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Globalization and Agriculture: Policies and Strategies for Northeast India

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Introduction

The impact of globalization is found to be positive as far as creating opportunities for the export of high-value products are concerned. There are a number of evidences indicating an accelerated flow of exports of high-value food products from developing to developed countries.[1] India, however, is not a significant player in the global trade of agricultural products. It shares only 1.2 per cent of exports and 0.8 percent of imports. The recent FAO data shows that in 2001- 04 the total agricultural export was 6080 million US dollars and import was 4449 million US dollars (Table 1).[3] As far as high-value products are concerned, India's share in world exports is 1.2 per cent for fruits and vegetables, 0.6 percent for meat and 0.2 percent for dairy products. Market liberalization and globalization are causing a transformation in agriculture and agri-food markets in India. It has been found that food preference is changing towards high-value food products like fruits and vegetables.[2]

This high-value segment of agriculture provides significant opportunities to farmers of any region or country for increasing their income and improving their living standards. But the question is: Can our farmers compete and survive in the highly competitive international market? This question holds more significance for the farmers of Northeast India who are yet to realize the benefits of green revolution, modern technology and large scale economics. But at the same time its suitable climate for high-value agricultural commodities and its sharing of borders with a number of countries are great opportunities for international trades.

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Table 1: Trends in Exports and Imports of Agricultural Products

Agri- products	1981- 85	1986- 90	1991- 95	1996- 00	2001- 04
	Exports				
Total agricultural exports (US $ million)	2372	2525	3567	5265	6080
Commodity shares %					
Rice	9.7	9.2	16.2	17.8	17.7
Fruits and vegetables	13.4	15.3	16.0	15.4	16.1
Coffee, tea, cocoa and spices	34.8	35.2	21.5	20.6	13.3
Wheat	0.4	0.5	1.1	1.1	6.1
Meat and meat products	3.1	2.7	3.5	4.2	5.3
Sugar	2.7	0.3	2.1	1.5	4.3
Pulses	0.1	0.3	0.7	1.5	1.4
Milk and milk products	0.1	0.1	0.2	0.4	1.0
	Imports				
Total agricultural imports (US $ million)	1629	1416	1514	3093	4489
Commodity shares %					
Edible oils	46.5	30.3	17.5	45.3	47.2
Fruits and vegetables	7.7	23.5	28.0	19.0	23.5
Pulses	4.4	16.0	11.3	6.5	13.0
Coffee, tea, cocoa and spices	1.8	1.3	1.2	1.9	3.0
Sugar	5.5	5.7	10.5	4.3	1.4
Milk and milk products	7.2	3.7	0.9	0.5	0.3
Rice	2.6	4.7	0.7	0.1	0.0
Wheat	17.8	5.2	4.1	5.4	0.0

Source: FAOSTAT (2007)[3]

In this paper, an attempt is made to find out the Export Performance Ratio (EPR) for few major agricultural commodities exported from India, examine the opportunities and challenges for Northeast agro-producers in their endeavour to play a significant role in market-oriented production of high-value agro-commodities in the globalised world. At the same time the enabling institutional and policy requirements for their participation has been identified and discussed.

Literature Review

There are a significant number of studies highlighting the relation between globalization and agri-trade. In a study on the examination of the trends in agri-trade during the post-liberalization period of India, Sathe *et al.* find that the share of India's agri-exports in the world agri-exports is higher than the share of India's total exports in world total exports [4]. In a study on the export performance in fruits and vegetables Bhagat has found that India has ample scope to increase export of fresh and processed fruits and vegetables.[5] Unnevehr finds that fresh food products have a high income elasticity of

demand and few traditional trade barriers in high income markets. As such, they represent an important opportunity for less developed country (LDC) exporters.[6] Aksoy *et. al.* have probed the export behaviour of fresh fruit and vegetable marketing firms in an international context and identified selected firms' export behaviour, export objectives, export stimuli, and export inhibitors.[7] Athukorala *et. al.* have presented the rapid expansion of processed food exports as a noteworthy recent development in world trade.[8] D´ýaz-Bonilla *et.al.* have observed that there have been important changes in the international trade of processed and high-value added food products from developing countries over the past several decades.[9] Henson explores the impact of sanitary and phyto-sanitary (SPS) measures in developed countries on developing country exports of agricultural and food products and tried to identify the problems that developing countries face in meeting SPS requirements and how these relate to the nature of SPS measures and the compliance resources available to government and the supply chain.[10] Coppel *et. al.* have examined the domestic policies since it is likely that future efforts to liberalize trade will require modification of internal measures. According to them, these areas include competitive policies and investment barriers, which favour local national producers or limit the ability of foreign firms to establish local production or distribution facilities.[11]

