

Developing Cross-Border Production Networks between North Eastern Region of India, Bangladesh and Myanmar: *A Preliminary Assessment*



Prabir De
and
Manab Majumdar



RIS

Research and Information System
for Developing Countries

Developing Cross-Border
Production Networks between
North Eastern Region of India,
Bangladesh and Myanmar:
A Preliminary Assessment

Developing Cross-Border
Production Networks between
North Eastern Region of India,
Bangladesh and Myanmar:
A Preliminary Assessment

Prabir De
and
Manab Majumdar



RIS

Research and Information System
for Developing Countries

Acknowledgment

We are grateful to Ambassador Shyam Saran, Chairman, RIS for his continuous guidance and encouragement. We are also grateful to Dr. Sachin Chaturvedi, Director General, RIS for encouragement. Thanks also to Prof. Biswajit Dhar for discussion and sharing views on trade and investment in India's North Eastern Region. Authors thank Mr. David Zote, Mr. Subodh Chandra Das and Mr. Sanjib Banik, who conducted the field survey in NER. We gratefully acknowledge the comments received from Prof. Gurudas Das on an earlier version of this monograph, which helped improve the study. Dr. Sabyasachi Saha gave his comments on the pre-publication version of the monograph. We are grateful to Mr. Tish Kumar Malhotra who coordinated the production of the monograph with the support of Ms. Ruchi Verma, and Mr. Sachin Singhal, who designed the monograph.

Copyright © RIS, 2014

Published in 2014 by:



RIS

**Research and Information System
for Developing Countries**

Zone IV B, 4th Floor, India Habitat Centre

Lodhi Road, New Delhi 110 003, India

Tel.: +91-11-24682177-80;

Fax: +91-11-24682173-74

E-mail: dgoffice@ris.org.in

Website: www.ris.org.in

Views expressed by the authors are personal and they do not necessarily reflect those of the organisations the authors work with. Usual disclaimers apply.

Cover design: Sachin Singhal

Contents

<i>Preface by Dr. Sachin Chaturvedi, Director General, RIS</i>	<i>xiii</i>
1 Introduction	1
2 Stylised Facts and Some Reflections on Trade and Integration	9
3 Overview of the NER Economy	21
4 NER's Trade with Bangladesh and Myanmar	35
5 Emerging Production Networks	49
6 Logistics and Trade Facilitation in NER	69
7 Field Survey Results and Impact Assessment	81
8 Conclusions and Recommendations	107
References	121
Appendices	125

List of Tables, Figures, Exhibits, Maps, Boxes, and Appendices

Tables

Table 1.1:	International Borders of the Northeastern States of India	2
Table 2.1:	India's Trade with Bangladesh and Myanmar	17
Table 3.1:	Population by NER States (2011 Census)	22
Table 3.2:	Gross State Domestic Product (GSDP) at Current Price	23
Table 3.3:	Per Capita Net State Domestic Product (PCNSDP) at Current Price	26
Table 3.4:	Important Industrial Characteristics (All Industries) in NER	29
Table 3.5:	List of Major Industries in NER	30
Table 3.6:	Trends in Registered and Unregistered Manufacturing Sector in NER	32
Table 3.7:	Number of SMEs in NER in 2012	32

Table 3.8:	Newly Registered Companies in NER, 2011	33
Table 4.1:	State-wise Distribution of LCSs in NER Dealing with NER-Bangladesh Trade.....	36
Table 4.2(a):	India's Major Exports to Bangladesh in 2012.....	37
Table 4.2(b):	India's Major Imports from Bangladesh in 2012.....	38
Table 4.3:	NER's Trade with Bangladesh in 2010-11	40
Table 4.4:	LCSs in NER Dealing Trade with Myanmar.....	42
Table 4.5(a):	India's Major Exports to Myanmar in 2012	44
Table 4.5(b):	India's Major Imports from Myanmar in 2012	44
Table 4.6(a):	Trends in India's Trade with Myanmar at Moreh.....	46
Table 4.6(b):	NER's Trade with Myanmar in 2012-13.....	47
Table 5.1(a):	India's Export of Limestone and Other Raw Materials to Bangladesh.....	53
Table 5.1(b):	India's Import of Cement from Bangladesh.....	53
Table 5.2(a):	India's Export of Textiles and Textile Articles to Bangladesh.....	55
Table 5.2(b):	India's Import of Ready-Made Garments and Other Textiles Made up from Bangladesh.....	55
Table 5.3(a):	India's Export of Fruits to Bangladesh.....	57
Table 5.3(b):	India's Import of Processed Fruit Juice from Bangladesh.....	57
Table 5.4:	India's Export of Selected Fruits to Bangladesh.....	58
Table 5.5(a):	India's Export of Bicycles and Parts to Bangladesh	59
Table 5.5(b):	India's Import of Bicycles from Bangladesh	60
Table 5.6(a):	India's Export of Plastics and Products to Bangladesh.....	62
Table 5.6(b):	India's Import of Plastics and Products from Bangladesh.....	62
Table 6.1:	Infrastructure Indicators of NER, 2011.....	70
Table 6.2:	TAB Indicators for NER vis-à-vis Other Countries/ Regions, 2013.....	72
Table 6.3:	TAB Indicators for NER, 2013	74
Table 6.4:	Major Export and Import Documents Recorded for NER, 2013.....	75
Table 6.5:	Nature of Export and Import Procedures, 2013	76
Table 7.1:	Land Customs Stations and Cities Covered by the Survey ...	82
Table 7.2:	Basic Profile of LCSs.....	83
Table 7.3	LCS-wise Traded Goods in 2012-13	85
Table 7.4(a):	Availability of Physical Infrastructure at LCSs	88
Table 7.4 (b):	Availability of Non-Physical Infrastructure at LCSs.....	90

Table 7.4 (c):	Major Trade Documents for a Standard Consignment	91
Table 7.5:	Required Improvements at LCSs: Suggestions of Respondents.....	91
Table 7.6:	Problems with Border Authorities: Respondents Opinion.....	92
Table 7.7:	Potential Sectors/Industries for Cross-border Production Networks.....	96
Table 7.8:	Suggestions for Improvement of Cross-border Production Networks.....	99
Table 7.9:	Ordered Probit Regression Results; DV = Trade with Bangladesh and Myanmar	102
Table 7.10:	Logit Regression Results: Trade Facilitation and Logistics to Encourage Production Networks; DV = Log Odd Ratio that Production Networks Increased.....	104
Table 8.1:	Policy Measures to Enhance Production Networks in the NER.....	108
Table 8.2:	Proposed Trade Facilitation Policy Frameworks	113

Figures

Figure 1.1:	Creation of Production Blocks in NER	5
Figure 1.2:	Production Networks and Supply Chain.....	6
Figure 2.1	Cross-Border Production Fragmentation.....	10
Figure 2.2:	Production Networks and Service Links.....	11
Figure 2.3:	NER as India's Gateway to the East	16
Figure 2.4:	Functional Classification of Trade in NER.....	18
Figure 2.5:	Removing the Economic Isolation: Development Cycle for NER.....	19
Figure 3.1(a):	Trends in Sectoral Composition in NER.....	25
Figure 3.1(b):	Trends in Sectoral Composition by NER States.....	27
Figure 5.1:	Trade Network in Cement between the NER and Bangladesh.....	54
Figure 5.2:	Illustration of Production Networks in NER-Bangladesh in Cement.....	54
Figure 5.3:	Illustration of Production Networks between NER and Bangladesh in RMGs.....	56
Figure 5.4:	Illustration of Production Networks between the NER and Bangladesh in Processed Foods	58
Figure 5.5:	Illustration of Production Networks between the NER and Bangladesh in Bicycles.....	61

Figure 5.6:	Illustration of Production Networks between the NER and Bangladesh in Plastics.....	63
Figure 5.7:	Illustration of Future Production Networks between India and Myanmar in RMGs.....	64
Figure 6.1:	Trends in Trading across Borders Indicators.....	73
Figure 6.2:	New Development Centres and Nodes	77
Figure 7.1:	Types of Surveyed Firms	94
Figure 7.2:	Do You Think Scope for Production Networks between the NER and Bangladesh/the NER and Myanmar has increased over the Last 5 Years?.....	95
Figure 7.3:	Do You Think Cross-border Production Networks between the NER and Bangladesh/the NER and Myanmar to Rise in Coming Days?.....	95
Figure 7.4:	Transport Costs: Opinion of Respondents	97
Figure 7.5:	Barriers to Production Networks: Respondents' Opinions.....	97
Figure 7.6:	Opinion of Respondents on Trade Facilitation and Logistics to Encourage Production Networks.....	103

Exhibit

Exhibit 5.1:	The 1st and 2nd Unbundling of International Division of Labour.....	50
--------------	---	----

Map

Map 1.1:	Map of North Eastern Region	3
----------	-----------------------------------	---

Boxes

Box 5.1:	NER-Bangladesh Production Network in Cement	51
Box 5.2:	India's Recent Assistance to Myanmar in Textile and Clothing Sector.....	66

Appendices

Appendix 1:	Trends in Sectoral Composition of NER States.....	125
Appendix 2:	Share of Seven Major Industries in Output and GVA in NER in 2010-11	127
Appendix 3:	State-wise Distribution of Registered and Unregistered Manufacturing Units.....	130
Appendix 4:	State-wise Distribution of LCSs in the NER.....	132
Appendix 5:	Questionnaire	134

List of Abbreviations

ADB	Asian Development Bank
AEC	ASEAN Economic Community
AEPC	Apparel Export Promotion Council
APTA	Asia Pacific Trade Agreement
ASEAN	Association of Southeast Asian Nations
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BCIM	Bangladesh, China, India, Myanmar Forum for Regional Cooperation
BTA	Border Trade Agreement
CAGR	Compound Annual Growth Rate
CEPZ	Chittagong Export Processing Zone
CTD	Customs Transit Documents
CRS	Constant Returns to Scale
DBD	Doing Business Database
DFTP	Duty Free Tariff Preference
DGFT	Directorate General of Foreign Trade
DPR	Detailed Project Report
EAS	East Asia Summit
EDI	Electronic Data Interchange
EIB	European Investment Bank
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDP	Gross Domestic Product

GMS	Greater Mekong Subregion
GPS	Global Positioning System
GSDP	Gross State Domestic Product
GSP	Generalised System of Preferences
GVA	Gross Value Added
HEPC	Handloom Export Promotion Council
IBTA	India-Bangladesh Trade Agreement
ICP	Integrated Check-Post
ICT	Information and Communication Technology
IFC	International Finance Corporation
IWT	International Warehousing and Transport
JICA	Japan International Cooperation Agency
JV	Joint Venture
KMTTP	Kaladan Multi-modal Transit Transport Project
KSFS	Karimganj Steamer and Ferry Station
LCS	Land Customs Stations
L/C	Letter of Credit
LDC	Least Developed Country
LEP	Look East Policy
LPI	Logistics Performance Indicators
MDBT	Myanmar Department of Border Trade
MGC	Mekong-Ganga Cooperation
MIEC	Mekong-India Economic Corridor
MNC	Multinational Corporation
MRA	Mutual Recognition Arrangement
MSME	Micro, Small and Medium Enterprises
NAFTA	North American Free Trade Agreement
NER	North Eastern Region
NIC	National Industrial Classification
NID	National Institute of Design
NIT	National Institute of Technology
NTMs	Non-Tariff Measures
NVA	Net Value Added

PCNSDP	Per Capita Net State Domestic Product
PP	Polypropylene
RFID	Radio Frequency Identification
RMG	Ready-made Garment
SAARC	South Asia Association for Regional Cooperation
SASEC	South Asia Sub-regional Economic Cooperation
SEZ	Special Economic Zone
SITRA	South India Textile Research Association
SMEs	Small and Medium Enterprises
SSIs	Small Scale Industries
TAB	Trading across Borders
TH	Trilateral Highway



Preface

The North Eastern Region (NER) of India is pivotal to India's growing economic and strategic partnership with Southeast and East Asia. The NER is also central to India's Look East Policy (LEP), and acts as a land-bridge between South and Southeast Asia. The NER shares borders with South Asian countries like Bangladesh, Bhutan and Nepal, and with growing Southeast and East Asian countries like Myanmar and China, on the other. However, high transportation cost negates NER's advantages of having vast international border. Nevertheless, given its strategic location, the NER can be developed as a base for India's growing economic links, not only with Southeast Asia but also with Bangladesh and China.

RIS conducted a study entitled "Expansion of North East India's Trade and Investment with Bangladesh and Myanmar: An Assessment of the Opportunities and Constraints", which was commissioned by the Ministry of Development of North Eastern Region (DONER) and the North Eastern Council (NEC) in 2011-12. This study, conducted by my senior colleague, Dr. Prabir De jointly with Mr. Manab Majumdar of FICCI, is an extension of earlier study, which presents opportunities in cross-border production networks between NER, Bangladesh and Myanmar.

This Study has shown, among others, that the NER has the potential to grow faster than its current pace, provided the region builds cross-border production links, particularly with Bangladesh, Myanmar and other Southeast and East Asian countries. However, the bottlenecks to cross-border production links are plenty, of

which inadequate connectivity, logistics and trade facilitation, more particularly at the border areas, are the major ones. Efficient logistics services are an important factor for the expansion of production networks within or across countries. This Study has also provided a set of recommendations for strengthening production networks between the NER, Bangladesh and Myanmar.

I trust this Study will be a valuable resource for policymakers, academics and practitioners.

Sachin Chaturvedi
Director General, RIS

1 Introduction

The North Eastern Region (NER) of India is pivotal to India's growing economic and strategic partnership with Southeast and East Asia. The NER is also central to India's Look East Policy (LEP), and acts as a land-bridge between South and Southeast Asia. Not only natural resources, the NER also enjoys greater geo-economic space over other Indian regions. For example, about 4 per cent of India's population lives in the NER, which is spread across 8 per cent of India's geographical area. However, in relative terms, it is one of India's most economically laggard regions, contributing only 3 per cent of the country's gross domestic product (GDP).¹ At the same time, no other region in India can outperform the NER in terms of availability of natural resources and in benefitting from its location as the international border. About 98 per cent of the NER's borders form India's international boundaries; on one hand, it shares borders with South Asian countries like Bangladesh, Bhutan, and Nepal, and with Southeast and East Asian countries like Myanmar and China, on the other (Table 1.1). Map 1.1 presents the geographic location of the NER and its eight states.

In the past, a majority of the NER population used the river system for their livelihood and international trade and commerce. Sea routes were the typical transportation outlets for international trade, whereas the inland waterways were the most preferred mode for inland trade. With the advent of technology, land transportation through road and railways gradually replaced the inland water transportation in the NER. The railway network between Dibrugarh and Chittagong is one of oldest railway links in Asia.² This fueled

the industrialisation in the NER. The establishment of tea gardens in Assam in 1835, an oil refinery in Digboi in 1901, etc., are few examples of such early industrial activities in the region. Transportation facilitated the international trade from the NER, particularly in Assam. However, with the partition of the Indian subcontinent in 1947, the NER became isolated, at least economically, from the rest of India, and gradually surrendered to an inward looking economic regime with broken transportation networks. The carving out of territory to constitute the new political entity called East Pakistan (now called Bangladesh) changed the entire landscape of the region.

The NER became virtually disconnected from the entire country leaving the mere 27 km long Siliguri corridor as the only link to the rest of India. The natural sea route through the port city of Chittagong was blocked and later discontinued. The geo-political distancing of the region from its main port of Kolkata, combined with economic insulation, forced the NER economy to move downward. Moving in a reverse direction, the NER gradually transformed from a bustling land-linked region into an isolated land-locked area. Today, the NER's high transportation cost negates its advantages of having an international border. As Brunner correctly noted, isolation plus high transaction costs equals low growth for the NER.³

Table 1.1: International Borders of the Northeastern States of India

State	Bangladesh	Bhutan	China	Myanmar	Nepal	Total
	(km)					
Arunachal Pradesh		217.0	1080.0	520.0		1817.0
Assam	263.0	267.0				530.0
Manipur				398.0		398.0
Meghalaya	443.0					443.0
Mizoram	318.0			510.0		828.0
Nagaland				215.0		215.0
Sikkim		32.0	220.4		97.8	350.2
Tripura	856.0					856.0
Total	1880.0	516.0	1300.4	1643.0	97.8	

Source: Government of India.

Map 1.1: Map of North Eastern Region



The reality is that the NER suffers from economic isolation. The region imports almost every consumer good from outside the region. Absence of adequate institutional and physical infrastructure, both national and international, coupled with political disturbances and insurgency in part, have slowed down the NER's development process.⁴ Nevertheless, given its strategic location, the NER can be developed as a hub for India's growing economic links, not only with Southeast Asia but also with Bangladesh and China.

Several studies posit that the NER has the potential to grow faster than its current pace, provided the region builds cross-border production links, particularly with Bangladesh, Myanmar and other Southeast and East Asian countries such as Thailand, Malaysia, China and Indonesia.⁵ However, the bottlenecks to cross-border production links are plenty, of which, inadequate connectivity, logistics and trade facilitation, more particularly at the border areas, are the major ones. The trade between the NER and Bangladesh, China and Myanmar, its immediate neighbours, significantly suffer from not only infrastructure related bottlenecks but also regulatory burdens associated with customs, security, standards and certification.⁶

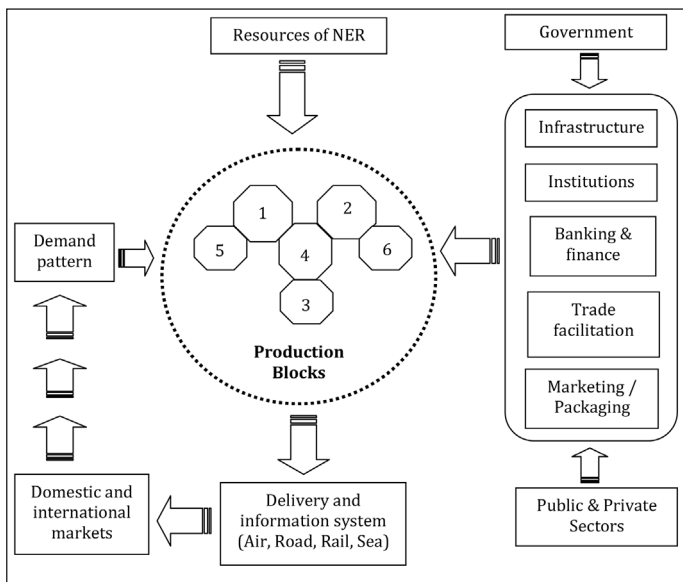
Globalisation has facilitated the development of cross-border production networks, where a thick network of trade in parts and components forms the superstructure. Large multinational corporations (MNCs) have spearheaded the process of production fragmentation. However, the costs of fragmentation depend on the associated service link costs (Jones and Kierzkowski, 2005). Service link costs are those costs that arise from a country's infrastructure and regulations. Even within a country, infrastructure quality varies across geographic space. For example, the NER suffers from infrastructure stock, resulting in higher cost of doing business. In other words, stronger and essential infrastructure facilitates production networks, within and across countries. Among infrastructure services, logistics is an important determinant in sustaining a country's (or, a region's) competitiveness. Its contribution to growth, regional integration and poverty reduction has been well recognised.⁷

In the Asia-Pacific region, logistics along with trade facilitation have been playing a key role in fostering production networks across borders. Logistics services coupled with trade facilitation play a catalytic role in ensuring just-in-time delivery of goods and services, either as inputs in the production process or as the final output. Improvements in logistics services help countries produce more sophisticated products and encourage a more dynamic export and import process (De and Saha, 2013). Therefore, efficient logistics services are an important factor for the expansion of production networks within or across countries. Since production processes and tasks in production are increasingly fragmented across boundaries, time-sensitive logistics infrastructure along with improved information and communication technology (ICT) and trade facilitation have become prerequisites in building production networks across borders.

Setting up production blocks or industrial clusters in the NER may require a set of supporting facilities along with sufficient resources. As illustrated in Figure 1.1, improved infrastructure, supportive institutions, banking and finance are the foremost requirements for the development of production blocks. Demand in international and domestic markets would determine the demand

pattern as well as sustainability of the production blocks in the NER. India's growing economic engagements with South, Southeast and East Asian countries tend to increase the international demand for goods produced in the NER. To meet the growing international demand, production blocks have to be developed, and to facilitate the production blocks, the NER would essentially need a strong presence of SMEs. Greater participation of SMEs in production networks through closer links with MNCs are viewed as a potent means of accelerating technology transfer, spillovers, and economic development.⁸ However, the presence of SMEs in the NER today is sparse and their strength has been relatively weak.⁹ The contribution of SMEs in the NER's economies in relation to international trade remains limited, relative to the sector's size or employment contribution. Some variations in SME export shares among the NER economies are visible with Assam, Meghalaya, and Tripura having higher figures than others.¹⁰

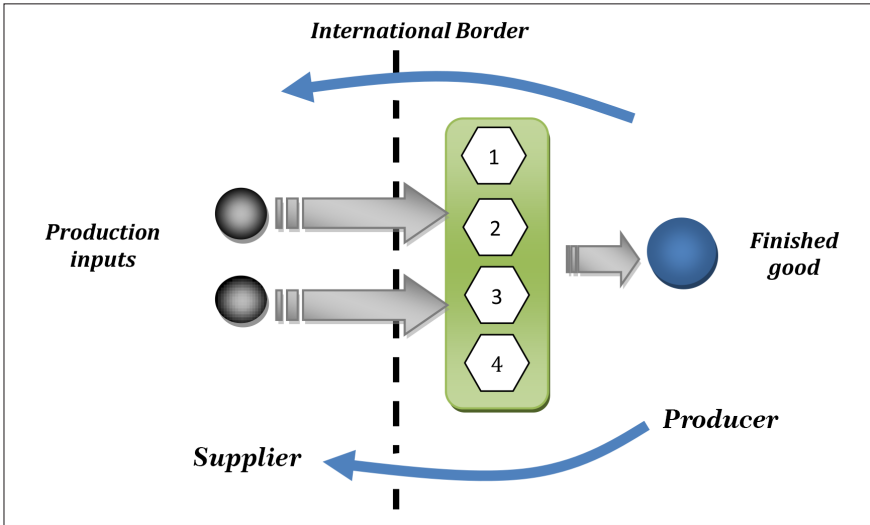
Figure 1.1: Creation of Production Blocks in NER



Note: 1 to 6 illustrate production blocks.

Source: Drawn by authors.

Figure 1.2: Production Networks and Supply Chain



Note: 1 to 4 present production blocks.

Source: Drawn by authors.

India's economic policies have been helping the NER in raising its trade and investment links with India's eastern neighbours, particularly Bangladesh. NER's trade is increasingly made up of growing intra-regional trade with Bangladesh, showing a strong resource-industry links.¹¹ A sizable body of research has measured international production fragmentation and analysed implications for East Asia.¹² However, the little attention has been paid on the research of production networks between India and Southeast Asian countries. No studies were found that dealt with the opportunities and scope of building production networks between India's NER, Bangladesh and Myanmar.

In view of the above, the broad objective of this study is to explore the role of trade facilitation in enhancing trade and production networks between India's NER, Bangladesh and Myanmar. Figure 1.2 illustrates a hypothetical structure of the cross-border production network and supply chain. This study focuses on the following set of issues:

Firstly, it makes an assessment of the pattern of trade at the border between India and its two neighbours and the possibilities of expanding it, given the existing market conditions.

Secondly, this study attempts to identify products, based on supply-demand balances in the region, and taking note of those in earlier studies.

Finally, the study discusses a set of issues that involve assessment of supply-side constraints that exist in the region, which are inhibiting the NER's production networks with these neighbours, more particularly with Bangladesh and Myanmar.

The study is by and large, a combination of both secondary and primary data analysis. Data has been collected through an extensive field survey with the help of a structured questionnaire only in those NER states, which share their respective international border with Bangladesh and Myanmar. In particular, this study has the following distinct features:

Firstly, it covers four state economies of Assam, Meghalaya, Manipur, and Tripura and a wide range of trade sectors.

Secondly, the dataset used here is collected through field surveys, which were randomly selected using a questionnaire.

Thirdly, the analysis is based on the econometric model of firms engaged in production networks (direct and indirect exporters).

The rest of the study is organised as follows: Chapter 2 presents literature review and important stylised facts. Chapter 3 discusses basic economic trends in the NER vis-à-vis industrial characteristics. The trade profile of the NER, Bangladesh and Myanmar is then presented in Chapter 4. The patterns of production networks centering the NER are presented in Chapter 5. Chapter 6 discusses the current profile of trade and logistics infrastructure in the NER. The field survey results are presented in Chapter 7 along with analysis of impact assessment of barriers to trade and production networks. Finally, Chapter 8 presents the conclusions of the study.

2

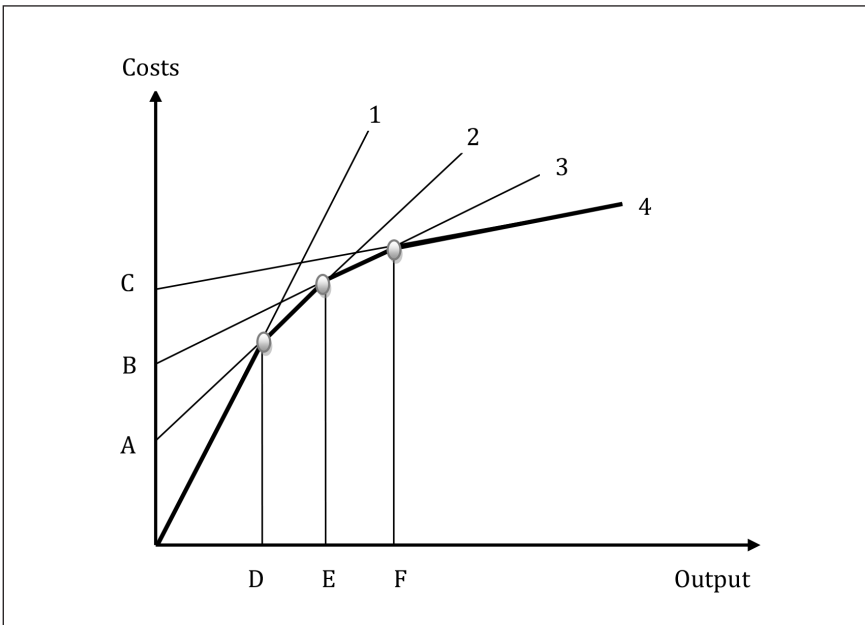
Stylised Facts and Some Reflections on Trade and Integration

Kierzkowski and Jones argued (in their 1990 and subsequent papers) that rise in world incomes and the reductions of service link costs encourage fragmentation of production across borders as part of an international production network.¹³ This refers to world production in sectors as textiles, automobiles, sports footwear, furniture, etc.

Borrowing from Jones and Kierzkowski (2005), Figure 2.1 presents the basic idea of fragmentation. It illustrates how total costs of production are positively related to scales of output. For example, ray 1 from the origin illustrates productive activity that takes place in a single location under constant returns to scale (CRS) technology.¹⁴ By contrast, line 2, flatter than ray 1, shows how total costs might vary with output if the originally vertically integrated production process were split up into a pair of production blocks. Lines 3 and 4 in Figure 2.1 represent either splitting up the production process into more separate production blocks, allowing a finer degree of specialisation according to comparative advantage, and/or engaging in international outsourcing, with some production blocks, say, being located in a different country (such as Dell does with Malaysia) in which the discrepancy between countries with different relative factor prices (compared with productivity) is even

more pronounced than within countries. The relationship between total costs (including service link costs) and output, illustrated by the solid broken line in Figure 2.1, exhibits increasing returns to scale. The growth rates of GDP, international trade, and trade in parts and components all serve to illustrate the changes encouraged by international fragmentation.¹⁵

Figure 2.1: Cross-Border Production Fragmentation

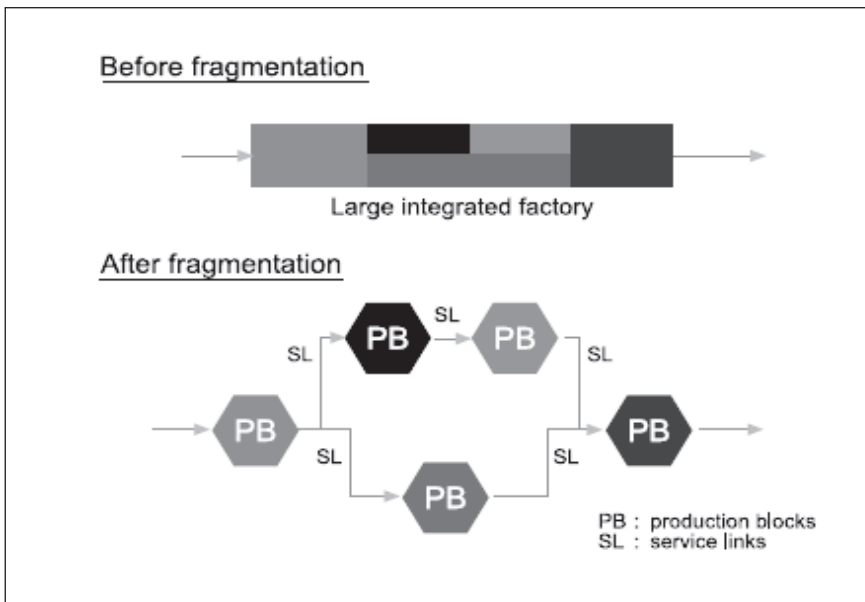


Source: Jones and Kierzkowski (2005).

The works of Jones and Kierzkowski (2005) were further supplemented by Kimura and others, who argued that rapid advances and innovations in communication and transport facilitate the development of service links that combine the fragmented production blocks and lead to sub-division of tasks and reorganisation, resulting in economies of scale. Figure 2.2 illustrates a schematic overview of production networks. This process of fragmentation in production enables countries to specialise according to their comparative advantages. Several studies conclude that more efficient supply chains and better access to logistics services will make

a country's trade globally competitive and create the conditions for mutually beneficial production fragmentation across borders. As production is increasingly shared or fragmented across borders, simplification of trade processes and procedures would help improve the time and costs associated with logistics.¹⁶ Nonetheless, the importance of logistics sector policy in enhancing a country's trade and its production fragmentation across borders cannot be overemphasised.

Figure 2.2: Production Networks and Service Links



Source: Kimura and Kobayashi (2011).

Logistics services constitute an essential part of international trade that usually involves progressions in communication, transportation, logistics, finance, etc. Advances in communication are not only vital intermediate inputs to international trade but can also be final exports; transport services enable a country's participation in the entire process of exchange weakening the 'proximity burden'; and a well functioning financial sector will facilitate steady credit lines in trade and production network. All of these entail associated costs in transactions for trade in goods (and

also trade in services). The competitiveness of the manufacturing firms in open economies is determined in part by access to low-cost and high-quality producer services (Francois and Hoekman, 2010). Efficiency in logistics services can thereby generate benefits for merchandise trade flows directly by reducing the associated transaction costs and indirectly by improving the competitiveness of firms (Mattoo and Rathindran 2001; Deardoff, 2001).

