

JOURNAL OF LAND PORTS AND BORDER ECONOMY

Issue II



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About the Issue

The second issue of the *Journal of Land Ports and Border Economy* features a comprehensive selection of research papers that delve into various dimensions of trade and development. The development and upgradation of transit points by the Land Ports Authority of India (LPAI) has been instrumental in fostering the growth of the border economy. The current issue of the Journal captures India's remarkable voyage in border management, showcasing its significant strides, advancements, and notable achievements. The contents encompass a Foreword by the Chairman of LPAI, an introduction by Managing Editor, and a compelling collection of six research papers authored by renowned scholars and practitioners. Additionally, the second issue of the *Journal of Land Ports and Border Economy* also includes a valuable book review, providing readers with an insightful analysis and offering them the benefits of critical evaluation and a broader perspective on India's approach to Border Management.

About the Journal

Journal of Land Ports and Border Economy is the primary publication of the Land Ports Authority of India (LPAI), which has distinguished itself as a leading developer for land port and border development. Widely consulted by researcher scholars, educators and practitioners, the journal encourages the submission of papers from all social science and humanities focusing on the development of land ports, generation of border economies, border issues and geo-political and security-related dynamics between borders in any part of the world. The distinctive purpose of the *Journal of Land Ports and Border Economy* is to publish original research covering the development of theories and concepts, methodological perspectives, empirical analysis and policy debate in the field of land port development and border studies with particular reference to India. The journal is an interdisciplinary forum, which showcases diverse perspectives and analytical techniques

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About LPAI

LPAI is a statutory body established under Land Ports Authority of India Act, 2010. The provisions of the Act came into force on 1 March 2012. Section 11 of the Act gives powers to LPAI to develop, sanitize and manage the facilities for cross-border movement of passengers and goods at designated points along the international borders of India. The Vision of LPAI is to provide state-of-the-art infrastructure to facilitate trade and travel. The Mission of LPAI is to build land ports on India's borders, to provide secure, seamless and efficient systems for cargo and passenger movement, to reduce dwell time and trade transaction costs, to promote regional trade and people-to-people contact and endeavour to imbibe the best international practices.



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Foreword

I am pleased to present the second issue of the 'Journal of Land Ports and Border Economy' which is the flagship publication of the Land Ports Authority of India. This issue contains six full-length freshly written research articles on land borders and border economies. The articles cover a wide range of topics, including the role of land ports in regional trade, digital trade facilitation, and the challenges and opportunities of cross-border cooperation.

I would like to thank the authors of the articles in this issue for their contributions. I would also like to thank Dr. Prabir De, Managing Editor, JLPBE & Professor, Research and Information System for Developing Countries (RIS) for the hard work in putting together this issue. I am confident that the Journal of Land Ports and Border Economy will continue to be a valuable resource for those who are interested in this important domain.

In the past year, LPAI has made significant progress in developing land ports and strengthening border infrastructure. We have operationalized two new Land Ports - Dawki in May 2023 and Rupaidiha in June 2023. We are in the process of constructing three more. We have also strengthened our trade facilitation initiatives, border security measures, and we have worked towards improving cooperation with our neighbouring countries.

The development of land ports and border infrastructure is essential for promoting trade and economic growth. It also helps to improve security and cooperation between countries. I am confident that the articles in this issue will contribute to our understanding of these important issues.

I hope you will enjoy reading the articles in this issue, and I encourage you to contribute your own research for publication in future issues.

Shri Aditya Mishra
Chairman, LPAI

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Introduction

The second issue of the Journal of Land Ports and Border Economy (JLPBE) carries six full-length freshly written research articles on land borders and border economies. All the articles have been peer-reviewed as per the journal's stated policy. This issue presents not only research articles on trade at Indian borders but also analyses sectoral issues such as port community system, warehousing, etc.

The first article in this issue is written by Pritam Banerjee and Atul Sanganerla, who, in their paper entitled "Strengthening Regional Integration in South Asia: Towards Highly Facilitated Trade Corridors", argue that regional integration in South Asia has been suboptimal due to connectivity challenges. Connectivity-related challenges arise mainly on two counts: the first being poorly coordinated infrastructure at the borders and across hinterlands in key economic corridors, and secondly due to facilitation challenges arising from regulatory and procedural issues. In addition, restrictions on overland transport operations, i.e., trucks from one country not being allowed to operate in another country has also created operational bottlenecks for logistics. These challenges necessitate reforms on multiple fronts. Banerjee and Sanganerla outline a strategy for comprehensive reforms on all these fronts, focusing on selected priority corridors to create a few highly facilitated trade corridors (HFTC) that would emerge as catalysts for regional connectivity and integration.

The second paper in this issue turns the lens on optimising land port capacity. India's trade across land borders has increased manifold, especially so with Bangladesh. Bangladesh is expected to be amongst India's top four export destinations. The land ports have a crucial role in facilitating overland trade. India is expected to upgrade its integrated checkpoints (ICPs) further and convert some land customs stations to ICPs. However, the question that then arises is if it is better to enhance the capacity of existing ICPs or should new ICPs be developed – in other words, we need to identify the limits to the growth of existing land port stations. In both cases, the conventional approach of queuing models is not suitable. The demand for ICP facilities is seasonal and depends on the clearance capacity of similar facilities on the other side of the border. The flow of goods through a particular land port is limited to the minimum flow rate from a node in the land border logistics chain. Thus, upgradation and investments in land ports need to be based on a holistic approach. Our second article entitled "Optimization of Land Port Facilities in India: A Systems Thinking Approach" by Deepankar Sinha and Dipanjana Sinha, presents a system thinking approach to optimising land port capacity. This paper identifies the causality between the inflows and outflows of individual nodes, and the exogenous and endogenous causes that impact the flow rates, and is modelled using the System Dynamics approach. The model has been validated using the process and data of trade passing through India's Petrapole land port to Bangladesh.

India, as part of its endeavour to utilise international trade for sustainable development, has tried to make trade procedures as efficient as possible, in particular through implementation of automated customs systems, electronic single windows and other digital customs and trade

facilitation initiatives. These digital trade facilitation measures have reaped positive results in several benchmarking indices. In terms of India's mode of trade with the rest of the country, there are broadly three modes of transportation—sea route, air route and land route. While India has progressed in terms of its digital trade facilitation initiatives across the former two routes, there is limited digitization across India's land border. This is the context of the third article entitled "Establishing the Need for Having a Port Community System at India's Land Ports", authored by Imran Beigh and Samridhi Bimal. It aims to establish the need for having a Land Port Community System to systemize and seamlessly facilitate trade across India's land borders. One of the conclusions of this paper is that land ports in India may re-use existing information systems towards creating transparency and reducing trade burdens in a manner that the Port Community System (PCS) can act as a Gateway into a Single Window.

The developing economies of the Greater Mekong Sub-region (GMS) have shown that they have become increasingly linked into the global economy through trade, investment credit and technology. Adequate transport and communication facilities play a vital role in their economic recovery and development. In recognition of the benefits of this regional integration, the countries of the GMS are currently co-operating to implement a number of initiatives to reduce physical and non-physical border barriers to trade and transport. The GMS land ports offer many important lessons to other regions. In the fourth article entitled "Border Warehouses as a Tool for Cross-Border Logistics Facilitation in the Greater Mekong Sub-region", Ruth Banomyong presents the perspectives and perceptions of key stakeholders on critical cross-border logistics issues as well as their views on the ways and means to address these issues. This paper also intends to link the formal institutional environment with the individual stakeholder's perspective and perception of critical issues and through that identify critical points related to logistic solutions in a cross-border environment. While utilising a participatory approach, developed by the UN-ESCAP (United Nations Economic and Social Commission for Asia and the Pacific), the results show a clear discrepancy in perceived benefit of the establishment warehouses along the Thai border to relevant stakeholders, as an illustrative example.

We also present sub-national case studies – one on Tripura-Bangladesh border connectivity and another on Arunachal Pradesh-Bhutan border connectivity. In the fifth article entitled "Situating Tripura-Bangladesh Trade Relations in the Framework of International Cooperation", Indraneel Bhowmik attempts to understand the possible impact of new initiatives as Tripura-Bangladesh relations spread across economic, social, cultural and political spheres. Bhowmik's paper also takes a special look at the possible development assistance from Japan, the most reliable international economic collaborator of both the countries. In the sixth article entitled "The Geo-economic and Geo-cultural Significance of the Tawang-Trashigang Corridor: A Perspective on Indo-Bhutan Border Connectivity", Bhagirathi Panda, Jajati K. Pattnaik and Chandan K. Panda discuss the geo-economic and the geo-cultural importance of the Tawang-Trashigang corridor and examine the causality that imposes diplomatic clutter and procrastination against every act of definitiveness and popular optimism towards the construction of this corridor. Most importantly, they observe the benefit to the people from both sides of the border and the possible formidability of India-Bhutan economic and cultural cooperation, and their effective presence in the eastern Himalayan sector at large in the event of this corridor becoming empirically viable.

This issue also carries a review of the book entitled “India’s Approach to Border Management: From Barriers to Bridges”, authored by Pushpita Das.

We are grateful to all those associated with the publication of this journal for their advice and support. In addition to the authors, who made this issue possible, we would like to extend our thanks to Routledge (Taylor & Francis Group) for helping us publish this journal. We hope this second issue of the journal serves its purpose and the readers find it useful and informative.

The editor is immensely grateful to Mr Aditya Mishra, LPAI Chairman for his motivation and guidance that has helped smooth the way towards effective management of the editorship of JLPBE. We are also grateful to Dr Samridhi Bimal, who, apart from contributing an important article in this issue has also helped us with effective administrative support in publishing the journal.

Prabir De
Managing Editor, JLPBE & Professor
Research and Information System for Developing Countries (RIS)
New Delhi

ARTICLE

1

Strengthening Regional Integration in South Asia: Towards Highly Facilitated Trade Corridors

Pritam Banerjee* and Atul Sanganerla**

Abstract: *Regional integration in South Asia has been sub-optimal due to connectivity challenges. Connectivity related challenges arise both from poorly coordinated infrastructure at the borders as well as across hinterlands in key economic corridors, as well as from facilitation challenges arising from regulatory and procedural issues. In addition, restriction on overland transport operations, i.e., trucks from one country being restricted to operate in another has also created operational bottlenecks for logistics. Thus, reforms are required at multiple fronts. This paper outlines a strategy for comprehensive reforms on all these fronts focusing on selected priority corridors to create a few highly facilitated trade corridors (HFTC) that would emerge as catalysts for regional connectivity and integration.*

Keywords: Trade Facilitation, Logistics, Economic Corridors, Regional Integration

JEL codes: C2, C6

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

The basic premise of an efficient global market is the smooth flow of goods, services, technology and people across borders, which, in other words, is known as connectivity. Connectivity is an essential pre-requisite for effective development of market access. Physical connectivity, i.e., existence of proper roads, railways, shipping and air linkages represents just one dimension of effective economic connectivity. In the context of international trade where goods, people, and services have to move across political borders, equally important are the institutional and procedural aspects of connectivity related to rules and governance structures that regulate such cross-border movement.

Literature on trade and transaction costs has dealt extensively with the idea of political borders as barriers (Bougheas et al., 1999). Lack of effective economic connectivity has been a much discussed policy issue in the context of the Bangladesh, Bhutan, India and Nepal (BBIN) subregion. The borders between India and Bangladesh that dissect the BBIN subregion have long been considered one of the worst managed and subject to the most severe transaction costs (Lakshmanan et al., 2001). Generally, poor infrastructure and the small number of operational rail and road cross-border corridors create congestion, which is further aggravated by the poor governance of border procedures (i.e., enforcement of customs and other allied regulations) and lack of institutional solutions to facilitate trade (Banerjee et al., 2009).

It comes as no surprise, therefore, that statistics show that tariff reduction under South Asian Free Trade Agreement (SAFTA) has not helped improve economic integration beyond a certain level. Most studies indicate improvement in connectivity including the institutional and procedural aspects of connectivity will be the key to improving economic integration in BBIN subregion (for example, Raihan, 2015).

Trade is a dynamic process of entrepreneurship seeking transactional opportunities and maximising gains. If transaction costs of negotiating political borders are reduced, a combination of investment and trade-led value-chain integration would result in far greater regional trade. As pointed out by Raihan (2015), in the South Asian case, much more than tariff-led trade liberalisation, it is the transaction cost of trading across borders that have impeded meaningful trade relations.

The article is organized as follows. Section 2 provides a brief discussion on the different sources of connectivity and trade facilitation related challenges. Section 3 introduces the concept of a HFTC including its fundamental components that are related addressing the connectivity related challenges discussed in this section. Section 4 provides a detailed analysis of current impediments and their solution to seamless cross-border transport operations. This includes both issues related to regulation of cross-border movement of goods, people, and conveyances (issue nos. 1 and 2 in Figure 1.1). Section 5 discusses issues related to coordinated planning and development of border infrastructure and on the practical details associated with cross-border cooperation in management of land borders in a manner that optimizes capacity utilization and operational efficiency on both sides (issue nos. 4 and 5 in Figure 1.1). Section 6 concludes with

the presentation of an ‘action agenda’ for developing HFTCs in South Asia, more specifically in the BBIN subregion.

2. CONNECTIVITY CHALLENGES DUE TO INFRASTRUCTURE GAPS AND POLICY DESIGN AND IMPLEMENTATION

South Asian, and even more specifically BBIN subregional integration has been held hostage by connectivity-related barriers. Such connectivity related barriers can be broadly categorized under hard infrastructure related issues and soft policy and procedural issues. More specifically, they can be summarized under five distinct categories as represented in Figure 1.1.

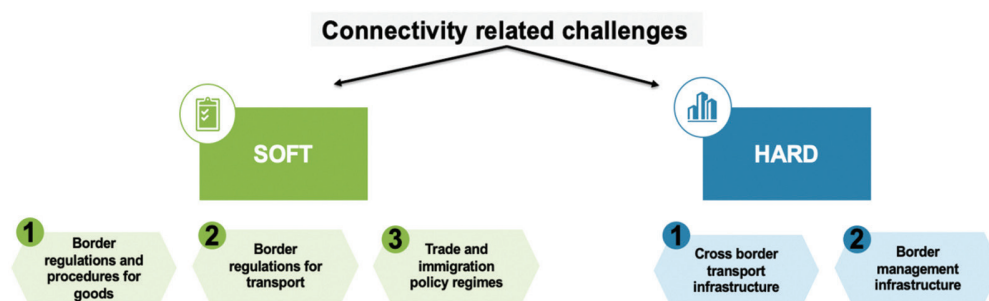


Fig. 1.1 Connectivity Related Issues

Source: Authors' own

Border regulations and procedures for goods and people essentially refer to trade facilitation and immigration issues. Customs procedures and immigration management at land borders need to be cognizant of the critical revenue, security and socio-economic concerns of the regulators on both sides. At the same time solutions need to be found that ensure that the regulations and associated rules and procedures that are in place to address these concerns are not overly complex and cumbersome. Typically, proactive use of technology and risk-management principles lead to workable solutions that facilitate movement of goods and people without compromising level of effective vigilance required to control any illegal activity related to trade and immigration.

Border regulations for transport refers to the transport related regulations that define the extent to which vehicles (including trucks) and trains can cross the border and operate the other countries territory. They also define the sets of rules and procedures that govern the cross-border movement of vehicles and trains including the procedures at the border in terms of any physical inspections and paperwork to comply with such regulations. Not having rights to cross the border necessitates goods and passengers having have to be trans-shipped between vehicles (or trains) at the border adding to transaction costs and transit time, and impedes the growth of regular end-to-end services.

Trade policy regimes relate to tariff and non-tariff measures that apply on the goods, including compliance requirements for rules of origin and safety and product quality standards for the goods. Immigration policy regime refers to the rights and privileges of foreign citizens as defined by the visa requirements and rules.

Cross-border transport infrastructure challenges refer to the generally poor last mile connectivity between many border points and the main trunk infrastructure that connects the border-points to rest of their respective national hinterlands. Added challenges include examples of inadequate infrastructure such as the Bangabandhu Bridge, which is currently unable to bear the weight of a fully-loaded container trains impeding a direct container rail connectivity between Dhaka and the Indian border¹.

Border management infrastructure refers to the eco-system of land-ports (both rail and road) that as gateways through which cross-border movement of goods and people are regulated. Inadequate or poorly planned infrastructure at the border can impede efficient movement of goods and people. A critical challenge at land borders is that of effective coordination of infrastructure development on both sides of the border since effective management of throughput would require adequate capacity and quality of infrastructure on both sides. Equally important is the level of operational efficiency of these facilities and coordination between the land port management authorities ensuring minimum delay and transaction costs.

This article introduces the concept of Highly Facilitated Trade Corridors (HFTC) that provides a holistic approach for addressing all of these connectivity related challenges except trade and immigration policy (issue no. 3 in Figure 1.1).

3. HIGHLY FACILITATED TRADE CORRIDORS

Most of global trade take place between corridors that connect major economic or logistics clusters. The efficient operation of these corridors therefore assumes great importance for the trading economies connected through them.

Such corridors can represent a land-based corridor connecting contiguous countries. A good example of this is the currently under development Lobito Corridor that connects the hinterlands of landlocked Zambia and Democratic Republic of Congo (DRC) with the port of Lobito in Angola. This corridor will link these three countries, as well as link landlocked Zambia and the DRC with other countries through the port of Lobito.

However, such corridors can also be multi-modal. For example, EU-China Smart and Secure Trade Lanes (SSTL) covers both the overland railway route connecting China with the EU via Kazakhstan and Russia, as well as the maritime linkages connecting the main ports in

¹A new multi-purpose rail and road bridge is under development, along with new road and rail linkages. Located much further south of the current route, it would provide a more direct route between Dhaka and Kolkata

Belgium, France, Germany and Italy with the port of Shanghai. There are also examples of cross-border air corridors such as the erstwhile India-Afghanistan air corridor.

But, ensuring efficient cross-border cargo operations requires all countries in that corridor to cooperate and work together to address physical and regulatory bottlenecks that impede efficiency. Such cooperation can focus on coordinated development of border infrastructure, use of technology to simplify processes on both sides of the border, or protocols for information exchange between regulatory agencies to make clearance of good more efficient. Successful collaboration on any of these elements would lead to increased facilitation of the corridor.

A Highly Facilitated Trade Corridor (HFTC) can be considered to be a combination of initiatives to address all major impediments to efficient transport and border operations, and ensure effective regulatory collaboration. Developing such HFTCs focusing on the most important trade corridors connecting countries in BBIN subregion would not only support better regional integration, the demonstration effect of operationalizing such a corridor would lead to adoption of similar facilitation measures in other cross-border corridors leading to overall improvement in regional integration objectives across the board.

Developing a HFTC for land corridors would require interventions to achieve these four key inter-related objectives:

Objective # 1: Facilitating seamless cross-border transport operations: Eliminate need for trans-shipment between trucks of the neighbouring countries at the border and thereby reduce congestion. Achieve further decongestion by minimizing customs related procedures and inspections required to be undertaken at the border locations on both sides.

Objective # 2: Collaboration between customs administrations and other regulators at the border to minimize time and complexity for clearance of goods: Achieving objective no.1 is not possible without active cooperation and trust between regulators on both sides of the border with proper institutional mechanisms for sharing of information, intelligence and putting in place formal systems for operational cooperation. Ideally, such collaboration could lead to even to regulators working together with single-point clearance, sharing facilities and conducting joint physical inspections wherever possible

Objective # 3: Systems inter-operability between regulators and land-ports: Objective no.2 requires institutionalized protocols for information exchange between regulators that would provide advance information that allows faster clearance of cargo. Digital exchange of information would eliminate the need for physical documents issued/endorsed by one administration to be submitted to across the border to the other administration that adds to delays in clearance.

If countries agree to exchange information in their customs declarations and manifest it would lead to great authentication and veracity, and allow much higher levels of facilitation reducing the need for scrutiny of either documents or physical inspection of goods.

Digital information exchange between Land Port Community Systems on both sides is also would allow greater coordination in operations leading more efficient processing of goods, and, therefore, also critical for objective no. 4.

Objective # 4: Coordinated border infrastructure development and management: Efficiency of cargo throughput, including dwell time at land ports, depends on the quality of infrastructure on both sides of the border. Otherwise, the side with the inadequate/inferior infrastructure will become a bottleneck. Coordinated development (which includes upgrading existing infrastructure deemed inadequate or inferior on either side) ensures that such bottlenecks do not arise.

In addition, border points in the HFTC can go one step further and upgrade existing facilities or create new ones, that allows customs and other regulators to work together, eliminating procedural duplication, especially with physical processes such as scrutiny of documents, physical inspections of good when needed, inspection of seal or trucks/containers. Common scanning and weighment equipment would also reduce capital and maintenance costs and rationalize operations.

Having discussed the fundamental components of the HFTC concept in this section, let us now examine specific interventions in greater detail in the following two sections.

4. SEAMLESS CROSS-BORDER TRANSPORT OPERATIONS

The fact that vehicles of one of the BBIN countries could not operate in another, thereby necessitating transshipment of goods between goods carriers of one country to the other at the border point is a major impediment for the development of a robust and efficient cross-border road freight network. The operational inefficiency and delays due to such forced and entirely avoidable transshipment is substantial.

By simply doing away with need for such transshipment by allowing trucks to cross borders, the BBIN MVA adds great value to the cause of regional integration. However, to be truly effective the BBIN MVA or bilateral MVA agreements, or a wider BIMSTEC MVA, would have to supplement the cross-border operation and transit rights of trucks with best practices in cargo-related protocols and governance solutions that will also address several of the existing institutional and procedural challenges to seamless cross-border connectivity for road freight.

The level of ambition of such MVA as a solution for regional integration would therefore depend on up to what extent are BBIN/BIMSTEC governments willing to introduce these global best practices and practical operational solutions around the rules and procedures related to the temporary entry of a vehicle, the movement of cargo, and transit. It would also depend on the appetite to use modern risk management systems in combination with easily available technology-based solutions to facilitate trade.

It needs to be pointed out that rules and procedures implemented by governments stem from legitimate objectives and concerns. However, the enforcement systems put in place often

suffer from design flaws that lead serious operational inefficiencies and transaction costs. In combination with administrative mis-management and occasional rent-seeking, these on-the-ground rules and procedures become serious impediments to connectivity.

Table 1.1 describes key regulatory objectives that regional MVA cargo protocols would have to address, the traditional enforcement tools (that do not integrate global best practices and technology-based solutions) and their potential negative impact on business operations.

Table 1.1 Regulatory Objectives: Inefficient Enforcement Tools and their Business Impact

Regulatory Objective	Traditional Enforcement Tool	Operational Challenge Posed to Business
Preventing foreign vehicle from violating pre-approved routes and destinations	Requiring prior approval of route plan for a truck for every cross-border journey	Reduced operational flexibility as various factors might require need to change route (customer requires shipment at a different location, accident or congestion on prior approved route, etc.)
Ensuring adequate standards for foreign vehicles and vehicle operators to ensure traffic safety and environmental security	Journey-wise requirements for permit; truck and driver need get permit for every journey individually and also get this permit endorsed by customs at the border	Getting permits for every journey, with specified vehicle and driver combination would be very cumbersome. Every journey would require a visit to officials with associated transaction costs and delays. Also, attaching a specific driver to a truck for a journey leads to operational inflexibility. it might be more convenient to have different drivers do different legs of the journey (a local driver for each leg)
	Lack of flexibility in integrating different types of vehicles; e.g. not allowing separate registration for tractors and trailers thereby allowing only one or the other to cross the border (typically the trailer crosses the border)	Operationally, tractor-trailers can help add a layer of operational flexibility to cross-border movement by having only the trailer cross the border. Having both options (i.e., allowing the full truck or only the trailer to cross the border) helps on this score
Prevention of smuggling of contraband (including weapons) and human trafficking. Preventing revenue leakage (customs misdeclaration)	Thorough physical inspection of shipments at every border	Delays caused due to typically manual methods of inspection and lack of risk management systems (RMS) resulting in almost 100 per cent inspection of cargo. Duplication of the process by authorities in both countries at each border adds to delays. There are instances of rent-seeking.

Regulatory Objective	Traditional Enforcement Tool	Operational Challenge Posed to Business
Prevention of revenue leakage and ensuring consumer and environmental health and safety	Onerous physical checking and physical endorsement of customs declaration-related documents	Delays due to typically manual environment and lack of risk management systems being in place. Physical checking and endorsement, and need for physical copies of supporting documents often defeats the efficiency gains of implementing EDI and having a system of advance declaration. Lack of EDI message exchange between customs administrations leads to duplication. Regulatory and physical infrastructure for implementing product quality-related rules is often missing, and leads to huge delays in clearing shipments.
	Insistence of at-the-border inspection and clearance of LTL (less than truckload, i.e., multiple shipment in single truck) cargo	Increases cost of both shipping and transshipping (i.e., transit to third country) smaller shipments, and leads to significant delays.

Source: Banerjee (2015)

Let us examine what are some of the best practice solutions that can balance the enforcement priorities of regulators while addressing the facilitation challenges discussed in Table 1.1.

4.1 Managing the Temporary Admission of Vehicle

Dispensation with the need for journey-wise permissions: Vehicles (tractors, trailers, and trucks) that have fulfilled technical pre-requisites are allowed to cross borders without specific permit for each journey. Number of such vehicles that can be registered are subject to a cap per associating partner country

GPS-based monitoring: Monitoring of whether vehicles stick to the agreed upon corridors, is done through the use of GPS technology. The protocol can establish a technical requirement for such vehicles to have ability to feed their GPS tracking into monitoring systems established by individual countries.

Electronic permits and log of entry/exit: A common online platform for issuance of permits for cross border operations should be developed that allows all MVA member country regulators to have sign off on permits (as per requirement), thereby ensuring a single-window environment for transporters who apply for such permits.

Carnet like system for temporary movement of vehicles across borders: A Carnet like system that allows parties to execute a single bond and guarantee in their own local jurisdiction for

operations across the region should be included in the MVA cargo protocol. This will reduce the transaction costs arising from the need to execute individual bonds or bank guarantees with regulators and customs of all countries where the truck operates.

Regional insurance scheme similar to COMESA Yellow Card: The Common Market for Eastern and Southern Africa (COMESA) Yellow Card is a motor vehicle insurance scheme, which is valid in all the participating countries in the region. It covers third-party liabilities and medical expenses for the driver of the vehicle and his passengers. As this card is valid in many parts of the region, transporters and motorists do not have to buy insurance cover at each border post they cross.

4.2 Allowing the Movement of Trailers and Flatbeds, and Not Just Trucks

Logistics service providers and transporters might choose not to send a truck across the border. Instead a trailer (flatbed with multiple containers, or a single container trailer) could be taken across the border. For example, an Indian registered prime mover can propel a trailer up to the border. At the border, a Bangladeshi prime mover can take over. This provides operational flexibility and dispenses with the need for certain kinds of insurance cover. It also allows the Bangladeshi leg of the journey to be undertaken by a Bangladeshi driver in a vehicle he is familiar with.

4.3 Customs Related Protocols

If MVA protocols do not eliminate the existing duplication of customs processes, lack of integration of customs operations at the border, and lack of electronic message exchange systems between the IT systems of MVA member state customs, then its achievement in terms of regional integration would be extremely modest. Some of the key reforms in this area include:

- Allowing seamless movement of sealed containerised cargo between hinterland customs stations without any procedures being done at the borders
- Message exchange between MVA member countries customs IT systems,
- Integration of a 'trusted operator' scheme. Another key achievable would be to ensure that all facilitations are available to LTL (less than truckload) shipments and not just to single-shipment full truckload or FTL cargo.

The combination of these three would allow for making provisions for hinterland-to-hinterland movement with 'no stop at border' for sealed containers. Let us discuss the specifics of these customs related priorities for seamless and efficient cross-border transport operations.

(a) Inland clearances supported by RFID e-Seal and GPS tracking

The customs protocol should have a provision for a truck to be stuffed at a hinterland customs location in the origin country (e.g., container freight station or CFS, or an inland container depot or ICD) and complete all export customs clearance there.

Such a customs-sealed truck would not be stopped again for customs clearance at the border, but would be allowed to pass with a simple check that seals are intact. The truck would travel on to a hinterland customs location in the destination country (again an ICD or CFS) where customs clearance would take place.

In order to ensure maximum security en-route and to dispense with apprehensions related to tampering with the seal, the truck should be sealed with an electronic passive RFID seal. In addition, GPS based monitoring that has already been discussed with regards to the temporary admission of vehicles, would also enable authorities to track any unauthorized stops or off-route activity. Integration of such measures into the protocol would enable member country customs to confidently allow hinterland to hinterland and dispense with procedures at the border.

The successful implementation of the Electronic Cargo Tracking System (ECTS) program supported by ADB for transit movement for Nepal bound containers from Indian ports has clearly demonstrated both the usefulness and practicality of such solutions in South Asia²

The same principle can be adopted for cross-border container movement by rail with all clearance and associated scrutiny and inspections taking place in rail inland container depots (ICDs), without any stoppages at the border. This is discussed in detail later in this section.