Methodology

The present study is based on secondary data. The time series data on export of floriculture and seeds, fruits and vegetables, processed fruits and vegetables, animal products, other processed foods and cereals are obtained from the Agriculture and Processed Foods Development Authority (APFDA).[12] The time series data on trade of these products for India vis-à-vis world are obtained from the *Economic Survey of India* (various issues).[13] Annual compound growth rate (ACGR) and coefficient of variation are computed to examine the trends in export and instability in export. The annual compound growth rate regarding the export of the above commodities are calculated by using the exponential function of the form

$Y = a.b^t$

Here, Y = Variable under study, i.e., export

a= Intercept

b= Regression coefficient of log y on t

t= Time variable (1, 2..., n) for each period.

The parameters a and b are estimated by the method of least square by transforming the above equation to log linear form

$\log y = \log a + t \log b$

or $Y = A + Bt$

The compound growth rate r was given by

$r = (b- 1) X 100$

with b as antilog of B

Coefficient of variation

To examine the stability with respect to export, coefficient of variation are worked out with the following formula:

$$\text{Coefficient of variation} = \frac{\sigma}{\bar{X}} \times 100$$

where, σ = standard deviation

$\bar{X}$ = mean of sample data

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{\sum X^2}{N}}$$

where, $X = (X_1 - \bar{X})$

N = No. of observations

Export Performance Ratio (EPR)

The Export Performance Ratio (EPR) is estimated to examine the comparative advantage of India in export of agricultural commodities, using the method suggested by Balassa (1965).[14] Here values of export and import have been referred in US dollars to see the effects of changes in exchange rate. The EPR of India in different categories of agricultural commodities was estimated by the following equation:

EPR $= S_{it} / S_{wt}$

Where,

S_{it} = Share of X commodity in India's total export, and

S_{wt} = Share of X commodity in the total world export

Since EPR is based on the observed pattern of trade flows, it is also called Revealed Comparative Advantage (RCA). If EPR/RCA is greater than unity, the country has the comparative advantage in the export of concerned commodity and vice versa.

Results and Discussion

Trade Performance

The exponential compound annual growth rates is estimated for all the major categories of agricultural products export viz. (i) Meat and Meat Preparations, (ii) Cereals and Cereal Preparations, (iii) Vegetables and Fruits, (iv) Sugar, Sugar Preparations and Honey, and (v) Coffee, Tea, Cocoa, Spices etc. from India and the results are presented in following tables.

Table 2 presents the Compound Growth Rate (CGR) of floriculture, fruits and vegetable seeds export from India during the study period of 1995/96 - 2006/07. There is a growth of 0.1182 per cent in the quantity of floriculture exported from India during the study period. As far as growth in values of floriculture export is concerned, it is 0.1861 per cent. There is 150.47 percent variation in quantity of floriculture exported during the study period. The coefficient of variation for values of floriculture export is found to be 88.69 percent. As far as export of fruits and vegetable seeds are concerned, Table 2 has shown a growth rate of 0.0061 per cent for quantity of products exported and 0.0652 for values of the export. The coefficient of variation for quantity of fruits and vegetable seeds export is 29.44 percent in comparison to variation in its value which has a C.V. of 33.11 percent.

Table 2: Annual Compound Growth Rate of Floriculture and Seeds Export from India (1995/96- 2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Floriculture	0.1182	0.722	150.47	0.1861	0.9153	88.69
2	Fruits and Vegetables Seeds	0.0061	0.0063	29.44	0.0652	0.5414	33.11
3	Total for Floriculture and Seeds	0.2052	0.7368	88.26	0.1504	0.8988	71.20

Source: Computations are based on export statement/APEDA scheduled products (1995- 96 to 2006- 07)[12]

