Agri-business in North East India: Current Status, Potential Ventures and Strategies

G. Kadirvel1*, Digia Lois Gangmei1, Bandita B. Banerjee1, S. R. Assumi1, Sao Evalwell Dkhar1 and Amitava Mukherjee1

1Agri-Business Incubation (ABI) Center, ICAR Research Complex for NEH Region, Umiam, Meghalaya, 793103, India.

ABSTRACT

The Northeast region (NER) of India comprises of 8 sister states namely Assam, Meghalaya, Tripura, Nagaland, Sikkim, Arunachal Pradesh, Mizoram and Manipur. The region has an agrarian economy composing of rich agricultural resources which needs strategic exploration for inclusive growth of the region. This can be achieved through the realization of the immense scope and potential for agribusiness in the region. The study aims to explore the agribusiness scenario in the region and to throw light on the constraints in the sector prevailing in the region. Several agribusiness ventures have also been discussed which have potential in the region’s unique business ecosystem. Finally several strategies were provided which may have policy implications on future entrepreneurial development strategies in the region. The descriptive policy paper was formulated based on data collected and experienced gained from over four years (2016-2020) of entrepreneurial development activities by the Agri Business Incubation Centre under Indian Council of Agricultural Research, Research Centre for North Eastern Hill region (ICAR RC for NEH) and its 5 regional centers across the NER. Further, references from other researchers have been included to substantiate the topics discussed here and improve validity of the observations. Agribusiness...
sector in the region may be promoted through intensified entrepreneurial initiatives by adequately exploiting the resource potential, particularly in agriculture, horticulture, animal husbandry and fishery sector. This creation of market driven products to suffice the demands of growing middle-class consumers will lead to improve rural employment generation, augment farm income and raise revenue through intensified participation in export trade. However several infrastructural, technical and policy improvement have to be made in order to unlock the potential of these ventures. Only planned structural and strategic changes which include increased exports, impactful research and development, institutional support, etc., can be catalytic for entrepreneurial development in the region.

Keywords: Agribusiness ventures; entrepreneurship development; status; strategies; northeast India.

1. INTRODUCTION

Agribusiness is an emerging specialized branch of management sciences that deals with the science and practice of agricultural commercialization. Agribusiness sector in India encompass four distinct sub-sectors in relation to forward and backward linkages viz. agricultural inputs; agricultural production; agro-processing; and marketing and trade. Thus, agribusiness encompasses activities from production, processing, marketing, trade and supply of inputs and services for these activities. Agribusiness is an important asset of agricultural dependent countries in terms of employment/income generation and reducing loss of farm products [1]. Agriculture sector in India as a whole, contributes a Gross Value Added (GVA) of about 15.87 per cent but accounts for around 42 per cent of total employment [2]. In context of North East India, although 70 per cent of region’s population depend on Agriculture for livelihood support, the production of food grains accounts for only 3 per cent of the country’s total production primarily due to marginal and small farmers having 78.92 per cent share of land, thereby making the region a net importer of food grains even for its own consumption [3].

Agribusiness sector in NER needs more organized entrepreneurial initiative to suffice the demands of growing middle-class consumers and improve rural employment generation, augment farm income and raise revenue through intensified participation in export trade. Given the availability of ample resources for agribusiness which are fostering the culture of entrepreneurship, the presence of innovation and technology driven startups in the region would invigorate the regional economic growth and development.

2. METHODOLOGY

The policy paper discusses the current status and scenario, as well as constraints and remedies; which were formulated based on the cumulated knowledge and experienced gained by the Agri Business Incubation Centers (ICAR RC for NEH) present in six states in the NER. The knowledge is gathered from the annual reports of the center and also from other publication (books, case studies and bulletins) developed by it. The centers have been continuously working on entrepreneurial development activities all over North East India for over four years. Other research has also been included to substantiate the observation given in the study.

3. RESULTS AND DISCUSSION

3.1 Current Status and Constraints

Deterring rise of Agri-business in the NER

Agribusiness in NER is yet to explore its utmost potential in the region. Compared to other areas of the country, the region has very few registered enterprises. In Table 1 below, we can see that all the states of the NER were having relatively fewer numbers of registered MSMEs (Medium Small and Micro Enterprises) up to December 2019. Manipur and Assam were having the highest number of registered MSMEs. The total number of registered MSMEs in the NER is 58346, which is only 0.69 per cent of the country’s total count. This shows the extent of under development of this sector in the region.

In the last five years there has been about 2,000 per cent growth in total number of MSMEs in the NER. This is significantly higher than the 1,690 per cent growth at national level, which may
signify a slight positive change. Even in the agriculture sector, the number of registered MSMEs is still lower than the unrecognized enterprises. For example, Table 2 reveals the number of unorganized manufacturing enterprises (own account enterprise) in the food processing sector with respect to recognized establishments. We can see that in most of the states, the unorganized enterprises number more than the registered/ recognized enterprises. Many of the entrepreneurs in the sector are still unaware of registration of businesses and the importance of being recognized for inclusion into entrepreneurial development initiatives.

