

AGRI STARTUPS IN INDIAN AGRICULTURE

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Article History

Received: 27. 10.2020

Revised: 6. 11.2020

Accepted: 11. 11.2020

INTRODUCTION

Agriculture plays a vital role in India's economy. Over 58% of the rural households depend on agriculture as their principal means of livelihood. India holds the record for the second-largest agricultural land in the world. The agricultural sector in India employs half of our population and we are greatly dependent on the farmers and agricultural labourers to provide us with a means of sustenance. Yet, this is one of the riskiest sectors to be employed in because it is dependent on uncontrollable factors like weather, market fluctuations and topographical conditions. Modern techniques and methods will surely elevate agriculture to the next level and ease the burden on farmers. This therefore creates a huge scope for Agriculture Startups in the country. Transformation of Agriculture to Agri-business is one of the important strategies where enterprising farmers practice profitable agriculture. Agri technology start-ups are such a meaningful solution across the agricultural value chain and can be in the form of a product, a service or an application. We have observed decent growth of Agri start-ups in the country in five focus areas: supply chain, infrastructure development, finance and related solutions, farm data analytics and information platforms.

“A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty. Agri-tech is defined as a segment of companies using technology in the field of agriculture leading to increase in productivity, efficiency and output.

FOCUS AREAS FOR AGRI-TECH STARTUPS

S. No	Focus Area	Services	Startup's
1	Big data	Determine Soil and Crop Health, Drones or tractor-based solution to get data on field, Data based decision making to farmers for improving productivity and reducing unit costs.	Agrostar, RML
2	Farming as a Service	Agri-equipment renting, because moderns equipment is expensive these services can reduce input costs for small and marginal farmers	EM3, Ravgo, Oxen and Farmart
3	Market Linkage Models	Timely and accurate estimation of sowing and harvesting in sync with consumer demand.	MeraKisan
4	Fintech for Farmers	Digitise payments for farmers through payment gateways linked their accounts, create credit profile environment for funders and lenders	payAgri
5	IOT for Farmers	Smart farming like high-precision crop control, data collection, automated farming, information about crop yields, rainfall patterns, pest infestation and nutrition	Airwood, cropin

List of Agri startup's and their focus in India

SI No	Name of Startup's	Focus
1	Bohecod	Bombay Hemp Company was incorporated in 2013 supports Indian Agriculture and sustainable living. They assist regional farmers in cultivating the crop by providing optimum seeds, best practices in cultivation techniques and innovating agro-products
2	Agricx Lab	Provides accurate, quick and portable and easy to use image-based quality assessment. They currently offer a solution to warehouses and enterprises clients with a plan to expand across the food production supply chain.
3	Gold Farm	Its Bangalore based Agri-tech startups, the company offers mobile app-based tractor booking platform for farmers in India, also provide solar water pumps for farmers working in power deficit areas in India. The aim of this company is to facilitate the doubling of farm income for a million farmers in India by 2022.
4	Agrowave	It's basically a Supply chain startup in India. Its Mobile e-vendor of fruits and vegetables that serves small and medium business directly from farmers. They provide services like, mapping production & demand using machine learning, plan to use block chain technology for traceability and using AI to map quality with price.
5	FASAL	It's a Agri-tech platform developed by Wolkus Technology Solutions. It is an AI-powered IOT platform for agriculture ecosystem that records a variety of growing conditions on the farm. The uses artificial intelligence and data science to make on farm perditions.
6	Airwood	Ainono pioneers the use of Real-time Intelligence and Agri 4.0 to solve this intractable problem with next-generation Agri-data science and artificial intelligence, its Real-time precision Agriculture solutions stabilizes and increases yields by 2x by monitoring over 50 farm variables, and the predictive supply engine controls the planting –material and just-in-time harvests to precisely match supply and demand, thereby doubling price realization and income for the farmer
7	CropIn	Basically headquarter in Bangalore, Karnataka digitized 3.1 million acres of farmland, enriched the 1.6 million farmer lives. It gathered data on 265 crops and 3500 crop varieties. It's a leading Agri-tech organization provides SaaS based solutions to agribusiness Globally. CropIn enables its clients to analyse and interpret data to derive real-time actionable insights on standing crop, help to enable businesses to utilise technology to effectively drive their initiatives around digitisation, compliance, Sustainability and traceability.
8	EM3 Agri services	Its Agritech startup in India established in the year 2014 by Rohtash Mal and Adwitiya Mal. They provide pay-per-use farm services for every step of the cultivation process, including development, land preparation, seeding sowing, planting, crop care, harvesting and post-harvest field management. Farmers can access their farming services through mobile app.
9	Ninjacart	Ninjacart is India's Largest Agri marketing platform, solving one of the toughest supply chain problems through technology. They connect vegetables and fruits farmers directly with businesses. The startup has been funded by Accel Partners, Nandan Nilekani, Mistletoe (Japan) & Qualcomm Ventures.
10	FarmLink	FarmLink is a data science and technology company with a passion for helping farmers. Their focus is to drive increased adoption of high-quality data and precision agriculture tools to improve productivity, profitability and sustainability of farm operations around the world.