(b) Trusted transporter scheme

MVA and rail movement related protocols for cargo must incorporate a trusted cross-border transporter program which would be open to transporters or logistics service providers. Stringent pre-requisites to qualify could be established in common agreement between the BBIN countries. Such requirements could relate to:

- Past compliance record with host country customs
- Global or national reputation
- National level accreditation from customs, e.g., whether transporter or logistics service provider providing transport services is an approved economic operator or AEO in its host country
- Scale of operations
- Technology integration (GPS tracking-enabled vehicles for road movement)
- Use of RFID e-seals (for both rail and road)

This is not an exhaustive list, but an indicative one. Transporters who do meet such pre-requisites should receive specific benefits related to (but not limited to) the following:

- Reduced or no requirement for bank guarantee or bond where such requirements would be put in place for cross-border operations
- Expedited clearances and green-channel at the border posts

²Refer, Butiong (2018), Early Lessons from Using Technology to Ease Trade in South Asia, Asian Development Blog, published November 2018, available at <https://blogs.adb.org/blog/early-lessons-using-technology-ease-trade-south-asia>

(c) No restrictions on less than truckload

Less than truckload (LTL) cargo, i.e., a truck carrying a consolidated cargo of several different shipments (multiple consignors and consignees) are often the most inspected at borders. Since they typically serve the smaller exporters, the transaction cost impact of such inspections (often 100 per cent) and associated delays are also significant. Even in an Risk Managed System (RMS) environment (i.e., a system of automatic clearance for a bulk of shipments based on pre-established risk assessment parameters), the probability of some or other shipment in an LTL truck being picked for physical inspection and thorough check would be very high. This would essentially require unloading of shipments and physical inspection of the truck adding to delays.

The solution for such LTL trucks is to allow consolidators (e.g., freight forwarders and express logistics firms) to have truck movement across regional borders with actual clearance happening at an inland customs station (i.e., essentially hinterland to hinterland movement of cargo discussed earlier) of convenience.

(d) Enabling multi-destination shipments: Transit and customs procedures

Another critical aspect would be customs treatment of mixed cargo. The competitiveness of a freight business is based on volumes. Larger volumes bring down costs of the service and allow roll-out better services. Therefore, operational flexibilities that allow better build-up of volumes in a trade-lane are always desirable from the perspective of trade and logistical facilitation. It is in this context that combining cargoes for several destinations (i.e., mixed cargo with final destination in more than one country) in one truck (or trailer) assumes importance.

For examples, a truck (or trailer) could carry shipments from Bangladesh for eastern Uttar Pradesh and Nepal. Even with the suggested idea of seamless movement of sealed containers (hinterland to hinterland) being adopted, this would still require customs clearance of both Nepal and India bound goods with Indian customs and then re-export to Nepal. Direct transshipment would not be allowed for containers/trucks/trailers that have mixed cargo. This reduces the efficacy of having mixed cargo trucks and increases costs of servicing multi-country trade-lanes using road freight.

In order to allow such aggregation and economies of scale, the MVA cargo protocol could develop an efficient transshipment model for mixed cargo. Trucks/containers/trailers containing mixed (i.e., multi-country destination) cargo should be allowed the facility of stuffing and sealing in customs presence at an inland location in origin country and is allowed to cross border by customs administration at both sides of the border without any further physical inspection. The truck would then travel to an inland location in the first destination country, clear the goods meant for first country in customs presence, and pick up additional goods meant for second country, and have the truck/trailer re-sealed in customs presence. The truck would then travel on to the second country without any inspection (other than seal and document check) at the border and undergo customs clearance for second country at an inland destination.

Using an illustrative example, this would mean that a truck/trailer that is customs sealed at, say, a Narayanganj factory in Bangladesh would cross the Indo-Bangladesh border without any further physical inspection, with just checking of seal and corresponding details that should be made available through EDI message exchange as suggested earlier.

The truck would then travel on to the ICD at Varanasi, whereby only those goods meant for Indian customers would be unloaded and cleared under customs supervision. Goods meant for Nepal from India would then be loaded on to truck (in addition to Nepal-bound cargo already in the truck) in custom presence and truck re-sealed for second leg of the journey. The truck would travel to Nepal without any physical inspection at the Indo-Nepal border and do customs clearance for Nepal at an inland destination. The above process would allow agglomeration of cargo in a single journey for the wider regional trade-lane and greatly reduce costs by doing away with the need for multiple customs clearances and handling (loading/unloading).

(e) Rail

Managing rail movement is much simpler. Since loading and customs clearance of container or bulk would happen under customs supervision at an ICD, these can be properly secured with passive RFID seals. Customs in the importing country simply use overhead scanners to verify whether seal is intact without having the train to stop (it would only slow down to allow proper scanning from the overhead scanners). Non-intrusive inspection of containers/wagons can also be undertaken without stopping the train (this is discussed in greater detail in Section 5).

The main rail border crossing should have facilities to offload a container or decouple a wagon, in case a problem is identified, i.e., seal has been tampered or non-intrusive inspection throws up something suspicious. This would allow rest of the containers/wagons continue on the journey without the entire train being held up. The containers/wagons stopped at the border could be cleared subject to further examination or returned to ICD of origin. A protocol that allows the return of the wagon/containers with suspicious cargo to origin ICD with the returning trains if so needed needs to be put in place as well.

(f) Cooperation on operational and safety standards and associated physical inspection and handover of trains between administrations

Movement of trains are subject to safety and operating standards, and regular associated inspections by railway administrations. In order to ensure seamless handover of trains between two different rail administrations across borders, International Union of Railways (UIC) has developed the framework Agreement on Freight Transfer and Inspection (ATTI)³. The ATTI agreement lays down rules for the transfer of freight trains between participating railway administrations, focusing on:

- Agreement on freight Train Transfer Inspections with protocols for cross-border transfer of freight trains to counterpart administrations

³See Agreement on Freight Train Transfer Inspection (ATTI) at <https://uic.org/special-groups/atti/#What-is-ATTI>

- Running and managing a shared quality management system
- Ensuring traceability in the shared ATTI quality database.

Regional railways administrations do not need to replicate ATTI in full, but explore the possibilities provided by frameworks like ATTI to have institutionalized cooperation that ensures seamless movement of freight trains with minimum duplication of inspections, checks, documentation etc., without compromising on security, while developing shared best practices in standards and their enforcement.

(g) Institutional mechanism to enable seamless cross-border movement

Effective management of cross-border movement of goods, people, and the vehicles and trains carrying them requires close institutional cooperation between multiple agencies of different countries in a corridor. In light of this need for regular exchange of information, sharing of concerns and finding solutions to day-to-day issues, it is important to put in place a formal institutional mechanism for cooperation.

A very good example of such an institutional framework can be found in the Transportation Border Working Group (TBWG) that brings together multiple transportation and border agencies, and other organizations, to coordinate transportation planning, policy implementation, and the deployment of technology to enhance border infrastructure and operations.

Such an institution can also be tasked with the responsibility of developing operational protocols and SOPs between different sets of regulators or border managers that ensure smooth management of cross-border movements and expeditious solution to any challenges that arise. For example, railways administrations of the corridor countries can work towards creating harmonized rail safety regimes and inspection systems. Customs administrations can develop joint inspection protocols and protocols for sharing of data and intelligence, an issue discussed in greater detail in Section 5.

Effectively, such an institution for cooperation between counterpart agencies of different countries in a corridor is a pre-requisite to coordinated planning, development and management of land border facilities, the topic of discussion of Section 5 that follows.

5. COORDINATED PLANNING, DEVELOPMENT AND MANAGEMENT OF LAND BORDER FACILITIES

Development of critical border infrastructure and its effective operation and management to optimally facilitate trade requires focus on both the physical infrastructure, as well as technological and institutional solutions that ensure efficient throughput of conveyances and goods. Since throughput depends on the state of affairs on both sides of a border, optimal outcome is totally dependent on coordination on both the physical infrastructure development aspects, as well as the adoption of institutional and technological solutions for effective management by agencies on both sides.

The Prime Minister's Gati Shakti Initiative (PMGSI) for coordinated planning and development of connectivity infrastructure across modes, launched in October 2021 by India, is a major reform in this regard. Since the PMGSI will address both the hinterland and border infrastructure needs in India, including the major economic corridors and dedicated freight corridors, it is important for the wider region for two reasons.

First, improved hinterland connectivity helps India's regional neighbours access the vast Indian market due to better infrastructure between the gateways and rest of the country. Second, trade between South Asian countries have to transit through India (e.g. between Nepal and Bangladesh), and improved multi-modal connectivity in India improves the infrastructure required for this transit movement. Third, South Asian countries depend on Indian gateway ports for their own export and imports. While such dependence is critical for landlocked countries, even countries like Bangladesh or Myanmar can leverage economies of scale, and therefore better cargo rates from large Indian hub ports or airports. The movement from the borders into these Indian port and airports are greatly helped due to the efficiencies that are expected to be achieved from the PMGSI.

But, there is a more strategic aspect to the PMGSI. This comprehensive planning and execution exercise can be extended to have a regional cooperation dimension, whereby planning and development of border infrastructure across South Asia borders in a coordinated manner, with clear focus on requirements of all countries, and linked to the economic corridors and industrial development plans of all countries.

If such cooperation in planning and execution could happen, using the PMGSI as a fulcrum, given India's outside hinterland role underlined earlier, this could lead to expeditious and coordinated development that has been missing in this region for decades. The following sub-sections discuss the key priorities for such coordinated planning and cooperation on management of border infrastructure and facilities.

5.1 Focus on the Last Mile Infrastructure

Needless to say, that planning for any HFTC would require addressing the critical infrastructure gaps. As an illustrative example, the Kolkata-Dhaka-Agartala rail and road corridors require a number of large infrastructure developments. These include improvements on the 80 km Kolkata-Bongaon road link, the 135 km Benapole-Bhatiapara highway in Bangladesh that would link to the under-development Padma multi-purpose road and rail bridge providing a much shorter route between Kolkata and Dhaka and then on to Akhaura border with Tripura.

The Padma multi-purpose bridge, along with the also under-development Dhaka to Bhangra railway line will provide a direct broad gauge railway line between Kolkata and Dhaka. Besides providing a shorter route, it will help overcome the current operational constraints of the existing Bangabandhu bridge much further north which is unable to support fully loaded container rakes. The other critical components for rail linkages in this corridor are the dual gauging of line connecting Tongi upto Akhaura (currently metre gauge).

The above illustrative example of the Kolkata-Dhaka-Agartala corridor underlines some of the broad infrastructure development priorities for HFTCs in South Asian region would include:

- Planning and development (including upgradation) of adequate road capacity, including road quality to handle heavy freight movement and large volume of traffic
- Planning and development of rail linkages that allow inter-operability, for e.g., double gauging (provision for both metre gauge and broad gauge) in Bangladesh that would allow trains designed for India's broad gauge being able to run through the Bangladesh rail network. Some standardization in signals and other operational aspects of railroad also need to be attended to for through end-to-end operations between different railroad systems.
- Planning and development (including upgradation) of road and rail bridges, including their ability to handle heavy freight movement

But equally important are development and capacity upgradation of the last mile linkages between the trunk infrastructure of different countries in the corridor and the main cross-border gateway points. The importance of this is highlighted in the BIMSTEC Connectivity Master Plan⁴.

South Asian countries have typically tended to focus on linkages between their key production and population centres, and not so much on the linkages with their overland border gateways. This relative lack of attention means that several last mile road or rail linkages to even critical cross-border gateways like Benapole-Petrapole or Raxaul remain congested, narrow and operationally inefficient.

Since these roads go through population agglomerations and there are issues related to encroachment of roads and poor traffic management, it is important that multiple strategies are explored to resolve these issues for last mile access for those cross-border gateways that would serve a HFTC. This includes access-controlled by-pass roads for freight movement, or dedicated access-controlled freight lanes if land acquisition issues can be easily attended to. It would also require developing strong partnerships with local administrations to focus on traffic management and limiting any encroachment of roads.

In the case of rail, the last mile cross-border connectivity is often found to be missing, for example the 15.6 km missing link between Agartala and Akhaura that would connect Bangladesh railway system with Northeastern Region of India (NER), and would thereby allow a Kolkata-Dhaka-Agartala and onwards to rest of NER. Work is ongoing at this particular critical link, and it is expected to be operationally ready by mid 2023.

5.2 Coordinated Development of Cross-border Gateways with Best-in-class Design, Technology and Management SOPs

Investing in an advanced land border facility for either road or rail without coordinating with the other side is a poor strategy. No matter how much efficiency is achieved due better

⁴ BIMSTEC Master Plan for Transport Connectivity, Asian Development Bank and BIMSTEC, published in April, 2022

infrastructure, improved processes and use of technology for faster processing and clearance of goods, the throughput at the facility will always be subject to limitations on the other side of the border. This is where land borders fundamentally differ from maritime and air gateways.

Since resources are always limited, the concept of developing HFTCs, that would include identification of mutually agreed cross-border points where countries on both sides of the border would focus their energies makes so much sense. This has indeed been the global best practice in all successful land-border corridors.

Essentially the land border facilities serving HFTCs should have well-developed infrastructure with modern truck bays and access roads. It should also have adequate deployment of Customs and all major agencies that required for clearance of goods to be present in location.

The critical infrastructure development or upgrades for identified road cross-border facilities for an HFTC would include:

(i) Facilities to manage seamless movement of trucks

In order to allow for RFID e-sealed trucks that have already been cleared in hinterland customs location the following infrastructure and equipment would need to be put in place. This assumes that the solutions for cross-border truck movement and facilitative regulatory protocols on the same would have been accepted.

- Dedicated lanes for the trucks with the following equipment
 - Weigh in motion (WIM) devices to capture the axle and gross-vehicle weights of passing trucks
 - Advanced X-Ray inspection systems⁵ used for scanning cargo containers, trucks, and other vehicles in high-volume operations
 - Overhead RFID e-seal scanners that check whether seals put in place by customs have remained intact in transit
 - Additional lane on the side that allows a truck to be turned back if any issues arise from WIM, X-Ray or RFID scans, or a truck has been pre-selected by customs risk management system (RMS) for further scrutiny including physical examination of cargo
 - Secure holding area for trucks that have been turned back or selected by RMS for further scrutiny, including adequate space for efficient unloading and re-loading required for any physical examination of cargo. Such a holding area should be equipped with high-performance CCTV cameras that record all physical examinations

(ii) Managing transshipment between trucks

While a large portion of the containerised trade would take advantage of hinterland-to-hinterland movements described above if provision for it is made in the MVA cargo protocol,

⁵Examples of this in use in cross-border facilities include the VACIS IP6500 Integrated X-Ray Inspection System

a large proportion of this trade in the Southern Asian region is related to bulk goods (industrial raw materials) and agro-produce which is often not containerised. Such shipments would still undergo checks and customs clearances at the border posts. Managing such cargo would require the following facilities to be in place

- Modern customs bonded warehouse with adequate space for temporary storage
- Well-designed truck parking bays equipped with handling equipment that allow fast, safe and efficient loading and unloading of goods
- Facilities for handling and storage of special products. These include food, agro and pharma requiring temperature controlled environment
- Container yard and holding bays for loaded trailers with containers/bulk or oversized goods within the bonded secure area. This would facilitate cross-border moves where the parties do not want trucks to cross-borders, but would want loaded containers/trailers to cross borders.

There should be a border management protocol that allows trucks of one country to travel up to the custodian premises on the other side to either pick-up or drop-off goods. Recognition of each other's custodian premises would allow, for example, Indian truck to go to the Bangladeshi custodian premise to pick up an Indian import shipment, and vice-versa for the Bangladeshi truck. The protocol understanding should recognize that goods or truck will not need to be further scrutinized if they have already been scrutinized by the other side customs before entering or at the custodian premises. The protocol would need include permission for a tractor with to come into the bonded area from across the border to pick up a trailer/container from the bonded area.

(iii) Facilities to manage the seamless movement of trains

It needs to be clarified that the rail and road cross-border facilities do not need to be in same place. But like in the case of road, there has to be matching investments in the facilities on both sides of the border. Specific infrastructure at the rail-crossings would be similar for trucks. This includes:

- WIM for weighment of wagons
- Advanced X-Ray inspection systems⁶ used for scanning cargo containers, trucks, and other vehicles in high-volume operations
- Overhead RFID e-seal scanners that check whether seals put in place by customs have remained intact in transit

In addition, a protocol should be put in place not to hold the entire train at the border location if customs intelligence or automated scrutiny from WIM, X-Ray or e-seals throws up issues. The entire train should be allowed to travel to ICD on the other side and further action should be taken there.

⁶Examples of this in use in cross-border facilities include the VACIS IP6500 Integrated X-Ray Inspection System

However there would be instances where it is essential to hold back the offending shipment from crossing the border. In such instances, adequate facilities for efficient de-coupling of wagons carrying the offending cargo/container(s) and secure siding to hold them until a returning train can take it back to origin.

5.3 Joint Deployment of Regulators and Shared Facilities

The discussion in the preceding Section 5(b) clearly shows that there is a significant quantum of physical infrastructure, equipment, and associated operational and regulatory human resources required for a well-functioning road and rail land border facility.

Wherever possible, opportunities need to be found for developing business processes that reduce duplicative activities for regulatory human resources, especially customs. The two customs administrations can devise protocols that allow joint inspections and scrutiny of documentation. This can be further facilitated by digital integration between customs systems and protocols for sharing data discussed in Section 5(d) that follows.

There are existing global best practices in this regard is the Laredo bi-national inspection facility that was established in 2013 at the Laredo International Airport. This facility facilitates joint inspection of Mexico bound US exports by both US-CBP (United States Customs and Border Protection) and Mexican counterpart Servicio de Administración Tributaria (SAT). With goods examined by both agencies in one location, U.S. exports can have expedited entry into airports in eight Mexican cities, allowing for uninterrupted delivery within Mexico. Cargo cleared at this facility can be immediately released to the importer in Mexico with no pauses at customs in these Mexican airports⁷.

Such solutions, besides helping both customs administrations in rationalizing their deployment, it would reduce procedural duplication and therefore transaction costs and time needed for clearance of goods.

In addition to coordinated joint deployment, HFTC land border facilities should look to see if there could one shared facility that shares all the expensive equipment and its operational and maintenance costs. This would help reduce overall operational costs for land border facilities overall for both countries on the border, help the process of joint deployment of officers, and create economies of scale in operations.

A recent example is the cooperation between Canadian Border Services Agency (CBSA) and US-CBP to create a shared customs pre-clearance facility for passengers and accompanying cargo at the Montreal Central Station. The facility would function as a shared-use facility with both U.S. and Canadian border security agencies conducting full customs, immigration, and agriculture inspections on-site and on trains operating in a sealed capacity between Montreal and the U.S. border.

⁷Innovative Customs Procedures in Laredo, Texas Accelerate U.S. Exports to Mexico, Blog from International Trade Administration, US Federal Government, viewed at <https://blog.trade.gov/2019/11/18/innovative-customs-procedures-in-laredo-texas-accelerate-u-s-exports-to-mexico/>

The essential point of this example is that two customs (and other agencies such as quarantine regulators for agro-products) have agreed to work together under one roof to have single point of control and regulation for cross-border movement of goods and people, and the conveyance carrying them. The institutional mechanism and the business process SOPs for joint working, workflow management and enforcement practices have been developed and accepted by agencies on both sides.

Such examples clearly show that such solutions are both possible and practical. All it requires is political will of the leadership of the countries involved and the spirit of cooperation between the agencies that would have to work together on the ground.

5.4 Digital Integration and Information Exchange Protocols

A critical trade facilitation measure for customs clearances related to overland movement of goods is the exchange of pre-arrival (i.e., arrival at the land border check post) customs declaration data between neighbouring Customs administrations. The receipt of such information few hours prior to arrival of truck or train (empty or carrying goods) at the border allows customs administration to carry out risk assessment and clearance protocols in advance, thereby significantly speeding up the process of actual clearance.

This would need participating Customs administrations⁸ to implement the following:

(i) Protocols and rules for advance declarations and their assessment

- Implement advance electronic customs declaration for overland movement of cargo
- Develop a message exchange system that allows their systems to interact and exchange information
- Enable advance risk assessment and clearance of cargo prior to arrival at land border crossing

(ii) Cooperation for digital integration of systems and message exchange between them

- Develop Application Programming Interface (API) that allows exchange of information between Landport operating systems in the HFTC. In case there are systemic deficits in existing Landport operating systems, or lack of a Landport operating system on one side, development of the same needs to be undertaken
- Develop API between customs administrations that allows message exchange, and if possible, exchange of documents between the customs administrations
 - It needs to be noted that both UNNExT and WCO have developed guidelines for such message exchange and API between customs, and these models can be suitably customized for the South Asian context with little effort
- Based on an MoU, develop protocols that allow exchange of declaration information between the two customs in a secure manner, and without compromising sensitive data of

⁸Customs administrations who will adopt and administer such facilitative measures under regional MVA or other institutional cross-border transit arrangements

declarants from either side. The exchanged declarations can be evaluated for risks by the customs administrations to decide the control to which the goods will be subject to, prior to their arrival

- It needs to be noted that WCO has been promoting the Globally Networked Customs (GNC), which has received support in the form of Article 12.2 of the WTO Trade Facilitation Agreement (TFA), and has published a detailed concept paper on this subject. To quote WCO ‘The GNC is a concept based upon the systematic exchange of information of a commercial nature for a wide variety of reasons that may include enhanced data re-use, improved risk assessment and control, improving data quality, and other reasons that enhances the ability of Customs and Border Agencies to discharge their responsibilities more effectively’⁹.

(iii) Institutional framework for co-operation between customs administrations for improved facilitation

- Customs administrations in the corridor can sign an MRA, recognizing each other’s Authorized Economic Operators or AEOs, further facilitating trade.
- Customs administrations can also agree to mutual recognition of controls. This would typically work best if the exports controls of the origin country are recognized by the destination countries customs. An incremental approach for implementing such a mutual recognition, i.e., applying this to specific categories of products that reflect lower risk, or entities that are better known or trusted.

Sections 4 and 5 identify a large number of interventions. This is an indicative list of interventions covering the broad areas of reforms related to connectivity and facilitation that need to be addressed if one is to create a genuinely seamless transport corridor with minimum operational hassles and regulatory transaction costs. This indicative list of interventions would need to be customized for the specific corridor identified for development as a HFTC. It is also unlikely that all of these interventions can be achieved simultaneously. Developing an HFTC would therefore require long-term commitment by countries to incrementally implement the comprehensive set of reforms phased over a few years. Section 5 which concludes this paper suggests a possible implementation framework for HFTCs in the South Asian region.

6. CONCLUSIONS: A POSSIBLE IMPLEMENTATION FRAMEWORK FOR HFTCS

The HFTC interventions can be staggered and implemented in phases. A successful HFTC would first require a comprehensive agreement between the countries in the corridor outlining the specific interventions and related protocols associated with different initiatives that both

⁹It needs to be noted that GNC as a concept goes much beyond the existing Customs Mutual Administrative Assistance Arrangements (CMAAA) that typically represent ad-hoc exchange of information between customs administrations, and not regular information exchange of specific transaction and data parameters based on a pre-agreed format (digital or otherwise)

countries would need to implement in each phase. Post this in-principle commitment to the set of reforms and interventions required to achieve the connectivity and facilitation related objectives of the HFTC, a time bound implementation plan would need to be put in place.

Implementation Framework

As was discussed in Section 5 in order to drive the implementation of these HFTC initiatives, it would be essential to set up a working group that includes all the key departments and agencies responsible for regulating the flow of goods and conveyances across borders from both the countries. This would include customs, transport authorities, border security agencies, land-port authorities, and agencies enforcing product related regulations related to human, animal, and plant health and safety, product standards, and environment.

The working group should be made responsible for implementation with deadlines, and standard operating procedure (SOP) for escalation to higher officials if specific challenges to on-ground implementation arise and lead to delays. The progress in implementation being made by the working group should be subject to regular monitoring by the political leadership in both countries to underline their commitment to its achievement.

Table 1.2 provides an example of such phasing, prioritizing interventions by both logical sequence of reforms/development required, as well as the relative speed and ease by which interventions can be implemented.

Table 1.2 Phased Implementation of HFTC Interventions

Phase 1	Identification of corridor(s) to be designated as HFTC
	Finalization of Protocols for seamless cross-border truck movement
	Finalization of rules for off-border clearances by customs administrations in all corridor countries
	Multiple pilot runs conducted to tests systems
	Initiation of dialogue on coordinating border infrastructure development, with the goal of eventually facilitating joint operations by regulators of both countries
Phase 2	Identification of system gaps in customs IT systems and Landports community systems. In cases where IT systems are missing, development of such systems
	Agreement on data elements and messages to be exchanged
	Agreement on API and message exchange protocols to be used
	Testing of systems and operationilization
	MRA between customs for AEOs/Trusted trader programs
Phase 3	Finalization of operating protocols for joint processing/ inspection
	Development of integrated border infrastructure to facilitate joint operations by regulators of both countries

Source: Authors' own

This article provides conceptual framework defining the fundamental elements that would define a cross-border transport corridor connecting key economic nodes across a region with a high degree of operational efficiency and well-designed regulatory and procedural frameworks

that govern the movement of goods and people and the conveyances that carry them. Such a corridor would therefore create a robust economic artery leading to improved regional integration. In other words, the development of such a HFTC is in many ways a pre-requisite for more ambitious regional integration. If South Asian policy-makers are serious about greater regional integration, as well as leveraging regional value-chains to improve the overall participation of South Asian businesses in global value-chains, prioritizing the development of such HFTC should become the most important policy priority in the context of regional cooperation.

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ARTICLE

2

Optimization of Land Port Facilities in India: A Systems Thinking Approach

Deepankar Sinha* and Dipanjana Sinha**

Abstract: *India's trade across land borders has increased manifold, and especially with Bangladesh, this has increased at the annualized rate of 9.27 per cent in the last 24 years, i.e., from US\$ 981 million in 1995 to US\$ 8.24 billion in 2019. Bangladesh is expected to be amongst India's top four export destinations. The land border trade is supported by the land ports providing customs clearance, warehousing, and cross-docking facilities - differentiated as integrated check posts (ICP) and land customs stations (LCS) in India. The ICPs are nodes where truck parking, warehousing, cross-docking facilities, and customs clearance are available. In contrast, LCSs are points where customs clearance and minimal facilities are available. In certain ICPs, the waiting time for trucks is about 15 to 30 days and the demurrage charge per day per truck is to the extent of US\$ 30 to 40, and this delay is expected to increase with the trade growth. India is expected to upgrade the ICPs further and convert some land customs stations to ICPs. However, the question arises whether enhancement of ICPs capacity is required, or develop new ICPs, or, in other words, identifying the limits to the growth of the existing land port stations. In both cases, the conventional approach of queuing models is not suitable. The demand for ICPs facilities is seasonal and depends on the clearance capacity of similar facilities on the other side of the border. The flow of goods through a particular land port is limited to the minimum flow rate from a node in the land border logistics chain. Thus, up-gradation and investments in land ports need to be based on a holistic approach. In this paper, a system thinking approach has been adopted to optimize land port capacity. This article identifies the causality between the inflows and outflows of individual nodes and the exogenous and endogenous causes that impact the flow rates and is modelled using the System Dynamics approach. The model has been validated using the process and data of trade passing through the Petrapole land port in India to Bangladesh.*

Keywords: Land Port, Integrated Check Posts (ICP), Queuing Model, Optimization, Bangladesh, India

JEL codes: F14, F20, F5

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

Trade across countries takes place through different modes of transportation, namely, sea, air, and land. Unlike air and sea transportation, the land border trade is affected by the natural environment and efficiency of the ports of both countries (Husain, 2014).

In South Asia, India, and Bangladesh, the two neighboring countries have strong diplomatic, trade, and economic relations. Over the past 25 years, India's export to Bangladesh has grown by over 8.5 per cent (OEC, 2020), and it is one of India's most prominent trading destinations in South Asia. Since the free trade agreement, SAFTA (South Asian Free Trade Agreement), the commerce between the two countries has seen growth through collaboration.

The World Bank (2021) suggests that improving transportation between the two countries could increase exports to the extent that there could be a 297 per cent increase in Bangladesh's exports to India and a 172 per cent increase in India's exports to Bangladesh. Increasing trade between nations depends on logistics facilities and stakeholders' effectiveness (Dua & Sinha, 2018). The performance of nodes (i.e., ports, terminals, land border stations) plays a crucial role in enhancing the quality of inter or synchro modal transportation (Dua & Sinha, 2019). The Land Port Authority of India (LPAI) had initially set up Land Custom Station (LCS) at the border between the two countries. However, these stations lacked proper infrastructure and made border-crossing time-consuming and un-economic. Therefore, Integrated Check Posts (ICPs) were introduced to counter the drawbacks of LCS. These check-posts are intended to facilitate three key operations related to border activities – Customs clearance of goods, Immigration of passengers, and Border Security (Bhattacharjee, 2019). The ICPs consists of facilities such as warehousing, cargo examination yard, customs clearance, and others. At present, there are nine ICPs operational in India, of which around 45 per cent are on the Indo-Bangladesh border (LPAI, 2022). However, since significantly less (<2 per cent) global trade happens via ICPs in India, there has been a lack of focus on their infrastructure until recently (Sinha, 2021). Improving ICPs can help upgrade the quality of land transport across borders for India. However, several issues often arise at these ICPs. Specifically, at ICP Petrapole, truck congestion is a regular phenomenon (Sinha et al., 2016). Congestion is caused by queuing due to random arrival of trucks and inconsistent service time per vehicle. Crossing the border at Petrapole-Benapole, the most significant ICP between the two countries, takes about 138 hours on an average, with 28 hours of transloading (Dappe, Lebrand, and Van Pattern, 2021). As follows, the ICP runs the risk of having the arrival rate of trucks exceed the service rate, which, in the light of queuing theory, would cause the system to explode, and a non-steady state would be reached. Naturally, Little's law does not apply in such a case, and queuing theory cannot be used. It eventually becomes clear that an alternative method for dealing with the same is required.

Besides, the cargo flow exhibits seasonality; the facilities pose a challenge at peak season times. The complexity increases when the partner country sometimes imposes restrictions on the number of cargo carriers that can be accepted on their end.

A systems thinking approach can resolve this complexity. The term was coined by Barry Richmond (1994) and was introduced by Peter Senge (1990) as the ‘fifth discipline’ – the need to see wholes and interrelationships rather than things in silos. Meadows (2008) took the concept forward to emphasize that a system is more than a collection of parts – it consists of elements, their interconnections, and a function or purpose. All these components describe the behaviour of a system. Thus, systems thinking should enable systems understanding, behaviour predictions, and modifications to devise policies and structural changes to produce desired outcomes.