Manufactured goods are the largest and most rapidly growing part of world trade. According to Hummels (2007), the heaviest goods travel via ocean, while a fall in the weight/value ratio of trade leads to use of air transport on account of a higher marginal fuel cost of lifting a 100 kg package into the air than the cost of floating it on water, and of consumers being more sensitive to changes in the delivered price of merchandise than transportation price. Also, the gains from employing air rather than surface shipping are more pronounced on longer routes. Once changes in the trade partner and product mix have been taken into account, ad-valorem air transportation costs are increasing in the weight/value ratio of the good, jet fuel expenses, and the distance shipped, such that the effect of distance is steadily eroding over time. Ocean shipping costs are increasing the shipment's weight/value ratio, fuel costs, and distance shipped. As the relative price of air/ocean shipping falls, goods at the margin shift from ocean to air shipping.

Reduction in the transaction costs assist fragmentation and are propagated by efficient logistics services, liberalisation of trade in services and investment policy regimes (Deardorff, 2001). Hesse and Rodrigue (2004) state that improvements in logistics include four core elements, viz. traditional transport costs, organisation of the supply chain, and the transactional and physical environments in which freight distribution evolves. This enables private firms to expand their opportunities more efficiently such that a product or its component inputs cross international borders several times during the process of production in accordance with related economic incentives (lower trade barriers or factor intensity as production stages may be labour-intensive, capital-intensive or use skilled

labour intensively). In such a scenario, service link costs can have a multiplicative effect on the total cost of producing a final product (Hiratsuka and Uchida, 2008; Kimura and Kobayashi, 2009).

Efficiency in logistics services is also dependent to a large extent on 'Behind the Border' measures of government policy and regulation that are driven by efficiency and equity concerns. Owing to the diversity evident in the range of logistics services that facilitate trade, the efficient regulation of logistics services is sector specific. In telecommunications, this may refer to pro-competitive regulation, while in the financial service sector it will concern prudential regulation (Mattoo, Rathindran and Subramanian, 2001). In transport, these may be reflected in lower freight, documentation and administrative costs for customs procedures. Owing to complicated supply chains, logistics requirements turn to be sophisticated and demanding, thus increasing pressure on infrastructure (Brooks, 2008; 2010). Hence, as economic activity becomes further concentrated in East Asia, logistics systems will be expected to evolve further on lines of efficiency. It is observed that logistics performance in East Asia is better than in other developing regions. However, as noted in the Logistics Performance Indicators (LPI) of the World Bank, the systems of logistics in South Asia must be developed further to successfully meet the strains of fragmentation.

Kimura and Kobayashi (2009) note that the key to attract fragmented production blocks is to (i) improve locational advantages such as developing special economic zones (SEZs) with at least an improved local level investment climate; and (ii) reducing the cost of service links that connect remotely located production blocs by improving trade and transport facilitation. Figure 2.2 presents graphical links between production blocks and service links. In fragmentation of production, an efficient and improved service link is important for expansion of production networks across a region.

Higher trade costs along with inefficient services may discourage fragmentation of production. Thus, liberalisation of trade services can also go a long way in overcoming infrastructural inefficiency (Deardorff, 2001). Deardorff discussed the rationale for liberalising

trade services, which he defined as any service for which the demand arises directly from trade (in this context international trade) itself – like transportation, communication, insurance, banking, etc. According to him, “The motive for liberalising trade in services, coming as it did from the service industries themselves, was to permit rationalisation of service activities along the lines of comparative advantage.” As an example, the author cites the case of US-Mexico cross-border transportation services. Before the North American Free Trade Agreement (NAFTA), Mexican truckers were not allowed to enter the US territory and vice versa. Thus, if a good is to be shipped from Mexico to US, Mexican trucks would carry the good up to the Mexico-US border checkpoint, unload it from Mexican registered truck, reloaded on to a US registered truck and transport it to the final destination. Therefore, the consignment faced a number of transaction costs in the form of time, customs delay, regulatory costs, and so on. Instead, after NAFTA, liberalisation of such transportation services has allowed a consignment to be shipped in a Mexican truck up to the destination in the US from its origin in Mexico. This has eliminated most trade transactions leading to a reduction of transport costs and time, which finally lead to a reduction in the final goods price. However, the gain from a liberalised regime (though only partial in nature) is significant and may be important for gaining competitiveness in the international markets, where cut-throat competition magnifies even minor cost advantages into significant gains. This has also been elaborated by Hummels (2007), although his discussion centered more on sea and air transportation.

East Asia has recorded high intra-regional trade shares owing in particular to rapidly expanding intra-regional trade in parts and components. Exports of those products which are part of cross-border production process across ASEAN witnessed over 60 per cent of total exports of manufacturing goods in the last decade (Athukorala, 2010). A great deal of literature indicates that East Asian regionalism is market-driven and to a great extent is based on fragmentation of production, where the efficiency of the services sector has been playing an important role in raising the

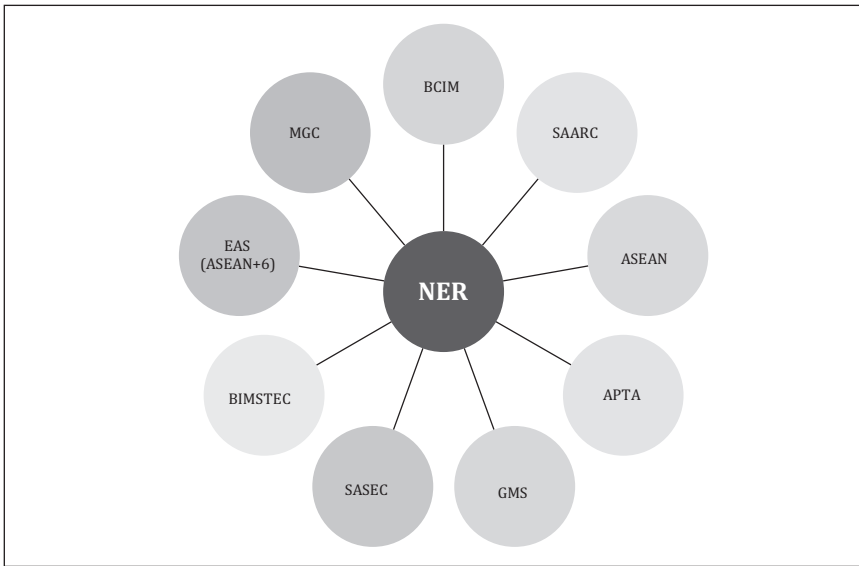
trade growth and internal demand (Ando and Kimura, 2009). For instance, there has been a positive relationship between competition and privatisation in telecom sectors for 12 developing East Asian countries, where services efficiency is the key to growth. Mishra *et al.* (2011) suggested that increasing sophistication in service exports carries important implications for countries in Asia, those stuck in a middle-income trap (Malaysia, Vietnam, etc.), or for countries that wish to sustain their rapid growth (India, Sri Lanka, etc.). Logistics services efficiency is one of the key drivers for attaining such services sophistication. However, there is no empirical evidence for any of the income groups (or, geographical regions) as to whether logistics services efficiency plays a catalytic role in improving the merchandise trade flow and fragmentation of production across borders. Finally, the trade liberalisation is primarily limited to tariff reduction on commodities. Little attention has been paid to the significant gains from reduction in trade costs by eliminating regulatory costs and time delays, improvement of logistics services, among others.

The process of fragmentation has risen in recent decades; this is in part owing to technological changes in service industries where more rapid and effective transportation and communication has been a precondition for reducing the costs of final products produced in several stages across countries. As a result, the international provision of many services has come to play a significant role in international trade, beyond what it was when products were typically produced in one place. The 2nd unbundling began in the 1980s, where production processes and tasks in production were fragmented and placed across national borders, backed by the ICT revolution and time-sensitive logistics infrastructure (Kimura, 2012).¹⁷ Undoubtedly, efficient and time-sensitive logistics services are one of the key elements that facilitate the production networks within and across borders.

Over the past several years, a number of regional and sub-regional initiatives have been introduced by countries in South and Southeast Asia, which have been shaping the economic geography of the region. These include the enhanced cooperation among members of the South Asian Association of Regional Cooperation (SAARC), the

Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC), and the Asia-Pacific Trade Agreement (APTA). Besides these, India has adopted the “Look East Policy” (LEP) and is engaged in deepening economic cooperation with the ASEAN and countries belonging to the East Asia Summit (EAS), which brings together the ASEAN and six of its partner countries, including India. Providing fillip to these initiatives is not possible without the NER also playing a pivotal role in international trade and connectivity (see Figure 2.3).

Figure 2.3: NER as India’s Gateway to the East



Notes: North East Region (NER); South Asia Sub-regional Economic Cooperation (SASEC); Mekong-Ganga Cooperation (MGC); Greater Mekong Sub-region (GMS); Bangladesh, China, India, Myanmar Forum on Regional Cooperation (BCIM); South Asia Association for Regional Cooperation (SAARC); Asia Pacific Trade Agreement (APTA); Association of Southeast Asian Nations (ASEAN); East Asia Summit Countries (EAS).

Source: Drawn by authors.

2.1 NER’s Economic Links with Bangladesh and Myanmar

The NER, Bangladesh and Myanmar had strong economic links in the past. The partition of the Indian sub-continent disrupted these communication links, leading towards disintegration. However, the economic exchange of goods and services between the NER and Bangladesh, and changes in Myanmar provide us opportunities

for deeper economic integration. A strategy would be needed for strengthening economic and cultural links between the NER, Bangladesh and Myanmar.

Table 2.1: India's Trade with Bangladesh and Myanmar

Particulars	Bangladesh		Myanmar		Bangladesh	Myanmar
	2005-06	2012-13	2005-06	2012-13	CAGR (2005/06-2012/13)	
	(US\$ billion)		(US\$ billion)		(%)	
Export	1.66	5.13	0.11	0.54	17.45	25.56
India's total export	103.09	300.27	103.09	300.27	16.50	16.50
Share in India's total export (%)	1.61	1.71	0.11	0.18		
Import	0.13	0.63	0.53	1.40	25.76	15.07
India's total import	149.17	491.95	149.17	491.95	18.59	18.59
Share in India's total import (%)	0.09	0.13	0.35	0.29		
Total bilateral trade	1.79	5.76	0.64	1.95	18.16	17.33
India's total trade	252.26	792.22	252.26	792.22	17.76	17.76
Share of bilateral trade in India's total trade (%)	0.71	0.73	0.25	0.25		
Bilateral trade balance	1.54	4.50	-0.42	-0.86	16.58	10.96

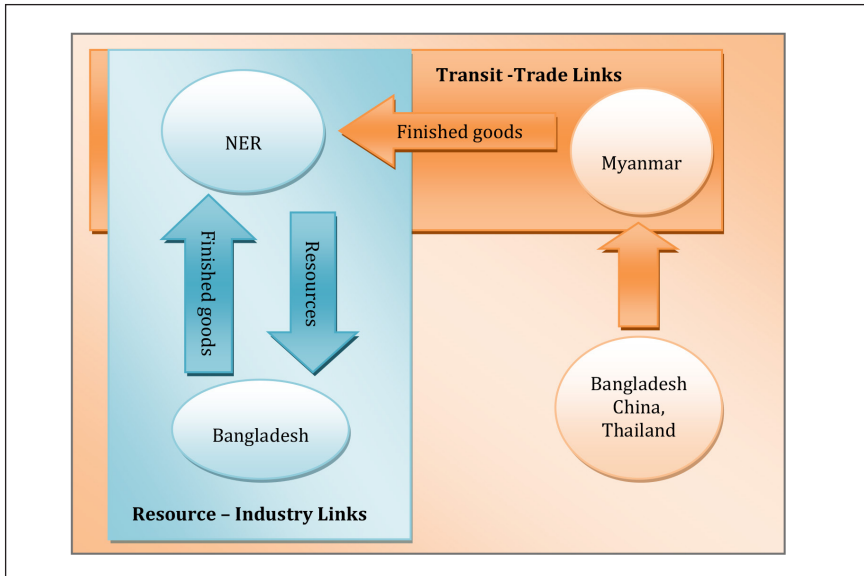
Source: Calculated based on Export – Import Databank, Department of Commerce, Government of India.

India and its two immediate neighbours, Bangladesh and Myanmar, do not have a strong formal trade links at present. As noted in Table 2.1, while the share of Bangladesh in India's total trade was about 0.73 per cent in 2012-13, Myanmar had an even smaller share of about 0.25 per cent. In absolute terms, India's two-way trade with Bangladesh increased from US\$ 1.79 billion in 2005-06 to US\$ 5.76 billion in 2012-13, which is the highest level attained ever. In the same period, grown by 17.33 per cent per annum, India's two-way trade with Myanmar increased to US\$ 1.95 billion in 2012-13.

The striking aspect of India's trade with Bangladesh and Myanmar is that while in case of Bangladesh, India has maintained a large

trade surplus, India has trade deficit with Myanmar. In 2012-13, India’s trade surplus with Bangladesh was US\$ 4.5 billion, which was despite the fact that India’s imports from Bangladesh had increased at a greater rate than its exports to Bangladesh during 2005-06 to 2012-13. In contrast, India’s trade deficit with Myanmar was about US\$ 0.86 billion in 2012-13, which was double than what was witnessed in 2005-06.

Figure 2.4: Functional Classification of Trade in NER

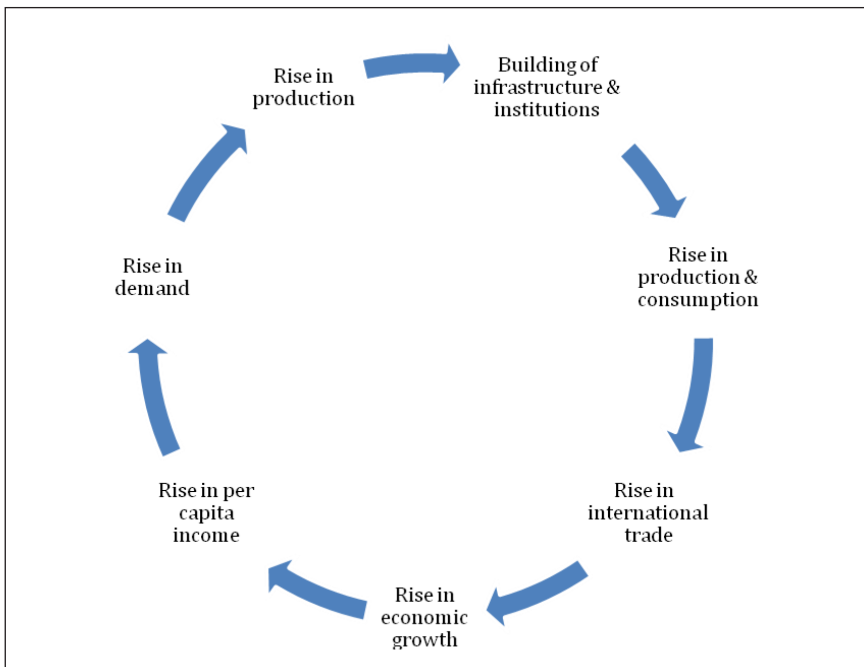


Source: Drawn by authors based on Das (2008).

Trade between India and Bangladesh and India and Myanmar do not include the informal trade that takes place through the land border. People living in the border regions have had economic and cultural links going back to several centuries, and drawing of the political boundaries has failed to sever their ties. The interdependence of the people on the two sides of the political boundaries, both at India-Bangladesh and India-Myanmar, has given rise to informal channels of trade. An effective solution to this lies in strengthening not only transport and communication infrastructure but also the institutional support, which is currently missing.

India's change in policy towards Myanmar in the last decade has paid rich dividends. Trade between the two countries increased heavily in the last one and half decades, allowing Myanmar to get higher market access in India. However, a full scale trade with Myanmar with greater engagement of the NER is yet to happen.¹⁸ Figure 2.4 shows an overview of the region's trade linkages with neighbouring Myanmar and Bangladesh. While the NER's trade with Bangladesh shows a link between resources and industry, the NER's trade with Myanmar through land border is mostly transit trade, of which a large volume is contraband (RIS, 2011).

Figure 2.5: Removing the Economic Isolation: Development Cycle for NER



Source: Drawn by Authors

In recent years, India's trade with Bangladesh and Myanmar witnessed an increase in growth, which indirectly suggests existence of a large trade potential. However, supply-side constraints, among others, inhibit a two-way trade across the borders with India's

two neighbours (RIS, 2011). Enhancing the NER's existing level of trade and economic linkages between Bangladesh and Myanmar would need infrastructure and institutional support, which would facilitate growth and remove the region's economic isolation (see, Figure 2.5). Removing the status quo, therefore, means the NER has to invest heavily in building physical and institutional infrastructures, which would in return lead to a higher production, both within and across borders, and enhance the growth of the region. Developing production networks is thus central to this development cycle.

Given the above, this study presents a perspective as to how to facilitate production networks between the NER and Bangladesh, and also between the NER and Myanmar, and the role of trade facilitation and logistics.

3 Overview of the NER ■ Economy

The NER comprises eight Indian states, namely, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. These eight states together cover an area of 2,62,179 sq. km., constituting 8 per cent of the country's total geographical area, and accounting for around 4 per cent of country's total population.¹⁹ The region shares a long international boundary of around 96 per cent with its neighbouring countries with China and Bhutan in the north, Myanmar in the east, Nepal in the west and Bangladesh in the south and west. Most of the hill states in the region like Arunachal Pradesh, Meghalaya, Mizoram and Nagaland are largely inhabited by tribal people with a fairly high degree of diversity even within the tribal groups. There is considerable uniformity among the NER states, but, at the same time, they carry distinctive differences.

The NER states are fairly homogenous in population size and area, barring Arunachal Pradesh, which is relatively larger but sparsely populated. The NER depends on its rural economy; almost 82 per cent of the population lives in rural areas, having an average population density of 176 people per sq. km. of area, almost half of the Indian average (Table 3.1). The distribution of population is also uneven across the states. Assam and Tripura are the top two densely populated states, sharing almost 76 per cent of the total NER population. These are also the two most resource-endowed states contributing towards development of the NER.

Table 3.1: Population by NER States (2011 Census)

NER States	Area (sq. km)	Total Population (million)	Rural (million)	Urban (million)	Pop Density (per sq. km)
Arunachal Pradesh	83743	1.38	1.07	0.31	17
Assam	78438	31.17	26.78	4.38	397
Manipur	22327	2.72	1.89	0.83	122
Meghalaya	22429	2.96	2.37	0.59	132
Mizoram	21081	1.09	0.53	0.56	52
Nagaland	16579	1.98	1.41	0.57	119
Sikkim	7096	0.60	0.45	0.15	86
Tripura	10486	3.67	2.71	0.96	350
NER Total	262179	45.28	37.21	8.35	176
NER share in India (%)	7.976	3.767	4.468	2.219	368*

Note: *India average.

Source: Census of India.

3.1 Economic Size and Trend

The standard of living of the people in the region, as measured by Per Capita Net State Domestic Product (PCNSDP), has lagged significantly behind the rest of the country. Except Sikkim and Arunachal Pradesh, the rest of the NER states rank below India's average growth rate, both state GDP and income per capita at current price (Tables 3.2 and 3.3). Interestingly, available information shows that at the time of independence per capita income in the undivided state of Assam was higher than the national average by 4 per cent). However, as the growth rate of per capita income lagged behind the rest of the country the gap narrowed, and by the late 1960s per capita income in the region had fallen behind. However, over time, differences in the growth rates in per capita income between the region and the country increased further (Marjit *et al.*, 2008). During the period 2004-05 to 2012-13, on an average, while the Indian economy in current prices increased at the rate of 13.79 per cent per year, the corresponding growth in the NER region was 11.65 per cent (Table 3.2). However, the growth rate will be much

Table 3.2: Gross State Domestic Product (GSDP) at Current Price

NER State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	CAGR*
	(Rs. Billion)									
Arunachal	34.88	37.55	41.08	48.10	56.87	74.73	87.32	111.36	127.02	15.62
Assam	533.98	593.85	646.92	710.76	810.74	959.75	1124.66	1265.44	1435.67	11.39
Manipur	51.33	57.18	61.37	67.83	73.99	82.54	91.08	104.10	117.13	9.24
Meghalaya	65.59	72.65	86.25	97.35	116.17	127.09	145.28	161.73	183.63	11.94
Mizoram	26.82	29.71	32.90	38.16	45.77	52.60	60.58	69.91	78.30	12.72
Nagaland	58.39	65.88	72.57	80.75	94.36	105.27	113.15	122.72	133.22	9.73
Sikkim	17.39	19.93	21.61	25.06	32.29	61.33	71.45	84.00	104.16	21.76
Tripura	89.04	98.26	109.14	117.97	135.73	154.03	175.45	199.10	221.39	10.58
NER	877.41	975.00	1071.85	1185.97	1365.92	1617.33	1868.97	2118.35	2400.52	11.65
India	29714.64	33905.03	39532.76	45820.86	53035.67	61089.03	72669.66	83534.95	95229.84	13.79

Note: *For the period 2004/05 to 2012/13.

Source: Calculated based on CSO (2013).

lower, if we consider the state and country GDPs in constant price. Similarly, the region's growth rate of per capita income also lagged behind the national growth rate of the country. Not surprisingly, the difference in per capita incomes between the country and the region has steadily diverged. The slow progress of the NER's economy is reflected in the low growth in income.

The aggregate trend presented in Tables 3.2 and 3.3, however, hides vast differences between the urban and rural areas, the hills and the plains and figures from the other states. In the region, except for Arunachal Pradesh and Sikkim, which recorded marginally higher growth rates than the country average, per capita income levels in all other states were lower by varying magnitudes. The region lags behind the rest of the country not only in terms of per capita income but also in several other development indicators as well.

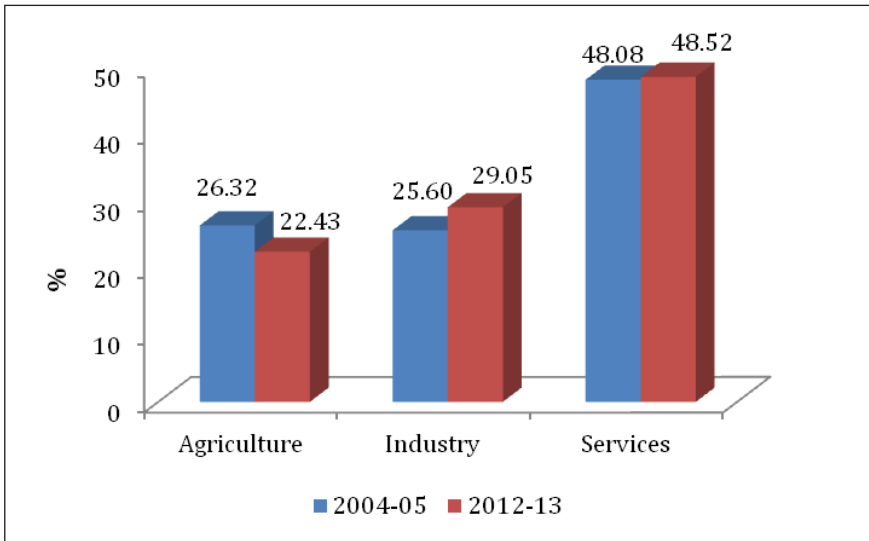
The NER has not had the same level of economic development as the rest of the country. The people of the region often do not have access to basic social and infrastructure services.²⁰ The literacy rate in the region is high, but there is also a high rate of unemployment and underemployment. The incidence of poverty in the region is high and the official income-poverty measure does not accurately reflect the deprivation.²¹ People in the NER suffer from access to social infrastructure such as health care facilities, education and public services, the availability of which are below the national average.

The NER has a number of logistics handicaps. Physical infrastructure such as electricity, communication, transportation, and banking and finance are very sporadic and unevenly distributed among urban and rural areas. Amenities are limited in nature, and the lack of economic opportunities encourages migration, particularly that of skilled resources to work and live in better-developing parts of India.

The NER is a service-driven economy, deriving 49 per cent of annual average income from the services sector (Figure 3.1(a)). With a 29 per cent share in aggregate GDP of the NER, the industry comes next. Agriculture is still the mainstay of the economies of the NER as it accounts for 22 per cent, and is a major source of employment

and livelihood in the region. However, agricultural growth has been uneven across the region. Appendix 1 presents these trends in a state-wise sectoral composition.

Figure 3.1(a): Trends in Sectoral Composition in NER



Source: Drawn by authors.

Structural composition varies across the NER states. For example, agriculture accounts for a major share of the economies of the NER states, from 44 per cent in Arunachal Pradesh to 8 per cent in Sikkim in 2012-13 (Figure 3.1(b)). However, the share of agriculture has been declining in all of these states (except Arunachal Pradesh and Manipur), indicating that these states have undergone significant structural changes. With the exception of Assam, Arunachal Pradesh and Mizoram, the share of manufacturing has been rising in the remaining NER states, accompanied by an increasing share of services. Sikkim has witnessed a sharp rise in industry, of which manufacturing increased from 4 per cent in 2004-05 to 24 per cent in 2012-13. Barring Arunachal Pradesh and Sikkim, services sector's contribution to state GDP has increased in 2012-13, compared to 2004-05 in all the NER states. Over 60 per cent of state GDP in Mizoram comes from the services sector, recorded highest among the NER states in 2012-13. Although the NER economies have

Table 3.3: Per Capita Net State Domestic Product (PCNSDP) at Current Price

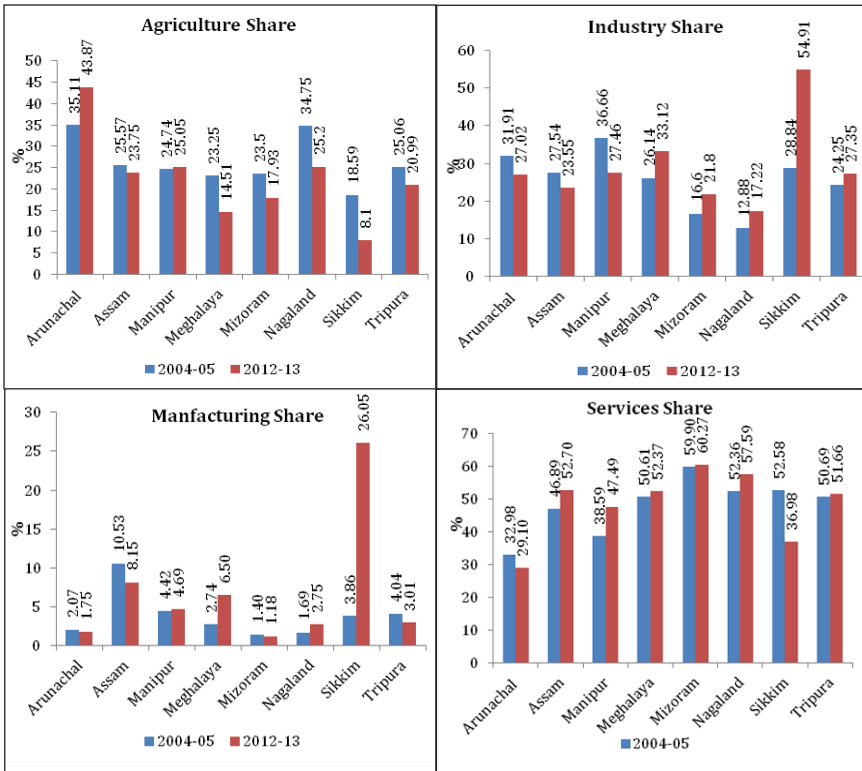
NER State	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	CAGR (%)
	(Rs.)									
Sikkim	26690	30252	32199	36448	46983	90749	104506	121440	150586	20.85
Arunachal	26610	28054	30000	34352	39656	51031	59415	74059	81583	13.65
Mizoram	24662	26698	28764	32488	38582	42715	48591	54689	61252	10.47
Meghalaya	24086	26284	30952	34229	40583	43142	48690	53542	60156	10.50
Nagaland	30441	33792	36568	39985	46207	50263	53635	56461	59535	8.03
Tripura	24394	26668	29081	31111	35587	39815	45087	50175	55004	9.43
Assam	16782	18396	19737	21290	24099	28383	33348	37250	42036	10.48
Manipur	18640	20395	21419	23093	24773	27095	29281	32865	36290	7.35
NER	24038	26317	28590	31625	37059	46649	52819	60060	68305	12.13
India	27286	30656	35234	40264	45958	52213	61273	69497	79226	12.40

Note: *For the period 2004/05 to 2012/13.

Source: Calculated based on CSO (2013).

been driven by the services sector, the manufacturing sector is still in a nascent stage; the region’s average share, except for Sikkim, is presently below 10 per cent of the state GDP, and in some states such as Arunachal Pradesh, Mizoram, Nagaland and Tripura it moves between 1 to 3 per cent of the state GDP only. Perhaps, strong growth will only introduce meaningful structural change in NER economies.²²

Figure 3.1(b): Trends in Sectoral Composition by NER States



Note: Taken at current price.

Source: Calculated based on CSO (2013).

In short, a structural change means a perpetual rise in the share of manufacturing and non-farm outputs in the gross domestic product over time. Unfortunately, the share of manufacturing in the GDP of the NER has been below 10 per cent in 2012-13 except

for Sikkim. Thus, the pattern of industrial development of the NER has not been in conformity with the standard historical trend even with respect to India. That is, industrialisation has failed to take off in the region. This failure to achieve a significant increase in the share of manufacturing in GDP has reflected in poor growth rates, both in GDP and per capita GDP in the NER.

In general, the NER has a very negligible share in the industry sector in India (Sarma and Bezbaruah, 2009). Its shares in number of factories, number of workers and net value added (NVA) have increased marginally in 2010-11, compared to 2008-09 (Table 3.4). However, the performance of the NER in terms of NVA has been static. The industries of the NER states include: mining and quarrying, food processing, spinning and weaving, pulp and paper, wine and malt, bidi, cigars and cigarettes, printing, bleaching and dyeing, wool spinning, wooden products, foot wears, fertilisers and chemicals, insulated wires and cables and drugs and medicines. The manufacturing activities are based on locally-available resources for which the optimal plant sizes are not very large. Industries requiring large scale production such as petrochemicals, cement, steel and sugar are completely absent despite the fact that the region is a rich source of the basic raw materials required for the production of such goods. For instance, there is abundance of limestone (in Meghalaya and Assam) but there is not a single large scale cement factory in the region to utilise this resource. Assam has the largest oil reserves (onshore) but the state has no large manufacturing unit of petrochemical products. On the other hand, we also observe some industries like insulated wires and cables coming up in the region, although the region has no known reserves of copper. The summary results of *Annual Survey of Industries 2010-11* present some interesting developments in the industry characteristics of the NER.²³

First, it is seen that at an all-India level, it is coke and refined petroleum products (NIC 19), that contribute to the total output by a maximum of 14.54 per cent, whereas in the states like Bihar (66.66 per cent), Assam (51.15 per cent), Gujarat (38.74 per cent), Kerala (38.46 per cent), Karnataka (14.49 per cent) and Maharashtra

(13.66 per cent), is contributing to the highest proportion in respect to the total output of the respective states.

