

Food Processing Industry: Opportunities in North East Region of India

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Abstract

India's north-eastern region (NER) is endowed with various sorts of fruits, vegetables, and other agro-products, and has the potential to be a sunrise zone for food processing and other agri-businesses. The present paper deals with immense opportunities present in food processing in the region. It is observed that simple value addition like cleaning, sorting and packaging can increase income of farmers by 42.8% per kg. It is also observed that although Central Government and various other state governments have come out with various policies and schemes for the development of sector in the region, still the sector is highly unorganized and inefficient. It is also established that the development of food processing sector in NER is hindered due to lack of infrastructure facilities like poor connectivity with national and international market, inadequate supply chain and poor power supply.

Keywords: Food processing, agri-business, growth potential and constraints, employment and income generation, government policy

Introduction

From a nation dependent on food imports to feed its population, India today is not only self-sufficient in grain production, but also has a substantial reserve. The progress made by agriculture in the last four decades has been one of the biggest success stories of free India. Agriculture contributes to about 14.1 percent to Gross Domestic Product and provides livelihood to about 58 percent population. This increase in agricultural production has been brought about by bringing additional area

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under cultivation, extension of irrigation facilities, the use of improved high yielding variety of seeds, better techniques evolved through agricultural research, water management, and plant protection through judicious use of fertilizers, pesticides and cropping practices. India's food grain production has touched 252.56 MT in 2011-12 from a mere 51 MT in 1951-52 (Ministry of Agriculture, 2012a). In the present scenario, a continuing problem in the country is storing the surplus produce and the percentage of wastage is very high. Various studies have estimated that there are post-production losses in food commodities to the tune of Rs. 75,000-1,00,000 crore. Every year around 21 MT of wheat is wasted in India, which is equivalent to Australia's wheat production per year. To overcome the problem of wastage, there is need to find out other sustainable ways, which will make proper use of the surplus produce, support the needs of undernourished and also generate income and employment along the process. The food processing industry provides a way out for this problem. The Indian food processing industry is still in its nascent stage, but it is poised for high growth in coming years. The total value of Indian food processing industry is expected to touch US\$ 194 billion by 2015 from a value of US\$ 121 billion in 2012, according to data released by Indian Council of Agricultural Research (ICAR). The packaged food sector is presently the fifth largest sector in India and has grown rapidly over the past few years (MOFPI, 2007). The industry registered a compound annual growth rate (CAGR) of 15.6 per cent during FY07-FY12 (MOFPI, 2012). In India, the industry is largely dominated by the ready-to-eat segment, which contributed nearly 90 per cent of the total sales of packaged foods in India FY12 (MOFPI, 2012).

The Indian food processing industry is primarily export oriented. India's agri and processed foods exports stood at Rs 116,331.68 crore (US\$ 18.65 billion) during April-March 2012-13, as compared to Rs 82,480.25 crore (US\$ 13.22 billion) in the corresponding period last year, according to data compiled by the Agricultural and Processed Food Products Export Development Authority (APEDA) (Ministry of Commerce and Industry, 2013b). Investments in the Indian food processing sector grew at 20 per cent per annum in five years and total investment at present is estimated at Rs 150,000 crore (US\$ 24.04 billion), employing over 10 million. Further, the Government of India expects US\$ 21.9 billion of investments in food processing infrastructure by 2015.

Despite all these figures indicating a huge growth in the sector, the ground reality is that the processing activity is still at a premature stage with low penetration. Even after India has become a key producer of various food products, its productivity levels are very low and its share in world food trade is 1.4% (National Manufacturing Competitiveness Council, 2012). The factors responsible for the slow growth of sectors range from lack of trained manpower, inadequate technologies, to governance problems (FICCI, 2010).

Like other parts of India, the north-eastern part of India is also an agrarian economy. The north-east region (NER) is a land of magnificent beauty, possessing undulating hills and thrilling flora and fauna. This picturesque scenario is contrasted by widespread poverty, low per capita income, high unemployment and low agricultural productivity leading to food-insecurity. With an extensive international border the region has an extra advantage in international trade. Yet it has failed to convert its strengths optimally into growth opportunities for the well-being of the people. The region suffers from weaknesses such as subsistence agriculture with poor roads, markets and other infrastructure. The high vulnerability to natural calamities like floods, submergence, landslides, soil erosion, etc. has resulted in low and uncertain agricultural productivity. The limited utilization of modern inputs in agriculture has further reduced the ability of the farm households to cope with high risks in production and income.

