PROJECT 'यंत्रीकरण': IMPROVING OPERATIONAL EFFICIENCY AT LAND PORTS

Building a better working world



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List of Abbreviations

Afghanistan–Pakistan Transit Trade Agreement
Bangladesh Bhutan India Nepal-Motor Vehicle Agreement
Bay of Bengal Initiative for Multi-Sectoral Technical and Economic
Cooperation
Border Trade Centre
Central Warehousing Corporation
Doorframe Metal Detector
Handling and Transportation
Handheld Metal Detector
Inland Container Depot
Integrated Check Post
Land Customs Station
Land Ports Authority of India
Logistics Performance Index
Metric Ton
National Trade Facilitation Action Plan
Participating Government Agencies
Standard Operating Procedure
Strength Weakness Opportunity Threat
Turnaround Time
Trade Facilitation Agreement
World Trade Organization





1. Executive Summary

Owing to its central geographical location in South Asia, the land ports located along India's international border of 15,104 kms play a crucial role in facilitating regional trade and connectivity in South Asia. However, the low levels of mechanization at land ports have limited the realization of operational efficiency and often resulted in high transaction time and cost of trading across borders.

In order to optimize the gains of trade facilitation at land borders, India's National Trade Facilitation Action Plan 2020-23 has suggested improving cargo handling efficiency at India's Integrated Check Posts (ICPs) through increased mechanization *(vide Action Point #57)*.

The Land Ports Authority of India (LPAI) is the key regulatory agency responsible for building, operating and managing ICPs which are consolidated infrastructure facilities that house all Participating Government Agencies (PGAs) responsible for cross-border trade. This Report has been prepared with an objective of supporting LPAI implement the aforementioned mandate of NTFAP 2020-23.

Using a **Capability Maturity Model**, a survey was conducted at seven ICPs¹ to gauge maturity level of the existing mechanization in operations and identify areas where improvements are required.

S.No.	ICP	Maturity Score	Gaps Identified
1	Attari	2.45/5	 No equipment available for handling cargo-operations. Complete dependence on manual labour. ICP operations frequently disrupted due to labour strikes. No equipment available for warehousing. Stacking of cargo done manually and is time-consuming. No security equipment available for examination. Customs undertakes a 100% manual examination of all incoming cargo from Pakistan. For auxiliary related works, ICP has only two lawnmowers available for maintenance of the green area. Labour force working at the ICP is largely untrained.

The key findings of the Maturity Assessment Analysis are summarized below:

¹ The study considers 7 ICPs that facilitate cross-border trade with India's neighbouring countries. These include ICP Attari, ICP Agartala, ICP Petrapole, ICP Raxaul, ICP Jogbani, ICP Sutarkandi and ICP Srimantapur.

S.No.	ICP	Maturity Score	Gaps Identified
			 No SOP defining cargo handling operations or auxiliary related operations to be undertaken either by labour or equipment.
2	Agartala	3.31/5	 No equipment available for handling important imports coming in cartons such as food items. No provision for handling containerized cargo. No equipment available for warehousing. Stacking of cargo done manually and is time-consuming. Manual transshipment inside the ICP results in intensive manual labour work and increases the dwell time. In terms of auxiliary equipment, there is only one floor scrubber. Apart from this, there is complete dependence on manual labour. Labour force working at the ICP is largely untrained. No SOP defining cargo handling operations or auxiliary related operations to be undertaken either by labour or equipment.
3	Petrapole	2.45/5	 Despite availability of 3 forklifts, 2 hydra cranes and 1 mobile crane, labour is still used predominantly for cargo-handling operations. This leads to congestion and results in high dwell time. No well-defined or scheduled maintenance for the available equipment. Manual transshipment inside the ICP results in intensive manual labour work and increases the dwell time. No warehousing equipment available at the ICP. Stacking of cargo done manually and is time-consuming. No cargo baggage scanners available. All cargo related checking is done manually by Customs. No equipment available for undertaking auxiliary-related works at the ICP.



S.No.	ICP	Maturity Score	Gaps Identified
			• Labour force working at the ICP is largely
			untrained.
			• No SOP defining cargo handling
			operations or auxiliary related
			operations to be undertaken either by
			labour or equipment.
4	Raxaul*	2.41/5	 In terms of auxiliary works, there is one tractor, one tractor mounted bush cutter, two Honda bush cutters, one cultivator and one disc harrow available at the ICP. Labour force working at the ICP is largely untrained. No SOP defining auxiliary related operations to be undertaken either by labour or equipment. In terms of security equipment, ICP has one X-ray baggage scanner and 109 CCTV
			cameras for monitoring. However, the
5	loghani*	1 24/5	 In terms of auxiliary equipment, there is
	J - 6 - 2		 no equipment available for grass cutting and maintenance. Complete dependence on manual labour. Labour force working at the ICP is largely untrained. No SOP defining auxiliary related
			operations to be undertaken either by
			 No security equipment available
6	Srimantapur	2.97/5	 Only one JCB-cum-Loader is available for loading items such as stone and coal. For all other types of cargo, the port is completely dependent on manual labour. No structured maintenance schedule for the available equipment. No equipment available for warehousing. Stacking of cargo done manually and is time-consuming. No equipment available for auxiliary related works.
			• Labour force working at the ICP is largely untrained.
			No SOP defining cargo handling operations or auxiliary related



S.No.	ICP	Maturity Score	Gaps Identified
			operations to be undertaken either by labour or equipment.
7	Sutarkandi	1.68/5	 No equipment available for undertaking cargo-related operations, auxiliary work or security checks. Complete dependence on manual labour for all the tasks taking place at ICP. Labour force working at the ICP is largely untrained. No SOP defining cargo handling operations or auxiliary related operations to be undertaken either by labour or equipment.

*- As per the provisions of the India-Nepal Treaty of Trade and Transit, cargo-handling operations do not take place inside the ICPs bordering Nepal.

Based on the current state assessment and gaps identified, the Report has proposed a list of initiatives to be implemented at each ICP. The list includes, *inter-alia*, the following:

- **Deployment of mechanized equipment** (such as forklifts, back-hoe loader, hydraulic conveyor belt, reach-stacker and pelletizing machine) to handle major import items and improve cargo-handling efficiency at ICPs
- **Deployment of auxiliary equipment** such as road cleaning truck, industrial vacuum cleaner and truck mounted water sprinkler system) to ensure cleanliness and maintenance of roads inside the ICP premises.
- **Deployment of security equipment** such as X-Ray Cargo Baggage Scanner and Handheld Metal Detectors to improve efficiency and efficacy of security operations at the ICP.
- **Establishment of Standard Operating Procedures** for working of labour and equipment at the ICP for cargo handling operations and auxiliary work to improve operational efficiency and ensure standardization.
- **Development of an effective training program** for labour working at the ICP to increase productivity and improve performance.

The Report has also made an assessment of the risks associated with implementation of each of these initiatives and prepared a prioritization framework to help the Authority prioritize the mechanization of key services being offered at the ICPs.

We hope that the findings of the Report will serve as useful inputs into the policymaking process aimed at transforming the ecosystem of land-border trade through increased mechanization.

INTRODUCTION



2. Introduction

On 22nd April 2016, India ratified the World Trade Organization's (WTO) Trade Facilitation Agreement (TFA) which contains several provisions for expediting the movement, release, and clearance of goods, including goods in transit². It also sets out measures for effective co-operation between customs and other appropriate authorities on trade facilitation and customs compliance issues. Trade facilitation is particularly important for developing countries, such as India, as they stand to gain most from efficient trade procedures, although achieving it may be more challenging for these economies than for the developed world. However, it has been noted in several studies that even modest reductions in the cost of trade transactions have the potential to have a positive impact on trade.³

In order to optimize the gains of trade facilitation, the Indian Government formulated the National Trade Facilitation Action Plan 2017-20 containing specific time-bound activities to ease out the bottlenecks to trade. The plan included more than 90 trade facilitation activities with definite timelines for their implementation. In 2020, the Government released the National Trade Facilitation Action Plan 2020-23 revising the activities to be implemented in order to transform the cross-border clearance eco-system through efficient, transparent, risk based, coordinated, digital, seamless and technology driven procedures. The Plan lists down 66 action points assigned to various stakeholders with specific time schedule and performance indicators.⁴ The action points are mapped to the WTO TFA Articles and aligned to India's policy objectives on improving the Ease of Doing Business.

The Land Ports Authority of India (LPAI), being an important facilitator of crossborder trade and passenger movement across India's land borders, is a key stakeholder in the implementation of trade facilitation reforms. The NTFAP 2020-23 lists down seven action points to be implemented by LPAI in a time-bound manner. Amongst these is the mandate for improving cargo handling efficiency at India's Integrated Check Posts (ICPs) through increased mechanization.

Action Point # 57 of India's NTFAP 2020-23

Assess and improve cargo handling efficiency at ICPs:

- Identify shortage of mechanised cargo handling equipment at six working ICPs
- Deploy mechanized cargo handling equipment across all ICPs

² WTO | 2016 News items - India ratifies Trade Facilitation Agreement

³ Welcome to department of commerce, Government of India

⁴ Cover.cdr (cbic.gov.in)



Mechanization at ports is defined as the handling of cargo with the use of mechanized equipment such as cranes, conveyor belts, stackers, forklifts, etc which effectively eliminates the conventional and less efficient method of unloading of cargo from trucks to warehouses or stacking yards and from there loading of goods onto trucks. The current cargo handling processes at ICPs rely heavily on manual labour which increases the transaction time and cost of trading across borders. Mechanization at land ports has the potential to improve the overall efficiency of cargo handling processes thereby reducing the overall transaction time and cost of trading.

2.1. Rationale for Mechanization at Land Ports

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 two landlocked countries in the region, i.e., Nepal and Bhutan also access the use the nearest seaports in India via the road route to gain transit access to participate in international trade with the rest of the world. The land ports located along India's long international border therefore play a crucial role in facilitating regional trade and connectivity in South Asia.

However, despite the importance of this mode of transport, it continues to be underdeveloped. **The low levels of mechanization at land ports have limited the realization of operational efficiency and often resulted in high transaction time and cost of trading across borders.** As a result of this, in spite of 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 poor infrastructure and high transaction costs of trading.

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. These are Attari-handing India's trade with Pakistan; Agartala, Petrapole, Srimantapur and Sutarkandi-handling India's trade with Bangladesh; Raxaul, and Jogbani — both handling India's trade with Nepal; and Moreh — handling India's trade with Myanmar; and Kartarpur which is limited to passenger movement. Apart from this, fourteen ICPs are in the process of development. The details of all 23 ICPs are attached in Annexure A.

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.





The importance of ICPs for facilitating cross-border trade can be better understood if we look at the combined share of ICPs in India's total trade with its immediate neighbourhood. This includes the five main countries with which India shares a land border-Bangladesh, Bhutan, Myanmar, Nepal, and Pakistan, hereafter referred to as BBMNP. The share of ICPs in India's trade with BBMP has gone up from 41.87 per cent in 2012-13 to 63.59 per cent in 2020-21.

Figure 2: Share of ICPs in India's Trade with BBMNP⁶



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 mechanization has been one of the main constraints that has limited the port capacity and increased logistics cost, thereby limiting true trade potential from being realized.

The ICPs are vital to India's trade and connectivity in the region. They not only consist of border infrastructure and regulatory agencies for facilitation of trade and people, but also

⁵ Computed using data from LPAI

⁶ Computed using data from LPAI



act as important transhipment centres for implementation of upcoming connectivity initiatives such as Bangladesh–Bhutan–India–Nepal Motor Vehicles Agreement (BBIN-MVA) and for facilitating transportation of goods from north-east region to seaports in Bangladesh such as Chattogram and Mongla ports Chattogram and Mongla. Many of the upcoming agreements will promote containerization of multimodal cargo movement, which will help reduce trade costs. Therefore, **there is an opportunity for land ports to embark upon port mechanization and modernization programs in order to become more efficient and remain at par with international benchmarks.**

Mechanized handling systems at land ports will not only provide smooth implementation of the sub-regional connectivity initiatives but will also boost cross-border regional trade by improving efficiency at various stages of the cargo handling value chain.

2.2. Benefits of Mechanization

Mechanization at ICPs can improve and enhance the cargo handling at the ports in an efficient manner. Efficient handling of cargo can in turn enhance the turnaround time and improve the port productivity and handling capacity. The deployment of mechanized equipment can lead to greater safety in handling of cargo and standardization of the processes. Lower dependence on manual labour can lead to reduction in human error while handling the cargo, thereby reducing cargo damage being incurred during the cargo handling processes.

Mechanization of the cargo handling processes at ICPs can lead to lower operating costs, greater accuracy, effective control, and improvement in quality of work. All this in turn can result in improvement in port performance and ease of doing business across borders.



Figure 3: Benefits of Mechanization for ICPs

In recent years, Government of India has taken several initiatives in the direction of expansion and modernization of major seaports of the country. These include construction of new berths and terminals, mechanization of existing berths and



terminals, capital dredging for deepening of drafts for attracting large vessels in port channels, development of road and rail connectivity etc. As a result of these initiatives, the cargo handling capacity of the major ports has gone up to 1534.91 Million Tonnes Per Annum (MTPA) as on 31st March 2020⁷. Improved efficiency and cargo handling capacity has also resulted in majority of India's global trade being conducted by the sea route.

A paradox in the evolution in transportation and logistics sector in India is that while seaports in the country have evolved and have deployed modern equipment for cargo handling, the land ports are still at a nascent stage, remain less advanced and still use labour for undertaking most of cargo handling processes. The growing importance of ICPs and changing nature of regional and global trade presents a golden opportunity for the Land Ports in India to undertake the process of mechanization and modernization at ICPs and realize the untapped potential of greater regional crossborder trade.

The Report is organized as follows. Section 3 of the Report lists down the objectives of the study. Section 4 describes the approach and methodology followed in the Report. Section 5 provides an overview of the ICPs included in the purview of the study. The current state assessment of mechanization and identification of gaps at different ICPs is presented in Section 6. Section 7 highlights the best practices in the use of mechanized equipment at other ports. Section 8 presents the target state with detailed list of initiatives proposed at the ICPs. Section 9 discusses the prioritization of the initiatives suggested. Finally, Section 10 describes the risk and mitigation strategies formulated for successful implementation of the project.

⁷ PIB (2020). Modernisation of Major Ports. 14 September 2020. Available at https://pib.gov.in/PressReleasePage.aspx?PRID=1654076

OBJECTIVES OF THE STUDY



3. Objectives of the Study

The objective of the study is to assess the current status of mechanization at ICPs⁸ and identify the shortage of mechanized cargo handling equipment with a view to propose greater deployment of equipment which can further enhance operational efficiency of the ports.

The present study seeks to achieve, *inter-alia*, the following:

- 1. Assessment of the current "as-is" state of mechanization at ICPs
- 2. Identification of the type and volume of commodities traded
- 3. Understanding of the current landscape of labour and equipment usage for cargo handling
- 4. Comparison of ICPs in terms of their current state of cargo handling operations
- 5. Assessment of the maturity level of mechanization at ICPs
- 6. Identification of gaps in the current state of cargo handling operations at ports
- 7. Identification of best practices in the use of mechanized equipment at national and international ports
- 8. Recommendation of policy measures to bridge the mechanization deficit at select ICPs, listing down the specific mechanized equipment requirements
- 9. Developing a risk register assessing risks associated with proposed initiatives and preparing prioritization framework for implementation of the initiatives
- 10. Proposing risk-mitigation strategies for successful implementation of mechanization

⁸ The study considers 7 ICPs that facilitate cross-border trade with India's neighbouring countries. These include ICP Attari, ICP Agartala, ICP Petrapole, ICP Raxaul, ICP Jogbani, ICP Sutarkandi and ICP Srimantapur.

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antification .





4. Approach and Methodology

4.1. Formulating the Methodology

In order to assess the current status of mechanization at ICPs and identify the shortage of mechanized cargo handling equipment, the study follows a comprehensive five-stage "mixed methods" approach. A mixed methods study approach is characterized by a combination of qualitative and quantitative research approaches with an overall goal of gaining an in-depth understanding of the subject of research and strengthening the study's conclusions. Primary information is collected through online and telephonic surveys and stakeholder consultations. Information is also collected through secondary sources such as published papers, government agreements and regulations.

As noted by (Johnson et al. 2007⁹):

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e. g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.

The five stages followed in the study are as follows: secondary data analysis and research, developing a Maturity Assessment Framework for assessing mechanization at ICPs, assessing current state of mechanization, identification of gaps and devising measures to bridge mechanization gap and preparation of implementation plan in terms of formulation of prioritization framework, undertaking a cost-benefit analysis and developing risk mitigation strategies.



⁹ Johnson BR, Onwuegbuzie AJ, Turner LA. Toward a definition of mixed methods research. Journal of Mixed Methods Research. 2007; 1:112–133. doi: 10.1177/1558689806298224



4.1.1 Secondary Data Analysis and Research

In the first stage, secondary data on trade flows conducted via seven operational ICPs was collected from the respective ports. This data includes type, value, and volume of trade at different ICPs. The data on trade value is used to assess the trends in trade across the years. The data on type and volume of trade (including commodity-wise trade) is used to understand the potential requirements for specific mechanized equipment at the ICPs.

Secondary research was also conducted to identify the best practices in the use of mechanized equipment in the handling of cargo at other ports.

4.1.2 Developing a Maturity Assessment Framework for Assessing Mechanization at ICPs

To assess the current level of mechanization at ICPs, the study designs a 'Maturity Assessment Framework'.

Maturity Assessment Framework is a toolkit to assess the maturity of mechanization in operations at an ICP. This framework aims to help LPAI attain efficiency in their operations through an assessment of the current processes and identification of gaps under loading, unloading, warehousing, security, and auxiliary works processes of an ICP.

An assessment using the Maturity Framework typically consists of designing a questionnaire covering different parameters that are important and related to the processes/services/functions of interest. Through a survey, the current level of maturity of each process/service/function is then determined with respect to a prescribed maturity level scale that measures the degree of *formalization*, *sophistication*, or *completeness* of the operations as compared to the target state. The survey findings from the Maturity Model enable us to assess the current state of mechanization, identify the gaps in the state of mechanization vis-à-vis an "ideal state" or an "ideal port" and help devise improvements to bridge the mechanization deficit. The assessment will allow LPAI to gauge maturity level of the existing mechanization in operations at its ICPs and identify areas where improvements are required. It will also provide inputs for planning the operationalization of upcoming ICPs that are currently in the process of development.

Several studies have utilized the principles of the Maturity Assessment Framework to gauge the capability or maturity of different services or processes related to infrastructure or logistics (Philipp, 2020 and UNDP, 2020)¹⁰. The most notable among them is the **Logistics Performance Index (LPI) by the World Bank** which analyzes countries through six indicators of efficiency of customs and border management

¹⁰ Philipp, R. Digital readiness index assessment towards smart port development. Nachhaltigkeits Management Forum 28, 49–60 (2020). https://doi.org/10.1007/s00550-020-00501-5 Damage and Capacity Assessment for Ports of Hodiedah, Salif and Ras Issa. UNDP Yemen (2020).



clearance; quality of trade and transport-related infrastructure; ease of arranging competitively priced international shipments; competence and quality of logistics services; ability to track and trace consignment and frequency with which shipments reach consignees within the scheduled or expected delivery time. The LPI relies on an online survey of logistics professionals, multinational freight forwarders and main express carriers. Each survey respondent is required to rate the selected countries on the six core components of logistics performance. Using standard statistical technique, LPI aggregates the data into a single indicator which is then used to compare countries, regions, and income groups¹¹.

4.1.3 Assessing Current State of Mechanization at ICPs

Based on the Maturity Assessment Framework, a questionnaire is designed to assess the current state of mechanization for five key services offered at the ICPs-unloading, loading, warehousing, security, and other auxiliary works. These services have the potential to be mechanized and are briefly described below.



Figure 4: Key Services Offered at ICPs

- **1. Unloading and Loading** refers to the service of unloading or loading trucks to any place on the ICP or to any other means of conveyance to or from the ICP premises. It essentially refers to the means of transference from (or to) a vehicle (in the current case mostly trucks) to (or from) premises adjacent to where the vehicle is parked or to (or from) another vehicle.
- 2. Warehousing is an important aspect of the transport supply chain and refers to the service of storing goods at the ICP premises so that they can be released from the premises later. Warehouses are primarily used by importers to store their consignments till the time they get clearance from Participating Government Agencies (PGAs) or till the time they pay customs duties.

¹¹ LPI2018.pdf (worldbank.org)



- **3. Security** refers to all operations pertaining to the protection of the ICPs and the protection and inspection of the cargo moving through these ports. While prima facie the aspect of security does not fall completely under the purview of mechanization, this study includes this process as it has the potential to be mechanized. For instance, the use of X-ray baggage scanners can benefit the efficiency of the cargo-handling process at ICPs.
- **4. Auxiliary Work** refers to all forms of supplementary operations at the ICPs that have the potential to be mechanized. For instance, heavy cargo vehicular movement inside ICPs results in pollution inside the premises. There is a possibility of deploying water sprinkler systems and high-rise fogging systems to reduce pollution inside the ICP premises. This is also important for maintaining health and safety of all the workers and stakeholders inside the port.

The questionnaire is designed to gauge the maturity level of mechanization of these five core services (hereby referred to as "Parameters"). These parameters are divided into two sub-parameters i.e., labour and equipment (hereby referred to as "**Sub-Parameter 1a** and **Sub Parameter 1b**" respectively), which in turn are further examined under the following criteria-process, availability, efficiency, training, and maintenance. These are hereby referred to as "**Sub-Parameter 2a**, **Sub-Parameter 2b**, **Sub-Parameter 2c**, **Sub-Parameter 2d** and **Sub-Parameter 2e**" respectively. All attribute parameters are presumed to have equal significance to the processes at an ICP.



Figure 5: Maturity Assessment Framework for Mechanization at ICPs

- **1.** The **Sub-Parameter 2a** on "process" is included to capture the standardization/nonstandardization of the series of inter-linked steps which are assigned to every stakeholder for a specific operation at an ICP.
- **2.** The **Sub-Parameter 2b** on "availability" is included to capture the ease of availability of labour and equipment for the five core shortlisted operations.



- **3.** The **Sub-Parameter 2c** on "efficiency" is included to capture the operational performance of ports, both in terms of time and cost saved for the five core shortlisted operations.
- **4.** The **Sub-Parameter 2d** on "training" is included to capture the presence or absence of any routine or tailor-made basis specific job-related training at operational or technical level (e.g., operation of quay cranes, loading/unloading of trucks etc.).
- **5.** The **Sub-Parameter 2e** on "maintenance" is included to capture the processes used to keep the equipment at an ICP in a reliable working order.



The detailed tree diagram representing the designed maturity assessment framework for mechanization at ICPs is represented below:

Figure 6: Tree Diagram Representing Maturity Assessment Framework for Mechanization at ICPs



Paran	neter	Sub Parameter 1		Sub Parameter 2		
P1	Loading	CD1 0	Labour	SP2a	Process	
P2	Unloading	SPId	Labour	SP2b	Availability	
P3	Warehousing			SP2c	Efficiency	
P4	Auxiliary	SP1b	Equipment	SP2d	Training	
P5	Security			SP2e	Maintenance	



The designed survey questionnaire went through multiple iterations to make it accurate, pinpointed, and comprehensive so as to elicit a proper response from the stakeholders. The questionnaire was then subjected to pilot testing sessions with port-service providers to understand their perspectives. After multiple rounds of iterations and modifications, the survey questionnaire was finalized. The final Maturity Assessment Questionnaire is enclosed in Annexure B.

Using the designed questionnaire, a survey of port-service providers was conducted at seven operational ICPs-Attari, Agartala, Jogbani, Petrapole, Raxaul, Sutarkandi and Srimantapur. Owing to the COVID-19 pandemic situation, the questionnaire was rolled out through web-enabled survey tool. Telephonic discussions and virtual meetings were held with the service providers.



Figure 7: Levels of Maturity

Each respondent was asked to rank their perceptions in the current state of mechanization at ICPs on each sub-parameter on a maturity scale of 1 to 5. The scale of 1 represents the lowest level of maturity and 5 represents the highest level of maturity¹². The maturity levels are measured and defined by the specific requirements applicable to each pre-defined set of process areas. Each maturity level provides a necessary foundation for effective implementation of processes at the next level.

During the analysis stage, the maturity level of mechanization at each ICP is represented in a *spider chart* which uses a two-dimensional graph to display a multi-dimensional data structure. The chart is used to represent the different sub-parameters based on which maturity is assessed on a scale of 1 to 5.

¹² In exceptional cases, wherein a particular service is not required or present at a particular ICP, a rank of 1 was accorded. For instance, the free trade treaty between India and Nepal allows seamless movement of cargo vehicles between the two countries. As a result, there are no labour or equipment available at either ICP Raxaul or ICP Jogbani for handling cargo operations. A rank of 1 has been accorded in such cases.



4.1.4 Identification of Gaps and Proposing Initiatives to Bridge Gaps

Based on the current state assessment, gaps and focus areas for improvement are identified. The gap analysis helps bridge the mechanization deficit by highlighting which requirements are currently being met and which are not. Gap analysis helps us provide vital inputs for the optimal use of mechanized equipment and improve the current service levels to match the defined ideal state service levels.

The analysis was complemented with stakeholder consultations to gain in-depth information and understanding of the responses captured in the survey. Accordingly, initiative measures for bridging the mechanization gap are devised and proposed.

4.1.5 Preparation of Implementation Plan-Identification of Risks and Prioritization Framework

a. Identification of Risks and Developing a Risk Register

Based on an assessment of the stakeholder ecosystem at the ICPs and the economic and political environment governing relationship with the neighbouring countries, the study has attempted to identify an exhaustive list of all possible risks associated with implementation of the proposed initiatives at each ICP. People, process, technology, and trade-related factors are the four key elements when it comes to implementing risk management at any ICP. 'People' have the greatest influence in risk management because depending on their role in the operations of an ICP, they are in the best position to decide what is at risk, determine the Authority's risk tolerance or sometimes even make decisions that affect risk. There are several types of people-specific risks. For instance, majority of the labour force might be untrained and unskilled which can make mechanization difficult. There could be strong labour union resistance towards mechanization as the process of deployment of machines and equipment often come with the fear of job or income loss.

'Process' is about rules and regulations and oversight. The Authority has the responsibility to ensure that the processes for deployment and usage of equipment are clearly well-defined so that it enables smooth implementation. For instance, there may not be any SOP for working of equipment. These get classified under process-specific risks. 'Technology' is associated with putting the right technological systems in place involves putting the right systems in place to automate processes and make the ICP operations smarter and more efficient. For instance, a technology-specific risk associated with mechanization is a technology error that can lead to breakdown or faulty functioning of the equipment.

Risks emanating from trade related factors (such as economic and political factors) are important determining factors towards implementation of any initiative. These include assessment of bilateral country dynamics, role of local community, implementation of sub-regional connectivity initiatives, etc. For instance, a complete shutdown of road-based trade between India and Pakistan/Afghanistan renders



utilization of proposed equipment at ICP Attari meaningless. This can be considered as an example of how political decisions can impact trade and implementation of reforms.

The study has compiled an exhaustive list of risks associated with these four elements and accordingly prepared a risk register. A commonly deployed tool in risk management, a 'risk register' is considered crucial towards successful implementation of initiatives proposed towards improving operations and management within an organization and is used to identify potential risks in the implementation of project. The risk register incorporates the identified list of potential risks and assesses the severity and likelihood of the same.

A risk determination matrix is formulated wherein **Risk= Severity X Likelihood**. Severity is defined as an assessment of the severity of the risk and likelihood is an assessment of the chances of it happening. Using a risk matrix for LPAI will allow it to look at each risk associated with the proposed initiatives and then decide how significant the risk might be.

