
Role of Agri-Business Entrepreneurship, Innovation and Value Chains/Networks in Farmer Income Improvement: Models, Policies and Challenges *

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I

INTRODUCTION

Agribusiness is a term used to describe the sector that encompasses all economic activities that are related to farming, i.e., breeding, crop production/farming, farm machinery, distribution, marketing etc. It relates to industries that are engaged in farming or that produce farm inputs. Examples of agribusiness include farm machinery manufacturing, seed supply, and agrichemicals. It also is used to describe businesses that are involved in the marketing and distribution of farm products. These businesses include warehouses, wholesalers, processors, retailers, and more. Any company that participates in the production, marketing, safety, and distribution of food is involved in agribusiness. More precisely it is defined as a sector that supports the growth of the agricultural industry, which is pivotal to economic growth. It also continues to play a crucial role in the growth of developing countries. Agribusinesses can potentially improve agricultural productivity, which is why governments often offer subsidies to agricultural businesses. Agricultural activities also contribute to an improved system of food security and sustainable food production, as well as income for a majority of the poor in developing countries. However, the activities increase the emission of greenhouse gases and contribute to global warming – which is why innovation is important in the sector to address such problems.

Entrepreneur refers to an individual that has an idea and intends to execute on that idea, usually to disrupt the current market with a new product or service. Entrepreneurship in agriculture can also be defined as the formation of novel economic organisation for the intention of growth under risk and uncertainty in agriculture (Dollinger, 2003). Contrary, Gray (2002) defines an entrepreneur as an individual who controls a business with the purpose of growing the business along with leadership and managerial skills necessary for achieving those goals. The most prominent example of entrepreneurship is the starting of new businesses. In economics, entrepreneurship connected with land, labour, natural resources and

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capital can generate a profit. The entrepreneurial vision is defined by discovery and risk-taking and is an indispensable part of a nation's capacity to succeed in an ever-changing and more competitive global marketplace. Many small-scale farmers and extension organisations understand that there is little future for farmers unless they become more entrepreneurial in the way they run their farms. They must increasingly produce for markets and for profits. Becoming more entrepreneurial can be a challenge for small-scale farmers. They will need help from extension workers and other institutions.

Innovation is defined as the process of making an idea or invention into a good or service that creates value and/or for which customers will pay. There are many different types of examples of innovation such as in social innovation, incremental innovation and open innovation among others. The word "innovation" is derived from the Latin verb *innovare*, which means to renew. In essence, the word has retained its meaning up until today. Innovation means to improve or to replace something, for example, a process, a product, or a service. Therefore we can say:

“Innovation is a process by which a domain, a product, or a service is renewed and brought up to date by applying new processes, introducing new techniques, or establishing successful ideas to create new value”

It requires more creativity and more willingness to take risks than the implementation of typical projects. Entrepreneurs are also innovators. The skills and techniques of innovative thinking are not just vital in work, but useful in everyday life as well, helping us to grow and develop in new situations and think about how to adapt to change more easily. Innovation skills refer to the talent of exploiting new ideas for the purpose of gaining social or economic value. Innovation skills are usually a combination of one's ability to think creatively, problem-solving ability, as well as functional and/or technical abilities.

According to Baragheh in 2009 “Innovation is the multi-stage process whereby organisations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace”. Agricultural innovation is the process whereby individuals or organisations bring new or existing products, processes or ways of organisation into use for the first time in a specific context in order to increase effectiveness, competitiveness, resilience to shocks or environmental sustainability and thereby contribute.

A 'value chain' in agriculture describes the range of activities and set of actors that bring agricultural produce from the point of production to point of consumption, in which value is added at each stage. At one end of the agricultural value chain are the producers – the farmers who grow crops and raise animals. At the other end are the consumers who eat, drink, wear and use the final products. And in the middle are many thousands of men and women, and small and large businesses. Each person and

each business performs one small step in the chain, and each adds value along the way – by growing, buying, selling, processing, transporting, storing, checking, packaging and branding. Other people and other businesses have important roles supporting the chain. Banks provide loans; governments establish laws and policies, and agricultural research organisations develop ways for farmers to more successfully participate in value chains.

