



Policy Brief

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Entrepreneurship Development in Agriculture has been in the major agenda of the government. This is due to the fact that most of the agricultural value chains have some or other issues that are hindering efficient agriculture and farmers' welfare. Recently the spurt of entrepreneurs in agriculture sector has been due to the fact that people are recognizing the sector as a very important for development of the nation. Many organizations are funding it to fulfill their social obligation. Government of India through Department of Science and Technology has initiated setting up incubators in academic institutions. ICAR has also taken up the challenge of creating new business enterprises based on their technology. They have established 25 Agribusiness incubators (ABI) and are in the process of creating 25 more ABIs. The issue of smooth functioning of these ABIs were always talked about. This policy brief looks into origin and present status of these ABIs vis-à-vis other incubators and suggests some improvements in governance and functioning of ABIs in India. We are hopeful that different perspectives presented in the Policy Brief would be helpful in promoting agripreneurship through robust incubation model

DR. CH. SRINIVASA RAO
Director

Fostering Entrepreneurship in Agriculture through Incubation Centres in National Agricultural Research & Education System (NARES)

K Srinivas, Ranjit Kumar, Manju Gerard and Ch Srinivasa Rao

Introduction

Agriculture plays a crucial role in India in terms of providing livelihood security to more than 54% of households. Modern agriculture and food sector have several challenges, like maintaining quality of the produce, improving crop yield, minimizing labour use, conservation of soil and water, pest prediction & control, value addition, etc. The sector is also facing challenges driven due to climate change. Accordingly, the sector offers several entrepreneurial opportunities in the area of food processing, financial sector, retailing, rural Marketing, international trade, rural credit and insurance, warehousing & commodities and cold chain. Besides, there are few areas which are mainly Agritech related, like disease and pest surveillance, precision farming, weather advisory, timely irrigation and soil health, aerial survey to detect anomalies, etc.

Demand growth drivers such as population, demographic advantage, urbanization, and the rise of the middle classes, make the issues of food and nutritional accessibility a priority. The agribusiness sector encompasses huge diversity and variety at each stage, from R&D-based input companies to generic chemical manufacturers, marginal farmers to high tech enabled large commercial farmers, biotech products and small & medium-sized enterprises (SMEs) to multinational corporations. These new dimensions demand for an innovation system to be in place. It is not just the invention or a discovery that is important, but it is crucial to recognize the potential by putting the innovation into practice for development of new products, services or systems that add value to bring about significant changes in the society. Agriculture graduates with typical entrepreneurial skills and vision to tackle problems in agri-value chains need to be sensitized to venture into entrepreneurship to solve the local problems of millions of farmers through such innovative interventions. However, they require proper ecosystem in terms of supportive policy, transparent market, better support services, access to investment, and institutional help in initial high-risk stage.

Startup ecosystem in India

There are many Government schemes such as TBI of National Science and Technology Entrepreneurship Development Board (NSTEDB), BPDs of ICAR and ACABC of MANAGE to encourage entrepreneurship in India. The launch of Startup India¹ has

¹ Startup India is a flagship initiative of the Government of India, intended to build a strong ecosystem that is conducive for the growth of startup businesses, to drive sustainable economic growth and generate large scale employment opportunities. (<https://www.startupindia.gov.in/>).

² NIDHI: National Initiative for Developing and Harnessing Innovations; BIG: Biotechnology Ignition Grant (<http://www.birac.nic.in/big.php>); BIRAC: Biotechnology Industry Research Assistance Council; R-ABI: RAFTAAR-Agribusiness Incubator (https://rkvy.nic.in/static/download/pdf/RKVY-RAFTAAR_Ent.pdf); DAC&FW: Department of Agriculture, Co-operation & Farmers' Welfare

accelerated this entrepreneurship drive in the country. The funds are being made available for startups through NIDHI scheme of DST², Atal Innovation Center scheme of NITI Aayog, BIG Scheme of BIRAC, and R- ABIs of DAC&FWs. Earlier, ICAR also initiated World Bank funded “National Agricultural Innovation Project” (NAIP) in XIth Plan with several grants for such projects.