**Table 3.4: Important Industrial Characteristics
(All Industries) in NER**

NER States	Factories (Number)			Workers (Number)			Net Value Added (Rs. Billion)		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Assam	2211	2247	2795	126338	125759	141274	30.14	50.62	66.73
Manipur	72	85	96	2313	2950	3894	0.12	0.15	0.38
Meghalaya	95	100	94	4571	4984	6105	5.24	4.93	6.60
Nagaland	91	90	84	2468	2676	1900	0.28	1.36	0.54
Sikkim		46	64		4854	5235		16.96	27.78
Tripura	363	407	472	23643	25756	30458	1.55	2.24	3.41
NER	2832	2975	3605	159333	166979	188866	37.33	76.26	105.45
India	155321	158877	211660	8776745	9157802	9901970	5277.66	5921.00	7045.76
Share of NER* (%)	1.82	1.87	1.70	1.82	1.82	1.91	0.71	1.29	1.50

Note: *Share in India.

Source: Calculated based on Annual Survey of Industries 2010-11, Government of India.

Secondly, in the third contributing (11.63 per cent) industry to the total output of India, i.e. the food products industry (NIC 10), the respective state-wise proportionate highest share of output comes from Manipur (53.68 per cent), Delhi (27.95 per cent), Madhya Pradesh (27.07 per cent), Andhra Pradesh (20.88 per cent), Uttar Pradesh (19.78 per cent) and Uttarakhand (11.08 per cent).

Third, it may be noted that in some smaller states, GVA is found to be negative for some industry groups like industry group 25 (rubber and plastic products) in Nagaland. This is because only 3 factories were selected for the survey of ASI 2010-11 and all of them belonged to the census sector. One of the units among these was non-operational (NOP) and another one had a negative GVA.

Based on the ASI data, one can outline a set of potential industries in the NER for growth (Table 3.5). The ASI factory sector data (2010-11) provides for such industries in the NER: coke and refined petroleum products, food products, other non-metallic

mineral products, chemicals and chemical products, pharmaceutical products and preparations, and basic metals. These are the major industries in the NER that have a comparatively increasingly higher output. Besides, some small-scale industries like tobacco products, beverages, wood and products, and rubber and plastic products also have positively increasing outputs, which can also be facilitated for the region's growth and for improving industry competitiveness.

Table 3.5: List of Major Industries in NER**

Industry*	Tripura	Manipur	Meghalaya	Assam	Nagaland	Sikkim	NER ³
	Annual Output (Rs. Billion)						
23. Other Non-Metallic Mineral Products	2.818	0.688	16.233	16.341	0.116		36.196
10. Food Products	1.989	1.474	0.622	91.039	0.449	1.215	96.787
24. Basic Metals	1.844	0.459	7.727	15.872			25.901
12. Tobacco Products	1.486			6.472		0.610	8.567
22. Rubber and Plastic Products	1.398	0.012			0.007	0.418	1.834
20. Chemicals and Chemical Products	1.345		0.768	25.692		5.173	32.977
19. Coke and Refined Petroleum Products		0.021	0.577	216.724			217.322
11. Beverages		0.010	0.496			0.919	1.425
16. Wood and Products of wood					4.075		4.075
21. Basic Pharma Products and Preparations						35.531	35.531

Notes: *Industry at 2-digit NIC 1998. **Refers the year 2010-11. ³Counts only six NER states.

Source: Summary Results for Factory Sector: ASI 2010-11, CSO, Government of India.

3.1.1 Rise of Unregistered Manufacturing Sector in the NER

The size of the manufacturing sector in the NER is very small; contributing to only 1 per cent of the manufacturing output of

India (Table 3.6). The manufacturing sector can be divided into registered and unregistered sectors. The unregistered sector generally comprises small-scale industries (SSIs) including handicrafts. Assam is by far the largest industrialised state in the NER with nearly 88 per cent of the total industrial units in the region. Nearly 74 per cent of the manufacturing output of the registered manufacturing sector (2011-12) originates in Assam, while at the other end of the spectrum Arunachal Pradesh has no registered manufacturing industry.²⁴ Another interesting observation is that while the NER has been growing slower than the all-India average in the manufacturing registered sector, the region has been growing faster than the all-India average in the unregistered manufacturing sector. This clearly indicates the rise of SSIs in the NER in recent years. At the same time, the unregistered sector is relatively evenly distributed across all the states in the NER. This means that the states of the NER have certain distinctive strengths and advantages in handicrafts and other small-scale industries. Assam has the largest share in the unorganised sector, followed by Manipur. In other words, in the absence of any large scale industries, manufacturing in the NER is dominated by SMEs. However, such industrial units face constraints in the form of land acquisition, availability of power, transport, logistics, credit disbursal, skilled labour, adequate marketing initiatives and issues in taxation.²⁵

Presently, the NER is home to about 4.24 lakh SMEs (Table 3.7). Data on the contribution of SMEs to the NER's economies is scarce and often contentious (due to different definitions used and conflicting timelines). SMEs account for the majority of firms and a large share of the employment in the NER's economies.²⁶ However, the contribution of SMEs in the NER's economies to international trade remains limited, relative to the sector's size or employment contribution. Some variation in SME export shares among the NER's economies is visible with Assam, Meghalaya, and Tripura having higher figures than others. In recent years, an encouraging trend has been noticed in setting up SMEs in the region.

Table 3.6: Trends in Registered and Unregistered Manufacturing Sector in NER

	Particulars	2004-05		2011-12		CAGR (2004/05 –2011/12) (%)
		Volume (Rs. Lakh)	Share* (%)	Volume (Rs. Lakh)	Share* (%)	
NER	Manufacturing	64.83	1.431	141.24	1.18	11.77
NER	Manufacturing Registered	46.46	1.589	99.15	1.17	11.44
NER	Manufacturing Unregistered	18.38	1.142	42.10	1.19	12.57
India	Manufacturing	4532.25		12020.86		14.95
India	Manufacturing Registered	2923.44		8487.34		16.45
India	Manufacturing Unregistered	1608.81		3533.52		11.90

Note: *Share in India.

Source: Calculated based on CSO (2013).

Table 3.7: Number of SMEs in NER in 2012

State	Number of Units (Lakh)
Arunachal Pradesh	0.25
Assam	2.34
Manipur	0.49
Meghalaya	0.50
Mizoram	0.13
Nagaland	0.18
Sikkim	0.07
Tripura	0.28
NER	4.24
All India	214.38
Share of NER in India (%)	1.98

Source: Ministry of MSME Industries, Government of India.

With emerging peace and stability in the region, new investment and registration of companies are being witnessed in the NER. Assam has taken the lead, as of 2011, with 745 new companies with authorised capital of almost Rs. 2 billion (Table 3.8). With 60

new companies, Meghalaya comes next. However, the business environment still lacks competitive market ethics. Barriers to doing business are plenty, and the NER lags behind other Indian regions in attracting FDI. The marketing and transport bottlenecks have been identified as the most serious constraints on industrial progress of the region.²⁷ With the region lagging behind India in the pace of economic growth for decades, the local market is not a large one. To look for markets beyond the NER, weak connectivity with rest of India and lack of access to bordering countries are serious deterrents.²⁸

Table 3.8: Newly Registered Companies in NER, 2011

NER State	Number of Company	Authorised Capital (Rs. Billion)
Arunachal Pradesh	24	0.08
Assam	745	1.99
Manipur	17	0.18
Meghalaya	60	0.20
Mizoram	5	0.02
Nagaland	22	0.11
Tripura	32	0.14
NER	905	3.00
India	91995	691.03
Share of NER* (%)	0.98	0.39

Note: *It counts the sectors like (i) Agriculture and Allied Activities, (ii) Mining and Quarrying, (iii) Manufacturing, (iv) Electricity, Gas and Water, (v) Constructions, (vi) Wholesale & Retail Trade and Restaurants and Hotels, (vii) Transport, Storage and Communication, (viii) Finance, Insurance, Real Estate and Business Services, and (ix) Community, Social and Personal Services.

Source: Calculated based on Annual Survey of Industries 2011-12, CSO, Government of India

Nevertheless, investment potentials may go up considerably in the NER, when one considers its geographical proximity to the growing Southeast and East Asian markets. In order to unlock this potential, the NER has to identify the products, which are of great demand in neighbouring Bangladesh, Myanmar and other ASEAN countries based on supply-demand balances. Parallely, we also have to identify the potential growth points that can be linked to the NER's larger resource base and market as well as global production networks. The NER needs to participate in the growing trade with

ASEAN countries, particularly in locally produced items like bamboo and other wood products, ores, rubber products, horticulture and food products, refined petroleum products, silk products, other non-metallic mineral products, chemicals and chemical products, pharmaceutical products and preparations, etc. While these are the important industries of the NER, not all of them have the potential to be linked with emerging production networks across borders at the present scenario. There are also scopes for cross-border networks in the services trade such as education, tourism, health and transportation. Therefore, the theme of an international orientation for the NER by promotion of interaction with neighbouring countries for enhancement of cross-border trade and production is further examined in the next few chapters.

4 ■ NER's Trade with Bangladesh and Myanmar

The primary objective of this chapter is to understand the pattern of the NER's trade with Bangladesh and Myanmar. This analysis is going to help us further understand the pattern of the NER's production networks with Bangladesh and Myanmar in next chapter.

4.1 Trade between NER and Bangladesh

India and Bangladesh share a 4091 km long international border, out of which the NER shares almost 1,880 km with Bangladesh (wherein 1,434 km is a land border and 446 km is a riverine tract). Four NER states, namely, Assam, Meghalaya, Tripura and Mizoram, have international borders with Bangladesh. However, a large part of this international border with Bangladesh is porous. To facilitate the border trade, the Government of India has set up 26 Land Customs Stations (LCS) along the NER-Bangladesh border. Out of 26 LCS, 20 are functional, while the remaining six are non-functional (Table 4.1). Besides these, two border huts are recently opened along the Meghalaya-Bangladesh border and one at the India-Myanmar border. Appendix 4 shows the state-wise distribution of LCSs in the NER of India and their counterparts in Bangladesh.

Trade offers immense opportunities for enhancing the economic welfare of Bangladesh as well as the NER. Bilateral trade is governed by the India-Bangladesh Trade Agreement (IBTA), which has been renewed till March 31, 2015.²⁹ The India-Bangladesh trade covers a

large proportion of the total South Asian trade. Trade between India and Bangladesh has resulted in robust growth of the South Asian region (De *et al.*, 2012). Bangladesh has a bilateral trade deficit with India, which has increased from US\$ 44 million in 1981 to US\$ 4.5 billion in 2012-13, and it is a matter of debate whether this is of any concern.³⁰ Nevertheless, Bangladesh's trade volume forms only 1 per cent of India's imports, a negligible share of its own exports, and consists of a small range of products (fertiliser and jute goods make up two-thirds of exports). Although ready-made garments (RMG) is the major exportable for Bangladesh, its export to India is still insignificant.

Table 4.1: State-wise Distribution of LCSs in NER Dealing with NER-Bangladesh Trade

State	Functional	Non-functional	Total
Assam	5	3	8
Meghalaya	8	2	10
Mizoram	0	1	1
Tripura	7	0	7
Total	20	6	26

Source: Ministry of Development of North East Region, Government of India.

Despite India's unilateral concessions to Bangladesh³¹ and the existence of a large land border between the two countries, India's trade with Bangladesh is not growing at a considerable pace. India's imports from Bangladesh in 2012-13 have witnessed a higher growth in aggregate volume and also in new products, which, indirectly suggests the existence of a large trade potential between India and Bangladesh.

India's export to Bangladesh has increased considerably in the last few years. Tables 4.2(a) and 4.2(b) depict India's major exported commodities to and imported from Bangladesh in 2012. The top 20 export commodity groups from India to Bangladesh account for about 87 per cent of India's total exports to Bangladesh. India's exports to Bangladesh have undergone a transformation and are presently dominated by diversified product groups including food and agriculture products. Besides cotton (which alone contributes to over one-fourth of total Indian exports to Bangladesh), there

are other important product groups in the Indian export basket such as residues and waste from the food industries, iron and steel, mineral fuels, mineral oils and products of their distillation, etc. India imports much less than what the country exports to Bangladesh. Table 4.2(b) presents the major imported commodity groups by India from Bangladesh in 2012. Major products imported from Bangladesh are vegetable textile fibres (read, jute), textile articles (read, RMGs) and edible fruit and nuts (read, betel nut or areca nut). The top 18 imported commodity groups account for about 92 per cent of total imports from Bangladesh. India's imports from Bangladesh have also been undergoing a transformation. For example, an increasing volume of electrical machinery and equipment, plastics and articles, etc., are now exported to India, presumably to India's NER from Bangladesh.

Table 4.2(a): India's Major Exports to Bangladesh in 2012*

Sr. No	Commodity Group [^]	Value (US\$ million)	Share ** (%)
1	Cotton (52)	1389.22	28.141
2	Cereals (10)	451.99	9.155
3	Vehicles other than railway or tramways (87)	412.69	8.360
4	Nuclear reactors, boilers, machinery (84)	272.53	5.521
5	Sugars and sugar confectionery (17)	263.81	5.344
6	Residues and waste from the food (23)	200.09	4.053
7	Man-made staple fibres (55)	126.33	2.559
8	Organic chemicals (29)	120.69	2.445
9	Iron and steel (72)	119.61	2.423
10	Electrical machinery and equipment (85)	118.33	2.397
11	Plastics and articles thereof (39)	109.15	2.211
12	Articles of iron or steel (73)	98.53	1.996
13	Mineral fuels, mineral oils and products (27)	97.08	1.966
14	Tanning or dyeing extracts; tannins (32)	94.84	1.921
15	Rubber and articles thereof (40)	80.85	1.638
16	Miscellaneous chemical products (38)	72.36	1.466
17	Salt; sulphur; earths and stone; (25)	71.140	1.441
18	Aluminium and articles thereof (76)	69.52	1.408
19	Edible vegetables and certain roots (07)	63.57	1.288
20	Edible fruit and nuts (08)	63.39	1.284
	Total of above items	4295.72	87.02

Table 4.2(b): India's Major Imports from Bangladesh in 2012*

Sr. No.	Commodity Group [^]	Value (US\$ million)	Share ** (%)
1	Other vegetable textile fibres (53)	123.34	21.74
2	Other made up textile articles (63)	79.15	13.95
3	Edible fruit and nuts (08)	59.27	10.45
4	Articles of apparel and clothing (62)	42.80	7.54
5	Fish and crustaceans, molluscs (03)	36.39	6.42
6	Salt; sulphur; earths and stone (25)	25.72	4.53
7	Mineral fuels, mineral oils and products (27)	20.48	3.61
8	Copper and articles (74)	19.94	3.51
9	Inorganic chemicals; organic (28)	18.89	3.33
10	Residues and waste from the food (23)	18.53	3.27
11	Iron and steel (72)	16.44	2.90
12	Cotton (52)	13.01	2.29
13	Animal or vegetable fats and oils (15)	11.59	2.04
14	Articles of apparel and clothing (61)	10.84	1.91
15	Electrical machinery and equipment (85)	7.44	1.31
16	Plastics and articles thereof (39)	7.31	1.29
17	Commodities not specified according to kind (99)	6.66	1.17
18	Rubber and articles thereof (40)	6.47	1.14
	Total of above items	524.27	92.42

Notes: *Taken at 2-digit HS (2007 code), and considers products having share over 1 per cent in exports or imports. **Share in India's total export to (or import from) Bangladesh. [^]Data in parentheses represent corresponding commodity group at 2-digit HS level.

Source: Calculated based on UNCOMTRADE.

The NER-Bangladesh trade mainly flows through Assam, Meghalaya and Tripura. Table 4.3 presents LCS-wise NER's trade with Bangladesh. Meghalaya has the highest share in the NER-Bangladesh trade volume (Table 4.3). Noted in Table 4.3, the NER has recorded trade surplus with Bangladesh in nine LCSs and deficit at remaining LCSs. Following observations are worth noting.

We observe that the Assam-Bangladesh trade flows mainly through Sutarkandi LCS in Barak valley in South Assam. This LCS

carries about 80 per cent of the Assam-Bangladesh trade. It presently handles an annual volume of Rs. 5 crore of trade, of which export to and import from Bangladesh were about Rs. 2 crore and Rs. 3 crore, respectively (Table 4.3). The commodity compositions of trade between Assam and Bangladesh suggest that trade has been relatively diversified and has the potential to build production networks with Bangladesh such as in cement, food products, plastic products, RMGs, electronics, etc.

Secondly, we note that Borsora and Ghasuapara in Garo Hills and Dawki in Jaintia Hills are the major LCS handling the Meghalaya-Bangladesh trade. Borsora, Dawki and Ghasuapara contribute about 45, 22 and 15 per cent of the total Meghalaya-Bangladesh trade, respectively. A significant amount of trade also flows through LCSs located at Shellabazar, Mahendraganj, Dalu and Bholaganj. Borsora LCS presently handles a total export of about Rs. 168 crore to Bangladesh. Import from Bangladesh through Mahendraganj LCS is the highest in the Meghalaya state, sharing about 96 per cent of total import of Meghalaya from Bangladesh. However, barring Mahendraganj, Dalu and Dawki, other LCSs in Meghalaya do not deal with import from Bangladesh. Bholaganj in export and Mahendraganj in import are the busiest LCSs in Meghalaya. The production network between Meghalaya and Bangladesh is already functioning in regards to cement. But it can be extended to food products, as well as some services sectors such as education and tourism.

Thirdly, Tripura handles about Rs. 257 crore of annual trade with Bangladesh, which is mostly imports. Most of the trade in this state (80 per cent) flows through Agartala LCS. A good amount of trade also passes through Srimantapur and Muhurighat LCSs. Export through LCSs like Khowaighat, Manu, Muhurighat and Old Ragnabazar is either nil or insignificant. Products exchanged at Tripura borders indicate that production networks between the NER and Bangladesh in food products, RMGs, cement, plastic and rubber products, etc., are quite possible.

Table 4.3: NER's Trade with Bangladesh in 2010-11

Sr. No.	Name of LCS	Export	Import	Top Five Products Traded	
				(Rs. Lakh)	
1	Sutarkandi	1954	3073	Coal & quick lime	Cement, Misc food item and plastic items
2	Karimganj Steamer & Ferry Station (KSFS)	822	67	Ginger, Oranges, dry fish and other citrus fruits	Knitted & crocheted synthetic fabric
3	Mankachar	11	253	Coal, Boulder Stone	Cement, Vest, Cloak & Religious Book
4	Borsora	16768	*	Coal & Lime stone	*
5	Bholaganj	22373	*	Lime Stone, Boulder stone & Quartz stone	*
6	Dawki	9720	0.1	Coal, Lime stone, Raw hides, quartz stone, stone boulders seasonal fruits, & vegetables	Food Items, Fire clay, & bricks
7	Shellabazar	829	*	Lime stone & boulder stone	*
8	Bagmara	385	*	Coal	*
9	Dalu	1890	296	Coal	Cement. Syn, Fabrics
10	Ghasuapara	6701		Coal	*
11	Mahendraganj	362	449	Coal. Crushed stone, Boulder stone. Dry fish, ginger	Cotton waste, synthetic fabric, food product
12	Agartala	157	20352	Other craft paper, vulcanised rubber tread, acmesip & mango classic	Stone, cement, fish, PVC pipes, & furniture
13	Srimantapur	6	2488	Raw hides, woven fabrics & synthetic filament	Stone, Cement, Plastic sheet of polymers
14	Khowaighat	*	306	*	Stone & cement
15	Manu	2	459	**	Broken stone, Bricks & Cement
16	Muhurighat	*	1838	*	Stone, Bricks & Cement
17	Old Raghhabazar	5	68	Citrus fruits	Textile items, cotton vest & others

Notes: *No trade was conducted. **very negligible trade.

Source: Ministry of Development of North East Region, Government of India based on Indian Customs.

Finally, official trade between the NER and Bangladesh is primarily concentrated in agricultural commodities, processed foods, minerals and garments. While the NER export is dominated by raw materials like coal, limestone, boulders and agri-horticultural products like ginger and citrus fruits, imports from Bangladesh are mostly finished goods such as cement, synthetic fabric, ready-made garments, and processed food. The NER's exports to Bangladesh are distinctly different from the major exports from the rest of India to Bangladesh. A quick look at the product-wise trade between the NER and Bangladesh indicates a complementarity between the resource structure of the NER and the demand structure of Bangladesh.³² Bangladesh lacks mineral resources such as coal and limestone, which the country imports from the NER. The manufacturing base of the NER has remained underdeveloped, and, hence in return, the NER imports manufacturing goods from Bangladesh. This provides a firm basis for trade expansion between the two regions and opportunities in cross-border production networks.³³ We found the following patterns amidst the India-Bangladesh trade:

- The NER exports raw materials such as coal, limestone, stone chips, bamboo, etc., to Bangladesh and imports manufactured goods like cement, plastic goods, ready-made garments, and processed food and drinks.
- Minerals from the region of Meghalaya are basically exported to Bangladesh through the LCSs of Assam and Meghalaya.
- The resource structure of the NER and the demand structure of Bangladesh are complementary to each other. There exists potential for trade between the NER and Bangladesh.
- Since the export of coal and limestone suffers from severe limitations, it is important to diversify the export basket and to also add value to the export by switching over from the export of raw materials to the export of processed/semi-processed goods.
- If barriers to trade between the NER and Bangladesh are removed, trade expansion will be obvious between them, particularly in agriculture and processed food industries, which will also enhance production networks.

4.2 Trade between NER and Myanmar

Since the adoption of the Look East Policy (LEP) of the early 1990s, India's engagement with Myanmar has grown substantially. Several empirical studies show the extent of economic integration between South and Southeast Asia, where Myanmar occupies the central position.³⁴ Since Myanmar is the land-bridge that connects the world's two largest markets – South and Southeast Asia, it is an important country for both India and ASEAN as it helps integrate economies across the border.

India and Myanmar share a common border of 1,643 km. There are four NER states, namely, Arunachal Pradesh, Manipur, Mizoram, and Nagaland that share international borders with Myanmar, a large part of which is porous. Four LCSs are in operation, serving the overland trade between the two countries (Table 4.4), of which Moreh in Manipur is the busiest one, handling almost 99 per cent of the NER's overland trade with Myanmar.

Table 4.4: LCSs in NER Dealing Trade with Myanmar

NER State	LCS in India	LCS in Myanmar
Arunachal Pradesh	Nampong* (Pangsau Pass)	Pangsu
Manipur	Moreh	Tamu
Mizoram	Zokhawthar (Champai)	Rih**
Nagaland	Avangkhu***	Somara

Notes: *Notified but non-functional. *At present, the nearest town in Myanmar functioning as LCS is Tiddim, approximately 75 km from the border village of Zokhawthar. ***Bilaterally agreed to open new LCS but not yet notified.

Source: Authors based on the Ministry of Development of North Eastern Region, Government of India.

In absolute terms, the rise in bilateral trade between India and Myanmar has been impressive. In the beginning of 1990s, bilateral trade stood at US\$ 55 million, which became US\$ 401 million at the beginning of the last decade, and increased by over four times to US\$ 1.8 billion at the beginning of the current decade. India's increasing trade deficit with Myanmar is a matter of concern, as this increased from a miniscule US\$ 2.5 million in 1980 and about US\$ 131 million in turning of the last decade to about US\$ 1 billion

in 2012. India's exports to Myanmar have been growing much faster than India's imports, thereby narrowing the trade deficit that India has with Myanmar.

The phenomenal rise in bilateral trade has been driven by Myanmar's increase in export to India. Today, Myanmar exports over US\$ 1.4 billion to India, constituting one-fifth of Myanmar's global exports. India is Myanmar's second largest export destination, next to Thailand. In other words, India provides a consistently higher market access to Myanmar, which is perhaps the highest in volume that India provides to the LDCs in the world. India has offered the Duty Free Tariff Preference (DFTP) Scheme to Myanmar.

India's imports from Myanmar are dominated by agricultural and forest products. Tables 4.5(a) and 4.5(b) present major Indian exports and imports to and from Myanmar, respectively. Myanmar is the second largest supplier of beans and pulses to India, accounting for one-third of India's total requirements of imported pulses. This is followed by the import of vegetables next. Myanmar also contributes to nearly one-fifth of India's imports of timber.³⁵ However, the shares of remaining import items have been negligible.

India fulfills a larger proportion of Myanmar's import demands. India's exports to Myanmar are diverse, ranging from primary goods to manufactured products. Pharmaceuticals are the top most important export group, contributing 20 per cent (US\$ 104.27 million) of total Indian exports to Myanmar in 2012. Primary and semi-finished steel along with steel bars and rods, tubes and pipes constitute over one-third of India's export to Myanmar, which may be classified as project goods. The other products exported to Myanmar are iron and steel, cotton yarn, electrical machinery, mineral oil, rubber articles, plastics, etc. However, the composition of Indian imports from Myanmar has not changed much over time. Incidentally, India's trade with Myanmar has witnessed an increase in growth over the last decade, which indirectly suggests the existence of a large trade potential between the two countries.

However, the India-Myanmar bilateral trade is not always safe and secure. There are several downsides such as the large informal

trade, smuggling of goods including drugs and narcotics, and human trafficking between the two countries. Land borders are open and porous, and, therefore, unofficial (informal) trade has always been very high. Ransoms to insurgent groups (operating in both India and Myanmar), political strikes, ethnic conflicts, etc., at the border areas are very common, which are a major deterrent to trade between the two countries. The actual trade between India and Myanmar is quite naturally difficult to quantify due to trade via any third country (for example, Singapore), and inadequate availability of trade data.

Table 4.5(a): India's Major Exports to Myanmar in 2012*

Sr. No	Commodity Group [^]	Value (US\$ million)	Share ** (%)
1	Pharmaceutical products (30)	104.27	19.79
2	Articles of iron or steel (73)	91.88	17.44
3	Nuclear reactors, boilers, machinery (84)	66.53	12.63
4	Electrical machinery and equipment (85)	44.57	8.46
5	Residues and waste from the food (23)	40.34	7.66
6	Iron and steel (72)	37.52	7.12
7	Vehicles other than railway or tram (87)	19.51	3.70
8	Cotton (52)	14.26	2.71
9	Rubber and articles (40)	13.77	2.61
10	Railway or tramway locomotives (86)	8.37	1.59
11	Essential oils and resinoids (33)	7.24	1.37
12	Meat and edible meat (02)	5.41	1.03
	Total of above items	453.67	86.12

Table 4.5(b): India's Major Imports from Myanmar in 2012*

Sr. No	Commodity Group [^]	Value (US\$ million)	Share ** (%)
44	Wood and articles of wood	682.78	50.72
1	Edible vegetables and certain roots (07)	596.17	44.29
2	Mineral fuels, mineral oils and products (27)	14.11	1.05
3	Nuclear reactors, boilers, machinery (84)	8.15	0.61
4	Organic chemicals (29)	4.80	0.36
5	Iron and steel (72)	4.02	0.30

Table 4.5(b) continued...

Table 4.5(b) continued...

6	Electrical machinery and equipment (85)	3.85	0.29
7	Plastics and articles (39)	3.02	0.22
8	Edible fruit and nuts (08)	3.00	0.22
9	Articles of iron or steel (73)	2.23	0.17
10	Animal or vegetable fats and oils (15)	2.17	0.16
11	Coffee, tea, matt and spices (09)	2.16	0.16
12	Rubber and articles (40)	2.15	0.16
13	Vehicles other than railway or tramways (87)	2.09	0.16
14	Commodities not specified according to kind (99)	1.90	0.14
15	Aluminium and articles (76)	1.59	0.12
16	Products of animal origin, nes (05)	1.38	0.10
	Total of above items	1335.57	99.21

Notes: *Taken at 2-digit HS (2007 code), and considers products having share over 1 per cent in exports and over US\$ 1 million of imports. **Share in India's total export to (or import from) Myanmar. ^Data in parentheses represent corresponding commodity group at 2-digit HS level.

Source: Calculated based on UNCOMTRADE

4.2.1 Border Trade

If trade liberalisation is one of the determinants that helped Myanmar in increasing the quantity of exports to India, trade facilitation through opening up of border trade between the two countries in 1995 is equally responsible for the higher bilateral trade between the two countries in later years, particularly 1997 onward. Since then India has become one of Myanmar's largest trading partners. However, the two geographically adjacent countries are yet to engage their land borders actively for substantial international trade and commerce. Trade at land borders has been negligible, compared to their respective bilateral trade. At present, there are four LCSs in India that engage in border trade with Myanmar, of which Moreh in India's Manipur state is the most active one. Although trade in traditional goods on a head load basis has been the customary practice for a long time, the Border Trade Agreement (BTA) signed in 1994 gave it a legal framework.³⁶ The Moreh LCS in Manipur (Tamu in Myanmar) was operationalised in April 1995. Under the 1994 India-Myanmar BTA, a second border trade point at Champai

LCS in the Mizoram (Rih in Myanmar) was opened in 2004. Border trade is also allowed at Nampong (Arunachal Pradesh). Another border trade point is proposed to be opened at Avakhung-Pansat/Somrai. India and Myanmar have signed an MoU in 2012 to open *border haats* between the two countries.

Table 4.6(a) presents the recent trends in border trade between India and Myanmar at Moreh. The recent spike in border trade is due to the increase in positive list items in December 2012 and improvement of trade facilitation including the setting-up of a food testing laboratory in Imphal. Table 4.6(b) shows the major export and import items traded through Moreh and Zokhawthar LCSs in the year 2012-13. Major items imported by Myanmar from the Indian side at Moreh are cumin seed, cotton yarn, auto parts, soya bean meal, wheat flour, and pharmaceuticals, whereas betel nut, dry ginger, green mung beans, black matpe beans, turmeric roots, resin and medicinal herbs are the major items imported by India. According to the Myanmar Department of Border Trade (MDBT), the border trade turnover between India and Myanmar has ranged from US\$ 10 to US\$ 22 million, which will be higher if the informal trade is taken into account.³⁷ Secondary reports show the prevalence of smuggling of items like fertilisers, vehicles, particularly two-wheelers, etc., from India to Myanmar through the land border.³⁸ The formal trade volume at Moreh appears to be lesser than the informal trade volume.³⁹

Table 4.6(a): Trends in India's Trade with Myanmar at Moreh

Year	Export	Import	Total
	(Rs. Crore)		
2007-08	4.94	13.47	18.41
2008-09	1.61	0.76	2.37
2009-10	2.15	8.32	10.47
2010-11	0.26	3.80	4.06
2011-12	1.50	1.49	2.99
2012-13	26.20	15.09	41.29

Source: Authors based on Manipur Government and Indian Customs.

Table 4.6(b): NER's Trade with Myanmar in 2012-13

Name of LCS	Major Commodities Traded	
	Export	Import
Moreh	Cumin seed, cotton yarn, auto parts, soya bean meal, wheat flour and pharmaceuticals	Betel nuts, dry ginger, green mung beans, black matpe beans, turmeric roots, resin and medicinal herbs
Zokhawthar	*	Betel nuts

Note: *No trade was conducted.

Source: Authors based on Ministry of Development of North East Region, Government of India.