The concept of Agri-Business is now changing minds and farmers' also are now becoming an entrepreneur. Small-scale farmers all over the world have shown a remarkable ability to adapt. They look for better ways to organise their farms and enhance their income. They try new crops and cultivars, better animals, and alternative technologies to increase productivity, diversify production, and reduce risk – and to increase profits. They have become more market oriented and have learned to take calculated risks to open or create new markets for their products. They need to be innovative, forward-looking, capability of managing their businesses as long-term ventures and ability to identify opportunities and seize them. The farmer having an entrepreneurial spirit try to act differently and make decisions about the value chain to be followed in his farm to increase the return and profits of the farm business.

Increase in farmer income is a big task and Government of India is very particular to enhance it through different means. Few procedures are much needed to adapt in the form of models to enhance the income of farmers and these are as under:

Promoting Innovations: Innovations are need of the hour to grow as entrepreneur or start-up depending upon the solution to the problems. We need to promote innovations through farmers and young entrepreneurs as they need to participate actively in designing, testing, adapting and introducing innovations to the agriculture.

Increase in Value Addition: Farmer-entrepreneurs need to realise that capturing value requires producing for buyers and final consumers. But just producing and selling is insufficient. This requires greater understanding and knowledge of value chains and their different elements. It requires a plan for participating further down the value chain. Farmers capture more value by selling their regular fresh produce directly to the consumers. Another way is to sell high-value products such as organic products. Instead of producing commodities that are undifferentiated, farmers need to produce commodities that are differentiated such as organic fruits, a unique type of commodity or other specialised products for a limited “niche” market. Another way of adding value is to enter into production and marketing contracts. Contracts are increasingly being used between farmers and input suppliers, farmers and processors and between farmers and other buyers for the production and supply of fresh or processed agricultural produce.

Development and Adaptation of New Technologies: Farmers need to be encouraged to develop and adapt new technologies and share them with other farmers. Extension workers can facilitate partnerships among farmers and between

farmers and researchers to work together to identify, develop and test new technologies and practices to improve productivity and profitability.

Use of Information Technology: Now-a-days information technology is available and accessible everywhere. Therefore, it is a very powerful way for extension workers to educate and inform the farmers about new ideas, technologies and other information. Physical distances and the lack of transportation facilities often limit the ability of extension workers to share information with farmers. Mobile phones, tablets, and computer-based systems can be used to overcome these physical barriers. The challenge is how information technology can be harnessed for the benefit of both extension agents and farmers without compromising the importance of human and unique local factors.

II

IMPORTANCE OF AGRI-BUSINESS ENTREPRENEURSHIP

Agri-business entrepreneurship is important for national economy in following ways (Sah *et al.*, 2009).

- (i) It helps in achieving productivity profit by small farmers and amalgamating them into local, national and international markets.
- (ii) It helps in decreasing food costs and provides high quality diets to the rural and urban poor in the country.
- (iii) It accelerates growth, diversifies income and develops entrepreneurial opportunities in both rural and urban areas.

III

ENTREPRENEURSHIP DEVELOPMENT OPPORTUNITIES IN AGRICULTURE

Agribusiness increases the scenario and opportunities for value addition, packaging, branding, retailing, and exports of agricultural commodities through improved technology and agribusiness management. Indian population directly or indirectly depends on agriculture and now agribusiness is taking the lead and raw material for industries comes from agricultural area only. Now, the time is approaching where agribusiness is most likely to control the Indian economic growth. Presently, there are about 25 per cent to 30 per cent of post-harvest losses in fruits and vegetables before reaching the final consumer, i.e., due to lack of proper post-harvest management practices. However, introduction of agribusiness in agriculture has created lot of changes in business professionalism. The scope and opportunity in the agribusiness has also been increased. The possible opportunities of entrepreneurship in agriculture are:

- (i) Agro produce processing units – New product is not manufactured but the agricultural produce is processed to form end product, rice mills and dal mills are few examples.
- (ii) Agro-produce manufacturing units – In this category, new products are produced depending upon the agricultural produce as the main raw material, sugar factories and bakery are few examples.
- (iii) Agro-inputs manufacturing units – These units are engaged in the production of goods either for mechanisation of agriculture or for increasing agricultural productivity. Fertiliser and pesticide production units, food processing units and agricultural implements are few examples.
- iv) Agro service centres – Agricultural engineering workshops and service centre for repairing, maintenance and serving the agricultural implement used in agriculture are the part of agro-service centres.