The reasons for these low numbers of recognized business enterprises in the region are due to several inhibiting constraints consisting of technical, institutional and financial shortcomings in the region which are being discussed below.

3.2 Constraints in the Promotion of Agribusinesses in the NER

3.2.1 Poor infrastructures

Inadequate infrastructures in transportation, communication, and marketing challenge the sustenance and growth of agribusiness. For example, food processing accounts only a small percentage of the region’s total agricultural produce. In 2015, the total installed capacity for food processing was about 6,000 MT but the utilization is only about 20 per cent of the capacity due to ill management leading to heavy losses [6].

3.2.2 Inadequate finance support mechanism

Low-level equilibrium of poverty and non-development of the region lead to lower per capita income in majority of the northeastern states. Funding constraint for investment in agribusiness venture is one of the major issues of budding entrepreneurs in the region. Small landholding system prevailing in the region and outdated land record system may hinder the agribusiness initiative due to inadequate collateral security fund during seeking loans from banks for first generation entrepreneurs. For example in Assam, researchers found that primarily microfinance is the only viable option to provide entrepreneurship opportunities to the poor who can’t get larger financing such as bank loans [7].

3.2.3 Ineffective institutional support mechanism

Inadequate extension services on best farming practices suitable for Northeast Region for commercial production and also on various aspects of agricultural value addition such as technical, financial, marketing and legal aspects. Limited informational access limits the prospective drive in commercial farming activities resulting in a handful of participation in agribusiness and underutilization of potential resources.

3.2.4 Inadequate research and development support mechanism

The research findings of the academia often remain in documents which need to be transferred to entrepreneurs and industry to strengthen commercial agribusiness sector. The existing gap between research and adoption result in mediocre advancement in agribusiness ventures. This is also due to the lack of linkages among stakeholders such as producers, processing enterprises and R&D institutions, which inhibit the sharing of knowledge and business connections amongst them. The inadequate research in this sector can be highlighted by the fact that only 290 patents have been filed from the NER, which accounts for less than 1 per cent of the total patent filed in India from 2013-17 [8].

Table 1. Number of registered MSMEs in the NER

| State          | Micro | Small | Medium | Total |
|----------------|-------|-------|--------|-------|
| Arunachal Pradesh | 821   | 538   | 42     | 1,401 |
| Assam          | 10,523| 3,054 | 169    | 13,746|
| Manipur        | 26,724| 4,488 | 57     | 31,269|
| Meghalaya      | 1,801 | 189   | 10     | 2,000 |
| Mizoram        | 2,136 | 633   | 30     | 2,799 |
| Nagaland       | 915   | 277   | 10     | 1,202 |
| Sikkim         | 503   | 233   | 29     | 765   |
| Tripura        | 4,500 | 640   | 24     | 5,164 |
| Total          | 47923 | 10052 | 371    | 58346 |

Source [4]
Table 2. Number of unorganized manufacturing enterprises of food processing in Northeast States of India (2010-11)

| State                | No. of Own Account Enterprises (OAE) | No. of enterprises (Establishments) |
|----------------------|--------------------------------------|-----------------------------------|
| Arunachal Pradesh    | 186                                  | 197                               |
| Assam                | 22,874                               | 14,310                            |
| Manipur              | 1,093                                | 516                               |
| Meghalaya            | 946                                  | 304                               |
| Mizoram              | 1,224                                | 96                                |
| Nagaland             | 804                                  | 262                               |
| Sikkim               | 12                                   | 21                                |
| Tripura              | 13,782                               | 4,843                             |

Source [5]

3.3 Scope of Agri-business in the NER

Although many constraints exist that inhibits the growth of agri-business in the NER. There are also many opportunities present in the region which may escalate entrepreneurship in the NER.

3.3.1 Rich natural resource

Firstly the Rich flora and fauna present in northeastern region offer a variety exotic fruits, high value spices, diversified flowers and numerous species of medicinal and aromatic plants and exotic fishes which could be adequately tapped for commercialization through investment in commercialization and export initiative [9]. For example, some of the popular and potential crops indigenous to the region are Lakadong turmeric, Naga Jolokia Chilies, Khasi Mandarin, Meghalaya Pineapple, Arunachal Apples which have been very popular in both national and international markets.