Table 3 shows the CGR of fruits and vegetables export from India during the study period of 1995/96 -2006/07. There is a growth of 0.1352 per cent in the quantity of fresh onions exported from India during the study period. As far as growth in values of fresh onions export is considered, it shows a growth rate of 0.1527 per cent. There is 60.70 percent variation in quantity of fresh onion export from India in comparison to variation in its value which has a C.V. of 69.02 percent. As far as exports of other fresh vegetables are concerned, Table 3 has shown a growth rate of 0.1214 per cent for quantity of products exported. In case of values a growth rate of 0.01507 per cent is observed. The coefficient of variation for quantity is 43.71 percent in comparison to variation in value of export which has a C.V. of 52.62 percent. Similarly, dry nuts (walnuts), fresh mangoes, fresh grapes, other fresh fruits have shown a growth rate of 0.0024, 0.0933, 0.1135, 0.0801 per cent respectively in terms of their quantity exported from India and their values have shown a growth rate of 0.0528, 0.0961, 0.01502, 0.1369 per cent respectively. A C.V. of 20.09, 37.16, 70.49, and 41.25 per cent are seen for dry nuts (walnuts), fresh mangoes, fresh grapes, other fresh fruits respectively. At the same time they have shown C.V. of 25.17, 36.07, 74.00, and 49.00 per cent for their values.

Table 3: Annual Compound Growth Rate of Fruits and Vegetables Export from India (1995/96- 2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Fresh Onions	0.1352	0.7094	60.70	0.1527	0.7972	69.02
2	Other Fresh Vegetables	0.1214	0.8746	43.71	0.1507	0.8973	52.62
3	Dry Nuts (Walnuts)	0.0024	0.0017	20.09	0.0528	0.4862	25.17
4	Fresh Mangoes	0.0933	0.7813	37.16	0.0961	0.8357	36.07
5	Fresh Grapes	0.1135	0.5084	70.49	0.1502	0.7715	74.00
6	Other Fresh Fruits	0.0801	0.4103	41.25	0.1369	0.9579	49.00
7	Total for Fruits and Vegetables	0.1209	0.7596	52.33	0.1353	0.9316	54.58

Source: Computations are based on export statement/APEDA scheduled produc:s (1995- 96 to 2006- 07)[12]

Total fruits and vegetables export from India has shown a growth rate of 0.1209 per cent for quantity of products exported and 0.9316 per cent for their values. The coefficient of variation for quantity exported is 52.33 percent in comparison to variation in value which has a C.V. of 54.58 percent.

Table 4 shows the CGR of other processed foods export from India during the study period of 1995/96 -2006/07. The quantity of groundnut export has shown a growth rate of 0.0.378 per cent. As far as growth in values of groundnuts export is considered, it has shown a growth rate of 0.0759 per cent. The coefficient of variation for quantity exported is 39.21 percent in comparison to variation in value which has a C.V. of 49.08 percent. Similarly, guargum, jaggery and confectionary, cocoa products, cereal preparations, alcoholic and non-alcoholic beverages, miscellaneous preparations, milled products have shown a growth rate of 0.063, 0.0754, 0.0941, 0.1968, -0.0127, 0.184, 0.0188 per cent respectively for quantity exported from India and their values show a growth rate of 0.0882, 0.1294, 0.1252, 0.1422, 0.0461, 0.1602, 0.0517 per cent respectively. A C.V. of 27.48, 77.10, 51.26, 238.01, 73.23, 70.57, and 94.11 per cent are seen for guargum, jaggery and confectionary, cocoa products, cereal preparations, alcoholic and non-alcoholic beverages, miscellaneous preparations, milled products respectively. They show C.V. of 42.97, 92.18, 62.95, 54.01, 38.10, 56.60, and 88.74 per cent for their values. The analysis for total other processed products export from India has shown a growth rate of 0.0553 per cent for quantity of products exported and 0.0786 per cent for their values. The coefficient of variation for quantity exported is 55.24 percent in comparison to variation in value which has a C.V. of 36.87 percent.

Table 4: Annual Compound Growth Rate of Other Processed Foods Export from India (1995/96- 2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Groundnuts	0.0378	0.0911	39.21	0.0759	0.2703	49.08
2	Guar gum	0.063	0.804	27.48	0.0882	0.4861	42.97
3	Jaggery & Confectionery	0.0754	0.0439	77.10	0.1294	0.1608	92.18
4	Cocoa Products	0.0941	0.756	51.26	0.1252	0.828	62.95
5	Cereal Preparations	0.1968	0.4486	238.01	0.1422	0.951	54.01
6	Alcoholic and Non-Alcoholic Beverages	-0.0127	0.0061	73.23	0.0461	0.1672	38.10
7	Miscellaneous preparations	0.184	0.6375	70.57	0.1602	0.8027	56.60
8	Milled products	0.0188	0.0014	94.11	0.0517	0.013	88.74
9	Total for Other Processed Products	0.0553	0.1058	55.24	0.0786	0.7157	36.87