One of the primary reasons for the low level of border trade at Moreh LCS is the unfavourable trading environment. Trade at Moreh LCS suffers not only from the lack of modern trade infrastructure, both in terms of hardware and software, but also from an absence of adequate security, thus making the entire trading environment very uncertain. Furthermore, till recently the anomalous exchange rate between India and Myanmar prohibited the growth of trade as a result of which the government lost a large amount of revenue. Conducting trade through LCSs may remain problematic since the connectivity on both sides of the India-Myanmar border remains underdeveloped. However, in an effort to encourage further trade, the Ministry of Home Affairs of the Government of India has decided to strengthen the border infrastructure through its ambitious Integrated Check-Post (ICP) project at Moreh with an investment of Rs. 13.60 billion.⁴⁰ Trade flows between the two countries would eventually grow faster once the land border connectivity is improved, and to further accommodate the rising trade, the border infrastructure at all the LCSs on both sides of the India-Myanmar border have to be swiftly brought to a world-class standard. Recent developments in the border trade arrangements between the two countries are encouraging, but need a long way to go to engage the border effectively for normal trade. For example, India and Myanmar have agreed to upgrade the status of border trade to normal trade, and have expanded the tradable items from 18 to 62 in 2012. In December 2012, rice, wheat, corn, medicines, and 18 other items

were added to the list of goods for trade at the India-Myanmar border areas. With this addition, the Directorate General of Foreign Trade (DGFT) of India has raised the number of border trade items to 62. The other newly added items include agricultural tools, bicycles, coal, garments, edible oil, electrical appliances, steel products, tea, beverages, motor cycles and spare parts, semi precious stones, sewing machines and three wheelers/cars below 100cc.

Finally, unlike the NER-Bangladesh trade, the NER's trade with Myanmar is a sort of transit trade, where resources in the NER are yet to form production networks with Myanmar. It has always remained less than 1 per cent of India's total trade with Myanmar since the opening of the LCS at Moreh in 1995. Therefore, the border trade potential between India and Myanmar still remains largely unrealised. With India entering into economic partnership agreements with almost all the countries in this region, trade links with Myanmar have now assumed greater importance. India and Myanmar have much to gain by opening up more trading routes through the NER and forming production networks across borders.

5

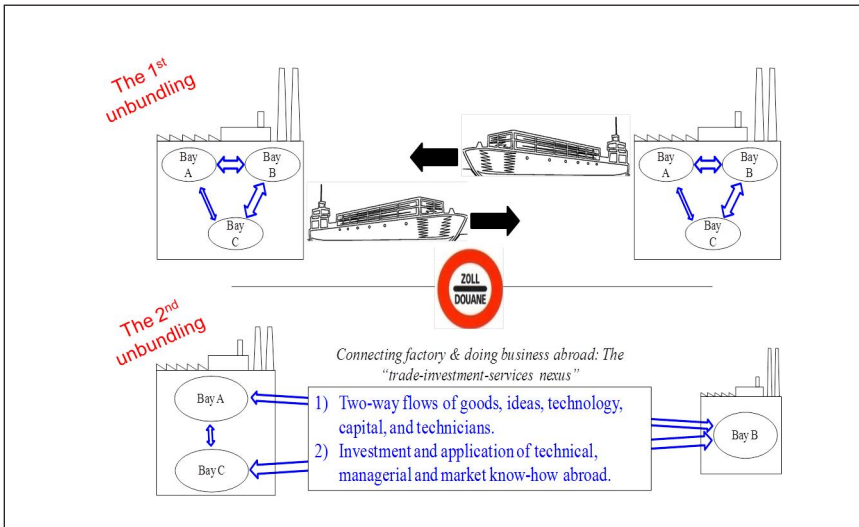
Emerging Production Networks

The 1st unbundling of the international division of labour was driven by trade across countries and facilitated by ocean transportation during 19th and 20th century, whereas the 2nd unbundling of the international division of labour has been driven by the production processes and tasks across countries and by improvements in transportation and communication technology. Figure 5.1 illustrates the 1st and 2nd unbundling of the international division of labour. Today, production networks in the manufacturing sector are the most advanced in the world. Production blocks can move to developing countries/regions and accelerate industrialisation, resulting in narrower development gaps. Connectivity is the key to production networks.

Rapid advances and innovations in communication and transportation have facilitated the establishment of services links that are needed for the fragmentation of production across borders. The process of fragmentation in production enables countries to specialise according to their comparative advantages. Thus, to utilise the mechanics of fragmentation, we need to reduce three kinds of costs: (i) network set up costs, (ii) service link costs (connectivity costs), and (iii) production costs per se. Institutional arrangements for hosting foreign direct investment would need to reduce network set up costs, whereas the development of logistics infrastructure/services (cost, time, reliability) and promotion of trade

liberalisation/facilitation are essential to reduce the service link costs. Finally, starting from special economic zones improvements in the investment climate with proper economic infrastructure such as electricity supply, etc., are needed to reduce production costs. We need to know how to reduce the service link cost in the NER.

Exhibit 5.1: The 1st and 2nd Unbundling of International Division of Labour



Source: Kimura based on Baldwin (2011).

As discussed in previous chapters, there is resource–industry link between the NER and Bangladesh, whereas the same has been missing between the NER and Myanmar. However, cross-border production networks between the NER and Myanmar are not remote. In this chapter, we analyse only those industries, where bilateral exchange has been driven by trade in parts and components or resources.

5.1 Production Networks between NER and Bangladesh

Here, we have elected to examine the networks involving the following products: (i) cement, (ii) ready-made garments (RMGs), (iii) processed food, (iv) bicycles, and (v) plastic products. The trade in

these products between the two countries has been steadily growing and facilitated by regional and bilateral trade agreements.⁴¹ While Bangladesh buys cotton yarn from India, the NER buys RMGs from Bangladesh. We argue that there is an increasing evidence of vertical (or, horizontal) production networks emerging between the two countries. It is thereby important to assess such development, which could then help countries to undertake policy measures in order to facilitate gains from production networks, for instance through improvements in logistics services.

(i) Cement

India exports limestone and other raw materials amounting to US\$ 40 million to Bangladesh annually (Table 5.1(a)), which has been growing sharply since 2001-02. Limestone and other raw materials are used as inputs in manufacturing cement in Bangladesh, a process driven by multinational companies like Lafarge (see Box 5.1). In exchange, India imports portland cement of amounting to US\$ 19 million from Bangladesh (about 3.23 per cent of total Indian imports from Bangladesh), which has been increasing at a rate of 76 per cent since 2005-06 (Table 5.1(b)). Such a healthy rate of growth indicates a growing demand for Bangladeshi cement in India. A large proportion of the cement from Bangladesh is directed to the NER. The annual import of portland cement in the NER from Bangladesh is estimated to be US\$ 10 million (Figure 5.1). Driven by both domestic and foreign firms, Bangladesh witnesses an agglomeration of cement manufacturers and downstream industries (Figure 5.2).

Box 5.1: NER-Bangladesh Production Network in Cement

Lafarge Umiam Mining Private Limited (LUMPL), a company incorporated in Meghalaya, India, under the Indian Companies Act, 1956, is a wholly-owned subsidiary of Lafarge Surma Cement Limited (LSC), a company incorporated in Bangladesh. LSC was set up as a cross-border cement manufacturing project. In November 2000, the Governments of India and Bangladesh signed a historic agreement through exchange of letters in order to support this unique project

Box 5.1 continued...

Box 5.1 continued...

and till date it is the only major cross-border industrial project between the two countries. The agreement provides for uninterrupted supply of limestone to the cement plant at Chhatak in Bangladesh by a 17 km long conveyor belt from the quarry located at Nongtraï in the state of Meghalaya. The project has been financed by Lafarge Group of France, world leader in building materials, Cementos Molins of Spain, and leading Bangladeshi business houses together with International Finance Corporation (IFC – The World Bank Group), the Asian Development Bank (ADB), German Development Bank (DEG), European Investment Bank (EIB), and the Netherlands Development Company (FMO). One of the major sponsors, Lafarge Group holds world's top-ranking position in Cement, Aggregates and Concrete and Gypsum, with about 78,000 employees in 78 countries. Lafarge was founded in France in 1833. Lum Mawshun Minerals Private Limited (LMMPL) was incorporated in 1994 under the Indian Companies Act, 1956. The Foreign Investment Promotion Board of India in the year 1998 granted permission to Lafarge Surma Cement (LSC) to invest 74 per cent in the equity capital of LMMPL. Two Indian local partners hold the rest 26 per cent equity shares. LMMPL acquired the land leases and mining rights for setting up the project. Subsequent to the Government of Meghalaya approval, the land leases and the mining rights were transferred to LUMPL. LUMPL has a limestone mining lease at East Khasi Hills, Meghalaya over an area of 100 hectares (hec) of land and additional land of 37.6 hec for infrastructure and ancillary activities towards transporting crushed limestone of 2 million tonnes per annum from the mining site to the cement plant at Chhatak in Bangladesh through an 17 km elevated Long Belt Conveyor (7 km of which lies within the territory of India and remaining in Bangladesh). LUMPL provides direct and indirect employment opportunities to some 350 people in Meghalaya. The local Darbar in Meghalaya also receives an income of around Rs. 20 million per annum, of which 70 per cent goes to households and 30 per cent to the village equating to an additional income of Rs. 106,000 per household per annum. LUMPL makes significant revenue contribution to the State of Meghalaya amounting to Rs. 190 million per annum. It also provides foreign currency earnings of about US\$ 22 million per annum for India arising out of the export of limestone to Bangladesh.

Source: Lafarge Group, New Delhi.

Table 5.1(a): India's Export of Limestone and Other Raw Materials to Bangladesh

HS Code	Commodity	2000-01	2011-12	2013-14	CAGR [^]
		(US\$ million)			(%)
25120030	Diatomite		0.010	0.010	
25181000	Dolomite Not Calcined or Sintered	0.610	0.810	0.810	2.611
25182000	Calcined Or Sintered Dolomite	0.040	0.010	0.020	-11.841
25183000	Dolomite Ramming Mix	0.020	0.010	0.020	-6.107
25202001	*Calcined Plaster	0.180	0.001		-37.630
25202002	*Other Plasters	0.530			-100.000
25202090	Plasters other than Calcined		0.020	0.020	
25210010	Limestone Flux (L.d Below 1% SiO ₂)	1.190	15.390	23.390	26.201
25210090	Limestone Othr thn Limestone Flux	0.420	21.980	17.760	43.302
25231000	Cement Clinkers	9.360	2.280	11.430	-12.049
	Total	12.350	40.511	53.460	11.404
	India's total export to Bangladesh	935.040	3789.200	6166.930	13.566
	Share in total export (%)	1.321	1.069	0.867	

Notes: * April to December 2012. [^]The growth rate cover the period 2001/02 – 2011/12.

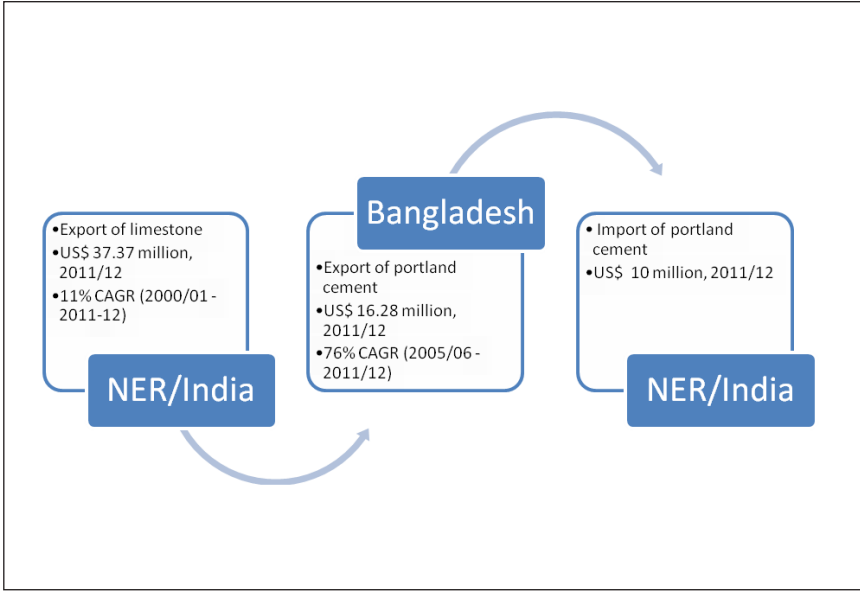
Table 5.1(b): India's Import of Cement from Bangladesh

HS Code	Commodity	2005-06	2011-12	2013-14	CAGR [^]
		(US\$ million)			(%)
25232910	Ordinary Portland Cement, Dry	0.360	10.910	5.130	76.57
25232920	Ordinary Portland Cement, Coloured		0.010		
25232930	Portland Pozzolana Cement	0.180	5.370	7.300	76.11
25232940	Portland Slag Cement		1.680	1.710	
25232990	Other Portland Cement Nes	0.020	0.890	0.030	88.25
	Total	0.560	18.860	14.170	79.70
	India's total import from Bangladesh	127.030	584.640	484.340	28.97
	Share in total import (%)	0.441	3.226	2.926	

Notes: * April to December 2012. [^]The growth rate cover the period 2005/06-2011/12.

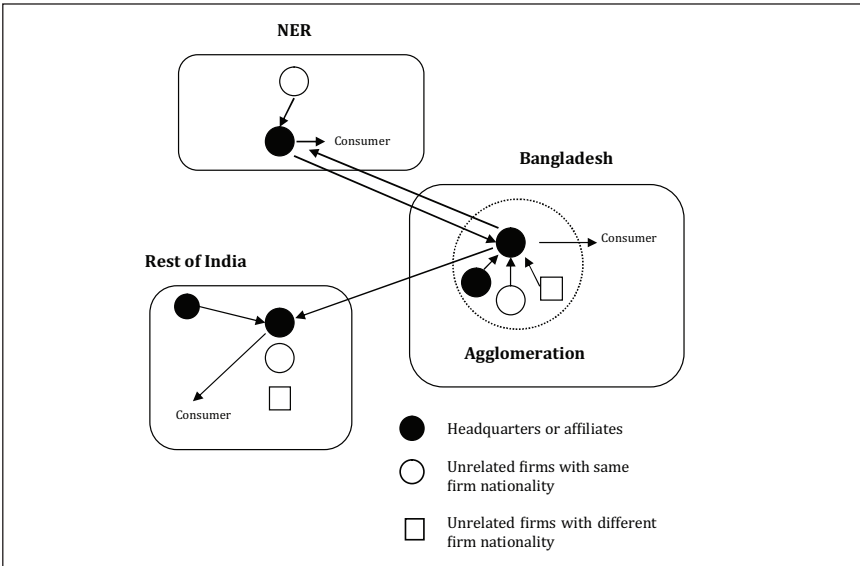
Source: Calculated based on Export-Import Databank, Department of Commerce, Government of India.

Figure 5.1: Trade Network in Cement between the NER and Bangladesh



Source: Drawn by authors.

Figure 5.2: Illustration of Production Networks in NER-Bangladesh in Cement



Source: Drawn by authors.

(ii) Ready-Made Garments (RMGs)

Unlike cement, Bangladesh sources textile and textile articles, mainly, cotton yarn, from the Northwestern parts of India to manufacture RMGs. Over time, Bangladesh's dependence on India as a source of yarn has increased. Bangladesh gets GSP from the EU and other developed countries. Today, Bangladesh is one of the top three largest RMG exporters in the world. It exports RMGs to all over India duty free; a small portion of which also goes to the NER. In 2011-12, India exported US\$ 1.27 billion textile and textile articles to Bangladesh (34 per cent of India's total export to Bangladesh) comprising 688 varieties, grown by 16 per cent since 2001-02 (see Table 5.2(a)).

India's import of RMGs and other textile made-ups from Bangladesh has also grown sharply. In 2001-02, India imported 14 RMG varieties (at 8-digit HS). In 2011-12, India imported 143 varieties of RMGs and other textile made-ups from Bangladesh, which amounted to US\$ 119.32 million, having a share of 20.41 per cent in India's total import from Bangladesh (Table 5.2(b)).

Table 5.2(a): India's Export of Textiles and Textile Articles to Bangladesh

Year	Items*	Export (US\$ million)	Total Export (US\$ million)	Share^ (%)
2000-01	573	247.41	935.04	26.46
2011-12	688	1268.35	3789.20	33.47
2013-14	719	1925.60	6166.93	31.22
CAGR (%) (2000/01 – 2011/12)	1.68	16.02	13.57	

Notes: *At 8-digit HS. ^Share in total exports to Bangladesh.

Table 5.2(b): India's Import of Ready-Made Garments and Other Textiles Made up from Bangladesh

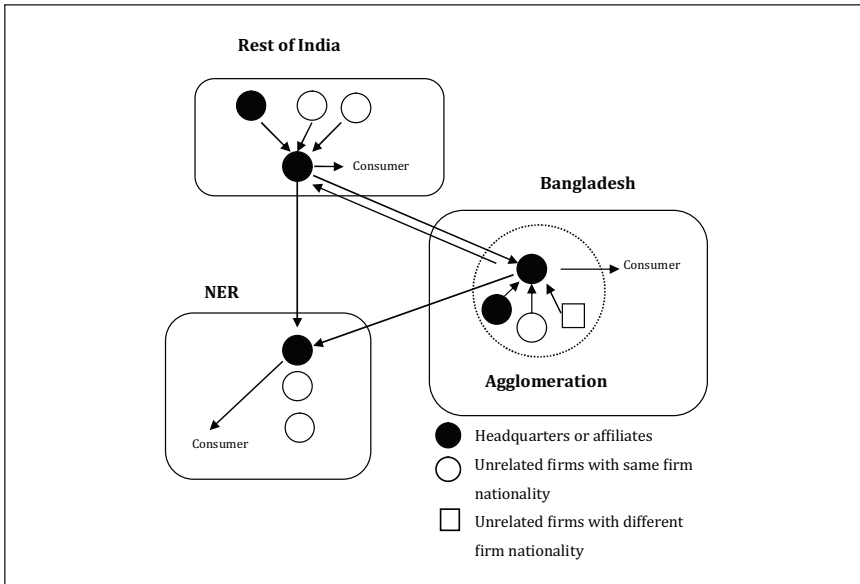
Year	Items*	Import (US\$ million)	Total Import (US\$ million)	Share^ (%)
2000-01	14	27.77	80.51	34.49
2011-12	143	119.32	584.640	20.41
2013-14	145	144.28	484.34	29.79
CAGR (%) (2000/01-2011/12)	23.52	14.17	19.75	

Notes: *At 8-digit HS. ^Share in total imports from Bangladesh.

Source: Calculated based on Export-Import Databank, Department of Commerce, Government of India.

As noted in Figure 5.3, this production network certainly does not originate from the NER. Western and Northwestern parts of India come together as suppliers of raw materials. In this supply chain, the NER is the importer and Bangladesh is the producer of RMGs, resulting in agglomeration of RMG firms in that country. Today, the NER imports an estimated US\$ 60 million of RMGs and related textile made-ups from Bangladesh, which is likely to go up in coming years due to India’s tariff concessions on imports from Bangladesh. This would obviously strengthen the value chain in textile and clothing between India and Bangladesh.

Figure 5.3: Illustration of Production Networks between NER and Bangladesh in RMGs



Source: Drawn by authors

(iii) Processed Food

Bangladesh imports good amount of fruits from India, both for consumption and trade purposes. Some of its food processing companies like Pran Beverages has business networks in NER, using which fruit juices and food products of Bangladesh have

been sold in India. Tables 5.3(a) and 5.3(b) present trends in export of fruits to and imports of fruit juices from Bangladesh. In 2011-12, India exported 49 varieties of fruits and nuts to Bangladesh, amounting to US\$ 81 million. Owing to the rising demand, the export of fruits to Bangladesh has been growing by 16 per cent per annum since 2001-02, higher than the average growth of India's total exports to Bangladesh. Wide varieties of fruits and pulps are exported to Bangladesh (Table 5.4), a large part of which is processed to produce fruit drinks and dried fruits for domestic consumption as well as export to NER. Some of the fruits like orange are cultivated in NER and then exported to Bangladesh. It is estimated that NER imports about US\$ 4.5 million of processed foods from Bangladesh annually. Figure 5.4 illustrates the production networks in processed foods.

Table 5.3(a): India's Export of Fruits to Bangladesh

Year	Items*	Export (US\$ million)	Total Export (US\$ million)	Share^ (%)
2000-01	36	16.08	935.04	1.72
2011-12	49	80.71	3789.20	2.13
2013-14	47	49.55	6166.93	0.80
CAGR (%) (2000/01 -2011/12)	2.84	15.80	13.57	

Notes: *At 8-digit HS. ^Share in total exports to Bangladesh.

Table 5.3(b): India's Import of Processed Fruit Juice from Bangladesh

Year	Items*	Import (US\$ million)	Total Import (US\$ million)	Share^ (%)
2005-06	9	1.29	127.03	1.02
2011-12	19	6.94	584.640	1.19
2013-14	8	2.45	484.34	0.51
CAGR (%) (2000/01 – 2011/12)	13.26	32.37	28.97	

Notes: *At 8-digit HS. ^Share in total imports from Bangladesh.

Source: Calculated based on Export-Import Databank, Department of Commerce, Government of India.

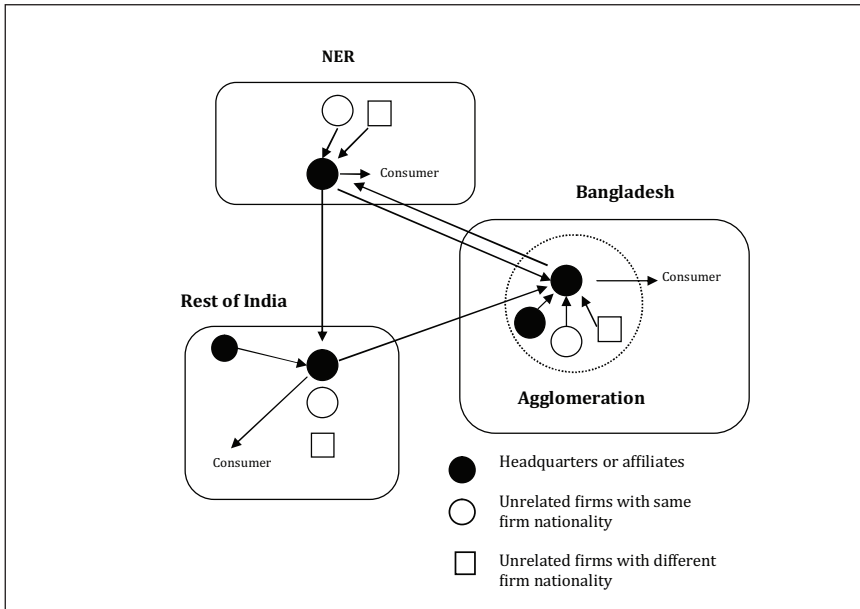
Table 5.4: India’s Export of Selected Fruits to Bangladesh

HS Code	Commodity	2000-01	2011-12	2013-14
		(US\$ million)		
8061000	Grapes Fresh	0.550	20.760	12.570
8081000	Apples Frsh	0.590	15.240	10.270
8051000	Oranges Fresh or Dried	5.780	14.740	8.180
8045020	Mangoes Fresh	5.090	8.950	0.690
8109090	Other Fruits, Frsh	3.280	7.840	6.540
8109010	Pomegranates Fresh	0.050	4.720	2.520
8071100	Water Melons	*	2.050	0.110
8059000	Other Citrus Fruits Fresh or Dried	0.010	1.280	2.130
8082000	Pears & Quinces Frsh	*	1.090	*
8045040	Mango Pulp	0.660	0.850	0.070

*No or negligible trade

Source: Calculated based on Export-Import Databank, Dept. of Commerce, Government of India

Figure 5.4: Illustration of Production Networks between the NER and Bangladesh in Processed Foods



Source: Drawn by authors.

(iv) Bicycles

Presently, the trade in bicycles and parts between India and Bangladesh does not a particularly significant amount, but it has potential. Indian export of bicycles and parts to Bangladesh has been growing over 36 per cent per annum since 2009 (Table 5.5(a)). India's total export of bicycles and parts to Bangladesh has crossed US\$ 25 million in 2012, a large part of which are used as parts and components to manufacturer bicycles in Bangladesh. Bangladesh exports bicycles to the NER and also to the EU, where the country enjoys GSP benefits.

A surge in bicycle manufacturers has been observed in Bangladesh in recent years with about 22 companies presently manufacturing bicycles in the region. Noting Bangladesh's GSP advantage, foreign bicycle companies are also investing in this sector. For example, Firefox of Sri Lanka, manufacturer and exporter of various types of bicycles, is presently setting up a new plant in the Chittagong Export Processing Zone (CEPZ). Bangladesh retains its zero per cent import duty and remains attractive for investors targeting the EU market.⁴² Several more companies from East Asian are also planning to invest in Bangladesh's bicycle industry.

Table 5.5(a): India's Export of Bicycles and Parts to Bangladesh

Year	HS Code	Product Description	Export Value (US\$ million)	Export Quantity	Qty Unit
2009	871200	Bicycles & other cycles	0.301	8398	Item
	871491	Frames & forks, & parts thereof	1.667		N.Q.
	871492	Wheel rims & spokes, for vehicles	0.271	28362	Kg
	871493	Hubs (excl. coaster braking hubs)	1.306	1852793	Kg
	871494	Brakes, incl. coaster braking hubs	0.406	466940	Kg
	871495	Saddles for vehicles of 87.11-87.13	0.444		N.Q.
	871496	Pedals & crank-gear, & parts thereof	0.753	1030307	Kg
	871499	Parts & accessories of the vehicles	5.704	5919422	Kg
		Total (2009)	10.851		

Table 5.5(a) continued...

Table 5.5(a) continued...

2012	871200	Bicycles & other cycles	2.066	37452	Item
	871491	Frames & forks, & parts thereof	5.386	80992	Kg
	871492	Wheel rims & spokes, for vehicles	0.771		N.Q.
	871493	Hubs (excl. coaster braking hubs)	3.655	4500247	Kg
	871494	Brakes, incl. coaster braking hubs	1.993	1792143	Kg
	871495	Saddles for vehicles of 87.11-87.13	0.644	480268	Item
	871496	Pedals & crank-gear, & parts thereof	2.283	2471995	Kg
	871499	Parts & accessories of the vehicles	9.814	7740494	Kg
		Total (2012)	26.614		
	CAGR (%) (2007 – 2012)	34.86			

Source: UN COMTRADE.

Table 5.5(b): India's Import of Bicycles from Bangladesh

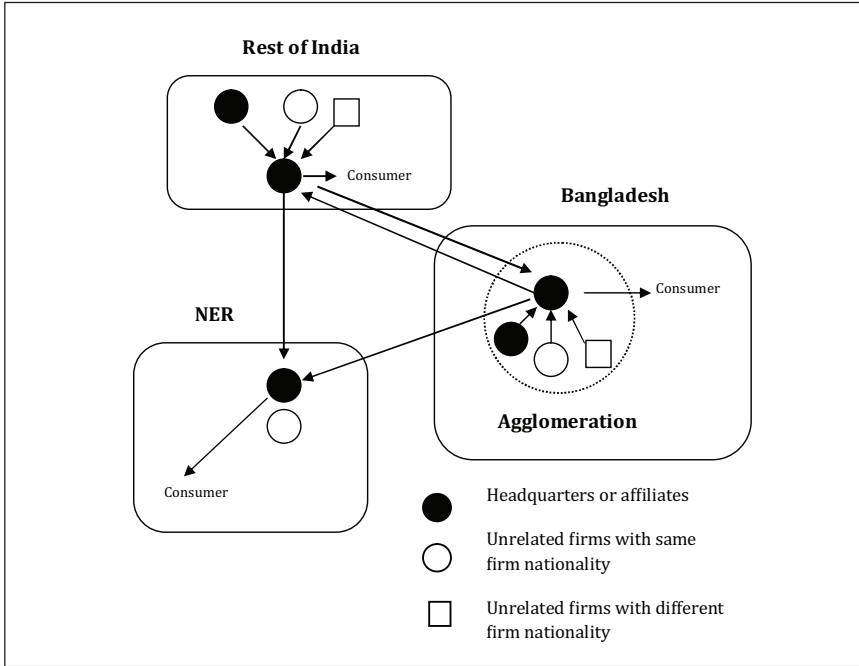
Year	HS code	Product	Import value ('000 US\$)	Import quantity	Qty Unit
2009	871492	Wheel rims & spokes, for vehicles	12.999		N.Q.
2010	871492	Wheel rims & spokes, for vehicles	37.748		N.Q.
2010	871499	Parts & accessories of the vehicles	13.844	15000	Kg
2011	871200	Bicycles & other cycles (incl. deli)	143.387	7440	Item
2011	871492	Wheel rims & spokes, for vehicles	11.978		N.Q.
2012	871200	Bicycles & other cycles (incl. deli)	83.63	3120	Item
2012	871492	Wheel rims & spokes, for vehicles	51.934		N.Q.
2012	871499	Parts & accessories of the vehicles	0.352	136	Kg

Source: UN COMTRADE.

Bangladesh's export of bicycles to India is directed towards the NER. The NER is the one of the major buyers of bicycles produced in Bangladesh. Table 5.5(b) presents India's import of

bicycles from Bangladesh. In 2012, India imported about 3,120 bicycles with an import value of US\$ 84,000, which were mostly sold in the NER. India also imports bicycle parts from Bangladesh. Figure 5.5 illustrates the emerging production networks in bicycle parts.

Figure 5.5: Illustration of Production Networks between the NER and Bangladesh in Bicycles



Source: Drawn by authors.

(v) Plastic Products

Bangladesh is one of the lowest consumers of plastic products. It sources several plastics and related articles, both intermediate and finished goods, from India. In 2011-12, over 2 per cent of India's bilateral export to Bangladesh comprised plastics and plastic products (US\$ 89 million). Over time, the number of plastic articles at 8-digit HS exported from India to Bangladesh has increased from about 14 items in 2005-06 to 199 items in 2011-12 (Table 5.6(a)). However, it is export of Polypropylene (PP), also known as Polypropene, which

is driving India's exports to Bangladesh. Bangladesh imports about US\$ 15 million worth of PP from India annually.

Table 5.6(a): India's Export of Plastics and Products to Bangladesh

Year	Items*	Export (US\$ million)	Total Export (US\$ million)	Share [^] (%)
2005-06	14	25.67	1664.36	1.54
2011-12	199	89.34	3789.20	2.36
2013-14	220	133.28	6166.93	2.16
CAGR (%) (2005/06 – 2011/12)	55.64	23.10	14.70	

Notes: *At 8-digit HS. [^]Share in total exports to Bangladesh.