3.3.2 High consumption

High consumption pattern and growing demand fueled by rising income have been instrumental in the growth of agribusiness sector in the NER. For example, the demand for meat and convenient meat products in NE determine have increased scope for large-scale piggery and poultry farming. Since the majority of the indigenous populations of the NER are Tribal in ethnicity, there is a lower degree of cultural taboo in consumption of various types of meat when compared to other regions of India. The NER accounts for about 69 percent of the total pork consumption in India and the average monthly per consumer consumption of all meat products for NER was 0.851 kg as compared to the national average of 0.381 kg. The monthly expenditure on meat is also relatively higher in the NER (0.18 per cent of total food expenditure) with respect to the rest of the country [10] (0.07 per cent of total food expenditure).

3.3.3 Prevalent supply-demand gap

There exist a huge supply and demand gap in the NER with respect to agricultural and livestock products. For example, even though the consumption of meat in the region is particularly high, when compared to the rest of India, there still exists a huge supply demand gap with respect to this industry. It is reported that the region is having a yearly deficit of 196.24 and 9.77 thousand tonnes in chevon/mutton and chicken, respectively [10]. Similar shortages in food grains, fish and eggs have also been reported. In fact, the shortage of agricultural products in the region, suggest tremendous potential for venture capitalism in this sector. Another example of supply gap is in the Case of HYV (high yielding variety) seed; utilization has been poor as evidenced from the fact that only 56 per cent of the rice area has been brought under HYVs in NE hill states against 74 per cent in the country. Only 40 per cent of the total quantity of improved seeds required by the farmers is met from within the region, thereby leaving a gap of 60 per cent, which requires sourcing from other regions [11]. These supply gaps, leave ample opportunity for entrepreneurs to develop products and strategies to meet the requirements of the agricultural input market.

3.3.4 Ample export potential

The NER shares international boundaries with South Asian (Bangladesh, Bhutan) and Southeast Asian countries (China, Myanmar). This renders immense potential for border trade and export. The existing India-Myanmar-Thailand
The trilateral highway also facilitates access to the fast-growing potential markets of Southeast Asia. The setting up of various Agricultural Export Zones by the Government of India will help tap the potential scope of export in the region. The NER is a gateway to Southeast Asia and hence the region has a good prospect for border trade [12]. The availability of exportable resources coupled with the fact that the region is situated in a strategic location leads to enormous potential to transform the NER into a successful international commercial hub of agro based products.

3.4 Potential Agribusiness Ventures for NER

With increasing access to agricultural/livestock/natural resources in the NER and due the presence of a wide supply-demand gap, the potential agribusiness ventures suitable for Northeast India may be categorized under four broad areas viz. production, processing, agricultural input and agro-allied services.

3.4.1 Production ventures

3.4.1.1 Poultry farming and hatchery

Northeast region has seen transformation in poultry production from backyard stage to a commercial enterprise during the last three decades. However as discussed before, the region still has a deficit in chicken production by 9.77 thousand tons. Poultry sector in India is valued at about INR 80,000 crore and broadly divided into two sub-sectors – one with a highly organized commercial sector with about 80 per cent of the total market share (say, INR 64,000 crore) and the other being unorganized with about 20 per cent of the total market share of INR 16,000 crore [13].

NER is dependent on other neighboring states for eggs and chicks. Data from 2018 revealed that the total egg production of the NER for the previous year was only around 10 thousand lakh, which was only 1 per cent of the national production of 8,80,000 lakh [14]. Entrepreneurs can capitalize the market potential of commercial poultry farming for meat and egg production which can narrow the demand-supply gap and accelerate income and employment generation in the sector.

3.4.1.2 Pig and piglet production

Pig production in NE is invariably small-scale and confined to back-yard animal husbandry. Piggery is essentially performed to meet household and farming expenses and provide some financial independence particularly to the women folk, but this venture has immense potential for commercial venture. In India, the total pork production is estimated at around 468 thousand tons and the NER contributes about 82 thousand tons, to the nation production, which accounts for less than 18 per cent [14]. A scientific and entrepreneurial approach to large-scale pig production must be prioritized amongst potential entrepreneurs to capitalize the immense market demand for pork.

3.4.1.3 Dairy farming

Milk production in NER (1,409.89 thousand tons) is less than one per cent of the country’s total production of 165,404.38 thousand tons [13] and hence per capita availability of milk in the region (86 g/day) is much lower than the national average (299 g/day). A lucrative revenue can be tapped from dairy-animal farming in NE with strategic investment in establishment of facilities for organized milk collection, distribution and marketing system and infrastructures for storage, processing, packaging and transportation to accelerate milk production and processing.