AGRI STARTUP ECOSYSTEM IN INDIA

It enables such as Incubators/Accelerators are also important partners in the overall Startup ecosystem which supports and accelerates successful development of businesses. It provides array of business services, technology and infrastructure support including office space, mentoring and funding (equity or debt) through grants or investor networking

opportunities. Accelerators, incubators and mentors identified for the Agritech startups ecosystem, along with the pronounced policy and schemes, need to work in tandem with the start-ups to provide the best technical support and reduce their gestation period. Some successful examples of Incubators/Accelerators in the Agritech chain in India are depicted below.

Sl. No	NAME	FOCUS
1	a-IDEA	Association for Innovation Development of Entrepreneurship in Agriculture (a-IDEA) is an agriculture-focused technology business incubator. aIDEA being one of the very few Agri-focused incubators in the country has a unique approach of supporting the broad spectrum of technologies in the value chain of agriculture starting from farm to fork. Through this approach a-IDEA intends to nurture, support and scale technologies that can bring efficacy in the value chains, improve productivity and benefit the stakeholders involved in such Agri-value chains. These incubators mainly focused on Sustainable inputs, smart agriculture, innovative food technology, supply chain technology, fisheries, soil water and weather technology, ICT and IOT in Agriculture, animal Husbandry, vertical farming, Agri-Biotech, post Harvest Technology, Farm Fresh retail and Farm Mechanization
2	AGRI UDAAN	Indian Council of Agricultural Research (ICAR) and the National Academy of Agricultural Research Management (NAARM) technology business incubator a-IDEA has launched 'Agri Udaan' a food and agribusiness accelerator 2.0 along with IIM Ahmadabad's Centre for Innovation, Incubation and Entrepreneurship (CIIE) This is the government's initiative to promote innovation in agriculture and help startups gain mentorship and connect with potential investors.
3	RTBI	IIT Madras Rural Technology and Business Incubator (RTBI) is a registered non-for-profit society established in Oct 2006. Its mission is to incubate start-ups whose focus is to impact rural/underserved societal segments, leveraging ICT (Information and Communication Technologies) RTBI is an independent, non-profit institution which has the unique distinction of having been funded both by the World Bank's InfoDev Project and the Government of India's Dept of Science and Technology's as the only incubator focusing on rural technologies and businesses in India today. Its goal is to combine entrepreneurship with social development in rural India, with information and communication technologies as the primary development tools.
4	DESHPANDE FOUNDATION	The startups can draw on the expertise and support of 500 professionals of the Deshpande Foundation's Hubballi sandbox who are actively engaged in programs for skill development, agriculture, livelihoods and healthcare for these rural and semi-urban customers.
5	CIIE	IIM Ahmedabad has launched India's first Food & Agri-Business accelerator for start-ups in food and agri-business sector in partnership with agriculture research management institutes. Barrix Agro Sciences and Greenway Grameenare the investee start-ups of CIIE.
6	iHub	ICRISAT launched Innovation Hub (iHub) to support agricultural tech entrepreneurs, scientists and technology experts can collaborate to innovate cutting edge ideas across the whole agriculture value chain.
7	LABS indigram	Indigram Labs Foundation (ILF) was founded in 2015, as Technology Business Incubator with the support of NSTEDB, DST, GoI. We believe that entrepreneurs have a unique opportunity to make the positive global change while remaining profitable the story started a long time ago with the success of our host organization, Indian Society of Agribusiness Professionals (ISAP) in setting up more than 1,800 Agri-based ventures through its ACABC program and is currently promoting 250 FPOs in 18 states. This experience became the seed for entrepreneurship development through IndigramLabs. We aims to support 100 innovations in the next 10 years through the process of mentoring, funding, networking & leveraging platforms that yield the stated results.

Top Firms focusing in Indian Agriculture

1. TCS has mobile delivery based advisory platform mKrishi. It provides information system for farmers which help them access localized information and advice on agricultural issues. It is an easy tool to sea food growers in stocking, pond management, feed and water test management and sampling in addition to providing weather forecast and graphical records.
2. Tech Mahindra enables companies to transport produce and meat grown at farm and deliver it as fresh, real time alerts/ notifications on violations, monitor storage temperature and humidity levels ensuring food quality.
3. Infosys: It helps in connecting the dots between on-field data and business insights of the farming ecosystem to transform operations across the agriculture lifecycle. Infosys mobility solutions integrate geospatial imagery and data for smart agriculture, livestock management and logistics; it's also offers precision farming solutions for site-specific crop management.
4. Cognizant: It helped AQUATEK, a brand of Monsanto Corporation to improve their product. Cognizant prepared an intuitive interface that can be viewed across a wide range of devices. The solution involved

satellite-linked, soil moisture probes to monitor water usage and crop health maps to monitor possible risks to crop health.

CONCLUSION

Digital transformation and start-up ecosystem playing a vital role for bringing new innovation in this sector. Since last five years more than five global Agritech companies started in India, many agri startups are focusing market linkage, digital agriculture, better access to inputs and financing are gaining attraction, these technological mechanisms help local farming become a sustainable and profit yielding enterprise.

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