The establishment of the 10 Business Planning and Development (BPD) units in 2012 (5 in ICAR institutes and 5 in state agricultural universities) initially followed by 12 more such units in 2013 were clear indication that ICAR had taken baby steps for promotion of entrepreneurship in agriculture. The primary objective of these BPDs was to focus on transfer of technology to commercial ventures so that the developed technology reaches to targeted stakeholders. Later under XIIth Plan, the project on 'National Agriculture Innovation Fund (NAIF)³ addressed issues towards innovation and Incubation by supporting Agri-business Incubation Centres.

Technology Business Incubators (TBI)

Technology Business Incubators (TBI) are recognised as

technology-led and knowledge-driven entities to help in speedy commercialisation of innovations and research outputs through passionate entrepreneurs or startups. The TBIs not only help in growth of technology based new enterprises but also improve their survival rate from 30 % to 70 % (NSTEDB, 2016)⁵. The primary role of any incubator is to help nascent innovative technology or business idea(s)- by providing resources, access to industry mentors, interactions with other entrepreneurs and most importantly much needed capital at early stage. These include exploring and match-making with suitable funding agencies such as High Networth Individual(s), angel investors, venture capitalists (VCs) or equity investors, depending upon the stage of the startups and business scalability. Figure 1 shows different stages of growth of any typical startups and the possible funding sources, which incubators help to bring on to the table for the discussion. Business incubators thus provide a high degree of management support to the startups besides helping them with technological inputs. This would cut the time and cost for a business to establish at a faster rate. However the strong support by the incubators does not guarantee the success of the business due to many external factors. The risk of business has large external factors such as change in policy, demand, demography and choices of customer. Besides there may be some internal unforeseen conflicts like co-founder