3.4.1.4 Fish and fish fingerlings production

In the NER, fish supply of approximately 90 thousand tons per year is required for 95 per cent of the fish consuming population due to production shortage. Fish used for consumption in the region is predominantly sourced from Bangladesh, Andhra Pradesh and West Bengal [15]. The region produces fish from 5.63 lakh hectares of total inland water bodies with a low productivity of only 600 kg/ha. One reason for the low production is because of the lack of quality fish fingerling production in Northeast India. The major problems faced by fish farmers are high mortality rate and logistics delay. Only the state department hatcheries are producing fish fingerling resulting in insufficient supply for the region. Technology led and scientific promotion of this sector is crucial for increasing the production and productivity of aquaculture in the region.
3.4.1.5 **Organic farming**

In Northeast India, traditional organic farming has been an age-old default practice for most farming communities in tribal belt. The absence or limited use of chemical inputs by the farmers of the hilly areas in agriculture translate to easier transition to certified organic farming of various high value crops. Out of the total area (69,488.11 hectares) in NE under certified organic cultivation, Sikkim (100% certified organic state since 2016) occupies the largest area (60,843.51 hectares) followed by Nagaland (5,168.16 hectares) and Assam (2,828.26 hectares). In year 2017-2018, North East region is one of the major contributors in the country’s total export of organic products worth Rs. 3,453.48 crore [16]. Expansion in organic farming of high value crops and investment in organic certifications, branding and identification of potential markets for commercialization can be a remunerative venture with growing demand for organic products worldwide.

3.4.1.6 **Apiculture**

The abundance of diverse flowering plants in the region favours huge potential for organic honey production and processing. Agripreneurs can tapped the natural potential of honey production and expand honey processing industry in the region, with emphasis on production and distribution of high-quality honey and honey-based products such as royal jelly and beeswax.

3.4.1.7 **Mushroom cultivation**

Naturally grown edible mushrooms are highly coveted in northeastern region. Some of the types of mushroom in high demand include oyster, button and Shiitake (*Lentinula edodes*). Shiitake, which is produced only in northeast region of the country, may be adequately exploited for commercialization. The region’s Climate diversity (5-35°C, 60-70% RH), biomass (substrates) abundance and domestic market potential suggest commercial cultivation of mushroom as a lucrative self-employment venture.

3.4.1.8 **Plant micro propagation and production of quality planting material**

The region is popular for its various plantation crops such as areca nut, coconut, bamboo, black pepper, bay leaf, large cardamom, pineapple, etc.; therefore there is a growing demand for disease free quality planting materials and seed. Investment in scientific methods of production and management of quality planting materials and seeds could be a potential agribusiness venture to intervene in the region’s cropping intensity and higher productivity to maximize production.

3.4.1.9 **Floriculture**

Floriculture covers over 3,039 hectares in the NER with immense floral diversity due to its diverse geo-climatic condition. Out of 1300 species of orchid reported in India, 870 species are in Northeast India [17]. India imports about 80.67 per cent of total orchid cut flower from Southeast Asian countries like Thailand which alone suggests the immense scope of commercial floriculture in NE to emerge as one of the potential competitors in both domestic and international markets.

3.4.1.10 **Medicinal & Aromatic (MAP) plants cultivation**

Northeast India has over 300 species of medicinal and aromatic plants (MAP) and is one of the richest repositories of MAP in the world [18]. Arunachal Pradesh and Assam have the most diverse medicinal plants followed by Sikkim. Some of the commercially important species available in the region include *Acorus calamus*, *Adhatoda zeylanica*, *Aquillaria malaccensis*, *Andrographis paniculata*, *Centella asiatica*, *Gynocardia odorata*, *Cordyceps sinensis*, *Nardostachys*, *Picrorhiz kurrooa* and *Podophyll hexandrum* [19]. However, commercial cultivation of MAP is still in its infancy in the region. Initiatives on exploration, conservation, production and value addition of medicinal and aromatic plants through scientific approach could open potential markets worldwide.

3.4.1.11 **Ornamental fish production**

Northeastern states like Assam, Arunachal Pradesh, Meghalaya and Mizoram are rich habitat to a variety of aquatic animals due to high precipitation and the presence of flood-plain rivers. Extensive fresh water habitats, diversified micro-habitat and numerous biotic and abiotic components render the region to have one of the world’s richest ichthyofaunal resources [20]. The ornamental fish species from NE with commercialization potential are *Trichogaster spp.*, *Nandus nandus*, *Botia spp.*, *Channa spp.*, *Chromobotia macrostomus*, *Botia striatus*, and *Puntius tetrazona*. These fish species are suitable for the aquarium trade in the region and have high potential to be exported.
Lepidocephalichthys spp, Amblypharyngodon mol, Badis pp and Puntius spp [21]. Venture in ornamental fish culture through scientific breeding approaches can capitalize the demand from potential markets worldwide.

3.4.2 Processing ventures

3.4.2.1 Fruit processing

Fruit production in NER is in surplus of demand by 52.92 per cent [22]. From Table 3 we can see that in almost all of the states of the NER, there is a huge surplus of fruits which can be utilized in the processing industry, thereby increasing the value of the agricultural commodities and reducing perishability and wastage through improper/lack of storage.