Agriculture is an important sector in the economy of the NER, with its share in State Domestic Product ranging from 19 percent to 37 percent in different states of the region, but the agro-based economy has failed to flourish as it should due to limited utilization of technological support and innovation. The north-eastern states have observed high production of fruits, spices and cashew in the recent past but could not fetch market prices that are on par with markets in other states. The surplus produce often spoils and is wasted due to lack of transportation, insufficient well-equipped cold storage facilities and processing of farm produce. In sum, the food value chain is weak capital base, there is lack of market access, both domestic and international, limited flow of labour and material, inadequate technological incentives, absence of agro-processing industries, poor-post harvest technology facility. To some extent social and cultural taboos are also responsible for not developing agro-industries that would provide better value addition to the horticultural crops in the region.

It is hence necessary to diagnose the problems in the NE region for providing an improved production and marketing environment and value-added economic benefits to the farmers through appropriate science and technological policies for various post-harvest functions in food processing industries. This is needed to address the problems of income generation and poverty alleviation of the region.

The population of NER has quadrupled to about 45 million during the past 50 years. The proportion of households living below the poverty line is 35 percent (13.6 million) (Barah, 2006), a value that is exactly 10 percentage points higher than the national average. The lack of income opportunities has perpetuated the worst form of poverty, the 'hidden poverty' in the region. High growth of population (varying from 2.01% to 5.22% per annum, except in Assam and Tripura) with a large proportion of small and marginal farm households, traditional and low-input agricultural practices coupled with the problem of insurgency have affected the economies adversely in the region. Our study is an attempt to highlight the importance of the food processing industry in the NER as a means to provide employment in the region. Due to its unique socio-economic and demographic features the NER is different from other states of India, and for its development, the government has come out with special policies. We will also study these policies and identify gaps to address strategic issues in NER.

Food Processing Industry in NER

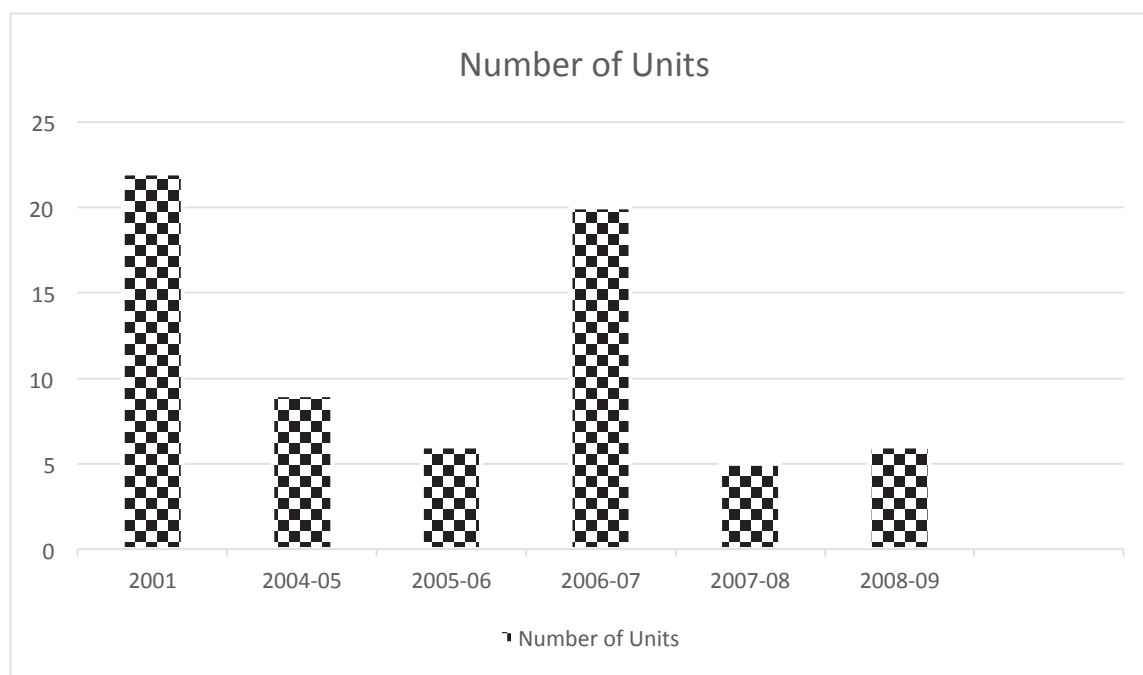
The north-eastern region with its agro-friendly climate and agrarian roots has the potential to be a sunrise zone for food processing and other agri businesses. The weather and availability of water are conducive for food cultivation and is especially suitable for growing horticultural produce. The various subsidies and benefits relating to excise duty, transport, capital investment, interest on working capital and income tax extended by the Government, already sets the stage for making food processing a lucrative option in northeast.