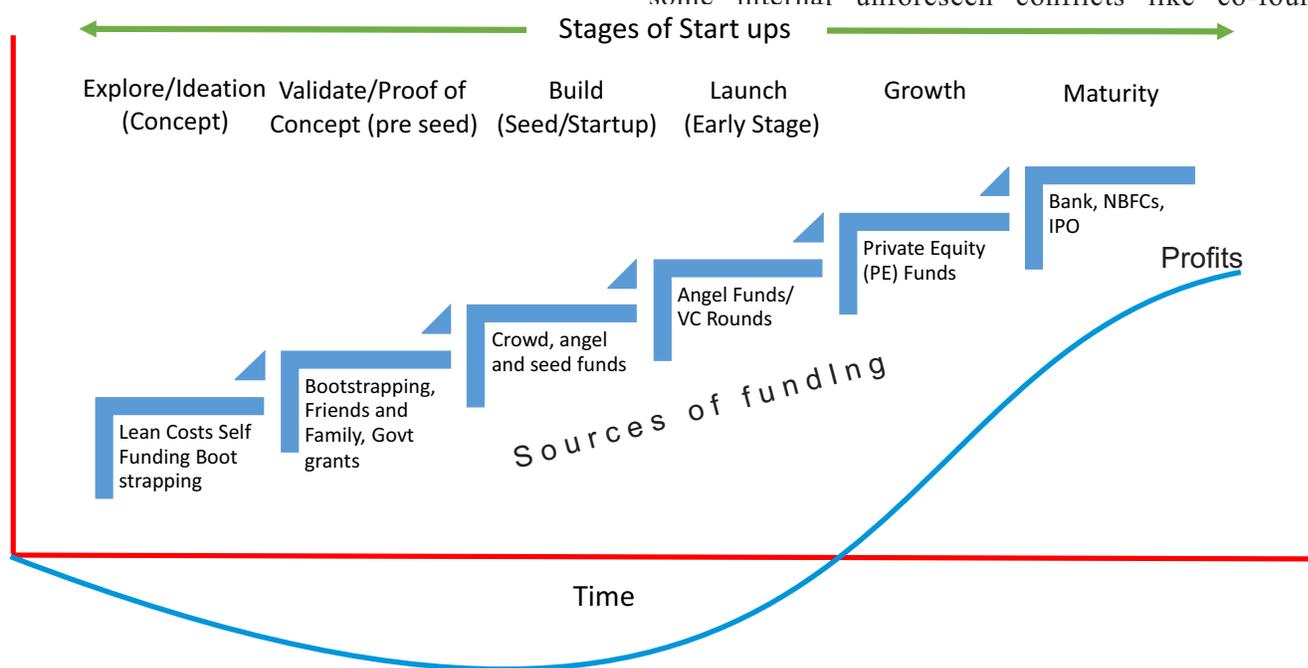


Fig 1. Stages of typical startups and possible funding sources

³ ICAR. 2013. EFC Document.

⁴ TBI: Technology Business Incubator; NSTEDB: National Science and Technology Entrepreneurship Development; BPD: Business Planning & Development; ICAR: Indian Council of Agricultural Research; ACABC: Agri-Clinics & Agri-Business Centre; MANAGE: National Institute of Agricultural Extension Management

⁵ NSTEDB, (2016), <http://www.nstedb.com/institutional/tbi.htm>. Accessed on 07-05-2015.

Compared to other sectors like engineering, pharmaceuticals, ICT, machinery, consumer goods etc, this concept is at an early stage in the agriculture and food sector in India. Even at the global level, variety of agribusiness incubators are now evolving and many are at early stage. We can bucket these incubators in three categories: The first being Agribusiness value chain/ sector development incubators. These incubators typically support the start-up entrepreneurs who are solving the problem in any part of value chain. It may be procurement, production, post-production, processing and reaching to the consumers. The basic features of these incubators are that they have strong network and management skills, have adequate capital support, can leverage services and provide linkages to wide range of mentors to markets. These incubators are costly affairs and very difficult to duplicate. They require lot of external funding but show limited sector impact. Agricultural research commercialization incubators are mostly backed by strong research. These incubators are basically situated in Universities or research institutions. In Indian condition, they have limitation of their mandate, oriented to production rather than market demand. These incubators have a strong pipeline of technology and linkages with research and technology community. Some field incubators are basically pioneering trans border high tech transfer with sufficient capital and work effectively with bottom of pyramid entrepreneurs and stakeholders. They continuously innovate through new programmes and process. However, the tech culture mix in many places may not be very successful due to many socio economic levels of customers.

Incubation centres in NARES

Incubation centre in NARES in India is less than a decade old

Table 1. Comparison of ICAR-ABIs and other incubators in India

Parameters	ICAR-ABIs	Other Incubators (TBIs)
General information		
Objective	Objectives align with the institutes mandate therefore becomes a very narrow band incubator	Nurture technology based new enterprises and facilitation of transfer of technology
Nature	Non-profit unit at public sector R&D institute	Both profit and non-profit organisations.
Sources of funding	ICAR supported project	Central government, host institute, financial institute, and private sector companies
Thrust areas	Agriculture and food sector	Diverse - ICT, IT, Manufacturing, Biotechnology, Agriculture, healthcare; Rural, etc.
Linkage with Startup India	Not yet	Forms part of the Startup India hub
Governance		
Governance Structure	Project-based mode with control by host institute.	Have operational autonomy.
Management Team	Mostly Scientific Staff of host Institute	Business management teams, with CEO and other professional experts