Northeastern agro-climate favours ample production of rich and exotic fruits; some of which have been identified and GI tagged for worldwide commercialization like Queen pineapple of Tripura, Kachai lemon of Manipur, Tezpur litchi of Assam, Khasi mandarin of Meghalaya and Malbough banana. However, lack of infrastructures and poor marketing system account for 5-40 per cent loss of marketable surplus depending on crop, variety and weather condition. Post-harvest loss of pineapple, khasi mandarin and banana in NER is estimated to be 12-17 per cent, 21-25 per cent and 15-20 per cent, respectively [23]. Technical, institutional and governmental interventions in horticultural value chain could substantially increase the scale of processing, maximize returns of producers and minimize post-harvest losses.

3.4.2.2 Spice processing

Popular spices from Northeast include lakadong turmeric and Megha Turmeric from Jaintia Hills of Meghalaya, ginger from Assam and Meghalaya, large cardamom from Sikkim and Arunachal Pradesh, black pepper from Assam and Garo Hills in Meghalaya and chillies (King chili and Bird’s eye chilli) from Nagaland and Assam. Government assistance in spice processing through market promotion scheme for NER is 50 per cent as compared to only 25 per cent for rest of India. There is a need for strategic investment for export of value-added forms such as spice powders, curry powders, spice oils and oleoresins to maximize returns in the spice sector.

3.4.2.3 Meat and fish processing

In the NER, the expenditure on meat is relatively higher (16.5%) than that of mainland India (7%). Meat production in the NER has also increased by around 38 per cent in the last two decades [10]. The per capita consumption of pork (9.54 kg per annum in rural population and 7.18 kg per annum in urban population) are highest in Nagaland of all Northeastern states [24]. Meat processing has immense scope for expansion as the demand for meat products in the NER is continuously rising every year.

Fish products, particularly fermented fish and dried fish are very popular in northeast. Shidal, a fermented fish product popularly known as Ngari in Manipur, Hidal in Assam and Tripura and Sepaa in Arunanchal Pradesh and Nagaland [25] is confined mainly in northeast and has potential scope for export to rest of India in niche market.

3.4.3 Agro-allied service ventures

3.4.3.1 Agro-eco tourism

Agro-ecotourism encompasses attractions based on farm and natural ecosystems. The NER, with its rich biodiversity, natural ecosystem and attractions along with uncountable agricultural farms can be capitalized, to invigorate income generating opportunities for indigenous and local communities. Entrepreneurs can tap the endowed gift of regional breathtaking landscape toward tourism enterprises and biodiversity preservation. Investment in provision of agro-eco tourism services can be a potential area for agribusiness. It is generally felt that tourism in the region has every opportunity to excel because it has a rich mixture of natural beauty, wildlife sanctuaries, eco-tourism spots, hill stations, lakes and places of religious and historical interest. However, simply having these things without development of those opportunities is not enough for any state [26].

3.4.3.2 Infrastructure services

Capital investment in specialized transport services such as refrigerated trucks, packaging infrastructure and cold storages can be made and entrepreneurs can earn a remunerative income through custom hiring model of the infrastructure.
Table 3. Production, Demand and Surplus/Deficit of fruits in the NER

| State              | Production (MT) | Demand (MT) | Deficit/Surplus (%) |
|--------------------|-----------------|-------------|---------------------|
| Arunachal Pradesh  | 214.6           | 63.7        | 70.34               |
| Assam              | 1,929.8         | 1,434.8     | 34.49               |
| Manipur            | 460.8           | 125.3       | 72.81               |
| Meghalaya          | 324.2           | 136.4       | 57.92               |
| Mizoram            | 309.8           | 50.2        | 83.79               |
| Nagaland           | 379.3           | 91.2        | 75.97               |
| Sikkim             | 21.3            | 28.0        | -23.70              |
| Tripura            | 715.4           | 169.0       | 76.38               |
| Total NE           | 4457.6          | 2,099.0     | 52.92               |

Source [22]

3.4.3.3 Agricultural services/trade

Graduates in agriculture and management field can consider entrepreneurship in consultancy services in the area of research, marketing, logistics, financing, insurance and others. These service providers can offer services in linking producers and potential buyers, in finding niche market for agro-products and get commission for it.

3.4.4 Agricultural input ventures

3.4.4.1 Farm tools and implements manufacturing

Northeast region is characterized by undulating agricultural land, where farmers with small landholdings predominantly use traditional implement and tools (spade, khurpi, sickle, dibirler and grass slasher). The power consumption for farm mechanization even in the most economically stable state (Assam) of NER (0.75 kW/ha) is far below national average [27] (1.5 kW/ha). Development and production of mechanized farming tools and implements suitable for implementation in the varying topography of the region has a great scope for agribusiness. Ergonomically designed and gender friendly hand tools for weeding, cleaning, cutting and pedal operated thereshers could be popularized in hilly states to reduce drudgery while land development equipment, tillage implements, sowing equipment and fertilizer application equipment could be focused in plain areas. Entrepreneurs can also introduce advanced machineries such as self-propelled reapers and multi-crop theresher to potential farmers in the region to improve farming efficiency.

