

Entrepreneurship Opportunity

in Dairy Sector

Ashish Kumar Singh, Gaurav Kr Deshwal and P N Raju

ICAR-National Dairy Research Institute, Karnal, Haryana 132 001

Livelihood security in rural sector of India primarily depends on agriculture including livestock sector. The milk alone accounts for 67% of the value of output from livestock sector and with increasing widespread demand it will continue to be among the major contributors to rural economy. About 70 million small and marginal farmers with an average of 2-3 animals produce more than 50% of the milk in the country. Milk and milk products constitute the major share in Indian food basket, next only to rice and wheat. India contributes to about 18.4% of global milk production with over 187.74 MT in 2018-19 with an annual growth rate of nearly 6.0%. The projected demand of milk offers new opportunities for marginal and small dairy farmers.

Key words: Dairy farming, Food processing, Mechanization, Stand-up India

GROWTH of Indian dairy sector would definitely coincide with the enhanced milk productivity, consistent supply of good quality raw milk directly from the milk producer or alternatively by promotion of value addition at the producer's level itself. Dairying would remain a major contributor to nation's GDP and lucrative source for livelihood options. There has been a growing interest among entrepreneurs towards establishment of dairy farms, milk or food processing units on commercial scale which is evident from the increasing number of organized dairy farms and milk processing units. Besides several opportunities exist in dairy sector for entrepreneurs, which are discussed here.

Strategic interventions required for promotion of entrepreneurs

The Indian dairy sector is largely under the domain of unorganized sector and its transformation is urgently required to meet the aspiration of domestic consumers and make a sizeable presence in international market. Probably the major reason that is driving entrepreneurs towards dairy sector is

an element of certainty and huge market opportunities existing across the nation. Experiences with current set-up of technology management indicate several issues listed below, which hamper the entrepreneurship development in dairy sector:

- Lack of awareness among the stakeholders regarding the scientific/technological developments in R & D institutions and organizations.
- Large reservoir of technologies are available in R & D Institutions, but most of the technologies have not been validated for up-scaling, consumer acceptance and marketing potential under field conditions.
- Majority of skill development programmes currently operational lack qualitative improvement among the trainee and conceived without clear goals.
- Lack of institutional support to farmers, entrepreneurs and other stakeholders.
- Absence of effective marketing, technology transfer and entrepreneurship strategies for promotion and adoption of products manufactured in

“unorganized sector” for successful commercialization.

Based on the above-mentioned issues, strategic plans need to be formulated to resolve the problem faced at different stages. Government initiatives through various schemes and programme have been conceptualized with well-defined set of goals and objectives, however, there is limitation in their effective implementation at different levels. It at times creates disenchantment among the startups. Since setting up of any business venture requires substantial investment, hence information on promotional schemes in terms of financing for plant and machinery and support system for marketing is required.

Prospective area for entrepreneurship in dairy sector

As 80% sector operates under the unorganized sector domain with numerous problems, it is of paramount importance that how changes can be brought in place. It would only be possible by developing the skills of stakeholders, creating awareness regarding the scientific or technological developments, transfer

of technologies to end-users and by providing assistance in validation of developed technologies through developing linkages among institutions, industry, entrepreneurs and farmers. Entrepreneurship development in dairy sector appears to be one of the best approaches in meeting the goal of sustainable development of Indian dairy sector based on technological developments. Agriculture, Dairy and Veterinary graduates may also opt for entrepreneurship in any of the following areas listed below:-

Dairy farming: Adoption of scientific dairy farming practices in peri-urban dairy sector has not only improved the productivity but also ensured the availability of quality milk to the consumers. Increasing knowledge and information of improved dairy farm management practices starting with selection and multiplication of superior germplasms, balancing of ration, disease prevention and treatment, minimizing the calving intervals and reducing the age of puberty, has assisted them in developing profitable ventures. The major requirement for the entrepreneur is how best they can deliver raw milk to the customers by using raw milk chilling-cum-transportation and Dispensing systems. Dairy farming could be more lucrative and satisfying through self-help-groups (SHGs) and milk producer's union (MPU) where forward and backward linkages may play crucial role. Dairy farms could also be partly converted into breeding farms as it may enhance the income of the farms manifold and assist in maintaining the herd size optimum. In states like Punjab and Haryana farmers earn huge revenue only through selling of animals. Government has also initiated e-PashuHaat for facilitating the breeders, sellers and buyers for the trade of disease-free and quality animals.