Table 5.6(b): India's Import of Plastics and Products from Bangladesh

Year	Items*	Import (US\$ million)	Total Import (US\$ million)	Share [^] (%)
2005-06	14	1.77	127.03	1.39
2011-12	47	8.51	584.64	1.46
2013-14	38	7.05	484.34	1.46
CAGR (%) (2005/06 – 2011/12)	22.37	29.92	28.97	

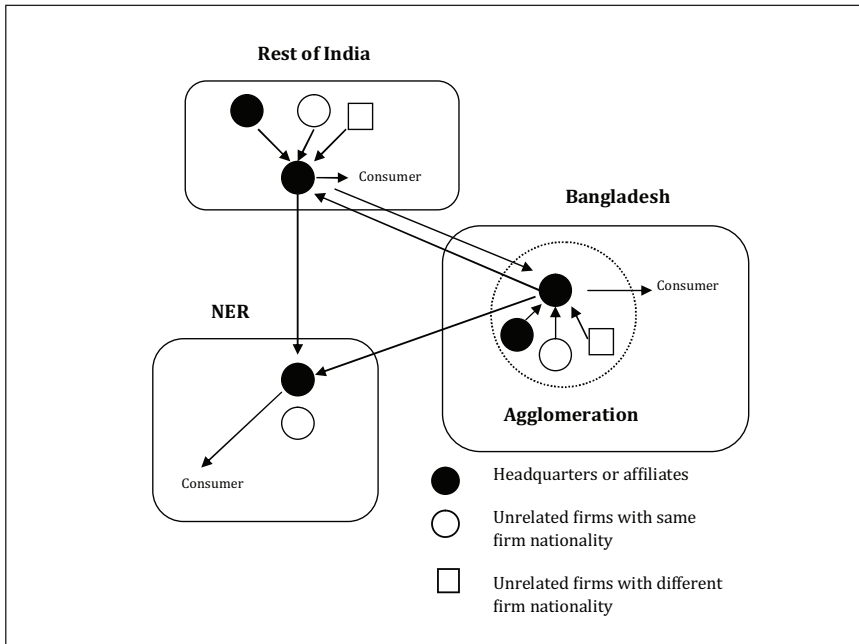
Notes: *At 8-digit HS. [^]Share in total imports from Bangladesh.

Source: Calculated based on Export-Import Databank, Government of India

PP is a thermoplastic polymer, used in a wide variety of applications including packaging and labelling, textiles (e.g., ropes, thermal underwear and carpets), stationery, plastic parts and various types of reusable containers, laboratory equipment, loudspeakers, automotive components, and polymer banknotes. On the one hand, Bangladesh imports PP from India (and from China as well) as raw materials, the country exports plastic articles such as sacks and plastic bags, household plastic items and plastic toiletries, etc., to India, particularly to the NER. In 2011-12, India imported US\$ 8.51 million of plastics and related products from Bangladesh, an increase from US\$ 1.77 million from 2005-06 (Table 5.6(b)). The NER is the major market for Bangladeshi plastic products. By

sourcing raw materials (e.g., polymers) from India, Bangladesh manufacturers plastic products, a portion of which are also exported to the NER. This emerging network is illustrated in Figure 5.6.

Figure 5.6: Illustration of Production Networks between the NER and Bangladesh in Plastics



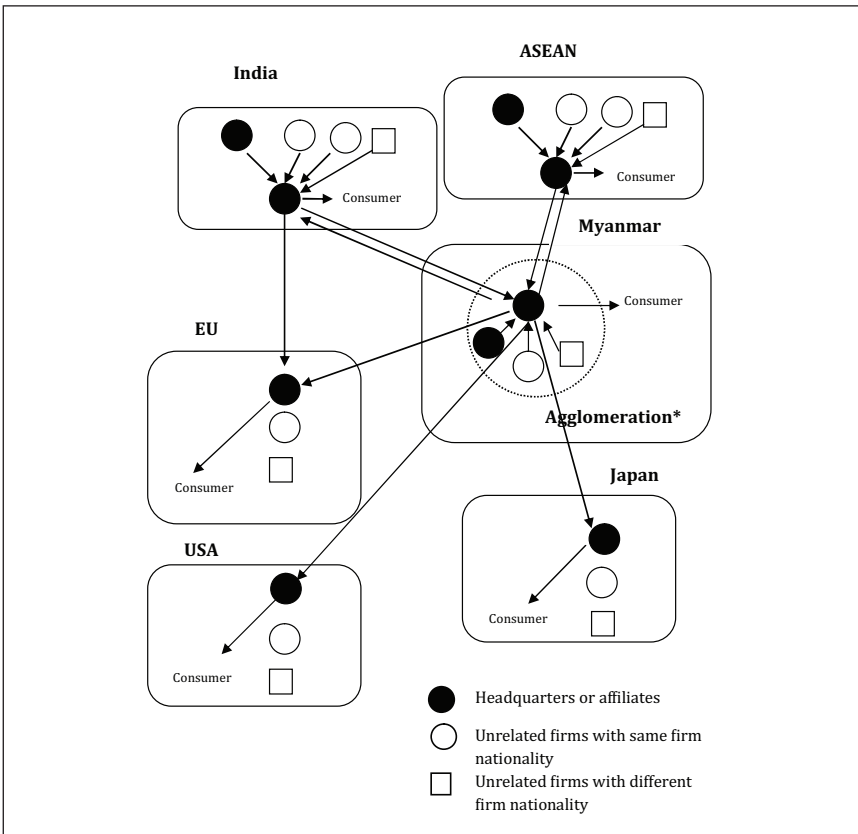
Source: Drawn by authors.

5.2 Production Networks between the NER and Myanmar

Various externalities that arise from industrial agglomeration (supply of industry specific labour, parts and knowledge, etc.) boost economic growth. Agglomeration also makes the supply of public goods (infrastructure, financial market, etc.) easier especially in low-income countries or regions.⁴³ At present, we do not find much agglomeration emerging from the present level of trade between the NER and Myanmar. The NER and Myanmar are yet to have a full scale exchange of goods and services through the land border. Today's production networks between India and Bangladesh are outcomes of a relatively open trade arrangement between the two

countries, which has been continuing for decades. In sharp contrast, the formal trade at the border between the NER and Myanmar has been conducted on limited items on a positive list basis, which are purely for domestic consumption on both sides of the border. It might be possible to build cross-border networks within those industries on which the NER has manufacturing capacities and complementarities that match with the demand or supply capacity of Myanmar and vice versa.

Figure 5.7: Illustration of Future Production Networks between India and Myanmar in RMGs



Note: *Proposed agglomeration.

Source: Drawn by authors.

There is potential for building production networks between the NER and Myanmar in (i) bamboo and wood products, (ii) pharmaceuticals and preparations, (iii) rubber products, (iv) food products, (v) refined petroleum products, (vi) other non-metallic mineral products, (vii) cement, and (viii) textile and textile articles. Besides the industries listed above, networks in services industry between the NER and Myanmar may also take a formal shape (presently conducted informally at a lower scale) in: (i) health, (ii) tourism, (iii) education, and (iv) transport and communication.

Ongoing restructuring of the global textile and apparel industry following the MFA abolition is advantageous to Myanmar. Myanmar has a relative labour cost advantage arising from the tightening of labour markets in China and poor security and labour standards in existing nations such as Bangladesh. Myanmar has been getting GSP benefits from the EU in RMG, over and above the trade preferences the country gets as a LDC. In the coming years, Myanmar would receive more such trade benefits from developed and developing countries. As a member of ASEAN, Myanmar would enjoy a more integrated ASEAN common market (read, AEC) from 2015 onwards. Therefore, building production networks between India and Myanmar is not remote, particularly in the textile and clothing sector. India has the advantage of having a strong textile base and the advantage of close proximity in supplying textiles for apparel production in Myanmar. India can also provide the apparel technology/design centre, train workers in textile and clothing industry, and supply the machinery to Myanmar. Sourcing yarn from India, Myanmar may replicate the Bangladesh model in RMGs. A model of future production networks between India and Myanmar in RMG is illustrated in Figure 5.7. The private sector has an important role in revival and building joint ventures of apparel factories in Myanmar. Box 5.2 presents India's recent assistance to Myanmar in textile and clothing sector.

Box 5.2: India's Recent Assistance to Myanmar in Textile and Clothing Sector

- India has offered to help in revival of 300 apparel factories in Myanmar.
- India has also offered US\$ 5 million Line of Credit for revival of apparel factories in Myanmar. The South India Textile Research Association (SITRA) will provide technical assistance in formulation of revival plans for these factories.
- India will also cooperate with Myanmar in formulating a common compliance code for standards and also the best practices in the factories. The Common Compliance Code - Disha Myanmar with technical assistance from Apparel Export Promotion Council (AEPC) – to enhance compliance standards in Myanmar for exports to developed countries. Sponsored by the Ministry of Textiles, and helmed by AEPC, Disha is an initiative that intends to drive the industry towards sustainable human capital advancement. Disha attempts to educate apparel exporting members on a code of ethics that covers all critical social and environmental concerns like child labour, health and industrial safety, etc.
- For furthering the capacity of the Myanmar textiles sector, India has offered two scholarships for two slots under National Institute of Design (NID) and 250 scholarships for textile workers under Integrated Skill Development Scheme. Scholarships have been offered in the National Institute of Fashion Technology and Institute of Foreign Trade also.
- India will be setting up India-Myanmar Apparel Sector Joint Ventures (JVs) in the Thilawa SEZ in collaboration with other international brands.
- India will also set up a textiles trade show - Textiles Expo in Yangon for traditional textiles with Handloom Export Promotion Council (HEPC) as lead council.
- India will also help Myanmar to establish supply chain linkages in handloom and silk.

Source: Press Release dated 9 June 2013, Department of Commerce, Government of India.

Similarly, production networks can also be developed in the cement industry since Myanmar (Sagaing state in particular) and Manipur have limestone reserves. The per capita consumption of cement in Myanmar and the NER are low at present, which may eventually rise due to an increase in construction activities in both Myanmar and the NER in coming years. Production networks are also possible in handlooms and handicrafts, food processing, etc., between the NER and Myanmar. Nevertheless, the availability of infrastructure, particularly electricity, and political peace are first and foremost required in order to develop production networks between the NER and Myanmar.

Logistics and Trade Facilitation in the NER

Efficiency in logistics services contributes to the expansion in both trade and production networks within or across countries. Chapter 5 showed that the existing production networks between the NER and Bangladesh in regards to the pattern of division of labour stays simplistic and appears to be cross-border production sharing. Reduction in the service link cost in connecting production blocks would pave the way in strengthening production networks in the NER. In this chapter, we discuss the role of logistics in promoting trade-induced production fragmentation across borders in an open economy framework.

6.1 Profile of Logistics and Infrastructure

Compared to the rest of India, the NER states suffer more from inadequate infrastructure and inefficiency. The NER comprises a heterogeneous group and is characterised by wide gaps in logistics and infrastructure. Table 6.1 presents basic infrastructure and logistics indicators of the NER for the year 2011. The profile suggests that the NER states are relatively better endowed with roads, airports, LCS and telecommunication where the variation across the NER states is not very high except for the road density in Tripura. However, the NER suffers from unavailability of electricity;

many of the NER states are yet to have an adequate supply of electricity. Next to electricity is the railways, where barring Assam and Tripura, the remaining states have either no railway lines or very negligible railway presence such as Arunachal Pradesh and Manipur. Similarly, only three of the NER states use IWT, among which Assam has the highest density of IWT in the NER. The remaining NER states are yet to utilise the inland waterways for transportation of goods and passengers. In what follows, the NER has gained tele-density, but lacks much in the form of physical infrastructure and logistics. Development of a production network, within or across borders, would require a more adequate infrastructure and logistics support, which would serve to reduce service link costs between the production blocks.

Table 6.1: Infrastructure Indicators of NER, 2011

States	Road*	Rail*	IWT*	Airport**	LCS**	Tele-density [^]	Electricity [§]
Arunachal Pradesh	23.79	0.02		5.97	1.19	32.34	1.54
Assam	36.16	31.03	32.94	8.92	17.85	46.61	0.31
Manipur	42.95	0.06		4.48	4.48	37.77	0.58
Meghalaya	36.11			4.46	49.04	41.23	0.98
Mizoram	43.97	0.07	6.59	4.74	14.23	31.89	1.27
Nagaland	29.80	0.78	22.62	6.03	6.03	34.33	0.52
Sikkim	8.74				14.09	34.85	3.22
Tripura	808.70	14.44		9.54	76.29	40.45	0.72

Notes: *km per 1000 sq. km. of area. **Number per 100,000 sq. km. of area. [^]Per 100 population. [§]Installed electricity per 10,000 population

Source: Calculated based on various issues of Statistical Abstract, Government of India.

The presence of railways in the NER is more than 125 years old; originating around when the first passenger railway system came into operation in 1881 between Assam's Dibrugarh and Sadiya. Unfortunately, the railway system in the NER was severely disrupted with the division of India in 1947. However, the creation of a new railway zone in 1958 for the NER, the Northeast Frontier Railway (NF Railway) helped in further development of the railway system in the region.⁴⁴ There are at present five divisions, which serve these

eight North Eastern states, viz. Katihar, Alipurduar, Rangia, Luming and Tinsukia. Today, the NF Railway directly or indirectly serves all the eight NER states alongside parts of West Bengal and Bihar. The present rail network in the NER comprised about 2602.35 km route (as of 31 March 2011), out of which 1454.16 km is on the broad gauge and the remaining 1148.19 km on the metre gauge.⁴⁵ Out of the 1148.19 km remaining on the metre gauge, 1130 km has already been sanctioned for conversion to broad gauge. Seventeen projects with the goal of new line, gauge conversion, doubling rail track and railway electrification are currently in progress with a total estimated cost of Rs 16,153 crore. Out of these, ten projects have been declared as National Projects, where upto 75 per cent of the funding for the project is met by the Central Government and 25 per cent by the Ministry of Railways.⁴⁶ As a result of the focused attention, the Railways' investment in the NER has been going up.

Roads are of particular importance in the region because they provide access to inland parts of the NER. However, geographic constraints make the construction of roads an expensive endeavour in the NER. The NER has many large and small rivers providing facilities for water transport. The Brahmaputra and Barak rivers were commonly used as the medium of transport for a long time. With the growth of the tea industry these rivers became important carriers of trade. The East India Company started the water route along the Brahmaputra from Kolkata to Dibrugarh in 1844 and steamships were introduced by the Joint Steamer Company in 1847. At about the same time, Silchar was linked with Kolkata along the Barak-Surma-Meghna navigation channel. However, with the partition of India in 1947, water transport in the NER faced slow progress. It is estimated that the NER has about 1,800 km of river routes that can be used by steamers and larger country boats.

6.2 Trading across Borders

Trading across Borders (TAB) are most popular indicators of trade facilitation.⁴⁷ Figure 6.1 presents trends in TAB for Bangladesh and India. The same information for Myanmar is yet to be reported in World Bank's Doing Business Database (DBD). While the number

of documents needed to export and import have been static, both in Bangladesh and India since 2006, exporters and importers in Bangladesh submit relatively fewer documents, compared to India. At the same time, India and Bangladesh have been successful in reducing the time taken to export and import goods during 2006 and 2013. Today, India takes 16 days to export a container load of goods and Bangladesh takes about 25 days, a marked improvement from 27 and 35 days, respectively, for India and Bangladesh in 2006. Export and import times in India are consistently lower than that of Bangladesh. However, we witness a completely different scenario regarding the costs to export and import goods. The export cost is relatively expensive in India as compared to Bangladesh, whereas Bangladesh witnesses relatively higher import costs than India. However, traders in both the countries face a little over US\$ 1000 per container as costs to export or import, witnessing a rising trend since 2008.

If we compare the NER with Bangladesh in TAB in 2013, the NER outperforms Bangladesh in time and cost to export and import (Table 6.2). In other words, exports from and imports to the NER face lower costs and time than to and from Bangladesh. Contrary to popular belief, the NER's performance in TAB is better than the South Asian average (Table 6.2). Among major Indian cities, Guwahati ranks 7th in TAB in 2013, placed much higher than Bangalore or Delhi NCR (Table 6.3). NER's advantage lies in cost competitiveness in export and import.⁴⁸

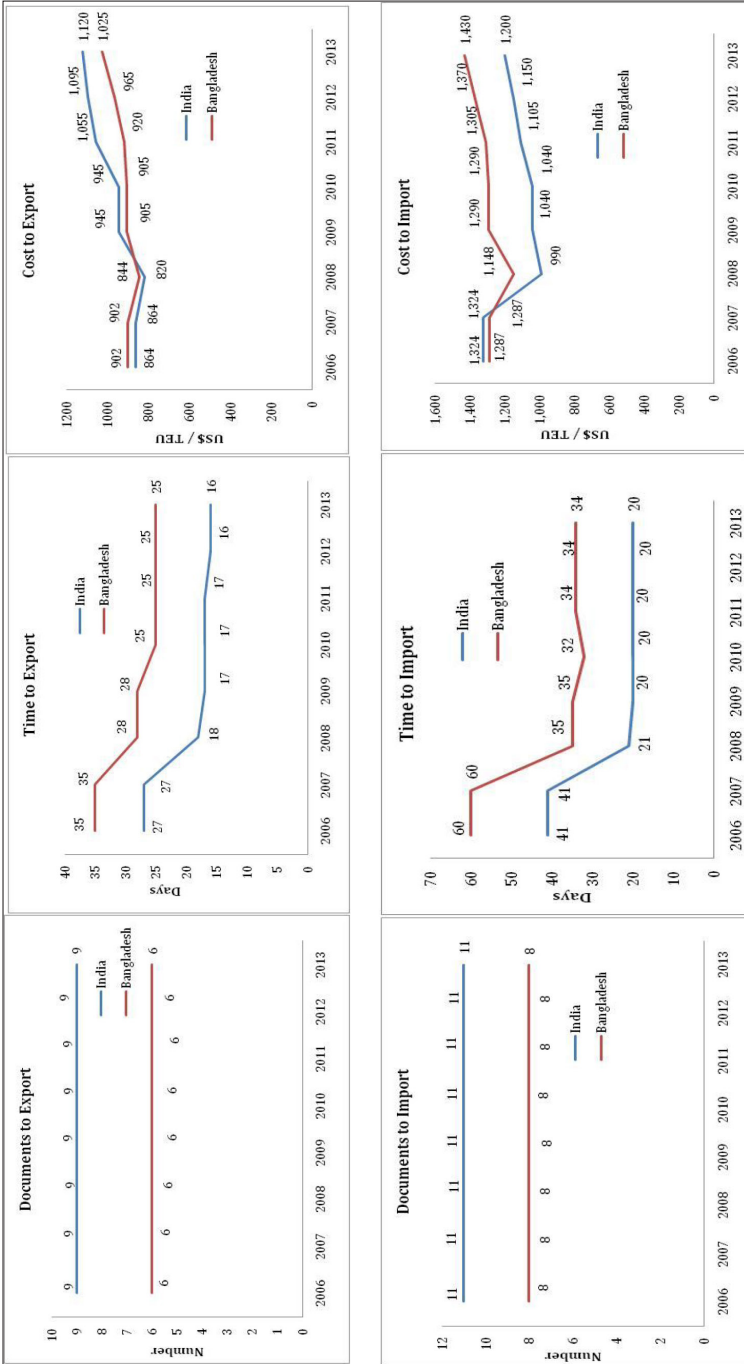
Table 6.2: TAB Indicators for NER vis-à-vis Other Countries/Regions, 2013

Indicator	NER*	India	Bangladesh	South Asia	OECD
Documents to export (number)	8	9	6	8	4
Time to export (days)	22	16	25	32	10
Cost to export (US\$ per container)	713	1,120	1,025	1,603	1,028
Documents to import (number)	9	11	8	9	5
Time to import (days)	28	20	34	33	10
Cost to import (US\$ per container)	794	1,200	1,430	1,736	1,080

Note: * Refers Guwahati only.

Source: Based on Doing Business Database, The World Bank.

Figure 6.1: Trends in Trading across Borders Indicators



Source: Drawn based on Doing Business Database, The World Bank.

Table 6.3: TAB Indicators for NER, 2013

City	Rank	Documents to export (number)	Time to export (days)	Cost to export (US\$ per container)	Documents to import (number)	Time to import (days)	Cost to import (US\$ per container)
Bhubaneswar	1	8	17	834	9	16	833
Chennai	2	8	25	541	9	19	593
Ahmedabad	3	8	17	946	9	18	978
Mumbai	3	8	17	945	9	21	960
Kochi	5	8	28	432	9	21	480
Kolkata	6	8	20	644	9	31	710
Guwahati	7	8	22	713	9	28	794
Ranchi	8	8	21	678	9	36	717
Bengaluru	9	8	25	783	9	25	1,024
Patna	10	8	19	941	9	32	985
Indore	11	8	21	912	9	35	981
Ludhiana	12	8	21	1,105	9	25	1,154
Hyderabad	13	8	26	1,012	9	23	1,084
Jaipur	14	8	22	1,289	9	22	1,384
New Delhi	14	8	25	1,077	9	28	1,158
Noida	16	8	25	1,077	9	27	1,187
Gurgaon	17	8	25	1,077	9	28	1,184

Source: Based on Doing Business Database, The World Bank.

The requirement of documents for export and import has been static in the NER. Table 6.4 presents the major documents that are required for the export and import of goods.⁴⁹ While the number of documents required is not very high, the NER's major disadvantage is that these documents have to be filled manually, particularly in the case of trade with neighbouring Bangladesh and Myanmar, whereas the same process has been conducted electronically for most of export and import procedures in Bangladesh.

However, the inland transportation and handling costs associated with major export and import procedures in the NER are lower than that of Bangladesh (Table 6.5). The completion of documentations for export and import procedures also takes relatively less time in the NER than in Bangladesh. While in importing goods, the NER does tend to take more time in completing (i) customs clearance and technical control,

(ii) ports and terminal handling, and (iii) inland transportation and handling forms, as compared to Bangladesh. The costs associated with inland transportation and handling for international trade in the NER can account for up to two-third of the total costs of export or import, while it is the cost of ports and terminal handling procedures, which contributes to almost 50 per cent of the total cost of export or import. Thus, document preparation takes a longer time than any other procedure in both export and import in the NER and Bangladesh.

Table 6.4: Major Export and Import Documents Recorded for NER, 2013

Sr. No	Export documents	Sr. No	Import documents
1	Bill of lading	1	Bill of lading
2	Certificate of origin	2	Cargo release order
3	Commercial invoice	3	Certificate of origin
4	Customs export declaration	4	Commercial invoice
5	Inspection report	5	Customs import declaration
6	Packing list	6	Inspection report
7	Technical standard/health certificate	7	Packing list
8	Terminal handling receipts	8	Technical standard/health certificate
		9	Terminal handling receipts

Source: Based on Doing Business Database, The World Bank.

Some export and import procedures are bit lengthier in the NER and also in Bangladesh. The more time-consuming the export or import process, the less likely it is that a trader in the NER will be able to compete in the international markets. The time it takes to complete export and import procedures and the subsequent delays associated with these procedures has been identified as a highly significant barrier to trade in the literature.⁵⁰ Lengthy procedures indeed create significant indirect costs that often far exceed the direct costs of trade transactions, including, in extreme cases, the complete loss of a shipment of value when that shipment contains perishable or time-sensitive goods. Lengthy procedures are also usually associated with increased uncertainties regarding the time of delivery, reducing opportunities for firms to take part in international production networks where just-in-time deliveries are essential.

Table 6.5: Nature of Export and Import Procedures, 2013

Nature of Export Procedures	NER*		Bangladesh	
	Duration (days)	Cost (US\$)	Duration (days)	Cost (US\$)
Documents preparation	12	204	14	225
Customs clearance and technical control	3	60	3	150
Ports and terminal handling	4	143	5	450
Inland transportation and handling	3	307	3	200
Totals	22	713	25	1,025
Nature of Import Procedures	Duration (days)	Cost (US\$)	Duration (days)	Cost (US\$)
Documents preparation	12	224	22	370
Customs clearance and technical control	5	128	3	150
Ports and terminal handling	8	143	7	650
Inland transportation and handling	3	300	2	260
Totals	28	794	34	1,430

Note: * Refers Guwahati only.

Source: Based on Doing Business Database, The World Bank.

In general, the NER is much more competitive than Bangladesh in completing export and import procedures. However, the trade cost incidence to the NER and Bangladesh is nonetheless, very high compared to other developing countries. The removal of these trade costs would be important in easing the NER's economic isolation.

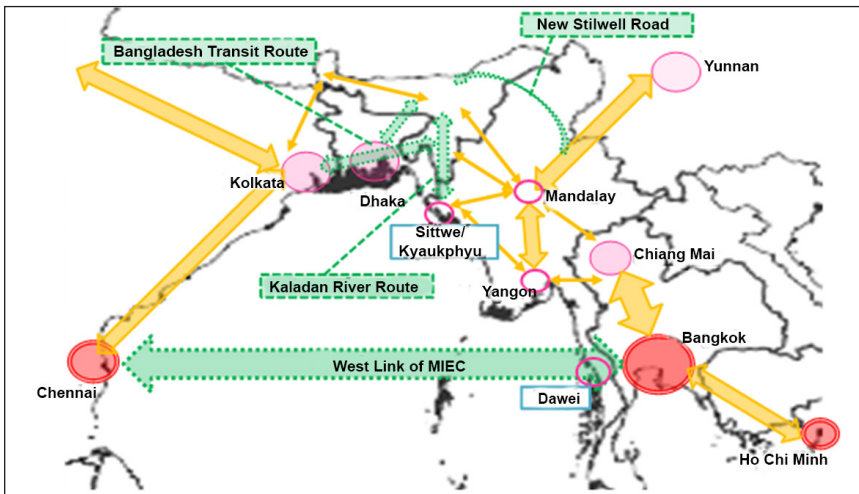
Hence, the NER should pay greater attention to the improvement of logistics, both on trade infrastructure and also on human capital. The bottom line that comes out from this study is that logistics improvement unambiguously increases trade. Therefore, trade facilitation and stronger logistics would be important in order to facilitate trade and production networks across borders in the NER.

6.3 International Connectivity

India has been implementing several connectivity projects in Myanmar. Projects to build and strengthen the physical connectivity between India and Myanmar have been drawn up by several flagship

studies in the recent past, most of which are primarily devoted to building India's connectivity with Southeast Asia. Two connectivity projects are worth mentioning which are ongoing and have India's involvement: (1) Trilateral Highway (TH), and (2) Kaladan Multi-modal Transit Transport Project (KMTTP). Besides these, there are three upcoming projects: (1) extending TH to connect Lao PDR, Cambodia and Vietnam, (2) a new highway to connect Cambodia and Vietnam, and (3) Delhi-Hanoi railway link. Two important projects are also important to strengthen bilateral connectivity: (1) BCIM-Economic Corridor, and (2) Rih-Tiddim Road. The Mekong-India Economic Corridor (MIEC), which connects South Asia with Southeast Asia, is another important project in the region, where India has indirect involvement. These projects would eventually facilitate the production networks between India, Myanmar and ASEAN, and many development zones would appear gradually (Figure 6.2). Enhancing connectivity with Myanmar and Bangladesh should be our utmost priority.

Figure 6.2: New Development Centres and Nodes



Source: ERIA (2012).

On the Trilateral Highway, the Tamu and Kalewa friendship road is being constructed with India's assistance. About 132 km has been completed and handed over to Myanmar. Work on the other 28 km is

still under progress. India has also undertaken the task of repairing and upgrading 71 bridges on the Tamu-Kalewa friendship Road, and the upgradation of the 120 km Kalewa-Yargyi road segment to highway standard, while Myanmar has agreed to undertake upgradation of the Yargyi-Monywa stretch to highway standard by 2016. This project would help in establishing trilateral connectivity from Moreh in India to Mae Sot in Thailand via Myanmar. Separately, the Government of India had taken initiatives to prepare Detailed Project Report (DPR) for construction of Chaungma-Yinmabin section (30 km); and upgradation from single lane to double lane of Yinmabin-Pale-Lingadaw section (50 km). India has also announced extension of the Trilateral Highway to Cambodia, Lao PDR and Vietnam.

The Mekong-India Economic Corridor (MIEC) will enhance trade and investment between India and Southeast Asia. The MIEC involves integrating the four Mekong countries, namely, Myanmar, Thailand, Cambodia and Vietnam with India. It connects Ho Chi Minh City (Vietnam) with Dawei (Myanmar) via Bangkok (Thailand) and Phnom Penh (Cambodia) and Chennai in India. A major investment will be required for the development of a port at Dawei and SEZ. This corridor, when completed, is expected to augment trade with India by reducing travel distance between India and the MIEC countries and removing supply side bottlenecks. The emphasis of the corridor is on expanding the manufacturing base and trade with the rest of the world, particularly with India. The corridor will enable economies of ASEAN and India to integrate further and collectively emerge as a globally competitive economic bloc.

Railways serve a key link, providing bulk trans-national movement of goods and services among the neighbouring countries. Its needs are four-fold: (1) to link India's Manipur with India's main railway corridor, (2) to link Imphal with Kalay in Myanmar (about 212 km), (3) to link Thanbyuzayat with Three Pagoda Pass in Thailand (110 km), and (4) to re-establish and renovate the railway networks in Myanmar. Harmonisation of railway tracks in the region is also essential. Without a compatible and strong railway system inside Myanmar, closer communication would be difficult. RITES

completed a preliminary study to establish a Delhi-Hanoi railway link in 2006. Although Railways is in service in major parts of these routes, about 238 km are missing links, which have to be built in Myanmar in order to have Delhi-Hanoi railways in operation. Renovation of the railway network systems in southern (Yangon to Dawei) and northern (Mandalay to Kalay) Myanmar is required.

Backend integration with regional connectivity projects is essential in order to reap the benefits of growing economic linkages between India and Southeast and East Asia. At present, the backend links in railways are poor. Projects for rail connectivity to the state capitals of Sikkim, Meghalaya, Mizoram, Manipur and Nagaland have been sanctioned by the Indian Railways. On 4 January 2014, the first Broad Gauge (BG) train from Guwahati to Tezpur via Rangiya started operating. In the interest of cross-border trade and production network, the following projects should be completed urgently: (i) railway lines between Harmuti-Itanagar and Dudhnai-Mendipathar, which will provide rail connectivity to all North Eastern states except Sikkim; and (ii) the establishment of the railway line from Jiribum to Imphal to Moreh.

7

Field Survey Results and Impact Assessment

This chapter presents the results of the primary survey conducted at the LCSs dealing India's trade with Bangladesh and Myanmar. The survey was conducted among selected traders and firms engaged in trade on the Indian side of the border. The findings of this primary survey help us understand the constraints that form barriers to trade and production networks between the NER and Bangladesh, on one hand, and, the NER and Myanmar, on the other. The costs arising from these barriers add to the service links cost of production networks across the border. It also helps us in undertaking appropriate policy measures to better facilitate trade and production networks in the region.

7.1 The Survey Findings

This field survey was conducted by means of a structured questionnaire developed in consultations with local partners. The survey was conducted by the researchers of the National Institute of Technology (NIT) Silchar, Tripura University in Agartala and Manipur University in Imphal. Before carrying out the field survey, proper training in conducting the survey was given to the surveyors.

Table 7.1: Land Customs Stations and Cities Covered by the Survey

State	LCS	City
Assam	Sutarkandi LCS** Karimganj Steamer Ghat / Ferry Station (KSFS) LCS	Silchar city Guwahati city
Meghalaya	Dawki LCS*	Shillong city
Manipur	Moreh LCS*	Imphal city
Tripura	Agartala LCS*	Agartala city

Notes: *To be replaced by ICP by 2014. **Identified as ICP in Phase II.