3.4.4.2 Supply agricultural inputs

Most farmers in the region have limited access to agricultural farm inputs (fertilizers, herbicides, insecticides, pesticides) and livestock feeds (poultry feeds, piggery feeds). Commercial ventures in the sector of farm inputs and feeds can be a potential agribusiness due to anticipated progressive growth in crop production and livestock farming in the region.

3.5 Strategies for Entrepreneurship Development in the NER

3.5.1 Hand holding support mechanism to facilitate business development

As discussed in the previous section, there is weakness in the agribusiness sector with regards to infrastructure and business know how. Therefore, it is important to facilitate startups in their infancy. This can be done through hand holding mechanism of business incubation centers such as the Agri-Business Incubation Centers (ABI) under ICAR. The Agri-business Incubation centres established in 24 ICAR institutes can strengthen the platform of incubation facility through intensified extension services to nurture the growth of potential agripreneurs and provide them with handholding support such as office space, business planning, market networking, packaging materials and advices on management, technical, legal and financial issues. For example, ABI (ICAR RC for NEH) have been instrumental in the facilitation and development of entrepreneurs in the NER. In 2019-20, the center was responsible in facilitating 123 entrepreneurs through technological backup and infrastructural assistance. The entrepreneurs were provided with key infrastructure like the meat processing
unit, spice processing unit, testing facilities and office accommodation [28].

3.5.2 Strong institutional support mechanism for support of entrepreneurs

The culture of entrepreneurship should be enhanced through awareness programmes of available schemes launched under the Government of India such as Startup India (2016), Atal Innovation Mission (ATM) set up by Niti Aayog, Aajeevika-National Rural Livelihood Mission (NRLM) and National Intellectual Property Rights (NIPR) (2016) which are providing entrepreneurs with access to knowledge, skill and linkages through workshops, seminars and trainings. Youth in semi-urban and rural areas are to be provided employable skills through technical and managerial trainings to unleash their potential entrepreneurial skills by concerned academia and organizations like Indian Institute of Entrepreneurship (IIE), Entrepreneurship Development Institute of India (EDII) and National Skill Foundation of India (NSFI). Industry can also participate in entrepreneurship development through their corporate social responsibility (CSR) budgets. The strategic linkages between academia, financial institutes, industry and agri-entrepreneurs will allow the right exposure to seed funding, mentoring, network support and technology [29]. In recent years ABI (ICAR for NEH) have been continuously linking with other institutions for support and facilitation of entrepreneurs. In February 2020, around 10 members of the center was shortlisted in the NEATEHUB (North East Agri Technology Entrepreneurs Hub) Boot Camp ‘Idea Sprout 1.0’ for facilitation financial grant. Such linkages will help entrepreneurs access critical financial support. So far, the success of the establishment of ABI centre at ICAR RC for NEH region can be substantiated by the total number of employment generated which has reached more than 500, the total fund generated which was estimated to be about Rupees 2 Crores and the total number of farmers’ lives touched which reached more than 12000 [28].

3.5.3 Capacity development through research and development (R&D) support mechanism

Capacity development is crucial in the emerging agribusiness sector. Entrepreneurs crave knowledge of not only the production aspects of business, but also the management. Capacity building programmes and research findings which can contribute to entrepreneurial development is catalytic in its growth. Some of the needful research areas that institutes can find solution for entrepreneurs to strengthen agribusiness are areas like standardization and validation of recipes and processing procedures of the regional traditional items for commercialization; development and pilot study of technology-based processing equipment; new product development from the exotic agro- and horticulture produce of the region and testing and certifications of novel products and technology. Linkage between academia and entrepreneurial venture would boost the innovation and R&D of the institutes [29]. The subject matter specialists, scientists in agricultural and allied disciplines and in-service professors of agricultural universities can take the opportunity to organize and conduct different training programmes on various technical aspects for agri-entrepreneurship development. ABI (ICAR for NEH) in 2019-20 was responsible for 23 workshops/meetings and trainings which dealt with not only production aspects but also included capacity building in managerial aspects [28]. Several technology in food processing have also been developed by the institute, such as novel technology in retort packaging and meat processing which are being shared with member entrepreneurs under a Memorandum of Understanding. Several publications such as bulletins, leaflets and book have also been published by the center to provide usable entrepreneurship ideas that target individuals dealing with agribusiness. Research which can develop entrepreneurship are to be designed in such a manner so that they have industrial value and are usable by the target audience.