Feed and fodder seed production: Good quality feed and fodder availability is important prerequisite for quality milk production. As feed and fodder cost almost 60% of milk production, it has received due attention in commercial dairy farming system. However,

considering the large bovine population and growing trend towards addition of mineral mixers, feed supplements, feed additives, composite feed block and emphasis on optimizing the dairy animal ration there is ample opportunity to start feed and fodder seed production business. To meet the demand of green fodder a number of crops and varieties are being evaluated and approaches including silage making and hay are gaining popularity. It is opportune time to capture the promising market and initiate innovative business.

Processing of milk/foods: Dairy based foods always have been an integral part of our rich cultural heritage and the nutritional advantages associated with consumption of these products are unparalleled. The pace and the level of value addition in dairy industry are better, if compared with other food processing sector. Technological advancements in processing of milk offer an opportunity for improving the value addition scenario in the country. With the introduction of Food Safety & Standards Act, the trade scenario is destined to improve with major emphasis on quality, safety and human health. Continuous basic and strategic research activities pertaining to dairy products are on paramount importance in our goal to deliver the "wholesome" foods to consumer. Value addition at producer's level could be attractive alternative for strengthening the milk value chain to deliver quality assured products to consumers and provide remunerative prices to producers. Optimizing product mix for better return and process line for indigenous dairy products, as it appears to be the best option for new enterprise considering the demand and low investment required.

Product testing and diagnostics: Under the gambit of FSSAI there is growing demand for food testing laboratories and there is a scheme for establishment of Food testing lab through financial support of Ministry of Food Processing Industries (MOFPI). Persons having expertise in food quality, safety and management system may undertake

accreditation job for NABL, HACCP, ISO and other safety management systems. However, that requires experience of field conditions. Another area for entrepreneurship development is manufacturing of rapid diagnostic kits and equipments to test adulterants, antibiotic residues, pathogens, mycotoxins, heavy metals and other pollutants.

Ingredient production and marketing: Food ingredients play an important role in quality enhancement of food products. Nowadays, excellent range of ingredients are available that can be marketed. The marketing of ingredients would be more remunerative, if technical and application services are provided. Likewise, to cater the need of growing fermented food market, there is rapidly growing demand of appropriate microbial cultures with novel techno-functional characteristics. Milk nutraceuticals have a great demand and occupy a pivotal position in market.

Converting waste into value added products: Community based approach for converting farm waste into value added products/service including vermin-compost, electricity, fuel and liquid fertilizer, may also be taken up as enterprise. There are successful business models that reflect the economic potential of farm waste in dairy value chain.

Farm and dairy processing equipment: Mechanization both at dairy farm and milk processing unit in SME (Small and Medium Enterprise) offer emerging opportunity to fabricators and engineers to start manufacturing such equipment. Mechanization is essential for enhancing the product quality and there is requirement of fabricators for small scale processing equipment. Moreover, there is also need for energy efficient service/utility systems to support small scale production. As packaging could be an effective tool for shelf-life and marketing that necessitate efficient packaging system and lines. Under Make-in-India mission it can be taken up and supported technically by ICAR institutes. Market statistics also suggest a growing demand of

equipments in export market as well.