Consequently, this article examines how optimal facilities of ICPs can be planned for efficient cross-border trading. The paper adopts a system dynamics approach to argue why the traditional queuing theory fails under the given circumstance and the advantages of implementing systems thinking to this challenge.

This article has eight sections. The following section gives an overview of the relevant literature. Section 3 describes the problem. Section 4 discusses the causal framework, and the System Dynamics model is discussed in Section 5. Section 6 provides a solution to the problem by simulating the System Dynamics model. The following section discusses the results. The model is validated considering the case of Petrapole ICP in Section 7. The last section concludes the work and discusses avenues for future research work.

2. LITERATURE REVIEW

India signed the South Asian Free Trade Agreement (SAFTA) and strengthened its Look East policy to Act East policy. Therefore, to realize the benefits of trade liberalization and the success of the Act East policy, there is a need for improving the efficiency of border customs stations (De et al., 2008).

The land port facilities in India include integrated check posts (ICPs) and land customs stations (LCS). The ICPs are developed into modern land ports that include provision for warehousing, cross-docking, truck parking, custom clearances, and other value-added services. Previous researchers have identified challenges faced by the Indian exporters trading through land borders. Sinha (2021) points out that such difficulties as lack of infrastructure in India and the neighboring countries, poor connectivity, and slow modernization have resulted in the underutilization of ICP potential. Similar issues exist with land border trade between India and Myanmar. The border stations are weak and inefficient, leading to informal land border movement of cargo (Taneja et al., 2019). The paper proposes expansion of ICPs considering the regional connectivity issues and other factors within the country but fails to indicate the impact of poor infrastructure and similar matters in the bordering nation. Inland border stations located on the US-Mexico or Norway-Sweden border have implemented processes such as unified cargo processing (a joint inspection by border control agencies of both countries). They use technology such as auto-detection of carrier numbers and digital scanners for faster clearances of carriers. However, these methods are fruitful when the clearance rates at the exporting country match the acceptance rate of the importing country.

However, the previous studies have limited references about optimizing facilities based on demand seasonality and considering mirror infrastructure, i.e., compatibility in infrastructure and efficiency in the two participating countries. Thus, traditional approaches such as the Queuing theory application may be revisited to see their applicability.

2.1 Queuing Theory

Over the decades, the queuing theory has found great significance through varied applications across many fields. The first element of the theory is based on Poisson Distribution or Exponential Distribution (the inter-arrival and service times). However, queuing theory is not without its limitations. Firstly, it is state-dependent and assumes a steady state. Secondly, the theory is somewhat simplified for complex assumptions (for example, any uncertainties) (van Dijk, 2001). The above-stated limitations can be counteracted if decision analysis methods such as simulation and regression are used (Mehandiratta, 2011). Here, simulation via system dynamic models has been found quite effective as an alternative to queuing theory. Several studies have to date, used the system dynamics model in addition to queuing theory. For example, Lee et al. (2010) used a hybrid of system dynamics modeling and queuing theory (represented via DES) for managing construction projects. In contrast, Grida and Zeid (2018) used only the system dynamics model to resolve complexities related to healthcare system performance that cannot be dealt with through queuing theory. Thus, to eliminate such limitations for this study, the system dynamics model will be used for modeling.

2.2 Systems Dynamics

Forrester first introduced the concept of systems dynamics in 1956 as a tool to analyze and evaluate practical problems (Yu et al., 2014). Since then, systems dynamics models have been applied in various policymaking sectors such as healthcare, transportation, and the environment.

Extant literature shows that simulation and mathematical techniques have been used to suggest performance improvements for nodes involved in multimodal transportation (Dua & Sinha, 2015). Several studies (Sinha, 2011; Sinha & Bagodi, 2019) have suggested using a causal approach based on System Dynamics theory for understanding the causality between the factors affecting port performance, the governing flows, and capacity constraints.

Until 2011, systems dynamics and systems thinking in policymaking were limited. However, the highly cited literature review by Ghaffarzadegan et al. (2011) changed the status quo of system dynamic's application in policy design. The authors found that small systems dynamics models can help gain insight into policy failures. They argued that characteristics that make the small systems dynamics model suited for the effective policy design include the feedback approach emphasizing endogenous explanation of behavior, aggregate approach, simulation approach, and scope for experimentation of structure and behaviour of the model. Subroto (2012) applied system dynamics models like systems mapping and quantitative modelling to understand the complexities in policy cycles in public policy building and experimentation.

Moving to context-specific cases, Pruyt (2013) presented the varied scope of small system dynamics model-based policy analysis's application to education, housing, energy, etc. The author emphasizes acknowledging policy structures and variables in performing the analysis. Cedillo-Campos et al. (2014) demonstrated the usefulness of the system dynamics model in analyzing challenges related to cross-border trade at the U.S. - Mexico border while taking into account all relevant policy scenarios.

More recently, Uriona and Grobbelar (2019) exhibited how the system dynamics model helped construct concrete science technology and innovation policy recommendations by visualizing the effects of R&D investment, the time-lags in seeing benefits, and the impact of prematurely stopping such investment, among others. Further, Dangerfield (2020) optimized the system dynamics model for select cases of policy experimentation using specific parameters. Chen, Qiu, Wan, and Yeng (2022) used a system dynamics model to study the impact of single and multiple policies on China's cross-border B2B export trade. The authors found through the simulation of their model that, among all others, regulatory policies were the most crucial to promoting cross-border e-commerce B2B export trade, followed by financial support, customs environment, and business environment. Evidently, system dynamics models can play a crucial role in policy design, experimentation, and implementation in public, trade, and commerce. Therefore, it is reasonable to use system dynamics models for policy experimentation surrounding India's land ports.

3. THE PROBLEM

A general queue model assumes Erlang Distribution, where exponential distribution is a particular case, and memory lessness – the Markovian property.

In usual random (Markovian) queues, where the arrival of one is not dependent on the previous, the traffic intensity $\rho = \frac{\lambda}{\mu}$ describes the utilization of a system, where λ be the rate of arrival of export cargo trucks to a land port, μ be the rate of clearance of export cargo trucks in a land port. Figure 2.1 illustrates a simple queue.

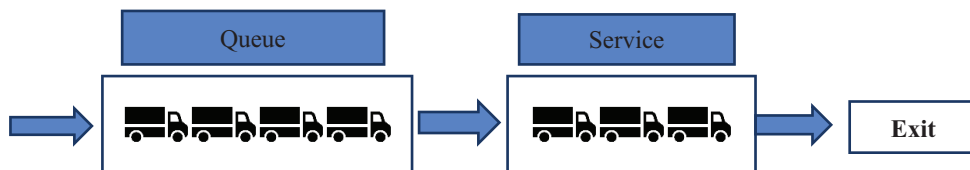


Fig. 2.1 A Simple Queue

Source: Authors' own

Figure 2.1 depicts the flow of cargo vehicles arriving randomly without each other's consultation and service time at the node, say, a land port, which is not constant. The service time refers to the clearance of cargo by the land port and the customs, unloading of the shipment from the vehicle, and release of the truck from the integrated check post (ICP).

Equation 1, following Little's Law, expresses the waiting time of trucks in the above system.

$$W = \frac{L}{\lambda} \quad (1)$$

where, L is the average number of trucks (cargo carriers) in the system, W is the average waiting time in the system.

Thus, the flow rate of vehicles is dependent on the demand for export and the service rate, i.e., clearance of carriers at ICPs.

In the event of multiple carriers being served, that is, say with ' s ' servers (service points), the length of the queue and the waiting time can be expressed as shown in equations 2 and 3.

$$L = \frac{\lambda/\mu}{1 - \lambda/(s\mu)} \quad (2)$$

$$W = \frac{1}{\mu - \lambda/s} \quad (3)$$

However, in many cases, the flows to land border stations are not simple as the carrier flow rates exceed the station's queue holding capacity. As such, the trucks carrying cargo are accommodated in truck terminals near the land border stations and are issued tokens for onward journey to the land customs stations (LCS) once the LCS clears the previous carriers in the queue. This scenario can be expressed in terms of Erlang distribution where k and λ are the two parameters. ' k ' represents the number of stages associated with the clearance of the vehicle. This phenomenon is not consistent since during low trade seasons, trucks may not be held up in the intermittent terminals, and instead, arrive directly at the LCS.

A study on cargo flow from India to Bangladesh shows seasonality, as illustrated in Figure 2.2. The trade peaks in March and slows down till June. Thus, the resource requirement planned for June will fall short during the peak period and idle during lean seasons.

Thus, seasonality plays a crucial role in deciding the optimal service facility and LCS throughput. Nguyen & Wright (2015) highlight the challenges service providers face due to variability in demand. Due to low demand, the facilities idle, while during peak periods, waiting times increase, resulting in opportunity costs and penalties such as demurrages or detention charges. The typical queueing models cannot take seasonality into account, and researchers resorted to simulations (Cayirli & Gunes, 2014) for optimizations.

Interactions with logistics service providers and truckers reveal that US\$ 30 to 40 per day detention charges are levied from the shippers beyond three or so free days. Thus, longer waiting times have a cost. Besides, with increased queue length and congestion, the quality of service drops as the carrier seeks priority over others on some grounds, and the entity delivering services at the LCS is under pressure to clear the cargo and the vehicle. Therefore, a queuing problem fails to simultaneously address complexities, such as capacity constraints, congestion, economic cost, and service restrictions. In such cases, heuristic methods such as genetic algorithms and their variants have been proposed (Goodarzi et al., 2022). However, this study assumes that the carriers are freed after processing at the service centers (say, LCS).

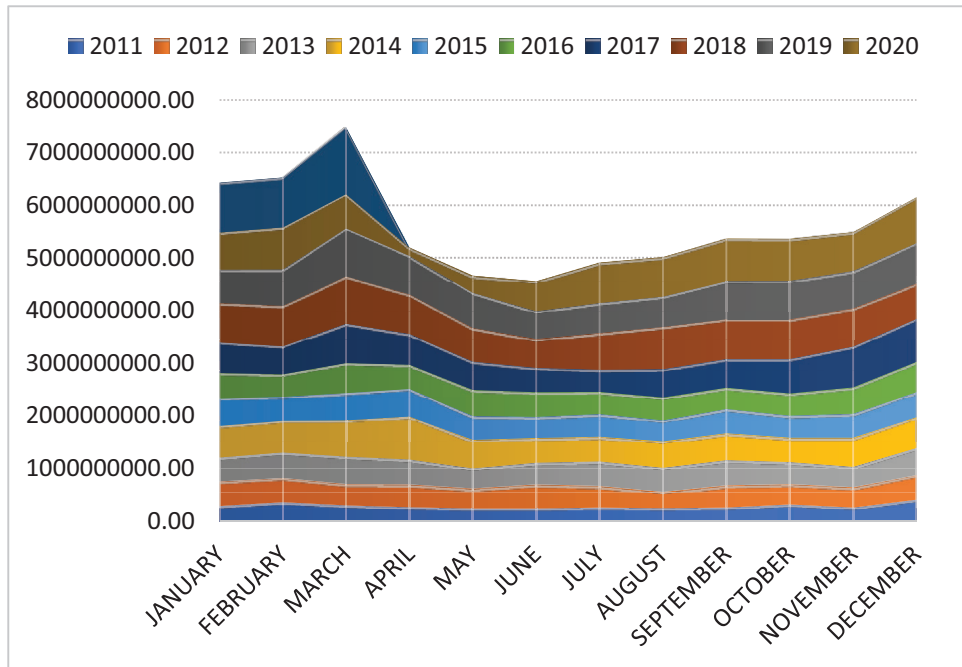


Fig. 2.2 Indo-Bangladesh Monthly Trade

Data Source: <https://www.indiantradeportal.in/vs.jsp?lang=0&id=0,25,45,916,13843,15264>

In border trade, such assumptions may not hold - for example, in India - Bangladesh border trade, the trucks engaged in delivering at the LCS of Bangladesh, e.g., Benapole, can leave the Indian system only when the passage to Bangladesh is allowed by the Bangladesh authorities. Thus, this constraint limits growth in cargo throughput from the integrated check post (ICP).

In a general queueing model, the rate of arrival (λ) is expected to be less than μ , i.e., $\lambda < \mu$, else the queue length would continually increase, and the steady-state is disturbed. In the event of restrictions on the movement of carriers by the importing country may change the steady-state condition to a non-steady state. Therefore, the application of queueing theory for determining optimal resource requirements fails.

The primary contributions of this paper include:

- I. Developing a Systems Dynamics model to offset the limitations of queuing models capturing, seasonality, and multi-stage queues with service time constraints based on external factors. The case of Petrapole Integrated Check Post (ICP) has been discussed to establish the model parameters.
- II. This model can help the Land Port Authority of India to identify the resource requirement in each ICPs and make investment decisions on ICPs holistically.

4. THE CAUSAL FRAMEWORK

Figure 2.3 depicts the causal loop diagram representing a multi-stage queue with capacity and external constraints. It shows that the complexity factor affects the rate of arrival—when the rate of arrival exceeds the rate of truck exit from the terminals, the traffic intensity is more than one resulting in a non-steady state. At this stage, there is chaos, and the arrival of trucks is affected as they divert to the neighbouring land customs stations. The trucks in terminals leave as and when ICP or LCS releases the carrier to cross the border. If the release rate is reduced, truck exiting rates from the terminals are affected. The release rate is affected when the number of trucks allowed by the Bangladesh authorities is less than the truck clearance rate from the ICP.

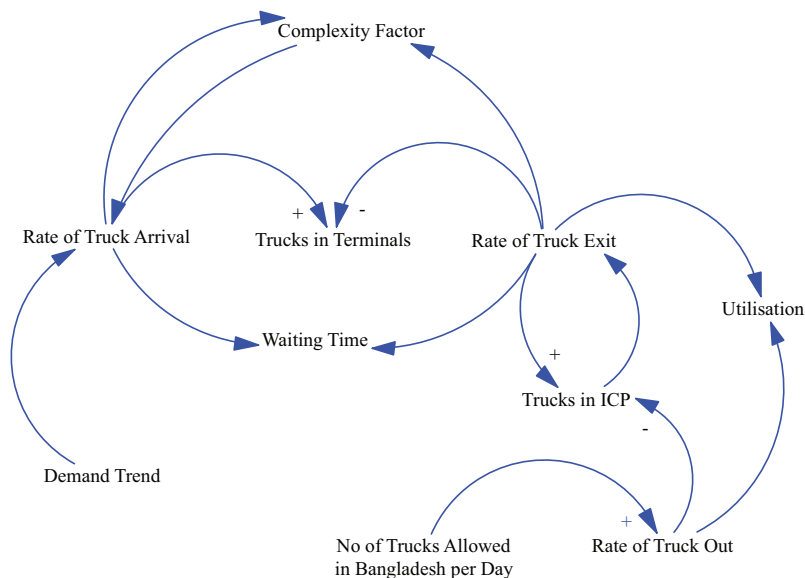


Fig. 2.3 Causal Loop Diagram Illustrating Multi-stage Queues with Capacity and External Constraints

Source: Authors' own

The primary loop comprising Rate of Truck Arrival, Parking Terminal (capacity), Rate of Truck Exit (from ICP), and the Complexity Factor governs the dynamics. It indicates that the capacity of the system or the throughput can be increased by a compatible increase of flow rates and terminal capacities. The flows at both the Indian and Bangladesh end should match else; it affects the complexity factor, adversely bringing down the cargo throughputs from the ICPs. The loops are given in Annexure 1.

5. THE SYSTEMS DYNAMICS MODEL

Figure 2.4 depicts the Systems Dynamics model emulating the situation: multi-queue, seasonal demand, and varying vehicle acceptance by the partner country. It has two level variables—the

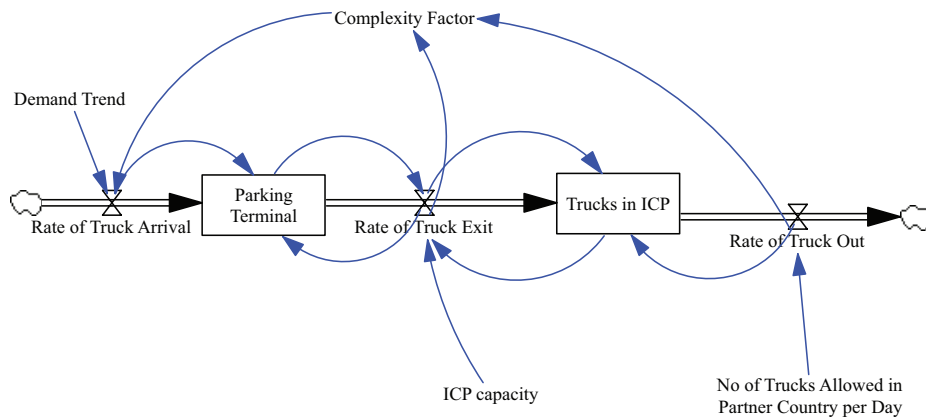


Fig. 2.4 Systems Dynamics Model

Source: Authors' own

“Trucks in the Parking Terminal” and the “Trucks in the ICP”. The arrival rate of trucks to the parking terminal depends on the complexity factor. The complexity factor is the ratio of average arrival rate and average servicing or exit rate; in other words, the traffic intensity has been used as the complexity factor. The inflow and outflow of trucks from the ICP remain constant unless the partner country’s land station imposes a restriction. When the acceptance rate of trucks by the other country across the border decreases, the arrival rate exceeds the outflow of lorries. This difference in inflow and outflow rates leads to the traffic intensity exceeding one, and the system becomes chaotic. The arrivals at the parking terminal may reduce to zero in the long term. The model takes into account the seasonality of the demand. The model can be simulated by inputting the real-time values to see under what conditions the complexity factor increases, the ICPs are overutilized, and the arrival rates are disturbed. Thus this model helps us understand the logistics disruption on account of external factors and the internal efficiency of ICPs.

6. SIMULATION

The model in this paper has been developed using VENSIM software and tested using the information collected from exporters, freight forwarders, and transporters. The information pertains to the flow of export trucks to Bangladesh via Petrapole and issues.

The ICP Petrapole, is the largest land port in South Asia, located in the eastern part of India in the state of West Bengal, linking with Bangladesh. This ICP accounts for nearly 30 per cent of land trade between India and Bangladesh. Table 2.1 shows the trade and cargo movements during the last five years.

The average arrival rate is 600 trucks per day, and the average clearance rate at the ICPs is 400 per day (may vary depending on staff availability or other reasons). The average acceptance

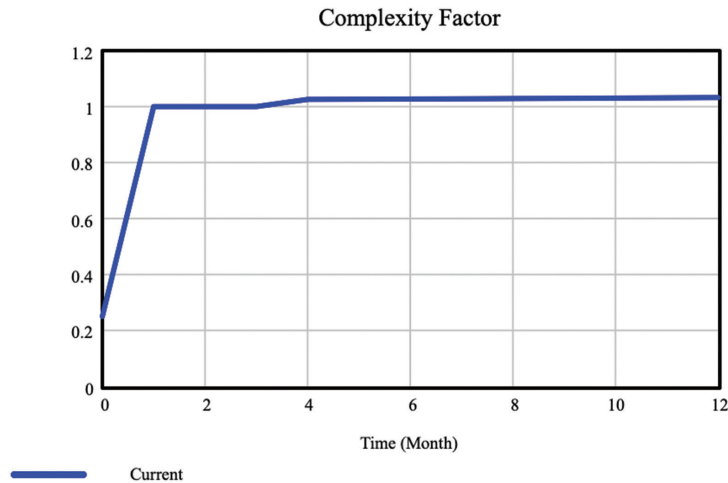
Table 2.1 Trade and Cargo Movements Through Petrapole (India)

Total Trade through Petrapole (Export and Import)			
Year	Total Trade (US\$ Million)*	Total Cargo Movement (Nos)	Per Day Movement of Carriers
2017-18	2506.53	146341	401
2018-19	2850.67	163555	448
2019-20	2747.33	154055	422
2020-21	2102.80	106334	291
2021-22 (up to Sep 2021)	127730/75	71648	392

*Take at 1 USD =75 INR

Source: <https://lpai.gov.in/en/icp-petrapole>; the data in Crores have been converted to US\$

rate by Bangladesh authorities stands at 400 trucks per day. The complexity increases when the demand increases (from October to March). At the same time, the rate of acceptance of trucks decreases – due to festivals and other reasons, as illustrated in Figure 2.5. Till this factor is below one, the arrival rate remains unaffected and reduces the possibility of zero arrival with the increase in chaos. This is shown in Figure 2.6.

**Fig. 2.5** Complexity Factor Change

Source: Authors' own

Figure 2.7 illustrates the simulation output considering all relevant endogenous and exogenous factors and the level variables: the trend in demand, complexity factor, arrival and exit rates to and from the parking terminal, and ICP. It shows that with an increase in demand, initially, the arrival rate increases at the parking terminal but then decreases as the complexity increases due to the reduction in acceptance rate by the Bangladesh authorities.

The output data in Table 2.2 shows that when the rate of acceptance by the Bangladesh Customs falls below 350 or so, the chaotic condition at the parking terminal or in the queue formation

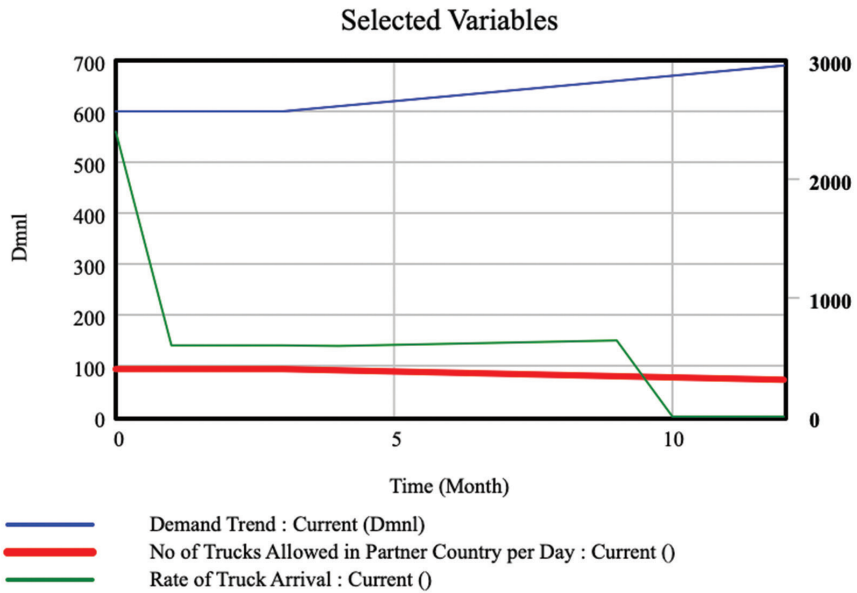


Fig. 2.6 Impact of Acceptance Rate on the Complexity Factor Resulting in Reduction in Arrival Rate

Source: Authors' own

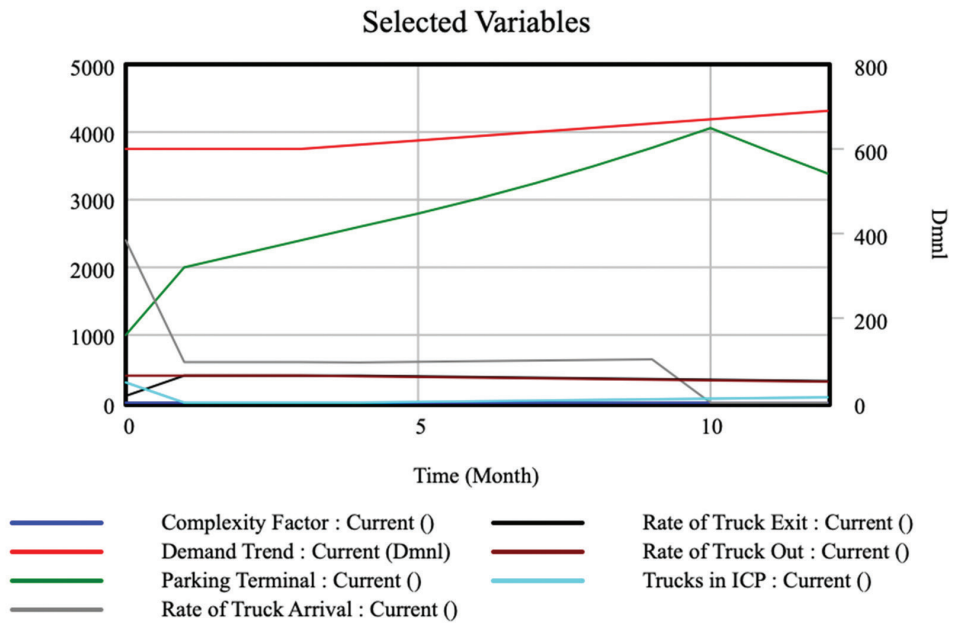


Fig. 2.7 Graph Showing the Simulation Output

Source: Authors' own

Table 2.2 Simulation Output

VENSIM Simulation Output													
Time (Month)	0	1	2	3	4	5	6	7	8	9	10	11	12
Complexity Factor: Current	0.25	1	1	1	1.0256	1.026	1.027	1.03	1.03	1.03	1.03	1.031	1.032
Demand Trend:	600	600	600	600	610	620	630	640	650	660	670	680	690
ICP capacity	400	400	400	400	400	400	400	400	400	400	400	400	400
No of Trucks Allowed in Partner Country per Day:	400	400	400	400	390	380	370	360	350	340	330	320	310
Parking Terminal:	1000	2000	2200	2400	2600	2795	3009	3242	3495	3767	4058	3718	3388
Rate of Truck Arrival:	2400	600	600	600	594.75	604.1	613.4	623	632	641	0	0	0
Rate of Truck Out:	400	400	400	400	390	380	370	360	350	340	330	320	310
Trucks in ICP:	300	0	0	0	0	10	20	30	40	50	60	70	80

Source: Authors' own

leading to the parking areas may discourage the carriers. The exporters may explore routing goods through adjacent ICPs or land custom stations like Gojadanga. However, the results are illustrative, and the actual scenario can be simulated by taking the current data and information about the system. Annexure 2 gives the equations of the model.

7. RESULTS AND DISCUSSION

The above findings indicate that the capacity and the throughput of ICPs are dependent on two significant constraints, namely, the acceptance rate by the Bangladesh authorities, i.e., the cross-border agencies, and the clearance rate at the Indian ICPs or land custom stations (LCS). The minimum of these two rates is the governing factor and acts as a constraint. The former is a constraint that the Indian agencies cannot control. Hence, any further investment in the land border stations may not yield results unless the external restrictions are removed.

An early warning system (EWS) can guide the land carriers to divert their vehicles to nearby ICP or plan their routing instead of getting detained in the queue leading to the parking terminal and paying detention charges to the terminal authorities. An exporter pays a detention charge of INR 3000 (equivalent to 40 US\$ @ 75 INR = 1 US\$) per day per truckload, increasing its total cost of operation (TCO), leading to an increase in total landed cost (TLC) for the importer. At the same time, the carriers are unhappy as each day's idle time results in a resultant loss of around 10000 INR (130 US\$ approx.). There is a need for stakeholders' collaboration in

global logistics that involves multiple nodes (Dua & Sinha, 2019b). The EWS is expected to improve coordination and eliminate the need to wait at parking terminals and move directly to the ICPs. The road carriers originating from far-off states in the western and northern region of the country face hardships when the overutilization of the parking terminals and ICPs lead to chaos and higher detention.

8. CONCLUSIONS

With the increase in trade with neighbouring countries of India and the Government of India's persuasion of Act-East policy, the land border stations need to be strengthened. As a part of the perspective plan of the LPAI, several existing ICPs have been proposed to be strengthened, and some of the LCSs have been upgraded to ICPs. This study shows that decisions based on endogenous factors may not yield the desired results. Unlike air or seaports, the flow of goods from land ports does not depend only on the inflow and the clearance rate at ports. In a land port, the outflow of the goods vehicles is governed by the acceptance rate of the border control agencies of the other country. If the capacity of the foreign land border stations is less than Indian ports, then the flow of goods is governed by the acceptance rates. Besides, due to asymmetry or lack of real-time information, the carriers reach the land port stations only to find congestion and wait. The interaction with exporters revealed that trucks have to wait more than ten days and incur losses on many occasions.

This study proposes a system dynamics model that captures the dynamics arising from differences in flow rates in and out of the land border and the capacity constraints of the terminals and stations. The model novelty is that it captures the seasonality in the demand, the capacity constraints, and the flow rates in the country and across borders. The model can be customized to study the flow in any region and carry out policy experimentations to determine the optimal requirement of facilities.

This study can be extended to identify the optimal location and capacities of consolidation centers, warehouses, and waiting or resting terminals for vehicles to revise the routing plans with minimal diversion or waiting at ICPs. Thus, the framework proposed here can be used to build a hub and spoke system for trade across land borders.