Bansal (2011) has proposed some entrepreneurial areas in agriculture

- (i) Farming - crop, dairy/poultry/goat, fish, rabbit, vegetables, flowers, ornamental plants, palmrosa, fodder, sericulture, agro-forestry, beekeeping, mushroom.
- (ii) Product marketing - wholesale, retail, commission agent, transport, export, finance, storage, consultancy.
- (iii) Inputs marketing- fertiliser, agricultural chemicals, seeds, machineries, animal feed, poultry hatchery, vet-medicines, landscaping, agriculture credit, custom service, bio-control units, bio-tech units.
- (iv) Processing - milk, fruits, vegetables, paddy, sugarcane, cashew, coir, poultry, cattle, tannery, brewery.
- (v) Facilitative - Research and development, marketing information, quality control, insurance, energy.

IV

OPPORTUNITIES FOR AGRI-BUSINESS ENTREPRENEURSHIP IN INDIA

Agri-business entrepreneurship is the future of India and Government of India is already focusing on it. Farmers and agri start-ups willing to grow are having number of opportunities for agri-business entrepreneurship and some of them are listed below:

- (i) Input industry is one of the important industries where demand for agricultural inputs have increased.
- (ii) Agricultural Biotechnology is having scope in the form of seed production, bio-control agents, industrial harnessing of microbes for different products.
- (iii) Processing is another area where agripreneurs are having opportunities and can excel.

- (iv) Animal husbandry as an industry can become a huge source of generating employment and livelihood. Introduction of new product (designer egg, crossbred cows, hybrid fowls, etc.) are some of the areas where one can excel as agripreneur.
- (v) Value addition to the livestock products such as milk, egg, meat, and fish has huge profit potential. Value of the products get increased many folds during processing, and thereby provide excellent returns.
- (vi) Non-Timber Forest Products are unexploited and therefore has scope for developing an enterprise.
- (vii) Beekeeping, apiary and mushroom production can be taken up on great extent in India.
- (viii) Organic farming has huge potential in India as the pesticide and inorganic fertiliser application are less in India compared to industrial nations of the world.
- (ix) Huge opportunities for production and promotion of bio-pesticides and bio-control agents for protection of crops.
- (x) Micro-irrigation systems and labour saving farm equipments have potential in future due to declining groundwater level and labour scarcity for various agricultural operations.
- (xi) Green House production of vegetables and flowers can play a major role in export of these commodities.
- (xii) Employment opportunities have increased in marketing, transport, cold storage and warehousing facilities, credit, insurance and logistic support services because of enhanced agricultural production.

v

SUCCESSFUL ENTREPRENEURS OF JAMMU AND AGRI-START-UPS INCUBATED
AT AGRI-BUSINESS INCUBATOR, SKUAST-JAMMU

Various success stories of agri-entrepreneurs have been reported from different sectors and states suggesting their growing importance in agricultural extension (Srinivas *et al.*, 2014). Below are some handpicked success stories about the successful entrepreneurs, farm innovators and agri start-ups incubated at SKUAST-Jammu.

Successful Entrepreneurs/ Farm Innovators

Mr. Kulbushan Khajuria (58) is a resident of Sohanjana village, Tehsil Mandal, District Jammu of Union Territory of Jammu and Kashmir. He owns 60 healthy milch animals and an automated milk collection system, a well-maintained cattle-shed and a feeding area. Currently, his dairy named Krishna Dairy Farm has 48 Holstein Friesians (HF) cows, nine Jersey cows, two Gir cows, one Shahiwal cow