Source: Computations are based on export statement/APEDA scheduled products (1995- 96 to 2006- 07)[12]

The annual compound growth rate of animal products export from India during the study period 1995/96-2006/07 has been presented in Table 5. The quantity of buffalo meat exported has shown a growth rate of 0.1126 per cent. As far as growth in values of buffalo meat export is considered, it shows a growth rate of 0.1546 per cent. The coefficient of variation for quantity is 43.52 percent in comparison to variation in value which has a C.V. of 61.93 percent. Similarly, sheep/goat meat, poultry products, dairy products, animal casings, processed meat, and natural honey have shown a growth rate of -0.0209, 0.3942, 0.2943, 0.0939, 0.0607, 0.0932 per cent respectively for the quantity exported from India and their values show a growth rate of 0.0089, 0.1694, 0.3392, 0.22, 0.0524, 0.0198 per cent respectively. A C.V. of 40.82, 160.68, 101.72, 192.44, 64.47, and 41.26 per cent were seen for sheep/goat meat, poultry products, dairy products, animal casings, processed meat, and natural honey respectively. At the same they show C.V. of 30.23, 63.50, 112.04, 170.41, 57.99, and 32.49 per cent for their values. The analysis of total for animal products export from India has shown a growth rate of 0.178 per cent for quantity of products exported and 0.1625 per cent for their values. The coefficient of variation for quantity exported is 76.50 percent in comparison to variation in value which has a C.V. of 62.92 percent.

Table 5: Annual Compound Growth Rate of Animal Products Export from India (1995/96- 2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Buffalo Meat	0.1126	0.9009	43.52	0.1546	0.9292	61.93
2	Sheep/Goat Meat	-0.0209	0.0341	40.82	0.0089	0.0088	30.23
3	Poultry Products	0.3942	0.733	160.68	0.1694	0.7824	63.50
4	Dairy Products	0.2943	0.79	101.72	0.3392	0.8192	112.04
5	Animal Casings	0.0939	0.1453	192.44	0.22	0.2237	170.41
6	Processed Meat	0.0607	0.0995	64.47	0.0524	0.0924	57.99
7	Natural Honey	0.0932	0.098	41.26	0.0198	0.0078	32.49
8	Total for Animal Products	0.178	0.8687	76.50	0.1625	0.9491	62.92

Source: Computations are based on export statement/APEDA scheduled products (1995- 96 to 2006- 07)[12]

Table 6 shows the CGR of processed fruits and vegetables export from India during the study period of 1995/96 -2006/07. The export of dried and preserved vegetables has shown a growth rate of -0.0269 per cent for quantity of products exported. As far as growth in values of dried and preserved vegetables export is considered, it has shown a growth rate of 0.0033 per cent. The coefficient of variation for its quantity exported is 46.87 percent in comparison to variation in value which has a C.V. of 41.41 percent.

Table 6: Annual Compound Growth Rate of Processed Fruits and Vegetables Export from India (1995/96- 2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Dried and Preserved Vegetables	-0.0269	0.037	46.87	0.0033	0.0007	41.41
2	Mango Pulp	0.1315	0.9219	49.41	0.1443	0.9294	50.78
3	Pickle and Chutney	0.2019	0.9567	80.10	0.1403	0.8805	58.22
4	Other Processed Fruits and Vegetables	0.1308	0.86	52.04	0.1587	0.9091	62.14
5	Pulses	0.1951	0.336	43.45	0.3204	0.6528	46.48
6	Total for Processed Fruits and Vegetables	0.1352	0.8854	52.95	0.1413	0.8968	54.60

Source: Computations are based on export statement/APEDA scheduled products (1995- 96 to 2006- 07)[12]

Similarly, mango pulp, pickle and chutney, other processed fruits and vegetables, and pulses have shown a growth rate of 0.1315, 0.2019, 0.1308, 0.1951 per cent respectively for quantity exported from India and their values show a growth rate of 0.1443, 0.1403, 0.1587, 0.3204 per cent respectively. A C.V. of 49.41, 80.10, 52.04, and 43.45 per cent are seen for mango pulp, pickle and chutney, other processed fruits and vegetables, and pulses respectively. At the same time they show a C.V. of 50.78, 58.22, 62.14, and 46.48 per cent for their values. The analysis for total processed fruits and vegetables export from India has shown a growth rate of 0.1352 per cent for quantity of products exported and 0.1413 per cent for their values. The coefficient of variation for quantity exported is 52.95 percent in comparison to variation in value which has a C.V. of 54.60 percent.