	Risk Level Determination- 5 x 5 Matrix						
				SE	VERITY		
			Critical	Very Serious	Serious	Marginal	Negligible
			5	4	3	2	1
٥	Very High	5					
8	High	4					
Ĕ	Medium	3					
IKE	Low	2					
	Very Low	1					

	Action Table								
Colour	Score	Risks	Action						
	16 to 25	High	Initiative risk assessment detailing significant control measures is required. Do not proceed unless significant controls are implemented to						
	10 10 25	111611	Initiative to be proceeded with extreme						
	12 to 15	Medium-High	caution. Implement additional controls.						
			Proceed with care. Additional control advised.						
	8 to 10	Medium-Low	Period review necessary.						
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.						



b. Prioritization Framework



Based on the identification of gaps, initiatives proposed, and assessment of risks associated therewith, a prioritization framework has been developed to prioritize the mechanization of key services being offered at the ICPs. The prioritization framework has been designed to support LPAI discern deployment of which mechanized equipment are "Critical and Urgent," so that the Authority can focus on what matters most. The framework is broadly based on four parameters considered crucial for implementation of the proposed measures. These include benefits of implementation, ease of execution, costs associated with implementation, and implementation time. The study team held extensive consultations with respective ICP Managers to assign weights to the aforementioned parameters and arrived at the following weighting scheme:

- Benefit Quotient: 50%
- Execution Quotient: 25%
- Cost Quotient: 10%
- Time Quotient: 15%



Based on the weighted score of each proposed measure, they are then classified under different priorities of implementation-High, Medium, and Low.

List of Initiatives		Overall Priority	
No	Initiative Name	Score	Rating
1	Deployment of Hydraulic Comveyor Belt	8.1	High
2	Deployment Road Cleaning Truck	8.1	High
3	Deployment of Truck Mounted With	8.0	Medium
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High
5	Estanlishment of SOP	8.4	High
6	Developing an effective training program for labour/ manpower	7.4	Low

The benefits of implementation are analysed with respect to four factors namely decrease in turnaround time, increase in cargo-handling capacity, improvement in quality of work and improved ease of doing business. Quantitative scores are assigned to these parameters. The scores range from 0-5 where 0 refers to the case where the initiative does not have an impact on the benefit factor and 5 refers to the case that the initiative has a High impact on a particular benefit factor.

The ease of implementation, i.e., **execution quotient** is analysed with respect to the risks that were assessed in the risk register. These include people-related risks, process-related risks, technology-related risks, and trade-related risks (associated with economic and political factors). Quantitative scores from 1 to 5 are assigned to these parameters, where a score of 1 refers to the case where the initiative is considered to have a "High" difficulty level of implementation and a score of 5 refers to the case where initiative has a "Low" difficulty level of implementation.

The cost of initiative is similarly scored on a scale of 1-10 based on the various cost brackets, ranging from 0-25 lacs to 100-125 lacs.

The implementation duration is assigned a quantitative score on a scale of 2-10, with a score of 2 being assigned for an initiative that can be implemented in a span of less than two years and a score of 10 being assigned for an initiative whose implementation can take place in less than six months.



4.1.6 Risk Mitigation Strategies

Mechanization at ports is associated with several risks related to resistance from labour force currently deployed, equipment handling and maintenance, allocation of necessary funds etc. Based on the compiled list of possible risks associated with mechanization, the study proposes appropriate risk mitigation plans to manage, eliminate, or reduce risk to an acceptable level. Decision analytic rules are applied to rank-order the identified risks from "most to least" critical. The risks assessed as medium or high criticality go on priority into risk mitigation planning and implementation. For instance, mechanization may face immediate resistance from labour unions because it may lead reduce labour engagement at ICPs. In this regard, the study considers mitigation strategies such as implementation of mechanization in a phase-wise manner. This can be complemented with capacity building and training programs for upskilling of labour force to re-engage them in handling of equipment that are proposed to be deployed.

4.2. Limitations of the Study

The study also has some limitations. First, there is a dearth of research about mechanization at land ports in India because of which there was no baseline to consider for the purpose of measuring the success of the project study. Second, from a theoretical perspective maturity in terms of mechanization is not the only condition mandatory for successful deployment of mechanized equipment. There are other considerations such as trade volumes, geo-political and economic conditions, bilateral or regional trade agreements/policies etc that determine the success of the process of mechanization. Third, it is important to note that the survey results are based on the knowledge and perception of the respondents. Fourth, owing to time and resource constraints, the sample selection may not be representative of the entire stakeholders involved in the operations and functioning of an ICP. Fifth, due to non-availability of information pertaining to best performing or ideal international land ports, the benchmarking is only representative in nature. Sixth, there is a certain amount of subjectivity involved while identifying, quantifying, and estimating the different costs and benefits associated with the proposed measures. Converting intangible costs and benefits into monetary values is also challenging and may differ depending on the perspective

OVERVIEW OF ICPs

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5. Overview of ICPs

This section provides an overview of the seven ICPs considered in the study. As each ICP is unique in terms of its importance in the overall bilateral relationship with the neighbouring countries, this section begins by providing a brief background of the economic and geo-political importance of each ICP followed by an analysis of the trends in trade (both in terms of value and volume) over the last five years. The commodity composition of trade also varies across ICPs and is dependent upon the demand and supply conditions between the two countries and the consumer taste preferences and industry requirements near the bordering areas. Therefore, the commodity composition of trade has also been analysed to gauge the requirement of mechanized equipment. Each ICP section also presents a snapshot of the existing labour and equipment available at each ICP.¹³

¹³ The detailed data on trade volume, trade value, truck movement and commodity profile of all ICPs has been annexed in Annexure C. The quantitative information on labour deployed and equipment used at different ICPs has also been placed in Annexure C.




5.1. Overview: ICP Attari

India developed its first ICP at Attari along the international border between India and Pakistan. ICP Attari is located at a distance of about 28 kms from the city of Amritsar in the state of Punjab. Spread over approximately 120 acres, the ICP was built at an estimated cost of Rs 150 crores and borders Wagah in Pakistan.

The operationalization of ICP at Attari was one of the major steps taken to normalize and boost economic relationship between India and Pakistan. The port holds immense economic and strategic importance as Attari-Wagah is the only permissible land route allowed for trade between India and Pakistan. Through ICP Attari, exports of only 138 items are allowed. There is no restriction on imports.

ICP Attari is also an important transit port for importing goods from Afghanistan. As per the Afghanistan–Pakistan Transit Trade Agreement (also known as APTTA) which was signed between Pakistan and Afghanistan in 2010, Pakistan allows transit access to Afghanistan, which is a landlocked country. ¹⁴However, the APTTA does not allow India's exports to Afghanistan through Pakistan via the land route.

The location of ICP Attari has direct access to National Highway-I. In terms of connectivity to railways, Attari Shyam Singh railway station is also located in close proximity. At present, Attari offers six rail lines — three each for passenger and goods trains from Pakistan. There is a proposal to extend the Attari rail link to the ICP — 3.2 km apart by road. The minimum distance between the ICP's boundary and the railway line is just 800 m¹⁵.

Trade via ICP Attari

India's trade with Pakistan via ICP Attari witnessed a significant rise post the operationalization of the ICP. As per a recent study, the share of ICP Attari in India's total trade with Pakistan increased from 17 percent in 2011–12 to 23 percent in 2014–15¹⁶. Trade flows between India and Pakistan via ICP Attari continued to rise steadily till 2018-19 when the two countries undertook trade-restrictive measures against each other. Since then, only imports from Afghanistan are being recorded at ICP Attari.

¹⁴ <u>Afghanistan Pakistan Transit Trade Agreement 2010 - CustomNews.pk</u>

¹⁵ https://www.tribuneindia.com/news/archive/punjab/news-detail-493024

¹⁶ http://icrier.org/pdf/Working_Paper_318.pdf



ICP Attari









5.2. Overview: ICP Agartala

India developed its second ICP at Agartala along the international border between India and Bangladesh in the state of Tripura. Located within the municipal area in the vicinity of the capital city of Agartala, the ICP was operationalized on 17th November 2013. Spread over approximately 11.72 acres of land, the ICP was built at an estimated cost of Rs 73.5 crores¹⁷ and borders Akhaura in Bangladesh. The Central Warehousing Commission (CWC) is the Cargo Terminal Operator of the ICP.

The ICP has the potential to be the gateway of India's corridor with South-East Asia. The location of ICP Agartala allows it direct access to National Highway-208 and further can be linked to the various identified routes under the BBIN Motor Vehicle Agreement and BIMSTEC Motor Vehicle Agreement. The ICP assumes greater importance in the context of its potential to facilitate multi-modal transportation between India and Bangladesh once the Agartala-Akhaura rail line is complete. The status as of November 2021 is that construction work is ongoing for the railway line project, connecting Agartala in Tripura and Akhaura in Bangladesh and is expected to be completed by next year¹⁸

Trade via ICP Agartala

ICP Agartala is currently the second largest trading route between India and Bangladesh, after the Petrapole-Benapole border. In the last seven years, trade has witnessed a significant increase through this port. From recording a value of Rs 282.4 crores in 2015-16, the port recorded a trade value of Rs 581.36 crores in 2020-21.

Trade through this ICP is dominated by imports from Bangladesh, which accounts for around 90 percent of the trade through the port. The reason for this stems from the port-specific restriction imposed by the Government of Bangladesh. According to the Bangladesh Gazette notification dated 1st September 2019, there is a list of only 40 items which can be exported from India to Bangladesh via ICP Agartala¹⁹. There is no restriction on exports from Bangladesh to India.

¹⁷ https://industries.tripura.gov.in/lcs-idc

¹⁸ Agartala to Akhaura rail by December - Maritime Gateway

¹⁹ These items are fish (fresh and dry), cotton threads, milk powder, sugar, cattle, fresh fruits, plants and herbs, seeds, rice, wheat, stones and boulders, marble stones, coal, pesticides, China clay, wood, timber, stone chips, onions, asafoetida, garlic, ginger, quartz, bamboo, betel leaves, CNG spare parts, dry fish, assorted spices dry animal skin, jeera, corn, broom, cashew nuts, generator, broken glass, chocolate, baby wipers. confectionary items, bitumen, raw rubber.





ICP Agartala







5.3. Overview: ICP Petrapole

India operationalized the largest land port in South Asia-ICP Petrapole along the international border between India and Bangladesh, located at a distance of about 80 kms from the city of Kolkata in the state of West Bengal in February 2016. The foundation stone for the ICP was laid in 2011 and the ICP was operationalised in February 2016. It was formally inaugurated in July 2016²⁰. Benapole is the corresponding land port in Bangladesh. The cargo terminal at ICP Petrapole is managed by the Central Warehousing Corporation. The land port at Benapole is directly managed by the Bangladesh Land Port Authority.

The location of ICP Petrapole allows it direct access to National Highway-112. There is also a rail link connecting Petrapole and Benapole, which offers ICP Petrapole the potential to facilitate multi-modal transportation²¹. Considering the potential of multi-modal transportation, LPAI is also in the process of establishing Railway Siding at ICP Petrapole.

Trade via ICP Petrapole

The Petrapole–Benapole route accounts for almost 70 percent of the land-based trade between India and Bangladesh. Since the operationalization of the ICP, bilateral trade has been witnessing an upward trend. Bilateral trade has increased from Rs 16,341 crores in 2015-16 to Rs 21,380 crores in 2018-19. Owing to the pandemic, the trade has dipped slightly to Rs 15,771 crores in 2020-21.

The trade through this ICP largely lies in the favour of India-exports to Bangladesh account for around 80 percent of the trade through the port.

²⁰ Ministry of External Affairs. (2016, July 21). Joint dedication of the Petrapole Integrated Check Post (ICP) [Press release]. Available at https://mea.gov.in/press-

releases.htm?dtl/27118/Joint_dedication_of_the_Petrapole_Integrated_Check_Post_ICP

²¹ The Petrapole-Benapole rail link was opened in 2001 after being closed for 24 years. There is a proposal to construct a by-pass road to ease congestion on the present road, connecting Benapole to NH 112 (earlier NH 35), bypassing Bongaon.





ICP Petrapole





RAXAUL

(INDIA - NEPAL)



5.4. Overview: ICP Raxaul

India operationalized its first ICP along the India-Nepal international border at Raxaul located at a distance of about 230 kms from the city of Patna in the state of Bihar on 3rd June 2016. Spread over approximately 235 acres, the ICP was built at an estimated cost of Rs 139 crores and borders Birgunj in Nepal.

ICP Raxaul is an important port not just for bilateral trade but also for facilitating the latter's third country trade. Over 70 percent of the total fuel trade between India and Nepal takes place through Raxaul-Birgunj trade route. ICP Raxaul is one of the only two ICPs²² that has a mirror ICP on the other side. On the opposite of ICP Raxaul lies ICP Birgunj which is currently being operated by the Nepal Intermodal Transport Development Board (NITDB)²³. The foundation stone of these two mirror ICPs was laid in 2010. While the ICP at Raxaul was operationalised in June 2016, it was only in 2018 that both Raxaul and Birgunj ICPs were jointly inaugurated. Birgunj has also been developed as a rail linked dry port (Sirsiya Dry Port) with an inland clearance (container) depot to handle both containerised and break-bulk cargo.

The strategic importance and potential of Raxaul in facilitating Indo-Nepal trade needs to be viewed at a macroeconomic level. The location of ICP Raxaul allows it direct access to National Highway-28A. The ICP is also located in close proximity to the Raxaul Junction which is already a well-established junction for rail connectivity between ports in western India to that in the East extending into Bangladesh and Myanmar. Following the recent revision in the India-Nepal Treaty of Trade and Transit which allowed the port of Vishakhapatnam (in addition to Kolkata port) to serve Nepal's third country trade, MAERSK has started operating a dedicated rail line for the movement of containerized commodities from Vishakhapatnam to ICD Birgunj. As a result, Raxaul railway station has also emerged as specializing in container traffic²⁴.Considering the potential of intermodal transportation, LPAI is also in the process of establishing Railway Siding at ICP Raxaul.

Trade via ICP Raxaul

Raxaul– Birgunj is the most important route for interchange of bilateral and third country trade. Nearly 40 percent of bilateral trade between India and Nepal takes place through Raxaul. Since the operationalisation of ICP Raxaul, India's exports to Nepal have increased by three times from Rs 8,559 crores in 2015–16 to Rs 25,200 in 2018–19. In 2020-21, the value of total trade via ICP Raxaul stood at Rs 22,099 crores. Over the years, the share of

²² India and Nepal are the only countries in South Asia to have mirror ICPs on both sides of the border.

²³ Govt appoints NITDB as custodian of ICP Birgunj - The Himalayan Times - Nepal's No.1 English Daily Newspaper | Nepal News, Latest Politics, Business, World, Sports, Entertainment, Travel, Lifestyle News

²⁴ Kumar, M (2018). Dirty Tracks across Border: Global Operations of Extraction, Labour, and Migration at a Railway Station on Bihar-Nepal Border. Tata Institute of Social Sciences Patna Centre. Available at Working Paper 7.cdr (tiss.edu)



ICP Raxaul in the overall bilateral trade between India and Nepal has averaged around 40 percent.







JOGBANI

(INDIA - NEPAL)



5.5. Overview: ICP Jogbani

India operationalized its second ICP along the India-Nepal international border at Jogbani located at about 325 kms from the city of Patna in the state of Bihar on 15th November 2016. The ICP is spready over approximately 186 acres.

Similar to the case of Raxaul, ICP Birgunj also has a mirror ICP on the other side. On the opposite of ICP Jogbani lies ICP Biratnagar which has been built with Indian assistance. The foundation stone for both the ICPs was laid on June 26, 2010. While ICP Jogbani was completed and operationalised in 2016, there were delays in starting ICP Biratnagar. It was only on 20th January 2020 that both ICPs were jointly inaugurated²⁵. Since August 2020, *TransNepal*, a terminal company, has been operating ICP Biratnagar.

The primary mode of cross-border trade is multimodal in nature, utilizing both road and rail. The location of ICP Jogbani allows it direct access to National Highway-527. In terms of connectivity to railways, Jogbani Railway station (located in Araria district) is located in proximity. LPAI is already in the process of establishing Railway Siding at ICP Jogbani which will further facilitate inter-modal transportation between India and Nepal.

Trade via ICP Jogbani

Jogbani (India) – Biratnagar (Nepal) is the second most important route for bilateral trade between India and Nepal. Together with ICP Raxaul, these two ICPs account for 60 percent of bilateral trade between India and Nepal. ICP Jogbani is also an important border point for movement of transhipment cargo to Nepal from India's eastern seaports (such as Kolkata which is approx. 581 kms away). The majority of transhipment cargo moves on a rail-cum-road basis, i.e., the containers arrive by rail till Bathnaha in Bihar, from Kolkata, Haldia and Visakhapatnam ports and are then moved by road from ICP Jogbani to Biratnagar²⁶.

Since the operationalisation of ICP Jogbani, India's exports to Nepal have increased by nearly 1.5 times, from Rs 5137 crores in 2015-16 to 6979 crores in 2018-19. Bilateral trade between India and Nepal reached its maximum value of Rs 8518 crores that year. In the last two years, trade averaged around Rs 7500 crores. Bilateral trade has remained largely in the favour of India.

²⁵ "Prime Minister Narendra Modi and Prime Minister of Nepal K P Sharma Oli jointly Inaugurate Integrated Check Post at Jogbani-Biratnagar," Press Information Bureau, January 21, 2020. https://pib.gov.in/newsite/PrintRelease.aspx?relid=197531

²⁶ Sinha, R. (2021). Linking Land Borders: India's Integrated Check Posts (CSEP Working Paper 9). New Delhi: Centre for Social and Economic Progress. Available at WP_Linking-land-borders-ICP-1.pdf (csep.org)



ICP Jogbani









5.6. Overview: ICP Sutarkandi

On 7th September 2019, LPAI took over the Border Trade Centre at Sutarkandi from the Government of Assam and upgraded it into a full-fledged ICP. The ICP at Sutarkandi is the first ICP in the state of Assam along the India-Bangladesh international border. Sutarkandi is located 10 kms away from the district town of Karimganj. The LCS on the corresponding side is Sheola LCS (Sylhet) which is being operated under the supervision of the Commissionerate of Customs, Excise and VAT, Sylhet division. In terms of space, the ICP is spready over only 3.38 acres of land.

ICP Sutarkandi is located at a very strategic location which has a river (Kushiara) connectivity at Lakhi Bazar just 3 kms away from ICP and rail connectivity about 10 kms at Mahishasan- Kalaura route which is going to be developed soon. The location of ICP Sutarkandi allows it direct access to National Highway-7 (new) and National Highway-151 (old).

Trade via ICP Sutarkandi

Since the operationalization of ICP Sutarkandi, bilateral trade between India and Bangladesh through this port has witnessed a significant increase. In 2017-18, the Border Trade Centre recorded a total trade of only Rs 162.2 crores. Coming up of the ICP has resulted in a three-fold increase, reaching a total trade value of Rs 467.7 crores in 2018-19. In the last year i.e., 2020-21, the ICP witnessed a total trade of Rs 237.65 crores.





ICP Sutarkandi







5.7. Overview: ICP Srimantapur

As recent as in 2020, LPAI upgraded LCS Srimantapur into a full-fledged ICP²⁷. This is the second ICP in the state of Tripura along the India-Bangladesh border at Srimantapur located at 63 kms from the city of Agartala in the state of Tripura. LPAI operationalized ICP Srimantapur on 5th September 2020. Spread over 3.51 acres of land, the ICP is in close proximity of Comilla district of the neighbouring country (8-10 kms from ICP). The geographical proximity makes it an extremely viable and cost-efficient route to cross-border trade between India and Bangladesh.

ICP Srimantapur has the potential to facilitate multi-modal transportation of goods between India and Bangladesh. The ICP terminal has one floating jetty on the Gomati river which flows through Tripura and the district of Comilla in Bangladesh. The opening of the floating jetty has placed Tripura on the map of Inland Water Transport, and this is expected to further boost India's trade with Bangladesh.

Trade via ICP Srimantapur

In 2020-21, bilateral trade between India and Bangladesh via ICP Srimantapur was Rs 81.72 crores. The trade balance lies largely in the favour of Bangladesh. Imports from Bangladesh were recorded as Rs 73.49 crores and exports were recorded as Rs 8.24 crores in 2020-21.

²⁷ As per the Department of Industries and Commerce, Government of Tripura the infrastructure of LCS Srimantapur was upgraded at a cost of Rs. 16 crores under erstwhile ASIDE scheme and consequently it was handed over to LPAI for maintenance and management. Information available at LCS-IDC | Department of Industries & Commerce (tripura.gov.in)





ICP Srimantapur

CURRENT STATE ASSESSMENT

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6. Current State Assessment

A robust understanding of how cargo handling operations are functioning at every ICP is necessary before suggesting any measures for mechanization. This section provides an assessment of the current state of operations of the five key services offered at ICsloading, unloading, warehousing, auxiliary works, and security. The current state assessment will be useful in identifying and evaluating the current processes at an ICP, identifying the gaps and prioritizing reform measures.

The current state assessment is tailored to the Authority's objectives of facilitating seamless movement of cargo across the border.



6.1. Current State Assessment: ICP Attari

ICP Attari is a labour-intensive port with 1300 labourers easily available for loading, unloading, and warehousing. The Central Warehousing Corporation (CWC) is the Cargo Terminal Operator responsible for arranging labour and equipment for cargo handling operations at the port. Prior to the trade suspension with Pakistan, ICP Attari had limited cargo handling equipment such as hydra-cranes, JCB and forklifts and heavy dependence on manual labour for undertaking most tasks. Following the trade suspension as the ICP is only catering to imports from Afghanistan, there are no equipment currently available at the port and there is complete dependence on manual labour. The labour usually works on alternate days in shifts of 650 each.



Apart from the strong labour union resistance to mechanization and frequent labour strikes, the port faces a major challenge with respect to the ambiguities over labour charges. The stakeholder consultations reveal that when at the time of trade with Pakistan even when imported cargo was unloaded using mechanized equipment, labour charges were still levied on traders irrespective of actual use of labour. The charges paid to labour, without the actual use of labour have at times gone up to Rs 2,000 per truck or Rs 140 per tonne.

Another major challenge faced at ICP Attari during trade with Pakistan was the lack of mechanized equipment for the purpose of handling cargo leading to underutilisation of storage space at the warehouses. For instance, when trade with Pakistan was permitted, cement was the major import commodity. One truck carrying cement approximately carries 800 bags. Manual un-loading and stacking of cement bags at the warehouse used to often result in reduced utilisation of available warehousing space, resulting in further delays. In an ideal scenario, stacking of cargo at the warehouse can happen up to a height of 30 metres.



However, due to manual handling of cargo, the stacking could not take place beyond 12 metres, thereby leading to significant under-utilization of available space at the warehouse. Stakeholder consultations and secondary research reveal that during the time when trade with Pakistan was at its peak, only 40 percent of the actual warehouse capacity was being utilized as a result of the manual stacking procedures. This kind of an issue can be resolved with installation of more conveyer belts and cranes for lifting large cement bags.



6.1.1 SWOT Analysis





6.1.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Attari scores an average of **2.45 out of 5** in the five key services offered at the ICP. The average is based on the maturity ranking accorded to loading, unloading, warehousing, security, and auxiliary works at the ICP.



A deep dive was conducted into these five services that are being offered at the ICP. The maturity assessment of each of these five services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. Based on the assessment, gaps were identified in the current state of these services at the ICP:



a. Loading Operations



- There are no equipment available for loading.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by equipment.



Availability-3.50

- Labour force is easily available for all the operational timings of the port
- Labour strikes are a frequent phenomenon (take place 9-12 times in a year)

Process-2.50

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by labour.
- Currently, the loading operations are defined in a manner that majority of the work can be carried out only by labour.

Efficiency-4.00

- Labour loads cargo trucks efficiently (no reported instances of truck delay due to loading by labour)
- Rare instances of cargo damage (<3 instance p.a)
- CWC is responsible for managing the port labour performance and operations. However, performance indicators are not quantified and largely based on discretion of supervisor

Training-2.00

- Neither SOP nor formal training plan exists.
- Informal training plan exists, but is neither standardized nor documented.



b. Unloading Operations



- There are no equipment available for unloading.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by equipment.



Availability-3.00

- Labour force is easily available for more than 80% of the operational hours
- Labour strikes are a frequent phenomenon (take place 9-12 times in a year)

Process-2.50

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by labour.
- Currently, the unloading operations are defined in a manner that majority of the work can be carried out only by labour.

Efficiency-3.67

- Labour loads cargo trucks efficiently (>3 instances of cargo damages p.a)
- Rare instances of cargo damage (<3 instance p.a)
- Although CWC does monitor performance of labour, it is largely discretionary in nature.
- Performance indicators are not quantified Training-2.00
- Neither SOP nor formal training plan exists.
- Informal training plan exists, but is neither standardized nor documented.



c. Warehousing Operations



 There are no equipment available for warehousing, hence there is no SOP for warehousing operations, no maintenance and no training SOP in place as well



Availability-3.50

- Labour force is easily available for all the operational timings of the port
- Labour strikes are a frequent phenomenon (take place 9-12 times in a year)

Process-3.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the warehousing operations to be carried out by labour.

Efficiency-3.80

- Warehousing is done efficiently by labour force (<20% of trucks experience delay due to incorrect stacking)
- Rare instances of cargo damage (<3 instance p.a)
- Some instances of pilferage have been reported (<10 p.a)
- Performance indicators are not quantified Training-2.00

Emphasis on training is low.



d. Auxiliary Operations





Availability-4.00

- Two lawnmowers are available.
- Available for all the operational timings of the port

Process-3.00

• There are no set procedures for undertaking auxiliary work by equipment.

Efficiency-3.00

• Limited check is kept on the performance of the equipment undertaking auxiliary tasks.

Training-2.00

 Labour performing auxiliary works using equipment is untrained.

Maintenance-2.00

- Some degree of equipment maintenance is carried out.
- No formal schedule is defined.

Availability-3.50

- Labour force for auxiliary work is available for 60-80% of the operational hours
- Process-3.50
- Procedures for undertaking auxiliary work by labour are informally designed, but followed by all labour force.

Efficiency-3.00

- No strict performance monitoring undertaken, largely depends on discretion of supervisor.
- Performance indicators are not quantified

Training-2.00

• Labour performing auxiliary works is largely untrained.



e. Security Operations

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Availability-3.00

•4 Cargo Scanners are available •Available for 60-80% of operational timings of ICP

Process-4.00

•The procedures for undertaking cargo security checks are standardized.

Efficiency-2.50

- 100% examination of all incoming cargo from Pakistan
- •20-30% of trucks experience delays due to

security checks

- Training-2.00
- Limited emphasis on training.
- Maintenance-2.00
- Some degree of equipment maintenance. is carried out. However, no formal schedule is defined.

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6.1.3 Gap Analysis

Complete Dependence on Manual Labour

During the time of the study, ICP Attari had no mechanized equipment in place to execute loading, unloading and warehousing operations, making the ICP completely dependent on manual labour to do the same.

Frequent Labour Strikes

The ICP witnesses frequent disruptions in its operations stemming from frequent labour strikes. The results from the Maturity Assessment revealed that although labour at the ICP is available for more than 80 percent of the time for which the ICP is operational, labour strikes take place almost every month.

Lack of Auxiliary Equipment

For auxiliary works such as cleaning of ICP premises, ICP Attari is dependent on manual labour to do so. No equipment such as floor scrubbers are available. For the maintenance of green space at the ICP premises, no sprinklers are available. Watering of green area at the ICP premises is also being done manually.

High Unloading Time

Unloading of cargo by manual labour at ICP Attari takes an average of 90 minutes. This is twice as much the time it would take to mechanically unload cargo from trucks. The results from the Maturity Assessment revealed that approximately 20 percent of the trucks are delayed due to high unloading times.