and one Murrah buffalo. At present, 50 per cent of his dairy animals are in the lactating phase and producing 4.5 quintals of milk every day. For marketing of milk, he has established 3 sale counters in Jammu city at Talab Tillo, Shakti Nagar and Channi Himmit Jammu. He is generating a turnover of more than Rs. 60 lakhs per year from sale of milk, vermin compost and agricultural products with a net profit of Rs. 20-25 lakhs per year. He is providing employment to 7 unemployed youths round the year and 10 persons are engaged for need based services as and when required for cutting of fodder. He is also producing and selling 400-500 qtls. of vermin compost every year through sale counters. To minimise cost of milk production, he is preparing silage on his own farm every year. His visionary and leadership qualities have made him a successful entrepreneur. The success of Mr. Khajuria can be gauged from repayment of loan of 30 lakhs in 5 years that he had taken from the bank at the time of expansion of his dairy farm. He has a clear vision of his venture that helped him to turn the idea of establishing a dairy farm into reality by pooling of his personal resources and availing bank loan.

Sh. Kuldeep Verma S/o Sh. Puran Chand is a resident of village Kotli Charakan, Jammu. He has constructed a pond of 1000 sq. metre. In the initial years, the fish production was less ranging between 200-300 kg/year which was encouraging but not upto his satisfaction. Then, he contacted scientists of KVK SKUAST Jammu for technical details and scientific fish farming techniques. KVK Jammu laid front line demonstration of fisheries at his field and briefed him with all the latest technologies and calendar of activities to follow. He followed all the instructions and achieved fish production of 400 kg during the year 2020. He is earning a net profit of Rs. 59000 per year from sale of fishes. Other than this, he is rearing backyard poultry birds near the fish pond after getting advice from KVK Jammu regarding integrated farming system and excreta of birds will work as feed for fishes and it will reduce his production cost. He is having Sahiwal cow for milk and two dogs to watch during night. His activities are continuously captured and recorded to motivate other youths.

Sh. Dunda Singh a turmeric farmer from Sultanpur village in Kathua district has three roles by profession- a farmer, an entrepreneur and a turmeric Cultivator. For setting up of processing plant he purchased land (1 kanal 3 marlas) @ 1.5 lakhs per kanal with the initial investment of Rs. 7.00 lakhs for creation of infrastructure, 6.92 lakhs on machinery and established the Baba Deep Singh Spices Park with brand name BDS at village Kana Chak and registered his products with Food Safety Standard Authority of India (FSSAI) vide Registration No 11017210000050. There is a handsome increase in his income after setting up of the processing plant. By putting all these stepping stones together he started his own turmeric processing plant in 2014 and named it as Baba Deep Singh Spices Park and BDS Haldi is one of the most trusted brands of his processing plant. His family including wife, two sons, two daughters in laws and maternal uncle play a major role in all the activities related to the processing of turmeric such washing, boiling, polishing and grinding. He also has seasonal labourers working for him in the processing plant and all the packaging,

sealing and grinding work is done by the equal contribution of family members in his factory and home. All these steps taken by him has increased the production of raw turmeric from 60 quintals to 110 quintals today.

Startups Incubated at Agri-Business Incubator, SKUAST-Jammu

Bhavishya Devgun

Bhavishya Devgun successfully running his start up ‘Salutem Ridegear’ selling AGRITREAT – An organic agri-input fluid spray offered as an alternative to harmful chemical pesticides & fungicides after conducting successful trials with farmers pan India. He has current sales generation of around 3 Lakhs pan India with distribution partners across 8 states and counting.

Nikky Kumar Jha

Nikky Jha successfully established his start up ‘Sapkrishi Scientific Pvt. Ltd. selling SABJI KOTHI – A solar powered, cost effective, IOT enabled, microclimate based wheel mountable Preservator for storage of fresh fruits and vegetables to extend their shelf life by 5-30 days for vendors and small producers. He has exhibited his innovation throughout the country and has been invited by Govt. of Arunachal Pradesh to run a pilot trial there.

Payal Sharma

Payal Sharma successfully running her start up ‘Jk Aromatics & Herbs LLP’ selling chemical free, natural, sustainable products such as incense, rapid compost, plantable rakhis and chemical free soaps made from flower waste collected from temples/mosques across J&K thereby converting waste to wealth. She has already established a loyal customer base of more than 500 customers.