Table 7 shows the CGR of cereals export from India. The export of non-basmati rice has shown a growth rate of -0.0497 per cent for quantity of

products exported. As far as growth in values of non-basmati rice export is considered, it shows a growth rate of 0.0311 per cent. The coefficient of variation for quantity is 66.18 per cent in comparison to variation in value which has a C.V. of 48.12 percent. Similarly, basmati rice and other cereals show a growth rate of 0.1642 and 0.4036 per cent respectively for quantity exported from India and their values show a growth rate of 0.7833 and 0.7504 per cent respectively. A C.V. of 88.17 and 131.53 per cent are seen for basmati rice and other cereals respectively. At the same time they show C.V. of 39.27 and 126.78 per cent their values. The analysis for total for cereals export from India has shown a growth rate of 0.0679 per cent for quantity of products exported and 0.0724 per cent for their values. The coefficient of variation for quantity exported is 44.73 percent in comparison to variation in value, which has a C.V. of 35.73 percent.

Table 7: Annual Compound Growth Rate of Cereals Export from India (1995/96-2006/07)

Sl. No.	Item	Quantity			Value		
		CGR	R^2	C.V	CGR	R^2	C.V
1	Non-Basmati Rice	-0.0497	0.0689	66.18	0.0311	0.0417	48.12
2	Basmati Rice	0.1642	0.6275	88.17	0.0995	0.7833	39.27
3	Other Cereals	0.4036	0.654	131.53	0.4029	0.7504	126.78
4	Total for Cereals	0.0679	0.2327	44.73	0.0724	0.4835	35.73

Source: Computations are based on export statement/APEDA scheduled products (1995- 96 to 2006- 07)[12]

Export Performance Ratio (EPR)

The Export Performance Ratio/Revealed Comparative Advantage (RCA) for export in various agro-products like (i) meat and meat preparations, (ii) cereals and cereal preparations, (iii) vegetables and fruits, (iv) sugar, sugar preparations and honey, and (v) coffee, tea, cocoa, spices etc. are estimated to compare the export competitiveness of India and the same has been presented in Table 8.

Table 8: RCA of India in Export of Agro and Agro Based Products

Sl. No.	Item	RCA							
		1970	1975	1980	1985	1990	2000	2004	2005
1	Meat and Meat Preparations	0.17	0.23	0.88	0.84	0.41	1.09	0.63	0.79
2	Cereals and Cereal Preparations	0.21	0.12	1.13	1.40	1.15	2.20	3.12	2.32
3	Vegetables and Fruits	1.79	2.86	2.54	3.05	1.45	1.89	1.22	1.31
4	Sugar, Sugar Preparations and Honey	1.49	8.92	0.67	0.00	0.27	1.28	0.37	0.76
5	Coffee, Tea, Cocoa, Spices etc.	7.96	9.01	9.35	10.13	7.26	5.15	2.34	2.18

Source: Computations are based on *Economic Survey of India 2007-08,* vide http://indiabudget.nic.in.

Table 8 shows that RCAs in meat and meat preparations were far less than unity during 1970-1990. In the year 2000, the RCA just crossed unity but again there was a significant reversal in 2004. The year 2005 has shown slight improvement over 2004. However, in case of cereals and cereals preparations, an increasing trend in RCAs is observed during the study period with year 2004 showing the highest RCA for the products. This indicates that though prior to 1975 India was not competitive in cereals and cereals product export, after 1980 India has become competitive in export of these products. As far as vegetables and fruits are concerned, India was competitive in exports of the same with highest RCA in the year 1985. But after that, a kind of reversal in trend can be seen. A decreasing trend in RCAs in recent years indicates decline in export competitiveness of India in export of fruits and vegetables. In case of sugar, sugar preparations and honey, apart from very high RCA of 8.92 in 1975 a downward trend in RCA can be seen. Except 2000, the RCA was less than unity from 1980 onward. This indicates that India has not been competitive in sugar, sugar preparations and honey export throughout the study period with years 1975 and 2000 as only exceptions. It can be viewed from Table 8 that RCA in case of coffee, tea, cocoa, spices etc. are far above unity. This indicates that India has been very competitive in export of these commodities throughout the study period. However the fluctuations and decreasing trends in recent years can be a cause of concern.