High Idle Time

The idle time between two loading/ unloading cycles is on an average 25 minutes, which sometimes adds to the delay in clearance of cargo. For mechanized handling of the same, the idle time would be less than half of what is currently being taken by manual labour.

Single Stacking of Cargo

Owing to the political sensitivity associated with the port, Customs conducts a 100 percent examination of all import cargo from Pakistan. This also includes the transit cargo originating from Afghanistan. A recent Customs Notification mandates all unloaded cargo at ICP Attari to be stacked in a single layer only. This leads to under-utilization of warehouse space.

Lack of Manpower to Operate Cargo Scanners

Although ICP Attari has four cargo scanners in the Cargo Terminal Building, there isn't adequate manpower present to operate these scanners. As a result, these cargo scanners are lying underutilized.

Undefined Processes for Cargo Handling Operations

Most of the cargo handling processes are loosely defined and formulated in such a manner that only manual labour can execute them. This further increases dependency on manual labour.

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the cargo handling operations. No formal training is being provided to the labour to efficiently execute the same.



6.2. Current State Assessment: ICP Agartala

ICP Agartala is a relatively small port spread over an area of 11.72 acres. The port uses a combination of both labour and equipment for handling its cargo-related operations. The port has a labour force of 80 available for undertaking loading, unloading, and warehousing operations. At present. there is only one backhoe loader and one hydracrane for handling commodities such as stone and coal. The supply of both labour and equipment is managed by PCG Logistics as defined by the H&T tender. The company is responsible to take care of the maintenance and working of the available equipment. It brings out a list of approved tariffs commodity-wise as per which the labour is paid for loading and unloading of different types of cargo.



A major challenge the port faces is in the form of necessary transshipment at the ICP. Owing to the restrictive transport arrangement between India and Bangladesh, Indian trucks cannot move into the neighboring country's territory and vice-versa. Due to this, there is intensive manual labour involved in unloading truck from the incoming Bangladesh truck and directly loading it onto the Indian truck and vice-versa. Not only does this add to the labour work but results in increased time and cost of trading.

Another challenge that the port faces is in terms of spacing at the warehouses. ICP Agartala currently has two go-downs: one for import and one for export. The estimated total capacity of the go-downs is 4,000 MT (2,000 MT for imports and 2,000 MT for exports). However, there is no equipment available at the ICP specifically for warehousing purpose. This necessitates labour force to manually unload the trucks from the Bangladeshi trucks and physically carry it to the warehouse and stack it²⁸. Due to the

²⁸ This is usually a practice when the importing truck from the Indian side is delayed for some reasons or the cargo is awaiting any necessary clearances.



strenuous nature of work task, the labour force can stack the cargo only horizontally, thereby limiting the space utilization of the warehouse.

Stakeholder consultations also suggest that the cargo handling charges at ICP Agartala are on the higher side. As compared to when the port was functioning as an LCS, the cargo handling charges have increased significantly. As per cement importers, the cost of importing one ton of cement has increased by three times in the last ten years²⁹.

²⁹ Reportedly, the cost of importing one tonne of cement was Rs 3 per tonne in 2011-12 which has now increased to Rs 11-12 per tonne.



6.2.1 SWOT Analysis

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STRENGTHS

- Second largest border point with Bangladesh in Tripura
- Has a floating jetty for facilitating multi-modal transportation
- Viable and cost-efficient trade route with Bangladesh
- In close proximity to Comilla district of Bangladesh (approx. 8-10 kms)
- Quick cargo turnaround time

O OPPORTUNITIES

- Potential for becoming multi-modal transportation hub
- Growth of domestic industries-Tripura is the 2nd largest producer of rubber in India and boasts rich reserves of bamboo, natural gas, rice and various horticultural products

N WEAKNESSES

- Restrictive transport arrangement between India and Bangladesh-Necessary need for trans-shipment at ICP
- Dependence on manual labour for cargo-handling operations
- Size of port area (only 3.51 acres of land)

THREATS

- Objection raised by Border Guard Bangladesh to carry out border fencing work within 150 yards of zero line along International Border
- Trade diversion-proposed ICP at Nischintapur and Sabroom; operational ICP at Srimantapur
- Several LCS in close vicinity-Mururighat, Old Raghna Bazar, Manughat, Khowaighat and Dhalaighat



6.2.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Agartala scores an average of **3.31 out of 5** in the five key services offered at the ICP. The average is based on the maturity ranking accorded to loading, unloading, warehousing and auxiliary works at the ICP.



A deep dive was conducted into these five services that are being offered at the ICP. The maturity assessment of each of these five services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. Based on the assessment, gaps were identified in the current state of these services at the ICP:


a. Loading Operations



Availability-4.00

- 1 Backhoe loader and 1 hydra-crane
- Equipment is available for more than 80% of the operational timings of the ICP.

Process-3.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by equipment
 Efficiency 4.32

Efficiency-4.33

- ICP has rarely reported cases of delay in clearance of trucks related to loading done by equipment (<20% of trucks are delayed)
- No instances of cargo damage resulting from loading by equipment
- There are no quantified performance indicators to measure the efficiency of equipment

Training-1.00

- Neither SOP nor formal training plan exists Maintenance-2.00
- Basic level of maintenance such as oiling and lubrication carried out. No set maintenance schedule.



Availability-4.50

- Labour force is easily available for more than 80% of the operational hours
- Rare instances of labour strikes

Process-3.50

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by labour
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour

Efficiency-3.67

- Labour loads cargo trucks efficiently (<20% of trucks experience delay)
- Rare instances of cargo damage (<3 instance p.a)
- There are no quantified performance indicators to measure the efficiency of labour
 Training 1 00

Training-1.00

 Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



b. Unloading Operations



Availability-4.00

- 1 Backhoe loader and 1 hydra-crane
- Equipment is available for more than 80% of the operational timings of the ICP.

Process-3.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by equipment

Efficiency-4.00

- ICP has rarely reported cases of delay in clearance of trucks related to unloading done by equipment (<20% of trucks are delayed)
- No instances of cargo damage resulting from loading by equipment
- There are no quantified performance indicators to measure the efficiency of equipment

Training-1.00

- Neither SOP nor formal training plan exists Maintenance-2.00
- Basic level of maintenance such as oiling and lubrication carried out. No set maintenance schedule..



Availability-4.50

- Labour force is easily available for more than 80% of the operational hours
- · Rarely any instances of labour strikes

Process-4.00

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by labour
- The current procedures are defined in a manner that majority operation can be performed by labour.

Efficiency-3.67

- Labour unloads cargo trucks efficiently (<20% of trucks experience delay)
- Rare instances of cargo damage (<3 instance p.a)
- There are no quantified performance indicators to measure the efficiency of labour

Training-1.00

 Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



c. Warehousing Operations



There are no equipment available for warehousing., hence no cargo handling procedures, no training and no maintenance schedules are formulated.



Availability-5.00

- Labour force is easily available for more than 80% of the operational hours
- Rare instances of labour strikes
- Process-3.50
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the warehousing operations to be carried out by labour

Efficiency-4.40

- Warehousing is done efficiently by labour force (<20% of trucks experience delay)
- No instance of pilferage or cargo damage or incorrect stacking
- However, no quantified performance indicators are in place

Training-1.00

• Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



d. Auxiliary Operations





Availability-4.00

- Only one floor scrubber is available.
- It is available for 60-80% of the operational hours

Process-3.00

There are no set procedures for undertaking

auxiliary work by equipment.

- Efficiency-3.00
- Minimal check is kept on the performance of the equipment undertaking auxiliary tasks.
 Training 1 00

Training-1.00 • Labour performing a

• Labour performing auxiliary works using equipment is untrained.

Maintenance-2.00

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- Some degree of equipment maintenance is carried out.
- No formal schedule is defined.

Availability-4.00

• Labour force for auxiliary work is available for 60-80% of the operational hours

Process-3.50

 There are no defined procedures to carry out auxiliary work

Efficiency-3.00

• No strict performance monitoring undertaken, largely depends on discretion of supervisor.

Training-1.00

• Labour performing auxiliary works is untrained.



e. Security Operations



6.2.3 Gap Analysis

Based on the current state and maturity assessment of ICP Agartala, the following gaps have been identified:

Limited Equipment Available for Cargo Handling

ICP Agartala has a back hoe loader and a hydra crane, but only for handling loose cargo such as stone and cement. For other types of cargo, ICP Agartala is completely dependent on manual labour.

No Provision to Handle Containerized Cargo

The Protocol on Inland Waterways Transit & Trade Agreement (PIWT&T) includes the port of Ashuganj in Bangladesh as a "Port of Call". This port is well connected to Agartala thereby making it a potential multimodal transport hub. However, there is no provision to handle containerized cargo to facilitate seamless multi-modal movement to and from Ashuganj.

Lack of Warehousing Equipment

Currently at ICP Agartala, no warehousing equipment such as conveyor belts, forklifts and stackers are available. Due to this, the stacking of cargo is being done manually and in a horizontal manner, resulting in underutilization of the warehouse space

Lack of Well-Defined Processes

While the operating procedures for cargo handling are generally defined, there are no set procedures for undertaking loading, unloading, warehousing or auxiliary related works. Additionally, there is no SOP for the use of labour or equipment for any of these tasks.



Manual Transhipment

Owing to the restrictive transport arrangement between India and Bangladesh, the incoming cargo from Bangladeshi trucks needs to be off-loaded and on-loaded onto Indian trucks-this is usually done "back to back" and involves intense labour work. This results in increased dwell time.

Lack of Security Equipment

ICP Agartala has no security equipment such as cargo scanners. All cargo related checking is currently being done manually by Customs.

Lack of Auxiliary Equipment

For auxiliary works such as cleaning of ICP premises, ICP Agartala is dependent on manual labour to do so. Only one floor scrubber is available for maintaining cleanliness of the ICP premises. For the maintenance of green space at the ICP premises, no sprinklers are available. Watering of green area at the ICP premises is being done manually.

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the cargo handling operations. No formal training is being provided to the labour to efficiently execute the same.

No Maintenance Schedule for Available Equipment

The maintenance of available equipment is unstructured and does not occur according to a formal schedule. Good practices such as preventive and predictive maintenances are not followed.



6.3. Current State Assessment: ICP Petrapole

Amongst the operational ICPs, ICP Petrapole has been utilizing the services of both equipment and labour for undertaking its cargo-handling operations. The Central Warehousing Corporation (CWC) is the Cargo Terminal Operator responsible for arranging labour and equipment for cargo handling operations at the port. Currently, ICP Petrapole has a labour force of 450 which is further divided in gangs of eight for loading and unloading purpose. In terms of equipment, the port has three forklifts, two hydracranes and one mobile crane available. CWC is responsible to take care of the maintenance and working of the available equipment.



A major challenge the port faces is in the form of necessary transshipment at the ICP. Owing to the restrictive transport arrangement between India and Bangladesh, Indian trucks cannot move into the neighbouring country's territory and vice-versa. The port uses manual labour to unload cargo from incoming Bangladesh truck and to load it onto the Indian truck and vice-versa. Manual transloading of cargo not only makes the entire cargo-handling process difficult, but also results in substantial delays in cargo release thereby leading to heavy congestion at the import warehouse. Additionally, manual transloading results in excessive costs being paid to labour force and also results in high dwell time.

Another challenge the port faces is complete dependency on manual labour for warehousing and stacking. The ICP has five warehouses-two used for storing goods, one used for inspection and two for BSF accommodation. The use of labour for stacking leads to under-utilization of the existing warehouse space and sometimes also leads to delay in clearance of goods. Any delay in clearance translates into heavy congestion inside the ICP premises and on the approach road to the ICP.



6.3.1 SWOT Analysis



WEAKNESSES

- Manual transhipment
- Complete dependence on manual labour for warehousing
- Limited parking facility at Benapole LCS

OPPORTUNITIES

- Mirror ICP on other side being constructed (LCS Sheola)
- Expansion of port area on Benapole side

- Foundation stone laid for opening of 2nd common cargo gate
- Lies along key BBIN corridor routes

THREATS

- Kalita parking in Bongaon municipality
- In close proximity (approx. 100 kms) lies Kolkata sea port which is already mechanized and handles containerized cargo movement.



6.3.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Petrapole scores an average of **2.49 out of 5** in the five key services offered at the ICP. The average is based on the maturity ranking accorded to Loading, Unloading, Warehousing, Security and Auxiliary works at the ICP.



A deep dive was conducted into these five services that are being offered at the ICP. The maturity assessment of each of these five services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. Based on the assessment, gaps were identified in the current state of these services at the ICP:



a. Loading Operations



Availability-2.00

•3 forklifts, 2 hydra-cranes and 1 mobile crane is available.

•However, the equipment is utilized for only 40-60% of the operational timings of the ICP. **Process-3.00**

• Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by equipment. Efficiency-3.33

• As a result of loading by equipment, only 20-30% of trucks are delayed.

• Rare instances of cargo damage (<3 instance p.a) • There are no quantified performance indicators to measure the efficiency of equipment defined in the H&T contract.

Training-2.00

Neither SOP nor formal training plan exists **Maintenance-1.00**

Poor maintenance and is undertaken only after complete equipment breakdown.



Availability-4.00

- Labour force is easily available for more than 80% of the operational hours
- Some instances of labour strikes (happens 3-6 times in a year)

Process-3.00

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by labour.
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour

Efficiency-3.30

- Labour loads cargo trucks efficiently (<20% of trucks experience delay)
- Rare instances of cargo damage (<3 instance p.a)
- There are no quantified performance indicators to measure the efficiency of labour defined in the H&T contract.

Training-1.00

• Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



b. Unloading Operations



Availability-3.00

•3 forklifts, 2 hydra-cranes and 1 mobile crane is available.

•However, the equipment is utilized for only 60-80% of the operational timings of the ICP. Process-2.00

• Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by equipment.

Efficiency-3.00

• As a result of loading by equipment, only 20-30% of trucks are delayed.

•Rare instances of cargo damage (<3 instance p.a) · Minimal check is kept on the performance of the equipment, and mostly based on the discretion of CWC.

Training-2.00

Neither SOP nor formal training plan exists Maintenance-1.00

Poor maintenance and is undertaken only after complete equipment breakdown.



Ávailability-4.00

- Labour force is easily available for more than 80% of the operational hours
- Some instances of labour strikes (happens 3-6 times in a year)

Process-3.00

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by labour.
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour.

Efficiency-3.33

- Labour unloads cargo trucks efficiently (<20% of trucks experience delay)
- Rare instances of cargo damage (<3 instance p.a)
- Minimal check is kept on the performance of the labour, and mostly based on the discretion of CWC.

Training-1.00

Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



c. Warehousing Operations



Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the warehousing operations to be carried out by equipment.



Availability-4.00

- Labour force is easily available for more than 80% of the operational hours
- Some instances of labour strikes (happens 3-6 times in a year)

Process-3.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the warehousing operations to be carried out by labour.

Efficiency-3.60

- Warehousing is done efficiently by labour force (<20% of trucks experience delay)
- No instance of pilferage
- Instances of incorrect stacking (10-20% of consignment stacked incorrectly)
- There are no quantified performance indicators to measure the efficiency of labour defined in the H&T contract.

Training-1.00

 Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.

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d. Auxiliary Operations



There are no equipment available for auxiliary works such as maintenance and beautification of ICP premises. Hence, there are no defined operating procedures, no training and no maintenance schedules in place.



Availability-3.50

- Labour force is available for 60-80% of the operational hours
- Process-3.50
- There are no set procedures for undertaking auxiliary work by labour. It is currently being undertaken in informal semi-standardized but followed by all the labour force.

Efficiency-2.00

- Labour involved in auxiliary works at ICP doesn't perform its assigned tasks efficiently.
- No check is kept on the performance of the labour doing auxiliary tasks.

Training-1.00

• Labour performing auxiliary works is untrained.

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e. Security Operations



Availability-2.00	<u>``</u>
 No cargo baggage scanners available. 8 handheld 	ì
metal detectors, 6 door frame metal detectors are	i
available.	
Process-4.00	
 The procedures for undertaking cargo security 	
checks are standardized.	
Efficiency-2.50	
 Due to the security checks, 20-30% of trucks 	i
experience delays.	i
• Limited check is kept on the performance of the	
personnel. This is largely discretionary.	
Training-2.00	
 Emphasis on training security personnel is low. 	
Maintenance-2.00	į
Some degree of maintenance is carried out for	j,
the security equipment.	1



6.3.3 Gap Analysis

Based on the current state and maturity assessment of ICP Petrapole, the following gaps have been identified:

Dependence on Manual Labour Despite Limited Equipment Available for Cargo Handling

Despite the availability of 3 forklifts, 2 hydra cranes and 1 mobile crane, labour is still used predominantly for the process of loading and unloading of cargo. This often leads to congestion at the ICP and high dwell time.

High Idle Time

Labour force usually takes 45-55 minutes for completing one loading/unloading cycle. The idle time between two loading/ unloading cycles is on an average 25-30 minutes, which sometimes adds to the delay in clearance of cargo. For mechanized handling of the same, the idle time would be less than half of what is currently being taken by manual labour.

Lack of Warehousing Equipment

No warehousing equipment such as conveyor belts and stackers are available. Due to this, the stacking of cargo is being done manually and is time-consuming. There have been instances reported of incorrect stacking.

Manual Transhipment

Owing to the restrictive transport arrangement between India and Bangladesh, the incoming cargo from Bangladeshi trucks needs to be off-loaded and on-loaded onto Indian trucks-this is usually done "back to back" and involves intense labour work. This results in increased dwell time.

Lack of Security Equipment

Although there are limited security equipment available for checking (such as handheld and doorframe metal detectors), there are no cargo baggage scanners. All cargo related checking is currently being done manually by Customs.

No Auxiliary Equipment

For work such as cleaning and maintenance of ICP premises, ICP Petrapole is completely dependent on manual labour.

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the cargo handling operations. No formal training is being provided to the labour to efficiently execute the same.



Limited Maintenance Schedule for Available Equipment

There is low maintenance for equipment used in cargo-handling operations and is usually carried out only after complete breakdown of equipment. For security equipment, there does exist some degree of maintenance. Good practices such as preventive and predictive maintenances are not followed.

Lack of Well-Defined Processes

While the operating procedures for cargo handling are generally defined, there are no set procedures for undertaking loading, unloading, warehousing or auxiliary related works. Additionally, there is no SOP for the use of labour or equipment for any of these tasks.



6.4. Current State Assessment: ICP Raxaul

As per the India-Nepal Treaty of Trade and Transit signed between the two countries there is free movement of persons and goods across the border, subject to the provisions mentioned in the treaty. Therefore, a truck entering or exiting the ICP does not require loading-unloading or warehousing of cargo inside the port premises. As a result of this, no permanent labour or equipment is available at the ICP. On a need-basis, labour and equipment can be hired. In terms of security services, the port has one X-ray baggage scanner which is installed and maintained by Customs. There are 109 CCTV cameras for monitoring. However, the CCTVs do not have any AMC. In terms of auxiliary equipment, the port has one tractor, one tractor mounted bush cutter, two bush cutters, one cultivator and one disc harrow available.



A major challenge the port faces is that there are no Standard Operating Procedures defined for handling of auxiliary equipment.



6.4.1 SWOT Analysis

S STRENGTHS

- Most important port for interchange of bilateral and third country trade between India and Nepal
- Primarily fuel-based trade
- No requirement for deployment of labour or equipment for handling cargo-related operations

WEAKNESSES

 No Standard Operating Procedures defined for handling of Labour and Equipment for handling cargorelated operations

O OPPORTUNITIES

- Mirror infrastructure on Nepal side-ICP Birgunj
- Development of rail-linked dry port at Birgunj
- Raxaul-Kathmandu railway project in pipeline
- Potential for multi-modal transportation: railway siding linkage
- Lies on key BBIN and BIMSTEC routes

THREATS

Т

- Changing geo-politics: growing influence of China in Nepal
- Petrol smuggling becomes rampant whenever prices are cheaper in Nepal because of tax differentiation



6.4.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Raxaul scores an average of **2.41 out of 5** in the two key services offered at the ICP. The average is based on the maturity ranking accorded to Security and Auxiliary works at the ICP. Loading, Unloading and Warehousing are not considered for assessment due to free movement of cargo between India and Nepal.



A deep dive was conducted into these two services that are being offered at the ICP. The maturity assessment of each of these two services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. On the basis of the aforementioned assessment, gaps were identified in the current state of these services at the ICP. The analysis is as follows:



a. Auxiliary Operations



Availability-2.00

- •Labour is available on need basis.
- Process-3.00

•There are no checks on how the operations are executed

- Efficiency-2.00
- Performance indicators are not quantified
- Training-1.00
- A training plan does not exist and no formal training occurs

b. Security Operations





Availability-4.00

1 tractor, 1 tractor mounted bush cutter, 2 Honda bush cutters, 1 cullivator and 1 disc harrow
The equipment is utilized for 80-100% of the operational timings of ICP.
Process-2.00

• Process are loosely defined and there is no SOP Efficiency-3.00

• Performance indicators are not quantified and performance check is based on discretion of the operator

Training-2.00

- Emphasis on training is low.
- Maintenance-2.00
- Some degree of maintenance is carried out at the discretion of the operator equipment.

Availability-4.00

- •1 X-ray baggage scanner and 109 CCTV are operational.
- •The equipment is utilized for 80-100% of the operational timings of ICP.

Process2.00

• Process are loosely defined and there is no SOP Efficiency-2.50

• Quantification of performance indicators are loosely defined

•Training-2.00

- Emphasis on training is low.
- Maintenance-2.00
- Some degree of maintenance is carried at the discretion of the operator equipment.

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6.4.3 Gap Analysis

Based on the current state and maturity assessment of ICP Raxaul, the following gaps have been identified:

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the auxiliary equipment. No formal training is being provided to the labour to efficiently execute the same.

Undefined Processes for Auxiliary Operations

Most of the auxiliary equipment processes are loosely defined and formulated in such a manner that are based on the discretion of operator . This further increases dependency on manual labour.

No Maintenance Schedule for Available Equipment

The maintenance of available equipment is unstructured and does not occur according to a formal schedule. Good practices such as preventive and predictive maintenances are not followed.



6.5. Current State Assessment: ICP Jogbani

As per the India-Nepal Treaty of Trade and Transit signed between the two countries, there is free movement of persons and goods across the border, subject to the provisions mentioned in the treaty. Therefore, a truck entering or exiting the ICP does not require loading-unloading or warehousing of cargo inside the port premises. As a result of this, no permanent labour or equipment is available at the ICP. Balmer Lawrie is the Cargo Terminal Operator and responsible for arranging labour or equipment on a hire basis (if required). In the limited cases when a particular consignment requires loading/unloading inside the ICP premises, the labour works on a hired basis for 8 hours in a day and takes 45 mins to fully load or unload a truck. ³⁰As there is no work of material handling equipment at the ICP, equipment can also be hired. The ICP has safety equipment such as safety belts, helmets, safety jackets, fire extinguisher, first aid and safety shoes available. A proposal has been submitted for requisition of auxiliary equipment such as lawnmower, handheld detector, grass cutting machine, tractor trolley. There is no scanner available for security checking and if any consignment required examination, it is done manually.



The total area available is 188 acres. However, less than 50 acres is available for operational purpose. There are two warehouses at the port, one is used for accommodation of SSB personnel and the other one earmarked for cargo operations is presently vacant.

³⁰ Labour is hired in cases when consignment requires P/Q fumigation or when Customs is required to perform manual intervention.



6.5.1 SWOT Analysis

S STRENGTHS

- Important route for interchange of bilateral and third country trade between India and Nepal
- Primarily fuel-based trade
- No requirement for deployment of labour or equipment for handling cargo-related operations

WEAKNESSES

- Poor condition of access roads
- No Standard Operating Procedures defined for handling of Labour and Equipment for handling cargorelated operations

O OPPORTUNITIES

- Mirror infrastructure on Nepal side-ICP Biratnahar
- Jogbani- Biratnagar (18.6 km) rail link in pipeline
- Lies on key BBIN and BIMSTEC routes

THREATS

Т

- Changing geo-politics: growing influence of China in Nepal
- Border dispute at a point, called Kalapani, which is on the tri-junction between India, Nepal, and China.



6.5.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Jogbani scores an average of **1.24 out of 5** in the two key services offered at the ICP. The average is based on the maturity ranking accorded to Security and Auxiliary works at the ICP. Loading, Unloading and Warehousing are not considered for assessment.



A deep dive was conducted into these two services that are being offered at the ICP. The maturity assessment of each of these two services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. On the basis of the aforementioned assessment, gaps were identified in the current state of these services at the ICP. The analysis is as follows:



a. Auxiliary Operations







Availability-3.00

No permanent labour is available at the port as there is no Loading & unloading work given by Customs to Custodian, however labour can be available at ICP on hire basis within no time Process-1.00
Process are undefined and the operations can be carried out by labor only Efficiency-1.00
There is no check on the performance of the personnel. Training-1.00
A training plan does not exist and no formal training occurs

b. Security Operations



Availability-1.00There is no scanner available for security checking

- Process-1.00
- Processes to be followed are largely undefined Efficiency-1.00
- A check is not kept on the performance of labour **Training-1.00**
- A training plan does not exist and no formal training occurs

Maintenance-1.00

• There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure



6.5.3 Gap Analysis

No Permanent Labour

There is no permanent labour available as the truck entering or exiting the ICP does not require loadingunloading or warehousing of cargo. Labour is available on hire and they need to understand the port operations every time.

No Permanent Equipment

There is no permanent Equipment available at the port. The equipment is available on hire and there is high dependency on the hired personnel for carrying out operations.

Limited Safety Equipment

The port has limited safety equipment such as safety belts, helmets, safety jackets, fire extinguisher, first aid and safety shoes available.

No Auxiliary Equipment

For work such as cleaning and maintenance of ICP premises, ICP Jogbani is completely dependent on manual labour. A proposal has been sent for lawnmower, grass cutting machine, tractor trolley.

No Security Equipment

There is a requirement for x-ray cargo bag scanner for smooth security at the port. However, no scanner available for security checking.



6.6. Current State Assessment: ICP Srimantapur

Amongst all operational ICPs, the ICP at Srimantapur is the smallest in terms of land area. It is spread across only 3.51 acres of land. Cargo handling operations are undertaken mostly by manual labour. While there is no equipment available for unloading operations, there is one JCB-cum-loader for loading items such as stone and coal. It is arranged (mostly on a rental basis) by the handling contractor i.e., PCG Logistics Pvt. Ltd. The ICP has one warehouse, which is further divided into five compartments. Owing to the quick turnaround of trucks, there is limited utilization of the warehouse. It is only required when the import trucks are awaiting clearance. In the times when the importer requires his consignment is kept in the warehouse, labour undertaken the entire warehousing operation manually and there is no equipment available for this. ICP Srimantapur has a total of 90 labourers available for undertaking loading, unloading, and warehousing operations.



Similar to the case of other ICPs located along India-Bangladesh border, there is a requirement of necessary transhipment at the ICP. However, consultations reveal given the current volume of trade, this is not a major impediment at the moment.

The floating jetty in the ICP terminal is currently non-functional. Once it becomes functional, the ICP may face impediments in the facilitation of multi-modal movement of goods. Use of manual labour in transloading goods from trucks and carrying them to the jetty for onward movement will only lead to additional burden on labour, paying out of higher labour costs and possible delays in clearance of goods.