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Annexure 1

Causal Loops

Loop Number 1 of length 3

Rate of Truck Arrival
 Parking Terminal
 Rate of Truck Exit
 Complexity Factor

Loop Number 2 of length 2

Rate of Truck Arrival
 Trucks in Terminals
 Complexity Factor

Loop Number 3 of length 1

Trucks in ICP
 Rate of Truck Exit

Annexure 2

Model Equations

(01) Complexity Factor = (Rate of Truck Exit/Rate of Truck Out)

Units: **undefined**

(02) Demand Trend = 600 + RAMP(10, 3, 12)

Units: Dmnl

- (03) FINAL TIME = 12
Units: Month
The final time for the simulation.
- (04) ICP capacity = 400
- (05) INITIAL TIME = 0
Units: Month
The initial time for the simulation.
- (06) No of Trucks Allowed in Partner Country per Day = 400 + RAMP(-10, 3, 12)
- (07) Parking Terminal = INTEG (MIN(Parking Terminal,(Rate of Truck Arrival-Rate of Truck Exit)), 1000)
- (08) Rate of Truck Arrival = IF THEN ELSE(Complexity Factor<1.03 , (Demand Trend*(1/Complexity Factor)), 0)
- (09) Rate of Truck Exit = MIN((MIN(ICP capacity, Parking Terminal)), (ICP capacity-Trucks in ICP))
- (10) Rate of Truck Out = MIN(No of Trucks Allowed in Partner Country per Day, 400)
- (11) SAVEPER = TIME STEP
Units: Month [0, ?]
The frequency with which output is stored.
- (12) TIME STEP = 1
Units: Month [0,?]
The time step for the simulation.
- (13) Trucks in ICP= INTEG (Rate of Truck Exit-Rate of Truck Out,300)

ARTICLE

3

Establishing the Need for Having a Port Community System at India's Land Ports

Imran Beigh* and Samridhi Bimal**

Abstract: *As part of the endeavour to utilize international trade for sustainable development, India has tried to make trade procedures as efficient as possible, in particular through implementation of automated customs systems, electronic single windows and other digital customs and trade facilitation initiatives. These digital trade facilitation measures have reaped positive results in several benchmarking indices. In terms of India's mode of trade with the rest of the country, there are broadly three modes of transportation-sea route, air route and land route. While India has progressed in terms of its digital trade facilitation initiatives across the former two routes, there is limited digitization across India's land border. This is the context of the current research paper. It aims to establish the need for having a Land Port Community System to systemize and seamlessly facilitate trade across India's land borders.*

Keywords: Trade Facilitation, Land Port, Port Community System, India

JEL codes: F14, F20, F5

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

Over the last three decades, technological advancements in Information and Communications Technology (ICT) have significantly altered the way in which trade is being conducted. Traditionally, trade was increased conducted between countries with significant difference in costs of production through exchange of tangible goods. As countries across world have embraced digital technologies, trade is now increasingly digital in nature and defined by intangibles.

Digitalisation has amplified the scale, scope and speed of trade. It enables firms to serve customers globally. It also allows firms (especially smaller firms) to use “new and innovative digital tools to overcome barriers to growth, helping facilitate payments, enabling collaboration, avoiding investment in fixed assets through the use of cloud-based services, and using alternative funding mechanisms such as crowdfunding.”¹

As digital trade grows, trade barriers and regulatory challenges for managing issues arising from digital disruption have also surfaced. To realize the gains from trade flows and participate in regional and global value chains, it is important to undertake measures aimed at digital trade facilitation.

As defined by Duval and Mengjing (2017)², digital trade facilitation refers to the “application of modern information and communication technologies (ICTs) to simplify and automate international trade procedures.” As part of the endeavour to utilize international trade for sustainable development, India has tried to make trade procedures as efficient as possible, in particular through implementation of automated customs systems, electronic single windows and other digital customs and trade facilitation initiatives. These digital trade facilitation measures have reaped positive results in several benchmarking indices. In terms of India’s mode of trade with the rest of the country, there are broadly three modes of transportation—sea route, air route and land route. While India has progressed in terms of its digital trade facilitation initiatives across the former two routes, there is limited digitization across India’s land border. This is the context of the current research paper. It aims to establish the need for having a Land Port Community System to systemize and seamlessly facilitate trade across India’s land borders.

The layout of the paper is as follows. Section 2 discusses India’s performance in the area of digital trade facilitation. Section 3 describes trade facilitation in the context of India’s land ports. The next section (Section 4) undertakes an assessment of the current state of trade procedures at the Land Ports. Based on the analysis of the current trade procedures, Section 5 identifies the key impediments that exist to trading goods via Land Ports. Section 6 analyses

¹OECD (2022). *The impact of digitalisation on trade*. Available at <https://www.oecd.org/trade/topics/digital-trade/>

²Duval, Y. and K. Mengjing. 2017. *Digital Trade Facilitation: Paperless Trade in Regional Trade Agreements*. ADBI Working Paper 747. Tokyo: Asian Development Bank Institute. Available: <https://www.adb.org/publications/digital-trade-facilitation-paperless-trade-regionaltrade-agreements>

how implementing a Port Community System is the solution to several impediments being faced currently at the Land Ports. Section 7 lists down the action points for implementing a Port Community System at land borders, as suggested by the European Port Community Systems Association. In Section 8, we suggest design principles on which the proposed Land Port Community System should be built. In Section 9, we present a set of good practices in the implementation of Port Community System worldwide. Lastly, Section 10 concludes the paper by detailing out functional requirements of a proposed Land Port Community System to enable Land Ports embark on a port digitization program.

2. INDIA'S PERFORMANCE IN DIGITAL TRADE FACILITATION

In recent years, India has undertaken several reforms towards achieving digital and sustainable trade facilitation. As per the UN Global Survey on Digital and Sustainable Trade Facilitation 2021, India has scored 90.32 per cent witnessing a remarkable jump from 78.49 per cent in 2019.³ After an evaluation of 143 economies, the Survey has emphasized India's noteworthy improvement in the scores on five key indicators of Trade Facilitation—Transparency, Formalities, Institutional Arrangement and Cooperation, Paperless Trade and Cross-Border Paperless Trade (Figure 3.1).

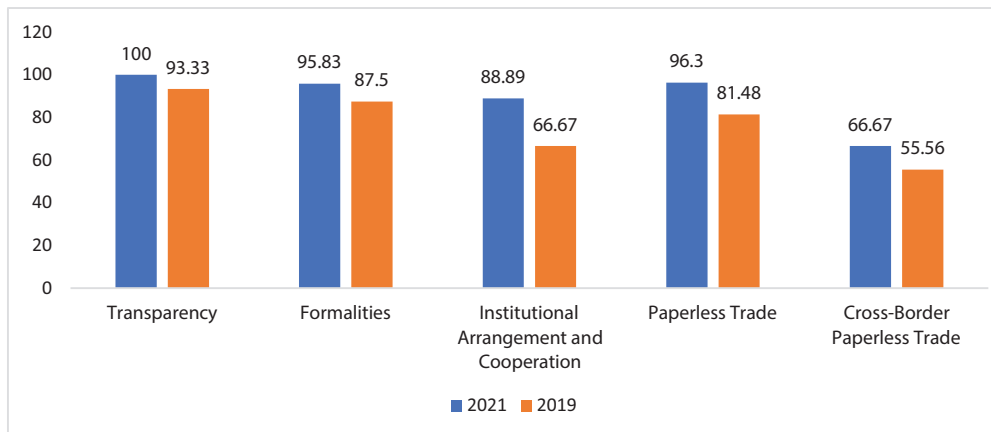


Fig. 3.1 India's Improvement in UN Global Survey on Digital and Sustainable Trade Facilitation
Source: Author's computation using data from UN Global Survey on Digital and Sustainable Trade Facilitation

As per the 2021 Survey, India is the best performing country when compared to South and Southwest Asia region (score of 63.12 per cent) and Asia Pacific region (score of 65.85 per cent). In fact, India also scored higher than most developed countries such as France, UK, Canada, Norway, Finland and developed regions such as the EU.

The OECD has also developed a set of trade facilitation indicators (TFIs) which cover the complete spectrum of border procedures for more than 160 economies. Each indicator

³<https://www.untfsurvey.org/economy?id=IND>

comprises of several specific, precise and fact-based variables related to existing trade-related policies and regulations and their implementation in practice (CBIC, 2020).⁴

As compared to 2017, India's performance in 2019 has improved in the areas of information availability, fees and charges, simplification and harmonisation of documents, automation of border processes, streamlining of procedures, internal border agency co-operation, cross-border agency co-operation, governance and impartiality. Performance in other areas has remained more or less stable-the exceptions being advance rulings and appeal procedures which witnessed some decline. The overall average score increased from 1.3/2.0 in 2017 to 1.5/2.0 in 2019, an improvement of 15 per cent. Figure 3.2 represents India's performance on 11 Indicators from 2017 to 2019.

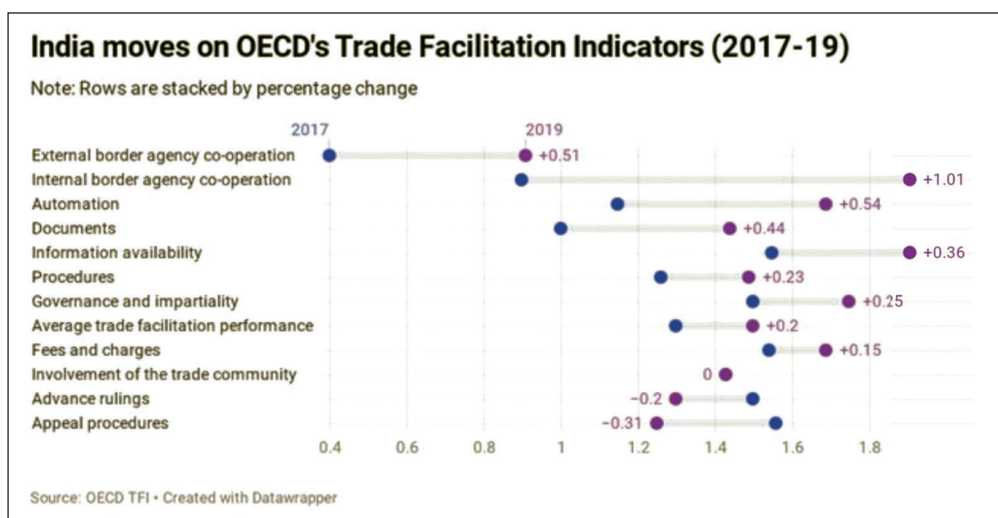


Fig. 3.2 India's Performance on OECD Trade Facilitation Indicators

Source: National Trade Facilitation Action Plan 2020-23. Available at <https://www.cbic.gov.in/resources//htdocs-cbec/implmntin-trade-facilitation/NTFAP2020-23jk.pdf;jsessionid=847981A635A554EFC5097871C33A90DC>

Press Information Bureau (2021) emphasizes upon the key role played by the Central Board of Indirect (CBIC) in undertaking “path breaking reforms under the umbrella of ‘Turant’ Customs to usher in a Faceless, Paperless and Contactless Customs” which have had a positive impact in terms of improvement in the rankings.

With the outbreak of the COVID-19 pandemic, Indian Customs have made all efforts to expedite import of essential items such as oxygen related equipment's, life-saving medicines, vaccines etc. Customs has formulated a dedicated single window COVID-19 24*7 helpdesk for managing export-import trade. Some of the key digital trade facilitations reforms undertaken by the Indian government during COVID-19 pandemic are given in the Box 3.1.

⁴<https://www.cbic.gov.in/resources//htdocs-cbec/implmntin-trade-facilitation/NTFAP2020-23jk.pdf;jsessionid=847981A635A554EFC5097871C33A90DC>

Box 3.1: Digital Trade Facilitation Reforms Undertaken by India during COVID-19 Pandemic

- To fulfil its commitments under different FTAs/PTAs, India issued preferential certificates of origin through an online platform. The common digital platform (Common Digital Platform for Issuance of Certificate of Origin (dgft.gov.in)) is designed to facilitate exporters through a secure, electronic, paperless CoO issuance process.
- The Customs has undertaken several measures to ensure the clearance process if as contactless as possible. The range of measures include a contactless and paperless bill of entry amendment, accepting digital copies, clearing goods in lieu of bond on the basis of plain paper, machine-based automated release of import consignments for free movement throughout India, “Out of Charge” work replaced by e-gate pass to custom brokers/exporters for releasing consignments, etc.
- The Directorate General of Foreign Trade (DGFT) launched a new platform for digital delivery of IEC related services to facilitate foreign trade.
- The government provided a facility to upload digitally signed licenses/permits/certificates/ other authorizations (LPCOs) by eight new participating Government agencies (PGAs) on e-SANCHIT (paperless processing under SWIFT) at all customs EDI systems (ICES).

Source: Based on De (2020)

3. TRADE FACILITATION AT INDIA'S LAND BORDERS

Owing to its central geographical location in the region, India shares over 15,000 kms long international land borders with seven countries in South Asia, namely Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal, and Pakistan. The land ports located along India's long international border play a crucial role in facilitating regional trade and connectivity in South Asia. However, manual processes, poor infrastructure and high transaction costs of trading have been among the most critical barriers to regional trade in South Asia. The low levels of digitization at land ports have limited the realization of operational efficiency and often resulted in high transaction time and cost of trading across borders.

Except for Sri Lanka and Myanmar, all other SAARC member countries are connected via land ports, and landlocked Nepal and Bhutan also require transit access through their neighbouring countries to participate in international trade using the nearest seaports. The contiguous geography of the region makes land transport and transit especially important for connectivity. However, despite sharing common land borders, trade between India and Bangladesh or India and Myanmar are currently largely undertaken by the sea route. This was also the case for trade between India and Pakistan when trade was operational. Even the trade that is being conducted majorly via land ports often suffers due to high transaction costs of trading.

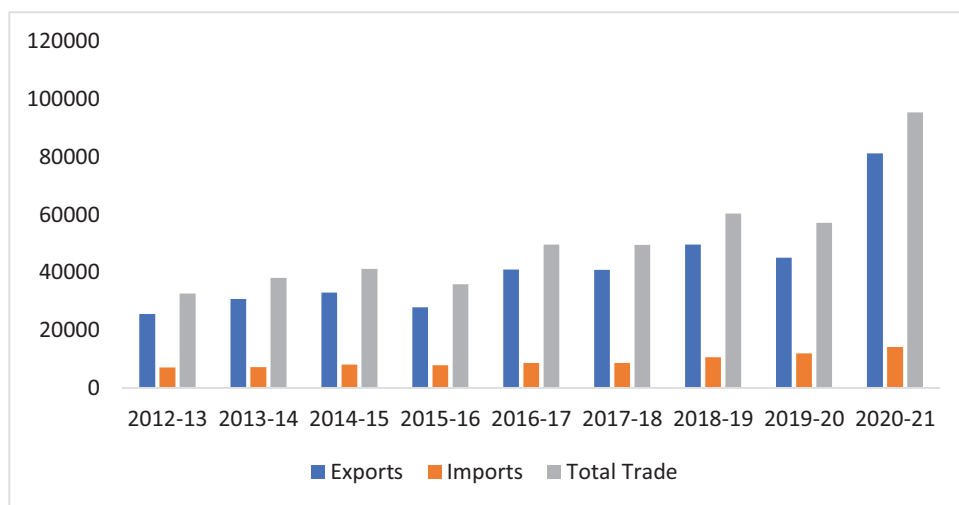


Fig. 3.3 Trade via ICPs (Values in INR Crore)

Source: Author's computation using data from Land Ports Authority of India

As part of the efforts to improve the infrastructure at border checkpoints, India is in the process of developing Integrated Check-Posts (ICPs) at selected checkpoints along land borders with its neighbours, for the efficient management of border crossings. An ICP is intended to be a one-stop solution that houses all regulatory agencies, such as immigration, customs, and border security. Since 2012, India has developed and operationalized nine ICPs. There is one ICP with Pakistan, which is known as Attari. There are four ICPs handling trade with Bangladesh: Agartala, Petrapole, Srimantapur and Sutarkandi. There are two ICPs with Nepal: Raxaul and Joghani, and one with Myanmar: Moreh. There is also an ICP at Kartarpur which is limited to passenger movement. Apart from this, 14 ICPs are in the process of development.⁵

Since the inception of the first ICP in 2012, LPAI has facilitated cross-border trade worth Rs 300,251 crores across all its operational ICPs. In value terms, cross-border trade via ICPs has increased from Rs 32,746 crores in 2012-13 to Rs 95,488 crores in 2020-21, growing at an average annual growth rate of 13 percent (Figure 3.3).

The importance of ICPs for facilitating cross-border trade can be better understood if we look at the share of ICPs in India's total trade with its immediate neighbourhood (particularly Bangladesh, Bhutan, Myanmar, Nepal, and Pakistan). The share of ICPs in India's trade with the countries in the immediate neighbourhood with whom it shares a border has gone up from 41.87 per cent in 2012-13 to 63.59 per cent in 2020-21 (De, 2021).⁶

Given the central geographical location in the region, there is potential to further enhance cross-border trade via ICPs and strengthen the process of regional integration. Lack of digitization

⁵LPAI Website: Welcome to Land Ports Authority of India | Land Ports Authority of India (lpai.gov.in)

⁶De, P. (2021). A Silent Revolution in Border Trade. Hindu Business Line. 8 September 2021. Available at A silent revolution in border trade - The Hindu BusinessLine

has been one of the main constraints that has resulted in unoptimized usage of resources, limited the port capacity and increased logistics cost, thereby limiting trade potential from being realized.

4. CURRENT STATE ASSESSMENT OF TRADE PROCEDURES AT ICPS

On the basis of extensive consultations with various stakeholders involved in cross-border trade via ICPS, this section describes the current processes of export and import in detail.

4.1 Exports Procedure

As is the case for exports via any mode of transportation, prior to entering the ICPS, the Customs Broker or trader digitally uploads commercial invoice and packing list on ICEGATE which is the customs national trade portal for generating the Shipping Bill.

Upon entering into the ICPS, the Border Guarding Forces check the carrier and the vehicle documents for security purposes. The security forces maintain the record of the carrier and the vehicle manually in the register. In the next step, exports documents are verified manually by the Customs officer who checks for commercial invoice, packing list, Shipping Bill and Good Receipt Form to allow the vehicle to enter into ICPS.

A gate-in slip or token number is then generated by the Cargo Terminal Operator (CTO) using a Warehouse Management System and provided to the transporter for entry into the ICPS. The vehicle then moves to the weighbridge area where its gross weight is recorded. A weighment slip is provided to the carrier after successful weighment. Once the weighment is completed, the cargo vehicle moves to the Inspection Area wherein the Customs undertakes a random inspection of the consignment (selected by RMS).⁷

Once the RMS has been completed, in cases where the export consignment requires an issuance of clearance, the ICEGATE portal raises request of the same to the concerned Participating Government Agencies (PGAs). Once the sample testing has been conducted, the PGA issues clearance certificate digitally. If the consignment is not cleared by PGA, then the cargo vehicle is kept in the holding area and further inspection is carried out before release.

After obtaining the requisite PGA clearance, vehicle moves to the rummaging shed wherein Customs undertakes rummaging of the export vehicle. Once this is done, the Customs Broker uploads the Shipping Bill, commercial invoice, packing list and PGA clearance certificate on the ICEGATE portal for requesting for 'Let Export Order' (LEO). Simultaneously, the Customs Broker also requests for Single Entry Permit for carrier.

Based on verification of the export documents submitted by the Customs Broker, the Customs issues LEO, EGM No. Single Entry Permit is also issued simultaneously to the carrier. The

⁷In the case that an export vehicle is not selected for random inspection, then token no. for export bay entry is directly generated after rummaging and provided to vehicle carrier and vehicle moves to export bay area.

Cargo Terminal Operator then generates an invoice for parking charges, weighment charges and cargo loading and unloading charges. Once the due payments have been made, a gate pass is issued to the carrier.

The export vehicle then exits through the 'zero gate' and returns after dropping the consignment and completing the export process. Upon return of the empty vehicle, the Border Guarding Forces conduct the requisite security check of the carrier and then allow it to enter the ICP gate. The transporter returns the token no. to the CTO Gate Operator who then issues the Gate-Out Slip digitally and allows carrier to exit the ICP and makes entry manually in the system.

4.2 Imports Procedure

As is the case for imports via any mode of transportation, prior to goods reaching the ICP, the Customs Broker digitally uploads the requisite documents on the ICEGATE portal and files for the Import General Manifest (IGM) on behalf of the carrier. This process results in an IGM No. being issued to the Broker. The next step is to obtain a Bill of Entry which forms an important part of the customs clearance procedure and is submitted to the customs department. The Customs Broker or trader applies for Bill of Entry based on the documents submitted to Customs on ICEGATE. Both these steps are performed before the import consignment enters the ICP.

Upon entry of the foreign vehicle at the zero gate, Border Guarding Forces physically check the carrier and vehicle for security purposes and make a manual entry. The Customs officer checks the trade-related documents submitted by the Broker and a number is provided against the SEP/car pass which is used as gate-in pass. The vehicle then moves to the rummaging shed wherein Customs undertakes rummaging.

After rummaging, the foreign vehicle enters the weighbridge where gross weight of vehicle is recorded and updated against SEP No. The weighment slip is provided to carrier digitally. After weighment, vehicle moves to unloading area wherein the Cargo Terminal Operator unloads the cargo from the vehicle and issues a landing certificate to the carrier.

After parking the vehicle for unloading, carrier moves to driver holding area where the immigration/customs officer completes immigration for foreign carrier by stamping and verifying its SEP. After unloading the cargo, the empty foreign vehicle is weighed again, and carrier is provided weighment slip. The foreign vehicle then exits from the ICP and the gate operator records time, stamp of exit against SEP number of carrier and provides it the gate-out slip.

The next step is for examination of the cargo. It is important to note here that examination of goods is carried out by Customs, after the facilitation level is decided by the Risk Management System (RMS). The imported goods, which are interdicted for examination by the RMS, are examined for verification of correctness of description/declaration given in the Bill of Entry and related documents. If testing is required for the import consignment, ICEGATE raises request to required Participating Government Agency (PGA) for issuance of No-Objection Certificate in accordance with the HS-code classification of the cargo. Following this, the Customs Broker submits the BoE and certificate of origin.

At this step, a representative from PGA lab comes to collect sample from cargo for testing. Post successful examination of the sample, PGA issues NOC and test reports are submitted. Once the customs examination and PGA clearance (if applicable) has been conducted, the ICEGATE portal generates the customs duty that has to be paid on the basis of the Bill of Entry. At this point the duty is paid digitally and an Out of Charge (OoC) is handed over to the Customs Broker or Importer. Following this, the details of the Indian vehicle and carrier that are supposed to carry the cargo to delivery destination are provided to the Cargo Terminal Operator who then creates and issues a Job Order.⁸

The Indian vehicle then enters the ICP pick up goods from CTO warehouse. Security check of carrier and vehicle is conducted by the Border Guarding Forces. The Broker or Trader shows the Job Order to the Customs officer at the ICP entry gate and after due security and document verification the vehicle is allowed to enter into the ICP. After entry into ICP, tare weight of Indian vehicle is measured, and a weighment slip is generated digitally.

The Indian vehicle then moves to the loading area where the cargo is loaded. After loading Indian vehicle is again weighed and the weighment slip is generated digitally and provided to the Indian carrier. At this point, the CTO raises invoice for parking, weighment and cargo loading and unloading charges. This is done digitally using the CTO warehouse management system. Once the payments are made, an import gate pass is provided to the Indian carrier for onward movement out of the ICP.

5. IMPEDIMENTS TO TRADE VIA ICPS

Based on the analysis of the current trade procedures, this section identifies the following key impediments that exist to trading goods via land ports.

5.1 Manual Processes

As described in Section 4, nearly 50 percent of the procedures are still conducted physically. For exports 7 out of 15 procedures are conducted physically and for imports 8 out of 17 procedures are conducted physically. The next two tables (Tables 3.1 and 3.2) highlight the current level of intervention (either manual or digital)⁹ at export and import procedures.

5.2 Excessive Documentation

Trade procedures at an ICP involve excessive documentation which are often submitted manually. For instance, stakeholder consultations in the year 2021 revealed that for exports 21 documents are required. These include shipping bill, GR Form, packing list, export license,

⁸In the case of India and Bangladesh, the transport protocols do not permit the carrier of one country to exit beyond the premises of the ICP. As a result, there is transshipment done at the ICP. This is not in the case of India's trade with Nepal and Bhutan where more liberal and free-movement transport regimes are prevalent.

⁹Digital intervention implies usage of electronic system or provision of digital receipts following a physical step.

Table 3.1 Current Level of Intervention for Exports via ICPs

Sl. No.	Export Procedure	Current Intervention
1.	Arrival of Truck at ICP Entry Gate	Manual
2.	Security Check by BGF	Manual
3.	Export Documents Verification	Manual
4.	Generation of Gate-In Slip/Token No.	Digital
5.	Weighment of Truck	Digital
6.	RMS Inspection (if applicable)	Manual
7.	Generation of PGA Clearance (if applicable)	Digital
8.	Rummaging of Truck	Manual
9.	Request for LEO	Digital
10.	Issuance of LEO, EGM No. and SEP	Digital
11.	Invoice Generation by CTO	Manual
12.	Payment to CTO	Manual
13.	Exit of Truck through Zero Gate	Manual
14.	Gate-in of Empty Truck after completing the export process	Manual
15.	ICP Gate-Exit of Truck	Manual

Source: Authors' own

Table 3.2 Current Level of Intervention for Imports via ICPs

Sl. No.	Import Procedure	Current Intervention
1.	Arrival of Foreign Truck at Zero Gate and Checking by BGF	Manual
2.	Documents Verification	Manual
3.	Rummaging of Truck	Manual
4.	Weighment of Foreign Truck	Digital
5.	Unloading/Transshipment of Foreign Truck	Manual
6.	Immigration of Foreign Carrier	Manual
7.	Tare Weighment and Exit of Empty Foreign Truck	Digital
8.	Cargo Examination (If selected by RMS)	Manual
9.	Generation of PGA Clearance	Digital
10.	Payment of Customs Duty	Digital
11.	Creation of Job Order	Manual
12.	Entry of Indian Truck at ICP	Manual
13.	Tare Weighment of Indian Truck	Digital
14.	Loading and Weighment of Indian Truck	Digital
15.	Invoice Generation	Digital
16.	Payment to CTO	Manual
17.	Generation of Import Gate Pass and Exit of Indian Truck exists from ICP	Digital

Source: Authors' own

indent, acceptance of contract, invoices, purchase order, AR4, PGA certificate, certificate of origin, bank guarantee, etc. Similarly, for imports, around 26 documents are required. These include IGM No., Bill of Entry, Single Entry Permit, landing certificate, driver license/government ID, PGA certificate, etc.

The digitization of documentation procedure is at a very nascent stage as of now. There is no consolidated digital platform to facilitate this. As a result, advance submission of documents and consignments' details through online platform is also not possible, resulting in clearance delays. The manual documentation processes for exports and imports therefore leads to delays and accrues additional costs.

5.3 Lack of a Single Window System

There are multiple stakeholders present at an ICP which are responsible for facilitating seamless cross-border cargo movement. These include Indian Customs, Bureau of Immigration, Plant Quarantine Information System, Animal Quarantine and Certification Services, Directorate General of Health Services and Food Safety and Standards Authority of India (FSSAI). Apart from this, there are Border Guarding Forces deployed at the ICPs as well for maintaining security. Traders and CHAs involved in cross-border trade have to submit large volumes of information and documents to the multiple stakeholders present at the ICPs. Often, this documentation has to be submitted through several different agencies, each with its own specific system and paper forms. These requirements are burdensome, both the government stakeholders as well as private sector players.

5.4 No Real Time Sharing of Information amongst PGAs

As noted by Mukherjee and Sarma (2022)¹⁰, all the participating agencies involved in cross-border trade via ICPs are not fully integrated into a uniform electronic system. Citing the example of import of agri-food items, the study reveals that while Food Safety Standard Authority of India (FSSAI) and Directorate of Plant Protection, Quarantine, and Storage (DPPQS) have their own import clearance portals which are linked to the Customs' RMS, the Animal Quarantine and Certification Services (AQCS) system is not fully integrated. In the absence of integration across these IT systems, information cannot be shared in real time.

5.5 No Track and Trace Facility

In the logistics industry, track and trace is defined as the process of identifying past and current locations of consignments. Track is the "act of following a trail left by the movement of a shipment or asset" and Trace refers to "tracking the movement of a shipment, property or even temperature of a package".¹¹ However, in the current trade procedures at an ICP, there is no

¹⁰ Mukherjee and Sarma (2022), Streamlining Agri-Food Imports through Technological Interventions: The Case of North-East India. The Journal of Land Ports and Border Economy. Routledge.

¹¹What Is Track & Trace? The Importance Of Track & Trace In Logistics (abivin.com)

facility that allows the trader or logistics operator to track the consignment. Put simply, a trader based in New Delhi who is importing 20 cartons of dry dates from ICP Attari in Punjab does not have any provision to be able to locate his consignment-both when its inside the ICP or when it exists the ICP for onward movement to the destination. The only option is to rely on the CHA agent or logistics service provider who the trader may have hired to facilitate import and transportation of his consignment.

6. PORT COMMUNITY SYSTEM AS THE SOLUTION

The solution to the impediments highlighted in the earlier section lies in developing an effective Port Community System at India's land ports. As defined by UNESCAP (2018), a Port Community System is "a neutral and open electronic platform enabling intelligent and secure exchange of information between public and private stakeholders in order to improve the competitive position of the sea and air ports' communities." It is used to optimise, manage and automate port and logistics processes through a single submission of data while connecting transport and logistics chains.

Implementation of a Port Community System at Land Ports has also been suggested and mandated by India's National Trade Facilitation Action Plan 2020–2023, Action Point #44.

Action Point #44 of NTFAP 2020-23

"Design and implement Land Port Community System to integrate various stakeholders at ICP. The system should be centralized network-based solution with adequate measures for 24x7 availability and data backup."

As described in the earlier sections, there are several key stakeholders involved in the cross-border operations taking place at an ICP. These include for instance LPAI, Customs, State Authorities, Border Guarding Forces, Customs Brokers, Bureau of Immigration, Transporters, Cargo Operators, Plant and Animal Quarantine Departments, and Trader. It has been learnt that LPAI is in the process of collaborating with Ministry of Railways and Inland Waterway Authority of India to explore possibilities of making its Land Ports multi-modal in nature. This implies these two authorities to also become part of the land port ecosystem in the near future.

