, Sensitize, Ideating, Creativity, Lemon Startups, Guidance, Education, Consultation, entrepreneurship, and accelerator	Nagpur	Lemon School of Entrepreneur- ship Lambent IT Park, Harihar Nagar, Besa, Nagpur, Maharashtra 440034, IN	<a href="http://www.lemonideas.in">http://www.lemonideas.in</a>	Mobile: +91-8407911142 Email:innovate@lemonideas.in;learring@lemon-school.com	





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