Case of NAARM TBI: a-IDEA

Established in 2014, the TBI of NAARM a-IDEA was initially supported by NSTEDB. The incubator is working across the value chain in agriculture, animal sciences and fisheries sectors in input, finance, mechanization, IoTs and ICTs, soil & water technologies, supply chain technologies, post harvest and food etc vertical. It organizes sensitization and ideation programmes for students (till date organized 18 programmes with 2500 students), Incubation programme (till incubated 36 innovative ideas), and seed investment in six companies. The NAARM a-IDEA has launched India's first Food and Agribusiness accelerator called AGRI UDAAN[®] in 2015, It has accelerated 18 startups from which 7 startups raised follow up investment up to Rs 55 Crores. The TBI has made an impact as good agri focus incubator due to adoption of best practices. The NAARM a-IDEA received Best Emerging Incubation Award from Government of India in 2018 and has been recognized in many national and international forums. (<https://aidea.naarm.in>)

development. In terms of governance, the ABIs seem to be more bound by institutional hierarchy and processes as compared to flexible models in other TBIs of NSTEDB. There are around 25 ABIs and most ABIs are still functioning on R&D models led by R&D professionals. The management inputs that are required by the entrepreneur for his business is hard to come by. It is very difficult to link market demand with the institute technology generation. The detailed comparisons of ABIs to other incubators (specifically TBIs) are given in table 1.

Monitoring and Evaluation	As per the host institute	Review mechanism of NSTEDB is through a National Expert Advisory Committee
Mentoring	Only technical mentoring	Both technical and business mentoring
Exit policy for incubatees	Not well defined	Defined exit policy
Legal Status	No independent legal status; works as a part of the institute	Not for profit registered societies or Section 8 companies
Services provided		
Infrastructure	Documented in application but not specified	Specified: Range from 5000 sq.ft. to 25,000 sq.ft depending on thrust area
Prototype testing	Still in nascent stage	Most incubators have established large facilities and outsource services
Funding support	No seed support	Have seed support, linkages with Angel investors and Investors

Roles and challenges with Incubators

Incubation centres play a very critical role to the success of startups and young entrepreneurs. Though, it is misconceived that an incubation program is just a trade-off of “free” space and facilities for equity/fees. A well-structured incubation programme helps the startups right from idea refinement, imparting management skill, market identification and development, and most crucial funding support. The challenges that the incubator is facing presently in India is finding good startups who want to build a product/service to solve problems in the market or in the value chain. Normally, the startups do not distinguish the value proposition that incubators can provide. Large asymmetry has been created due to the difficulty by startups and incubators to rightly price the “value add” at an early stage of the enterprise. Incubator normally charges for the services it provides. The charges can be in the form of fees, equity or combination of both. However, majority of incubator take equity as startup does not have money for paying fees. If startup fails, there is no realization for the incubator in this case. However, the issue is more complex in terms of fees. Most of the incubates fail in paying the fees and incubator need to condone it. Government owned incubators have the problem in this model as the receivable increases in their balance sheet.

Recommendations

Keeping in view of non-coherent and diverse approaches being practiced by different incubators in promoting

entrepreneurship, there is urgent need of developing systematic processes and procedures for functioning of the incubators. Following are the specific recommendations to promote agripreneurship through incubators:

- **Standard Operating Procedures (SOPs):** For smooth functioning and successful execution (on boarding, monitoring & evaluation, exit policy etc.), SOPs should be framed by ICAR/SAUs in consultation with different stakeholders.
- **Building pipeline of agripreneurs:** The incubators should conduct programmes like sensitization workshops, technology fairs, ideation competitions, hackathons, accelerators, etc. for scouting and nurturing of potential entrepreneurs.
- **Professional team for Incubators:** Incubators need to engage professional management team with relevant experience in business development, finance and strategic operations etc. for mentoring and managing incubates.
- **Autonomy to Incubators:** Incubators need to take several decisions for for smooth day to day operations. Therefore, functional autonomy to the incubators should be ensured.
- **Networking with stakeholders:** Entrepreneurship requires support of different stakeholders such as technology developer, mentors, funding agency, legal and regulatory service provider etc. Incubators should develop and maintain strong network with stakeholders to provide needed support to the early-stage agripreneurs.

For further details and feedback:

Director

Email: chsrao_director@naarm.org.in

Corresponding author

Email: ksrinivas@naarm.org.in

**ICAR-National Academy of
Agricultural Research Management**
Rajendranagar, Hyderabad- 500 030
Telangana, INDIA
Tel: +91-40-24581342
Fax: +91-40-24015912