The primary advantages of a PCS are based on a "network effect" and are exponential to the number and role of the stakeholders connected to the system (Constante, 2019). Designing and developing a Port Community System at Land Ports will enable, *inter-alia*, the following¹²:

- information exchange between transport operators in the port and for hinterland connections, the port users, Customs, port and other authorities,
- electronic exchange of Customs declarations and Customs responses, and cargo releases between private parties and Customs,

¹²<https://tfig.unece.org/contents/port-community-systems.htm>

- electronic handling of all information regarding import and export of trade consignments,
- elimination of excessive manual documentation,
- increase in operational efficiency
- status information and control, tracking and tracing goods through the whole logistics chain, and
- processing declarations of dangerous goods with the responsible authorities.

In addition to these benefits, a Land Port PCS will be immensely beneficial to all the stakeholders involved.

- **LPAI:** Land Port PCS will lead to digitization of most manual processes currently being undertaken and promote international trade through optimized and business friendly operations. It will lead to informed business decision making and result in enhancement of non-trade revenue for the Authority. The operations will be conducted in a transparent and secure manner through a single window system. It will also reduce operational costs.
- **Customs:** If it can be ensured that the PCS has easy integration with Customs, a PCS can ensure real-time integration (both messages and transactions), enable electronic exchange of customs declarations and customs responses, and cargo releases between private parties and Customs, result in faster clearance of goods. The Customs will have a better capability to perform risk analysis. Instead of ICEGATE transaction with multiple stakeholders, PCS can become a nodal platform to deal with all stakeholders for the exchange of messages with ICEGATE.
- **Logistics Operators/Custom Brokers/Freight Forwarders:** Land Port PCS will provide the ability to latch on world-class transportation solutions that work in tandem with the transactions that work at the ports. PCS will enable sharing of live data-gate in, gate out status and better vehicle planning. It will reduce dwell time of trading and simultaneously reduce congestion at land ports. The main benefit will be in terms of elimination of excessive documentation resulting in better resource management and increased efficiency in the transfer of goods. For the logistics operator, one of the greatest benefits will be in terms of visibility of real-time uploaded data.
- **Traders:** The largest benefit lies for the traders involved in cross-border trade via Land Ports. A PCS will have the ability to bring various service providers on a single platform and will enable safe and secure transactions on a single platform. It will provide a single point of collection and multiple point for settlement through payment gateway. With increased access to information and easier access to a wide range of services, it will result in saving of time and money. Traders will be able to do a matching of trade transactions with relevant payment transactions and track their cargo. It will also result in standardization of data points and processes across trade stakeholders
- **Other Authorities such as Ministry of Railways and Inland Waterway Authority of India:** A PCS will facilitate multi-modal movement of cargo. On-carriage operators will have a clearer view of the availability of the cargo and respective government control and document status. For railways specifically, it will enable easy booking of container

trains and easy booking of cargo. Real time information exchange (container lifting order, railway receipt, container received report, etc.) with Land Port PCS will be made feasible. A Land Port PCS will also enable international linkages with shipping lines and capability to link with international portals to bring pre-manifest data.

In sum, a PCS should be viewed as a “strategic asset” for India’s Land Ports as it can accrue a wide range of direct as well as indirect benefits. Typical indirect economic benefits include decreased communication costs for logistics operators and reduced cost of information access. As a result of more transparent information, there will be provision for more accurate taxation and increase in overall additional government revenue. There are studies to also suggest that PCS can also lead to prevention of smuggling and illegal activity (Keceli et al., 2008). There are several other flow-on benefits which may not be financial in nature and difficult to anticipate (Bezic et al., 2011). Implementation of PCS also results in amplified competitiveness, improved information quality, increased operational performance, and safe paperless document exchange procedures for port authorities. These gains have the potential to translate into cost saving and time reduction and will positively contribute to indicators such as World Bank’s ‘Trading Across Borders’ index.

7. ACTION POINTS FOR IMPLEMENTING A PORT COMMUNITY SYSTEM

To implement a Port Community System, the European Port Community Systems Association has suggested twelve action points which can be considered while executing a similar system at the Indian Land Ports (EPCSA, 2015).

The first Action Point is to create a common understanding of a PCS (Figure 3.4). It is important that there is a common understanding of what a PCS is and what it can do in the local region. The second Action Point is to know why one should choose to have a PCS? There are reasons discussed in the paper earlier. These include reducing inefficiencies in port business processes, facilitating the smooth flow of electronic data, integrating and achieving compliance with national and international laws and prerogatives. At this point, it is also imperative to understand that the PCS is formed by the community and is for the community.

The third Action Point is “How to start developing a PCS”. This is one of the most important steps of developing a PCS. This involves getting a community buy-in, identifying a lead in the project with the responsibility to bring the community together and act independently of its own interests to act in the interests of the community and identifying the legal and business model, including finance. The next Action Point is to identify “Ambassadors” who can promote the concept and benefits of PCS within the locality, region and abroad. The fifth Action Point is to keep all stakeholders informed of the progress of the implementation. The next Action Point is identification of core business processes to be addressed. During this step it is important to outline the key challenges related to the existing processes and outline benefits of having a simplified electronic approach.

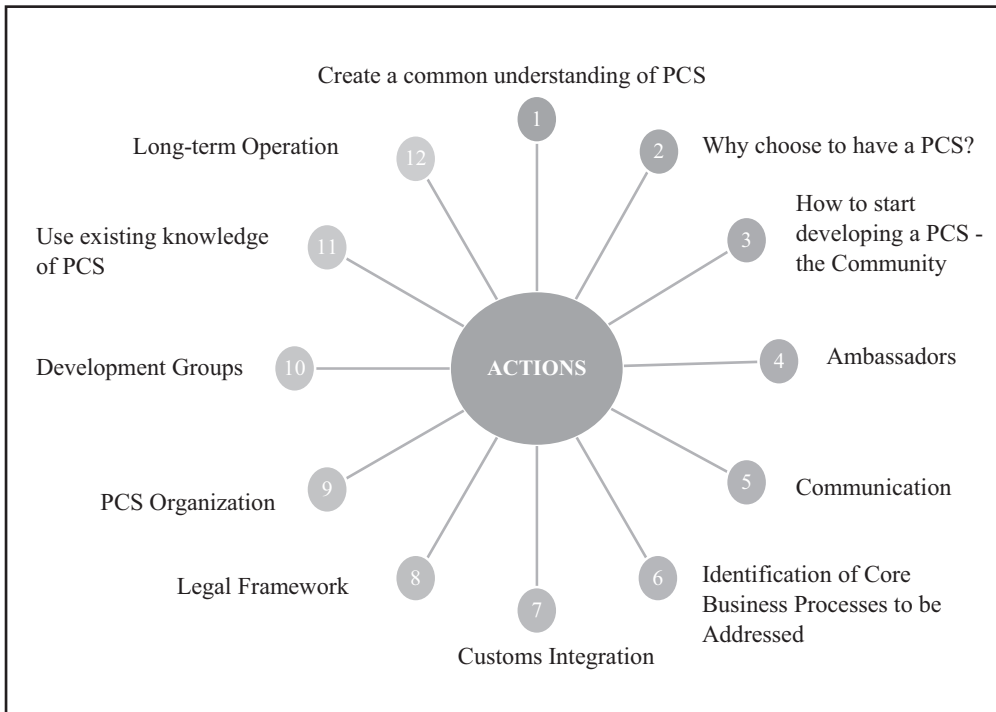


Fig. 3.4 How to Develop a Port Community System

Source: EPCSA Guidelines on How to Develop a Port Community System. Available at https://unece.org/fileadmin/DAM/trade/Trade_Facilitation_Forum/BkgrdDocs/HowToDevelopPortCommunitySystem-EPCSAGuide.pdf

EPCSA in their Action Point 7 suggest Customs integration. Action Point 8 is to reflect upon the legal frameworks within which the PCS will need to work such as data projects Acts, Customs Acts etc. Action Point 9 is to arrive at a consensus on a PCS Organization-what will be the operating model? What will be the shareholding and types of shares? What will be the financing? What will be the governance framework?

Action Point 10 is to identify key community stakeholders to work in development groups to steadfast and utilize the electronic solution to the identified business processes. As a next step, it is important to utilize the existing knowledge of PCS-both within India and from international experience.

As a last Action Point, to create a sustainable PCS and PCS Operator, it is crucial to identify the revenue streams, ongoing development plans and updating the system regularly to comply with national and international laws, regulations and directives.

8. DESIGN PRINCIPLES FOR PROPOSED LAND PORT COMMUNITY SYSTEM

This section presents a set of design principles, particularly related to technology, application and data that will be useful to establish and maintain good design practice and ensure consistency of applicable. When designing a software solution, we should pursue at least the following objectives, which together comprise the core of all software requirements and rules for implementation of LPCS.

8.1 Technology Principles

- *Availability, Reliability and Serviceability*: Solutions must achieve a level of availability, reliability, and serviceability in line with the business criticality and requirements.
- *Scalability, Flexibility and High Performance*: It should be ensured that System can deliver consistently high performance as the system scales upward and must anticipate order-of-magnitude growth beyond today's state-of-the-art standard (user scale, data scale, and application scale). The architecture should allow for scalability as and when the number of registered resources have increased. It should provide a flexible platform to support ongoing changes in the business and effective integration of new business initiatives.
- *Openness and Extensibility*: Adoption of open API, open standards and wherever prudent open-source products are of paramount importance for the system. This will ensure the system is lightweight, scalable and secure. Openness comes from use of open standards and creating vendor neutral APIs and interfaces for all components.
- *Innovative, Sustainable and Modern Solutions*: Technology solutions should be innovative and apply modern approaches as per current trends. It should enable more effective ways to meet land port related business demand and requirements.
- *Resilience and Robustness*: The platform should promote resilience between its platform components and act as a robust solution. It should have ability to provide and maintain an acceptable level of service in case of faults and challenges to the normal platform operation.
- *Responsive Change Management*: Changes to the platform information environment are implemented in a timely manner.
- *Control Technical Diversity*: Technological diversity should be controlled to minimize the non-trivial cost of maintaining expertise in and connectivity between multiple processing environments.
- *Security Risks are Considered*: Technology environment should maintain a level of security that is commensurate with the risk and magnitude of the harm that could result from the loss, misuse, disclosure or modification of information.
- *Simplify and Standardize*: Standardize the processes and services. Introduction of new solutions should simplify the operations.
- *Technology Refresh*: System should have provision to adopt technology refresh in every 3-5 years or whenever there are significant updates and upgrades available.

- *Elasticity*: Containerized application components, with automated provisioning & de-provisioning of infrastructure, will introduce elasticity in the deployment where the system can adapt to changes in workload by automatically provisioning and de-provisioning infrastructure resources so that the available infrastructure resources at any point of time is aligned with the current demand.
- *Adaptive Learning*: The Land Port Community System can incorporate adaptive learning to adapt to resident needs by providing personalized and better quality of service to residents. Adaptive learning includes automated analysis of fine-grained operational data for business and trade facilitation business services and through a feedback loop adapting the business processes to make them more personalized or for handling the exception conditions, with minimal human intervention.
- *Extreme Automation*: In systems of the size and scale of LPCS, it becomes imperative to reduce human intervention through automation. Extreme automation increases efficiency and reduces errors, thereby improving quality of service and security in these systems. Extreme automation covers automation of business processes, DevOps and IT automation. Technologies such as AI/ ML should be used to enable extreme automation end-to-end. Automation should be emphasized, wherever possible, for processes where there is significant scope for minimizing human interaction, thereby reducing the cost of operations and improving the quality of service.
- *Containerization*: To improve the efficiency of deployment, reduce the risk of system bottleneck through features such as auto-scaling and move towards optimal software-driven operations for high availability, several application components can be containerized, i.e. executed on containers, using technology such as Docker and container orchestration technology such as Kubernetes/ Marathon/ Docker Swarm.
- *Debuggability*: It should be possible to debug application services by enabling dynamic/ compile-time instrumentation and application logs, at different levels, using standard runtime configurations in logging software. Automated analysis of application logs should also be enabled using standard software, with integration into Ticket Management tools in the Service Desk.
- *Monitorability*: Every application service should have defined monitoring requirements, related to latency, throughput & availability that will need to be monitored for SLA purposes using centralized monitoring dashboards.
- *Configurations*: Success of scalability, elasticity and containerization requires centralized & automated configuration management, which makes it easy to propagate configuration changes across multiple instances. Configurations for all infrastructure, platform and application services should be maintained in centralized configuration management software, for automated management & propagation of configurations.
- *Open Source/COTS*: Solution components is preferred to be open source and should be provided with enterprise support. While preference must be given to using open-source products, specific OEM products may be used when necessary to achieve scale and reliability if it meets the following requirements:

- Every such OEM component/service/product/framework must be wrapped in a vendor neutral API so that at any time the OEM product can be replaced without affecting rest of the system.
- Proposed system/application/products are latest commercially available versions.
- Products must be supported in terms of upgrades, bug fixes, functionality enhancements and patches to cater to changes to statutory requirements by their respective OEM for the entire duration of the contract plus 6 months after end of contract.
- OEM support should be made available on all deployed versions for the contract period.
- It should be readily deployable with or without customization to suit the Port Community System's specific process requirements and does not involve developing the application from scratch or major significant developments in the product.

8.2 Application Principles

- *Supreme User Interface/Experience*: Solution should provide simple and standardized but attractive user experience to engage maximum number of Passengers/Travel Portals/Service Partners. The applications are easy to use. The underlying technology should be transparent to users, so they can concentrate on tasks at hand.
- *Technology Independence*: The architecture should promote solutions that are technology independent and can operate on multiple infrastructure platforms. Applications should be independent of specific technology choices and therefore can operate on a variety of technology platforms.

8.3 Data Principles

- *Data Security and Privacy*: Data is an asset that has value to the enterprise and should be managed accordingly. Data should be protected from unauthorized use and disclosure. In addition to the traditional aspects of national security classification, this includes, but is not limited to, protection of pre-decisional, sensitive, source selection-sensitive, and proprietary information.
- *Data is Accessible and Available*: Quality data should be available and accessible to enable users to perform their functions.
- *Data Ownership*: Data owners are accountable not just for the quality and accuracy of the data but also for establishing data policies and guidelines.
- *Data Sharing*: The system should provide a single, clearly defined and authoritative view/source of quality data across the enterprise. It should provide consistent, controlled information sources to meet functional system requirements, enable business management information and performance management through a single source data, integration method and framework.
- *Master Data Management*: System should manage hierarchies and reference data to support master data management

- *Common Vocabulary and Data Definitions:* Data is defined consistently throughout, and the definitions are understandable and available to all users. Information, data and its metadata are consistently defined and structured through a Data Model. Data definitions and vocabulary are easy to comprehend and published to all users. Calculations, terms, definitions and business rules defined and approved by the business for the business and to be used by the entire business.

9. GOOD PRACTICES FOR IMPLEMENTING PORT COMMUNITY SYSTEM

This section demonstrates a set of good practices which have been successful in implementing PCS across the world and is largely based on the works of Constante (2019).

9.1 Port of Valencia/Spain

The Valencia port comprises of three ports that are managed by the Valencia Port Authority (PAV): Valencia, Sagunto, and Gandía. The IT platform is fully owned and operated by the PAV. Aspects related to technical, commercial, operational, and development are outsourced to specialized companies through public tenders. The platform has a PCS manager inside the port authority structure who is responsible for organizing, running, and managing the PCS and coordinating and supervising the different teams and activities.

Reportedly, implementation of PCS at Valencia port has increased the efficiency and competitiveness at more than €23 million per year. Even if the estimated development costs (around €10 million) and the annual operative costs (around €1.6 million) are taken into account, Mendes Constante (2019) estimate that there would be return on investment in less than one year.

9.2 Port of Antwerp

Antwerp Port Authority and Alfaport Antwerpen formed a PCS at the Port of Antwerp in June 2011 and hold the ownership rights of the same. The PCS is managed by a steering committee with public and private sector representatives from the port community. The Descartes Systems Group (formerly Porthus) is a strategic partner that operates and manages the data center.

According to Constante (2019), there are several services and benefits of the data center:

- Transmission of standardized EDIFACT or XML messages
- Conversion of message formats
- Business rules and routings
- Supporting network for all applications that exchange electronic messages
- Interconnections to an unlimited list of international networks worldwide
- Optional archiving of all messages for a period of at least 10 years
- Tracking and tracing sent and received messages

- Immediate access to the Descartes Global Logistics Network
- Authentication of sender and recipient

9.3 Port of Rotterdam and Amsterdam

Portbase was set up because of a merger between the Port of Rotterdam's Infolink and Portnet, a system implemented by the Port of Amsterdam in 2009. Similar to the case of Antwerp PCS, the services offered by Portbase are wide-reaching. The road and rail planning services have been integrated with the platform. The system offers planning services for barges and vessel-related services connecting shipping agents, shipping lines, customs, harbor masters, and port authorities. Many activities can be scheduled in advance through the system. The main advantages of include greater efficiency, lower costs, better service provision, better planning, quicker turnaround times, fewer errors, optimal re-use of information and 24/7 availability (Constante, 2019).

9.4 Port of Singapore

Port of Singapore is one of the largest container ports in the world. Portnet is a privately owned PCS platform operating at the Port. As per estimates, Portnet has resulted in savings of up to US\$ 80 million to the entire port community over a three-year period (PortStrategy, 2012).

The system offers several services such as:

- Online ordering of port services
- Vessel management
- Stevedoring services and information
- Service and vessels declaration
- Berth application
- Yard crane handling services
- Pilots, tugs, and water boat services
- Reefer monitoring services
- Labeling/monitoring/fumigation services for dangerous goods cargoes
- On-dock depot facilities
- Online billing functions which integrate with customers' in-house systems
- Financial electronic data interchange (FEDI) of bills
- Facilitating rebilling processes by shipping lines

Each PCS has its own operating model and functionalities. A summary of selected Port Community Systems implemented worldwide are presented in Table 3.3.

10. CONCLUSIONS

In recent years, India has undertaken several reforms aimed at achieving digital transformation for trade operations. The most notable amongst the reforms is the implementation of a Single

Table 3.3 Summary of Select Port Community Systems

Port	System Name	System Description
Singapore	Portnet	Subsidiary of PSA, a port group with operations throughout the globe, particularly in Singapore and Antwerp. Supports the seamless flow of information for container shipment and facilitates interactions and the synchronization of activities/information across multiple parties,
Rotterdam	PortBase	2009 Merger between Rotterdam's Port infolink (2002) and Amsterdam's PortNET (2000). Online platform and communication service that links freight forwarders, agents and terminals to customs.
Antwerp	APCS (Antwerp Port Community System)	Platform between the port authority, customs, shippers, shipping companies, ship's agents, forwarders, terminal operators, road and rail carriers, barge operators, logistic service providers.
Hamburg	DAKOSY	Web-based freight tracking and order entry system for shippers and freight forwarders.
New York / New Jersey	FIRST (Freight Information Real-time System for Transport)	Internet-based, real-time network that integrates sources of freight location and status into a single web portal to allow port users to access cargo and port information.
Valencia	valenciaportpcs.net	Online platform labelled as a port community system linking freight forwarders, Customs, terminal information systems and gate management systems.
Los Angeles	Port Optimizer	Cloud-based platform connecting the port and supply chain stakeholders to handle cargo flows in a more predictable and timely manner.

Source: Theo Notteboom, Athanasios Pallis and Jean-Paul Rodrigue (2022) Port Economics, Management and Policy, New York: Routledge and Mendes Constante, J., & Lucenti, K. (2019). International Case Studies and Good Practices for Implementing Port Community Systems.

Window Facility by the Indian Customs. However, it is important to note that while Single Window simplifies, harmonizes and automates, but it does all this only for administrative processes. Trade Facilitation in the true sense should achieve simplification, harmonization and automation of both administrative and operational processes. This is what can be achieved through a Land Port Community System. There are a plethora of manual processes and documentation that is followed for undertaking export and import activities at Land Ports. Land PCS will achieve greater operational and administrative efficiency and seamlessly facilitate cross-border trade.

Based on an analysis of the current trade procedures and review of the good practices in the implementation of PCS, this paper proposes the following functional requirements to be considered by the Land Ports Authority of India for the planning, design and implementation of the Land Port Community System:

- Provide a centralized online platform to streamline and simplify the operations and processes for cross-border trade
- Enable electronic handling of all information, data and documents regarding import and export of cargo
- Simplify and consolidate cargo and passenger movement processes at ICPs by allowing electronic submission of requisite documents along with status tracking, grievances submission, etc.
- Enable the user to book the date and time of the arrival of his vehicle at the ICP and therefore optimize the planning process for all stakeholders
- Provide status information, process control, tracking and tracing of trucks, containers, goods and services while ensuring data security and privacy.
- Include features that help optimize the management of the port. For instance, there should be a weighbridge operations module that fetches weighment data from the weighbridge system already installed at ICP. Similarly, there should be a module to update the rummaging or scanning status of the vehicle on LPMS.
- Provide information regarding the requirement of parking and automatically allot the time and location of parking of the truck in the holding area at the ICP
- Greater coordination through online cross functional integration with all relevant stakeholders related to trade and passenger movement.
- Act as a central and secure electronic repository of all records and enable an integrated workflow across functions of different entities
- Enable effective real-time information for better planning and coordination with various stakeholders so as to improve efficiency of entire lifecycle of trade which includes process of manifesting, goods loading, transportation, unloading, Customs clearance etc.
- Provide predictive insights and business intelligence use cases using emerging technologies such as Artificial Intelligence and Robotic Process Automation
- Act as a data repository of all the data for generation of relevant dashboard and MIS reports for multiple levels to enable quick decision making.

To conclude, the guiding principles of technology, data and application elucidated in the paper may be considering while designing the system solution. Going forward, Land Ports may also re-use existing information systems in place towards creating transparency and reducing trade burdens in a manner that PCS can act as a Gateway into a Single Window. There have been some successful examples of integrating PCS with Single Window. For instance, in the case of Benin, Africa, within two years, Integrated PCS/SW increased trade volume from 1,50,000 to 2,50,000 TEUs, reduced dwell time from 36 to less than 8 hours and increased custom revenue from 410 m to 490 m Euros (Morton, 2015).

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ARTICLE

4

Border Warehouses as a Tool for Cross-Border Logistics Facilitation in the Greater Mekong Sub-region

Ruth Banomyong*

Abstract: *The developing economies of the Greater Mekong Sub-region (GMS) have shown that they have become increasingly linked into the global economy through trade, investment credit, and technology. Adequate transport and communication facilities play a vital role in their economic recovery and development. In recognition of the benefits of this regional integration, the countries of the GMS are currently co-operating to implement a number of initiatives to reduce border physical and non-physical barriers to trade and transport. This article seeks to share the perspectives and perceptions of key stakeholders on critical cross-border logistics issues as well as their views on the ways and means to address these issues. This paper also intends to link the formal institutional environment with the individual stakeholder's perspective and perception of critical issues and by that identify critical points related to logistic solutions in a cross-border environment. This study utilizes a participatory approach, developed by the UN-ESCAP, which is known as the anthology methodology. The results show a clear discrepancy in terms of perceived benefit between relevant stakeholders with regards to the establishment warehouses along the Thai border as an illustrative example.*

Keywords: GMS, Border warehouses, Trade, Logistics

JEL codes: F15, F18, F68

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

The developing economies of the Greater Mekong Sub-region (GMS)¹ have shown that they have become increasingly linked into the global economy through trade, investment credit, and technology (Binh, et al., 2020). Adequate transport and communication facilities play a vital role in their economic development (Banomyong and Beresford 2001). In recognition of the benefits of this regional integration, the countries of the GMS are co-operating to implement a number of initiatives to reduce border physical and non-physical barriers to trade and transport.

Trade and investment initiatives require closer co-ordination of transport and communication infrastructure, which implies the removal of barriers so as to facilitate movement. An interconnected infrastructure network will accelerate trade and introduce efficient transport and communication facilities (Furuichi, 2021). This will reduce trade transaction cost in the GMS, however the flow of goods information and services within and cross-borders must be ensured in the most effective way (ESCAP, 1997). Bottlenecks with regards to border crossing may lead to congestion, late delivery, increase in costs and ultimately loss of future contracts (Grainger and Morini, 2019).

Logistics in the GMS must be considered as a critical sector to enhance regional economic growth and integration. As an economic sector, logistics (i.e., by improving efficiency and reducing costs) is an essential contributory ingredient to international competitiveness. An integrated logistics system is a prerequisite for the competitiveness for goods (Rodrigues et al., 2004).

A number of initiatives have included the first Thai-Lao Friendship Bridge and the rehabilitation of roads in member countries of the GMS. There are also a number of other initiatives underway such as: the development of the East-West Economic Corridor (EWEC), which is being developed to create a direct land route from Danang in Vietnam to Mawlamyine in Myanmar (which include a second Thai-Lao bridge linking Mukdahan and Savannakhet); and the construction of a road through the northern provinces of Lao People's Democratic Republic, which provide a direct land route from Kunming in China to Bangkok in Thailand (Walker, 1999).

In the area of trade and transport facilitation, countries of the sub-region have signed and ratified the GMS Cross-Border Transport Agreement (Than, 2005). They have negotiated and signed all the 20 annexes and protocols to the Agreement but to this day this agreement has not been fully implemented. In addition to these initiatives, there is a need to develop efficient logistics systems in the sub-region in order to increase its competitiveness when accessing regional and global markets.

The Third Ministerial Meeting on the ASEAN-Mekong Basin Development Cooperation (AMBDC) held during 8-9 October 2001 in Chiangrai province (Thailand) considered a number of issues related to the whole cross-border trade chain, including public markets,

¹Cambodia, Lao PDR, Myanmar, Thailand, Vietnam & P.R. China (Yunnan & Guangxi province)

export promotion institutions, bonded warehouses, border warehouses and the location of border warehouses. It was the first time that cross-border logistics system was recognised as important.

The objective of this study is to find ways on how to improve the GMS's competitiveness through improved border logistics connectivity. In return, this increase in competitiveness will hopefully reduce poverty and improve the overall quality of life for the people in the GMS. This objective is aligned with the vision of the GMS where the GMS program has adopted a three-pronged strategy² (the 3 Cs):

- Increasing connectivity through sustainable development of physical infrastructure and the transformation of transport corridors into transnational economic corridors.
- Improving competitiveness through efficient facilitation of cross-border movement of people and goods and the integration of markets, production processes, and value chains.
- Building a greater sense of community through projects and programs that address shared social and environmental concerns

Comprehensive and integrated logistical systems, which are efficient, reliable and cost effective, are still in the developmental stage throughout most of the GMS (Banomyong, 2004) and there is a demand for a study based on the stakeholders perceptions' on cross-border trade and logistics system.

2. METHODOLOGY

This paper seeks to obtain the perspective and perception of key stakeholders in particular along the Thai border on critical GMS cross-border logistics issues as well as their views on the ways and means to address these issues.

In this study a participatory approach, known as the "anthology methodology" (ESCAP, 2001), was used. This methodology was developed by the United Nations Economic & Social Commission for Asia and the Pacific and its purpose has been to examine stakeholders' perspectives and perceptions of critical issues and by that identification of critical points related to logistic solutions in a cross-border and transit environment with special emphasis on the function, demand, and location of distribution centres, warehouses and/or inland clearance depots. The context of the study is the existing and future environment concerning cross-border and transit activity in GMS countries with special focus on Cambodia, Lao PDR, Myanmar and Thailand. The following groups of respondents were identified for this study.

- Policy makers/Government officials (regulators/enforcers);
- Shippers/Consignees/Traders (cargo owners/channel intermediary); and,
- Transport/Logistics service providers.

²Source: <https://www.greatermekong.org/overview#:~:text=To%20realize%20its%20vision%20of,corridors%20into%20transnational%20economic%20corridors.> (accessed August 28, 2022)

Relevant stakeholders of the above groups were interviewed at the following border crossing locations:

- Chiang Kong-Houayxay (Thailand/Lao PDR)
- Chiang Saen (port on the Mekong)
- Mae Sai-Tachilek (Thailand/Myanmar)
- Aranyaprathet-Poipet (Thailand/Cambodia)
- Nongkhai-Vientiane (Thailand/Lao PDR)
- Mukdahan-Sawannakhet (Thailand/Lao PDR)

These stakeholders were asked questions related to:

- Identification of the principal problems, constraints and their causes related to border trade and transit trade when applicable.
- Identification of possible strategies to address the said problems and making proposals on possible actions to implement solution strategies in order to reduce constraints within the system.
- Possibility of establishing public border warehouses to facilitate cross-border trade in the GMS.

In total, 95 stakeholders were interviewed in the pre-selected provinces and border points. All stakeholders were delivered the interview protocols in advance. Stakeholders' responses and viewpoints are summarized, presented and discussed in the findings section hereunder. Table 4.1 presents the respondents' details by their group and survey location.

Table 4.1 Respondents' Details

Location	Policy Maker	Service Providers	Traders	Total
Aranyaprathet-Poipet	4	4	7	15
Mukdahan-Sawanakhet	4	2	8	14
Nongkhai-Vientiane	4	3	5	12
Maesai-Thachilek	2	—	8	10
Chiangsaen	1	5	13	19
Chiangkhong-Houey Xay	1	6	14	17
Central governments	8	—	—	8
Total	24	16	55	95

Source: Author's own

3. GENERAL FINDINGS

The finding of this paper are presented in three sub-sections: (A) the identification of principal problems and their causes related to border trade; (B) The identification of possible strategies and how to implement them in order to address the said problems; and (C) the possibility of establishing public border warehouses to facilitate cross-border trade

A. Identification of Principal Problems and their Causes Related to Border Trade

A number of problems related to border trade were identified during the interviews with key stakeholders in all the provinces visited as well as with central governmental agencies. One of the key themes that arose during the interviews with all stakeholders was a lack of clear understanding in terms of rules and procedures related to border trade and how border trade differed from international trade. This lack of understanding both at the provincial and national level has created a “gap” in terms of understanding the realities of border trade between GMS countries. One respondent even stated very clearly: “border trade is not transit trade!”