3.5.4 Suggested Models for promotion of agribusiness entrepreneurship

As stated before, there are several constraints that are faced by entrepreneurs in the NER regarding resources and infrastructure. Therefore there are models that have been successfully initiated by ABI (ICAR for NEH) which can be adopted by other institution for the purpose of entrepreneurship development. Some of the models that can be effective in entrepreneurship development are: Custom Hiring Model, Farmer Producer Organization (FPO) Model and Self-Help Group Model.

Custom Hiring Model can be one of the effective models where entrepreneurs are given the
facilities for business operation (such as processing machines) at nominal rates. This model addressed the lack of supporting infrastructure and also provides a source of income for the institute. The ABI has successfully initiated this model in the institute and have received more than INR 165,000 in revenue from its processing unit. Tynrai farms is one successful enterprise under ABI which was developed using this model. The entrepreneur was registered as a member, and given capacity building through pilot study using the meat processing unit through custom hiring. This relieved the need to spend on expensive equipment by the entrepreneur during the initial stage of learning. Currently the enterprise has its own meat processing unit which produces meat products including sausages, salami, nuggets and smoked products of chicken and pork meat in addition to traditional meat products of Meghalaya. The company had linked up with about 50 farmers from 10 villages. Currently the enterprise has an annual turnover of more than INR 35 lakhs [30].

The Second successful model practiced by entrepreneurs associated with ABI, is the Farmer Producer Organisation (FPO) or Farmer Producer Company Model (FPC). The Centre have been instrumental in facilitation of more than 10 FPCs across NER. For example, one FPC named Eastern Ri Bhoi Organic Producer Company (ERBFpc), which is a member of ABI, have been key to changing the lives of more than 500 farmers in Meghalaya. The FPC have been hugely successful in providing marketing and processing facilities to its member farmers. In 2019, the FPC was responsible for marketing more than 1000 metric tons of ginger and turmeric thereby making a profit of more than INR 188 Lakhs. These models can be adapted to help the members pool resources and create better profits through bargaining power and economy of scale.

The third successful model to be discussed is the Self-Help Group (SHG) Model. These models organize farmers similarly to FPO/FPC but at a smaller scale. There are many enterprises running in SHG model which are under ABI. One such successful SHG enterprise is Grassroot Syndicate Producers’ Company Ltd. The SHG was started by the Diocesan Social Service Society (DSSS), a reputed Christian NGO and majority of its members were female. Main activities of the group were drift and saving apart from trainings and book keeping. Slowly they started processing activities (washing, slicing and drying) at farm level and were earning income ranging from Rs. 3000 to Rs. 5000 per month. The SHG was later converted in to Grassroot Syndicate Producers’ Company Ltd. under the aegis of Diocesan Social Service Society. Presently, the SHG is producing 6 different value added products (Dry sliced turmeric, dry boiled turmeric, dry sliced ginger, dry king chilli, turmeric powder and ginger powder) from three major spice crops namely turmeric, ginger and king chilli, with a monthly production of 3600 kgs. Grassroot Syndicate has all total 12 resource centres located in different districts. They have different producer groups who are engaged in production of certified organic produces under centrally sponsored scheme on ‘Mission Organic Value Chain Development for North Eastern Region’ being implemented by Manipur Organic Mission Agency [30].

4. CONCLUSION

The scope and potential for agribusiness development in Northeast is immense given the natural supply of resource potential of agriculture, horticulture, animal husbandry and fishery and excellent demographic characteristics such as high literacy rate [31]. The resources need adequate exploitation through effective agribusiness entrepreneurship development initiatives to increase employment generation by accelerating economic growth and development of the region which is lagging far behind mainland India. The strategies outlined in the paper may be adopted to lay a strong foundation for development of agribusiness entrepreneurship and set out an entrepreneurial ecosystem in Northeast India.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Sunder I. Agribusiness scope, opportunities and challenges in India. EPRA International Journal of Economics and Business Review. 2016;4(7):171-178.
2. Ministry of statistics and programme implementation. Press Note on First Advance Estimates of National Income 2018-19. Central Statistics office,
Government of India, New Delhi, India; 2019.

3. Jana H, Basu D. Agricultural backwardness analysis of North-East India: A cause of concern for national development. International Journal of Current Research. 2018;10(12):76825-76831.

4. Ministry of micro, small and medium enterprises. Registration of Micro, Small and Medium Enterprises (MSMEs) in India (Udyog Aadhaar Memorandum). Office of the Development Commissioner, Government of India, New Delhi; 2020.

5. Rais M, Acharya S, Vanloon GW. Food Processing Industry: Opportunities in North East Region of India. The NEHU Journal. 2014;12(1):37-51.

6. North Eastern Regional Agricultural Marketing Corp. Ltd. Study report on to set-up food processing industries in the States of Assam, Mizoram and Tripura. ITV Agro & Food Technologies Pvt. Ltd., New Delhi; 2015.