Government schemes for promotion of dairying and food processing

Government has launched and modified various schemes for the promotion of entrepreneurship in dairy and food processing sectors. One of the important step in the direction is establishment of Business Incubation Centers for nurturing the budding entrepreneurs. Government has recently launched Dairy Processing and Infrastructure Development Fund (DIDF) with a total outlay of ₹ 10,881 crore, where cooperatives will be provided loans at 6.5% annual interest to be repaid within a period of 10 years. The centre will provide the interest subsidy. This scheme targets to benefit 95 lakh milk producers through coverage of 50,000 villages. Many skilled, semi-skilled and unskilled workers would get direct or indirect employment opportunity. Under this scheme, additional milk processing capacity of 126 lakh litres per day with milk drying capacity 210 tonnes/day and 140 lakh litres of milk chilling capacity per day will be created. The programme has also provision for Rapid milk testing machines and promotion of value added dairy products. Some of the major initiatives are discussed hereunder:

- **Dairy Entrepreneurship Development Scheme (DEDS):** Department of Animal Husbandry, Dairying and Fisheries, under the Ministry of Animal Husbandry and Farmers has launched the scheme under 12th plan, which continued in current financial years. The National Bank for Agriculture and Rural Development (NABARD) is appointed as nodal agency for the implementation of DEDS scheme. There is budget provision of ₹ 144 Crore with ₹ 110 Crore for General Component, ₹ 17 Crore for SC

component and ₹ 13 crore for North-eastern. The scheme is for promotion of dairy sector including animal and milk processing.

- **Startup India:** Recent initiative of central government with the aim of fostering entrepreneurship and promoting innovation by creating an ecosystem that is conducive for the growth of start-ups. The scheme could be game changer for entrepreneurs and hopefully proves to be a milestone. (www.startupindia.gov.in)
- **Stand-up India:** Stand-up India scheme provide bank loans between ₹ 10 lakh to ₹ 1 crore mainly for socially deprived and women entrepreneurs. The enterprise may be in manufacturing, services or the trading sector. (www.standupmitra.in).

processed and packed in biodegradable cartons and marketed. Company is located in Jaipur and has units in various districts of Rajasthan and having an annual turnover of ₹ 25 crore. The company provides employment to around 150 persons. Agribusiness Incubation (ABI) of ICAR-National Dairy Research Institute, Karnal has guided and mentored them in establishing state-of-art dairy farm, milk processing unit and also in formulation of new products.

Aadvik Foods & Products Pvt. Ltd, Bikaner

Aadvik Foods, is India's first company to process, market camel milk and its products in the country and abroad. In a short span of 2.5 years, it has acquired over 250,000 customers who consume camel milk on a daily basis. One of the prime objectives of company is to dispel the gap between the camel milk and its consumers. In a pursuit to diversify their product portfolio, company has joined as Incubatee Company ABI, NDRI, Karnal in 2018 to carry out the core Research and Development in Camel milk and goat milk products.

Mishti Farmers Producer Co. Ltd., Karnal

A milk producer company consisting of about 250 farmers has started commercial of *bajra lassi*, whey drinks, sweets, ghee, butter, *lassi* and curd under the Business Incubation Programme of ABI. The milk collected from 270 resource poor farmers is processed and at

present the company has 14 outlets in five district of Haryana. ABI has supported them through mentorship and skill development in commercial production of dairy products. It has also extended its support to continuously educate them with series of interactions with experts and developing business acumen in order



Success Stories in Dairy Sector

Olitia Foods Pvt. Ltd., Jaipur

The sectors of operations are indigenous breed based dairy farming, value added dairy products, olive tea, traditional beverages and primary processed products. It is a complete "Make in India" venture. The milk from indigenous cows is

to compete with intangible market forces. One of the best examples of rural entrepreneurship where poor farmers can be linked in the form of a Producer's company to provide better price of milk and higher return through manufacturing of innovative value added dairy products. The company is providing direct employment to about 15 persons and indirectly to about 150 persons. The company will expand its business through increasing manufacturing capacity and by launching new products.