6.6.1 SWOT Analysis

STRENGTHS

- S Second largest border point with **Bangladesh in Tripura**
 - Has a floating jetty for facilitating multi-modal transportation
 - Viable and cost-efficient trade route with Bangladesh
 - In close proximity to Comilla district of Bangladesh (approx. 8-10 kms)
 - Quick cargo turnaround time

OPPORTUNITIES

- Potential for becoming multimodal transportation hub
- Growth of domestic industries-Tripura is the 2nd largest producer of rubber in India and boasts rich reserves of bamboo, natural gas, rice and various horticultural products

WEAKNESSES

- arrangement between India and
- cargo-handling operations

THREATS

- Objection raised by Border Guard Bangladesh to carry out border fencing work within 150 yards of zero line along International Border
- Trade diversion-proposed ICP at Nischintapur and Sabroom; operational ICP at Srimantapur
- Several LCS in close vicinity-Mururighat, Old Raghna Bazar, Manughat, Khowaighat and Dhalaighat



6.6.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Srimantapur scores an average of **2.97 out of 5** in the five key services offered at the ICP. The average is based on the maturity ranking accorded to Loading, Unloading, Warehousing, Security and Auxiliary works at the ICP.



A deep dive was conducted into these five services that are being offered at the ICP. The maturity assessment of each of these five services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. Based on the assessment, gaps were identified in the current state of these services at the ICP:



a. Loading Operations



Availability-2.00

- JCB-cum-loader is available for loading items such as stone and coal.
- Equipment is available for 40-60% of the operational timings of the ICP.

Process-3.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by equipment

Efficiency-4.00

- ICP has rarely reported cases of delay in clearance of trucks related to loading done by equipment (<20% of trucks are delayed)
- No instances of cargo damage resulting from loading by equipment
- There are no quantified performance indicators to measure the efficiency of equipment

Training-2.00

- Neither SOP nor formal training plan exists. Maintenance-2.00
- Basic level of maintenance such as oiling and lubrication carried out. No set maintenance schedule.



Availability-4.50

- Labour force is easily available for more than 80% of the operational hours
- Rare instances of labour strikes

Process-3.50

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading operations to be carried out by labour
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour

Efficiency-4.33

- Labour loads cargo trucks efficiently (rare instance of trucks being delayed due to loading process by labour)
- Rare instances of cargo damage (<3 instance p.a)
- There are no quantified performance indicators to measure the efficiency of labour

Training-2.00

 Neither SOP nor formal training plan exists. Emphasis on training the labour working at ICP is low.



b. Unloading Operations



There are no equipment available for unloading, hence, no operating procedures, training plans and maintenance plans are defined and available



Availability-5.00

- Labour force is easily available for more than 80% of the operational hours
- Rarely any instances of labour strikes

Process-3.50

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by equipment
- The current procedures are defined in a manner that majority operation can be performed by labour.

Efficiency-4.00

- Labour unloads cargo trucks efficiently (<20% of trucks experience delay)
- Rare instances of cargo damage (<3 instance p.a)
- There are no quantified performance indicators to measure the efficiency of labour

Training-2.00

 Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



c. Warehousing Operations



 There are no equipment available for warehousing. Hence, no processes, maintenance schedules and training plans are defined



Availability-4.50

- Labour force is easily available for more than 80% of the operational hours
- Rare instances of labour strikes

Process-4.00

 Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the unloading operations to be carried out by labour

Efficiency-4.60

- Warehousing is done efficiently by labour force
- No instance of pilferage or cargo damage or incorrect stacking
- There are no quantified performance indicators in place

Training-2.00

 Neither SOP nor formal training plan exists. Emphasis on training the labour working at ICP is low.



d. Auxiliary Operations



· There are no equipment available for auxiliary work, hence, no cargo operation procedures, training plans and maintenance schedules are defined.

e. Security Operations





Availability-5.00

Labour force for auxiliary work is available for 60-80% of the operational hours

Process-3.00

Procedures for undertaking auxiliary work by labour are informally defined, with no check kept on how they are executed.

Efficiency-2.00

- No strict performance monitoring undertaken, largely depends on discretion of supervisor. Training-2.00
- Labour performing auxiliary works is untrained.

Availability-5.00

The available security equipment are adequate for handling the current cargo operations Process-4.00 •The procedures for undertaking cargo security checks are standardized.

- Efficiency-3.00 • Security checks are performed efficiently (<20%
- trucks delayed due to security checks)
- •Limited check is kept on the performance of the personnel. This is largely discretionary.

Training-4.00

The security personnel are trained

Maintenance-4.00

· Formal maintenance schedule is carried out



6.6.3 Gap Analysis

Based on the current state and maturity assessment of ICP Srimantapur, the following gaps have been identified:

Limited Equipment Available for Cargo Handling

ICP Srimantapur has only one JCB-cum-loader is available for loading items such as stone and coal. For other types of cargo, ICP Srimantapur is completely dependent on manual labour.

Lack of Warehousing Equipment

No warehousing equipment such as conveyor belts, forklifts and stackers are available at the ICP. Although there is limited utilization of the warehouse, but in times when there is a requirement to stack goods in the warehouse, the stacking is done manually and in a time-consuming manner.

Manual Transhipment

Owing to the restrictive transport arrangement between India and Bangladesh, the incoming cargo from Bangladeshi trucks needs to be off-loaded and on-loaded onto Indian trucks-this is usually done "back to back" and involves intense labour work. This results in increased dwell time.

Lack of Security Equipment

ICP Srimantapur has no security equipment such as cargo scanners. All cargo related checking is currently being done manually by Customs.

Lack of Auxiliary Equipment

For work such as cleaning of ICP premises, ICP Srimantapur is dependent on manual labour to do so. There is no floor cleaning machine available for maintaining cleanliness of the ICP premises.

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the cargo handling operations. No formal training is being provided to the labour to efficiently execute the same.

No Maintenance Schedule for Available Equipment

The maintenance of available equipment is unstructured and does not occur according to a formal schedule. Good practices such as preventive and predictive maintenances are not followed.



6.7. Current State Assessment: ICP Sutarkandi

Amongst all operational ICPs, the ICP at Sutarkandi is one of the smallest in size. It is built over an area of 3.38 acres of land. The operational size of the ICP is about 17 acres. Currently, there are no equipment available for undertaking any cargo related operation. There is no equipment for loading, unloading, warehousing, auxiliary work or even for security checks. All these operations are undertaken by manual labour. There is a labour force of 51 workers available at the ICP for undertaking loading and unloading. The ICP has one warehouse, which is currently not being utilized. Like the case of other ICPs located along India-Bangladesh border, there is a requirement of necessary transhipment.



A major challenge that the ICP faces is the lack of infrastructure. There have been some instances where after unloading of cargo from the Bangladeshi truck, there is a requirement for goods to be stored at the ICP (especially in the case of waiting for PGA clearances). However, as there is no infrastructure for the same this often translates into impediment traders face while from this ICP. importing an Another challenge faced by the ICP is the high dwell time for exports of coal. The export of coal from this ICP has witnessed an increase over the years. The coal is usually brought from Meghalaya and exported as a raw material for the brick manufacturing industry in Bangladesh. However, due to lack of equipment for unloading and loading of coal at the ICP, there is reliance on manual labour which takes a longer time to perform this operation.



6.7.1 SWOT Analysis

S STRENGTHS

- Strategic location in NER
- Government of India's focus on NER and Neighborhood First
- Industrial development-20 industrial estates, 8 mini industrial estates, 17 industrial areas and 12 growth centres in Assam

WEAKNESSES

- Limited size of ICP premise
- No equipment available for loading, unloading, warehousing, auxiliary work and security checks
- Complete dependence on manual labour for all operations
- Minimal infrastructure facilities

OPPORTUNITIES

- Potential for multi-modal transportation
- "Chattogram port/ Mongla port to Sutarkandi via Sheola and return" is an agreed route between India and Bangladesh
- Steamer Ghat in Karimganj district located at a distance of 13.3 Km from Sutarkandi.
- Close to Mahishasan Railway Station

THREATS

- Informal trade (instances of cattle smuggling and YAPA tablet smuggling)
- Several LCS in Assam are proposed for development-Mankachar, Dhubri Steamerghat, Golakganj, Ultapani, Darranga, Hatisar


6.7.2 Maturity Assessment

The results of the Maturity Assessment analysis reveal that ICP Sutarkandi scores an average of **1.68 out of 5** in the five key services offered at the ICP. The average is based on the maturity ranking accorded to Loading, Unloading, Warehousing, Security and Auxiliary works at the ICP.



A deep dive was conducted into these five services that are being offered at the ICP. The maturity assessment of each of these five services was also conducted based on five parameters: Availability, Efficiency, Process, Maintenance and Training. Based on the assessment, gaps were identified in the current state of these services at the ICP:



a. Loading Operations



There are no equipment available for loading. Hence, no cargo operation procedures, no maintenance schedules and no training SOPs are defined



Availability-5.00

- Labour force is easily available for all the operational hours of the ICP
- Rare instances of labour strikes (3 times in a year)

Process-2.00

- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the cargo handling operations to be carried out by labour
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour

Efficiency-3.67

- Labour loads cargo trucks efficiently (<20% of trucks experience delay.
- There are no quantified performance indicators in place to measure labour efficiency

Training-1.00

• Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



b. Unloading Operations



 There are no equipment available for unloading. Hence, no cargo operation procedures, no maintenance schedules and no training SOPs are defined



Availability-5.00

- Labour force is easily available for all
- the operational hours of the ICP
- Rare instances of labour strikes (3 times in a year) Process-2.00
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the cargo handling operations to be carried out by labour
- The current transhipment procedures are defined in a manner that majority operation can be performed by labour

Efficiency-3.67

- Labour unloads cargo trucks efficiently (<20% of trucks experience delay)
- No reported instances of cargo damage
- No quantified performance indicators for labour efficiency

Training-1.00

• Neither SOP nor formal training plan exists. No emphasis on training the labour working at ICP.



c. Warehousing Operations



- There is only one warehouse available at the ICP, which is not being used
- No equipment available for warehousing, hence, no procedures or SOP for cargo operation procedures, training and maintenance are defined



- There is only one warehouse available at the ICP, which is not being used
- No specific labour for undertaking warehousing related work, hence procedures or SOP for cargo operation procedures and training are not defined



d. Auxiliary Operations



- No equipment available for undertaking auxiliary related works at ICP.
- Although the operating procedures for cargo handling are defined, there are no set procedures for undertaking auxiliary work.



Availability-5.50

• Labour force is available for the entire operational time of the ICP.

Process-2.00

 Although there are no set procedures for undertaking auxiliary work by labour, it is currently being undertaken in semi-formal standardized manner and the procedure is followed by all the labour force.

Efficiency-2.00

- Labour involved in auxiliary works at ICP doesn't perform its assigned tasks efficiently.
- Performance indicators are loosely defined and mostly based on discretion of the supervisor

Training-1.00

• Labour performing auxiliary works is untrained.

e. Security Operations







6.7.3 Gap Analysis

Based on the current state and maturity assessment of ICP Sutarkandi, the following gaps have been identified:

Complete Dependence on Manual Labour

There is no equipment available for undertaking any cargo-related operations such as loading, unloading or warehousing. Moreover, there is no equipment available for undertaking auxiliary work or security checks. There is complete dependence on manual labour for all the aforementioned tasks.

High Idle Time

Labour force usually takes 20-30 minutes for completing one loading/unloading cycle. The idle time between two loading/ unloading cycles is on an average 30 minutes, which sometimes adds to the delay in clearance of cargo. For mechanized handling of the same, the idle time would be less than half of what is currently being taken by manual labour.

Lack of Warehousing Equipment

Although there is one warehouse inside the ICP, it is currently not being utilized. Moreover, there is no equipment that could be utilized for warehousing purposes.

Manual Transhipment

Owing to the restrictive transport arrangement between India and Bangladesh, the incoming cargo from Bangladeshi trucks needs to be off-loaded and on-loaded onto Indian trucks inside the ICP premise. This results in increased dwell time.

Lack of Security Equipment

There is no security equipment available at the ICP. All cargo related checking is currently being done manually by Customs.

No Auxiliary Equipment

For work such as cleaning and maintenance of ICP premises, ICP Sutarkandi is completely dependent on manual labour.

Lack of a Well Defined Training Plan

There is no SOP in place for training of labour to execute the cargo handling operations. No formal training is being provided to the labour to efficiently execute the same.



Lack of Well-Defined Processes

While the operating procedures for cargo handling are generally defined, there are no set procedures for undertaking loading, unloading, warehousing or auxiliary related works. Additionally, there is no SOP for the use of labour or equipment for any of these tasks.

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BEST PRACTICES





7. Best Practices

7.1. Current Trends in Mechanization

As per the current trends in cargo handling at major ports and warehouses across the globe, there is a gradual shift taking place from deployment of manual labour to deployment of mechanized equipment for handling cargo operations. Using the latter offers a plethora of advantages:

	Faster Turn Around Time	Executing cargo operations such as loading, unloading and warehousing is faster using mechanized equipment as compared to manual labour
ъ с	Reduced Cargo Damage	Replacing manual labour with mechanization will reduce human error during cargo handling hence reducing the chances of damaging the cargo
es o tio		
ntage anisa	Increased Port Performance	Using mechanized equipment instead of manual labour to perform cargo operations increases the efficiency of executing such operations, hence improving port performance
/ar cha		
Adv Med	Increase Cargo Handling Capacity	Mechanization of cargo handling operations will reduce the time spent by the consignment at ports, hence increasing the availability of port resources to handle more consignments
	Ease of Doing Business	The advantages brought by mechanization such as reduced turn around time and improved port performance will improve the ease of doing business for traders and freight forwarders

As per a study by Ministry of Shipping (2007), mechanization of berths has led to significant reduction in Turn Around Time (TAT) across major ports in India. The study finds that major dry bulk ports such as Chennai, Haldia, New Mangalore, Paradip, Tuticorin and Visakhapatnam observed a difference in TAT between mechanized and non-mechanized berths³¹.



³¹ Performance Audit of Functioning of Major Port Trust in India of Union Government, Ministry of Shipping



From the graph above, it can be observed that mechanized handling of cargo reduced the turnaround time of vessels by an average of **44 percent** at seaports.

Major seaports across India have consistently installed and upgraded mechanized equipment across their terminals to increase cargo handling capacity and make cargo handling operations more efficient. This has also attracted traders and freight forwarders to further rely on mechanized ports to ship cargo.

An example of improved port efficiency through mechanization is the **Mundra International Container Terminal**³².



³² India Container Market Report 2018



7.2. Equipment in Mechanization

Various mechanized equipment are available for mechanization of cargo handling operations like loading, unloading, and warehousing of cargo. Replacing manual labour with mechanized equipment will significantly reduce the time taken to execute cargo handling operations.

"In unloading operations, the manual handling time required is at least 3.5 times that of the mechanical handling time when using a forklift"³³

Bases on an examination of the profile and volume of commodities traded at the ICPs, our secondary research on best practices being followed vis-à-vis cargo handling operations at ports suggests that the following equipment can be deployed at the ICPs to improve operational efficiency:



Mobile Hydraulic Cranes

Mobile Hydraulic cranes are widely used for **loading, unloading, and transportation materials**. The claw of the crane can be attached to a harness and can be used to pick up various commodities like sheet metal, glass, palletized sacks of cement, etc. Cranes can be used to lift material weighing anywhere between 1 ton to 40 tonnes



Payloaders

Payloaders are used for digging, hauling, picking up and transporting materials. Payloaders have a scoop or a bucket on an articulated arm at the front which can be used to pick up loose cargo scattered on the ground and transport it from one location to another. Various other attachments like forks and shovels can also be attached to manipulate other cargo operations.



Excavators

An excavator is similar to a payloader except for the fact that the articulated arm extends the attached bucket or scoop inwards unlike the payloader where the attachment is extend outwards. Excavators can also be used to pick up loose cargo like coal, gypsum, crushed stone etc. They can be used for loading and unloading operations at ports.

³³ PLANNING, DEVELOPMENT AND OPERATION OF DRY PORTS OF INTERNATIONAL IMPORTANCE, UNESCAP





Forklifts

A forklift is a powered industrial truck used to lift and move materials over short distances. Forklifts have become an indispensable piece of equipment in manufacturing and warehousing. The forks in a forklift can be adjusted according to height and can be used to load, unload and stack cargo packed in the form of sacks or pellets. Small forklifts can pick weights up to 5 tonnes. Larger forklifts can pick weights up to 50 tonnes.



Conveyor Belts

Conveyor belts are a standard piece of equipment for warehouses. Primarily, it's used in transporting and sorting goods. Warehouse conveyor systems can be used to transport material directly from the unloading area to the warehouse as well as from the warehouse to the loading area. They can transport any kind of packaged cargo. The heights of conveyor belts can also be adjusted as required to make operations easier.



Reach Stacker

A reach stacker is a vehicle used for handling intermodal cargo containers. Reach stackers are able to transport a container short distances very quickly and pile them in various rows depending on its access. Reach stackers are useful for heavy duty purposes as they can lift and transport weights up to 150 tonnes.



Cargo Scanners

Cargo Scanning plays a critical part in the non-intrusive inspection of import, export and security controls. When combined with effective profiling methods, non-intrusive scanners can greatly improve the Customs and Security functions by screening cargo flows at land borders.



7.3. Maintenance of Mechanized Equipment

Maintenance of equipment is necessary to ensure optimal equipment health and operation. A scheduled maintenance procedure must be followed at the ICPs. Based on best equipment practices followed worldwide, the study identifies the types of maintenance that should be followed at ICPs post mechanization.



before failure occurs.





8. Target State

The target state vis-à-vis mechanization at ICPs has been prepared based on the current state assessment and gap analysis conducted in the preceding sections. While drafting the target state and proposing different initiatives, the study has taken reference from the status of technology, deployment of cargo-handling equipment and security and other auxiliary equipment at other ports. The overall vision and long-term objectives of LPAI have been considering while proposing the recommendations.

The study has assessed the risks of implementing each of the suggested initiatives based on the following Risk Determination Matrix wherein, **Risk= Severity X Likelihood**:

Risk Level Determination- 5 x 5 Matrix							
			SEVERITY				
		Critical	Very Serious	Serious	Marginal	Negligible	
		5	4	3	2	1	
Very High	5						
High	4						
Medium	3						
Low	2						
Very Low	1						
	Very High High Medium Low Very Low	Very High5High4Medium3Low2Very Low1	Risk LevImage: Stress Stre	Risk Level DeterminationCriticalVery SeriousCriticalVery Serious54Very High54High44Medium34Low24Very Low14	Risk Level Determination- 5 x 5 MarErisk Level Determination- 5 x 5 MarSEVERITYCriticalVery SeriousSerious543Very High5-43High4-4-4-4Medium3-4-4-4Low2-4-4-4Very Low1-4-4-4	Risk Level Determination- 5 x 5 MatrixEVERITYCriticalVery SeriousSeriousMarginal5432Very High5High4Medium3Low2Very Low1	

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control		
			measures is required. Do not proceed unless		
			significant controls are implemented to reduce the		
	16 to 25	High	risk.		
		Medium-	Initiative to be proceeded with extreme caution.		
	12 to 15	High	Implement additional controls.		
		Medium-	Proceed with care. Additional control advised.		
	8 to 10	Low	Period review necessary.		
			No imminent dangers. Frequent review should be		
	1 to 6	Low	undertaken.		

Based on the (a) risk assessment of the initiative, (b) the cost of the initiative and (c) the implementation duration of the initiative, the priority of each initiative was assessed using the prioritization framework.



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8.1. Target State: ICP Attari

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8.1.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Attari scores 2.45 out of 5 in the five key services offered at the ICP.

Figure 8: Snapshot of Current State Assessment of ICP Attari





Summary of Key Findings

- No mechanized equipment available for handling cargo-operations. There is complete dependency on manual labour to do the same.
- ICP operations are frequently disrupted due to labour strikes.
- There is no warehousing equipment available at the ICP. As a result, stacking of cargo is being done manually and is time-consuming.
- Owing to the political sensitivity of the port, Customs undertakes a 100% examination of all incoming cargo from Pakistan. There is no security equipment available for examination. All cargo related checking is currently being done manually by Customs.
- For auxiliary related works, the ICP has only two lawnmowers available for maintenance of the green area.
- The labour force working at the ICP premises is largely untrained-this includes labour force working for loading, unloading, warehousing and auxiliary works.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by labour or equipment at the ICP. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment.



8.1.2 List of Initiatives

Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Attari.

• Initiative – 01	
Initiative Name	Deployment of Forklift
• Operations	 Loading Unloading Warehousing
• Initiative Description	ICP Attari witnesses high imports of dry fruits and dry dates from Afghanistan. However, there is no equipment to handle the same. Labour has to manually unload the import consignments from trucks and either load them onto another truck or lift them and store it at the warehouse. This often leads to high dwell time and adds to the workload.
	An equipment like a forklift can improve the operational efficiency of cargo-handling operations by reducing the manual workload and reducing dwell time. Carton clamps can be attached to the forklift and can be used to quickly handle unit loads without the requirement of expensive pallets. Carton clamps are an efficient way of handling non-pallet loads and will allow for optimization of warehouse storage space and reduction of packaging material costs.
	As and when trade with Pakistan resumes, the forklift can also be used to lift cement bags which were one of the most important import commodities that India used to import from Pakistan.
• Rationale	 Easily able to move heavy bags of cement and cartons from one place to another As compared to manual loading, time taken to undertake cargo-operations using forklift will be reduced to half Increased cargo handling capacity, as compared to manual labour Reduction in manpower required Easy to train manpower to operate a forklift



• Initiative – 01	
Initiative Name	Deployment of Forklift
	Easy maintenance scheduleImproved safety
• Priority	Low Medium High
 Implementation time 	>5 years 1-3 years <1 year
• Risk	Low ledium High



Risk Register for Initiative 1:

Initiative 1: Deployment of Forklift						
Num ber	Type of Risk	Description	Seve rity	Likeli hood	Risk Assessme nt	
1	People	Majority of the labour force is untrained and unskilled	2	4	8	
2	People	Probability of reluctance to mechanization	4	4	16	
3	People	Perceived fear of occupational hazard	4	4	16	
4	People	Fear of Job security	4	4	16	
5	Process	No established procedure or SOP for working of equipment	5	5	25	
	Process	Process disrupted due to frequent labour strikes	4	4	16	
6	Process	Human error-probability of untrained drivers, etc	2	3	6	
7	Technology	Equipment will be deployed at the ICP after a very long time	3	2	6	
8	Technology	Technology failure	2	2	4	
9	Trade- related factors	Underutilisation of equipment due to geo-political disruptions in South Asia (Afghanistan and Pakistan)	5	4	20	
		Initiative 1 Risk Assessment			13	

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 02	
Initiative Name	Deployment of Pelletizing Machine
Operations	 Warehousing
• Initiative Description	There is no equipment available for pelletizing import items such as dry fruits and dry dates that are being imported from Afghanistan into ICP Attari. Pelletizing is the most common agglomeration technique used at ports and warehouses. This can be used at ICP Attari in order to reduce handling costs. A pallet stretch wrapping machine will be an ideal machine for wrapping pallets that are ready to be
	transported to final destination/consumer in containers/boxes. The stretch film packing will also be useful for protection against perforation, moisture, protection against corrosion from sea air, dust etc.
• Rationale	 Improved handling and transportation Ensures stable and moisture-proof wrapping of pallets at minimum cost Improved safety of cartons from pilferage and damage Environmentally friendly machine Allows for segregation of consignments as per importer requirement
• Priority	Low Medium High
 Implementation time 	>5 years 1-3 years <1 year
• Risk	Low <u>Aedium Hig</u> h



Risk Register for Initiative 2:

Initiative 2: Deployment of Pelletizing Machine							
Num ber	Type of Risk	Description	Seve rity	Likeli hood	Risk Assessme nt		
1	People	Majority of the labour force is untrained and unskilled	2	3	6		
2	People	Probability of reluctance to mechanization	3	4	12		
3	People	Difficulty in adjustment to new type of machine	3	4	12		
3	Process	No established procedure or SOP for working of equipment	5	5	25		
4	Process	Process disrupted due to frequent labour strikes	4	4	16		
5	Process	Human error	2	З	6		
6	Technology	Technology failure	2	2	4		
7	Trade- related factors	Underutilisation of equipment due to geo-political disruptions in South Asia (Afghanistan and Pakistan)	5	4	20		
		Initiative 2 Risk Assessment			13		

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented t		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 03	
Initiative Name	 Deployment of Road Cleaning Truck (Street Sweeper)
Operations	 Auxiliary Work
 Initiative Description 	The ICP does not have any equipment for auxiliary related works. Deployment of mechanical equipment for housekeeping operations can ensure better cleanliness and improve efficiency.
	Road cleaning truck is one such equipment that can collect small particles of debris and cement dust from the port premises.
• Rationale	 Increased hygiene Helps maintain ICP premises Convenient operation High efficiency Enhanced safety More effective as compare to manual cleaning
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	L bw Medium High



Risk Register for Initiative 3:

Initiative 3: Deployment of Road Cleaning Truck (Street Sweeper)							
Num ber	Type of Risk	Description	Seve rity	Likeli hood	Risk Assessme nt		
1	People	Perceived reduction in manpower involved	3	3	9		
2	Process	No established procedure or SOP for undertaking auxiliary work	5	5	25		
3	Process	Human error	1	2	2		
4	Technology	Mechanical failure	2	2	4		
5	Trade- related Factors	Underutilisation of equipment due to geo-political disruptions in South Asia (Afghanistan and Pakistan)	1	3	3		
		Initiative 3 Risk Assessment			9		

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



 Initiative – 04 		
Initiative Name	 Establishment of Standard Operating Procedure 	
• Operations	 Loading Unloading Warehousing Auxiliary Work 	
• Initiative Description	Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing Standard Operating	
• Rationale	 Procedures for different operations at the ICP. Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability 	
• Priority	Low Medium High	
 Implementation time 	>3 years 1-2 years <1 year	
• Risk	Low Medium High	



Risk Register for Initiative 4:

	Initiative 4: Establishment of Standard Operating Procedure							
Num ber	Type of Risk	Description	Seve rity	Likeli hood	Risk Assessme nt			
1	People	Majority of the labour force is untrained and unskilled	3	4	12			
2	People	Difficulty in adjustment towards standardization of processes	3	4	12			
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2			
4	Trade- related Factors	Geo-political disruptions in South Asia (Afghanistan and Pakistan) leading to limited trading activity at ICP	2	1	2			
Initiative 4 Risk Assessment								

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 05		
Initiative Name	 Developing an Effective Training Program for Labour Working at the ICP 	
• Operations	 Loading Unloading Warehousing Auxiliary Work 	
• Initiative Description	The labour working at the ICP is largely untrained. There is lack of training about efficient operating procedures for handling cargo at the ICP. There is also lack of training for operating the existing equipment. There is lack of information about the growing technologies and operating requirements thereof. There is therefore a need to develop detailed training plan and calendar and identify process and equipment	
• Rationale	 Enhanced quality and performance Improved productivity Safe working environment Helps in staff retention 	
• Priority	Low Medium High	
 Implementation time 	>3 years 1-2 years <1 year	
• Risk	Lq <mark>w Med</mark> um High	



Risk Register for Initiative 5:

Initiative 5: Developing an Effective Training Program for Labour Working at the ICP							
Nu mb er	Type of Risk	Sev erit Likeli Description y hood					
1	People	Majority of the labour force is untrained and unskilled	3	2	6		
2	People	Low adoption to skills acquired during training	4	3	12		
3	Process	Low training turnout	4	4	16		
4	Process	Difficulty in establishing a SOP for training labour working at ICP	3	2	6		
5	Process	Poor execution of training program	4	2	8		
6	Trade- related Factors	Limited utilization of skills imparted during training program due to geo-political disruptions in South Asia (Afghanistan and Pakistan)	4	3	12		
Initiative 5 Risk Assessment							

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



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8.2. Target State: ICP Agartala

8.2.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Agartala scores 3.31 out of 5 in the five key services offered at the ICP.