7. Sharma N, Bora B. Role of microfinance in women entrepreneurship. Eleventh biennial conference on entrepreneurship. Ahmedabad, Gandhinagar, Gujarat: Bookwell. 2015;(1):688–693.

8. Kadirvel G, Senthil N, Sen A, Prakash N. Patent landscape analysis: North East India. Agri Business Incubation Centre and Zonal Technology Management Unit. ICAR RC for NEH, Meghalaya, India; 2019.

9. Barnik CM, Adil Z. India’s farms: harvesting the future. Reimagining India. Unlocking the potential of Asia’s next superpower. Mckinsey & Company. 2013; 247-253.

10. Mahajan S, Papang JS, Datta KK. Meat consumption in North-East India: Pattern, opportunities and implications. Journal of Animal Research. 2015;5(1):37-45.

11. Shah P. Strategies to gear-up seed Production in North-Eastern Region of India. Indian Research Journal of Genetics and Biotechnology. 2015;7(1):127–129.

12. Basu A, Adak K. Analysis of factors of advantages and disadvantages in the business scenario of Northeast India: The Entrepreneur’s Perspective. In: Rajagopal, Behl R. (Eds) Business Governance and Society. Palgrave Macmillan, Cham; 2019.

13. Department of Animal Husbandry, Dairying & Fisheries. Basic animal husbandry & fisheries statistics 2017. Ministry of Agriculture & Farmers Welfare Government of India, New Delhi; 2017.

14. Department of Animal Husbandry, Dairying & Fisheries. National Action Plan for Egg & Poultry for Doubling Farmers’ Income by 2022. Ministry of Agriculture & Farmers Welfare Government of India, New Delhi; 2018.

15. Singh ND, Krishnan M, Sivaramane N, Ananthan PS, Satyasai KJS. Determination of efficiency of fish farms in North-East India using data envelopment approach. Agricultural Economics Research Review. 2015;28(2):329-337.

16. APEDA. Annual Report 2017-18. Government of India, New Delhi. 2018. Accessed 15 May 2020. Available:https://apeda.gov.in/apedawebsite/

17. Oyi D, Gibji N, Sunya B, Karma C. Floriculture prospects in Arunachal Pradesh with special reference to orchids. Journal of Biodiversity and Environmental Sciences. 2012;2(3):18-32.

18. Chandra DL. Medicinal and aromatic plants of Northeast India. International Journal of Development Research. 2016; 6(11):10104-10114.

19. Shankar R, Tripathi AK, Anku G, Neyaz S, Rawat MS. Indigenous Medicinal Plants of Northeast India in Human Health: Literary Note. Journal of Drug Research in Ayurvedic Sciences. 2017;2(2):104-117.

20. Biswas SP, Santosh Kumar SA, Das JN. Conservation and management of ornamental fish resources of North East India. Journal of Aquaculture Research and Development. 2015;6(3):1-3.

21. Das JN, Biswas SP. Present status, diversity and habitat ecology of ornamental fishes in the flood plain lakes of Upper Assam. Life Science Bulletin. 2005;11:32-40.

22. Roy A, Dkhar DS, Tripathi AK, Uttam NS, Kumar D, Das SK, et al. Food security in north-east region of India- A State-wise Analysis. Agricultural Economics Research Review. 2015;28:259-266.

23. Hossain MM. An overview on postharvest handling and commercial processing of horticultural crops in NEH Region of India. International Journal of Science and Research. 2015;4(11):2304-2308.

24. Feroze SM, Raju V, Singh R, Tripathi A. Status of livestock sector: A micro study of North Eastern India. Indian Journal of Hill Farming. 2010;23(2):43-51.
25. Muzaddadi AU, Basu S. Shidal-A fermented fishery product of North East India. Indian Journal of Traditional Knowledge. 2012;11(2):323-328.

26. Kalita PC, Barman P. Tourism entrepreneurship in Assam: A study on the employment opportunities in Tourism in Assam. Tenth Biennial Conference on Entrepreneurship. Ahmedabad, Gujarat, India: Bookwell. 2013;(2):1288–1296.

27. Mandal S, Kumar A, Singh RK, Ngachan SV. Road Map for Farm Mechanization in Assam State. Indian Journal of Hill Farming. 2014;27(1):30-36.

28. ABI. Annual Report 2019-2020. Agri Business Incubation Centre. ICAR RC for NEH, Meghalaya, India; 2020.

29. Jatinder S. New age skills – Generating opportunities for youth. Yojana. 2018;33-36.

30. Kadirvel G, Roy SS, Prakash N. Agri Business incubation model. Promoting Agri Business Entrepreneurs in North East India. Agri Business Incubation Centre. ICAR RC for NEH, Meghalaya, India; 2019.

31. Patel A. Harnessing agricultural potential in NER. Kurukshetra. A Journal on Rural Development. 2012;61(1):21-23.

© 2020 Kadirvel et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/61907