In the present scenario, the food processing industry is mainly operated on a small scale and in small numbers. In 2009, in north-east, only 85 units received licenses under the FPO (Fruit Products Order) act and out of these only 32 are functional units (MSME, 2009). The number

of food processing industry is highly erratic in different years for NER. In 2001, the total number of applications for registered food processing industries in NER was 21, and given the conditions in further years, the number should have increased but in first six months of 2008-09, the number was 6 (Figure 1). The number come as a shocking figure, as after the implementation of NEIPP in 2007, the number should have taken a leap, but for both years after the implementation of NEIPP, the number has been less than previous years.

Figure - 1

Year-wise Number of Food Processing Units Registered in North East India



Source: Indiastat.com, Lok Sabha Starred Question No. 848, dated on 09.07.2009.

In tune with the rest of India, the food processing industry in the NER is mainly unorganized and works on a smaller scale. Own-account enterprises hold the highest share in the unorganized sector (Table 1). The huge presence of the unorganized sector can be attributed to the fact that most of the units in the unorganized sector are less capital intensive, and the easy availability of raw materials makes it more attractive for small entrepreneurs.

TABLE 1		
Number of unorganized manufacturing enterprises present in Food processing industry in north-eastern states (2010-11)		
States	No. of Own Account Enterprises (OAE)	No. of enterprises (Establishment)
Arunachal Pradesh	186	197
Assam	22874	14310
Manipur	1093	516
Meghalaya	946	304
Mizoram	1224	96
Nagaland	804	262
Tripura	13782	4843
Sikkim	12	21
Source: NSSO 67th round, November 2012		