Figure 9: Snapshot of Current State Assessment of ICP Agartala



Summary of Key Findings

- There is limited equipment available for handling the import cargo. While there is one backhoe loader and a hydra-crane available at ICP Agartala for handling loose cargo such as stone and cement, there is no equipment available for handling imports coming in cartons such as food items.
- There is no provision for handling containerized cargo which is especially important in the light of recent developments such as allowing use of Chattogram and Mongla Ports for transit as well as the inclusion on port of Ashuganj in the India-Bangladesh Protocol on Inland Waterways Transit & Trade Agreement.
- As of now, there is no warehousing equipment as well and for all stacking needs there is dependence on manual labour.
- The transhipment taking place at the ICP is done manually which results in increased dwell time.
- In terms of auxiliary equipment, there is only one floor scrubber. Apart from this, there is again dependence on manual labour.
- The labour force working at the ICP premises is largely untrained-this includes labour force working for loading, unloading, warehousing and auxiliary works.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by labour or equipment at the ICP. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment.



8.2.2 List of Initiatives

Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Agartala.

• Initiative – 01			
Initiative Name	Deployment of Forklift		
• Operations	 Loading Unloading Warehousing 		
• Initiative Description	ICP Agartala imports commodities such as food items and cotton waste from Bangladesh. However, there is no equipment to handle the same. Labour has to manually unload the import consignments from trucks and either load them onto another truck or lift them and store it at the warehouse. This often leads to high dwell time and adds to the workload.		
	An equipment like a forklift can improve the efficiency of cargo-handling operations by reducing the manual workload and reducing dwell time. They will be useful in serving warehousing and other storage facilities.		
• Rationale	 Easily able to move heavy bags of cement (another important import item at ICP Agartala) and cartons from one place to another As compared to manual loading, time taken to undertake cargo-operations using forklift will be reduced to half Increased cargo handling capacity, as compared to manual labour Reduction in manpower required Easy to train manpower to operate a forklift Easy maintenance schedule Improved safety 		
• Priority	Low Medium High		
• Implementation time	>5 years 1-3 years <1 year		
• Risk	Lbw Medium High		



Risk Register for Initiative 1:

Initiative 1: Deployment of Forklift							
Num ber	Type of Risk	Secription		Likelih ood	Risk Assessmen t		
1	People	Majority of the labour force is untrained and unskilled	3	4	12		
2	People	Probability of reluctance to mechanization	3	3	9		
3	People	Perceived fear of occupational hazard	3	3	9		
4	People	Fear of Job security	3	4	12		
5	Process	No established procedure or SOP for working of equipment	5	5	25		
6	Process	Human error-probability of untrained drivers, etc	2	3	6		
7	Technology	Equipment will be deployed at the ICP for the first time	3	4	12		
8	Technology	Technology failure	2	2	4		
9	Trade-related Factors	Underutilisation of equipment due to tensions between India and Bangladesh	2	1	2		
10	Trade-related Factors	Trade diversion to newer routes being developed in Tripura (E.g., ICP Nischintapur, ICP Sabroom, etc)	3	3	9		
14	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	3	2	6		
	Initiative 1 Risk Assessment 10						

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



Deployment of Reach Stacker
 Loading Unloading Warehousing
In 2019, the Government of India and Bangladesh agreed upon the use of Chattogram and Mongla Ports for movement of India's transit cargo through Bangladesh. Trial runs have already been conducted for the containerized cargo movement from Kolkata to Agartala through Chattogram and Mongla ports of Bangladesh.
Owing to the restrictive transport arrangement between India and Bangladesh, there is a mandatory requirement of transshipment at the ICP premise. The transshipment takes place manually which requires intensive manual labour which first unloads the cargo from Bangladeshi truck and loads the same onto the Indian trucks. Although manual transshipment is still not perceived as a major impediment at the moment, but in order to effectively utilize the Chattogram and Mongla Ports for movement of India's transit cargo through Bangladesh, it is important for deploying equipment for enabling seamless transshipment.
Deployment of reach-stacker at ICP Agartala is one of the most flexible cargo-handling solutions for containerized cargo. A reach stacker can handle loaded containers quickly and efficiently in narrow spaces.
 Ability to handle heavy-weight consignments with ease. A fully equipped reach stacker can carry up to a 100-ton load. Useful for warehouse stacking. In a warehouse the reach stackers can reach much higher, allowing for greater storage efficiency. While most container stackers reach only up to the first row in a warehouse, reach stackers can carry a 50-ton load up to the third row. As compared to a container stacker, a reach-stacker is a cheaper option.

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• Ini	tiative – 02	
• Ini	tiative Name	Deployment of Reach Stacker
		 Offers zero emissions
• Pri	iority	Low Medium High
• Im tin	plementation ne	>3 years <u>1-2 years</u> <1 year
• Ris	šk	Low Medium High



Risk Register for Initiative 2:

Initiative 2: Deployment of Reach Stacker								
Num ber	Type of Risk	Sev Description it		Likelih ood	Risk Assessmen t			
1	People	Majority of the labour force is untrained and unskilled	3	4	12			
2	People	Probability of reluctance to mechanization		3	9			
3	People	Perceived fear of occupational hazard	3	3	9			
4	People	Fear of Job security	3	4	12			
5	Process	No established procedure or SOP for working of equipment	5	5	25			
6	Process	Human error	3	4	12			
7	Technology	Equipment will be deployed at the ICP for the first time		5	20			
8	Technology	Technology failure		3	9			
9	Trade-related Factors	Underutilisation of equipment due to tensions between India and Bangladesh	2	1	2			
10	Trade-related Factors	Trade diversion to newer routes being developed in Tripura (E.g., ICP Nischintapur, ICP Sabroom, etc)	3	3	9			
11	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	5	4	20			
Initiative 2 Risk Assessment								

Action Table							
Colour	Score	Risks	Action				
			Initiative risk assessment detailing significant control measures is				
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



 Initiative – 0 	03		
Initiative Na	Deployment of Pelletizing Machine		
Operations	► Warehousing		
• Initiative Description	ICP Agartala imports food items that come in disaggregated manner and often require agglomeration. A pallet stretch wrapping machine can be deployed at the ICP which will be immensely beneficial in wrapping pallets that are ready to be transported to final destination/consumer in container/boxes. The stretch film packing will also be useful for protection against perforation, moisture, protection against corrosion from sea air, dust etc.		
• Rationale	 Improved handling and transportation Ensures stable and moisture-proof wrapping of pallets at minimum cost Improved safety of cartons from pilferage and damage Environmentally friendly machine Allows for segregation of consignments as per importer requirement 		
• Priority	Low Medium High		
 Implementa time 	>5 years <u>1-3 years</u> <1 year		
• Risk	Low Medium High		


	Initiative 3: Deployment of Pelletizing Machine					
Numb	Severi Likeliho				Risk	
er	Type of Risk	Description	ty	od	Assessment	
1	People	Majority of the labour force is untrained and unskilled	3	4	12	
2	People	Probability of reluctance to mechanization	3	3	9	
3	People	Difficulty in adjustment to new type of machine	3	3	9	
4	Process	No established procedure or SOP for working of equipment	5	5	25	
5	Process	Human error	2	3	6	
6	Technology	Technology failure	2	2	4	
7	Trade-related Factors	Underutilisation of equipment due to tensions between India and Bangladesh	2	1	2	
8	Trade-related Factors	Trade diversion to newer routes being developed in Tripura (E.g., ICP Nischintapur, ICP Sabroom, etc)	4	3	12	
9	Trade-related Factors	Failure of upcoming regional connectivity agreements-BBIN MVA, BIMSTEC MVA, etc	2	3	6	
Initiative 3 Risk Assessment						

Risk Register for Initiative 3:

	Action Table					
Colour	Score	Risks	Action			
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



•	Initiative – 04	
•	Initiative Name	Deployment of Industrial Vacuum Cleaner
•	Operations	 Auxiliary Work
•	Initiative Description	The ICP only has one floor scrubber for cleaning the ICP premises. Deployment of mechanical equipment such as a vacuum cleaner for housekeeping operations can ensure better cleanliness and improve efficiency.
		Undertaking cleaning operations using a vacuum cleaner can help save manual energy, effort and time. A vacuum cleaner can also make it possible to transport material without mechanical cleaning or the use of cleaning liquids.
•	Rationale	 Increased hygiene and easy maintenance Better efficiency Improved air quality inside ICP premise More effective as compare to manual cleaning. Vacuum cleaners come with multiple features that allow the user to reach corners and places where it is difficult to reach manually.
•	Priority	Low Medium High
•	Implementation time	>3 years 1-2 years <1 year
•	Risk	Low Medium High

Risk Register for Initiative 4:

	Initiative 4: Deployment of Industrial Vacuum Cleaner					
Num ber	Type of Risk	f Risk Description Sever Likelih ity ood		Risk Assessmen t		
1	People	erceived reduction in manpower involved 1 1			1	
2	Process	No established procedure or SOP for undertaking auxiliary work	5	5	25	
3	Process	Human error	1	1	1	
4	Technology	Mechanical failure	2	2	4	
5	Trade-related Factors	Underutilization of equipment due to tensions between India and Bangladesh	2	1	2	
		Initiative 4 Risk Assessment			7	

	Action Table						
Colour	Score Risks Action						
			Initiative risk assessment detailing significant control measures is				
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



• Initiative –05	
Initiative Name	Deployment of X-Ray Cargo Baggage Scanner
Operations	Security
• Initiative Description	The ICP does not have any cargo baggage scanners for security checks. Any examination is therefore completely manual and adds to the dwell time of clearance. Deployment of an x-ray baggage scanner can improve efficiency and efficacy of security operations and enable checking of baggage and cargo without unpacking examination.
• Rationale	 Has a high-image quality for improved investigation performance Improved safety Reduced dwell time due to faster cargo clearance
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 5:

	Initiative 5: Deployment of X-Ray Cargo Baggage Scanner						
Num ber	Type of Risk	Description	Risk Assessmen t				
1	People	Majority of the labour force is untrained and unskilled	2	1	2		
2	People	Probability of reluctance to mechanization	1	1	1		
3	Process	No established procedure or SOP for working of equipment	5	5	25		
4	Technology	Equipment will be deployed at the ICP for the first time	2	5	10		
5	Technology	Technology failure	2	1	2		
6	Trade-related Factors	Underutilization of equipment due to tensions between India and Bangladesh	2	1	2		
		Initiative 5 Risk Assessment			7		

	Action Table						
Colour	Score	Risks	Action				
			Initiative risk assessment detailing significant control measures is				
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



 Initiative –06 	
Initiative Name	 Establishment of Standard Operating Procedure
• Operations	 Loading Unloading Warehousing Auxiliary Work
• Initiative Description	Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing standard operating procedures for different operations at the ICP.
Rationale	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability
• Priority	Low Medium High
Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 6:

	Initiative 6: Establishment of Standard Operating Procedure						
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t		
1	People	Majority of the labour force is untrained and unskilled	3	4	12		
2	People	Difficulty in adjustment towards standardization of processes	3	3	9		
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2		
4	Trade-related Factors	Tensions between India and Bangladesh leading to limited trading activity at ICP	2	1	2		
5	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	3	2	6		
Initiative 6 Risk Assessment							

	Action Table					
Colour	r Score Risks Action					
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative –07		
Initiative Name	Designing an Effective Training Program	
• Operations	 Loading Unloading Warehousing Auxiliary Work 	
• Initiative Description	 that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst 	
	establishing Standard Operating Procedures for different operations at the ICP.	
• Rationale	 Increased productivity Improved efficiency Better performance Simplification of performance management Uniformity of work processes 	
• Priority	Low Medium High	
• Implementation time	>3 years 1-2 years <1 year	
• Risk	Low Medium High	



Risk Register for Initiative 7:

	Initiative 7: Developing an Effective Training Program for Labour Working at the ICP					
Nu mbe r	Type of Risk	Description	Severity	Likelihood	Risk Assessment	
1	People	Majority of the labour force is untrained and unskilled	3	2	6	
2	People	Low adoption to skills acquired during training	3	2	6	
3	Process	Low training turnout	3	2	6	
4	Process	Difficulty in establishing a SOP for training labour working at ICP	3	2	6	
5	Process	Poor execution of training program	4	2	8	
6	Trade- related Factors	Limited utilization of skills imparted during training program due to tensions between India and Bangladesh	2	1	2	
Initiative 7 Risk Assessment						

	Action Table					
Colour	Score	Risks	Action			
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



8.3. Target State: ICP Petrapole

8.3.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Petrapole scores 2.45 out of 5 in the five key services offered at the ICP.

Figure 10: Snapshot of Current State Assessment of ICP Petrapole





Summary of Key Findings

- The ICP has 3 forklifts, 2 hydra cranes and 1 mobile crane available for handling cargooperations. Despite this, labour is still used predominantly for the process of loading and unloading of cargo. This often leads to congestion at the ICP and results in high dwell time.
- There is no well-defined or scheduled maintenance for the available equipment.
- Owing to the restrictive transport arrangement between India and Bangladesh, there is a necessary transhipment that takes place from the Bangladeshi truck onto the Indian truck within the ICP premises. This not only involves intensive manual labour work but also increases the dwell time.
- There is no warehousing equipment available at the ICP. As a result, stacking of cargo is being done manually and is time-consuming.
- Although there is limited security equipment available for checking (such as handheld and doorframe metal detectors), there are no cargo baggage scanners. All cargo related checking is currently being done manually by Customs.
- There is no equipment available for undertaking auxiliary-related works at the ICP.
- The labour force working at the ICP premises is largely untrained-this includes labour force working for loading, unloading, warehousing and auxiliary works.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by labour or equipment at the ICP. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment.



8.3.2 List of Initiatives

Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Petrapole.

 Initiative – 01 	
Initiative Name	Deployment of Hydraulic Conveyor Belt
Operations	 Warehousing
	 Loading/Unloading
• Initiative Description	Owing to the prevailing transport arrangement between India and Bangladesh, the Bangladeshi trucks are not allowed to enter the Indian Territory and carry cargo directly to the importers' warehouses. This necessitates the mandatory requirement of transloading cargo from Bangladeshi trucks onto the Indian trucks which then carry the same to the importer's destination. In some cases when PGA clearances are awaited, the consignment has to get offloaded into the ICP premises and stored in warehouses.
	The entire process of unloading of cargo, storage in warehouse area and loading back onto the Indian trucks is carried out by laborer's working on a daily-wage basis. Manual transloading of cargo is not just difficult but results in substantial delays in movement and causing heavy congestion at the import warehouse.
	A Hydraulic Conveyor Belt can be used to transport the cargo from one place to another inside the ICP premises. The equipment consists of a hydraulic motor and a drive unit which is comprised of a fixed-speed AC induction motor and an axial piston pump. The transportation of cargo material can be carried out by different methods depending upon the type of material to be transported and the position of the discharge point with reference to loading point.
	Deployment of hydraulic conveyor belt can reap several benefits for important import commodities coming in bales and sack bags . It will improve the efficiency of cargo-handling operations. It can be customized to cater to the cargo-requirements at the ICP.



• Initiative – 01	
Initiative Name	Deployment of Hydraulic Conveyor Belt
• Rationale	 Ability to carry a greater diversity of bulk solid products (from fine grain to bulk material) at higher rates and over longer distances. Built with "inclination" which makes it easy to transport light and heavy items from one elevation to another Time and cost-saving Compact and easy to transport Can move in both directions-this is very useful when cargo need to be moved between warehouse and transshipment area Reduction in manpower required Improved safety
• Priority	Low Medium High
Implementation	
time	>5 years 1-3 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 1:

	Initiative 1: Deployment of Hydraulic Conveyor Belt						
Num ber	Type of Risk	Sever Likelih Description ity ood		Risk Assessmen t			
1	People	Majority of the labour force is untrained and unskilled	4	4	16		
2	People	Probability of reluctance to mechanization	3	3	9		
3	People	Perceived fear of occupational hazard	4	3	12		
4	People	Fear of Job security	3	4	12		
5	Process	No established procedure or SOP for working of equipment	5	5	25		
6	Process	Human error	3	4	12		
7	Technology	Equipment will be deployed at the ICP for the first time	4	5	20		
8	Technology	Technology failure	4	3	12		
9	Trade-related Factors	Underutilisation of equipment due to tensions between India and Bangladesh	2	1	2		
10	Trade-related Factors	Local community dynamics-state politics, unauthorized parking, etc	3	2	6		
11	Trade-related Factors	Prevalence of NTBs	3	2	6		
14	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	3	2	6		
	Initiative 1 Risk Assessment 12						

	Action Table					
Colour	Score	Risks	Action			
	16 to 25	High	Initiative risk assessment detailing significant control measures is required. Do not proceed unless significant controls are implemented to reduce the risk.			
	12 to 15	Medium-High	Initiative to be proceeded with extreme caution. Implement additional controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative – 02		
Initiative Name	 Deployment of Road Cleaning Truck (Street Sweeper) 	
Operations	 Auxiliary Work 	
 Initiative Description The ICP does not have any equipment for related works. Deployment of mechanical equipment housekeeping operations can ensure better cle and improve efficiency. Road cleaning truck is one such equipment to collect small particles of debris from the port of 		
• Rationale	 Increased hygiene Helps maintain ICP premises Convenient operation High efficiency Enhanced safety More effective as compared to manual cleaning 	
• Priority	Low Medium High	
Implementation time	>3 years 1-2 years <1 year	
• Risk	low Medium High	



Risk Register for Initiative 2:

	Initiative 2: Deployment of Road Cleaning Truck (Street Sweeper)					
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t	
1	People	Perceived reduction in manpower involved	3	3	9	
2	Process	No established procedure or SOP for undertaking auxiliary work	5	5	25	
3	Process	Human error	1	2	2	
4	Technology	Mechanical failure	2	2	4	
5	Trade-related Factors	Underutilisation of equipment due to tensions between India and Bangladesh	2	1	2	
Initiative 2 Risk Assessment						

	Action Table					
Colour	Score	Risks	Action			
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative – 03	
Initiative Name	 Deployment of Truck Mounted Water Sprinkler System
Operations	Auxiliary Work
• Initiative Description	ICP Petrapole handles on an average of 500 trucks per day. Movement of trucks often leads to dust pollution and pollution from fuel emission within the ICP premises.
	Deployment of a truck mounted sprinkler can help in reducing pollution levels within the ICP by spraying water droplets to settle the dust on the ground.
• Rationale	 Reduced pollution Easy to use Capacity in between 6000-9000 liters of water hence can be used for an entire day without the need to refuel Improved safety
• Priority	Low Medium High
Implementation time	>5 years 1-3 years <1 year
Risk	Low Medium High



Risk Register for Initiative 3:

	Initiative 3: Deployment of Truck Mounted Water Sprinkler System					
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t	
1	People	Perceived reduction in manpower involved	2	2	4	
2	Process	No established procedure or SOP for undertaking auxiliary work	5	5	25	
3	Process	Human error	1	2	2	
4	Technology	Mechanical failure	2	2	4	
5	Trade-related Factors	Underutilization of equipment due to tensions between India and Bangladesh	2	1	2	
Initiative 3 Risk Assessment						

	Action Table					
Colour	Score	Risks	Action			
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative – 04	
Initiative Name	Deployment of X-Ray Cargo Baggage Scanner
Operations	Security
• Initiative Description	In terms of security equipment, ICP Petrapole has 8 Handheld Metal Detectors and 6 Door Frame Metal Detectors for scanning purpose. However, it does not have any cargo baggage scanners for security checks. Any examination is therefore completely manual and adds to the dwell time of clearance. Deployment of an x-ray baggage scanner can improve efficiency and efficacy of security operations and enable checking of baggage and cargo without unpacking
• Rationale	 examination. Has a high-image quality for improved investigation performance Improved safety High flexibility Reduced dwell time due to faster cargo clearance
• Priority	Low Medium High
Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 4:

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	Initiative 4: Deployment of X-Ray Cargo Baggage Scanner					
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t	
1	People	Majority of the labour force is untrained and unskilled	2	1	2	
2	People	Probability of reluctance to mechanization	1	1	1	
3	Process	No established procedure or SOP for working of equipment	5	5	25	
4	Technology	Equipment will be deployed at the ICP for the first time	2	5	10	
5	Technology	Technology failure	2	1	2	
	Trade-related	Underutilization of equipment due to tensions				
6	Factors	between India and Bangladesh	2	1	2	
		Initiative 4 Risk Assessment			7	

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative – 05	
Initiative Name	 Establishment of Standard Operating Procedure
• Operations	 Loading Unloading Warehousing Auxiliary Work
• Initiative Description	Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing Standard Operating Procedures for different operations at the ICP.
• Rationale	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 5:

	Initiative 5: Establishment of Standard Operating Procedure				
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t
1	People	Majority of the labour force is untrained and unskilled	3	4	12
2	People	Difficulty in adjustment towards standardization of processes	3	3	9
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2
4	Trade-related Factors	Tensions between India and Bangladesh leading to limited trading activity at ICP	2	1	2
5	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	3	2	6
Initiative 5 Risk Assessment					

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative – 06			
Initiative Name	 Developing an Effective Training Program for Labour Working at the ICP 		
• Operations	 Loading Unloading Warehousing Auxiliary Work 		
• Initiative Description	The labour working at the ICP is largely untrained. There is lack of training about efficient operating procedures for handling cargo at the ICP. There is also lack of training for operating the existing equipment. There is lack of information about the growing technologies and operating requirements thereof. There is therefore a need to develop detailed training plan and calendar and identify process and equipment		
• Rationale	 Enhanced quality and performance Improved productivity Safe working environment Helps in staff retention 		
• Priority	Low Medium High		
 Implementation time 	>3 years 1-2 years <1 year		
• Risk	Low Medium High		



Risk Register for Initiative 6:

	Initiative 6: Developing an Effective Training Program for Labour Working at the ICP				
Nu					
mbe	Type of				Risk
r	Risk	Description	Severity	Likelihood	Assessment
		Majority of the labour force is untrained and			
1	People	unskilled	3	2	6
2	People	Low adoption to skills acquired during training	3	2	6
3	Process	Low training turnout	3	2	6
		Difficulty in establishing a SOP for training			
4	Process	labour working at ICP	3	2	6
5	Process	Poor execution of training program	4	2	8
	Trade-	Limited utilization of skills imparted			
	related	during training program due to tensions			
6	Factors	between India and Bangladesh	2	1	2
Initiative 6 Risk Assessment					6

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



8.4. Target State: ICP Raxaul

8.4.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Raxaul scores 2.41 out of 5 in the two key services offered at the ICP.



Figure 11: Snapshot of Current State Assessment of ICP Raxaul



Summary of Key Findings

- There is one tractor, one tractor mounted bush cutter, two Honda bush cutters, one cultivator and one disc harrow available at ICP Raxaul for auxiliary works. The labour force working at the ICP premises is largely untrained and there are no laid-out procedures for conducting auxiliary work by either labour or equipment.
- In terms of security services, the port has one X-ray baggage scanner which is installed and maintained by Customs. There are 109 CCTV cameras for monitoring. However, the CCTV does not have any AMC.



8.4.2 List of Initiatives

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Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Raxaul.

• Initiative –01			
Initiative Name	 Establishment of Standard Operating Procedure 		
Operations	 Auxiliary Work 		
• Initiative Description	There are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing Standard Operating Procedures for different auxiliary operations at the ICP.		
• Rationale	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability 		
• Priority	Low Medium High		
 Implementation time 	>3 years 1-2 years <1 year		
• Risk	Low Medium High		



Risk Register for Initiative 1:

Initiative 1: Establishment of Standard Operating Procedure					
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t
1	People	Majority of the labour force is untrained and unskilled	3	4	12
2	People	Difficulty in adjustment towards standardization of processes	3	3	9
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2
4	Economic and Political Factors	Growing influence of China in Nepal leading to limited trading activity at ICP	4	3	12
Initiative 1 Risk Assessment					9

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative –02	
• Initiative Name	Designing an Effective Training Program
Operations	 Auxiliary Work
• Initiative Description	The labour performing auxiliary works at the ICP are largely untrained. There is lack of information about the growing technologies and operating requirements thereof.
	A well-designed training program customized to different equipment at the ICP can help enhance skills of the labour working at the ICP.
	There is therefore a need to develop detailed training plan and calendar and identify process and equipment training requirements.
• Rationale	 Increased productivity Improved efficiency Better performance Simplification of performance management Uniformity of work processes
• Priority	Low Medium High
Implementat ion time	>3 years <u>1-2 vears</u> <1 year
• Risk	Low Medium High



Risk Register for Initiative 2:

	Initiative 2: Developing an Effective Training Program				
Nu mb er	Type of Risk	Description	Severity	Likelihood	Risk Assessment
1	People	The labour force is untrained and unskilled	3	2	6
2	People	Low adoption to skills acquired during training	3	2	6
3	Process	Low training turnout	3	2	6
4	Process	Difficulty in establishing a SOP for training labour	3	2	6
5	Process	Poor execution of training program	4	2	8
6	Economic and Political	Limited utilization of skills imparted during training program due to growing influence of China in Nepal leading to geo-political tensions in the region	2	2	6
o Factors the region 3 2 Initiative 2 Risk Assessment					6

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



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8.5. Target State: ICP Jogbani

8.5.1 Summary of Key Findings

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Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Jogbani scores 1.24 out of 5 in the two key services offered at the ICP.







Summary of Key Findings

- In terms of auxiliary equipment, there is no equipment available for grass cutting and maintenance. The ICP requires lawnmower, grass cutting machine and tractor trolley. There is complete dependence on manual labour.
- The labour force working at the ICP premises is largely untrained and there are no laid-out procedures for conducting auxiliary work by either labour or equipment.
- In terms of security there is no X-ray baggage scanner or handheld detector available for security checking. These equipment are required for smooth functioning of security at the port.



8.5.2 List of Initiatives

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Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Jogbani.