The above discussion shows that though India has not been very competitive in respect of export of meat and meat preparations during the study period yet in other agro-products it has been competitive. However, recent years have shown some decreasing trends in RCA. Therefore it is very important to support the existing system and improvement in infrastructure facilities like cold chain, good transportation network, and better port facilities. Going organic can be a good option. There is a need to focus on improvement in existing technology and its proper transfer to the farmers so that the quality of the agro-products can be improved as per the demand in international market.

As evident from Table 9, the major importers of India's agro-products are from among developed as well as developing countries. These destinations depend on several factors like geographic and political proximities, difference in competitive advantage and degree of trade barriers. So, it is very important to have a proper export policy for these agro-products which can take advantage of markets in neighbouring countries and trade relations with

developed countries. India is continuously exporting to European countries and the USA. This indicates that SPS and HACCAP standards and other quality requirements are being met by the Indian exporters and these are not a bottleneck in the export of products. This shows that there is opportunity in global agricultural trade and India is very competitive in becoming a major player of this global trade.

Table 9: Major Importing Countries

Product group	Major importing countries
Floriculture	USA, The Netherlands, UK, Germany, Japan
Fruits and Vegetables	USA, Pakistan, Japan, Bangladesh, The Netherlands
Fresh onions	Bangladesh, Malaysia, UAE, Sri Lanka, Bahrain
Other fresh vegetables	UAE, Nepal, UK, Saudi Arabia, USA
Walnuts	Spain, Germany, UK, Egypt, The Netherlands
Fresh mangoes	Bangladesh, UAE, UK, Saudi Arabia, Nepal
Fresh grapes	The Netherlands, Bangladesh, UAE, UK, Germany
Other fresh fruits	Bangladesh, UAE, Saudi Arabia, Nepal, The Netherlands
Dried and preserved vegetables	Bangladesh, Sri Lanka, USA, UK, UAE
Mango pulp	Saudi Arabia, The Netherlands, Yemen, UAE, Kuwait
Pickles and chutneys	Russia, USA, France, Belgium, Spain
Other processed fruits and vegetables	USA, Israel, Saudi Arabia, UK, The Netherlands

Source: Report of the Working Group on Horticulture, Plantation Crops and Organic Farming for the XI Five Year Plan (2007-12), GoI, Planning Commission.[15]

Opportunities and Challenges for Northeast India

This section discusses the opportunities and challenges for Northeast India in terms of agriculture production and export. The state-wise area under horticulture crops during 2003-04 is presented in Table 10. Among the Northeastern states, Sikkim and Manipur have more than 50 percent of their cultivated areas covered under horticulture crops. In Assam 14.34 percent area, in Meghalaya 31.25 percent and Tripura 28.47 percent area are covered under vegetables. This clearly shows that there is a very strong exportable opportunities from North- Eastern India.

Table 10: Statewise Area under Horticulture Crops During 2003-04

State	% Area under horticulture
Assam	14.34
Manipur	57.21
Meghalaya	31.25
Mizoram	18.00
Nagaland	7.20
Sikkim	58.80
Tripura	28.47
National	13.08

Source: Report of the Working Group on Horticulture, Plantation Crops and Organic Farming for the XI Five Year Plan (2007-12), GoI, Planning Commission.[15]

S. S. Khanka (2007), after reading a series of different studies, has listed the potential item for border trade in the region, which includes products like processed fruits and vegetables (orange, lemon, jackfruits, ginger, papaya, potato, chilli, pineapple, guava, brinjal, turmeric), tea, rubber, medicinal plants and herbs and silk.[16]

Table 11: Potential Items for Border Trade in Northeast India

Items	States
Processed fruits and vegetables (orange, lemon, jackfruits, ginger, papaya, potato, chilli, pineapple, guava, brinjal, turmeric)	Arunachal Pradesh, Assam, Manipur, Mizoram, Tripura
Tea	Assam, Manipur
Rubber	Manipur, Tripura
Medicinal Plants and Herbs	Assam, Manipur, Tripura
Silk	Assam, Nagaland

Source: S.S. Khanka (2007).

Government has identified some export zones to boost agricultural exports from India, and among them 3 zones are in Northeast India. The details are presented in Table 12.