During the field survey many respondents felt that border trade rules were cumbersome for local exporters and importers, in particular small-scale traders who did not appreciate the bureaucracy involved. They felt that the system was not suitable for micro and small businesses. This perception of outdated and complicated import/export rules and regulations in the GMS countries is prevalent among key stakeholders but the question remains whether outdated rules are better than no rules at all. GMS countries own trade policies must first be clearly defined, in particular those related to border trade, as there is no harmonization yet of border trade policies within the GMS. This is an area where substantive coordination and cooperation is critical.

Complicated and incoherent import/export and transit tax system has been identified as a principal problem for border trade. This is particularly true when the points of views of all traders are taken into account. It seems that tax rate within the study area are highly arbitrary, depending on the officer in charge of the import/export process or the bilateral situation between the two trading countries. This is clearly the case when border trade between Thailand and Lao PDR, Cambodia and Myanmar is explored. The stakeholders’ general feeling is that there are no standardized procedures and no standardized tariffs for border trade. However, a nationality bias has also been observed where the blame has mostly been directed to the other trading partner country.

It is possible that this complicated tax system is one of the causes for the proliferation of contraband or smuggled goods, as the borders between countries in the GMS sub-region are long and highly permeable (Rubesch and Banomyong, 2005). Some respondents were bold enough to suggest that this incoherent import/export and tax system favours corrupt practices.

There is also a perception that there is no recognized standard in terms of how to conduct border trade. Stakeholders consider that border trade is different from traditional international trade. This creates numerous problems for the traders, as for each border trade transaction they feel that the rules are continually changing. This is also reflected in the sentiment that traders and service providers do not have enough knowledge on how to conduct border trade properly. This problem is directly related to the fact that there is no harmonization of border trade practices, be it in terms of business transactions or cross-border procedures. Clear border trade policies or harmonized border trade legislation could help provide a framework on how to conduct border trade within the GMS.

An interesting issue is that there is a persistent feeling of mistrust between Burmese, Laotian and Cambodian traders and Thai traders. From the interviews, certain stakeholders were quite vocal in their mistrust of Thai traders. They felt that Thai traders usually take an unfair advantage during border trade transactions. This may or may not be relevant with the fact that certain types of Thai products are currently being boycotted in Myanmar, Lao PDR and Cambodia. It is of course important to discern that not all of the Thai traders are unworthy of trust but it is possible that many of these Burmese, Lao and Cambodian traders have had bad experiences with Thai border traders.

Fluctuation in currency exchange rate is considered as another major problem. The Thai baht is a freely convertible currency but there are problems related to the exchange rates of the Lao kip, the Myanmar kyat or the Cambodian riel. The rates are continuously changing and there is also a difference in terms of exchange rates between the official rate and the 'black' market rate. This makes it difficult for traders to set up their selling prices. One easy way to circumvent the problem is to use just one currency for border trade in the region. In practice, the Thai baht is currently the 'de-facto' currency for border trade in the region but this places an increased burden on Cambodian, Lao and Burmese traders on the other side of the border.

There is a possibility that in the near future the Chinese Yuan will become the currency for trade in this sub-region as the Chinese traders are willing to trade with Lao and Burmese traders and be paid in the currency of both countries. At present, since most of the border traders have to source their product from Thailand, they have to pay in Thai baht and are subject to their currencies' fluctuation against the Thai baht. Thai traders are not willing to accept the currencies of neighbouring countries.

Lack of infrastructure is appraised by all the stakeholders to be a major constraint for border trade. From the stand point of the stakeholders, lack of adequate road, bridges, warehouses or facilities is seriously hindering the capabilities of the GMS countries to integrate their economic system. At the provincial level, this lack of facility and infrastructure seriously limit the capacity of border trading posts in terms of types of goods that can be transported and also in terms of volume.

It is possible that the lack of infrastructure is related to the low level of volumes of goods traded across-borders. However, in Chiangrai, Nongkhai, Nakon Phanom and Mukdaharn province, Thailand, the level of infrastructure is considered acceptable with the usage of the various Thai-Lao friendship bridges as a gateway to and from Lao People's Democratic Republic. Figure 4.1, hereunder, is a schematic cause and effect diagram that incorporates most of the general problems involved in border trade in the GMS.

The lack of standardised border trade procedures and weak infrastructure linkage is hindering the development of the GMS logistics system. The purpose of any logistics system is to be able to satisfy customers while controlling or even lowering all the costs involved. The infrastructure linkages is the backbone of logistics development in the GMS but this upgrade of infrastructure must be done in conjunction with the facilitation of trade and transport services to create an effective and efficient integrated logistics system within the GMS.

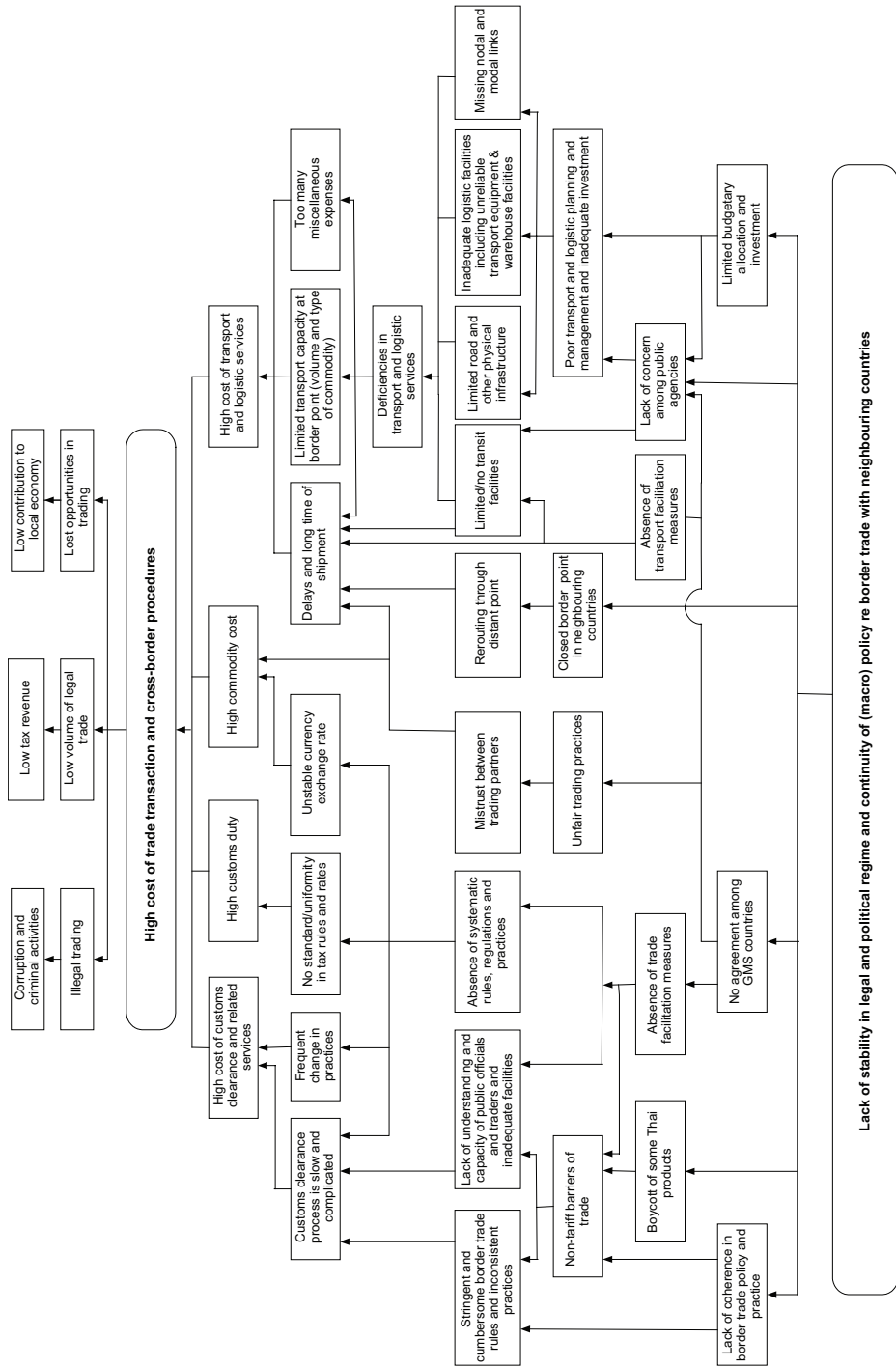


Fig. 4.1 Border Trade Cause and Effect Diagram

Source: Author's own

This cause and effect diagram clearly demonstrates the relationship between the numerous factors that are considered problematic in the case of border trade. The issues are in fact inter-related and must be appreciated from a holistic perspective. Not one of the problems can be or should be taken out of context as a proposed solution may become misleading. An integrated approach is needed in order to solve these problems. This integrated approach should combine solutions to the ‘hardware’ infrastructure aspect with the solutions to the ‘software’ rules and regulation aspect.

Most of the problems involved in the development of logistics system for cross-border trade are mostly related to the import/export processes of the countries in the GMS. There still exist high levels of arbitrary taxes for traded goods and a lack of harmonised procedures for cross-border trade. Financial security in terms of trading is also lacking with strong currency fluctuation and no specialized or dedicated services for cross-border payments. Infrastructure is also considered a constraint but the impact may seem less important due to the relatively low volumes involved.

This reality may be true for now but in the near future with the implementation of free trade agreement (FTAs) in the sub-region; infrastructure will become as critical in the facilitation of the movement of goods across-borders as the harmonisation of border trade rules and regulations. There is a very strong potential for expansion of border trade after FTAs are in place and this will probably lessen the need for contraband trade as tariffs and non-tariffs barriers will be eliminated in the GMS.

B. Identification of Possible Strategies and How to Implement Them in Order to Address the Identified Logistics Problems

The interviewed stakeholders agreed that the most effective way to lessen the impact of border trade related problem is to set-up joint cross-border committees at the national, provincial and at the district level too. Some of these committees are already in existence but it seems that their activities and output should be more clearly defined. In order to reduce the ‘gap’ in terms of understanding of border trade rules it is important to create two-way communication channels among the parties involved. These communication channels must include national as well as local governmental agencies, service providers and border traders. The public and the private sector in each country must work together in developing the agenda of each joint cross-border committee. The traders themselves considered this public private partnership approach critical. Improved cooperation and collaboration among stakeholders is the desired outcome from these consultative bodies.

It is also important to delegate authority to negotiate border trade agreements to provincial or district level agencies. The process of decentralisation will help local governmental agencies to make decisions and take action immediately without referring first to a central governmental agency. If decentralisation is not possible at this stage then the establishment of a single agency or assigning the responsibility to an existing agency that deals with border trade issues at the provincial or district level can be a solution. This single agency should be the sole agency

involved with all the documentation or paper work needed for cross-border trade, similar to a one stop service centre for border traders.

Some stakeholders discussed the possibility of implementing special rules and regulations just for border trade. These rules and regulations should therefore be flexible and adapted to the need of the border traders as usually the scale of their operations are relatively small. If special rules or regulations cannot be implemented, then a relaxation of existing rules could be a solution. But, this relaxation should only cover border trade and not transit trade.

Ideally, the border areas should become special economic zones where free trade is the norm. This will lessen the need for rules and regulation and will make the GMS truly “borderless”. All the respondents, however, did not share this vision. Some respondents were very clear in their need for borders to protect their homeland from outside threats.

It was also proposed that a fix or pegged exchange rate be utilized in order to limit the effect of currency fluctuation but this solution does not seem feasible. Fixed exchange rate will only fuel the development of ‘black’ market exchange rate. The problem of exchange fluctuation cannot be dealt with just by rules or regulation as exchange rates are linked to numerous factors that are not always controllable.

Human resource development, especially capacity building in terms of understanding the mechanism of international trade has been proposed as a solution to the problem of lack of knowledge of stakeholders involved in border trade. This might be done in relatively quick manner, as it does not require high level of financial investment. Special training programs could be comprehensively targeted for state officials, service providers and traders by related supporting multilateral agencies.

An upgrade in infrastructure, in particular physical links of a cross-border, is considered important to the facilitation of cross-border trade. Without this improvement in infrastructure it will be difficult to facilitate the movement of goods across-borders. Linkage roads, bridges are seen as the integrators that will help expand border trade. The problem with infrastructure upgrade is the source of funds as many countries in the GMS have limited financial capacity. Borrowing for infrastructure linkage upgrade may not be financially sustainable in the long run.

It can be described that stakeholders proposed numerous solutions to the facilitation of border trade and the improvement of the regional logistics system. Some of the solutions were practical such as the establishment of joint border trade committees to look at procedural barriers or to implement a public-private dialogue among the stakeholders involved. However, some of the other solutions were not as practical such as the fixing of exchange rates. Nonetheless, an interesting solution is the fact that in the future all countries in the GMS would belong to the same free trade area and that will automatically have to facilitate all types of trade between member countries. The question of suitability of establishing public border warehouses was then put forward to all stakeholders for the improvement of the regional logistics system and border trade facilitation.

C. Possibility of Establishing Public Border Warehouses to Facilitate Cross-border Trade

Almost all of the stakeholders interviewed felt that it was suitable to establish public border warehouses in their respective areas in order to facilitate cross-border trade. Public border warehouses are warehouses established by state agencies. The only exceptions were respondents located on the Thai-Cambodian border who felt that the establishment of a border warehouse was not necessary. The main reason given was the relative proximity of the border to Bangkok, the establishment of a border warehouse would, according to them, only increase cost, waste time without any particular benefits.

The biggest suitability problem may be with Chiangrai province, where respondents of each border crossing area (3 areas) declared the suitability of their area for the establishment of border warehouses. It seems very unlikely that trade flows for each individual border crossing will be sufficient to justify the establishment of a border warehouse for each crossing but this shows the intent of the local community of wanting to improve trade in their area.

An interesting viewpoint is that the most vocal supporters for the establishment of border warehouses were governmental officers or local district officers. They felt that it was a sensible way to support the development of cross-border trade in their respective area, whereas the private sector was usually more sceptical about the idea. In contrast many traders were afraid that the establishment of border warehouse in their area would increase their cost. Most of these traders also mentioned the fact that they had their own storage area and that the trading volumes did not justify the need to build a dedicated cargo storage facility. Transport and logistics service providers were less wary of border warehouses than the traders. This is probably due to the fact that they can pass on any cost increase on their customers. If border warehouses were able to increase the service providers' service level then they would not feel any objection towards their establishment.

In their belief, governmental officers considered that the establishment of a border warehouse in their area would help accommodate the future expansion of trade in the region. However, the impact of border warehouses is dependent upon the upgrading of border links. If the infrastructure is not ready, then according to these officials, it will be difficult to justify the establishment of these border warehouses, as border crossing will still remain difficult. In terms of priority, establishing border warehouses is not the most critical issue that will help facilitate cross-border trade.

These border warehouses should not be just warehouses but also act as distribution centres, e-commerce fulfilment centres as well as customs checkpoints. The stakeholders would like their border warehouses to provide value-added logistics services compared to the traditional warehousing functions available elsewhere. These services can be related to re-conditioning, re-packaging of goods or even services related to goods inventory management. If these value-added services could be offered, border warehouses would then be able to generate more revenues and create new employment opportunity for the local people.

It is believed that the establishment of border warehouses would accelerate hub status for the area involved. Local district officers mostly share this belief and would like the warehouses to be located in their area. However, a chief area of concern is the cost involved in using border warehouses. The traders and service providers believed that having to go through a border warehouse would definitely increase their transaction costs. Some traders even felt that establishing border warehouses would only benefit big businesses at the expense of small local traders.

Nonetheless, the majority of respondents considered the establishment of border warehouses to be useful to the economic development of their border area. District officers believed that the local community would benefit from a more systematic method of conducting border trade through the use of these specialised warehouses. These facilities would help traders and service providers to control their cost and facilitate inspection by governmental agencies involved in import and export processes. This perception is interesting as some local traders felt that they would not get any direct benefit from the establishment of border warehouses but they still supported the idea because they thought that it would benefit their area as a whole.

Location issues appeared to be very nationalistic. Stakeholders wanted the border warehouses to be solely located in their area. The point of view of Lao stakeholders should be taken into account, as they believed that establishing border warehouses on the Lao side would bring more benefit than on the Thai side. Cambodian also shares similar beliefs.

It was not within the scope of this paper to decide which location was the most suitable but the issue of a “borderless” GMS would definitely affect the location of the border warehouses. Thai stakeholders suspected that with a “borderless” GMS the location of warehouses would be in neighbouring countries due to the lower cost of land and labour.

A limitation during the interviews was related to the concept of “borderless”. Governmental officers did understand the concept very clearly and could foresee its impact. However, it was much more difficult to explain the concept and its possible impact to traders and service providers. The concept of “borderless” might be something that is a bit too far away from local people’s preoccupations. During the interviews, when the concept of “borderless” was explained, many respondents still considered that the establishment of a border warehouse was still of utmost importance but acknowledged that the location may be dependent upon other factors such as the freight flows, the level of infrastructure linkages and ease of access.

4. CONCLUSIONS

To summarise, except for private stakeholders on the Thai-Cambodian borders, almost all of the respondents were favourable to the concept of establishing border warehouses to facilitate border trade and improve the regional logistics system in the GMS. The strongest support for the establishment of border warehouses came from governmental/local officers. However, it was also acknowledged that border warehouses offering basic warehousing services were

insufficient. Border warehouses should be able to provide other types of value-added logistical services such as single window customs inspection or the repackaging of products.

The private sector, as a whole, does not seem to be particularly enthusiastic about the idea of establishing a public border warehouse. They are afraid of the likely increase in costs and time in using these facilities. They also believe that these facilities would only serve the interest of big businesses. If the GMS really become borderless, the Thai private sector thinks that these facilities would move to neighbouring countries due to the lesser cost involved in their operations.

However, many of them do believe that the establishment of public border warehouses/distribution centres would be of great value to their local community in terms of local economic development. A greater concern for local traders and service providers is for the improvement in linkage infrastructure between neighbouring countries. They believed that these improvements would greatly improve cross-border trade and the regional logistics system. Nevertheless, infrastructure improvement is necessary but not sufficient to facilitate border trade. Rules and procedures related to border trade must be harmonised.

The biggest threat perceived by Thai stakeholders is from the influx of Chinese made products, which are significantly cheaper and are competing very strongly with Thai made products. This issue is not directly related to the paper but shows the concerns of the Thai respondents who are afraid of losing their dominant border trade market share in the GMS. Respondents from other countries do not see a threat from the influx of Chinese products as many of them consider these products to be of lower quality. However, respondents in Lao PDR and Cambodia believe that it is good that there is competition between Thai and Chinese products.

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ARTICLE
5

Situating Tripura–Bangladesh Trade Relations in the Framework of International Cooperation

Indraneel Bhowmik*

Abstract: *Tripura has been in pursuit of its growth engine since independence. The unique geographical setting of the state warrants that all development plans must be considered factoring in Bangladesh. The improved connectivity between the two lands in the form of recently inaugurated Maitree Setu at Sabroom-Ramgarh border, the ongoing construction of the rail link between Agartala and Akhaura, the proposed waterway through River Gomati, internet bandwidth, are likely to increase the exchange of goods and interaction of people with positive multiplier effect on both sides of the border. Hopes are high that Tripura will emerge as the gateway of India's Northeast. This article attempts to understand the possible impact of the new initiatives in the backdrop of Tripura–Bangladesh relation spreading across economic, social, cultural and political spheres and takes a special look at the possible development assistance from Japan the most reliable international economic collaborator of both the countries.*

Keywords: Trade, Development, Tripura, Connectivity, Infrastructure

JEL codes: F00, F15, L8

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

The landmass of India, consisting of seven states, connected through a 22-km Siliguri corridor was considered as a single geographic unit and one socio-economic unit and legitimised as the Northeast India in the post colonial period (Bhattacharjee, 2022). These seven states, often called as the seven sisters comprise the Northeastern region of India (NER) and are heterogeneous in their own way but shared the commonality of chequered history marked by ethnic disturbances and security apprehensions, a factor which reiterated the state intervention following strategic reasons. The traditional state of affairs in the NER had been characterised by low productivity in almost all the spheres resulting in widespread poverty and unemployment. Geographical segregation had often led to economic isolation. Even though the region boosted of two of the early industrial products of the country, namely, tea and petroleum, not much was visible in the form of big business. Capital formation remained truncated and the people of the region often chalked out a living based on their environmental surroundings leading to the depletion of natural resources. As a result, liberal transfers from the state often became the main driver of the state economy. However, India's renewed interest on the eastern front has brought the region and its states into the spotlight again. Presence of international border is another commonality of the NER states and connected histories, contiguous geographies, shared economies and common cultures with their international neighbours are the features of these states. The revamping of the Look East Policy as the Act East Policy provided a better scope for the integration of the NER economy with the ASEAN region and the National Trade Facilitation Action Plan (NTFAP) attempted to do away with the barriers that prevented faster growth of trade and business. Improved economic relations with the neighbouring countries, therefore, became a major area of focus for the NER states.

Tripura, the smallest state among the seven sisters in terms of area, is also the second largest in terms of population and economy. Almost engulfed by Bangladesh, Tripura is unique for having its capital city Agartala sharing the international border with Bangladesh. The multi-coloured history of the state attests to the fact that the erstwhile kings of Tripura were also the zaminders of Chakla Roshanabad, now situated in Bangladesh. (Bhaumik, 1996) The ethnic, social, cultural and natural ties between the two regions are numerous and economic linkages were certainly unavoidable. Informal trade between the two lands have been huge owing to the long and porous borders which also caused a lot of infiltration and insurgency, a challenge, which has, no doubt, been quite successfully managed in the recent years. Thus, any effort at Tripura's development can hardly be conceived without factoring in Bangladesh. The pursuit of development and identification of growth engines become even more imminent for the state as it is placed among the lowest level group of the states in terms of gross state domestic product (GSDP) per capita and ranks 27th in the social progress index (IFC, 2022). Moreover, the state finances are also not robust (Bhowmik and Nath, 2016).

It is in this background that this paper stems to explore the possibilities of trade, business and development in Tripura and identify opportunities in the backdrop of the emerging policy framework as well as developmental interventions by the country as well as international

agencies including foreign countries. The evolving international framework and tie-ups in promoting trade and business as well as strategic interests are considered. The focus of the paper is on the dynamics of bilateral economic relations between India (Tripura) and Bangladesh as well as the possible tie ups and support from development partners like Japan, a stable supporter to the development initiatives in the region.

2. TRIPURA–BANGLADESH TRADE: EMERGING TRENDS

The official trade between India and Bangladesh began in 1995–1996 from the Agartala Land Customs Station and the annual volume of trade in the first year was Rs. 4.12 crores (GoT, 2022). The transactions have grown manifolds and in 2021–2022, the volume of trade crossed the Rs. 1000 crores mark. The rise can certainly be attributed to the several initiatives, agreements and joint efforts by the authorities of the two countries, for whom enhancing trade relations and volume has been a priority (Bhowmik, 2022). Table 5.1 shows that the trade indicate an overwhelming dominance of Imports from Bangladesh in the total trade. The exports from Tripura had hardly been around 1–2 per cent of the total trade for most of the years till 2018–2019, when exports from the state crossed the Rs 10 crores mark. The imports on the other hand had been steadily growing and had crossed the Rs 100 crores barrier in

Table 5.1 Imports and Exports through the Land Ports of Tripura

Year	Imports (I)	Exports (E)	Total Trade (TT= I+E)	AGR of TT (per cent)
	(Rs crore)			
2006–2007	48.69	0.87	49.56	
2007–2008	84.15	1.51	85.66	72.84
2008–2009	125.94	0.26	126.2	47.33
2009–2010	162.88	0.42	163.3	29.40
2010–2011	255.88	1.71	257.59	57.74
2011–2012	329.05	1.55	330.6	28.34
2012–2013	342.65	0.41	343.06	3.77
2013–2014	229.83	0.41	230.24	-32.89
2014–2015	357.65	1.02	358.67	55.78
2015–2016	381.76	1.96	383.72	6.98
2016–2017	300.23	4.6	304.83	-20.56
2017–2018	384.22	6.46	390.68	28.16
2018–2019	522.42	14.66	537.08	37.47
2019–2020	644.78	30.34	675.12	25.70
2020–2021	716.87	16.33	733.2	8.60
2021–2022	767.00	241.40	1008.40	37.53

Source: Compiled by author from various issues of Economic Review of Tripura

2008–2009 itself. The total volume of trade had, however, witnessed a decline in 2013–2014 and 2016–2017. However, the most interesting aspect to this international trade had been the surge in exports in 2021–2022, which changed the Bangladesh-India (Tripura) trade ratio to around 76:24. The average annual growth rate (AAGR) of trade has been around 25 per cent for the period 2007–2008 to 2021–2022, with the rates being positive even during the pandemic year of 2020–2021 and subsequently increasing to above 37 per cent in 2021–2022.

It may be noted in this background that there are eight stations of international movement of goods and passengers in Tripura, which are Agartala, Srimantpur, Muhurighat, Khowaighat, Manughat and Old Ragnabazar, Dhalaighat and Sabroom. Among these, the first two, namely, Agartala and Srimantapur are designated as land ports and are in the ambit of Land Ports Authority of India (LPAI, 2022). Goods movement, however, occurs through the first six (6) while in Dhalaighat; only passenger movement is permissible. The Sabroom Land Customs Station is not yet operational as on date. Table 5.2 shows that trade is maximum through Agartala while Srimantapur follows next. The better infrastructure provisions at these two land ports ensure quicker as well as easier transactions for the traders. The trade volumes are much lower in the other stations with exports in Muhurighat and Khowaighat being non-existent. Interestingly, in 2021–2022, the import through Srimantapur has been lesser than the export.

Table 5.2 Trade at Land Ports/Customs of Tripura

LCS/ICPs	2020–2021			2021–2022		
	Export	Import	Total	Export	Import	Total
	(Rs. Crore)					
Agartala	1.46	580.17	581.63 (79.32)	134.73	642.24	776.97 (77.05)
Srimantapur	7.3	73.52	80.82 (11.02)	104.69	68.27	172.96 (17.15)
Muhurighat	0	35.59	35.59 (4.85)	0	13.42	13.42 (1.33)
Manughat	2.77	24.29	27.06 (3.69)	0.02	28.81	28.83 (2.85)
Khowaighat	0	1.98	1.98 (0.27)	0.01	3.61	3.62 (0.35)
Old Ragnabazar	4.86	1.32	6.18 (0.84)	1.95	10.65	12.6 (1.24)

Note: Figures in parenthesis indicate share of total trade between Tripura and Bangladesh

Source: Compiled by author from various issues of Economic Review of Tripura

The exports from Tripura have traditionally been very less and comprised of items like fresh ginger, cumin seeds, fruits like grapes and oranges. There are restrictions on exports of several state grown items from the ports of Tripura. However, in 2021–2022, the exports increased substantially and wheat accounted for 88 per cent of the total export value. It may be noted that wheat is not produced in Tripura. The availability of cheaper inland transport through railway facilitated this movement. Rice, worth Rs 21 crores, was also exported. However, with Government of India, restricting the export of wheat in 2022–2023, there are no such exports in the current financial year (2022–2023) and the total volumes of exports are likely to go back to the traditional levels.

On the other hand, the composition of imports from Bangladesh indicates wide varieties. The import basket comprises of both primary commodities as well as manufactured items. Table 5.3 shows that the two most prominent items are fresh fishes and food items. Cement comes third in terms of volume. Dry Fish had been a traditional import item, however, the volume declined in 2021–2022. Similar has been the case with Steam Coal, which generally was re-exported by Bangladesh after importing from India’s Meghalaya. Nonetheless, the compositions of imports indicate a much wider array.

Table 5.3 Imports from Bangladesh to Tripura (in Rs Crores)

Items	2021–2022	2020–2021	2019–2020
	(Rs crore)		
Fresh Fishes	240.42	248.61	174.95
Food Items	247.4	157.67	239.49
Cement	99.5	130.13	73.62
Dry Fish	0.46	47.31	36.19
Steam Coal	0.34	42.37	24.37
Steel Sheet	18.75	14.47	25.8
PVC/Pipes/Tube/ Plastic/Melamine	41.49	31.77	19.13
Flavour Drinks	0.76	9.84	13.26
MS Rod	1.84	6.94	8.37
Other commodities	116.04	27.76	29.6

Source: Compiled from various issues of Economic Review of Tripura

The legal trade between Tripura and Bangladesh has an additional segment in the form of the Border Haats. Border Haats are considered to be a rough and ready market that allows people to trade in locally grown agricultural and manufactured items along the border. The Government of Bangladesh and India formalised the concept of selling and buying of local product among the people of the two countries living in the border areas. These markets have been created to stimulate the livelihood opportunities of those people living on the margins of the international border. Currently, there are four Border Haats between Bangladesh and India and six more in the pipeline for the Northeastern region. The first Border Haat was inaugurated in 2011 in the West Garo Hills district of the Indian state of Meghalaya at Kalaichar (India)–Kurigram (Bangladesh). Among the other three, one is in Meghalaya at Balat and the rest two are in Tripura, namely Srinagar and Kamalasar. Srinagar is located at Sabroom sub-division of South Tripura district and is around 35 kms from the district headquarter, Belonia. The Kamalasar Haat is situated in the Bishalgarh sub-division of Sepahijala district and is about 25 kms from the state capital Agartala. The counter parts of these two places in Bangladesh are Chagalnaiya and Tarapur respectively (CUTS, 2021). These haats allow selling of locally produced agro-horticulture items, minor forest products, furniture, cottage industry items, handloom and handicraft products and alike (Bhowmik, 2022). However, the Border Haats

Table 5.4 Sales at Border Haat

Year	Kamalasagar			Srinagar			Grand Total
	India	Bangladesh	Total	India	Bangladesh	Total	
	(Rs. Crore)						
2014–2015	—	—	—	0.18	0.09	0.27	0.27
2015–2016	2.96	0.55	3.51	1.81	0.7	2.51	6.02
2016–2017	5.88	0.59	6.47	7.39	3.81	11.2	17.67
2017–2018	4.25	1.21	5.46	4.28	3.29	7.57	13.03
2018–2019	3.17	0.91	4.08	0.94	0.63	1.57	5.65
2019–2020	8.39	0.98	9.37	0.83	4.61	5.44	14.81
2020–2021	No trade						
2021–2022	No trade						

Source: Compiled by author from *Economic Review of Tripura*

had been closed in the outbreak of the COVID-19 pandemic and the Srinagar-Taranagar haat have opened up again in May 2023, though the two haats at Meghalaya have resumed trade, some time ago.