 Initiative – 01 	
Initiative Name	 Deployment of Lawnmower
Operations	 Auxiliary Work
• Initiative Description	The ICP does not have any equipment for maintaining the green area at the port premises. Deployment of mechanical equipment such as a lawnmower can ensure better cleanliness and maintenance. An electric lawnmower can cut grass efficiently and help save manual energy, effort and time.
Dationalo	Lead to get through thick grass with asso without
• Rationale	 Osed to cut through thick grass with ease without expending extra effort Can work for long duration
	Easy to train manpower to operate a lawnmower
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High

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Risk Register for Initiative 1:

Initiative 1: Deployment of Lawnmower					
Number	Type of Risk	Description	Severity	Likelihood	Risk Assessment
1	People	Majority of the labour force is untrained and unskilled	2	1	2
2	People	Probability of reluctance to mechanization	3	3	9
3	People	Perceived reduction in manpower involved	3	3	9
4	Process	No established procedure or SOP for working of equipment	2	2	4
5	Process	Human error	3	3	9
6	Economic and Political Factors	Underutilization of equipment due to growing influence of China in Nepal leading to geo-political tensions in the region	3	2	6
	Initiative 1 Risk Assessment 7				

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 02			
Initiative Name	Deployment of Tractor Trolley		
Operations	 Auxiliary Work 		
• Initiative Description	The ICP does not have any equipment for transporting horticulture related products at the ICP. There is complete dependence on manual labour for the same. Deployment of a tractor trolley can lead to fast and efficient system of transportation of horticulture-related products.		
Rationale	 Good tensile strength 		
• Priority	Low Medium High		
 Implementation time 	>3 years 1-2 years <1 year		
• Risk	Low Medium High		



Risk Register for Initiative 2:

	Initiative 2: Deployment of Tractor Trolley				
Nu mb er	Type of Risk	Description Severity Like		Likelihood	Risk Assessment
1	People	Majority of the labour force is untrained and unskilled	2	1	2
2	People	Probability of reluctance to mechanization	3	3	9
3	People	Perceived reduction in manpower involved	3	3	9
4	Process	No established procedure or SOP for working of equipment	2	2	4
5	Process	Human error	3	3	9
6	Economic and Political Factors	Underutilization of equipment due to growing influence of China in Nepal leading to geo- political tensions in the region	3	2	6
Initiative 2 Risk Assessment					7

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



 Initiative –03 	
Initiative Name	Deployment of Grass Cutting machine
Operations	 Auxiliary Work
• Initiative Description	The ICP does not have any equipment for maintenance of green area inside the port premise. There is dependence on manual labour for cutting the grass which involves extensive effort and time. The deployment of a grass cutting machine will be an efficient means of maintaining the green area and can be used to cut through thick grass with ease without expending extra effort.
Rationale	Can work for long durationEasy to train manpower to operate a lawnmower
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 3:

	Initiative 3: Deployment of Grass Cutting Machine				
Numbe r	Type of Risk	Description	Severity	Likelihood	Risk Assessmen t
1	People	Majority of the labour force is untrained and unskilled	2	1	2
2	People	Probability of reluctance to mechanization	3	3	9
3	People	Perceived reduction in manpower involved	3	3	9
4	Process	No established procedure or SOP for working of equipment	2	2	4
5	Process	Human error	3	3	9
6	Economic and Political Factors	Underutilization of equipment due to growing influence of China in Nepal leading to geo-political tensions in the region	3	2	6
	Initiative 3 Risk Assessment 7				

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative –04	
Initiative Name	Deployment of X-Ray Cargo Baggage Scanner
Operations	 Security
• Initiative Description	The ICP does not have any cargo baggage scanners for security checks. Any examination is therefore completely manual and adds to the dwell time of clearance. Deployment of an x-ray baggage scanner can improve efficiency and efficacy of security operations and enable checking of baggage and cargo without unpacking examination.
• Rationale	 Has a high-image quality for improved investigation performance Improved safety Reduced dwell time due to faster cargo clearance
• Priority	Low Medium High
• Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 4:

	Initiative 4: Deployment of X-Ray Cargo Baggage Scanner				
Nu mb er	Type of Risk	Description	Severity	Likelihood	Risk Assessment
1	People	Majority of the labour force is untrained and unskilled	2	1	2
2	People	Probability of reluctance to mechanization	1	1	1
3	Process	No established procedure or SOP for working of equipment Equipment will be deployed at the ICP for the first time	4	4	16
5	Technology	Technology failure	2	1	2
6	Economic and Political Factors	Underutilization of equipment due to growing influence of China in Nepal leading to geo-political tensions in the region	2	1	2
Initiative 4 Risk Assessment					6

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative –05	
Initiative Name	Deployment of Handheld Detector
Operations	Security
 Initiative Description 	The ICP does not have any security equipment for undertaking security checks. Handheld metal detectors can be deployed at ICP Jogbani for enabling quick and efficient scanning searches.
Rationale	Assists in detecting concealed weaponsIncreased safety
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 5:

	Initiative 5: Deployment of Handheld Detector					
Nu mb er	Type of Risk	Description	Severity	Likelihood	Risk Assessment	
1	People	Majority of the labour force is untrained and unskilled	2	1	2	
2	People	Probability of reluctance to mechanization	1	1	1	
3	Process	No established procedure or SOP for working of equipment Equipment will be deployed at the ICP for	4	4	16	
4	Technology	the first time	2	5	10	
5	Technology	Technology failure	2	1	2	
6	Economic and Political Factors	Underutilization of equipment due to growing influence of China in Nepal leading to geo-political tensions in the region	2	1	2	
	Initiative 5 Risk Assessment 6					

	Action Table			
Colour	Score	Risks	Action	
			Initiative risk assessment detailing significant control measures is	
			required. Do not proceed unless significant controls are implemented to	
	16 to 25	High	reduce the risk.	
			Initiative to be proceeded with extreme caution. Implement additional	
	12 to 15	Medium-High	controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



 Initiative –06 	
Initiative Name	 Establishment of Standard Operating Procedure
Operations	 Auxiliary Work
• Initiative Description	There are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders.
	There is therefore a need for establishing Standard Operating Procedures for different auxiliary operations at the ICP.
• Rationale	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



	Initiative 6: Establishment of Standard Operating Procedure				
Numbe					Risk
r	Type of Risk	Description	Severity	Likelihood	Assessment
		Majority of the labour force is untrained			
1	People	and unskilled	3	4	12
		Difficulty in adjustment towards			
2	People	standardization of processes	3	3	9
		Difficulty in establishing a SOP for			
з	Process	working of labour or equipment at ICP	2	1	2
	Trade-related	Growing influence of China in Nepal		•	
4	Fasters	leading to limited trading activity of ICD	4	2	10
4	Factors	reading to inflited trading activity at ICP	4	3	12
	Initiative 6 Risk Assessment 9				

Risk Register for Initiative 6:

	Action Table			
Colour	Score	Risks	Action	
	16 to 25	High	Initiative risk assessment detailing significant control measures is required. Do not proceed unless significant controls are implemented to reduce the risk.	
	12 to 15	Medium-High	Initiative to be proceeded with extreme caution. Implement additional controls.	
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.	
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.	



• Initiative –07				
Initiative Name	Designing an Effective Training Program			
Operations	 Auxiliary Work 			
• Initiative Description	The labour performing auxiliary works at the ICP are largely untrained. There is lack of information about the growing technologies and operating requirements thereof.			
	A well-designed training program customized to different equipment at the ICP can help enhance skills of the labour working at the ICP.			
	There is therefore a need to develop detailed training plan and calendar and identify process and equipment training requirements.			
• Rationale	 Increased productivity Improved efficiency Better performance Simplification of performance management Uniformity of work processes 			
• Priority	Low Medium High			
 Implementation time 	>3 years 1-2 years <1 year			
• Risk	Low Medium High			



Risk Register for Initiative 7:

Initiative 7: Developing an Effective Training Program					
Numbe					Risk
r	Type of Risk	Description	Severity	Likelihood	Assessment
		The labour force is untrained and			
1	People	unskilled	3	2	6
		Low adoption to skills acquired			
2	People	during training	3	2	6
3	Process	Low training turnout	3	2	6
		Difficulty in establishing a SOP for			
4	Process	training labour	3	2	6
		Poor execution of training			
5	Process	program	4	2	8
		Growing influence of China in			
	Trade-related	Nepal leading to limited trading			
6	Factors	activity at ICP	3	2	6
	6				

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



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8.6. Target State: ICP Srimantapur

8.6.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Srimantapur scores 2.97 out of 5 in the five key services offered at the ICP.







Summary of Key Findings

- ICP Srimantapur has only one JCB-cum-Loader is available for loading items such as stone and coal. For all other types of cargo, the port is completely dependent on manual labour. Additionally, there is no structured maintenance schedule for the available equipment.
- There is no warehousing equipment available at the ICP. As a result, stacking of cargo is being done manually and is time-consuming.
- The ICP does not have any equipment available for auxiliary related works.
- The labour force working at the ICP premises is largely untrained-this includes labour force working for loading, unloading, warehousing and auxiliary works.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by labour or equipment at the ICP. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment.



8.6.2 List of Initiatives

Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Srimantapur.

 Deployment of Forklift
 Loading Unloading Warehousing
 While there is a JCB-cum-Loader to handle import of commodities such as stone and coal, there is no equipment available for handling cement which is one of the most important import commodities at ICP Srimantapur. The labour has to unload the cement bags from the Bangladeshi trucks and load them onto the Indian trucks, which not only adds to the workload but impact the dwell time as well. An equipment like a forklift can be used to lift the heavy bags of cement. This will also improve the operational efficiency of cargo-handling operations by reducing the manual workload and reducing dwell time.
They will also be useful in serving warehousing and other storage facilities, as and when the port expands.
 Easily able to move heavy bags of cement and cartons from one place to another As compared to manual loading, time taken to undertake cargo-operations using forklift will be reduced to half Increased cargo handling capacity, as compared to manual labour Reduction in manpower required



• Initiative – 01	
Initiative Name	 Deployment of Forklift
	 Easy to train manpower to operate a forklift
	 Easy maintenance schedule
	 Improved safety
• Priority	Low Medium Hiah
 Implementation time 	>5 years 1-3 years <1 year
• Risk	low Medium High



Risk Register for Initiative 1:

Initiative 1: Deployment of Forklift						
Num ber	Type of Risk	Description		Likelih ood	Risk Assessmen t	
1	People	Majority of the labour force is untrained and unskilled	3	4	12	
2	People	Probability of reluctance to mechanization	3	3	9	
3	People	Perceived fear of occupational hazard	3	3	9	
4	People	Fear of Job security	3	4	12	
5	Process	No established procedure or SOP for working of equipment	5	5	25	
6	Process	Human error-probability of untrained drivers, etc	2	3	6	
7	Technology	Equipment will be deployed at the ICP for the first time	3	4	12	
8	Technology	Technology failure	2	2	4	
9	Trade-related Factors	Under-utilization of equipment due to tensions between India and Bangladesh	2	1	2	
10	Trade-related Factors	Trade diversion to newer routes being developed in Tripura (E.g., ICP Sabroom, etc)	2	2	4	
11	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	2	2	4	
Initiative 1 Risk Assessment 9						

Action Table					
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 02	
Initiative Name	Deployment of Industrial Vacuum Cleaner
Operations	 Auxiliary Work
• Initiative Description	The ICP only has no equipment available for cleaning the ICP premises. Deployment of mechanical equipment for housekeeping operations can ensure better cleanliness and improve efficiency.
	Undertaking cleaning operations using a vacuum cleaner can help save manual energy, effort and time. A vacuum cleaner can also make it possible to transport material without mechanical cleaning or the use of cleaning liquids.
Rationale	Increased hygiene and easy maintenance
	 Better efficiency
	Improved air quality inside ICP premise
	 More effective as compare to manual cleaning. Vacuum cleaners come with multiple features
	that allow the user to reach corners and places
	where it is difficult to reach manually.
• Priority	Low Medium High
Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 2:

Initiative 2: Deployment of Industrial Vacuum Cleaner						
Num	Turne of Disk Description Counciles Likelihood					
ber	Type of Risk	Description	Sevenity	Likelinood	Assessment	
1	People	Perceived reduction in manpower involved	1	1	1	
		No established procedure or SOP for				
2	Process	undertaking auxiliary work	5	5	25	
3	Process	Human error	1	1	1	
4	Technology	Mechanical failure	2	2	4	
	Trade-related	Under-utilization of equipment due to				
5	Factors	tensions between India and Bangladesh	2	1	2	
Initiative 2 Risk Assessment						

	Action Table				
Colour	Colour Score Risks Action				
	Initiative risk assessment detailing significant control measures is				
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 03					
Initiative Name	Deployment of X-Ray Cargo Baggage Scanner				
Operations	Security				
• Initiative Description	The ICP does not have any cargo baggage scanners for security checks. It has only Handheld Metal Detectors and Door Frame Metal Detectors for scanning purpose. Any examination is therefore completely manual and adds to the dwell time of clearance. Deployment of an x- ray baggage scanner can improve efficiency and efficacy of security operations and enable checking of baggage and cargo without unpacking examination.				
• Rationale	 Has a high-image quality for improved investigation performance Improved safety High flexibility Reduced dwell time due to faster cargo clearance 				
• Priority	Low Medium High				
Implementation time	>3 years 1-2 years <1 year				
• Risk	L <mark>ow Mec</mark> ium High				



Risk Register for Initiative 3:

Initiative 3: Deployment of X-Ray Cargo Baggage Scanner						
Num					Risk	
ber	Type of Risk	Description	Severity	Likelihood	Assessment	
		Majority of the labour force is untrained				
1	People	and unskilled	2	1	2	
		Probability of reluctance to				
2	People	mechanization	1	1	1	
		No established procedure or SOP for				
3	Process	working of equipment	5	5	25	
		Equipment will be deployed at the ICP for				
4	Technology	the first time	2	5	10	
5	Technology	Technology failure	2	1	2	
	Trade-related	Under-utilization of equipment due to				
6	Factors	tensions between India and Bangladesh	2	1	2	
Initiative 3 Risk Assessment						

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



 Initiative – 04 	
Initiative Name	 Establishment of Standard Operating Procedure
• Operations	 Loading Unloading Warehousing Auxiliary Work
• Initiative Description	Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing Standard Operating Procedures for different operations at the ICP.
• Rationale	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability
• Priority	Low Medium High
Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 4:

	Initiative 4: Establishment of Standard Operating Procedure					
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t	
1	People	Majority of the labour force is untrained and unskilled	3	4	12	
2	People	Difficulty in adjustment towards standardization of processes	3	3	9	
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2	
4	Trade-related Factors	Tensions between India and Bangladesh leading to limited trading activity at ICP	2	1	2	
5	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	2	2	4	
Initiative 4 Risk Assessment						

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



• Initiative – 05	
Initiative Name	 Developing an Effective Training Program for Labour Working at the ICP
• Operations	 Loading Unloading Warehousing Auxiliary Work
• Initiative Description	The labour working at the ICP is largely untrained. There is lack of training about efficient operating procedures for handling cargo at the ICP. There is also lack of training for operating the existing equipment. There is lack of information about the growing technologies and operating requirements thereof. There is therefore a need to develop detailed training plan and calendar and identify process and equipment training requirements.
Rationale	 Enhanced quality and performance Improved productivity Safe working environment Helps in staff retention
• Priority	Low Medium High
 Implementation time 	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 5:

	Initiative 5: Developing an Effective Training Program for Labour Working at the ICP					
Num ber	Type of Risk	Likelihoo Description Severity d		Risk Assessme nt		
1	People	Majority of the labour force is untrained and unskilled	3	2	6	
2	People	Low adoption to skills acquired during training	3	2	6	
3	Process	Low training turnout	3	2	6	
4	Process	Difficulty in establishing a SOP for training labour working at ICP	3	2	6	
5	Process	Poor execution of training program	4	2	8	
6	Trade- related Factors	Limited utilization of skills imparted during training program due to tensions between India and Bangladesh	2	1	2	
Initiative 5 Risk Assessment						

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



8.7. Target State: ICP Sutarkandi

8.7.1 Summary of Key Findings

Based on the current state assessment and gap analysis using the Maturity Assessment Framework, ICP Sutarkandi scores 1.68 out of 5 in the five key services offered at the ICP.

Figure 14: Snapshot of Current State Assessment of ICP Sutarkandi





Summary of Key Findings

- There is no equipment available for undertaking any cargo-related operations such as loading, unloading, or warehousing. Moreover, there is no equipment available for undertaking auxiliary work or security checks. There is complete dependence on manual labour for all the tasks taking place at ICP.
- The labour force working at the ICP premises is largely untrained-this includes labour force working for loading, unloading, warehousing and auxiliary works.
- Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by labour or equipment at the ICP. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment.



8.7.2 List of Initiatives

Based on the aforementioned findings, the section below lists down several initiatives that are important for moving towards the target state of mechanization at ICP Sutarkandi.

 Initiative – 01 	
Initiative Name	Deployment of Forklift
• Operations	 Loading Unloading Warehousing
• Initiative Description	ICP Sutarkandi witnesses substantial imports of cement and cartons of food items . However, there is no equipment to handle the same. Labour has to manually unload the import consignments from the Bangladeshi trucks and load them onto Indian trucks, which leads to high dwell time and adds to the workload.
	An equipment like a forklift can improve the operational efficiency of cargo-handling operations by reducing the manual workload and reducing dwell time. Carton clamps can be attached to the forklift and can be used to quickly handle unit loads without the requirement of expensive pallets. Carton clamps are an efficient way of handling non-pallet loads and will allow for optimization of warehouse storage space and reduction of packaging material costs.
	Deployment of forklift can reap several benefits and improve the efficiency of cargo-handling operations. As LPAI is already planning for development of ICP Sutarkandi, a forklift will also be useful in serving warehousing and other storage facilities
• Rationale	 Easily able to move heavy bags of cement and cartons from one place to another As compared to manual loading, time taken to undertake cargo-operations using forklift will be reduced to half Increased cargo handling capacity, as compared to manual labour Reduction in manpower required Easy to train manpower to operate a forklift

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• Initiative – 01	
Initiative Name	 Deployment of Forklift
	Easy maintenance scheduleImproved safety
• Priority	Low Medium Hiah
Implementation	
time	>5 years 1-3 years <1 year
• Risk	Low Medium High

Risk Register for Initiative 1:

Initiative 1: Deployment of Forklift						
Num	Type of Risk	of Pick Description		Likelihood	Risk Assessmen t	
	Type of Risk	Majority of the labour force is untrained and	Sevency	Likeiniood	Ľ	
1	People	unskilled	3	4	12	
2	People	Probability of reluctance to mechanization	4	4	16	
3	People	Perceived fear of occupational hazard	4	4	16	
4	People	Fear of Job security	3	4	12	
5	Process	No established procedure or SOP for working of equipment 5 5		25		
6	Process	Human error-probability of untrained drivers, etc	3	4	12	
7	Technology	Equipment will be deployed at the ICP for the first time	4	5	20	
8	Technology	Technology failure	2	2	4	
9	Trade-related Factors	Under-utilization of equipment due to tensions between India and Bangladesh	2	1	2	
10	Trade-related Factors	Trade diversion to other LCS being upgraded (e.g., Mankachar, Dhubri Steamer Ghat etc)	4	3	12	
11	Trade-related Factors	Failure of upcoming regional connectivity agreements-BBIN MVA, BIMSTEC MVA, etc	3	2	6	
	Initiative 1 Risk Assessment 12					

	Action Table				
Colour	Score	Risks	Action		
			Initiative risk assessment detailing significant control measures is		
			required. Do not proceed unless significant controls are implemented to		
	16 to 25	High	reduce the risk.		
			Initiative to be proceeded with extreme caution. Implement additional		
	12 to 15	Medium-High	controls.		
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.		
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.		



•	Initiative – 02	
•	Initiative Name	Deployment of Backhoe Loader
•	Operations	LoadingUnloading
•	Initiative Description	The ICP witnesses truck movement of approx. 150 trucks per day of limestone for exports to Bangladesh. The export cargo originates from Meghalaya and reaches ICP Sutarkandi during evening hours. The limestone is offloaded using dumper tipper (via the hydraulic mode). Next day, the exporter usually arranges a JCB on rent and uses it to load the limestone onto the Indian truck for onward movement to Bangladesh.
		As LPAI is already planning for development of 17,000 sq.m area for BTC-II, deployment of a backhoe loader can reap several benefits and improve the efficiency of
•	Rationale	 cargo-handling operations at the ICP. Time and cost saving Improves quality of work Ouick-connect mounting systems and auxiliary
		 by Quick connect mounting systems and advinary hydraulic circuits for simplified connection assembly, which increases the use of the machine Versatile and can be utilized for handling various types of materials like limestone, boulders, etc. Improved safety
•	Priority	Low Medium High
•	Implementation time	>5 years 1-3 years <1 year
•	Risk	Low Medium High



Risk Register for Initiative 2:

	Initiative 2: Deployment of Backhoe Loader						
Num					Risk		
ber	Type of Risk	Description	Severity	Likelihood	Assessment		
		Majority of the labour force is untrained and					
1	People	unskilled	3	4	12		
2	People	Probability of reluctance to mechanization	4	4	16		
3	People	Perceived reduction in manpower involved	4	4	16		
4	People	Fear of job- and income-loss	3	4	12		
		No established procedure or SOP for working					
5	Process	of equipment	5	5	25		
6	Process	Human error	3	4	12		
		Equipment will be deployed at the ICP for the					
7	Technology	first time	4	5	20		
8	Technology	Technology failure	2	3	6		
	Trade-related	Under-utilization of equipment due to					
9	Factors	tensions between India and Bangladesh	2	1	2		
	T						
	Irade-related	Trade diversion to other LCS being upgraded		-			
10	Factors	(e.g., Mankachar, Dhubri Steamer Ghat etc)	4	3	12		
	Trade-related	Policy restriction impacting limestone					
11	Factors	industry	4	2	8		
	Trade-related	Failure of uncoming regional connectivity					
12	Factors	agreements_BBIN MVA_BIMSTEC MVA_etc	2	2	6		
12	12 FACTORS ABLEETINGLES BRINNING, BINDLEC NIVA, ELC 3 2 6						
Initiative 2 Risk Assessment 12							

	Action Table					
Colour	Score	Score Risks Action				
			Initiative risk assessment detailing significant control measures is			
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative – 03	
Initiative Name	Deployment of Industrial Vacuum Cleaner
Operations	 Auxiliary Work
• Initiative Description	The ICP only has no equipment available for cleaning the ICP premises. Deployment of mechanical equipment for housekeeping operations can ensure better cleanliness and improve efficiency. Undertaking cleaning operations using a vacuum cleaner can help save manual energy, effort and time. A vacuum cleaner can also make it possible to transport material without mechanical cleaning or the use of cleaning liquids
• Rationale	 Increased hygiene and easy maintenance Better efficiency Improved air quality inside ICP premise More effective as compare to manual cleaning. Vacuum cleaners come with multiple features that allow the user to reach corners and places where it is difficult to reach manually.
• Priority	Low Medium High
Implementation time	>3 years 1-2 years <1 year
• Risk	Low Medium High



Risk Register for Initiative 3:

Initiative 3: Deployment of Industrial Vacuum Cleaner						
Num ber	Type of Risk Description Severity Likelihood				Risk Assessment	
1	People	Perceived reduction in manpower involved	1	1	1	
2	Process	No established procedure or SOP for undertaking auxiliary work	5	5	25	
3	Process	Human error	1	1	1	
4	Technology	Mechanical failure	2	2	4	
5	Trade-related Factors	Under-utilization of equipment due to tensions between India and Bangladesh	2	1	2	
	7					

	Action Table						
Colour	Score	Score Risks Action					
	Initiative risk assessment detailing significant control measures is						
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



•	Initiative – 04	
•	Initiative Name	Deployment of X-Ray Cargo Baggage Scanner
•	Operations	Security
•	Initiative Description	The ICP does not have any cargo baggage scanners for security checks. Any examination is therefore completely manual and adds to the dwell time of clearance. Deployment of an x-ray baggage scanner can improve efficiency and efficacy of security operations and enable checking of baggage and cargo without unpacking examination.
•	Rationale	 Has a high-image quality for improved investigation performance Improved safety High flexibility Reduced dwell time due to faster cargo clearance
•	Priority	Low Medium High
•	Implementation time	>3 years 1-2 years <1 year
•	Risk	Low Medium High



Risk Register for Initiative 4:

Initiative 4: Deployment of X-Ray Cargo Baggage Scanner						
Num	_		Risk			
ber	Type of Risk	Description	Severity	Likelihood	Assessment	
1	People	Majority of the labour force is untrained and unskilled	2	1	2	
2	People	Probability of reluctance to mechanization	1	1	1	
		No established procedure or SOP for				
3	Process	working of equipment	5	5	25	
		Equipment will be deployed at the ICP for				
4	Technology	the first time	2	5	10	
5	Technology	Technology failure	2	1	2	
	Trade-related	Under-utilization of equipment due to				
6	Factors	tensions between India and Bangladesh	2	1	2	
Initiative 4 Risk Assessment						

	Action Table					
Colour	ur Score Risks Action					
	Initiative risk assessment detailing significant control measures is					
			required. Do not proceed unless significant controls are implemented to			
	16 to 25	High	reduce the risk.			
			Initiative to be proceeded with extreme caution. Implement additional			
	12 to 15	Medium-High	controls.			
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.			
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.			



• Initiative – 05				
Initiative Name	 Establishment of Standard Operating Procedure 			
• Operations	 Loading Unloading Warehousing Auxiliary Work 			
• Initiative Description	Although there is a well-defined flow of cargo operations that is followed by all stakeholders, there is no SOP in place that defines the loading, unloading or warehousing operations to be carried out by equipment. Similarly, there are no laid-out procedures for conducting auxiliary work by either labour or equipment. There are multiple procedures being followed by different stakeholders involved in different operations of the ICP. Due to non-documentation and standardization of procedures, there is lack of synchronization amongst the stakeholders. There is therefore a need for establishing Standard Operating Procedures for different			
Rationale Priority	 Streamlining of procedures Improved efficiency and consistency Better performance Simplification of performance management Safe working environment Worker accountability 			
Implementation	Low Medium High			
time	>3 years 1-2 years <1 year			
• Risk	Low Medium High			



Risk Register for Initiative 5:

	Initiative 5: Establishment of Standard Operating Procedure						
Num ber	Type of Risk	Description	Sever ity	Likelih ood	Risk Assessmen t		
1	People	Majority of the labour force is untrained and unskilled	3	4	12		
2	People	Difficulty in adjustment towards standardization of processes	3	3	9		
3	Process	Difficulty in establishing a SOP for working of labour or equipment at ICP	2	1	2		
4	Trade-related Factors	Tensions between India and Bangladesh leading to limited trading activity at ICP	2	1	2		
5	Trade-related Factors	Failure of upcoming regional connectivity agreements- BBIN MVA, BIMSTEC MVA, etc	2	2	4		
Initiative 5 Risk Assessment							

	Action Table						
Colour	Score Risks Action						
		Initiative risk assessment detailing significant control measures is					
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



• Initiative – 06		
Initiative Name	 Developing an Effective Training Program for Labour Working at the ICP 	
• Operations	 Loading Unloading Warehousing Auxiliary Work 	
• Initiative Description	The labour working at the ICP is largely untrained. There is lack of training about efficient operating procedures for handling cargo at the ICP. There is also lack of training for operating any form of equipment that gets deployed in the future. There is lack of information about the growing technologies and operating requirements thereof. There is therefore a need to develop detailed training plan and calendar and identify process and equipment	
• Rationale	 Enhanced quality and performance Improved productivity Safe working environment Helps in staff retention 	
• Priority	Low Medium High	
 Implementation time 	>3 years 1-2 years <1 year	
• Risk	Low Medium High	



Risk Register for Initiative 6:

Initiative 6: Developing an Effective Training Program for Labour Working at the ICP								
Nu mbe r	Type of Risk	Description	Seve rity	Likeli hood	Risk Assessme nt			
1	People	Majority of the labour force is untrained and unskilled	3	2	6			
2	People	Low adoption to skills acquired during training	3	2	6			
3	Process	Low training turnout	4	3	12			
4	Process	Difficulty in establishing a SOP for training labour working at ICP	3	2	6			
5	Process	Poor execution of training program	4	2	8			
6	Trade- related Factors	Limited utilization of skills imparted during training program due to tensions between India and Bangladesh	2	1	2			
		Initiative 6 Risk Assessment			7			

	Action Table						
Colour	Score	Risks	Action				
			Initiative risk assessment detailing significant control measures is				
			required. Do not proceed unless significant controls are implemented to				
	16 to 25	High	reduce the risk.				
			Initiative to be proceeded with extreme caution. Implement additional				
	12 to 15	Medium-High	controls.				
	8 to 10	Medium-Low	Proceed with care. Additional control advised. Period review necessary.				
	1 to 6	Low	No imminent dangers. Frequent review should be undertaken.				



8.8. Miscellaneous Initiatives

While the deployment of the proposed mechanized equipment is necessary for smoother and efficient operations at ICPs, it is equally important that there are adequate safety measures put in place to avoid hazards at the ports. For the deployment of proposed equipment for handling trade consignments, the Authority and H&T contractor should ensure that the operator properly wears the right **personal protective equipment**. Such equipment can include:

- o Hard hats
- Eyewear
- o Gloves
- Steel-toed work boots

Cement is an important import item at several ICPs such as ICP Attari (when trade with Pakistan was permitted), ICP Agartala, ICP Srimantapur and ICP Sutarkandi. There are chances of dust pollution inside the ICP premises owing to import of cement. For preventing the same, the Authority may consider deploying **dust-suppression watersprinklers**. The dust-suppression water sprinkler system creates a 'wetting mechanism' which settles the airborne cement dust on the surface. Additionally, in order to reduce concrete dusting in the warehouses where cement bags are stored, a **'concrete densifier'** can be used. The standard industry practice to combat concrete dusting is to use a chemically reactive concrete densifier. The Authority may consider procuring the same.