Conclusion

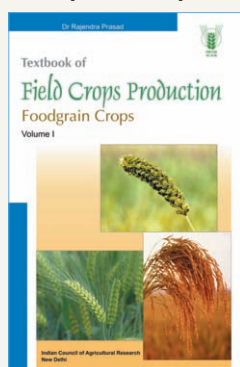
India has made a remarkable growth in milk production, but still there are several issues that need urgent redressal to keep the momentum. Large population of non-descript cattle and buffaloes, very low productivity of milch animals, lack of feed and fodder, longer calving interval, reproductive problems and non-availability of good quality semen & animals. Likewise, milk processing industry is facing the problem of adulterants & contaminants, lack of standardized

manufacturing technologies, absence of mechanization, poor emphasis on quality & safety and product innovations. The scenario is more of less similar across the country and it offers newer opportunity for rural youths and farmers. Present environment and government efforts have also created a positive atmosphere for the startups and it is an opportune time for entrepreneurs.

Corresponding author's e-mail:
aksndri@gmail.com.

Textbook of *Field Crops Production* – Foodgrain Crops

(Volume I)



The first edition of Textbook of Field Crops Production was published in 2002 and there has been a heavy demand for the book. This book is now being brought out in two volumes. The chapters cover emerging trends in crop production such as System of Rice Intensification (SRI), export quality assurance in the production technology of commodities like Basmati rice, organic farming, resource conservation technologies, herbicide management etc. Good agronomic practices must judiciously inter-mix the applications of soil and plant sciences to produce food, feed, fuel, fibre, and of late nutraceuticals while ensuring sustainability of the system in as much possible environment and eco-friendly manner. The advent of hydroponics, precision farming, bio-sensors, fertigation, landscaping, application of ICT, GPS and GIS tools, micro-irrigation etc. is in the horizon. The textbook covers both the fundamentals of the subject and at the same time inspire and prepare both teachers and students for the emerging frontiers.

TECHNICAL SPECIFICATIONS

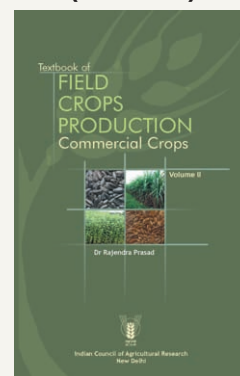
No. of pages : i-xii + 396 • Price : ₹ 700 • ISBN No. : 978-81-7164-116-1

Textbook of *Field Crops Production* – Commercial Crops

Availability of high-yielding varieties/hybrids and increased irrigated facilities have resulted in the development of production-intensive cropping systems in several parts of India, and this has catalyzed further agronomic research based on the cropping-system approach. Many changes have also taken place in the crop-production technologies. And this necessitated the revision of the earlier publication brought out in 2002. The revised textbook is in two volumes: First is covering Foodgrains and second is on Commercial Crops.

The discipline of Agronomy has no longer remained mere field trials without application of discoveries emanating from the related disciplines of Genetics, Soil Science and Agricultural Chemistry, Plant Biochemistry, etc. The future Agronomy Landscape will face challenges of climate change, transboundary issues, TRIPS and other trade-related barriers, biotic and abiotic stresses, consequences of biotechnology and genetic engineering and increased market demands in terms of quality assurance, customized food crops, global competition, ecosystem services on land and social equities etc. The Agronomy must measure up to these futuristic challenges with well-defined metrics and methodologies for performance. The advent of hydroponics, precision farming, bio-sensors, fertigation, landscaping, application of ICT, GPS and GIS tools and micro-irrigation is in the horizon. This revised edition in two volumes covers fundamentals of the subject and at the same time will inspire and prepare teachers and students for the emerging frontiers.

(Volume II)



TECHNICAL SPECIFICATIONS

Pages : i-xiv + 612 • Price : ₹ 800 • ISBN No. : 978-81-7164-146-8

For obtaining copies, please contact:

Business Manager

Directorate of Knowledge Management in Agriculture
Krishi Anusandhan Bhavan-I, Pusa, New Delhi 110 012
Tel : 011-25843657, Fax 91-11-25841282; e-mail : bmicar@gmail.com