Vivek Sharma

Vivek Sharma successfully running his start up ‘Vatika Agro Services’ selling high quality, high yield, disease free seeds and seedlings of vegetables and cash crops developed in soil less media to farmers as well as individual customers including off season seedlings raised in protected structures. He is rapidly establishing a loyal customer base in the Jammu province and is looking to soon expand his operations outside as well.

Kuldeep Dhaliwal

Kuldeep Dhaliwal a progressive farmer successfully running his start up ‘Kdhariwal Agrotech & IT Services Pvt. Ltd. Selling CROP RECHARGER – A

natural Agri input liquid that enriches the soil with nutrients and increases the nutrient absorption capacity of plants as an alternative to chemical fertilisers. He has won numerous awards & certifications from various government and non-government organisations for his innovative invention and has a huge customer base of fellow farmers.

VI

POLICIES

The task of promoting entrepreneurship was earlier given to different departments and government agencies. In 2014, the Prime Minister decided to dedicate an entire ministry i.e., Ministry of Skill Development and Entrepreneurship to build this sector as he felt that skill development required greater push from the government's side. Furthermore, the idea is to reach 500 million people by the year 2022 through gap-funding and skill development initiatives.

India is gradually building a robust startup ecosystem. In order to promote and support entrepreneurs, the government has created a Ministry (department) dedicated to helping new businesses.

Below given is a list of Government schemes/agencies launched to develop and encourage entrepreneurship in India.

- Startup India Seed Fund
- Startup India Initiative
- ASPIRE
- MUDRA Bank
- Ministry of Skill Development and Entrepreneurship
- ATAL Innovation Mission
- eBiz Portal
- Dairy Processing and Infrastructure Development Fund (DIDF)
- Support for International Patent Protection in Electronics & Information Technology (SIP-EIT)
- Multiplier Grants Scheme (MGS)
- Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)
- Software Technology Park (STP) Scheme
- The Venture Capital Assistance Scheme (VCA)
- Loan For Rooftop Solar Pv Power Projects
- NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC)
- Single Point Registration Scheme
- Modified Special Incentive Package Scheme (M-SIPS)
- Atmanirbhar Bharat Schemes

The important schemes wherein budding entrepreneurs can get funding or grant-in-aid for establishment and growth of their enterprise are explained below:

RKVY-RAFTAAR

- The Rashtriya Krishi Vikas Yojana (RKVY) is an important scheme of the Government of India, Ministry of Agriculture and Farmers' Welfare (MoA&FW), aimed at strengthening infrastructure in agriculture and allied areas. In order to promote agripreneurship and agribusiness by providing financial support and nurturing the incubation ecosystem, a new component under the revamped scheme RKVY-RAFTAAR has been launched in 2018-19. Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu got selected as one of the Incubation Centres under RKVY-RAFTAAR project and Agri Business Incubator, SKUAST-Jammu has been established in March 2019.
- It is an initiative to encourage young minds to come with innovative ideas in the field of agribusiness and to develop an agripreneurship ecosystem.
- Under this project there are two Agripreneurship Development Programmes namely UDGAM (Pre-Seed Stage Funding) and PRAGATI (Seed Stage Funding) with grant-in-aid to the tune of 5 lakhs and 25 lakhs, respectively.

Atal Innovation Mission (AIM)

It is Government of India's flagship initiative to create and promote a culture of innovation and entrepreneurship across the length and breadth of our country. It was setup in 2016. AIM's initiatives have played an important contributory role in the advancement of India from a position of 81 in the Global Innovation Index in 2015 to a position of 48 in 2020. AIM has adopted a holistic approach encompassing schools, universities, research institutions, industry, MSME, NGOs, Ministries, at district, state and national levels.

Major initiatives by Atal Innovation Mission (AIM)

- (i) Atal Incubation Centres - Fostering world class startups in universities, institutions, private sector adding new dimensions of outcomes based scale up and monitoring to existing incubator model.
- (ii) Atal New India Challenges - Fostering product and service innovations in the country with national socio-economic impact and aligning them to the needs of various sectors/ministries/industry.
- (iii) Atal Community Innovation Centre - To stimulate community centric innovation and ideas in the unserved/underserved regions of the country including Tier 2 and Tier 3 cities and rural India
- (iv) Building strategic Innovation partnerships with public sector, private sector, multinationals, and global country to country partnerships which include USA,

UK, Germany, Russia, Singapore, Sweden, Israel, Denmark, Australia to name a few.