Source: Authors compilation.

We have covered five LCSs and five major cities in the NER with a break-up of four in Assam, and two each in Meghalaya, Manipur and Tripura, respectively. These LCSs and cities constitute a good amount of trade conducted by India's NER with Bangladesh and Myanmar. Table 7.1 presents the list of LCSs and cities surveyed in this study. Appendix 5 provides the questionnaire that was used in the field survey. Selection of the LCSs was based on the trends in volumes and the composition of trade. Apparently, these five LCSs jointly handle more than 75 per cent of the NER's annual trade with Bangladesh and Myanmar in recent years.⁵¹ The total sample size is 110 respondents, of which 90 refers to production networks between India and Bangladesh and 15 for India and Myanmar.⁵²

While information on both trade and production networks were collected through the field survey, we present only those responses on trade that linked with the bilateral production networks here. As may be seen from Appendix 5, our emphasis is on locating barriers that prohibited production networks to grow within Bangladesh and Myanmar. For the sake of simplicity, we are presenting only those findings which are supplementing the previous discussion. In this chapter, we only provide aggregate information on trade facilitation and logistics. However, a surveyed database on specific LCS can be provided to the interested reader(s) on request.⁵³

7.1.1 Features of LCSs

Tables 7.2 presents the basic profile of LCSs, which were surveyed in this study.

- Among the five LCSs surveyed, the Agartala LCS is the closest to the state capital by virtue of being only 3 km away, whereas Sutarkandi and Karimganj Steamer Ghat and Ferry Station (KSFS) LCSs in Assam are located over 300 km away from the state capital Guwahati. On the other hand, Moreh and Dawki LCSs are located about 110 km from Imphal city and 82 km from Shillong city, respectively.
- There are also wide variations in topography. Agartala is the most advantageous with regards to communication. Agartala's internal and external communication links are relatively better, as compared to other LCSs in the NER, and it is easily accessible from the state capital.
- Due to locational advantages, administering the Agartala LCS is relatively easier than other LCSs in the NER. Working hours in most of the LCSs are 10.00 – 16.00 hrs. everyday.
- Trade routes between the NER and bordering countries are overland except the KSFS in Assam, which shares a river border with Zakiganj located in neighbouring Bangladesh.

Table 7.2: Basic Profile of LCSs

LCS	State	Bordering Country	LCS in Bordering Country	Trade Route	Working Hours	Distance from State Capital (km)*
Dawki	Meghalaya	Bangladesh	Tamabil	Dawki-Tamabil	10 am to 5 pm	82
Sutarkandi	Assam	Bangladesh	Sheola	Sutarkandi-Sheola	6 am to 6 pm	338
KSFS	Assam	Bangladesh	Zakiganj	River Kushiara	6 am to 6 pm	324
Agartala	Tripura	Bangladesh	Akhaura	Agartala - Akhaura	9 am to 6 pm	3
Moreh	Manipur	Myanmar	Tamu	Moreh – Tamu	9 am to 5 pm	110

Note: *By road.

Source: Compiled by authors.

7.1.2 Trade at LCSs

Table 7.3 presents the major goods traded at the selected LCSs in the NER.⁵⁴ The following points are worth noting:

- The LCSs in Meghalaya handle the export of minerals to Bangladesh, of which coal and limestone are the major export items. The Dawki LCS also handles import cargoes such as food products, cement, etc., coming from Bangladesh. Limestone is used in the production of cement in Bangladesh.
- Unlike Meghalaya, LCSs in Assam handle both export and import to and from Bangladesh, showing wide trade varieties. Among the two LCSs we surveyed in Assam, Sutarkandi is the largest LCS. It handles minerals, processed foods and agriculture goods, having relatively higher trade complementarities. KSFS, on the other, handles knitted and crocheted synthetic fabric as import items, and ginger, oranges, dry fish and other citrus fruits as export items. Horticulture products like orange are exported through both Sutarkandi and KSFS as inputs to the production of fruit juices and processed foods in Bangladesh.
- Trade at Agartala is one-sided; there are quantitatively more imports than exports. Import from Bangladesh through Agartala varies from agriculture and food items to cement and plastic to textile and clothing. The trade at Agartala LCS has been growing sharply due to the local demand on both sides of the border.
- Trade at Moreh is diverse, ranging from agriculture and food, on one side, to pharmaceuticals, on the other. In general, the border trade at Moreh is of a transit trade nature. The volume of trade handled by the LCS is miniscule as compared to the informal/illegal trade that takes place through the local trade point, better known as 'Gate No. 2'.⁵⁵ Trade taking place through 'Gate No. 2' includes the items indicated in Table 7.3. Imports consist of agricultural commodities including beans, vegetables and fruits, besides electronic equipment. Quite clearly, the goods that are traded through the informal/illegal channels are well beyond the 62 items that have been included in the Border Trade Agreement

between India and Myanmar in December 2012. Most of the products coming through Moreh do not originate from Myanmar; they are produced in China or elsewhere.

7.1.3 Infrastructure at LCSs

The availability of physical infrastructure at LCSs is presented in Table 7.4(a). We consider only those physical infrastructure facilities which are available “on border”. The following observations are worth noting:

- Electricity is available in all the LCSs surveyed, but the quality of electricity varies. Most of the LCSs face frequent power-cuts all throughout the day such as in Moreh, where electricity is available only for 4 to 5 hours in a day.
- The telephone facility (landline) is not available in many of the LCSs. Mobile communication facility except BSNL does not work at the Moreh LCS.⁵⁶ Internet is also not available, except perhaps in Agartala.

Table 7.3: LCS-wise Traded Goods in 2012-13

LCS	State	Border with	Goods Exported	Goods Imported
Dawki	Meghalaya	Bangladesh	Coal Limestone/ Quicklime Quartz stone Boulders	Food items Fireclay bricks
Sutarkandi	Assam	Bangladesh	Coal Lime Fruits, incl. orange Cotton Vegetable Furniture Ginger Onion Citrus fruits Vegetablea	Food products Soft drinks Mosquito net Citrus fruits Furniture Glass Plastic furniture Sarees Synthetic fruit drinks

Table 7.3 continued...

Table 7.3 continued...

			Lime Fresh fruits Machineries Orange Dry chilli Turmeric Green chilli	
KSFS	Assam	Bangladesh	Bamboo Soya food RHGS Cotton Radish Umbrella Coal Fruits / Citrus fruits Dry chilli Orange Rice Poultry feed	Aromatic water Bakery products Beverage Cement RMGs Cracker Dry fish Furniture Food items Fried vegetables Fruit drinks Glass sheets, Hilsa fish Maggi cup Manufactured goods Mosquito net Nuts Orange juice Potato “Pran” products Shampoo Soap Synthetic food items Synthetic fruit drinks Tissue paper Vanaspati Vegetable Wafer Washing powder

Table 7.3 continued...

Table 7.3 continued...

Moreh	Manipur	Myanmar	Fertiliser Sugar Life saving drugs Agarbati Bicycle spares Leather products X-ray and photo paper Paints & varnish Cotton fabrics Handloom textiles Stainless steel Blades Salt Cosmetics Spices Menthol Bicycle Motorcycle Redwood Mosquito coil Soyabari Electric coil Bitumen Wheat flour Machinery Steel Bleaching powder Horticulture items	Precious stones Dry ginger Reed broom Pulses Resin Betel nut Bean Rice Turmeric Timber Sunflower Red Kidney Bean Teakwood Rapeseed Fresh vegetables Fruits Tobacco Sesame Soyabean Katha Pearls Kuth root Onion Spice Garlic Chilly Coconut Mosquito coils Gram Electric equipment Garments Furniture Candle Electronic equipments Blanket Imitation jewellery Petrol Fish
-------	---------	---------	---	---

Table 7.3 continued...

Table 7.3 continued...

Agartala	Tripura	Bangladesh	Raw hides Beverage Broken Stone Dry fish Ginger Plastic articles Playing cards Potato Skin Textile Wall clock	Animal feed Beverage Broken or crushed stone Cement Ceramic tiles Cosmetics & toilet products Cotton waste Dry fish Edible oil Fish Food items Furniture Jute rope Molasses Plastic articles Resins Textile goods
----------	---------	------------	--	---

Source: Field Survey.

Table 7.4(a): Availability of Physical Infrastructure at LCSs

Facilities/ LCS	Dawki	Sutarkhandi	KSFS	Agartala	Moreh
Electricity	Yes	Yes	Yes	Yes	Yes
Telephone	Yes	Yes	Yes	Yes	Yes
Internet	No	No	No	Yes	No
EDI	No	No	No	No	No
Weighbridge	No	Yes	No	Yes	Yes
Warehouse	No	Yes	No	No	No
Cold storage	No	Yes	No	No	No
Parking yard	No	Yes	Yes	No	Yes
Transshipment platform/ transit sheds	No	Yes	Yes	No	No
Dumping sheds	No	No	Yes	No	No
Drinking water	Yes	Yes	Yes	Yes	Yes
Drivers rest room	No	No	Yes	No	No
Passengers rest room	Yes	No	No	Yes	No
Health centre	No	No	No	Yes	No
Hotels and restaurants	No	No	No	No	No

Table 7.4(a) continued...

Table 7.4(a) continued...

Separate entry and exit gates	No	No	Yes	No	No
Banks	Yes	Yes	Yes	No	Yes
Courier/ Post office	No	Yes	Yes	Yes	No
Servicing centre/ Vehicle repair shops	No	Yes	Yes	No	No
Food testing laboratory	No	No	No	No	Yes*
Container handling yard	No	No	No	No	No
Container handling equipment	No	No	No	No	No
Currency exchange	No	No	No	No	No

Note: *Done at Imphal.

Source: Field Survey based on a sample size of 110.

- Absence of consistently good quality electricity has demotivated Customs from using the EDI facility. Virtually, the EDI facility is completely missing in LCSs in the NER. Therefore, trade is being handled manually.
- Unfortunately facilities like weighbridges, warehouses, cold storage, etc., which are essential for trade, are not available except at Sutarkandi in Assam and Agartala in Tripura (and even then, it is only the weighbridge).
- There are also wide gaps in the availability of supporting facilities such as health centres, rest rooms, hotels and restaurants, etc. across the LCSs. The KSFS LCS at least provides a driver's rest room, a facility that the others do not have. The Agartala LCS has a health centre, unlike other LCSs. However, hotels and restaurants are not available.
- Except for KSFS, none of the LCSs have a separate entry and exit gate for the export and import of goods.
- The availability of banks and testing laboratories are necessary for trade at the border. While banks are available at some LCSs such as Moreh, KSFS, Sutarkandi, and Dawki, there are no food testing laboratories at the border except at Moreh, where the testing is conducted at Imphal, which is located 110 km from the border.

- Most of the LCSs surveyed suffer from the unavailability of non-physical infrastructure facilities (which is also known as soft infrastructure) for trade with Bangladesh and Myanmar (Table 7.4(b)). Barring uniform application of customs procedures, none of the interviewed respondents confirm the availability or benefits of facilities. In sharp contrast, e-submission of customs documents is becoming increasingly popular in India, while NER exporters and importers are yet to be familiar with it. The documentation process for export and import is relatively transparent and not heavy, but is still handled manually (Table 7.4(c)). In other words, the NER's documentation process for trade through the land border is conducted manually, and thus faces delays and incurs additional costs. To facilitate production networks within and across borders, electronic submission of trade documents is must.

Table 7.4 (b): Availability of Non-Physical Infrastructure at LCSs

Particulars	Dawki	Sutarkandi	KSFS	Agartala	Moreh
Uniform application of customs procedures	Yes	Yes	Yes	Yes	Yes
Harmonisation and simplification of customs procedures and practices	No	No	No	No	No
Capability for e-submission of customs documentations	No	No	No	No	No
Acceptance of electronic signature	No	No	No	No	No
Customs valuation	No	No	No	No	No
Fast-track cargo clearance	No	No	No	No	No
24x7 customs	No	No	No	No	No
Information about standards and application	No	No	No	Yes	No
Transit of goods	No	No	No	No	No
Dispute settlement mechanism	No	No	No	No	No
Trade through L/C	Yes	*	*	*	No

Note: *Some traders prefer trade through L/C and some uses advance payment or informal arrangement.

Source: Field Survey based on a sample size of 110.

Table 7.4 (c): Major Trade Documents for a Standard Consignment

Export Cargo	Import Cargo	Submission
Shipping bill	Bill of entry	Manual
Export application	Custom duty receipt	Manual
Customs declaration form	Security clearance	Manual
List of procurement of goods	Declaration	Manual
Consignment note	Licence	Manual
Invoice		Manual

Source: Field Survey based on a sample size of 110.

**Table 7.5: Required Improvements at LCSs:
Suggestions of Respondents**

LCS	Improvement/Provision of Facilities
Dawki	<ul style="list-style-type: none"> • Better road connectivity • Provision of vehicle scanner
Sutarkandi	<ul style="list-style-type: none"> • Improved approach road • Better administrative building • Availability of electricity • Establishing a testing lab
KSFS	<ul style="list-style-type: none"> • Establishing administrative building • Building a warehouse • Construction of weighbridge • Availability of separate dumping ground • Improvement of electricity
Agartala	<ul style="list-style-type: none"> • Requirement of vehicle scanner • Establishment of health office/quarantine • Improvement of electricity (or back-up system)
Moreh	<ul style="list-style-type: none"> • Improvement of customs infrastructure • Setting up animal/plant quarantine facilities • Improvement of electricity and telecommunication • Setting up of banks • Settling border dispute with Myanmar • Replacement of old friendship bridge • Transit and cargo handling arrangement between India and Myanmar

Source: Field Survey based on a sample size of 110.

7.1.4 Improvement of Infrastructure for Promoting Production Networks

- The respondents’ suggestions regarding the improvement of facilities at the LCSs are mostly related to the improvement or establishment of physical infrastructure (Table 7.5). The requirements of Agaratala and Dawki LCSs are basically related to security at the border, whereas some LCSs need improvements in connecting roads (Dawki, Sutarkandi, Moreh).
- All LCSs suffer from power cuts. Electricity supply must be improved across all the LCSs surveyed in this study.
- Respondents have also suggested improvement in security and banking relations at LCSs (Table 7.6).
- The testing laboratory is very important as it helps remove NTMs. Unfortunately, none of the LCSs have a testing laboratory at the border, resulting in delays and corrupt practices.

Table 7.6: Problems with Border Authorities: Respondents Opinion

LCS	Problems with border security agencies	Problems with standard or testing	Problems with bank	Problems with Customs	Problems with transport and communication
Dawki	None reported	Lack of testing lab	None reported	None reported	None reported
Sutarkandi	Security agencies seek bribe	Testing lab is in Guwahati	Need currency exchange and faster banking system	None reported	<ul style="list-style-type: none"> • Linking road from Silchar, Shillong and Guwahati has to be improved
KSFS	Security agencies seek bribe	Testing lab is in Guwahati	Need currency exchange and faster banking system	None reported	<ul style="list-style-type: none"> • Linking road from Silchar, Shillong and Guwahati to be improved • Bridge at Sadar Ghat in Silchar to be constructed.

Table 7.6 continued...

Table 7.6 continued...

Agartala	Security agencies seek bribe	Testing is a big problem; results take lot of time	Inefficient banking leading to delays in payment	Customs building needs renovation	None reported
Moreh	Security agencies seek bribe	Testing lab has been established recently, but training & capacity building is needed	Bank exists but the trade-related operations are non-functional	Customs building needs renovation	<ul style="list-style-type: none"> • Need improvement of road between Imphal and Moreh. • Building railway line from Jiribam to Imphal. • Air connectivity between Dhaka, Imphal, Mandalay and Yangon.

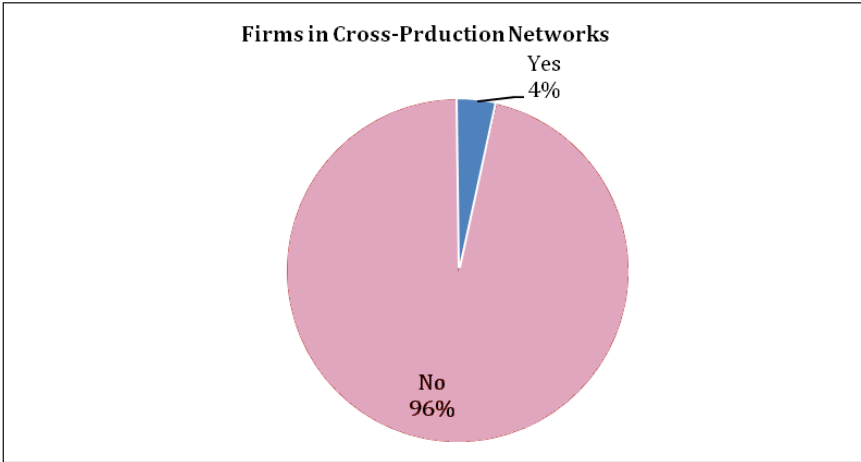
Source: Field Survey based on a sample size of 110.

- Transport connectivity has to be improved. Respondents suggested some measures such as improving the linking road from Silchar, Shillong and Guwahati; the construction of a new bridge in Silchar on the Barak river; improving the road between Imphal and Moreh; the construction of a railway line from Jiribam to Imphal; and direct air connectivity between Dhaka, Imphal, Manalay and Yangon.

7.1.5 Potential Industries for Production Networks: Respondents Opinion

In this study, we have observed that out of the sample size of 110 firms, 96 per cent are not engaged in cross-border production networks (Figure 7.1). However, respondents are well aware of the emerging trade environment.⁷ We, therefore, presume responses are statistically significant. Out of 110 respondents directly associated with the NER's trade with Bangladesh and Myanmar, we find 74 per cent of the respondents are skilled, whereas 22 per cent and 4 per cent are semi-skilled and unskilled, respectively. Therefore, the respondents are assumed to be relatively aware of the need and benefits of production networks in the NER.

Figure 7.1: Types of Surveyed Firms

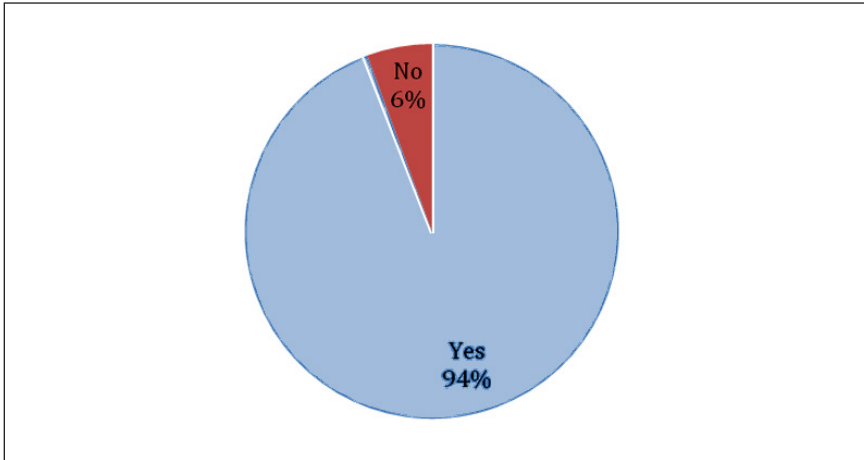


Source: Drawn by authors.

Before we draw a policy conclusion on production networks, we need to know whether or not respondents think that scope for production networks between the NER and Bangladesh/the NER and Myanmar has increased over the last five years. Our survey indicates that 94 per cent of respondents think scopes have increased, and a minor 6 per cent do not agree (Figure 7.2). This informs us of the optimism associated with production networks. About 87 per cent of the respondents think cross-border production networks between the NER and Bangladesh/the NER and Myanmar is to rise (Figure 7.3).

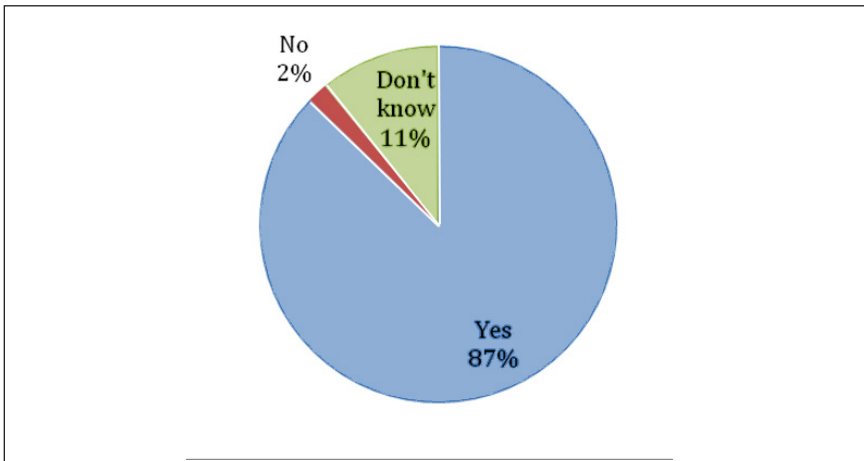
We then asked the respondents to identify the sectors/industries which have potentials for cross-border production networks with Bangladesh and Myanmar. Table 7.7 presents the respondents' views on industries having network potentials across the border. The industries identified through the primary survey fall in the line with the ones we identified through the secondary analysis in previous chapters. In other words, driven by regional demand, both secondary and primary analyses indicate a set of industries for the NER, ranging from agro and food processing to electronics, which can be promoted for cross-border production and trade. Besides, services industries like health, education, tourism, construction, etc., also have the potentials to become active cross-border services networks.

Figure 7.2: Do You Think Scope for Production Networks between the NER and Bangladesh/the NER and Myanmar has increased over the Last 5 Years?



Source: Drawn by authors based on responses to field survey.

Figure 7.3: Do You Think Cross-border Production Networks between the NER and Bangladesh/the NER and Myanmar to Rise in Coming Days?



Source: Drawn by authors based on responses to field survey.

Table 7.7: Potential Sectors/Industries for Cross-border Production Networks

Assam	Tripura	Meghalaya	Manipur
Agro-based industries	Rubber-based industry	Agro and food processing industries	Health services
Food processing industries	Bamboo stick (for Agarbatti)	Cement	Education services
Plastic articles	Food processing industry (pineapple, Jackfruit)	Horticulture	Construction services
Ready-Made Garments	Ready-Made Garments	Education services	Food processing industry
Cement		Tourism services	CC Tea (Green tea)
Confectionaries		Handloom industries	Electronics
Electronics		Electronics	Agro-based industries
			Handloom industries
			Handicrafts
			Timber products

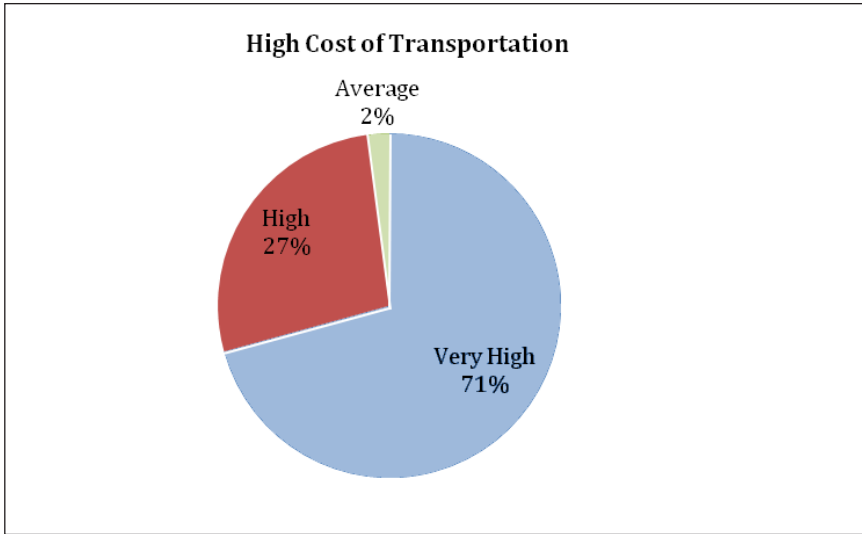
Source: Opinions based on Field Survey of a sample size of 110 respondents.

However, there are major constraints identified by the respondents, of which high transportation cost is the major barrier to production network. About 71 per cent of respondents agree that it is the strongest barrier, whereas none think it is unimportant (Figure 7.4). In order to develop production networks, we need to reduce transportation costs through an improvement of infrastructure, whereas lower transportation costs can have a multiplicative effect on the total cost of production of a final product, thereby reducing the service link costs. The perception of the respondents indicates that there is further scope for improvement in trade facilitation.

Based on the opinions of the respondents, we can now identify major barriers to production networks in the region. Figure 7.5 presents a list of such barriers. Many respondents feel that although bureaucracy, red-tapeism, corruption and bribery at check posts are

common, adequately available infrastructure is the key to the NER’s participation in production networks within and across the borders. Ergo removing these bottlenecks should be the priority objectives of the governments of the NER states and India.

Figure 7.4: Transport Costs: Opinion of Respondents



Source: Drawn by authors based on responses to field survey.

**Figure 7.5: Barriers to Production Networks:
Respondents’ Opinions**

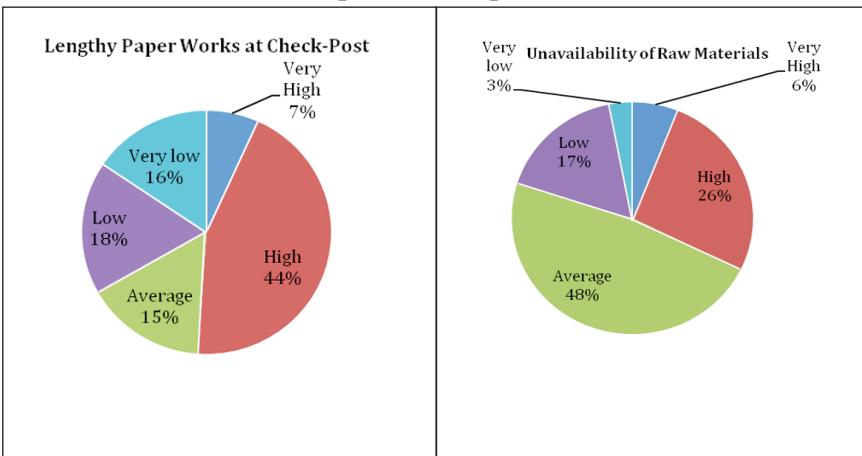
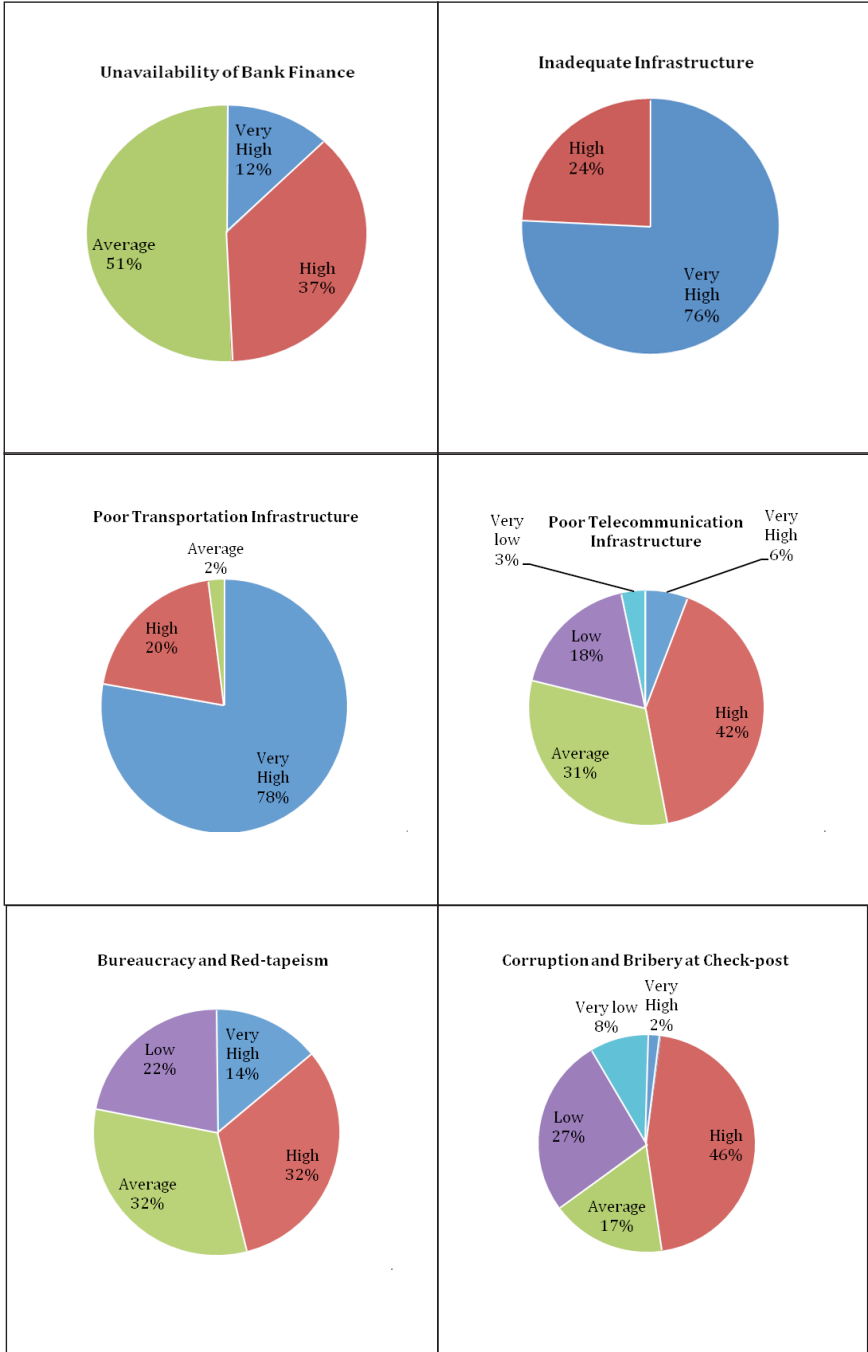


Figure 7.5 continued...

Figure 7.5 continued...



Source: Drawn by authors based on responses to field survey.

Table 7.8: Suggestions for Improvement of Cross-border Production Networks

Assam	Tripura	Meghalaya	Manipur
Infrastructure improvement	Rail connectivity between India and Bangladesh is urgently required to minimise transportation cost and time.	Improvement of border infrastructure	Visa on arrival at Moreh.
Build people to people contact	Infrastructure facilities at LCS have to be increased.	Road network has to be improved	Presence of export and import offices in Imphal.
Government guidance on investment	Facility for e-submission of paper work is urgently needed.	Require laboratory for food testing	Build platform for traders/ manufacturers
Political will	Road and rail connectivity have to be improved.	Allow international flights in NER.	Make available credit facility
	Various types of certifications are required for various exportable as well as importable items. Uniform certification especially for NER is urgently needed.	Railway line should be extended in Shillong.	Organise seminars or conferences to update business people on trade and foreign policies as well as listening to their grievances
	Require laboratory for food testing.	Government support for capacity building in trade facilitation.	Develop warehousing facilities, both at Imphal and Moreh.