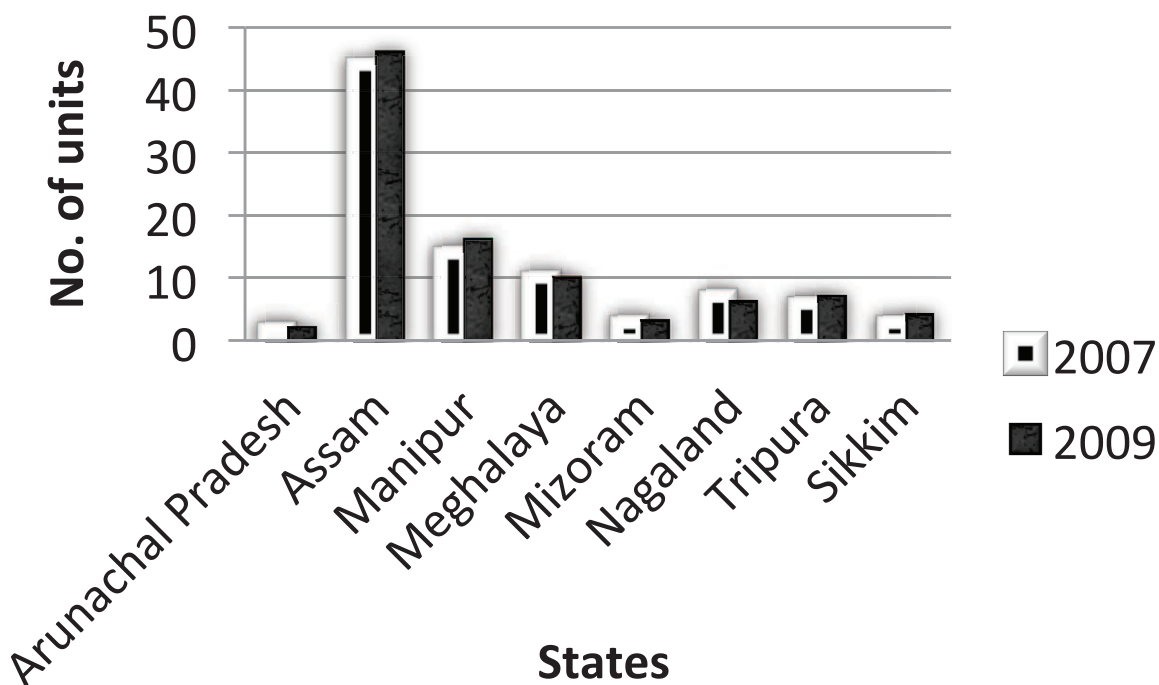
The high presence of own account enterprises (OAE) does serve to mitigate unemployment to a large extent, but this sector is also responsible for the low level of income generation, and low level of productivity in the region. Among all the sectors in food processing industry, the sector which has an advantage in NER over the rest of India is the horticulture industry. Diverse agro climatic conditions ranging from temperate to tropical, fertile soils and abundance of rainfall offer immense scope for development of this sector. The major horticulture crops of the region are potato, onion, tapioca, sweet potato among vegetables and tuber crops; ginger, turmeric and chilies among spices; banana, pineapple, orange/other citrus fruits, mango, litchi, jackfruit among fruit crops and coconut and areca nut among fruit-nuts. Other horticultural crops, which are produced to a somewhat smaller extent, are cabbage, brinjal, cauliflower among vegetables and apple, pears, plums/peach and passion fruit among fruit crops. The horticulture crops are found in surplus for the local population.

The other factor which is hindering the growth of horticulture industry in north-eastern states is the cultural and religious values of people in the region. The rural community does not accept processing of fruits in a very kind manner. They have their apprehensions about the

produce. For example, for them frozen is not fresh. They still throw their weight against fresh products, and not processed one, as they have doubts regarding the ingredients and procedure of value addition.

Figure -2

Number of Fruit and Vegetable Processing Units in North-Eastern States (2007 and 2009)



Source: Indiatat.com, Lok Sabha Unstarred Question No. 848, dated on 09.07.2009.

Even though the horticulture industry is not doing that well in the NER, there are examples where value addition of horticultural crops has clearly shown a contribution to income generation and poverty alleviation. For example, ginger is grown in almost whole of the NER, and is one of the most important cash crops of this region. When it undergoes primary processing only, then the farmer’s income increases by 42.8% per kg (Table 2).

Farm Produce	Local market Price (Rs./kg) for fresh produce	Price after value addition for fresh produce	Increase in income of farmers (%)	Selling Price of value-added products (Rs./kg)
Ginger	7	10	42.8	110
Source: CPHPR, 2008				

The value addition for fresh produce is sorting, washing, cleaning, drying and packaging and value added products can be ginger powder, ginger oil, ginger candy, ginger extract and ginger garlic paste. Other than ginger, other crops of NER also have a demand for themselves in the market, and value addition to the crops will generate more employment, increase income of self-employed people. Therefore, it is needed that state governments recognize those crops and strive towards the development of those produce. Of the fruit crops, banana, pineapple and orange are the most important, covering about 60% of the area and accounting for 66% of the production. Other important crops include litchi in Tripura and Assam, apple in Arunachal Pradesh, passion fruit in Nagaland, Mizoram and Manipur, cashew nut in Assam and Tripura and coconut in Assam, Tripura and Nagaland. In most cases, these states have missed the opportunity of processing these crops even though there is surplus production in each case (Table 3).

The presence of large amounts of surplus provides the NER with two options - either to export this surplus in its raw state, or to process the produce. The processing of produce still provides a much better option and after processing the products can be exported, provides higher gains to the producers and others along the value chain. The processing sector not only benefits the people involved in this sector but also people involved with service sectors like transportation, restaurants, packaging, advertising and marketing. In all processing of surplus will create more employment and income generation opportunities.