Atal Innovation Mission initiatives are key to further promoting the culture of innovation and giving expression to the innovative and entrepreneurial ideas of startups to enable development of one of the most Innovative Nations of the world.

NIDHI

National Initiative for Developing and Harnessing Innovations (NIDHI) is an umbrella program conceived and developed by the DST for nurturing ideas and innovations (knowledge-based and technology-driven) into successful startups.

NIDHI has following programme components:

- (i) Technology Business Incubator (TBI), Seed Support System (SSP), Accelerator, Centre of Excellence (CoE), Promoting and Accelerating Young and Aspiring Innovators and Startups (PRAYAS), Entrepreneur in Residence (EIR),
- (ii) The NIDHI-EIR programme provides Rs. 30,000 per month as fellowship to an aspiring or budding entrepreneur for pursuing a promising technology business idea.
- (iii) While Promoting and Accelerating Young and Aspiring technology entrepreneurs (PRAYAS), support upto Rs. 10 lakhs to enable translation of an innovative idea to a prototype is provided.
- (iv) Inclusive TBI is a three years duration initiative supported by the Department of Science Technology DST for educational institutions who are likely to foster innovation and entrepreneurship culture among the students, faculties, entrepreneurs, and nearby communities.

Startup India Initiative

The Prime Minister of India launched the Startup India Initiative in the year 2016. The idea is to increase wealth and employability by giving wings to entrepreneurial spirits. The government gives tax benefits to startups under this scheme and 798 applicants have made use of this scheme to date. The Department of Industrial Policy and Promotion is maintaining this initiative and is treating it as a long term project. Moreover, the overall age limit for startups has been increased from two years to seven years and for biotechnology firms, the age limit is ten years from the date of incorporation. It is one of the best government-sponsored startup schemes for entrepreneurs as it provides several concessions.

Startup India Seed Fund

On 16 January 2021, Prime Minister Sh. Narendra Modi announced the launch of the 'Startup India Seed Fund' — worth INR 1,000 crores — to help startups and

support ideas from aspiring entrepreneurs. Prime Minister said that the government is taking important measures to ensure that startups in India do not face any capital shortage. Financial assistance to startups is also the part of the initiative for proof of concept, prototype development, product trials, market entry, and commercialisation. Under the initiative, the Seed Fund is disbursed to eligible startups through eligible incubators across.

VI

CHALLENGES

Agripreneurs are facing various challenges in the execution of their plans to develop new start-ups or any other support businesses. The basic problem can be the literacy level of the agripreneurs, farmers or rural people and another strong chance is lack of innovative mind. This acts as root cause for majority of challenges mentioned below. Major challenges faced by the agripreneurs are inadequate infrastructural facilities, lack of innovative entrepreneurial abilities among people, declining interest in agricultural allied services, lack of skilled and managerial manpower, marketing problems, lack of awareness about career in agripreneurship, lack of budget, lack of strategy, innovation initiatives with no innovation strategy, fear of making mistakes, cognitive barriers etc.

VII

CONCLUSION

Agri-entrepreneurship is the need of the hour to make agriculture a more attractive and profitable business enterprise. Agriculture has great scope for entrepreneurship and innovative start-ups and it needs useful management of production and marketing parameters. In developing countries this sector has not been successful to produce enough income to lift people out of their poverty and scarcity. Thus, innovation and agriculture definitely generates a solution for growing household incomes. The excellent management and entrepreneurial expertise infused with government measures would facilitate success of the growing needs of agri-businesses. Innovation, confidence, risk bearing, honesty and vision are the parameters to be adopted and follow for becoming a successful agri-entrepreneur. Agri-entrepreneurship provides direct employment especially in rural areas and contributes to the national income. Value addition of products offer entrepreneurs with high profit and return-on-investment which otherwise farmers is not able to receive. Therefore, farmers by becoming entrepreneurs have to take benefit of change in consumer demand and satisfy consumers' needs with value-added products.

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