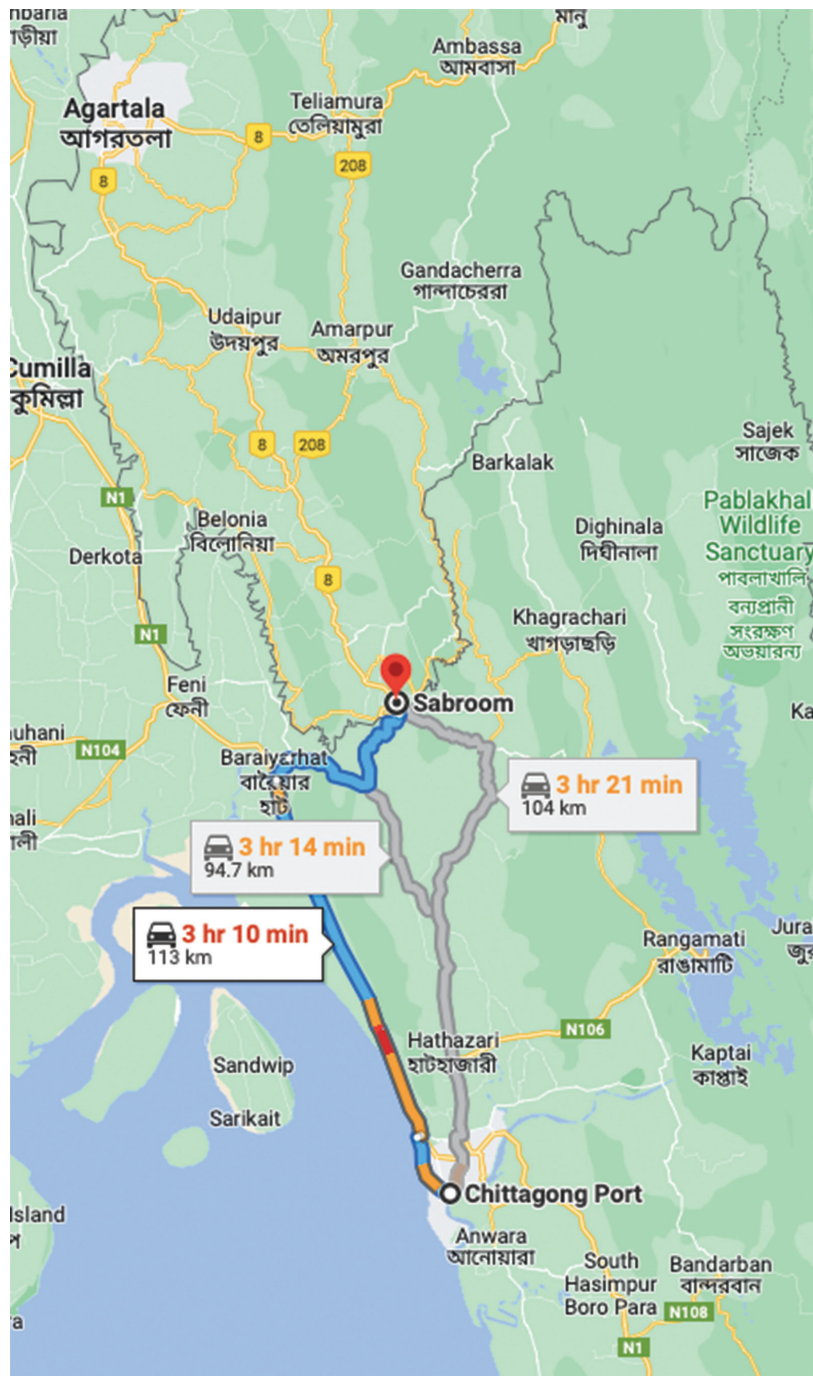
Table 5.4 shows that the trade at the border haats of Tripura started in 2014–2015 at Srinagar and followed suit at Kamalasagar in the next year. The value of total sales in the border haats of Tripura reached Rs. 17.67 crores in 2016–2017, but has decreased thereafter. The total volume of trade in these two border haats have been Rs. 57.18 crores with the aggregate at Kamalasagar (Rs. 28.89 crores) being marginally higher than that at Srinagar (Rs. 28.29 crores). Further, Indian traders had higher sales volume than the Bangladeshi traders in all years at both the locations save one exception, at Srinagar in 2019–2020, where sales from Bangladesh were substantially more. Spices, local vegetables, jackfruits, toiletries, saree, cloths like lungi and gamcha, tea leaves, baby food, etc are the prominent items of sale by the Indian vendors, whereas, the major items from Bangladesh were dry fish, bakery items, and fruits like green apple, watermelon and plastic goods (Bhowmik, 2022). The mandate for the Border Haats indicate that only those persons residing within a 5 km radius of the haat can be vendors, and are allowed to trade in the following commodities: (i) locally produced vegetables, food items, fruits and spices; (ii) non-timber minor forest produce like bamboo, bamboo grass and broom sticks; (iii) cottage industry products like *gamcha*, lungi, saree and any other handloom items; (iv) small household and agricultural implements, for example, sickle, plough axe, spade and chisel; (v) garments, melamine products, processed food items, fruit juice, toiletries, cosmetics, plastic products, aluminum products, cookeries, stationary; and (vi) any indigenous product belonging to the area of the Border Haats, subject to the mutual consent of both countries. The items sold here are exempted from any type of custom or other duties and trade occurs in local currency and the limit for consumption of an item is as considered reasonable for family consumption. In reality, however, apart from these products, several manufactured and fast moving consumer goods are also brought by the Indian traders

particularly which are in demand from the Bangladeshi consumers. Expanding the Border Haats framework augment the development of the region as well as deepen the bonds between people which goes a long way in sustaining the border management and cooperation between the two neighbours. These Border Haats facilitate trade in an informal manner that is people friendly but is distinctly different from illegal or illicit trade. Illicit or illegal trade refers to all types of cross border trade that is undertaken between different countries without the approval and guidance of the respective governments (Nath, 2018). These haats have been instrumental in reducing the volume of illegal trade in the local areas where they are set up and local people who were previously engaged in the informal channels have mingled themselves in the new system finding it to be safe as well as easy. Moreover, these markets have contributed to the gender perspective by allowing not just women vendors but also women buyers and customers, who would otherwise find it inconvenient to participate in the markets far away from their homes. Nonetheless, it can be ascertained that increased volumes in the formal trade channels has led to decrease in the volume of informal trade but smuggling of restricted items and contrabands have not stopped entirely (CUTS, 2021). Improved trade relations and volume between the two regions have, apart from boosting economics have also augmented people to people connectivity which has also played a big role in ensuring the stability and peace brought in by counter-action against the insurgents persist. Two more Border Haats are in the pipeline in Tripura, Kamalpur in Dhalai district and Raghna in North Tripura district and it attest to the positive contribution made by this institution towards the local economy.

3. THE SABROOM CONNECT

The southern most town of Tripura, Sabroom, known for multi-ethnic population, agrarian character and peaceful vibes shot to prominence for being India's connect to Bangladesh through the 150 metre long Maitree Setu. The bridge on the River Feni, the riverine boundary between India and Bangladesh, connects this small municipal town to Ramgarh in Bangladesh (GoT, 2022) This Bridge makes Chittagong Port only around 100 kms away from Sabroom (Map 5.1). As a result, Agartala can be connected to Kolkata through a multi-modal route, which can emerge as an alternative to the Siliguri corridor that acts as the major connect between the Northeastern region and the mainland of India. Instead, Sabroom can emerge as the gateway for the entire Northeastern region of India.

The National Highway 8 connects Sabroom to Karimgunj in Assam and Sabroom is also connected by broad-gauge railway network since 2018–2019 and the Indian Railways is also setting up the freight handling station to facilitate movement of goods at lower cost and better speed. Connecting the Chittagong port to the railway network at Sabroom will fuel host of economic activities and trade and business opportunities may spiral not just between India and Bangladesh but also conduit linkages for the entire region as well as between the country and other South-east Asian nations. However, goods and passenger movement through Sabroom is non-operational currently. The construction of the new Integrated Check Post (ICP) was expected to be over by the end of 2022 but has been delayed.



Map 5.1 Sabroom–Chittagong Connectivity

Source: Drawn by author using Google Maps

Moreover, the state government initiated the first multi-sector Special Economic Zone at West Jalefa, near the Sabroom railway station where business units may be setup for manufacture of goods falling in two or more sectors or rendering of services falling in two or more sectors or any combination thereof including trading and warehousing. A notification in this regard was made in December 2019 by the Central Government. An area of 16.35 hec has been earmarked for sector-specific Special Economic Zone for agro-based food processing. The Department of Industries, Government of Tripura estimated the project cost and investments to be Rs. 60.57 crores and Rs 635.5 crores respectively and also believed in employment generation of around 5000 persons¹. Such an effort will definitely have further multiplier effects in the form of additional economic activity and employment that should improve infrastructure facilities further. The SEZ can emerge as a centre for production of rubber goods, bamboo products, agro-food processing items, etc. However, as on date, not much progress has been made on that front.

An additional impetus for Sabroom's emerging prominence is the proposed International Buddhist University. The state legislative assembly passed the Dhamma Dipa International Buddhist University Bill 2022 in September and the foundation stone laying ceremony was held in November 2022. This proposed university when functional is likely to attract students and scholars from a lot of East and Southeast Asian countries where Buddhism is considered to be 'a living culture'. Presence of sizeable Buddhist population in the region and also in the adjoining areas of Bangladesh offers newer scopes of economic and development activities.

Further, Sabroom is also the site of the annual 'Baruni Mela', a fair held on the 'Madhu-Krishna Trawadashi' (mid. March) of the Indian calendar to celebrate a Hindu ritual, where devotees, across religious colours, from both India and Bangladesh participate in a festive manner. The fair is held on the bank of the river Feni with several stalls being set up and visitors from across the border, taking advantage of the open border for the day purchase a lot of products allowing brisk business for the traders of Sabroom. However, the pandemic and possibility of Rohingya influx have restricted the border movements during the fair for the immediate past two years.

4. EMERGING OPPORTUNITIES AND ROLE OF JAPAN

India's 'Neighbourhood First' policy is aptly echoed in positions like Bhutan Bangladesh, India, Nepal (BBIN) initiative and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) on issues like trade of goods and services, water resources management, power connectivity, transport networks and infrastructure facilities. Further, with the adoption of the Act East Policy, the scope expands beyond the immediate neighbours and extends towards the Association of Southeast Asian Nation (ASEAN) countries even strongly.

¹Refer, <https://industries.tripura.gov.in/special-economic-zone-sez>

In this process, the Northeastern states of India surface as an area of interest and attention as all the states are Border States and have historical linkages with their respective neighbouring countries. The emerging policy regime provides further platform to work and concretise as well as formalise the relations, particularly on the trade front. Tripura's unique geographical position can help her to leverage this emerging scenario to the fullest. Bangladesh is a global giant in the textile/garments sector and has both comparative and competitive advantages and is the leading exporter. Tripura, particularly the proposed SEZ in Sabroom, can be marketed for Foreign Direct Investment from Bangladeshi investors. Apparel exports are the mainstay of Bangladesh's foreign trade and the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) wants to raise it to US\$ 10 billion by 2030. Manufacturing in Tripura will facilitate easier access to Indian markets which will be an added dimension.

Similarly, the proposed SEZ in Sabroom as well as other industrial parks in Tripura can be platform for investment from not just investors from Bangladesh but other parts of the world and the country and be part of the global value chain for several other products also. The evolving transport and connectivity framework involving the Chittagong port via the Maitree Setu will also reduce the transportation and transaction cost further and adds to the competitive edge. Moreover, the region and Tripura can explore possibilities of being part of the global value chain of the rubber goods manufacturing sector. It is true that that the NER is the second largest Natural Rubber (NR) growing region in the country but no large-scale rubber goods manufacturing unit has been established in these states (Bhowmik and Viswanathan, 2021). The Southeast Asian countries are the largest growers and exporters of NR as well as are now coming affront as major rubber goods manufacturing nations. Naturally, opportunities for integration with investors from the friendly countries, including Bangladesh, can be explored to tap the market in South Asia. Another item grown in abundance in the NER including Tripura is Bamboo, which is considered to be integrated eternally to the life and livelihood of the indigenous people of the region. However, value-addition for Bamboo products is very limited. Technological support and scientific intervention from Southeast Asian and Asian countries following greater connectivity and easier access may add immensely to the trade and economic front.

Apart from the access to the Chittagong port, goods from mainland India do come to Tripura through another alternative route via Bangladesh. The goods are transhipped to Ashuganj river port and then brought by road to Agartala via Akhaura. This option was first exercised to transport heavy machineries for the natural gas-based OTPC power plant set up at Palatana in south Tripura. India reciprocated by providing 100 MW electricity to Bangladesh once the project became operational. The same route has been utilised again in 2022–2023 for shipment of iron and steel.

However, on the connectivity front another new option is emerging in recent times with Bangladesh deciding to develop a deep-sea port (DSP) at Matarbari near Chittagong with support from Japan. This project addressing the domestic logistics of Bangladesh can also accelerate the logistics framework with the neighbouring countries. The Matarbari DSP is part

of Japan's cooperation strategy 'The Bay of Bengal Industrial Growth Belt (BIG-B)' initiative and is not just limited to developing the port but also strengthen the economic environment and capacity in the region with setting up of coal-based and gas based power plants, heavy industries as well as promote tourism facilities. Matarbari DSP aims to become the regional hub for industrial value chains connecting Bhutan, Nepal, and Northeast India through Tripura.

The India-Japan-Bangladesh relations, particularly in the economic front, are merging towards unison over strategic interest. Japan's effort towards Free and Open Indo-Pacific (FOIP) considers India's North East as an important link. The India-Japan Act East Forum (AEF) was formed in 2017 to provide a platform for modernisation and development of these NER states. The possible areas of cooperation identified included connectivity, road infrastructure, health, forest conservation, water supply and sewerage, electricity, disaster management, people to people exchange and capacity development (Ghosh, 2022).

Japan's involvement in Tripura has been foremost in the primary sector initiatives mainly in the forestry sector. To strengthen the State government's effort in promoting joint forest management, transforming shifting cultivation to agroforestry and providing alternative livelihood activities, the "Tripura Forest Environmental Improvement and Poverty Alleviation Project (TFIPAP)" has been implemented since 2007 with the focus on poverty alleviation under the financial support of Japan International Cooperation Agency (JICA). Popularly known as Tripura-JICA project this initiative has been spread across seven districts of the state and led to achievements in afforestation, agro-forestry, bamboo-grass plantations, sustainable livelihoods development through SHGs and provided bamboo-based skill development training. The enriching experience in the first 10 years of cooperation between the two countries led to the second phase (to be implemented from September 2018 to September 2028), named as Sustainable Catchment Forest Management in Tripura (SCATFORM). The support from the JICA aims to foster sustainable development of forest ecosystem and contribute to the livelihood improvement of forest dependent people, households and communities of the state.

Apart from this, JICA's involvement in Tripura is visible in the form of Official Development Assistance for the North East Road Network Connectivity Improvement (NERNCI) Project under which the Phase 4 earmarks funds for the 80 km long Kailasahar-Khowai stretch of the National Highway 208. Travelling time between this two district head quarters along the international border will drastically reduce from 3 hours and 40 minutes to 1 hour and 40 minutes (JICA, 2021). The phase VI of the NERNCI project is being formulated for the Khowai-Sabroom stretch of the same NH 208 (Mitsunori, 2022). Positive vibes from Japan towards Tripura was very much evident the visit of the Japanese Ambassador to the state in 2019 when he identified the potentiality of the state in bamboo handicrafts, tourism, bamboo cultivation and their value addition, connectivity and forest management for multi dimensional growth and expressed keenness to provide financial and technical help in the fields of infrastructure, bamboo development, agriculture, disaster management and human resource development.

Among the identified areas of cooperation, apart from the physical goods are also several service related sectors. Improvement of health infrastructure can be the source for medical

tourism for a lot of people of Bangladesh who come to India for health services. Tripura acts as transit for them while moving to Chennai, Bengaluru or Hyderabad for treatment. Tapping such visitors will have multiple linkages in the local economy. Investment from Japan may be explored in this aspect also. Similarly, Tripura as well as the other Northeastern states can transpire as a wellness destination. The climatic advantage of the region can be utilised with tie-ups from global leaders of the wellness sector so that such services can be provided in the region. A lot of youth from the region work in the wellness industry across the country and the world. Their expertise can be recorded and utilised (Bhowmik, 2022).

Tripura can also emerge as an important education hub owing to its advantage of relatively strong human capital force. The emphasis may be laid on elementary and secondary education and leading educational service providers, particularly residential institutions may open up their units in Tripura taking advantage of the policy and investment incentives. Unemployment is a burning issue in the state and educated unemployment is a greater challenge. So, educational institutes can be a good employer and having residential campus in the state will also lead to local area development through trickle down effect. The experience of several such institutes in the Doon Valley of Uttarakhand and the hills of Darjeeling in West Bengal can be referred. The comparatively larger use of Bengali and English in Tripura can be an attraction for middle level school students from Bangladesh. The focus on the middle levels will also ease out the pressure on the institutes to find placements for their pass outs which is a real challenge in the region.

The National Education Policy 2020 prescribes internationalisation of education among the salient features. This is also an area where cooperation and intervention from Japan is possible. The Japanese school education system aims at shaping social behaviour and the curriculum includes subjects like moral education, integrated studies and special activities. The Japanese people are role models of courtesy and humility and are extremely productive socially as well as economically. Investments or tie-ups from Japanese educators can add value to the future human capital. The Indian Prime Minister has also noted the opportunities of learning *discipline* and *morality* from the Japanese education system. Moreover, the institutes of higher learning in the region can address the human resource development aspect too by introducing courses on Japan. In the emerging rubric of the NEP 2020, students can opt for flexible learning and exposure to Japanese studies can add to their possible employment in Japan, particularly because Japan is an ageing society and the need for young workforce is in the rise, while the population in this part of India as well as Bangladesh is relatively young. Japanese support can be explored in the field of disaster management also as Japan located in one of the most earthquake prone zone has developed several technological interventions for managing natural shocks. A specialised Disaster management-training institute can be considered in Tripura to cater to the entire NER since the region is situated in an ecologically fragile zone.

Another area of economic engagement is the tourism sector. The Northeast has huge potentials that remain grossly untapped. Building tourism infrastructure as well as dedicated tourist circuits has been advocated for quite some time. In this context, Tripura may take the initiative

of introducing specialised Memorial tours on Muktijuddho for visitors from Bangladesh who have sentimental attachments towards the cradle of the Liberation War of 1971. Similar initiative can be considered for the Japanese visitors with the entire Northeast as the backdrop linking it to the memorials of the World War II as well as the Buddhist sites in the region as well as in Bangladesh.

5. CONCLUSIONS AND WAY FORWARD

The emerging scope of things can materialise if the focus on infrastructure continues. The expansion of broad gauge railway network across the state has facilitated greater movement of both passenger and commodities and boosted the economy. Movement of freights from other parts of the country has become cheaper and easier. The rise in exports to Bangladesh in 2021–2022 was also possible due to this factor. The increased spread of National Highway network has also been a growth enhancer and can act as the catalyst to fuel better connectivity between Bangladesh and other NER states. Air connectivity facilities have also improved with the new terminal at Agartala being functional from 2022. The new terminal is better endowed to serve international tourists and transit passengers from adjoining areas of Bangladesh as well as facilitate faster cargo and freight transfers. There are likelihoods of connecting Agartala with Sylhet and Chittagong in Bangladesh through air in the near future. Possibilities in expanding the UDAAN framework to Kailasahar in the northern part of Tripura are being explored. Improvement in the physical infrastructure will heighten up the hospitality sector, which is, perceived as a potential growth engine.

Tripura was perceived to be better in terms of logistics infrastructure than other Northeastern states according to the LEADS index of 2018 and 2019. However, Meghalaya came better in 2021 ahead of Tripura (GoI, 2021). Nonetheless, issues relating to poor mobile/internet connectivity; limited inland waterways, inadequate storages and warehousing facilities and the system of informal payment (often in roads) added to the logistic expenditures. Integrating the IT infrastructure with the logistics ecosystem can reduce the unwarranted stoppages and enhance the trade and development at both domestic and international levels. Further on the frontier of digital connectivity, Agartala is India's 3rd international Internet gateway owing to the provision of 10 GBPS worth bandwidth by Bangladesh via the Cox's Bazar Port, and, therefore, provides immense opportunity for trade of ITeS, where cooperation and support from Japanese entrepreneurs can be explored.

However, there are certain factors which need immediate attention for achieving the potential. The opening of the Agartala-Akhaura railway link through the Nishchintapur-Gangasagar gateway will certainly increase the volume of international trade as well as open up new vistas of economic activities. The non-economic factors delaying the completion of the project need quicker resolution. Easing out the congestion at the over-burdened Agartala ICP should also be a priority. Earmarking the Srimantapur Land Port exclusively for freight movement and the Agartala Land port for passenger movement can be considered seriously. The quicker completion of the Sabroom ICP is also an urgent necessity.

The potentials, nonetheless, outweigh the challenges and harnessing them requires decisive policy intervention. Capable human resources with entrepreneurship zeal should be welcomed for investment on professional terms and conditions. There has been a brain drain from Tripura in the last three to four decades particularly, and many of these out-migrants are very well placed professionally across the globe including Japan and can be yoked for investment as well as technical insights. The state government may envisage a policy of homecoming accordingly and showcase Tripura as an attractive business destination and propel an era of high mass consumption. Blending Japanese enterprises with the available factors of production in Bangladesh and India's northeast can provide a win-win situation for all and serve the strategic goal fully.

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ARTICLE

6

The Geo-economic and Geo-cultural Significance of the Tawang-Trashigang Corridor: A Perspective on Indo-Bhutan Border Connectivity

Bhagirathi Panda*, Jajati K. Pattnaik**, Chandan K. Panda***

Abstract: *The much-awaited Tawang-Trashigang corridor sees no foreseeable certitude to transmute a diplomatic ambivalence and prolonged slowness in decision-taking between two committed Himalayan neighbours—India and Bhutan—to a definitive action plan. In this direction, several high-level discussions have taken place involving the top political leadership of both countries, and from the ground, numerous representations have been submitted to the Bhutanese government over the cultural homogeneity and economic importance of the corridor that involve the people from both sides of the border. Historically, the region has experienced deeper cultural and economic participation of the people but the geopolitical pressure in the region post-India-China War in 1962 and the subsequent geopolitical churn in the region under Chinese brinkmanship have seemingly inflicted this disconnect and have brought onto the diplomatic table some degree of uncertainty. Therefore, this paper (i) discusses the geo-economic and the geo-cultural importance of the Tawang-Trashigang corridor, (ii) looks into the causality that imposes diplomatic clutter and procrastination against every act of definitiveness and popular optimism towards the construction of this corridor, and (iii) most importantly, observes the benefit of the people from both sides of the border and the possible formidability of India-Bhutan economic and cultural cooperation and their effective presence in the eastern Himalayan sector at large in the event of this corridor becoming empirically viable.*

Keywords: Tawang-Trashigang Corridor; geo-economics; geo-cultural; border space geopolitics; China

JEL codes: L91, L86, M15, F13

Views are authors' own. Usual disclaimers apply.

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1. INTRODUCTION

From the geo-economic and geo-cultural perspectives, the indefiniteness concerning the road connectivity between the Tawang and Trashigang delays the process of economic synergy and cultural integration between two peoples who shared historically profound socio-economic and cultural interaction. Both India and Bhutan understand the importance of this corridor but the geopolitics in the region under the Chinese interfering streak generates imperatives that restrict the scope of the possible unfolding of shared growth of two peaceful Himalayan countries through robust connectivity. The perceived importance of this corridor takes the course of the discussion to the specifics of this corridor. The Tawang District is located in the westernmost part of Arunachal Pradesh and shares approximately 217 km with Bhutan on the Himalaya's eastern edge. Trashigang, on the other hand, is the easternmost district (dzongkhag) of Bhutan. Both Tawang and Trashigang enjoy cultural commonality through Buddhism, food, language, lifestyle and habits. This constitutes the driving force behind the renewal of the physical connectivity between two places which bear a compelling historical connect. In spite of the rich cultural history and the erstwhile economic engagement, both the places across the border remain unconnected. However, there exists a pathway treacherously unfit for pedestrian manoeuvrability leave alone motorability. In the absence of frequency of ferrying through this road, the road holds shocking surprises for an adventurous traveller. But there exists the road nevertheless, though difficult for motorability, which embodies the history of connectivity difficult to determine its beginning.

To give a blueprint of the road, a journey from Tawang currently requires reaching Lumla (a subdivision of the Tawang district) and the distance between the two constitutes approximately 42 km. Further movement from Lumla to Bleteng through Dudunghar helps one reach the India-Bhutan border. To this destination, there exists a motorable road but from Bleteng to Trashigang which comprises about 15 km remains unconnected and impossible for motorability. The movements of the locals and others between these two places require permission from the appropriate authority. This border space instead of being a space for economic integration, cultural interaction, opportunity, and happiness has become a forbidden space blocking prospects for shared growth and mutual well-being. This border-crossing at the eastern Himalayas apart from the existing ones with Bhutan at Phuntsholing in West Bengal and Samdrup Jhongkar in Assam embodies the opportunities for the people in Eastern Bhutan and Arunachal Pradesh but they, on the contrary, suffer from serious disconnect owing to connectivity bottleneck on account of the difficult ecology and geopolitical pressure imposed by the Chinese interventionist approach. The construction of the road between Bleteng and Trashigang had some developments in 2012 but soon it got mired in the diplomatic logjam and saw no definitive action whatsoever thereafter. Though there has been enough revisiting on the matter after 2014 under Act East Policy (AEP) formalism, the Chinese pressure-building tactic on Bhutan from the northern and western border leaves the latter embroiled in its own helplessness.

2. GEO-ECONOMIC IMPORTANCE OF THE CORRIDOR

From the geo-economic vantage point, the Tawang-Trashigang Corridor helps India minimise significantly the travel time between Guwahati and Tawang via Bhutan by six hours reducing the distance of around 200 km. The current dependencies on Bhalukpong and Tezpur roads passing through the perilous Sela Pass at the height of 13,700 ft above sea level make the journey to Tawang difficult and unnecessarily arduous. During winter, travelling to Tawang through the snow-filled Sela Pass makes the journey time-consuming and strenuous. It increases the burden of the defence personnel stationed at Sela Pass to clear the heavy snow and maintain motorability. This restricts the ease of movement and easy connectivity. Tawang-Trashigang Corridor (TTC) facilitates movement to the border space in Tawang with great ease augmenting the scope of economic activity and promotion of tourism at the border space. In addition to this, India's policy revitalisation to facilitate comprehensive and mutual prosperity through the 'neighbourhood first' policy (Aryal 2022, Pattanaik 2022, Tang 2021) under the framework of AEP and several other cross-border collaborations and economic, commercial and cultural linkages to convert the challenges at the border space to opportunities indicate its commitment to definitive growth through mutual cooperation.

Culture and its soft power importance have seemingly been given dedicated attention to facilitate lasting and committed relationships with the neighbouring nations. The case of Bhutan is self-evident in this context as India shares not only cultural linkages but also deep diplomatic, defence, and strategic agreements with it. Border space fails to be a restrictive space and geography of isolationism. The border space with Bhutan is more integrative, symbiotic, and culturally and economically embedded. The success of this integration is seen to have happened through the existing border crossing points at Phuntsholing in West Bengal and Samdrup Jhongkar in Assam. But the same trade collaboration through the establishment of TTC sees difficulties on account of china's interventionist foreign policy. It seems quite evident that India and Bhutan have no problem thereof to exploit the economic and cultural prospects and people-to-people ties through the TTC. What restricts Bhutan's decision-making is china's apprehension of the former's slipping away from its sphere of influence.

Besides, this critical engagement focuses largely on the economic prospects TTC holds for the people on both sides of Bhutan's eastern border. This is not just going to help India and its easternmost Himalayan border space at Arunachal Pradesh. It is also going to help Bhutan's economy and bring development to its people at the eastern fringe. This urgency has been realised by the local people on the Bhutanese and Indian sides of the eastern border as well and in this connection, several representations have been made to the Bhutanese govt to rethink its prolonged indecision over the much-anticipated corridor. If the corridor reopens, it will formalise the existing informal trade between Tawang and Trashigang and reduce the difficulties the people face to conduct trade on account of poor roads and the absence of motorable road facilities. More importantly, this corridor will resolve Bhutan's long-standing issue of the disconnection between western Bhutan and eastern Bhutan. A formidable trade circuit will be ensured involving the Indian states such as West Bengal, Assam and Arunachal

Pradesh, and Bhutan's eastern and western sectors with the possible amplification of the trade scope. It will give Bhutan and India the logistics and connectivity advantage to deliver the essentials to the last mile and to integrate them into the mainstream to ensure holistic growth.