Table 7.8 continued...

Table 7.8 continued...

			Restrict on frequent bandh and blockades.
			Remove restriction on textile export items.
			Cooperation of Government officials to support local business.
			Investment to promote health facilities
			Legalising of supply of raw materials and price from Myanmar
			Promote entrepreneurship
			Remove stringent RBI Guideline on border trade at Moreh dated 16 October 2000.
			Allow MFN trade at Moreh and remove the current positive list.
			Improve banking services at Moreh including foreign exchange
			Training and capacity building on trade procedures to local firms and individuals

Source: Field Survey based on a sample size of 110.

7.1.6 Suggestions for Strengthening Production Networks

Respondents have recommended a list of measures to promote the NER's production networks with Bangladesh and Myanmar (Table 7.8). Their suggestions cover a wide spectrum of areas, ranging from development of infrastructure to visa on arrival facilities. Nonetheless, these are good recommendations, which need the utmost attention of our policy makers for implementation. There are suggestions for the improvement of logistics and trade facilitation in the NER such as setting up testing laboratories, electronic submission of trade documents, improvement of air, road and rail connectivity, etc., in the NER.

Increased investment from the government is required for the development of infrastructure, and particularly for the improvement of the transport and telecommunication infrastructure in the NER. There are some recommendations for organising dissemination workshops or instituting visa on arrival procedures at Moreh, Imphal and Guwahati, which can be implemented without much additional investment.

7.2 Impact Assessment of Logistics and Trade Facilitation on Trade Flows and Production Networks

We use an Ordered Probit analysis to understand the relation between categorical variables and trade flows. The perception of individuals is ranked from a scale of 1 to 5 where 1 is taken to be highest barrier, and 5 is taken to be the lowest barrier. We have performed the Ordered Probit regression on the categorical variables on which the ordered responses were received through the survey. Table 7.9 summarises the Ordered Probit regression results.

Regarding the infrastructure barriers to trade, logistics indicators like availability of telecommunication and border warehousing facilities in model 1 and trade facilitation indicators like faster paper work at check-posts in model 2 variables affect the outcome probabilities significantly. Other variables are not statistically significant but having correct sign. Thus, the

perceptions of individuals about the possible barriers to trade are significantly related to either logistics facilities or trade facilitation. Put simply, the perception is that trade flow depends on the reduction in trade barriers through better trade facilitation and logistics infrastructure.

Table 7.9: Ordered Probit Regression Results
DV = Trade with Bangladesh and Myanmar

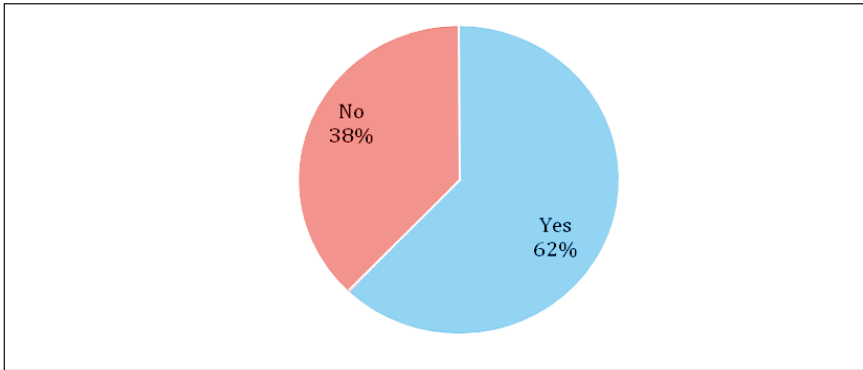
Variables	Estimated Coefficients	
	Model 1	Model 2
Availability of raw materials	-0.122 (0.84)	-0.065 (0.49)
Availability of transportation infrastructure	-0.044 (0.17)	
Availability of telecommunication infrastructure	-0.368 (1.97)*	
Less bureaucracy and red-tape	-0.061 (0.29)	-0.250 (1.32)
Availability of warehouse facilities at border	-0.644 (3.07)**	
Availability of faster handling equipment at border	-0.074 (0.29)	
Less corruption and bribery at check-post		-0.131 (0.88)
Availability of trained human resources at border		-0.378 (1.51)
Faster paper work at check-post		-0.362 (2.04)*
Observations	99	99
Pseudo R ²	0.309	0.228
Wald chi ²	31.42	34.41
Prob > chi ²	0.00	0.00

Notes: 1. All the values are changes in probability of having an outcome value of 5 in the ranking of the respective categorical variables. 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Having assessed the relationship between trade flow and trade facilitation, we can then attempt to assess the relationship logistics and trade facilitation have with production networks. When asked

whether improvement of trade facilitation and logistics is one of the responsible factors in promoting production networks, 62 per cent of the respondents agreed that it was (Figure 7.6). However, the remaining 38 per cent felt otherwise – trade facilitation and logistics have not succeeded in promoting production networks across borders in the NER. Therefore, the overall response is rather mixed. We shall attempt to understand whether or not the opinions of the respondents regarding the production networks show any relation with trade facilitation and logistics. We take the help of Logit regression to assess this argument.

Figure 7.6: Opinion of Respondents on Trade Facilitation and Logistics to Encourage Production Networks



Source: Drawn by authors based on responses to field survey.

In a categorical regression (here, for instance, logistic regression), the binary variable trade facilitation and logistics generate production network (1 = Yes and 0 = No) can be regressed on categorical variables, which represent the state of trade facilitation and logistics services. Thus, one can answer the question if it is likely from the perception of those who are involved in cross-border trade that trade facilitation and logistics will facilitate production networks.⁵⁸ The independent variables are categorical ranking responses on a scale of 1 to 5 regarding the perception of barriers to trade and production networks by individuals. A value of 5 implies the least barrier of the concerned variable and 1 implies a high barrier in the mind of the respondent.

Table 7.10: Logit Regression Results: Trade Facilitation and Logistics to Encourage Production Networks

DV = Log Odd Ratio that Production Networks Increased

Variables	Estimated Coefficient
Availability of raw materials	-2.122***
	(1.353)
Better transport infrastructure	-0.311
	(0.370)
Better telecommunication infrastructure	0.727*
	(0.487)
Availability of bank finance	-0.314
	(0.765)
Availability of warehouse	1.395**
	(0.877)
Availability of faster cargo handling equipment	-0.071
	(0.727)
Availability of trained human resources	-1.765*
	(0.954)
Less corruption and bribery	-1.175**
	(0.497)
Supporting bureaucracy and no red-tape	1.019**
	(0.568)
Less paper works	1.565**
	(0.754)
Observations	99
Pseudo R ²	0.656
Wald chi ² (11)	121.04
Prob > chi ²	0

Notes: Robust standard errors in parentheses . *** p<0.01, ** p<0.05, * p<0.1

Table 7.10 presents the Logit regression results. It is found that in regards to individual perception, only four trade barriers (or facilitation variable) affect production networks, which are less paper work, supporting bureaucracy and no red-tape, better telecommunication infrastructure and a greater availability of warehouses. These are all statistically significant variables. On the

other, better facilitation in terms of infrastructure like transport, availability of raw materials, less corruption and bribery, etc., do not seem to be important in increasing the probability of a positive response regarding production networks. In other words, since in the perception of individuals who are engaged in trade along LCSs in the NER, better logistics infrastructure and trade facilitation may generate opportunities for cross-border production networks with Bangladesh and Myanmar. Notwithstanding the aforesaid results, the usual caveat is that the Logit regression result needs deeper introspection. Nevertheless, the perception is mixed and the connection of the perception variables to production network needs to be unraveled through follow up surveys, concentrating on the specific variables.

8 Conclusions

Reduction in the transaction costs assist fragmentation and are propagated by efficient logistics services, liberalisation of trade in services and investment policy regimes.⁵⁹ Efficiency in logistics services is, therefore, an important factor contributing not only to the expansion in trade and production networks within or across the NER but also in building their productive capacities in networked countries.

Improvements in logistics include four core elements, viz. the traditional transport costs, the organisation of the supply chain, and the transactional and physical environments in which freight distribution evolves. This enables private firms to expand their opportunities more efficiently such that a product or its component inputs cross international borders several times during the process of production in accordance with related economic incentives (lower trade barriers or factor intensity as production stages may be labour-intensive, capital-intensive or use skilled labour intensively). In such a scenario, service link costs can have a multiplicative effect on the total cost of producing a final product.⁶⁰

Efficiency in logistics services is also dependent to a large extent on 'Behind the Border' measures. Owing to the diversity evident in the range of logistics services that facilitate trade, the efficient regulation of logistics services is sector specific. The systems of

logistics in the NER must be developed further to successfully meet the strains of fragmentation.

To effectively fragment production, an efficient and improved service link is important for expansion of production networks across a region. Table 8.1 suggests some policy measures to enhance production networks in the NER.

Table 8.1: Policy Measures to Enhance Production Networks in the NER

	Reduction in network set-up cost	Reduction in service link cost	Reduction in production cost per se
Trade agenda (high-level FTAs)	<ul style="list-style-type: none"> • Investment liberalisation • IPR protection • Competition policy 	<ul style="list-style-type: none"> • Tariff removal and accept MFN trade at border • Trade facilitation including improvement in border infrastructure and transit of goods • Enhance institutional connectivity 	<ul style="list-style-type: none"> • Liberalisation of production-supporting services • Investment liberalisation • Availability of banking, finance and insurance facilities
Development agenda (high level trade facilitation)	<ul style="list-style-type: none"> • Investment facilitation/promotion • Electronic transaction 	<ul style="list-style-type: none"> • Enhancing physical connectivity (including hard and soft logistics infrastructure) • Reducing transaction cost in economic activities • Capacity building 	<ul style="list-style-type: none"> • Availability of raw materials • Upgrading infrastructure services such as electricity supply • Building SEZs • Enhancing agglomeration effects through SME development • Strengthening innovation

Source: Adapted from Kimura (2012).

Our illustrations of existing and emerging production networks between India and Bangladesh suggest that the pattern of division of labour is simplistic. It appears to be an the early stage of cross-border production networks. Production networks between India and Bangladesh are yet to show complicated divisions of labour since no more than two countries are involved in a sophisticated

combination of intra-firm and inter-firm transactions. Most of the Indian exports to Bangladesh, including those that are exported from the NER except limestone, are almost exclusively transported to Bangladesh by road (by trucks to be precise).⁶¹ Therefore, we argue that logistics efficiency is crucial to production networks between India and Bangladesh.

The field survey conducted across five LCSs and five cities in the NER clearly shows that the LCSs lack infrastructure required for handling border trade. Unavailability of electricity, poor quality roads, manual handling of trade documentations, and many other such barriers are making trade at the border expensive and time consuming. These are negatively affecting the growth of trade as well as that of production networks. As a result, we find unofficial (informal) trade of greater volume at the border. The high transaction cost and time at the border can be mitigated through implementation of trade facilitation measures and improvement of logistics.

Our assessment is that trade creation can only take place only if corrected measures are taken, in particular to improve the quality of infrastructure at the border, connectivity to the rest of the state and the region and improvements in the supply capacities from the Indian side. Our view is that trade flows can be improved by adopting two sets of strategies separately for Bangladesh and Myanmar.

The India-Bangladesh trade can be increased manifold through strengthening production networks, provided appropriate investments are made on two sides of the border on projects that give rise to trade complementarities. For instance, the NER, which is a hub of fresh fruits and vegetables can act as a source of raw materials for the food processing industry in Bangladesh. Furthermore, Indian entrepreneurs and technologists can help strengthen the Bangladesh food processing industry by enabling further development of this sector. Indian investment may be taken up primarily in the SME sector. Another industry that can be considered for such development is the textiles and clothing industry.

In case of trade with Myanmar, efforts would have to be made by both the NER states and the Government of India to address the supply-side bottlenecks at Moreh in Manipur. The Myanmar government has to take steps to improve the trade infrastructure at Tamu, particularly availability of electricity. Indian government may consider providing electricity to Tamu in Myanmar. The NER governments have been arguing that industrialisation must precede the opening up of trade. The government has argued that local industry such as agro-processing, horticulture, textiles, etc., must be encouraged through the employment-led expansion of the regional market, which can result in substitution of imported products by local produce, while at the same time servicing external demand. It has further been pointed out that there is ample scope for the development of manufacturing/processing units for medicines, rubber goods, cycles and cycle parts, pharmaceuticals, edible oils, petroleum products, cement, RMGs, etc.

While dealing with non-tariff policy-related trade costs, improving the efficiency of sea and land ports and providing access to information and communication technology facilities is essential to reducing trade costs.⁶² Policies aimed at liberalising logistics and information technology services and increasing competition among service providers should, therefore, be readily considered, with a view to maximising efficiency at any given level of infrastructure development.

In particular, transport infrastructure and trade facilitation can enhance the intraregional trade in ASEAN.⁶³ In context of South Asia, De (2012) found that a 10 per cent fall in transaction costs at borders has the effect of increasing a country's exports by about 2 per cent, where the implementation of e-filing of trade documents has been found to act as a significant determinant of trade flows, thereby indicating that electronic submission of trade documents is helping the trade grow in South Asia.

The fact is that the NER, Bangladesh and Myanmar are far behind the South Asian average in undertaking trade facilitation measures. In general, information on the actual implementation

of specific trade facilitation reforms is generally lacking. Based on a field survey data on the progress 26 Asian countries have made in implementing various trade facilitation and paperless trade measures, Wang and Duval (2013) have shown us that all countries have implemented at least some trade facilitation measures.⁶⁴ For example, according to the same article, many countries have established customs automation systems and are developing national single window systems, but much work remains to be done in terms of implementing cross-border exchange and recognition of trade-related documents, as well as in facilitating transit arrangements. India (NER), Bangladesh and Myanmar should then take urgent steps to install measures of paperless trade. To a great extent, simplification of trade processes and procedures is envisaged as key to improving competitiveness of exports across most of the countries in South Asia and Myanmar and some parts such as the NER. Three critical trade facilitation measures are to be implemented in the NER: (i) harmonisation and simplification of international trade procedures, (ii) harmonisation of related data requirements with the international standard, and (iii) implementation of single window.⁶⁵

Finally, we need to engage the NER states more actively in the closer economic integration process that India has been seeking with its eastern neighbourhood.

8.1 Recommendations on Trade Facilitation and Logistics

- There is enough scope for simplification of documentary requirements and alignment with international standards. Application of modern information and communication technology (ICT) to trade processes has been recognised as an important component of national and regional trade facilitation strategies.⁶⁶ By making e-filing of documents mandatory, documentary burdens on trade in goods in the NER will be lessened undoubtedly.
- Procedural bottlenecks often seem to be more on the import side rather than on the export side in the NER.

- Physical inspection by government agencies before, and at the time of export or import and other regulatory procedures also appear to create bottlenecks in trade in the NER and Bangladesh. Sometimes, there are multiple inspections from different agencies.
- While inspections are required for making trade safe and secure, excessive inspections by authorities impede trade very much the same way tariff does. Physical inspections, by multiplying face to face contacts between control officers and traders (or their representatives), also potentially provide opportunities for informal payments and rent seeking, increasing overall cost of trade, and, most importantly, uncertainties associated with each transaction.
- Implementation of risk management systems, standard operating procedures, and authorised economic operator programmes may help minimise the need for inspections in NER. Therefore, while streamlining regulatory procedures and related documentation is important, broader policy reforms targeting the services sectors supporting trade transactions may also be needed.
- We need to train the local people on how to deal with modern trade procedures and formalities in order to make the trade facilitation more inclusive and sustainable.
- Finally, time spent on documentary processes such as pre-arrival documentation, opening L/C account with bank, compliance to standard and testing, etc., appear to be equally important but time consuming. However, their significance varies across products and routes. What appears is that simplification of commercial, transport, financial, regulatory and procedures and their alignment with regional or international practices would be important for facilitating trade in the NER. In doing so, we would then lead towards a Single Window and paperless trading system in one hand, and production networks, on the other.

Table 8.2: Proposed Trade Facilitation Policy Frameworks

Sr. No.	Title	Issue	Policy suggestions
1	Procedure	Procedural simplification	<ul style="list-style-type: none"> • Minimise physical inspection except special cases (e.g. security), use of risk management techniques, etc. • Build common standards with neighbouring countries • Accept to transit between India, Bangladesh and Myanmar • 24x7 Customs operation
2	Documentary	Harmonisation of documents and introduction electronic submission of documents	<ul style="list-style-type: none"> • Harmonise Customs & other trade processes, data, etc. • Phase-out manual process and move towards electronic system • Acceptance of electronic signature in trade across borders
3	Transparency	Transparency of trade facilitation measures	<ul style="list-style-type: none"> • Introduce trade facilitation performance monitoring system • Regular and timely publication of all border measures • Payment through electronically
4	Infrastructure	Development of infrastructure	<ul style="list-style-type: none"> • Cargo handling equipment, testing laboratory, scanner, banks, etc. • Improved border corridors and management • Faster handling of goods at border with help of RFID system • Allow Chittagong port as transshipment port for NER • Capacity building & training for local people on trade procedures • National and subregional single windows
5	Financing	Financing trade facilitation projects and measures	<ul style="list-style-type: none"> • Opening of L/C with bank • Post-shipment payment

This study also recommends some important areas of cooperation as well as intuitive suggestions (see Table 8.2). The following

measures may be undertaken in order to improve trade facilitation and logistics in the NER:

- Paperless trade, including development of national and subregional single windows, needs to be prioritised for trade facilitation.
- Remove the regulatory burden on exports and imports.
- Physical inspections should be minimised, whenever possible, in particular through adoption of risk management techniques by all organisations involved in the trade process.
- Healthy competition among transport, logistics and other trade-related services such as insurance providers should be encouraged.
- Reviewing the payment systems currently in place and their efficiency may reveal new opportunities for improving trade facilitation performance.
- Trade facilitation performance monitoring mechanisms are needed to identify the real and most important barriers to trade efficiency.
- Harmonisation of documentary requirements across India, Bangladesh and Myanmar should be actively pursued.
- Synchronisation of cross-border Customs with Bangladesh and Myanmar should be the priority objective.
- Bilateral and regional free trade agreements should systematically address trade facilitation issues.
- All trade documents including Customs should be submitted electronically. There must be a strong application of ICT.
- Trade will be much faster with minimum process reengineering.
- Acceptance to subregional transit in eastern South Asia and Myanmar.
- Monitoring the trade facilitation programmes through joint task force committee at the government level.

- Cooperation and coordination among border agencies such as security, customs, etc.
- Building a dispute settlement mechanism.
- Acceptance of cross-border digital signatures in bill of lading, and other transactions such as Customs Transit Documents (CTD).
- Agreement on cargo handling and operation between India and Myanmar at border.
- Transit arrangement along Trilateral Highway and with Bangladesh.
- Capacity building and training programmes for personnel handling trade, trade facilitation, etc.
- Strengthening the regional supply chain.

To overcome these barriers and to support cross-border connectivity, we need (i) an integrated transport planning, (ii) improvement of infrastructure and services, (iii) harmonisation of rules and procedures, (iv) active transport and trade facilitation measures, and (v) application of ICT in transportation and border/corridor management.

Security is the common challenge facing India, Bangladesh and Myanmar. Application of ICT would facilitate customs clearance and maintenance of security at the border. We can track containers moving in the the NER, Bangladesh and Myanmar corridors on real time basis through GPS or RFID system. This would help the security and safety of goods and transport vehicles. Bilateral or regional trade and transport agreement is important to formalise the customs procedures, movement of vehicles at the border areas and also introduce standard operating procedures.

Improvements in India-Myanmar connectivity can unleash a new dynamism in trade and production, especially in relatively backward areas of both India and Myanmar. With better connectivity, cross-border production network, particularly within the NER, is likely to emerge. Value chain potentials in paper and newsprint, agro and food

processing, cement, textile and clothing, light engineering, etc. are not remote, if supported by a favourable business environment and stronger connectivity. Stronger production networks would enhance trade and investment, and thereby deepen the integration process, and vice versa. In order to strengthen the production networks between India and Myanmar, we recommend the followings:

- Complete the Trilateral Highway before ASEAN Economic Community (AEC) starts operating and a greater part of Asia comes under the regional free trade regime.
- Connect the capital cities in India and Myanmar with direct air links and extend it to other important cities such as Yangon, Mandalay and cities in India's NER. Also link major NER cities with Dhaka and Chittagong.
- Ports of India, Myanmar and Bangladesh should be well connected. Private sector should be encouraged to operate liner services in this region.
- Set up an SEZ at Sittwe in Myanmar for investors and build highways linking it to major Indian, Bangladesh and Myanmar cities.
- Ensure economic, social and political stability in Myanmar and the NER.
- Financial market development and market-driven currency exchange rate stability are essential.
- Strengthen banking infrastructure at border, particularly at Moreh and Champai.
- Allow more Indian banks to operate in major Myanmar cities and vice versa.
- Develop better institutional and business environment to help Indian investors in Myanmar and Bangladesh, and strengthen chambers of commerce in Myanmar in particular.
- Low or no tariff on bilateral trade and phase out non-tariff barriers.

- Develop food testing laboratories at border and sign MRA to accept each other's standards.
- Consistent and standardised border crossing formalities and simplified trade procedures are very important.
- Upgrade the capacity of LCSs, particularly at Moreh and Champai, with all modern trade infrastructure.
- Encourage public-private partnership in building and managing cross-border infrastructure.
- Capacity building for local traders, making the trade system more inclusive and sustainable.
- Engagement of international organisations for development of connectivity and border infrastructure such as ADB, World Bank, JICA, to mention a few.

Endnotes

- ¹ GDP and GSDP are taken at current price for the year 2011-12, sourced from CSO.
- ² Refer, for example, Indian Railways (2007).
- ³ Refer, Brunner (2010).
- ⁴ Refer, for example, NEC (2007), Bhattacharya and De (2006), De (2008), to mention a few.
- ⁵ Refer, for example, RIS (2012), to mention a few.
- ⁶ Refer, for example, Government of India (2010).
- ⁷ Refer, for example, World Bank (2012).
- ⁸ Refer Hobday (2001), Lim and Kimura (2010).
- ⁹ Northeastern states of India are home to about 4.24 lakh SMEs which is only 2 per cent of India's total number of SMEs.
- ¹⁰ Refer, for example, Government of India (2012).
- ¹¹ Refer, for example, Das (2009).
- ¹² See, for example, Ng and Yeats (2003), Athukorala and Yamashita (2006), Kuroiwa and Heng (2008), Kuroiwa (2009), Koopman *et al.* (2010), and WTO IDE-JETRO (2011).
- ¹³ Refer, for example, Jones (2006).
- ¹⁴ A production function exhibits constant returns to scale if changing all inputs by a positive proportional factor has the effect of increasing outputs by that factor.
- ¹⁵ Refer, Jones (2006).
- ¹⁶ Movement of goods across borders requires a vast array of commercial, transport and regulatory requirements. Inefficiencies in compliance with these requirements often create unnecessary delays and costs. These are often associated with preparation of transport and regulatory documents, unclear border procedures, and overzealous cargo inspections (Duval and Utoktham, 2011; UNESCAP, 2011) Simplification of trade processes and procedures is thus envisaged as key to improving competitiveness of exports.
- ¹⁷ The 2nd unbundling was coined by Baldwin (2011). According to him, the 2nd unbundling is the international division of labour in terms of production processes and tasks.
- ¹⁸ Refer, for example, RIS (2011).
- ¹⁹ While population refers the year 2011, area refers the latest year, sourced from Census of India.
- ²⁰ The standard development indicators such as road length, access to healthcare, and power consumption in the region are below the national average (NEC, 2012).
- ²¹ In Assam, Meghalaya, Manipur, Mizoram and Nagaland, poverty in 2009-10 has increased. Refer, press note on poverty estimates, 2009-10, Government of India, Planning Commission, 17 March 2012.
- ²² A rapid structural change is always associated with the economic growth of any region. Growth processes have always been characterised by a lessening in the emphasis on agricultural and primary activities and an increasing importance to the manufacturing sector. Various countries including India have undergone this structural change.

- ²³ The ranking of major industries in a state has been done according to the value of their gross output. The industry with maximum gross output is ranked first and others in their descending order of their gross output. Besides the gross output, the contribution of each of these industries to GVA is also given. Appendix 2 presents the share of seven major industries in output and GVA for NER in 2010-11.
- ²⁴ Refer Appendix 3 on NER state-wise distribution of registered and unregistered manufacturing units.
- ²⁵ Refer, for example, FICCI - KAF (2012).
- ²⁶ Refer, Government of India (2012).
- ²⁷ Refer, for example, De (2011a), Sarma (1993), to mention a few.
- ²⁸ Refer, for example, Sarma and Bezbaruah (2009).
- ²⁹ The first Trade Agreement between India and Bangladesh was signed in 1972.
- ³⁰ Bangladesh's perennial large bilateral trade deficit with India might be a cause for concern but it has not led to any balance of payments problem for Bangladesh as consistent trade surpluses with such trading partners as the US and EU compensate for these deficits.
- ³¹ Except 25 items, all other items produced in Bangladesh now can be imported into India duty free.
- ³² This was also widely discussed in Das and Thomas (2008).
- ³³ According to Brunner (2010), export potential lies in food or fruit processing, bamboo and cane products, jute, floriculture, aromatic plants, aromatic and medicinal herbs, spices, rubber, forest products, natural resource products, tea and other plantation crops, inland freshwater fishing, among others.
- ³⁴ Refer for example, Francois *et al.* (2009), etc.
- ³⁵ However, import of timber from Myanmar will be stopped from 2014 due to the recent ban on timber export by the Myanmar government.
- ³⁶ India's border trade with Myanmar is also governed by RBI Guidelines on Barter Trade with Myanmar under the Indo-Myanmar Border Trade Agreement A.P.(DIR Series) Circular No.17 (October 16, 2000), available at <http://rbidocs.rbi.org.in/rdocs/notification/PDFs/16423.pdf>
- ³⁷ Refer, ERIA (2011).
- ³⁸ Refer, De and Ray (2013).
- ³⁹ The total volume of trade at Moreh is certainly more than official trade of Rs. 15 crore. A quick estimate shows total trade including informal volume is about Rs. 280 crore. This does not include the clandestine trade in drugs and small arms whose value also would be substantive.
- ⁴⁰ Land Ports Authority of India (LPAI), New Delhi
- ⁴¹ Preferential tariff reductions have been given under, for example, SAFTA in case of India – Bangladesh trade.
- ⁴² Firefox of Sri Lanka is setting up a bicycle plant in Bangladesh after Sri Lanka lost its GSP+ (import) duty free access to the EU market in August 2010. Also, the EU is currently conducting an anti-circumvention investigation into imports of bicycles from Sri Lanka, Malaysia, Indonesia, and Tunisia.

- ⁴³ However, there is a trade-off between rapid economic growth and regional income equality for the low income countries or regions within countries.
- ⁴⁴ NF Railway was carved out of the North Eastern Railway with headquarters at Maligaon, Guwahati.
- ⁴⁵ Sourced from Annual Report, Indian Railway .
- ⁴⁶ Sourced from NTDP (2012).
- ⁴⁷ Trading across Borders is a major part of World Bank's Doing Business database. Refer World Bank (2013) for its detailed methodology of calculation.
- ⁴⁸ It is imperative to interpret this data cautiously. We have to keep in mind that the NER at present handles relatively lower volume of trade, compared to Bangalore or Delhi NCR. Lower export and import costs appear due to low trade volume. Therefore, the NER's rank may change with rise in trade volume.
- ⁴⁹ The usual caveat is that the number of documents represents an India average.
- ⁵⁰ Refer, for example, Djankov *et al.* (2010).
- ⁵¹ See the discussion in previous chapters.
- ⁵² Five respondents do not belong to India-Bangladesh or India-Myanmar.
- ⁵³ Please contact FICCI to know further on this.
- ⁵⁴ The list presents goods traded both formally and informally at these LCS. The usual disclaimer is this may not necessarily match with the officially published record.
- ⁵⁵ The latter has no customs officials; only a few security personnel were found to be manning the gates. The survey team found that the 'no man's land' was only a narrow strip between the two gates, which was also being used by the traders (chairs were laid out and were obviously being used).
- ⁵⁶ Noticed at the time of survey in 17-19 April 2013.
- ⁵⁷ We interviewed the CEOs of the firms in most cases, and firms are mostly SMEs.
- ⁵⁸ Logit analysis based on perception survey is not historical in nature. However, one checks the significance of predictions based on such surveys. Hence, in a sense it cannot be a prediction based on historical time-series or panel data.
- ⁵⁹ Refer, for example, Deardorff (2001).
- ⁶⁰ This was also widely discussed in Hiratsuka and Uchida (2008); Kimura and Kobayashi (2009).
- ⁶¹ There are some shipments from India's western part to Bangladesh by ocean
- ⁶² Refer, for example, Duval and Utoktham (2011)
- ⁶³ Shepherd and Wilson (2009) presented empirical evidence that trade flows in ASEAN are particularly sensitive to transport infrastructure and ICT networks. Their estimates suggest that the region could make significant economic gains from trade facilitation reform, which would be considerably larger than those from comparable tariff reforms.
- ⁶⁴ Refer to the WTO draft consolidated negotiating text on trade facilitation.
- ⁶⁵ However, questions have been asked about whether the gains from trade facilitation exceed the costs. Concerns regarding the distributional consequences of trade reforms have also been expressed.
- ⁶⁶ Refer, for example, UNESCAP (2010), ADB (2012).