Table 12: List of Agri Export Zones in Horticulture Sector (North- East India)

Sl. No.	State	AEZ project	Districs/ Area
1	Tripura	Pineapple	Kumarghat, Manu, Melaghar, Matabari and Kakraban Blocks
2	Sikkim	Flowers (Orchids and Cherry), Pepper	East Skkim
		Ginger	North, East, South and West Sikkim
3	Assam	Fresh and Processed Ginger	Kamrup, Nalbari, Barpeta, Darrang, Nagaon, Morigaon, Karbi Anglong and North Cachar

Source: http://apeda.com/apedawebsite/trade_promotion/Agri_Export_Zone.htm

The above discussion clearly shows that there is tremendous opportunity in the region regarding export of agro-products and government has also given support to this by establishing agri-export zones. But there are other problems emerging. Bhagat has identified some of the most significant problems in this regard such as subsistence agriculture, low adoption rate, small size of operational holdings, high vulnerability to natural calamities like floods, submergence, landslides, and soil erosion, poor communication, transport and market infrastructure, low utilization of modern inputs in agriculture, traditional agro-processing and post-harvest management, and low per capita income.[17]

Institutional and Policy Requirements

In the era of liberalization, privatization and globalization, it is very important

to focus attention on the establishment and strengthening of regional cooperation across the globe to bust trade and business across the regions. The emergence of various forms of regional cooperation like EU, NAFTA and LAFTA confirms this need. Similarly, South Asian Association of Regional Cooperation (SAARC) and Association of South East Asian Nations (ASEAN) are good examples in this regard. As a validation of a conscious adoption of a "Look East" policy, India has become a full dialogue partner of ASEAN and has participated for the first time at the Post Ministerial Conference (PMC) of ASEAN in Jakarta in July 1996. The formation of BIMSTEC Group (Bangladesh, India, Myanmar, Singapore and Thailand - Economic Cooperation), which is likely to be joined by Bhutan and Nepal, is another step to forge regional cooperation, which may benefit Northeast India. The South Asian Free Trade Area Framework Agreement, 2004 and South Asian Preferential Trade Agreement (SAPTA) are also expected to bring further benefits to the region. The following suggestions may result in increased trade and cooperation among the member countries.

- Establishment of transportation and communication network among these countries.
- Relaxation in foreign trade policy in favour of member countries.
- Bringing peace and political stability in Northeast India to provide a favourable condition for investment.
- Agri-business development in the region.
- Organization of seminars, conferences and business summits.

A number of policy decisions have been taken by both central and state governments to bust internal agriculture and agri-business. These include relaxation of regulations governing markets, fiscal incentives for food processing industry, increased availability of credit to farmers at low interest rate, funding of contract farming schemes by institutional agencies, permission of FDI in single brand retailing etc.[2]

Apart from policy decisions and building relations with other countries, the need of the hour is to improve the farmers' access to markets through institutional innovations. The existing supply chains are long and are dominated by a number of intermediaries like assembler, wholesaler, sub-wholesaler, commission agent and retailers. In case of fruits and vegetables, farmers receive one-third to one-half of the final price,[18] indicating high marketing cost and margins. Brithal *et. al.* have estimated the marketing cost to be

around 20 percent of the sale price of vegetables.[19] There is a need to focus on institutional innovations to reduce the high marketing and transaction costs. Institutions such as cooperative, growers' associations and contract-farming are considered to reduce marketing and transaction costs and risks by providing 'market' to the farmers at their doorsteps.[20]

Conclusion

The present study has shown that except meat and meat preparations, India has been competitive in export of agro-products during the study period. However, recent years have shown some decreasing trends in RCA. Therefore it is very important to support the existing system and improvement in infrastructure facilities like cold chain, good transportation network, and better port facilities. Going organic can be a good solution. There is also a need to focus on improvement in existing technology and its transfer to the farmer so that the quality of agro-products can be improved as per the demand in international market. The study clearly shows that the region has tremendous opportunity as far as export of agro-products is concerned and government has also given support to this by establishing agri-export zones. But there are some nagging problems like subsistence agriculture, low adoption rate, small size of operational holdings, high vulnerability to natural calamities like floods, submergence, landslides, soil erosion, etc. poor communication, transport and market infrastructure, low utilization of modern inputs in agriculture, traditional agro-processing and post-harvest management and low per capita income. There is also a need to bring the farmers, specially the small holders, into the market and make them valuable players.

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