In the present scenario, all three sector of the NER are going through an employment crisis. Similar to the rest of India, the NER

TABLE 3

SURPLUS QUANTITIES OF MAJOR HORTICULTURE PRODUCE IN NORTH EASTERN STATES

Commodity	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura	Total
Citrus	18702	12000	1962	23000	5300	2000	1100	10500	74564
Banana	10168	85000	-	-	1200	-	-	-	96368
Pineapple	24919	29000	24000	70000	-	5400	-	31000	184319
Papaya	-	15000	5320	-	-	-	-	-	20320
Jackfruit	-	25000	-	-	-	-	-	93000	118000
Ginger	25163	42000	7045	35048	16500	-	24300	960	151016
Turmeric	-	-	-	6900	400	-	1300	1600	10200
Potato	-	-	-	117500	-	1750	32612	-	151862
Chilies	-	-	22200	-	424	-	-	11650	34274
Total	78952	208 000	60527	252448	23824	9150	59312	148710	840923

Source: APEDA, 2004-05.

primary sector is also struggling with disguised employment. The share of primary sector has gone down in GDP of NER in the last two decades but workforce involvement has not gone down in the similar pattern. The secondary sector due to lack of investment has not been able to create expected employment opportunities, and the tertiary sector is dominated by public sector opportunities, which is not sufficient for the workforce. The severity of unemployment is worst in urban areas, and especially for women. In this gruesome condition, the food processing industry can act as a boon for the economy of NER. Therefore, the government needs to come up with various policies which will provide a strong platform to the industry to build upon, and promote private investment in NER.

Government Policies

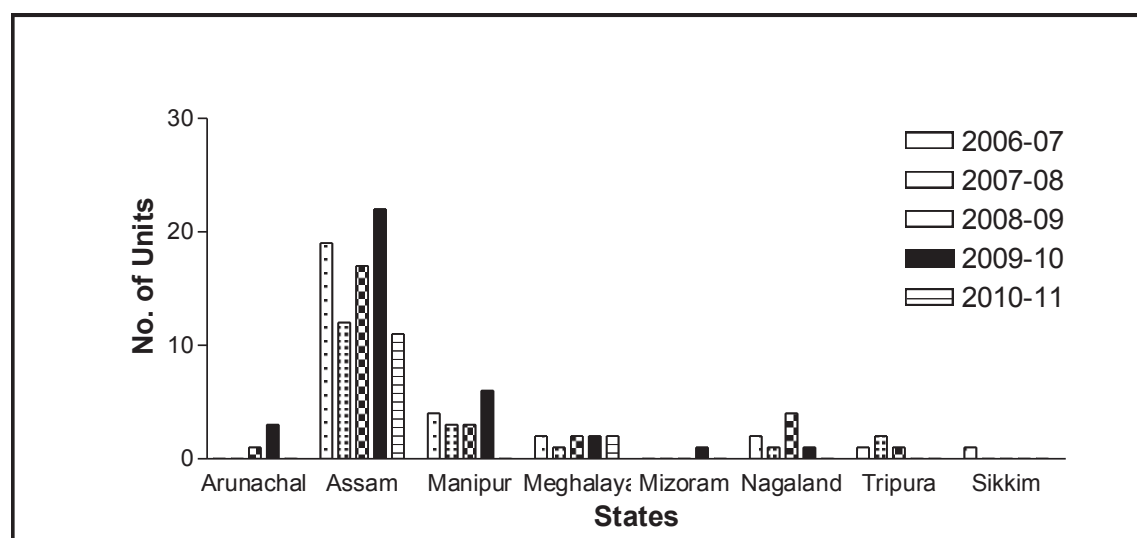
Keeping in mind the growth prospects of the food processing industry in the NER, the government instituting various policies to promote the food processing industry:

- 1) Scheme for technology upgradation, establishment and modernization of food processing industries:** The scheme is the signature initiative of the central Ministry of Food Processing Industries. The food processing industry in India has traditionally been a labour intensive and less technology driven sector, and now the government is trying to modernize it. The scheme covers setting up technology upgradation/Modernization/Establishment of food processing industries in fruits and vegetables, milk products, meat, poultry, fishery, oil seeds and such other agri-horticultural sectors including food flavours and colours, oleoresins, spices, coconut, mushroom etc. Grain Market sector, namely rice milling, flour milling, pulse processing units are also eligible for availing of grant under the scheme. The government of the NER is also trying to implement this scheme, but the results have not been satisfactory as implementation has been held up in red tapism, with very low approval rates. Table 4 tabulates number of project proposals received, approved, pending, closed and rejected in NER under this scheme till 2006. Under the same scheme, there is subsidy for setting up of food processing industries. Under the same scheme, entrepreneurs from NER were also given grant.

States	Received	Approved	Pending	Closed	Rejected
Arunachal Pradesh	6	0	5	1	0
Assam	54	27	22	9	1
Manipur	13	3	5	4	0
Meghalaya	7	3	4	1	0
Mizoram	4	0	1	2	1
Nagaland	22	2	12	4	3
Sikkim	1	0	1	0	0
Tripura	2	3	0	1	0

Source: Indiatat.com, Rajya Sabha Unstarred Question No. 409, dated 27.11.2006.

FIGURE 3
STATE-WISE NUMBER OF PROJECT APPROVED UNDER FOOD PROCESSING SECTOR IN NER FROM 2006-07 TO 2010-11



Source: Indiatat.com, Lok Sabha Unstarred Question No. 583, dated on 11.11.2010

According to the figures given, the response of entrepreneurs is not very encouraging. Assam has come out as biggest beneficiary of the scheme, owing to its large size and population. However, most of the small states almost have no share in the scheme.

- 2) **Mega food park scheme:** The scheme revised under 11th Five Year Plan aims to provide adequate infrastructure for food processing along the value chain from the farm to the market. The scheme provides a grant of 50% of the capital cost excluding land cost, subject to a ceiling of Rupees Fifty Crores; in case of NER the grant is 75%. Under this scheme in NER, there will be a Central Processing Centre at Nathkuchi, Tihu, Assam. The scheme will cover 50 acres of land supported by a network of six Primary Processing Centers (PPC) and 19 collection centers (CC) spread across the entire NER. In order to develop the horticulture industry in NER, an agro marketing hub has been set up near Guwahati, which will be linked with a mega food park and a retail market chain. A food processing park at Chaygaon, located at a distance of 40 km from Guwahati is also under implementation in the district of Kamrup.

States	Proposals Received	Remarks
Assam	3	Park not established. (1 Approved)
Mizoram	1	Park not established.
Sikkim	2	Parks not established. (1 Approved)
Source: Indiastat.com, Lok Sabha Unstarred Question No. 1582, dated on 21.08.2012.		

It can be easily seen from these figures that there is a huge delay in deployment of this scheme in the NER (Table 5). Such delays in implementation of the government scheme create doubt in hearts of people associated with the sector, which is bad for the growth of any sector.

Policy Gaps and Recommendations

The food processing industry has made some significant progress in the NER. Through arrival of MNC's and locals realizing the potential, the sector is all set to boom. Yet, the sector continues to face many challenges. Originating within a difficult geo-physical terrain, varied socio-economic conditions, poor road connectivity and environment problems, the sector is cluttered with complications. The geo-physical terrain of the region with widely scattered diverse tribal communities is itself a huge challenge in formation of a cohesive socio-economic policy for the region. Hence, there is a need of special approaches to deal such issues. The centralization of all policy making bodies has had a very bad effect on the economic prospect of NER. In the process of coming out with policy, the central government undermines the hidden truth that different regions have different problems of their own, and a 5 per cent or 10 per cent increase in the grant will be insufficient to reduce the difficulties faced by people of that region.

The food processing industry has been recognized as a thrust area by all state governments of NER; however there has been no proper policy making body or department in any of the state which looks into the prospect of this sector. All the states cover food processing policy in their industrial policy segment, which leads to generalization of policies. Therefore, in the way central government has a separate ministry for food processing sector, the state government should also come up with separate department or ministry for the food processing industry. There are numerous players in this industry, from producers to entrepreneurs, workers to sellers, and all of them need attention.