Similarly, at ICP Petrapole that witnesses extensive trade in textile products, there is a lot of textile process dusts, particularly from cotton. This can cause several occupational and health hazards such as byssinosis (cotton dust), occupational asthma and respiratory irritation. For loading and unloading of trucks carrying textile products, the labour force can be provided with **Respiratory Protective Equipment (RPE)** such as face masks.

At ICPs bordering Nepal wherein there is extensive trade in fuel products, there are chances of oil spills on the ICP roads. These are considered as hazardous waste and it is important that they are removed and cleaned in a safe and timely manner. The Authority can procure and use **absorbent materials** to clean up oil spills. **Sorbent particulates** such as sorbent pads and sorbent sheets can make it easier to clean spills on ICP roads by absorbing residues. There are also industry solutions such as **oil spill detergents** that remove hydrocarbon and liquid paint spills from road surfaces. They leave the road surface oil free and non-slippery. They are environmentally friendly and emulsion free.

PRIORITIZATION OF INITIATIVES



9. Prioritization of Initiatives

Prioritization of initiatives is the disciplined process of evaluating the relative importance of the initiative, given a variety of constraints. This section uses the principle of **'Weighted Scoring Prioritization'** to help the Authority decide which initiative should be implemented with priority at each ICP.

Each initiative has been accorded a prioritization score which is the weighted aggregation of four parameters that are used to quantify the importance of the initiative. The four parameters used to arrive at prioritization of an initiative are the benefits of implementation, ease of execution, costs associated with implementation, and the time of implementation.

As described in the Approach and Methodology section (refer 3.1.5), based on consultations held with different port-service providers, the following weights were assigned to the different parameters:

- Benefit Quotient: 50%
- Execution Quotient: 25%
- Cost Quotient: 10%
- Time Quotient: 15%

The final prioritization score for each initiative is calculated to be in the range of 1-10, with a score greater than 8 representing High Priority, a score in the range of 7.5 and 8 representing Medium Priority and a score less than 7.5 representing Low Priority.

Score	Priority
>8.0	High
7.5-8.0	Medium
<7.5	Low



9.1 Prioritization of Initiatives: ICP Attari

Based on the prioritization framework developed in the study, **deployment of a Road Cleaning Truck and establishment of Standard Operating Procedures have been accorded High Priority** at ICP Attari. Even while trade with Pakistan stands suspended, ICP Attari witnesses a daily import truck movement of about 15-20 trucks from Afghanistan. Deployment of a road cleaning truck will ensure proper and regular maintenance of roads inside the ICP premises.

Establishment of Standard Operating Procedures for working of labour and equipment at the ICP for cargo handling operations and auxiliary work is also important for improving operational efficiency and ensuring standardization.

Deployment of a mechanized equipment like forklift to handle import items such as dry fruits and dry dates has been accorded Medium priority, based on an assessment of the four parameters included in the study. The deployment of a pelletization machine and development of an effective training program for labour working at the ICP has been accorded Low priority for now.

List of Initiatives		Overal	l Priority	Quotient Score (1 to 10)				
N o	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quoti ent	
				50%	25%	10%	15%	
1	Deployment of Forklift	7.9	Medium	4.5	1.3	1.0	1.1	
2	Deployment of Palletisation Machine	7.2	Low	3.5	1.7	1.0	1.1	
3	Deployment of Road Cleaning Truck	8.1	High	3.0	3.0	0.6	1.5	
5	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1	
6	Developing an effective training program for labour/ manpower	7.1	Low	2.5	3.0	0.8	0.8	

The detailed prioritization framework for ICP Attari has been attached in Annexure D 14.1.



9.2 Prioritization of Initiatives: ICP Agartala

Based on the prioritization framework developed in the study, **deployment of a Forklift**, **Industrial Vacuum Cleaner and X-Ray Cargo Baggage Scanner**, **and establishment of Standard Operating Procedures have been accorded High Priority** at ICP Agartala. Even though the ICP witnesses high imports of food items and cotton waste from Bangladesh, there is no equipment to handle the same. Deployment of a forklift can reap several benefits and improve the efficiency of cargo-handling operations. In terms of auxiliary works, the ICP has only one floor scrubber for cleaning the ICP premises. Deployment of an industrial vacuum cleaner can ensure better cleanliness and improve efficiency of housekeeping operations. Deployment of an x-ray baggage scanner is also important as it can eliminate the need for manual examination and improve efficiency and efficacy of security operations. Additionally, establishment of Standard Operating Procedures for working of labour and equipment at the ICP for cargo handling operations and auxiliary work is also important for improving operational efficiency and ensuring standardization.

Deployment of a Reach Stacker and Pelletization Machine have been accorded Medium priority, based on an assessment of the four parameters included in the study. Development of an effective training program for labour working at the ICP has been accorded Low priority for now.

	List of Initiatives	Overa	ll Priority	Quotient Score (1 to 10)			
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient
				50%	25%	10%	15%
1	Deployment of Forklift	8.9	High	4.5	2.3	1.0	1.1
2	Deployment of Reach Stacker	7.6	Medium	5.0	1.0	0.8	0.8
3	Deployment of Pelletizing Machine	7.9	Medium	3.5	2.3	1.0	1.1
4	Deployment of Industrial Vacuum Cleaner	8.2	High	3.0	2.7	1.0	1.5
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	4.0	2.7	0.4	1.1
6	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1
7	Developing an effective training program for	7.4	Low	25	22	0.8	0.8
	labour/manpower		LUW	2.5	5.5	0.0	0.0

The detailed prioritization framework for ICP Agartala has been attached in Annexure D 14.2.

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9.3 Prioritization of Initiatives: ICP Petrapole

Based on the prioritization framework developed in the study, **deployment of a Hydraulic Conveyor Belt, Road Cleaning Truck, and X-Ray Cargo Baggage Scanner, and establishment of Standard Operating Procedures have been accorded High Priority** at ICP Petrapole. Deployment of a Hydraulic Conveyor Belt is important and can be used to transload goods from Bangladeshi trucks to Indian trucks and also to transport the cargo from one place to another inside the ICP premises. As ICP Petrapole is one of busiest ICPs, it witnesses movement of atleast 500 trucks daily. Deployment of a road cleaning truck will ensure proper and regular maintenance of roads inside the ICP premises.

Deployment of an X-Ray Baggage Scanner is important as it will eliminate the need for manual examination and can improve efficiency and efficacy of security operations at the ICP. Additionally, establishment of Standard Operating Procedures for working of labour and equipment at the ICP for cargo handling operations and auxiliary work is also important for improving operational efficiency and ensuring standardization.

	List of Initiatives		verall iority	C	Quotient Score (1 to 10)			
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient	
				50%	25%	10%	15%	
1	Deployment of Hydraulic Conveyor Belt	8.1	High	5.0	1.7	0.4	1.1	
2	Deployment Road Cleaning Truck	8.1	High	3.0	3.0	0.6	1.5	
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Medium	3.0	2.7	0.8	1.5	
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High	4.0	2.7	1.0	1.1	
5	Establishment of SOP	8.4	High	3.0	3.3	1.0	1.1	
6	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8	

Deployment of a Truck Mounted Water Sprinkler System and development of an effective training program for labour working at the ICP have been accorded Medium and Low priority respectively.

The detailed prioritization framework for ICP Petrapole has been attached in Annexure D 14.3.



9.4 Prioritization of Initiatives: ICP Raxaul

As there are no cargo-handling operations taking place at ICP Raxaul, there are no High Priority initiatives vis-à-vis deployment of mechanized equipment for the ICP. Based on the prioritization framework developed in the study, **establishment of Standard Operating Procedures has been accorded Medium Priority** at ICP Raxaul. Formulating Standard Operating Procedures for undertaking auxiliary related works will ensure standardization of processes and improve efficiency of the tasks undertaken. It is also important to develop an effective training program for the labour working at the ICP. This has been accorded a Low priority.

List of Initiatives		O۱ Pr	Overall Priority		Quotient Score (1 to 10)				
No	Initiative Name	Score	Rating		Benefit quotient	Execution quotient	Cost quotient	Time quotient	
					50%	25%	10%	15%	
1	Establishment of Standard Operating Procedure	7.7	Medium		3.0	2.7	1.0	1.1	
2	Developing an Effective Training Program	7.4	Low		2.5	3.3	0.8	0.8	

The detailed prioritization framework for ICP Raxaul has been attached in Annexure D 14.4.



9.5 Prioritization of Initiatives: ICP Jogbani

Based on the prioritization framework developed in the study, **deployment of X-Ray Cargo Baggage Scanners and deployment of Handheld Metal Detectors** have been accorded High Priority at ICP Jogbani. Both these initiatives are intended to strengthen security systems at the ICP. While there are no cargo-handling operations that take place at ICP Jogbani, the Customs does occasionally undertake random examination, which is completely manual at the moment. Deployment of the aforementioned security equipment will improve the efficiency and efficacy of the security operations.

The study accords a Medium priority for establishment of Standard Operating Procedures for undertaking auxiliary related works that can ensure standardization of processes and improve efficiency of the tasks undertaken.

Deployment of equipment such as lawnmower, tractor troller and grass cutting machine for auxiliary works at ICP Jogbani have been accorded a Low priority based on the parameters considered in the study. It is also important to develop an effective training program for the labour working at the ICP. However, this has also been accorded a Low priority for now.

	List of Initiatives		Overall Priority		Quotient Score (1 to 10)				
No	Initiative Name	Score	Rating		Benefit quotient	Execution quotient	Cost quotient	Time quotient	
					50%	25%	10%	15%	
1	Deployment of Lawnmower	6.1	Low		1.0	3.0	1.0	1.1	
2	Deployment of Tractor Trolley	6.1	Low		1.0	3.0	1.0	1.1	
3	Deployment of Grass Cutting Machine	6.1	Low		1.0	3.0	1.0	1.1	
4	Deployment of X- Ray Cargo Baggage Scanner	8.6	High		4.5	2.7	0.4	1.1	
5	Deployment of Handheld Detector	9.2	High		4.5	2.7	1.0	1.1	
6	Establishment of Standard Operating Procedure	7.7	Medium		3.0	2.7	1.0	1.1	
7	Developing an Effective Training Program	7.4	Low		2.5	3.3	0.8	0.8	

The detailed prioritization framework for ICP Jogbani has been attached as Annexure D 14.5.



9.6 Prioritization of Initiatives: ICP Srimantapur

Based on the prioritization framework developed in the study, **deployment of a Forklift**, **Industrial Vacuum Cleaner and X-Ray Cargo Baggage Scanner**, **and establishment of Standard Operating Procedures have been accorded High Priority** at ICP Srimantapur. The ICP witnesses high imports of cement from Bangladesh. However, there is no equipment available for handling the same. Deployment of a forklift can reap several benefits and improve the efficiency of cargo-handling operations. In terms of auxiliary works, the ICP has no equipment for cleaning the ICP premises. Deployment of an industrial vacuum cleaner can ensure better cleanliness and improve efficiency of housekeeping operations. Deployment of an x-ray baggage scanner is also important as it can improve efficiency and efficacy of security operations. Additionally, establishment of Standard Operating Procedures for working of labour and equipment at the ICP for cargo handling operations and auxiliary work is also essential for improving operational efficiency and ensuring standardization.

Development of an effective training program for labour working at the ICP has been accorded Low priority for now.

	List of Initiatives		erall ority	Quotient Score (1 to 10)				
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient	
				50%	25%	10%	15%	
1	Deployment of Forklift	8.9	High	4.5	2.3	1.0	1.1	
2	Deployment of Industrial Vacuum Cleaner	8.2	High	3.0	2.7	1.0	1.5	
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	4.0	2.7	0.4	1.1	
4	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1	
5	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8	

The detailed prioritization framework for ICP Srimantapur has been attached as Annexure D 14.6.



9.7 Prioritization of Initiatives: ICP Sutarkandi

Based on the prioritization framework developed in the study, **deployment of a Forklift**, **Industrial Vacuum Cleaner and X-Ray Cargo Baggage Scanner**, **and establishment of Standard Operating Procedures have been accorded High Priority** at ICP Sutarkandi. As the ICP witnesses import of commodities such as cement and cartons of food items, deployment of a forklift can be immensely useful for handling the same. In terms of auxiliary works, the ICP has no equipment for cleaning the ICP premises. Deployment of an industrial vacuum cleaner can ensure better cleanliness and improve efficiency of housekeeping operations. Deployment of an x-ray baggage scanner is also important as it can improve efficiency and efficacy of security operations. Additionally, establishment of Standard Operating Procedures for working of labour and equipment at the ICP for cargo handling operations and auxiliary work is also important for improving operational efficiency and ensuring standardization.

The deployment of a backhoe loader primarily for facilitating export items such as limestone has been accorded a Medium priority, based on an assessment of the four parameters included in the study. Development of an effective training program for labour working at the ICP has been accorded Low priority for now.

	List of Initiatives	Overa	ll Priority	Quotient Score (1 to 10)))
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient
				50%	25%	10%	15%
1	Deployment of Forklift	8.6	High	4.5	2.0	1.0	1.1
2	Deployment of Backhoe Loader	7.6	Medium	4.0	2.0	0.8	0.8
3	Deployment of Industrial Vacuum Cleaner	8.2	High	3.0	2.7	1.0	1.5
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	4.5	2.7	0.4	1.1
5	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1
6	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8

The detailed prioritization framework for ICP Sutarkandi has been attached as Annexure D 14.7.

RISK & MITIGATION



10.Risk and Mitigation

10.1. Need to Identify Risks and Mitigation Strategies

The advent of mechanization at ports will bring about a lot of changes in current port functioning with respect to processes, people, procurement of equipment and implementation of the same. In the current scenario, most ICPs are completely dependent on manual labour to handle majority of the port-related operations and only a select few are at a nascent stage of mechanization. Even at these ICPs, the equipment is currently deployed by Cargo Terminal Operators like Central Warehousing Corporation at ICP Petrapole and Balmer Lawrie at ICP Jogbani. Given this, while LPAI does not have any current level of significant ownership of the same, it opens up tremendous potential for it to embark on its own drive of mechanization at these ports.

The study recognizes that undertaking this initiative might not be easy and can bring along its fair share of risks which can become a hindrance to the project implementation.

"Between 2013 to 2018, a hydraulic tipper was procured by CWC at ICP Attari to fasten the process of loading and unloading of gypsum and rock salt, hence completely replacing manual labour. This led to prolonged labour strikes and protests. Also, the labour force, backed by the labour union at Attari, would create a blockade on the road to avoid the trucks from entering the ICP. Due to these circumstances, although the tipper was being used and manual labour was absent, the labour force still had to be paid in full to stop them from avoiding the trucks from entering into the ICP"

The study identifies a comprehensive list of possible risks and proposes appropriate risk mitigation plans to manage, eliminate, or reduce risk to an acceptable level.

10.2. Risk and Mitigation Strategies

The risks identified can be broadly categorised under the following:

- People-related risks
- Political and seasonal-related risks
- Process-related risks
- Technology-related risks
- Organization-related risks
- Implementation-related risks

Based on extensive deliberations and consultations with relevant stakeholders, the study proposes the following mitigation strategies against each of the risks identified. These strategies will help the Authority in the successful implementation of the project.



People Related Risks								
Perceived Risk	What it means	Mitigation Plan						
S Reluctance to adoption	Mechanization may face resistance from labour unions because it may lead to reduced labour engagement. The labour force may conduct strikes and protests which can hinder the functioning of the ICP.	There are several mitigation strategies which can be adopted to reduce this risk: 1. Phase wise implementation: Instead of completely mechanizing the ICP and eliminating the need for manual labour, mechanization can be brought about in phases. For example, in the first year, 20% of the commodities can be handled using mechanized equipment and the remaining will be handled by manual labour. An increment of 10% can be brought upon every 6 months or every year till 50% of the commodities are handled by mechanized equipment. Hence, the procurement of equipment can be based on the percentage of commodities handled. This will not completely eliminate manual labour and reduces the chances of labour unrest.						
		 2. Operation wise implementation Based on the study conducted and operation completion time, specific operations can be identified which will be mechanized. For example, in the case of loading, unloading and warehousing, if warehousing operations are being performed efficiently by the labour force in minimal time, then only those equipment that mechanize loading and unloading can be procured. This will ensure that labour displacement from the ICP is reduced. 3. Capacity building of existing labour Unskilled labour can be trained to operate the mechanized equipment and subsumed in mechanized operations. This will reduce labour displacement. 						
Capacity Building and Training	Considering the fact that mechanization at existing ports is minimal, operators will not have the expertise to use such equipment and will need to be trained for successful usage of such resources.	Various training methods such as the following can be adopted before, during and after the deployment of mechanised resources: 1. OEM based trainings The OEM selected for procurement of equipment will impart formal trainings to the manpower before their actual deployment at the ICP. This will ensure smooth functioning of mechanized equipment and seamless cargo handling operations 2. SLA based trainings Training modules based on SLA parameters can be adopted, e.g. trainings will be imparted till every operator is confident in operating the equipment, ensuring seamless cargo handling						



	Political and Season Related Risks								
Perceived Risk	What it means	Mitigation Plan							
Disruption in commodity volume	There can be disruption in the commodity flow through the ICP due to two reasons:	This risk can be mitigated through leasing of equipment instead of buying them. Equipment can be leased based on contracts for 3-6 months when the commodity is being traded in heavy							
	1. Political: In case of any unrest between India and neighbouring countries, restrictions may be imposed on commodity trade.	volumes. When the lean period of commodity trade starts, the operations can be handled by manual labour.							
	2. Seasonal: the trade of some commodities like food, beverages and plant based commodities like cotton, etc. is dependent on their season of harvest. There will be some months when the commodity is scarcely traded.								
	These reasons lead to non-usage of mechanized equipment for prolonged periods of time.								

	Process Re	lated Risks
Perceived Risk	What it means	Mitigation Plan
Lack of communication	There can be a case of insufficient communication amongst stakeholders. This will lead of confusion with regard to the implementation of mechanization which translates to inefficient cargo handling operations as procurement plan and process related to cargo handling by mechanization are not communicated to the concerned stakeholders.	 This risk can be mitigated through various measures: 1. Workshops for stakeholders Prior to deployment of mechanized equipment at ports, workshops can be conducted for concerned stakeholders where they are informed about the processes related to cargo handling by the equipment. 2. Appoint a POC for stakeholders A point of contact or a dedicated team can be formed to handle all stakeholder communication as well as address stakeholder queries relating to mechanized equipment and its deployment.



	Technology Related Risks									
Perceived Risk	What it means	Mitigation Plan								
X Maintenance of equipment	There are various kinds of maintenances that need to be followed to ensure good equipment health and optimal working. Failure to do so will lead to disruption of mechanized operations at the ICP	This risk can be mitigated by devising a proper maintenance schedule for the equipment. Not only corrective maintenance, but preventive and predictive maintenance schedules should be devised to ensure smooth equipment functioning. The OEM through which procurement will be done can be onboarded to carry out such equipment maintenances. To ensure that maintenances are followed, an SLA based contract can be made. Furthermore, LPAI can itself deploy trained manpower for the maintenance of equipment. Also, an equipment audit team can be formed to audit the use and maintenance of the equipment								

	Organizationa	I Related Risks
Perceived Risk	What it means	Mitigation Plan
Availability of funds	Considering the capital intensive nature of the project, LPAI might face difficulty in raising funds for procurement and deployment of mechanized equipment	This risk can be mitigated through the following ways: 1. BOO based procurement: LPAI can procure equipment through a Build, Own and Operate model wherein the OEM will be responsible to deploy , operate and maintain the equipment. The revenue generated through equipment usage will belong to the OEM but LPAI will be offered a revenue share or a minimum monthly guarantee. This model will not only ensure mechanization, but also monetize it for LPAI. 2. Leasing of equipment LPAI can procure the equipment through a lease based contract for a certain time period, on completion of which the contract can be renewed based on commodity flow and success of the equipment. Through this model, the cost incurred by LPAI or procurement will be reduced as compared to directly buying the equipment from the OEM.



	Implementation Related Risks										
Perceived Risk	What it means	Mitigation Plan									
Subpar performance of equipment	After implementation of equipment at the ICP, the performance output may be subpar, and the benefits of operational efficiency may not be yielded, hence proving the entire exercise ineffective.	This risk can be mitigated through the following ways: Penalty based SLAs As part of the procurement contract, SLAs can be drafted based on the performance of the equipment in terms of cycles per hour, limit on equipment breakdown and failure as well as performance of manpower operating the equipment. Failure to adhere to these service levels will impose a penalty on the OEM.									





11. Annexure A: List of ICPs

Sr.	ICPs	State	Border	Status
1	Attari	Punjab	Pakistan	Operational since 2012
2	Dera Baba Nanak	Punjab	Pakistan	Operational since 2019
3	Jogbani	Bihar	Nepal	Operational since 2016
4	Raxaul	Bihar	Nepal	Operational since 2016
5	Agartala	Tripura	Bangladesh	Operational since 2013
6	Petrapole	West Bengal	Bangladesh	Operational since 2016
7	Sutarkandi	Assam	Bangladesh	Operational since 2019
8	Moreh	Manipur	Myanmar	Operational since 2018
9	Srimantapur	Tripura	Bangladesh	Operational since 2020
10	Rupaidiha	Uttar Pradesh	Nepal	Under Construction
11	Dawki	Meghalaya	Bangladesh	Under Construction
12	Sunauli	Uttar Pradesh	Nepal	DPR Prepared
13	Sabroom	Tripura	Bangladesh	DPR Prepared
14	Banbasa	Uttarakhand	Nepal	DPR Prepared
15	Bhithamore	Bihar	Nepal	DPR Prepared
16	Kawrpuichhuah	Mizoram	Bangladesh	Land Acquisition
17	Panitanki	West Bengal	Nepal	Land Acquisition
18	Jaigaon	West Bengal	Bhutan	Land Acquisition
19	Mahadipur	West Bengal	Bangladesh	Land Acquisition
20	Ghojadanga	West Bengal	Bangladesh	Land Acquisition
21	Hili	West Bengal	Bangladesh	Land Acquisition
22	Changrabandha	West Bengal	Bangladesh	Land Acquisition
23	Fulbari	West Bengal	Bangladesh	Land Acquisition



12. Annexure B: Maturity Assessment Questionnaire

S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
1	Unloading	Labour	Process	How well defined are the cargo unloading operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
2	Unloading	Labour	Process	What is the ease of replacing labour force with equipment to carry out unloading operations?	Unloading operations are defined in such a manner that they can only be carried out by labour.	Labour is required to carry out majority of the operations. Only some operations can be carried out by equipment.	Unloading operations are defined in such a manner that they can be carried out by equipment. However, usage of labour is being preferred at the ICP.	Labour can be used effectively in combination with equipment to carry out most of the operations.	It is easy to replace all labour- related operations by equipment to increase efficiency at ICP.	5
3	Unloading	Labour	Availability	What is the availability of labour to carry out cargo unloading operations?	Labour is available for less than 40% of the time for which ICP is operational	Labour is available for 40-60% of the time for which ICP is operational	Labour is available for 60-80% of the time for which ICP is operational	Labour is available for 80-100% of the time for which ICP is operational	Labour is available for 100% of the time for which ICP is operational	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
4	Unloading	Labour	Availability	What is the frequency of labour strikes?	Labour strikes happen more than 12 times in a year	Labour strikes happen more than 9 times but less than 12 times in a year	Labour strikes happen more than 6 times but less than 9 times in a year	Labour strikes happen more than 3 times but less than 6 times in a year	Labour strikes happen less than 3 times in a year	5
5	Unloading	Labour	Efficiency	Does the labour force cause delay in unloading cargo?	More than 40% of trucks experience delay in unloading of cargo by labour force	More than 30% but less than 40% of trucks experience delay in unloading of cargo due to labour force	More than 20% but less than 30% of trucks experience delay in unloading of cargo due to labour force	Less than 20% of trucks experience delay in unloading of cargo due to labour force	No instances of delay observed in unloading cargo	5
6	Unloading	Labour	Efficiency	How often is the cargo damaged during unloading by labour force?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
7	Unloading	Labour	Efficiency	How well defined are the performance indicators that measure labour efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
8	Unloading	Labour	Training	How well defined is the training SOP for labour?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
9	Unloading	Equipment	Process	How well defined are the cargo unloading operations carried out by the equipment?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices are incorporated in the defined processes and process improvement is focussed upon	5
10	Unloading	Equipment	Availability	What is the availability of equipment to carry out cargo unloading operations?	Equipment is available for less than 40% of the time for which ICP is operational	Equipment is available for 40-60% of the time for which ICP is operational	Equipment is available for 60-80% of the time for which ICP is operational	Equipment is available for 80-100% of the time for which ICP is operational	Equipment is available for 100% of the time for which ICP is operational	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
11	Unloading	Equipment	Efficiency	Does the equipment cause delay in unloading cargo?	Moe than 40% of trucks experience delay in unloading of cargo by equipment	More than 30% but less than 40% of trucks experience delay in unloading of cargo by equipment	More than 20% but less than 30% of trucks experience delay in unloading of cargo by equipment	Less than 20% of trucks experience delay in unloading of cargo by equipment	No instances of delay observed in unloading cargo	5
12	Unloading	Equipment	Efficiency	How often is the cargo damaged during unloading by equipment?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
13	Unloading	Equipment	Efficiency	How well defined are the performance indicators that measure equipment efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
14	Unloading	Equipment	Training	How well defined is the training SOP for manpower that will operate equipment?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
15	Unloading	Equipment	Maintenance	ls there a system/ schedule in place for maintenance of equipment?	There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure	Some degree of equipment maintenance such as oiling, lubrication, etc. is carried out. No formal schedule is defined.	A formal schedule of maintenance is defined. However, it is not checked on a regular basis.	The formal maintenance schedule is carried out thoroughly.	Along with the formal maintenance schedule, predictive maintenance is also carried out to avoid major equipment problems in the future.	5
16	Loading	Labour	Process	How well defined are the cargo loading operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
17	Loading	Labour	Process	What is the ease of replacing labour force with equipment to carry out loading operations?	Loading operations are defined in such a manner that they can only be carried out by labour.	Labour is required to carry out majority of the operations. Only some operations can be carried out by equipment.	Loading operations are defined in such a manner that they can be carried out by equipment. However, usage of labour is being preferred at the ICP.	Labour can be used effectively in combination with equipment to carry out most of the operations.	It is easy to replace all labour- related operations by equipment to increase efficiency at ICP.	5
18	Loading	Labour	Availability	What is the availability of labour to carry out cargo unloading operations?	Labour is available for less than 40% of the time for which ICP is operational	Labour is available for 40-60% of the time for which ICP is operational	Labour is available for 60-80% of the time for which ICP is operational	Labour is available for 80-100% of the time for which ICP is operational	Labour is available for 100% of the time for which ICP is operational	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
19	Loading	Labour	Availability	What is the frequency of labour strikes?	Labour strikes happen more than 12 times in a year	Labour strikes happen more than 9 times but less than 12 times in a year	Labour strikes happen more than 6 times but less than 9 times in a year	Labour strikes happen more than 3 times but less than 6 times in a year	Labour strikes happen less than 3 times in a year	5
20	Loading	Labour	Efficiency	Does the labour force cause delay in unloading cargo?	More than 40% of trucks experience delay in loading of cargo by labour force	More than 30% but less than 40% of trucks experience delay in loading of cargo due to labour force	More than 20% but less than 30% of trucks experience delay in loading of cargo due to labour force	Less than 20% of trucks experience delay in loading of cargo due to labour force	No instances of delay observed in loading cargo	5
21	Loading	Labour	Efficiency	How often is the cargo damaged during loading by labour force?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
22	Loading	Labour	Efficiency	How well defined are the performance indicators that measure labour efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
23	Loading	Labour	Training	How well defined is the training SOP for labour?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
24	Loading	Equipment	Process	How well defined are the cargo loading operations carried out by the equipment?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices are incorporated in the defined processes and process improvement is focussed upon	5
25	Loading	Equipment	Availability	What is the availability of equipment to carry out cargo loading operations?	Equipment is available for less than 40% of the time for which ICP is operational	Equipment is available for 40-60% of the time for which ICP is operational	Equipment is available for 60-80% of the time for which ICP is operational	Equipment is available for 80-100% of the time for which ICP is operational	Equipment is available for 100% of the time for which ICP is operational	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
26	Loading	Equipment	Efficiency	Does the equipment cause delay in loading cargo?	Moe than 40% of trucks experience delay in unloading of cargo by equipment	More than 30% but less than 40% of trucks experience delay in unloading of cargo by equipment	More than 20% but less than 30% of trucks experience delay in unloading of cargo by equipment	Less than 20% of trucks experience delay in unloading of cargo by equipment	No instances of delay observed in unloading cargo	5
27	Loading	Equipment	Efficiency	How often is the cargo damaged during loading by equipment?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
28	Loading	Equipment	Efficiency	How well defined are the performance indicators that measure equipment efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
29	Loading	Equipment	Training	How well defined is the training SOP for manpower that will operate equipment?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
30	Loading	Equipment	Maintenance	ls there a system/ schedule in place for maintenance of equipment?	There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure	Some degree of equipment maintenance such as oiling, lubrication, etc. is carried out. No formal schedule is defined.	A formal schedule of maintenance is defined. However, it is not checked on a regular basis.	The formal maintenance schedule is carried out thoroughly.	Along with the formal maintenance schedule, predictive maintenance is also carried out to avoid major equipment problems in the future.	5
31	Warehousing	Labour	Process	How well defined are the cargo warehousing operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
32	Warehousing	Labour	Process	What is the ease of replacing labour force with equipment to carry out warehouse operations?	Warehouse operations are defined in such a manner that they can only be carried out by labour.	Labour is required to carry out majority of the operations. Only some operations can be carried out by equipment.	Warehousing operations are defined in such a manner that they can be carried out by equipment. However, usage of labour is being preferred at the ICP.	Labour can be used effectively in combination with equipment to carry out most of the operations.	It is easy to replace all labour- related operations by equipment to increase efficiency at ICP.	5
33	Warehousing	Labour	Availability	What is the availability of labour to carry out cargo warehousing operations?	Labour is available for less than 40% of the time for which ICP is operational	Labour is available for 40-60% of the time for which ICP is operational	Labour is available for 60-80% of the time for which ICP is operational	Labour is available for 80-100% of the time for which ICP is operational	Labour is available for 100% of the time for which ICP is operational	5