References

- ADB-UNESCAP. 2009. *Designing and Implementing Trade Facilitation in Asia and the Pacific*. Asian Development Bank (ADB), Manila, and UNESCAP, Bangkok.
- Ando, Mitsuyo, and Fukunari Kimura. 2009. "Fragmentation in East Asia: Further Evidence". *ERIA Discussion Paper Series No. 2009-20*. ERIA, Jakarta.
- Arnold, John. 2010. "Connectivity and Logistics for the North East and Beyond", in Hans-Peter Brunner (ed.) *North East India: Local Economic Development and Global Markets*. New Delhi: Sage..
- Athukorala, Prema-chandra. 2010. "Production Networks and Trade Patterns in East Asia: Regionalization or Globalization?". *ADB Working Paper Series on Regional Economic Integration No. 56*. Asian Development Bank, Manila.
- Athukorala, Prema-chandra and Nobuaki Yamashita. 2006. "Production Fragmentation and Trade Integration: East Asia in a Global Context". *The North American Journal of Economics and Finance*, Vol. 17, No. 3, pp. 233-256.
- Athukorala, P. 2011. "Production Networks and Trade Patterns in East Asia: Regionalization or globalization?" *Asian Economic Papers*, Vol. 10, No. 1, pp. 65-95.
- Baldwin, Richard. 2011. "21st Century Regionalism: Filling the Gap between 21st Century Trade and 20th Century Trade Rules". *Centre for Economic Policy Research Policy Insight No. 56*, London.
- Bhattacharya, Biswa and Prabir De. 2005. "Promotion of Trade and Investment between People's Republic of China and India: Toward a Regional Perspective". *Asian Development Review*, Vol. 22, No. 1.
- Bhattacharyay, N. Biswanath and De Prabir. 2006. "Promotion of Trade and Investment between People's Republic of China and India: Toward a Regional Perspective". *Asian Development Review*, Vol. 22, No. 1.
- Brooks, Douglas H. 2008. "Linking Asia's Trade, Logistics, and Infrastructure". *ADB Institute Working Paper No. 128*. Asian Development Bank Institute (ADBI), Tokyo.
- Brunner, Hans-Peter (ed.). 2010. *North East India: Local Economic Development and Global Markets*. New Delhi: Sage.
- Central Statistical Organisation (CSO). 2013. *State Domestic Product Data*. CSO, New Delhi.
- Das, Gurudas. 2005. *Structural Change and Strategy of Development: Resource-Industry Linkages in North Eastern Region*. New Delhi: Akansha Publishing House.
- Das, Gurudas and C J Thomas. 2008. *India's Border Trade with Bangladesh*. New Delhi: Akansha Publishing House.
- De, Prabir. 2008. "Reassessing Transaction Costs of Trade at the India-Bangladesh Border". *Economic and Political Weekly*, Vol. 43, No. 29.
- De, Prabir. 2011a. "Trade Facilitation in India: An Analysis of Trade Processes and Procedures". *ARTNeT Working Paper No. 95*. UNESCAP, Bangkok.
- De, Prabir. 2011b. "ASEAN-India Connectivity: An Indian Perspective", in Fukunari Kimura and So Umezaki (eds.) *ASEAN-India Connectivity: The Comprehensive Asia Development Plan Phase II*. ERIA, Jakarta.

- De, Prabir. 2012. "Why is Trade at Border a Costly Affair in South Asia? An Empirical Investigation". *Contemporary South Asia*, Vol. 19, No. 4, pp. 441-464.
- De, Prabir. 2014. "Economic Corridors and Regional Economic Integration", in Prabir De and Kavita Iyenger (eds.) *Developing Economic Corridors in South Asia*. Asian Development Bank (ADB), Manila.
- De, Prabir, Selim Raihan and Sanjay Kathuria. 2012. "Unlocking India-Bangladesh Trade Potential: Emerging Issues and the Way Forward". *Policy Research Working Paper*. The World Bank, Washington, D.C.
- De, Prabir and Kavita Iyenger (eds.). 2014. *Developing Economic Corridors in South Asia*. Asian Development Bank (ADB), Manila.
- De, Prabir and Jayanta Ray. 2013. *India-Myanmar Connectivity: Current Status and Future Prospects*. Calcutta University. New Delhi: KW Publishers.
- De, Prabir and Amrita Saha. 2013. "Logistics, Trade and Production Networks: An Empirical Investigation". *RIS Discussion Paper No. 181*. Research and Information System for Developing Countries (RIS), New Delhi.
- Deardorff, A. V. 2001. "International Provision of Trade Services, Trade and Fragmentation". *Policy Research Paper 2548*. World Bank, Washington, D.C.
- Djankov, S., C. Freund, and C. Pham. 2010. "Trading on Time". *The Review of Economics and Statistics*, Vol. 92, pp. 166-173.
- Duval, Y. and C. Utoktham. 2011. "Trade Facilitation in Asia and the Pacific: Which Policies and Measures Affect Trade Costs the Most?" *Working Paper Series, No. 94*. ARTNeT, UNESCAP, Bangkok.
- Francois, Joseph and Bernard Hoekman. 2010. "Services Trade and Policy". *Journal of Economic Literature*, September, pp. 642-692.
- Francois, J. F., P. B. Rana, and G. Wignaraja (eds.) 2009. *Pan-Asian Integration: Linking East Asia with South Asia*. Basingstoke (UK): Palgrave Macmillan.
- Economic Research Institute of ASEAN and East Asia (ERIA). 2011. *ASEAN-India Connectivity Report*. ERIA, Jakarta.
- Government of India. 2008. *North Eastern Region Vision 2020*. Ministry of Development of North Eastern Region and North Eastern Council, New Delhi.
- Government of India. 2011. *Report of the Working Group on Logistics*. Planning Commission, Government of India, New Delhi.
- Government of India. 2012. *Economic Survey of India 2011-2012*. Government of India, New Delhi.
- Harvie, C. and B. C. Lee. 2002. "East Asian SMEs: Contemporary Issues and Developments-An Overview" in C. Harvie and B. C. Lee (eds.) *The Role of SMEs in National Economies in East Asia*. Cheltenham, UK: Edward Elgar.
- Hesse, M. and J-P Rodrigue. 2004. "The Transport Geography of Freight Distribution and Logistics". *Journal of Transport Geography*, Vol. 12, No. 3, pp. 171-184.
- Hiratsuka, Daisuke and Yoko Uchida (eds.). 2008. *Vertical Specialization and Economic Integration in East Asia*. The Institute of Developing Economies-Japan External Trade Organization (IDE-JETRO), Chiba.
- Hobday, M. 2001. "The Electronics Industries of the Asia-Pacific: Exploring International Production Networks for Economic Development." *Asian-Pacific Economic Literature*, Vol. 15, No. 1, pp. 13-29.

- Hummels, David. 2007. "Transportation Costs and International Trade in the Second Era of Globalization". *Journal of Economic Perspectives*, Vol. 21, No.3, pp. 131-154.
- Indian Railways. 2007. *Masterplan for the Development of Rail Infrastructure in the North East Region*. Indian Railways, New Delhi.
- Jones, R. W. 2006. "Production Fragmentation and Outsourcing: General Concerns". Paper presented at the workshop 'Production Networks and Changing Trade and Investment Patterns: The Economic Emergence of China and India and Implications for Asia and Singapore' organised by Singapore Centre for Applied and Policy Economics (SCAPE) held on 14-15 September 2006.
- Jones, R. and H. Kierzkowski. 1990. "The Role of Services in Production and International Trade: A Theoretical Framework," in R. Jones and Anne Krueger (eds.) *The Political Economy of International Trade*. Blackwells.
- Jones, R. W. and H. Kierzkowski. 2001. "A Framework for Fragmentation", in S. Arndt and H. Kierzkowski (eds.) *Fragmentation*. Oxford: Oxford University Press (OUP).
- Jones, R. W. and H. Kierzkowski. 2005. "International Fragmentation and the New Economic Geography". *North American Journal of Economics and Finance*, Vol. 16, pp. 1-10.
- Kimura, Fukunari. 2012. "Japan's Mission on Constructing a New International Economic Order". *Japan's Economic Currents Policy Brief No. 8*, Keizai Koho Center, Tokyo.
- Kimura, Fukunari and Izuru Kobayashi. 2009. "Why Is the East Asia Industrial Corridor Needed?" *ERIA Policy Brief No. 2009-01*. Economic Research Institute for ASEAN and East Asia (ERIA), Jakarta.
- Kimura, Fukunari and Izuru Kobayashi. 2011. *Why Is the East Asia Industrial Corridor Needed?* Economic Research Institute of ASEAN and East Asia (ERIA), Jakarta.
- Koopman, Robert, William Powers, Zhi Wang and Shang-Jin Wei. 2010. "Give Credit Where Credit Is Due: Tracing Value Added in Global Production Chains". *NBER Working Paper No. 16426*. National Bureau of Economic Research (NBER), Cambridge.
- Kuroiwa, I. (ed.). 2009. *Plugging into Production Networks! Industrialization Strategies in Less Developed Southeast Asian Countries*. Institute of Southeast Asian Studies (ISEAS), Singapore.
- Kuroiwa, I. and T. M. Heng (eds.). 2008. *Production Networks and Industrial Clusters: Integrating Economies in Southeast Asia*. Institute of Southeast Asian Studies (ISEAS), Singapore.
- Lim, H. and F. Kimura. 2010. "The Internationalization of Small and Medium Enterprises in Regional and Global Value Chains". *ADB Working Paper Series No. 231*. Asian Development Bank Institute, Tokyo.
- Mattoo, Aaditya and Randeep Rathindran. 2001. "Measuring Services Trade Liberalization and Its Impact on Economic Growth: An Illustration". *World Bank Working Paper 2655*. The World Bank, Washington, D.C.

- Mishra, Saurabh, Susanna Lundstrom and Rahul Anand. 2011. "Service Export Sophistication and Economic Growth". *Policy Research Working Paper No. 5606*. The World Bank, Washington, D.C.
- NEC. 2007. *Northeastern Region: Vision 2020*. North Eastern Council (NEC), Ministry of Development of North Eastern Region, Shillong.
- NEC. 2012. *North East Region of India*. North East Council (NEC), Shillong.
- Ng, F., and A. Yeats. 2003. "Major Trade Trends in East Asia—What are their Implications for Regional Cooperation and Growth?" *World Bank Policy Research Working Paper 3084*. World Bank, Washington, D.C.
- NTDPC. 2012. *Report of the Working Group on Improvement and Development of Transport Infrastructure in the North East*. National Transport Development Policy Committee (NTDPC), Planning Commission, New Delhi.
- RIS. 2011. *Expansion of North East India's Trade and Investment with Bangladesh and Myanmar: An Assessment of the Opportunities and Constraints*. Research and Information System for Developing Countries (RIS), New Delhi.
- RIS. 2012. *ASEAN – India Connectivity Report: India Country Study*. Research and Information System for Developing Countries (RIS), New Delhi.
- Sarma, Amiya and M. P. Bezbaruah. 2009. "Industry in the Development Perspective of North East India". *Dialogue*, Vol. 10, No. 3.
- Shepherd, B., and J.S. Wilson. 2009. "Trade Facilitation in ASEAN Member Countries: Measuring Progress and Assessing Priorities". *Journal of Asian Economics*, Vol. 20, No. 4, pp. 367-383.
- Tranh, V. T, D. Narjoko, and S. Oum. 2010. "Integrating Small and Medium Enterprises into More Integrating East Asia." *ERIA Research Report 2009 No. 8*. Economic Research Institute for ASEAN and East Asia (ERIA), Jakarta.
- UNESCAP. 2010. *The Development Impact of Information Technology in Trade Facilitation*. Studies in Trade and Investment 69. United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Bangkok.
- UNESCAP. 2011. "Summary of Discussions and Recommendations", Asia-Pacific Trade Facilitation Forum 2011, Trade Facilitation beyond Borders: International Supply Chain Efficiency, International Conference held at Seoul on 4-5 October 2011.
- Wang, Tengfei and Yann Duval. 2013. "Trade Facilitation and Paperless Trade in Asia: Results from an Expert Survey". *Staff Working Paper 01/13*. Trade and Investment Division, UNESCAP, Bangkok.
- World Bank. 2012. *Connecting to Compete: Trade Logistics in the Global Economy*. World Bank, Washington, D.C.
- World Bank. 2013. *Doing Business Database*. Washington, D.C. Available at: <http://www.doingbusiness.org>
- WTO and IDE-JETRO. 2011. *Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks*. World Trade Organization (WTO), Geneva and Institute for Developing Economies-Japan External Trade Organization (IDE-JETRO), Tokyo.
- WTO–IDE-JETRO. 2011. *Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks*. WTO–IDE-JETRO, Geneva.

Appendix 1 Trends in Sectoral Composition of NER States

States	Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
		(%)								
Arunachal Pradesh	Agriculture	35.11	34.26	34.81	34.01	30.21	33.34	39.78	40.94	43.87
	Industry	31.91	32.51	30.72	32.59	36.18	28.5	27.96	29.53	27.02
	Manufacturing	2.07	2.29	2.49	2.46	2.23	1.95	1.99	1.74	1.75
	Services	32.98	33.23	34.47	33.4	33.61	38.16	32.26	29.52	29.1
Assam	Agriculture	25.57	28.39	26.63	26.06	25.51	25.83	26.34	24.58	23.75
	Industry	27.54	25.24	24.65	23.39	24.83	24.29	23.28	23.56	23.55
	Manufacturing	10.53	9.53	9.53	8.58	7.5	8.05	8.05	8.09	8.15
	Services	46.89	46.37	48.72	50.55	49.67	49.88	50.38	51.86	52.7
Manipur	Agriculture	24.74	24.18	24.24	23.76	24.81	26.76	25.17	24.8	25.05
	Industry	36.66	36.53	36.32	36.59	33.14	31.47	31.03	28.93	27.46
	Manufacturing	4.42	4.32	4.79	5.24	4.9	4.72	4.85	4.73	4.69
	Services	38.59	39.29	39.44	39.65	42.05	41.76	43.81	46.27	47.49
Meghalaya	Agriculture	23.25	22.42	23.49	21.48	19.26	18.03	16.63	15.73	14.51
	Industry	26.14	26.75	27.5	30.89	32.89	31.56	31.08	31.87	33.12
	Manufacturing	2.74	4.62	6.87	7.3	5.92	5.56	6.67	6.66	6.5
	Services	50.61	50.83	49.01	47.63	47.85	50.41	52.29	52.39	52.37

Appendix 1 continued...

Appendix I continued...

Mizoram	Agriculture	23.5	21.81	20.84	21	20.55	20.5	18.79	17.93	17.93
	Industry	16.6	20.12	19.52	20.01	20.8	19.53	21.41	21.8	21.8
	Manufacturing	1.4	1.31	1.45	1.57	1.31	1.15	1.25	1.18	1.18
	Services	59.9	58.07	59.64	59	58.65	59.97	59.81	60.27	60.27
Nagaland	Agriculture	34.75	32.13	29.73	27.12	27.24	26.72	26.42	25.78	25.2
	Industry	12.88	13.77	14.74	14.83	17.11	16.78	16.97	17.00	17.22
	Manufacturing	1.69	1.86	1.97	2.05	1.76	2.64	2.73	2.72	2.75
	Services	52.36	54.1	55.53	58.06	55.64	56.5	56.61	57.22	57.59
Sikkim	Agriculture	18.59	17.49	16.7	16.57	14.55	8.43	8.26	8.1	8.1
	Industry	28.84	28.97	28.79	30.23	36.07	56.37	55.43	54.91	54.91
	Manufacturing	3.86	3.64	4.00	4.23	3.68	29.53	27.04	26.05	26.05
	Services	52.58	53.53	54.51	53.2	49.38	35.2	36.31	36.98	36.98
Tripura	Agriculture	25.06	25.34	23.46	23.15	21.6	21.73	21.45	21.32	20.99
	Industry	24.25	25.1	26.57	25.49	26.86	23.64	25.32	26.9	27.35
	Manufacturing	4.04	2.67	2.94	3.1	2.98	3.06	3.06	3.02	3.01
	Services	50.69	49.57	49.97	51.36	51.54	54.63	53.23	51.77	51.66
NER	Agriculture	26.32	25.75	24.99	24.14	22.97	22.67	22.86	22.40	22.43
	Industry	25.60	26.12	26.10	26.75	28.49	29.02	29.06	29.31	29.05
	Manufacturing	3.84	3.78	4.26	4.32	3.79	7.08	6.96	6.77	6.76
	Services	48.08	48.12	48.91	49.11	48.55	48.31	48.09	48.29	48.52

Source: CSO (2013).

Appendix 2

Share of Seven Major Industries in Output and GVA in NER in 2010-11

	Output (Rs. Lakh)		GVA (Rs Lakh)	
	Actual	Share (%)	Actual	Share(%)
	Tripura			
Total	143076	100.00	39607	100.00
Total of 7 Industries	132935	92.91	39006	98.49
23 other Non-Metallic Mineral Products	28176	19.69	12227	30.87
OT Other Industries	24152	16.88	1626	4.11
10 Food Products	19888	13.90	3946	9.96
24 Basic Metals	18441	12.89	3330	8.41
12 Tobacco Products	14857	10.38	10233	25.84
22 Rubber And Plastic Products	13976	9.77	1054	2.66
20 Chemicals and Chemical Products	13445	9.40	6590	16.64
	Manipur			
Total	27451	100.00	4364	100.00
Total of 7 Industries	27211	99.13	4284	98.16
10 Food Products	14736	53.68	961	22.02
23 Other Non-Metallic Mineral Products	6884	25.08	2606	59.72
24 Basic Metals	4587	16.71	602	13.79
Ot Other Industries	569	2.07	69	1.58
19 Coke and Refined Petroleum Products	211	0.77	4	0.09
22 Rubber and Plastic Products	123	0.45	21	0.48
11 Beverages	101	0.37	21	0.48
	Meghalaya			
Total	287476	100.00	82912	100.00
Total of 7 Industries	273591	95.17	80221	96.76
23 Other Non-Metallic Mineral Products	162326	56.47	63802	76.95

Appendix 2 continued...

Appendix 2 continued...

24 Basic Metals	77266	26.88	10450	12.60
25 Fabricated Metal Products,Except Machinery and Equipment	9368	3.26	779	0.94
20 Chemicals and Chemical Products	7680	2.67	2851	3.44
10 Food Products	6219	2.16	933	1.13
19 Coke and Refined Petroleum Products	5774	2.01	852	1.03
11 Beverages	4958	1.72	554	0.67
	Assam			
Total	4236700	100.00	766187	100.00
Total of 7 Industries	3943026	93.07	729513	95.20
19 Coke and Refined Petroleum Products	2167235	51.15	370547	48.36
10 Food Products	910385	21.49	180855	23.60
20 Chemicals and Chemical Products	256921	6.06	58631	7.65
OT Other Industries	221640	5.23	10890	1.42
23 Other Non-Metallic Mineral Products	163411	3.86	77247	10.08
24 Basic Metals	158715	3.75	20207	2.64
12 Tobacco Products	64719	1.53	11136	1.45
	Nagaland			
Total	46960	100.00	5588	100.00
Total of 7 Industries	46904	99.88	5558	99.46
16 Wood and of Products of Wood and Cork,Except Furniture; Articles of Straw	40749	86.77	4301	76.97
10 Food Products	4490	9.56	473	8.46
23 Other Non-Metallic Mineral Products	1158	2.47	737	13.19
OT Other Industries	246	0.52	56	1.00
25 Fabricated Metal Products,Except Machinery and Equipment	109	0.23	-108	-1.93

Appendix 2 continued...

Appendix 2 continued...

18 Printing and Reproduction of Recorded Media	87	0.19	69	1.23
22 Rubber and Plastic Products	65	0.14	30	0.54
	Sikkim			
Total	445997	100.00	285155	100.00
Total of 7 Industries	441630	99.04	284161	99.66
21 Basic Pharmaceutical Products and Pharmaceutical Preparations	355306	79.67	259084	90.86
20 Chemicals and Chemical Products	51727	11.60	12565	4.41
10 Food Products	12154	2.73	3536	1.24
11 Beverages	9188	2.06	2098	0.74
12 Tobacco Products	6096	1.37	5713	2.00
22 Rubber and Plastic Products	4176	0.94	833	0.29
17 Paper and Paper Products	2983	0.67	332	0.12

Source: Summary Results for Factory Sector 2010-11, CSO.

Appendix 3 State-wise Distribution of Registered and Unregistered Manufacturing Units

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Arunachal Manufacturing	7231	8609	10216	11837	12708	14574	17387	19416
Arunachal Manu-Registered	0	0	0	0	0	0	0	0
Arunachal Manu-Unregistered	7231	8609	10216	11837	12708	14574	17387	19416
Assam Manufacturing	562146	565728	616757	609499	608147	772464	905889	1023186
Assam Manu-Registered	434687	425730	449266	411747	391864	552955	642730	729086
Assam Manu-Unregistered	127459	139997	167492	197752	216284	219509	263158	294100
Manipur Manufacturing	22676	24725	29394	35547	36225	38962	44170	49214
Manipur Manu-Registered	608	1004	651	1149	1508	2047	2342	2583
Manipur Manu-Unregistered	22068	23721	28743	34398	34717	36915	41828	46631
Mizoram Manufacturing	3767	3904	4783	5987	6002	6040	7574	8264
Mizoram Manu-Registered	571	824	582	676	548	672	1150	1292
Mizoram Manu-Unregistered	3196	3080	4201	5311	5454	5368	6424	6972
Nagaland Manufacturing	9841	12222	14298	16589	16654	27809	30871	33400
Nagaland Manu-Registered	2118	3642	3866	3925	3556	14245	15679	17296
Nagaland Manu-Unregistered	7723	8580	10432	12664	13098	13564	15192	16104
Sikkim Manufacturing	6720	7253	8638	10611	11896	181116	193223	218816

Appendix 3 continued...

Appendix 3 continued...

Sikkim	Manu-Registered	3373	3780	4537	5501	6507	175566	187058	211835
Sikkim	Manu-Unregistered	3347	3473	4101	5110	5389	5549	6165	6981
Tripura	Manufacturing	35961	26236	32071	36603	40478	47105	53626	60147
Tripura	Manu-Registered	23200	11192	13793	15544	19098	24424	26901	29378
Tripura	Manu-Unregistered	12761	15044	18278	21059	21380	22681	26725	30769
NER	Manufacturing	648342	648676	716157	726673	732111	1088070	1252739	1412443
NER	Manu-Registered	464557	446172	472694	438542	423081	769909	875860	991470
NER	Manu-Unregistered	183785	202504	243463	288131	309030	318161	376879	420973

Source: Summary Results for Factory Sector 2010-11, CSO.

Appendix 4

State-wise Distribution of LCSs in the NER

Sl. No.	State	LCS in India	LCS in neighbouring country	Neighbouring country	Status
1	Arunachal Pradesh	Namong (Pangsau Pass)	Pangsu	Myanmar	Notified but non-functional
2	Assam	Sutarkhandi*	Sheola	Bangladesh	Functional
3	Assam	Karimganj Steamer Ghat	Zakiganj	Bangladesh	Functional
4	Assam	Mankachar		Bangladesh	Functional
5	Assam	Golakganj	Bhurungamari	Bangladesh	Not Functional
6	Assam	Karimganj Ferry Station	Zakiganj	Bangladesh	Functional
7	Assam	Mahisasan Railway Station	Sahabajpur	Bangladesh	Not Functional
8	Assam	Silchar R.M.S. office		Bangladesh	Not Functional
9	Assam	Dhubri Steamerghat	Rowmati	Bangladesh	Functional
10	Assam	Gauhati Steamerghat		Bangladesh	Functional
11	Assam	Silghat		Bangladesh	Functional
12	Assam	Darranga		Bhutan	-
13	Assam	Hatisar		Bhutan	-
14	Assam	Ultapani		Bhutan	-
15	Assam	Export Extension Counter at Guwahati		For all countries	
16	Meghalaya	Borsora	Borosora	Bangladesh	Functional
17	Meghalaya	Dawki**	Tamabil	Bangladesh	Functional
18	Meghalaya	Ghasuapara	Karaitoli	Bangladesh	Non-functional
19	Meghalaya	Shellabazar	Sonamganj	Bangladesh	Functional
20	Meghalaya	Bholaganj	Chattak	Bangladesh	Non-functional

Appendix 4 continued...

Appendix 4 continued...

21	Meghalaya	Dalu	Nakugaon	Bangladesh	Functional
22	Meghalaya	Mahendraganj	Dhanua Kamalpur	Bangladesh	Functional
23	Meghalaya	Baghmara	Bijoypur	Bangladesh	Functional
24	Meghalaya	Ryngku	Kalibari, Sonamganj	Bangladesh	Not functional
25	Meghalaya	Balat	Lauwaghar	Bangladesh	Not functional
26	Meghalaya	Kalaichar	Baliamari	Bangladesh	
27	Tripura	Agartala**	Akhaura	Bangladesh	Functional
28	Tripura	Srimantapur	Bibir Bazaar	Bangladesh	Functional
29	Tripura	Old Raghnabazar	Betuli (Fultali)	Bangladesh	Functional
30	Tripura	Manu	Chatlapur	Bangladesh	Functional
31	Tripura	Sabroom	Ramgarh	Bangladesh	Non- functional
32	Tripura	Belonia (Muhurighat)	Belonia	Bangladesh	Non- functional
33	Tripura	Dhalaighat	Khurma	Bangladesh	Functional
34	Tripura	Khowaighat	Balla	Bangladesh	Functional
35	Mizoram	Kawrapuchia*	Thegamukh	Bangladesh	Not yet notified
36	Mizoram	Demagiri	Rangamati	Bangladesh	Functional
37	Mizoram	Zokhawthar	Rih**	Myanmar	Functional
38	Manipur	Moreh**	Tamu	Myanmar	Functional
39	Sikkim	Sherathang (Nathu La)	Renginggang	China	Functional
	Nagaland	Avangkhu****	Somara	Myanmar	

Notes: *Identified to be developed as Integrated Check Post in Phase-II by D/o Border Management. **Being developed as Integrated Check Post by D/o Border Management in Phase-I. *** At present the nearest town in Myanmar which is functioning as LCS is Tiddim, approximately 75 kms from the border village of Zokhawthar. Government of India is assisting Myanmar to build the Rih Tiddim Road. In order to facilitate proper functioning of border trade, the Government of Mizoram has requested Government of India to request Government of Myanmar to open a counterpart LCS near the border, say, Tiau or Rih (Rihkhawdar-II). ****Bi-laterally agreed to open new Land Custom Station in the Indo-Myanmar Joint Trade Committee meeting in October, 2008. Not yet notified by Government of India under Section 7 of the Customs Act, 1962 (52 of 1962).

Source: Ministry of DONER, Government of India.

Appendix 5
Questionnaire
Assessing Cross-border Production Networks
in Northeast India
Questionnaire Survey for Firms

Sr. No.

1. Name of the Respondent
2. Name of the firm:
3. Address:
4. Year of establishment:
5. Number of employees (firm size):

Particulars	No of employees when the firm was established	No of employees at present
Permanent		
Casual/Contractual		
Skilled		
Unskilled		
Officers		
Labourers		

6. Annual financial indicators (Rs.):

(Please write unit: _____)

Particular	Sales volume when the firm was established	Current sales volume, For the year 2012 (as on 31/3/2012)
Output		
Sales		
Profit before tax		
Export		
Import		

7. Foreign ownership: Yes / No, If yes, how much: _____ (%)
8. Education of workers:
9. Education of CEO:

10. Any quality certification (ISO 9000 or 9002):
11. Does the firm have obtained any patent?
12. Access to credit: Have you taken any loan from financial institution?
13. Export (Name of country):
14. Import (Name of country):
15. Import of raw materials for export:
16. Export items:
17. Import items:
18. Import of technology (source country):
19. Is your firm part of cross-border production networks between Northeast India and Bangladesh / Northeast India and Myanmar? If yes, what are the products/services you are producing (exporting) to Bangladesh / Myanmar and consuming (importing) from Bangladesh / Myanmar?
20. Border check-posts for export / import:
21. Facilities available for imports / exports at the check-post (put a \checkmark against each facility):
(specify the check-post: _____)

Physical	Non-physical
<ul style="list-style-type: none"> • Customs • Immigration • Testing lab. • Security • Bank • Health facilities • Warehouse and parking • Weight bridge • Container handling yard • Container handling equipment • Waiting / rest room • Shops, hotels and restaurants • Internet • Telephone • Post office • Currency exchange • Any other (please specify) 	<ul style="list-style-type: none"> • Uniform application of customs procedures • Harmonisation and simplification of customs procedures and practices • e-submission of customs documentations • Acceptance of electronic signature • Customs valuation • Fast-track cargo clearance • 24x7 customs • Transit • Dispute settlement mechanism • Standards • Any other (please specify)

- 22. Kindly list major deficits of LCS and suggest provision of facilities or scopes of improvement
- 23. How many documents you submit to border related government agencies involved in clearance process for export and imports including Customs? (specify: export import)

Number of documents	Type of documents	Submission (Manual / electronic)
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

- 24. Time and cost impediments to exports/imports at the check-posts:
 - a) Waiting time at the check-posts Yes/No
If Yes, no. of days for each consignment _____
 - b) Paper works at the customs Yes/No
If Yes, costs and time incurred in clearance Rs. _____ or Time

 - c) Different insurance for two countries Yes/No
 - d) Different bank charges in two countries Yes/No
- 25. Do you think scope for production networks between Northeast India and Bangladesh / Northeast India and Myanmar has increased over the last 5 years for you? Yes / No / Don't Know
- 26. Do you think cross-border production networks between Northeast India and Bangladesh / Northeast India and Myanmar set to rise? Yes / No / Don't Know
- 27. Do you think improvement in trade facilitation and logistics will encourage Northeast India production networks with Bangladesh and Myanmar? Yes / No / Don't Know
- 28. What are the barriers faced by exporters / importers / producers which are negatively affecting growth of cross-border production networks between

Northeast India and Bangladesh / Northeast India and Myanmar (put ✓ against each barrier)?

	Very low	Low	Average	High	Very High
	5	4	3	2	1
Unavailability of raw materials					
Unavailability of bank finance					
Inadequate infrastructure					
Poor transportation infrastructure					
Poor telecommunication infrastructure					
Bureaucracy and red-tapeism					
Corruption and bribery at check-post					
High cost of transportation					
Lack of warehouse facilities at border					
Lack of faster handling equipment at border					
Lack of trained human resources at border					
Lengthy paper work at check-post					
Others (if any), please mention					

29. What are the sectors / industries have potentials for cross-border production networks between Northeast India and Bangladesh / Northeast India and Myanmar?
30. What are your suggestions / recommendations for overall improvement of trade facilitation and logistics in NER?

This Study aims to explore the role of trade facilitation in enhancing trade and production networks between India's North Eastern Region (NER), Bangladesh and Myanmar. NER suffers from economic isolation. Absence of adequate institutional and physical infrastructure, both national and international, has slowed down the NER's development process. Nevertheless, given its strategic location, the NER can be developed as a base for India's growing economic links with Southeast Asia and Bangladesh. NER has the potential to grow faster than its current pace, provided the region builds cross-border production links, particularly with Bangladesh, Myanmar and other Southeast and East Asian countries such as Thailand, Malaysia, China and Indonesia. Stronger production networks would enhance trade and investment, and thereby deepen the integration process, and vice versa. However, the bottlenecks to cross-border production links are plenty, of which inadequate connectivity, logistics and trade facilitation, more particularly at the border areas, regulatory burdens associated with customs, security, standards and certification are the major ones. Setting-up production blocks in the NER may require a set of supporting facilities along with sufficient resources. Improved infrastructure, supportive institutions, banking and finance are the foremost requirements for the development of production blocks. To facilitate production blocks, the NER would essentially need a strong presence of SMEs. The presence of SMEs in the NER today is sparse and their strength has been relatively weak. At the same time, logistics efficiency is crucial to production networks between NER, Myanmar and Bangladesh. We need to engage the NER more extensively in the closer economic integration process that India has been seeking with its eastern neighbourhood.

About the Authors

Prabir De, Professor, Research and Information System for Developing Countries (RIS) and Coordinator, ASEAN-India Centre (AIC), New Delhi

Manab Majumdar, Assistant Secretary General, Federation of Indian Chambers of Commerce and Industry (FICCI), New Delhi



RIS
**Research and Information System
for Developing Countries**

Core IV-B, Fourth Floor, India Habitat Centre
Lodhi Road, New Delhi-110 003, India

Tel.: +91-11-2468 2177-80, Fax: +91-11-2468 2173-74

E-mail: publication@ris.org.in

Website: www.ris.org.in