From the viewpoint of producers, the difficult terrain of region does not allow large scale farming, and the reliance on traditional methods leads to low productivity. The government needs to find appropriate farm management practices that will ensure high productivity while preserving environmental services. Organic or low external input farming can be a way out, and the large areas of fallow land can be used to increase area under cultivation. The government also needs to promote business development services in the region. There is huge presence of educated unemployed youth in the north-east. To enable these youth to start their own ventures, the states can provide financial support and incubation. In this scheme, organizations like the FICCI, All India Food Processors

Association, and CII can also play a major role. The ministry of food processing industry in its scheme for human resource development promotes skill development through various courses, training centers and certificate programmes. Likewise, Industrial Training Institutes in the states can start diploma courses which entertain skills needed in this sector. For any program to be financially successful, the food processing industry must emphasize issues of marketing. Therefore, the marketing people should have proper knowledge about the product, the industry and various other forces which guide the industry, and for this they need to have training. Apart from these lacunas, the industry is crippled by absence of adequate infrastructure facilities like road connectivity, power supply, insufficient cold storage facilities, and transportation. Lack of these basic infrastructure facilities coupled with frequent insurgencies have had a detrimental effect on the investment coming in the region. Therefore, there is an urgency to improve the infrastructure facilities, a necessity to establish collection centers to reduce the transaction costs involved in sourcing from small scale farmers to small and medium food processing enterprises. The increase in competition among enterprises for the products will enhance farmer's capacity to adopt improved production and postharvest techniques to meet the required higher quality standards. In the north-east states most of the small and medium enterprises are unorganized, and technological obsolescence is high in. Therefore, to improve conditions and upgrade technology for small industries as well as for small farmers, the government of north-eastern states is joining hands with private parties for infrastructure and technological development, providing huge tax incentives and other benefits under North-East Industrial and Investment Promotion Policy (NEIIPP, 2007).

References

1. Barah, B.C. (2006) *Agriculture Development in North-East India Challenges and Opportunities*, NCAER, New Delhi
2. FICCI (2010) *Survey on challenges in food processing sector*, Mumbai
3. Government of India, Ministry of Agriculture (2012a), 3rd advance estimates of Crop production for 2011-12; Press Information Bureau, New Delhi
4. Government of India, Ministry of Commerce and Industry (2007), Department of Industrial Policy and Promotion, North East Industrial and Investment Policy (NEIIPP), New Delhi

5. Government of India, Ministry of Commerce and Industry, APEDA (2013b), Three Year export summary statements (2010-11 to 2012-13), New Delhi
6. Government of India, Ministry of Food Processing Industries, APEDA (2005), *Report on export potential of horticultural products from North-Eastern states (2004-2005)*, New Delhi
7. Government of India, Ministry of Food Processing Industries (2006-07), Annual Report on food processing industries in India, New Delhi
8. Government of India, Ministry of Food Processing Industries (2011-12), Annual Report on Food processing industries in India, New Delhi
9. Government of India, Ministry of Small and Medium Industries (2009), Annual report on Small and Medium Industries in India, New Delhi
10. Government of India, Ministry of Statistics and Programme Implementation (2012), Key Results of Survey on Unincorporated Non-agricultural Enterprises (excluding Construction) in India, 2010-11. New Delhi
11. Government of India, Ministry of Statistics and Programme Implementation (2013a), Key Indicators of Employment and Unemployment in India, 2011-12, New Delhi
12. Government of India, National Manufacturing Competitiveness Council (2009), *Enhancing firm level competitiveness Indian food and agro-processing industry: Strategies and road map development*, New Delhi
13. Government of Mizoram (2009), Report on Centre for Post Harvest Processing and Research (CPHPR), Mizoram
14. Agro-based Food Processing Industries, Indiatat.com, <http://www.indiastat.com/table/industries/18/agrobasedandfoodprocessingindustries/43/461023/data.aspx> Accessed on 21.11.2013; <http://www.indiastat.com/table/industries/18/agrobasedandfoodprocessingindustries/43/412396/data.aspx> Accessed on 21.11.2013; <http://www.indiastat.com/table/industries/18/agrobasedandfoodprocessingindustries/43/716382/data.aspx>. Accessed on 18.11.2013