At least at this juncture in the wake of the Covid-19 pandemic, the unending Russia-Ukraine War, the Sri Lankan economic crisis, and global inflation, the urgency of deeper trade collaboration and economic revitalisation with India is apparently the demand of the day. Against this background, exploring the possibility of reopening the Tawang-Trashigang corridor is likely to be sensible and prudent in order to realise the potential that the corridor may present. At present, the Bhutanese economy does not seem to be in a state of stability. This perceptible instability may intensify the economic crisis. The symptoms of trade deficit, import restrictions, and the gradual depletion of the foreign currency reserve are not persuasive enough to remain irresponsive to the possible areas of economic reintegration and revitalisation. The Finance Minister of Bhutan Namgay Tshering alluded to the trade deficit "to fix the basic macro-economic parameters" (The Statesman 2022). To crystallise this deficit the recourse to import asymmetry statistics is pertinent here, "The value of imports amounted to Nu 90.22 billion (B) in 2021 from Nu 66.63B in the previous year. Accordingly, the trade deficit increased to more than Nu 32B from more than Nu 18B during the corresponding period" (The Statesman 2022). It is difficult for an import-dependent country to restrict the import and handle the deficit. The Asian Development Bank predicts "a decline in the GDP from 4.5 per cent in 2022 to 4.0 per cent in 2023 for Bhutan" (Choki 2023). The Finance Minister commented on the possible ramifications of the issue of the current trade deficit, "If we continue to experience the widening trade deficit, then it is certain that we will experience current account deficit and run out of our foreign currency reserve" (The Statesman 2022). In addition to this, the President of the Bhutan Chamber for Commerce and Industry Tandy Wangchuk, projects a bleak trajectory for Bhutan's economy in 2023, "The crisis of the last two years has left the country saddled with higher debt and higher inequality. Economy is grappling with high inflation and lower growth. The government should work hand in hand with the royal monetary authority (RMA) for effective coordination and delivery of services, and relax the guidelines according to the country's economy" (Choki 2023).

In such a trying time, the exploration of feasible areas of economic engagement, for instance, the reopening of a very old and time-tested trade route such as TTC, does not sound in any perceivable sense impractical given the geopolitical gravity the exercise may invoke. In addition, the hub and spoke economic model may be effectively deployed to intensify economic participation with India. Trashigang may be developed as a manufacturing hub with Tawang its spoke and vice-versa in order to integrate both regions into meaningful economic activity. The spoke-hub distribution paradigm is likely to optimise productivity and economic synergy. To this effect, proper research on the viability of specific, sustainable, and profit-generating manufacturing areas is to be identified.

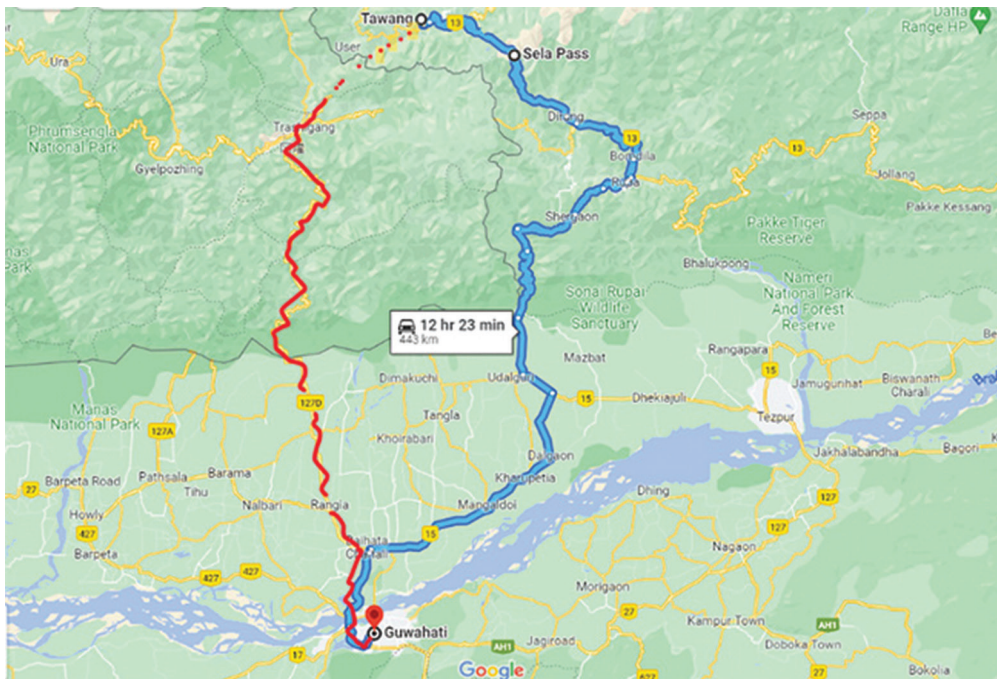
In retrospect, during the colonial era and even prior to that, the trade and cultural relationship between the Eastern Bhutan and Tawang, and Western Arunachal Pradesh continued in a

most consistent manner. Through trade, people-to-people interaction became very prominent. Regular fairs and cultural activities at Udalguri and Sadiya (Assam) and Doimara (Arunachal Pradesh) used to happen to give the people on both sides of the border the opportunities to interact, exchange, and be culturally connected. The Bhutias from Bhutan used to join the trade fair at Udalguri with their merchandise to sell. It included cattle, ponies, blankets made of soft fur, musk, sheep, and other livestock, and the products specific to the region they belong (Choudhury 1996). To reach the grand fairs at Udalguri, they usually followed the Doimara-Amtola-Bhairabkund route. The goods from Bhutan and their finesse, fineness, and quality were received quite enthusiastically, and in exchange, they used to carry spices, salt, rice, oil, and several products from the Indian side. This was a very thriving and effective trade relationship which got disturbed by the outbreak of the India-China War in 1962. The trade ties between the two regions got severely affected and it gradually trickled to the most diminutive shape. To renew its vitality, it requires several diplomatic clearances from Bhutan's side.

The geopolitics in the region that China generated after its war with India in 1962 and Bhutan's increasing drift towards India complicate Bhutan's diplomatic move to reopen the corridor. In China's perception, this would significantly strengthen India's position in the eastern Himalayas. It does not intend to extend any leeway to India to build its strategic depth in collaboration with Bhutan in the eastern Himalayas. However, from the Tawang side, there has been time and again the effective demonstration of keenness to open the corridor while alluding to the economic and cultural significance it holds for the region at large. To this effect, two Chief Ministers of Arunachal Pradesh have extended a great show of solidarity to connect the regions historically so entrenched. The current Chief Minister Pema Khandu has said, "This road is very important for both countries. It will be a win-win situation not just strategically but also in terms of tourism and economics. The matter has been taken up by Arunachal Pradesh govt with the Union government to take it up with Bhutan" (Mohan 2020). He has quite rightly emphasised the strategic, economic, and tourist importance the corridor embodies. If reopened, it would revitalise the perception of this place to a significant degree.

The former Chief Minister of Arunachal Pradesh Kalikho Pul, on the other hand, categorically stated the developmental dynamics and cross-border synergy that the corridor bears, "Arunachal and Bhutan share not just boundary but cultural and religious history, particularly the communities in Tawang and West Kameng" (The Indian Express 2016). He crystallised the cultural and religious imperatives that inspire this corridor-building as the boundary between Arunachal Pradesh and Bhutan does not suspend the cultural history, especially with Tawang. This concern indicates the importance these places hold for the people across the border. Map 6.1 illustrates the existing Tawang-Sela Pass-Bomdila-Tezpur-Guwahati Corridor (in Blue) and the proposed Tawang-Trashigang-Samdrup Jongkhar-Guwahati corridor (in Red). The dotted lines indicate the incomplete part of the road from Lumla to Trashigang.

From Trashigang to Samdrup Jongkhar, there exists a motorable road but a 15 km road-building between Trashigang and Bleteng will ensure better connectivity with Tawang in Arunachal Pradesh engendering the scope for comprehensive cultural and economic synergies



Map 6.1 Existing and proposed connectivity linkages between India and Bhutan

Source: <https://www.google.com/maps>

with Bhutan from all sides. It would amplify Bhutan's trade scope in the process ensuring a ceaseless and holistic economic participation with India. It is also expected that the cultural commonality between the two regions in the eastern Himalayas may prove to be a catalyst of comprehensive economic growth in the areas of herbal, hydro, horticultural, animal husbandry, tourism, hospitality, etc. Currently, the world manufacturing arrangement is becoming more fragmented and networked. Opening up this corridor will significantly promote manufacturing activities between both the countries in areas of Pharmaceuticals, and hydropower in this mode besides the traditional areas of expansion in tourism and hospitality.

The existing bilateral trade with Bhutan is conducted through Jaigoan (West Bengal)-Phuentsholing (Bhutan). Figure 6.1 captures the Jaigoan-Phuentsholing border trading point through which the trade between India and Bhutan takes place.

This picture is taken by one of the authors during his field trip to this trading point. Currently, India is putting its best efforts to develop the Jaigoan border trading post into an Integrated Check Post (ICP) to ensure seamless border trade with Bhutan. In addition to this, India has also notified, "Birpara, Rangapani, and Loksan (West Bengal) as permanent Land Customs Stations (LCS) and considered notifying Bhairabkunda and Jorlong (Assam) as seasonal LCS to augment cross border trade with Bhutan. It has also specified Bokajuli (Assam)-Motanga industrial estate (Samdrup Jongkhar, Bhutan) as an authorized route for bilateral trade between



Fig. 6.1 Jaigoan-Phuentsholing border trading point

Source: Authors, Phuentsholing, 26 December 2014

India and Bhutan” (Pattnaik 2022). It indicates India’s determined efforts to improve the scale of its existing trade ties with Bhutan. On the contrary, from the Arunachal side, there is no official trade route or trade activity. Whatever trade happens in a most diminutive form or in a trickling shape in order to maintain continuity is mostly informal as there was a vibrant trading activity happening in the most dedicated fashion with determined regularity in the past for centuries. The informal trade even continues today largely of the local products at Lumla and Tawang with great difficulty and inconvenience. It has been truncated to a significant degree and largely confined to certain festive occasions, for example, Torgya and Gorsam Kora in the Tawang district and Gompu Kora in the Trashigang district. The great synergy between culture and economy has gradually disappeared on account of a lack of continuity, state sponsorship, and the emergence of complex geopolitics at the border space. The informal trade has been largely reduced to mere irregular tokenism. The cultural economy or economy through cultural modes which was traditionally so effective has been discouraged. The current informal trade covers, as responded by the locals in one of the field studies, “agricultural and horticulture products like orange, groundnut, processed maize, dry mushroom, dry chili, dry fish, chili powder, amla, cows, horses, processed soyabean, rice cookers, dinner sets, Chinese blankets, cheese, butter, made-in Bhutan biscuits, religious statues, electric water boiler, electric heater, beers, rums, dry meat, and fish, etc.” (Pattnaik 2022). This might have been ameliorated into a substantive and systematic economic activity taking the most vibrant and colourful cultures

along with if the Tawang-Trashigang corridor had received diplomatic clearances. The sleepy border trading points at Bleteng and Namstering (Tawang) could have woken to hectic activity, paperwork for exit and entry, and the marriage of trade and culture. This would have given a further fillip to regional economic integration.

In general, India is committed to conducting free trade and commerce with Bhutan since the enforcement of the friendship treaty between the two in 1949. India's committed involvement in the planned development of Bhutan began in 1961 and the first formal trade and commerce agreement was signed in 1972 and has been subsequently revised in 1983, 1990, 1995, 2006 and 2016. The Free Trade Agreement (FTA) with Bhutan amplifies India's economic cooperation and collaboration with the former and ensures an enduring bilateral relationship, shared development and mutual growth. Bhutan being a landlocked country has been given transit rights by India to enable it to trade with the countries it chooses to do. This has also helped Bhutan to diversify its trade attracting various trading partners. The major exports from Bhutan to India include "electricity, ferro-silicon, dolomite, semi-finished product of iron or non-alloy steel, Portland pozzalana cement, cardamoms, pebbles gravel, gypsum, carbide of silicon, ordinary Portland cement, etc. The total export value in 2020 including electricity was Nu.43.51 billion and excluding electricity was Nu.27.52 billion" (Royal Bhutanese Embassy, New Delhi n.d.). On the other hand, Bhutan's imports from India comprise "diesel, petrol, motor vehicles for transport of goods(dumper), ferrous products, telephones, electrical distribution panel board, coke and semi-coke, soya-bean oil, passenger cars and, petroleum bitumen. The total imports from India including electricity was Nu.51.37 billion" (Royal Bhutanese Embassy, New Delhi n.d.).

3. GEO-CULTURAL IMPORTANCE

An economy without cultural underpinnings does not evolve into a sustainable and enduring one. The cultural factor accelerates economic aspirations. The marriage between the two emboldens the economic well-being of a country. The cross-border integration of Tawang and Trashigang through the construction of a road is expected to stimulate cooperation between the two regions as they share a cultural affinity and deep homogeneity. Against this background, the roll-out of any economic programme is likely to get successful. Cultural homogeneity encourages economic stability. The proposed corridor holds the potential to culturally integrate the people of eastern Bhutan and Arunachal Pradesh divided by a border. In the neo-liberal economic imagination, the ontology of a border does not present itself as a constraint. It rather becomes an instrument of effective economic integration. To this, the addition of cultural commonality opens the scope for progress and shared growth.

The insistence of the people from both sides for opening up this corridor is largely impacted by cultural factors. They include the places of pilgrimage in eastern Bhutan and Tawang which the people from Bhutan and Arunachal Pradesh have been visiting for centuries. The religious places such as Gombay Kora, Durang Chorten, Gonja Ney, Tango Ney, Thimphu Dzongkha,

etc., in Bhutan (Kumar 2019; Pattnaik, 2020) constitute tremendous importance for the people in Tawang. The Bhutanese people, on the other hand, used to visit Tawang Monastery, Gorsam Chorten, Zangdopari Gompa, Taksang Gompa, Urgelling Gompa, Khinmay Gompa, Lhugyepu Phobrang (Muktur), Thongmin Gompa, Manma-Gyalam Ney, Thanga-Fe Ney, Banga Jang Ney, Sarong Gompa, Changbu Gompa, Gomshin Ney in Arunachal Pradesh (Kumar 2019; Pattnaik, 2020).

At present, in the absence of a motorable road the pilgrimage to these places or for other reasons has been seriously affected. The cultural aspirations of many people from both sides of the border are thwarted owing to the connectivity constraints. Covering the distance by foot is quite difficult and many people take the pain nevertheless in undertaking this perilous journey. On top of this arduous journey, it requires the issuance of several permits and official clearances to traverse the region to fulfil one's cultural and religious duties and aspirations. Culture equally acts as a compelling cause for reopening the proposed corridor. This would embolden cultural camaraderie between the people of both regions and it would in the process take the India-Bhutan relationship to new heights. On the contrary, Bhutan's indifference to the possible harvesting of these extraordinary benefits and its unreasonably delaying tactic is indicative of the overwhelming geopolitical pressure built on it from the Chinese side and the associative security concerns involved thereof.

Culturally both Tawang and Bhutan follow the religious structuralism of Mahayana Buddhism. In Bhutan, the Nyingmapa and Kagyupa schools of Mahayana Buddhism are officially followed and received equally royal patronage. Tawang, on the other hand, follows the Gelugpa school of Vajrayana Buddhism. The possible gelugpaisation of Bhutan with the reopening of the Tawang-Trashigang corridor is quite far-fetched, improbable and unconvincing. There are scholars who have alluded to this problem and have expressed apprehension. But, this apprehension is apparently unfounded. The Monpa tribes in Tawang are not demographically dense and are certainly not on the lookout for any new turf or pasture for relocation. And there is no such compelling reason political or otherwise to embark on this decision. Their cultural rootedness in Tawang and its spiritual ecosystem do not free them to move anywhere. The Tawang-Trashigang corridor may, on the contrary, revive the cultural and economic heritage and history that they share for centuries. Buddhism in spite of its embodiment of the varying denominations and schools can be a great cementing force in binding people together in greater harmony as it has done for centuries in the same region. These Buddhist communities with their denominational differences have been living in the same region for centuries together with an incredible exchange of ideas, cultures and trade that have historically never been so domineering. Had it been so, why does the Bhutanese side show equal enthusiasm for the construction of this corridor? The opening of the Tawang-Trashigang corridor would encourage cultural bonhomie among these Buddhist communities and would give culture and trade massive stimulation. Therefore, the fear of gelugpaisation of Bhutan's easternmost territory is a mere exaggeration. The China factor is, on the contrary, the most concerning one than the myth of gelugpaisation.

4. CHINA FACTOR

There are several factors accountable for Bhutan's prolonged indecision over the reopening of the Tawang-Trashigang corridor. The Chinese factor is the most prominent one. Other minor factors causing constraints may be negotiably put to rest through persuasion or incentive but the Chinese territorial appetite and its unending bickering with Bhutan over the border space in northern and western Bhutan speak glaringly of its ulterior motive. China weaponises the border space and its inherent liminality and indefiniteness to inflict tension on a country that aspires to grow capitalising on its strength. It targets India and Bhutan as they chose not to come under its Belt and Road Initiative (BRI) structuralism, subsequent debt trap and its instrumentalization and hegemonisation of complex interdependence.

India's rising economy, its success story in spite of the Covid-19 pandemic and the ongoing Russia-Ukraine War, its growing defence strength, its effective retaliation to Chinese border bickering and its extension of support to Bhutan cause substantive discomfort to China and its demonstrative hegemony. India-Bhutan deep partnership may give the former the strategic advantage to exercise checkmate on China if such a complex situation arises in future. Bhutan is not a threat to China but Bhutan-India cooperation may prove lethal for it. India's membership in Quadrilateral Dialogue (QUAD) in the Indo-Pacific sector and its increasing association with the forces opposing China's hegemonic rise and its autocratic predilection seeking asymmetric rise to success at the cost of human rights violation, environmental degradation, and unethical practices impose deterrence to Chinese unbridled aspiration. Therefore, it always inflicts tension on Bhutan weaponising the border space. This mires Bhutan in uncertainty and speculative anxieties and debilitates its will to act in the most definitive manner. It bullies Bhutan and takes advantage of the latter's lack of competitive calibre to stand a match to the former. It chooses incremental encroachment of the latter's land to drag it to the diplomatic table and fill it with all kinds of apprehensions and anxieties. China's standoff strategy at Galwan (Ladakh), Doklam (Bhutan), Tawang (Arunachal Pradesh) over the border issue is a very finely crafted and deeply calibrated strategy recurrently adopted to inflict anxiety on India and Bhutan.

Bhutan shares about 477 km with China and its border dispute goes back to the latter's annexation of Tibet. Mao Zedong's Chinese foreign policy set the blueprint which constitutes the five fingers of Tibet (Dorji 2020). Under that framework, Tibet remains China's right-hand palm and its five fingers allude to its peripheries such as Ladakh, Nepal, Sikkim, Bhutan, and the North-East Frontier Agency (NEFA and now Arunachal Pradesh). After the annexation of Tibet, China is in the work-in-progress to capture Ladakh, Nepal, Sikkim, Bhutan, and Arunachal Pradesh. Therefore, it makes every attempt to weaken India's strategic depth, developmental activities and defence preparedness in Arunachal Pradesh in particular and along the Line of Actual Control (LAC) in general. India's approach to establishing effective integration of its northeastern region through enduring connectivity restricts China's spatial appetite and expansionist will.

The Tawang-Trashigang corridor is expected to facilitate smooth connectivity with Tawang through Bhutan and inaugurate effective growth in the eastern sector. This connectivity arrangement will give India an alternative route to Tawang, the most critical border space in the region, in order to ease pressure on the route that passes through the Sela Pass. The connectivity bottlenecks that the Sela Pass segment of the road at an altitude of 13,700 ft high generates in winter can be a crucial constraint in the event of any escalation in the sector initiated by the Chinese military. In China's perception, opening the Tawang-Trashigang corridor gives India a certain amount of strategic depth in the eastern Himalayas. It, therefore, engages its strategic and diplomatic arsenal and soft power not to allow Bhutan to exercise that choice. To this effect, all the Sino-Bhutan border discussions in 1984, 1990, 1995, 1996, 1998, and 2016 have not seen any significant development except reaching the status quo uniformly. It is apparent that China wants the tension in Bhutan to keep brewing until Bhutan agrees to the former's unreasonable and most impossible exchange offer. It includes the swap of the disputed 495 sq. km in Bhutan's north with the disputed 89 sq. km of land in Doklam (Pattnaik & Panda 2021, Ramachandran 2020). Beijing proposes to take 89 sq. km of Doklam from Bhutan in exchange for 495 sq. km in Bhutan's north to Thimphu.

China declares the territory disputed whichever country shares a border with it and forces the country in question to come to the negotiation table to do the bargain. This is China's most seasoned strategy and its application has been seen variously at different points in time. China's dispute with Bhutan over the latter's western and northern sectors is quite known, but what seems more intriguing is that of its recent claim in 2020 over Sakteng valley in eastern Bhutan as disputed territory. The 740 sq. km Sakteng Wildlife Sanctuary is located in Trashigang district, far-eastern Bhutan, and the government in Thimphu when applied to the US-Based eco-friendly project financier Global Environmental Facility (GEF) for aid is seriously objected by the Chinese representative of the GEF and made sure not to fund as the territory in question is disputed (Ranjan 2020, Chang 2020).

To Bhutan's consternation, China messes with Bhutan's eastern sector claiming the territory there disputed. To this unjustified claim, Bhutan has retorted strongly, "no part of its territory in the eastern sector was ever on the agenda of its territory negotiation" (Indian Defence News 2020). With the development of this kind of skewed geopolitics in the eastern Himalayas at Sakteng and Tawang, India has extended its solidarity to Bhutan and has expressed its unconditional commitment to work together in order to address effectively these challenges and convoluted developments along the border space. These geopolitical pressures generated by China may impact Bhutan to go India's way instead of preferring no position-taking or acting neutral. But in diplomatic parlance, to remain neutral is also some form of position-taking. Chinese belligerence in the region and, more specifically, to Bhutan in relation to the border dispute may give rise to a situation when the latter decides to forgo uncertainty and move whole-hog to India for its required assistance and other things. In such a scenario, the possibility of reopening the Tawang-Trashigang corridor becomes really feasible. Until such a time arrives, which is quite likely to come, there hangs a cloud of uncertainty over the fate of the Tawang-Trashigang corridor. But for the effective and robust security coordination

between India and Bhutan given the challenges in the region posed by China, the proposed corridor is a great strategic asset. This fact has been most convincingly communicated to the Bhutanese government at various levels under different diplomatic and bilateral meets. But the China factor is currently so definitive that Bhutan fails to decide the destiny of this proposed corridor.

5. CONCLUSION

The proposed Tawang-Trashigang Corridor embodies enormous geo-economic and geo-cultural importance for eastern Bhutan and Arunachal Pradesh on account of the cultural homogeneity they share and the trade history they inherit. This heritage route ought to be reopened to give the economy and culture of this region a revitalisation. The rich history of the erstwhile cultural and trade interaction builds public opinion for its rework. Public opinion apart, the strategic advantage of the corridor in relation to China's bellicose attitude and border bullying proclivity in the region enriches Bhutan and India's strategic depth in the region. But, Bhutan remains squirmed on this matter and succumbs to China's cunning manifested in the form of the most obfuscating border dispute. Therefore, the China factor has been playing a decisive role in stalling every diplomatic progress in this direction to build that corridor. China's territorial greed over Bhutan and Arunachal Pradesh generates geopolitical pressure on Bhutan which paralyses its independent decision-making. This geopolitical imperative that emerged from China's brinkmanship in the region keeps Bhutan indecisive. This indecision on a very important matter of geo-economic, geo-cultural and geo-strategic importance gives rise to Bhutan's forced preference for ambivalence. This protracted ambivalence intensifies the degree of uncertainty to the extent of its permanent impossibility over the possibility of the construction of the Tawang-Trashigang corridor. These questions and concerns have been discussed in the paper in addition to setting the spotlight on the importance of the corridor from the geo-economic, geo-cultural and geo-strategic perspectives. Unless Bhutan decouples itself from the Chinese sphere of influence, though it requires a great deal of courage and readiness to absorb the ramifications of any defiant act against a powerful neighbour, no progress can seemingly be made on the proposed Tawang-Trashigang corridor.

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Book Review

Das, Pushpita (2021) *India's Approach to Border Management: From Barriers to Bridges*, KW Publishers, New Delhi, pp. xx+366, ISBN: 9789391490003, Rs 1280

Border connectivity spearheads the development of a region which is connected by geography. Seamless transportation requires connected border, both land and water. Border connectivity has gained importance in linking communities, transportation and economic integration. It has multi-dimensional features. Proper management of borders is vital for national security. But, managing borders is not an easy task. There are many challenges in the areas of coordination, diplomatic, security, legal, regulatory, boundary disputes, to mention a few.

South Asian countries sharing geographical borders face special problems and challenges in a regional economy that is heavily fragmented by trade and transportation barriers. Freedom of movement of trade and transportation is still limited in South Asia and Bay of Bengal regions, particularly in this Covid-19 phase. Nonetheless, started in early decade, a change has started happening. Following Bangladesh model, India has introduced massive reforms in border management in 2012. Myanmar, Thailand, Nepal, Pakistan, Afghanistan and Bhutan gradually introduced reforms in border management and scaled up border development programmes. Not only at the borders, these countries have also introduced several trade and transport facilitation initiatives. The entire trade-led border management eco-system in South Asia and Bay of Bengal, therefore, looks promising.

To encourage cross-border movement of people and goods, India has invested heavily in border connectivity (integrated check posts), transport (multi-modal corridors), trade facilitation (simplification of the trade procedures) and security (guarding, fencing). India has extended quite substantial resources for modernization of border posts and streamlining border activities, particularly at the land borders, including aligning with the global practices. To a great extent, the entire ecosystem of India's border management for the trade transaction purpose is now transformed into an improved frontier. Theory suggests that trade and infrastructure have a self-reinforcing relationship, in that higher infrastructure spurs a larger volume of trade flows. Higher investment in border infrastructure has indeed facilitated the trade and connectivity.

India has set-up the Land Ports Authority of India (LPAI) through an Act in Parliament in 2010 under the Ministry of Home Affairs. Set up in 2012, LPAI has developed till date a total of nine ICPs, which are located across India's international land border, and these are Attari—handling India's trade with Pakistan; Agartala, Petrapole, Srimantapur and Sutarkandi—all handling India's trade with Bangladesh; Raxaul and Jogbani—both handling India's trade with Nepal; and Moreh—handling India's trade with Myanmar. There are 14 new ICPs operating as on May 2023 and the total number of ICPs is likely to touch 24 by 2030.

There are many challenges in border connectivity. Porous borders pose several non-traditional security threats such as illegal migration and informal trade, illegal flows of drugs, arms and ammunition smuggling, etc. Many border posts face inadequate infrastructure in controlling the trade flows such as poor road connectivity and telecommunication, absence of banks and foreign exchange, manual handling of customs and cargoes, no electronic scanning of goods, inadequate warehouses, etc. Another major threat to border connectivity is lack of efficient customs operations, including lack of transparency of procedures for inspection, informal payments, and inadequate preparation of customs documents by the shipper, etc. Many of South Asia and Bay of Bengal countries do not have adequate legislations in managing border posts and no single agency to look after border management. Although border connectivity has improved in parts, a regional process for collaborative border management is yet to get a shape in South Asia and Bay of Bengal regions. Safe and secure border is *sine qua non* for enhanced trade and integration in South Asia and Bay of Bengal.

The book entitled “India’s Approach to Border Management: From Barriers to Bridges” has provided a comprehensive understanding of India’s border management. Perhaps, it is the first time such a resourceful book has been published. I congratulate the author for presenting an interesting and informative publication. Author has argued “persistence of various cross-border threats and challenges and an absence of robust intra-regional trade among its neighbouring countries forced India to employ a security-centric and unilateral approach to border management with emphasis on hardening the borders to cross-border trade and travel and keeping the border areas underdeveloped to act as a buffer against external conventional threats”. She continued “However, as India’s economy grew and the country gained more confidence and resources, India started perceiving the borders as bridges rather than barriers. Consequently, greater emphasis was being laid on development of border areas and restoring severed lines of communication with its neighbours through increased investments in building transportation networks both within the border as well as beyond. It also started constructively engaging its neighbours to effectively manage its international borders”. This book is, therefore, not only discusses the pros and cons but also derives a way forward at the end. It has a rich collection of bibliography. This book is certainly a good resource to those who are engaged in border development and management or doing higher studies on borderlands.

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About the Issue

The second issue of the Journal of Land Ports and Border Economy features a comprehensive selection of research papers that delve into various dimensions of trade and development. The development and upgradation of transit points by the Land Ports Authority of India (LPAI) has been instrumental in fostering the growth of the border economy. The current issue of the Journal captures India's remarkable voyage in border management, showcasing its significant strides, advancements, and notable achievements. The contents encompass a Foreword by the Chairman of LPAI, an introduction by Managing Editor, and a compelling collection of six research papers authored by renowned scholars and practitioners. Additionally, the second issue of the Journal of Land Ports and Border Economy also includes a valuable book review, providing readers with an insightful analysis and offering them the benefits of critical evaluation and a broader perspective on India's approach to Border Management.

About the Journal

Journal of Land Ports and Border Economy is the primary publication of the Land Ports Authority of India (LPAI), which has distinguished itself as a leading developer for land port and border development. Widely consulted by researcher scholars, educators and practitioners, the journal encourages the submission of papers from all social science and humanities focusing on the development of land ports, generation of border economies, border issues and geo-political and security-related dynamics between borders in any part of the world. The distinctive purpose of the Journal of Land Ports and Border Economy is to publish original research covering the development of theories and concepts, methodological perspectives, empirical analysis and policy debate in the field of land port development and border studies with particular reference to India. The journal is an interdisciplinary forum, which showcases diverse perspectives and analytical techniques

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