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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
34	Warehousing	Labour	Availability	What is the frequency of labour strikes?	Labour strikes happen more than 12 times in a year	Labour strikes happen more than 9 times but less than 12 times in a year	Labour strikes happen more than 6 times but less than 9 times in a year	Labour strikes happen more than 3 times but less than 6 times in a year	Labour strikes happen less than 3 times in a year	5
35	Warehousing	Labour	Efficiency	Does the labour force cause delay in stacking the cargo?	More than 40% of trucks experience delay in stacking of cargo by labour force	More than 30% but less than 40% of trucks experience delay in stacking of cargo due to labour force	More than 20% but less than 30% of trucks experience delay in stacking of cargo due to labour force	Less than 20% of trucks experience delay in stacking of cargo due to labour force	No instances of delay observed in stacking of cargo	5
36	Warehousing	Labour	Efficiency	How often is the cargo damaged during loading by labour force?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
37	Warehousing	Labour	Efficiency	How frequently does pilferage take place at ICP?	More than 15 instances of pilferage have been observed in a year	Not more than 15 instances of pilferage have been observed in a year	Not more than 10 instances of pilferage have been observed in a year	Not more than 5 instances of pilferage have been observed in a year	No instances of pilferage have been observed in a year	5
38	Warehousing	Labour	Efficiency	What is the frequency of incorrectly positioned stacking at warehouse?	More than 30% of cargo consignment are stacked incorrectly.	More than 20% but less than 30% of cargo consignment are stacked incorrectly.	More than 10% but less than 20% of cargo consignment are stacked incorrectly.	Less than 10% of cargo consignment are stacked incorrectly	No instances of incorrect stacking.	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
39	Warehousing	Labour	Efficiency	How well defined are the performance indicators that measure labour efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
40	Warehousing	Labour	Training	How well defined is the training SOP for labour?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
41	Warehousing	Equipment	Process	How well defined are the cargo warehousing operations carried out by the equipment?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices are incorporated in the defined processes and process improvement is focussed upon	5
42	Warehousing	Equipment	Availability	What is the availability of equipment to carry out cargo warehousing operations?	Equipment is available for less than 40% of the time for which ICP is operational	Equipment is available for 40-60% of the time for which ICP is operational	Equipment is available for 60-80% of the time for which ICP is operational	Equipment is available for 80-100% of the time for which ICP is operational	Equipment is available for 100% of the time for which ICP is operational	5
43	Warehousing	Equipment	Efficiency	Does the equipment cause delay in stacking the cargo?	Moe than 40% of trucks experience delay in stacking of cargo in warehouse	More than 30% but less than 40% of trucks experience delay in stacking of cargo in warehouse	More than 20% but less than 30% of trucks experience delay in stacking of cargo in warehouse	Less than 20% of trucks experience delay in stacking of cargo in warehouse	No instances of delay observed in stacking the cargo	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
44	Warehousing	Equipment	Efficiency	How often is the cargo damaged during stacking in warehouse?	More than 9 instances of cargo damage have occurred in a year	Not more than 9 instances of cargo damage have occurred in a year	Not more than 6 instances of cargo damage have occurred in a year	Not more than 3 instances of cargo damage have occurred in a year	No instances of cargo damage have been observed in a year	5
45	Warehousing	Equipment	Efficiency	What is the frequency of incorrectly positioned stacking at warehouse?	More than 30% of cargo consignment are stacked incorrectly.	More than 20% but less than 30% of cargo consignment are stacked incorrectly.	More than 10% but less than 20% of cargo consignment are stacked incorrectly.	Less than 10% of cargo consignment are stacked incorrectly	No instances of incorrect stacking.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
46	Warehousing	Equipment	Efficiency	How well defined are the performance indicators that measure equipment efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5
47	Warehousing	Equipment	Training	How well defined is the training SOP for manpower that will operate equipment?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
48	Warehousing	Equipment	Maintenance	ls there a system/ schedule in place for maintenance of equipment?	There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure	Some degree of equipment maintenance such as oiling, lubrication, etc. is carried out. No formal schedule is defined.	A formal schedule of maintenance is defined. However, it is not checked on a regular basis.	The formal maintenance schedule is carried out thoroughly.	Along with the formal maintenance schedule, predictive maintenance is also carried out to avoid major equipment problems in the future.	5
49	Auxiliary work	Labour	Process	How well defined are the auxiliary operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
50	Auxiliary work	Labour	Process	What is the ease of replacing labour force with equipment to carry out auxiliary operations?	Auxiliary operations are defined in such a manner that they can only be carried out by labour.	Labour is required to carry out majority of the operations. Only some operations can be carried out by equipment.	Auxiliary operations are defined in such a manner that they can be carried out by equipment. However, usage of labour is being preferred at the ICP.	Labour can be used effectively in combination with equipment to carry out most of the operations.	It is easy to replace all labour- related operations by equipment to increase efficiency at ICP.	5
51	Auxiliary work	Labour	Availability	What is the availability of labour to carry out cargo auxiliary operations?	Labour is available for less than 40% of the time for which ICP is operational	Labour is available for 40-60% of the time for which ICP is operational	Labour is available for 60-80% of the time for which ICP is operational	Labour is available for 80-100% of the time for which ICP is operational	Labour is available for 100% of the time for which ICP is operational	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
52	Auxiliary work	Labour	Availability	What is the frequency of labour strikes?	Labour strikes happen more than 12 times in a year	Labour strikes happen more than 9 times but less than 12 times in a year	Labour strikes happen more than 6 times but less than 9 times in a year	Labour strikes happen more than 3 times but less than 6 times in a year	Labour strikes happen less than 3 times in a year	5
53	Auxiliary work	Labour	Efficiency	How well defined are the performance indicators that measure labour efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5



S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
54	Auxiliary work	Labour	Training	How well defined is the training SOP for labour?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5
55	Auxiliary work	Equipment	Process	How well defined are the auxiliary operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
56	Auxiliary work	Equipment	Availability	What is the availability of equipment to carry out auxiliary operations?	Equipment is available for less than 40% of the time for which ICP is operational	Equipment is available for 40-60% of the time for which ICP is operational	Equipment is available for 60-80% of the time for which ICP is operational	Equipment is available for 80-100% of the time for which ICP is operational	Equipment is available for 100% of the time for which ICP is operational	5
57	Auxiliary work	Equipment	Efficiency	How well defined are the performance indicators that measure equipment efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
58	Auxiliary work	Equipment	Training	How well defined is the training SOP for manpower that will operate equipment?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5
59	Auxiliary work	Equipment	Maintenance	Is there a system/ schedule in place for maintenance of equipment?	There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure	Some degree of equipment maintenance such as oiling, lubrication, etc. is carried out. No formal schedule is defined.	A formal schedule of maintenance is defined. However, it is not checked on a regular basis.	The formal maintenance schedule is carried out thoroughly.	Along with the formal maintenance schedule, predictive maintenance is also carried out to avoid major equipment problems in the future.	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
60	Security	Equipment	Process	How well defined are the auxiliary operations which are carried out by the labour force?	Processes to be followed are largely undefined	Processes are loosely defined with no check on how they are executed	The processes are defined and documented for all key activities and followed by the majority of the staff	Processes are standardized and followed by everyone. A check is kept on process execution	Best practices and evolving user requirements are incorporated in the defined processes and process improvement is focussed upon	5
61	Security	Equipment	Availability	What is the availability of equipment to carry out security screening of cargo?	Equipment is available for less than 40% of the time for which ICP is operational	Equipment is available for 40-60% of the time for which ICP is operational	Equipment is available for 60-80% of the time for which ICP is operational	Equipment is available for 80-100% of the time for which ICP is operational	Equipment is available for 100% of the time for which ICP is operational	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
62	Security	Equipment	Efficiency	Does the screening of cargo using equipment cause delay in cargo operations?	Moe than 40% of trucks experience delay due to screening of cargo by equipment	More than 30% but less than 40% of trucks experience delay due to screening of cargo by equipment	More than 20% but less than 30% of trucks experience delay due to screening of cargo by equipment	Less than 20% of trucks experience delay due to screening of cargo by equipment	No instances of delay observed due to screening of cargo by equipment	5
63	Security	Equipment	Efficiency	How well defined are the performance indicators that measure equipment efficiency?	A check is not kept on the performance of labour	Performance indicators are loosely defined but not quantified.	Some performance indicators are defined and quantified but based on the discretion of the supervisor	Performance indicators are properly defined and quantified. Action is taken against poor performance	Performance indicators are properly defined and quantified. Best practices are regularly incorporated to improve performance	5

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S.No	Parameter	Sub Parameter 1	Sub Parameter 2	Question	1	2	3	4	5	Target Score
64	Security	Equipment	Training	How well defined is the training SOP for manpower that will operate equipment?	A training plan does not exist, and no formal training occurs	An informal training plan is defined but emphasis on training is low	A formal training plan has been developed	Mature training techniques are applied, and effectiveness of the training plan is assessed.	Formal training plan incorporates external best practices to eliminate gaps in training plan and is regularly undertaken to improve performance.	5
65	Security	Equipment	Maintenance	ls there a system/ schedule in place for maintenance of equipment?	There is no schedule for maintenance of equipment. Equipment repair is carried out only after complete equipment failure	Some degree of equipment maintenance such as oiling, lubrication, etc. is carried out. No formal schedule is defined.	A formal schedule of maintenance is defined. However, it is not checked on a regular basis.	The formal maintenance schedule is carried out thoroughly.	Along with the formal maintenance schedule, predictive maintenance is also carried out to avoid major equipment problems in the future.	5

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13. Annexure C: Cargo-Handling Information Collected from ICPs

13.1. Trade Data in Metric Tonnes

	In MT													
	ICP Aga	rtala	ICP Srima	antapur	ICP A	ttari	ICP Sut	arkandi	ICP F	etrapole	ICP R	axaul	ICP Jo	ogbani
Year													Impo	Ехро
	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	rt	rt
2016-														
17	3,10,527	33	3,83,568	740	22,63,309	2,51,487	NA	NA	21,534	1,71,461	NA	NA		
2017-											3,43,57	49,83,2		
18	2,10,981	62	4,77,100	220	22,97,932	1,06,476	NA	NA	34,546	2,00,551	8	16	N	IA
2018-											3,73,30	49,46,5		
19	1,85,459	140	1,61,163	487	22,86,021	41,993	NA	NA	32,937	1,96,734	1	20		
2019-											5.86.49	44.09.5		
20	1.71.846	38	1.87.162	382	1.47.404	14.019	29.453	31.815	22.337	1.54.711	3	78		
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2020-											2 42 09	31 86 8		
21	1.44.427	146	1.23.173	1.874	1.22.919	NA	33,979	68,454	14.002	12.37.191	9	98		



13.2. Trade Data in INR Crores

	In INR Crores													
Voor	ICP Aga	rtala	ICP Srima	intapur	ICP A	ttari	ICP Sut	arkandi	ICP P	etrapole	ICP R	laxaul	ICP Jo	ogbani
fear	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
2016- 17	190.0	1.0	57.0	2.5	2,907.4	1,063.6	72.7	45.1	2,847.0	15,654.0	1,333.0	19,972. 0	1,199. 0	4,280. 0
2017- 18	235.0	-	91.2	0.3	3,404.0	744.2	106.3	55.9	2,690.0	16,110.0	859.0	18,726. 0	1,289. 0	5,272. 0
2018- 19	355.0	1.0	95.9	0.5	3,627.5	726.2	108.0	359.7	3,943.0	17,437.0	1,061.0	24,139. 0	1,539. 0	6,979. 0
2019- 20	579.0	0.9	100.9	0.4	2,544.3	227.8	262.0	67.0	4,614.0	15,991.0	2,000.0	22,821. 0	1,897. 0	5,727. 0
2020- 21	580.0	0.9	73.5	8.2	2,626.7	-	188.4	49.3	3,160.0	12,610.0	5,887.0	63,030. 0	1,711. 4	5,558. 2

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13.3. Trade Data in Trucks

						In	Trucks							
	ICP Aga	rtala	ICP Srima	antapur	ICP A	ttari	ICP Sut	arkandi	ICP P	etrapole	ICP R	axaul	ICP Jo	gbani
Year	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Impo	Expo
	mport	Ехроп	mport	Ехроп	mport	Export	πηροτι	Ехроп	mport	Export	πηροιτ	Ехроп	11	
2016-									32,693.0					
17	11,484	1	6,094	20	46,085	14,224	NA	NA	0	1,14,013.00	9939	95226	NA	781
2017-									26,661.0			1,17,52		3639
18	10,988	7	8,961	15	44,890	3,303	NA	NA	0	1,19,196.00	9,110	1	NA	7
2018-									36,794.0			1,18,12		3486
19	12,055	18	7,870	85	46,335	2,767	NA	NA	0	1,26,761.00	8,770	5	NA	8
2019-									39,134.0			1,29,34		4179
20	13,366	5	10,305	115	5,818	837	2,697	7,156	0	1,15,434.00	19,281	9	9	4
2020-									22,967.0			1,47,74	1221	8074
21	11,135	11	5,601	223	5,250	-	4,377	2,530	0	83,369.00	14,826	6	8	4

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13.4. Commodity Wise Trade Data

(i). ICP Attari

				In MT					
				ICF	P Attari				
Year			Import				Ехро	ort	
i cui	Fresh/Dry Fruits	Dry Dates	Cement	Gypsum Rock/Powder	Aluminium Ore	Vegetable	Cotton/ Yarn	HDPE	Soyabean
2016-									
17			10,24,236.0						
	33,268.00	1,49,807.00	0	7,23,263.00	1,79,775.00	1,86,149.00	42,404.00	16,099.00	3,056.00
2017-									
18	42,936.00	1,28,868.00	9,20,317.00	7,97,220.00	2,19,215.00	-	34,137.00	8,114.00	-
2018-									
19	47,632.00	1,31,739.00	8,36,766.00	8,24,022.00	1,78,042.00	-	32,151.00	9,785.00	-
2019-									
20	54,385.00	12.00	-	-	-	-	9,210.00	4,797.00	-
2020-									
21	74,663.00	-	-	-	-	-	-	-	-

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(ii). ICP Agartala

In MT													
				ICP Agartala									
Year	Import												
	Cement	Stone		Food Item	Fresh Fish	Dry Fish							
2016-17	NA		NA	NA	NA	NA							
2017-18	1,24,430.02	63,418.80		6,058.39	5,494.13	2,915.81	NIA						
2018-19	68,706.45	56,049.77		10,111.58	5,988.27	1,949.09	NA NA						
2019-20	65,604.75	20,006.27		35,113.56	11,202.05	3,307.30							
2020-21	60,165.15	4,775.17		19,872.42	4,256.94	16,159.85							

(iii). ICP Petrapole

		In MT		
Year		Export		
	Cotton Rags	Jute Yarn	Jute Cloth	
2016-17				
2017-18		NIA		NA
2018-19		INA		NA
2019-20				
2020-21	70099	17983	756	

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(iv). ICP Raxaul

	In MT					
	ICP Ra	xaul				
Year	Import	Export				
2016-17						
2017-18	NA	A				
2018-19						
2019-20						
2020-21						

(v). ICP Jogbani

	In MT				
Voor	ICP Jog	gbani			
fear	Import	Export			
2016-17					
2017-18					
2018-19	NA	4			
2019-20					
2020-21					



(vi). ICP Srimantapur

	In MT														
				ICP	Srimantap	ur									
Year		Import					Export								
	Cement	Steam Coal	GCI Steel Sheet	Ginger	Cumin	Wood apple	Agarbatti	Betel Leaf	Pineapple	Tamarind					
2016-17	1,17,095.00	NA	NA	260	480										
2017-18	1,49,617.00	NA	NA	15		56	9.795			128.00					
2018-19	1,42,001.00	12,817.00	779.40	10.00		385.80	11.87	11.50		50.14					
2019-20	1,42,803.00	9,338.00	406.60		9.90	294.80		7.50	4.50	65.50					
2020-21	1,04,075.00	12,046.00	99.00	713.00	311.13	725.54	23.00			63.30					

(vii). ICP Sutarkandi

	In MT													
		ICP Sutarkandi												
Vear			Import					Ex	port					
i cai	Cement	Soya Oil	Drinks	Food Items	Cotto n	Plastic Items	Coal	Limestone	Fruits and vegetables	Rice				
2016-														
17			0	0	0	0	0	0	0	0				
2017-														
18			0	0	0	0	0	0	0	0				
2018-														
19			0	0	0	0	0	0	0	0				
2019-														
20	2,700.00	16,089.17	3,797.45	2,938.90	1403	-	18,171.00	-	13,292.88	-				

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2020- 21										3,202.0
	10,690.00	4,694.39	7,959.25	5,774.30	0	2,131.13	9,134.70	42,160.50	11,475.30	0

13.5. Information on Labour Available at ICPs

Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
	1	What is the total number of labour force available for unloading purpose at ICP?	80	90	650	51	450 persons	No labour	
Unloading	2	Is the labour force for loading and unloading same?	Yes	Yes	No	Yes	Yes	required as only transhipme nt takes place	No labour required as only transhipm ent takes place
	3	What is the total weight of the commodit y carried in a fully	Depends on nature of cargo	20	1 to 4	As per commodity	10-12 MT		

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Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
		loaded truck (in MT)?							
	4	What is the average number of labour in one gang for unloading (one labour unit required to unload one full truck at the ICP)?	6	6	10	8	8 persons		
	5	What is the time (in minutes) taken by one labour gang to fully unload one truck?	45	30	90	25	45-55 minutes		



Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
	6	What are the labour charges (in INR) paid to one labour gang to unload one truck?	As per approved tariff	INR 990	INR 4400	Depends on commodity	1300/-		
	7	What is the idle time (resting time in minutes) between unloading of two trucks?	5	5	25	30	25-30 minutes		
	8	What are the working hours (shift) for labour gang that unloads the trucks?	10	From 10.00 A.M to until finished the unloading the tracks (varied to Nos. of imported trucks)	NA	5	8 hrs		



Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
	9	What is the total number of labour force available for loading purpose at ICP?	80	90	650	51	450		
Loading	10	What is the average number of labour in one gang for loading (one labour unit required to load one full truck at the ICP)?	6	5	10	8	8 persons	No labour required as only transhipme nt takes place	
	11	What is the time (in minutes)	45	35	120	25	45-55 minutes		



Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
		taken by one labour gang to fully load one truck?							
	12	What are the labour charges (INR) paid to one labour gang to load one truck?	As per approved tariff	INR 990	INR 4400	Depends on commodity	1300/-		
	13	What is the idle time (resting time in minutes) between loading of two trucks?	5	5	25	30	25-30 minutes		



Process	S. No.	Question	ICP Agartala	ICP Srimantapur	ICP Attari	ICP Sutarkandi	ICP Petrapole	ICP Raxaul	ICP Jogbani
	14	What are the working hours (shift) for labour gang that loads the trucks?	10	From 10.00 A.M to until finished the unloading the tracks (varied to Nos. of imported tracks)	NA	5	8 hrs		



13.6. Information on Equipment Available at ICPs

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Proces s	S.n o.	Question	ICP Ag	gartala	ICP Srimantap ur	ICP Attari	ICP Sutarkan di	ICP Petrapol e	ICP Raxaul	ICP Jogbani
	1	What are the different types of equipment available at ICP for unloading cargo?	Backho e Loader (Stone and Coal)	Hydra (Stone and Coal)				3 forklift, 2 hydra, 1 mobile		
	2	What is the number of each type of equipment available at the ICP?	NA	NA					No	
	3	What is the purchasing cost of each equipment?	INR 32 Lacs	INR 34 Lacs		No			Equipme	
Unloa	4	What is the lifecycle of each equipment (in years)?	15	15	No Equipment	Equip ment	No Equipmen		required as only	
ding	5	What are the Annual Maintenance Charges (AMC) of each equipment?	Based on equipm ent need	Based on equipm ent need	available	availab le	t available		tranship ment takes place	
	6	Is there a defined Standard Operating Procedure (SOP) for equipment usage?	SOP defined as per H & T Tender	SOP defined as per H & T Tender						
	7	What is the volume of commodity (in MT) being handled by each equipment in one unloading cycle?	1.5	1.5						



Proces s	S.n o.	Question	ICP Ag	gartala	ICP Srimantap ur	ICP Attari	ICP Sutarkan di	ICP Petrapol e	ICP Raxaul	ICP Jogbani
	8	What is the manpower available to handle each equipment	2	2				1 each		
	9	Is the manpower trained to handle the equipment?	Yes	Yes						
	10	What is the time taken by each equipment to unload one truck (in minutes)?	25	40				45-50 minutes		
	11	What is the total working time (in hours) of the equipment per day?	Depen ds on volume of work	Depen ds on volume of work						
	12	What is the percentage of time in a day when equipment does not work (breakdown, failure, maintenance, etc.)	NA	NA						
	13	What is the idle time (resting time in minutes) between unloading of two trucks?	10	10						
Loadin	14	What are the different types of equipment available at ICP for loading cargo?	Backho e Loader (Stone and Coal)	Hydra (Stone and Coal)	One JCB cum loader use as and when required in	No Equip ment	No Equipmen	3 forklift, 2 hydra, 1 mobile	No Equipme nt required as only	
g	15	What is the number of each type of equipment available at the ICP?	NA	NA	ICP Srimantapu	availab le	t available		tranship ment	
	16	What is the purchasing cost of each equipment?	INR 32 Lacs	INR 34 Lacs	arranged /				takes place	
	17	What is the lifecycle of each equipment?	15	15	Tenteu					

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Proces s	S.n o.	Question	ICP Ag	gartala	ICP Srimantap ur	ICP Attari	ICP Sutarkan di	ICP Petrapol e	ICP Raxaul	ICP Jogbani
			Based	Based						
		What are the Annual Maintenance	on	on						
	18	Charges (AMC) of each equipment?	equipm	equipm						
			ent	ent						
			need	need	-					
			SOP	SOP						
		Is there a defined Standard Operating	defined	defined						
	19	Procedure (SOP) for equipment usage?	as per	as per						
			H&T	H&T						
			Tender	Tender						
		What is the volume of commodity (in								
	20	MT) being handled by each equipment in one loading cycle?	1.5	1.5						
	21	What is the manpower available to handle each equipment	2	2				1 each		
	22	Is the manpower trained to handle the equipment?	Yes	Yes						
	23	What is the time taken by each	25	40				45-50 minutes		
			Depen	Depen	-			minutes		
		What is the total working time (in hours)	ds on	ds on						
	24	of the equipment per day?	volume	volume						
			of work	of work						
		What is the perceptage of time in a day			1					
	25	when equipment does not work	NA	NA						
		(breakdown, failure, maintenance, etc.)								



Proces s	S.n o.	Question	ICP Ag	artala	ICP Srimantap ur	ICP Attari	ICP Sutarkan di	ICP Petrapol e	ICP Raxaul	ICP Jogban
	26	What is the idle time (resting time in minutes) between loading of two trucks?	10	10						

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14. Annexure D: Details of Prioritization of Initiatives at ICPs

14.1. ICP Attari

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	7.9	Medium	
2	Deployment of Palletisation Machine	7.2	Low	
3	Deployment of Road Cleaning Truck	8.1	High	
5	Establishment of SOP	8.1	High	
6	Developing an effective training program for labour/ manpower	7.1	Low	

Quotient Score (1 to 10)								
Benefit quotient	Execution quotient	Cost quotient	Time quotient					
50%	25%	10%	15%					
4.5	1.3	1.0	1.1					
3.5	1.7	1.0	1.1					
3.0	3.0	0.6	1.5					
3.0	3.0	1.0	1.1					
2.5	3.0	0.8	0.8					

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Beneficial Impact on Business Lever:

List of Initiatives Ov Pr		verall riority	Beneficial Impact on business lever					Quantita	Quantitative scoring of each business lever					Benefit Quotient			
N o	Initiative Name	Scor e	Rating	De e ir 1	ecreas n TAT 1.00	Increas e in cargo handlin g capacity 1.00	Improvement in quality of work 1.00	Improv ed EODB 1.00	Decreas e in TAT	Increase in cargo handling capacity	Improveme nt in quality of work	lmprove d EODB	Al	bsolut Score	Relativ e Score	Relativ e score scaled to 10	
1	Deployment of Forklift	7.9	Mediu m	Hig	gh	High	Medium	High	5	5	3	5		18	0.90	9	
2	Deployment of Palletization Machine	7.2	Low	Me	edium	Mediu m	High	Mediu m	3	3	5	3		14	0.70	7	
3	Deployment of Road Cleaning Truck	8.1	High	NA	N	NA	Medium	NA	0	0	3	0		3	0.60	6	
5	Establishme nt of SOP	8.1	High	Me	edium	NA	Medium	Mediu m	3	0	3	3		9	0.60	6	
6	Developing an effective training program for labour/ manpower	7.1	Low	Me	edium	Low	Medium	Mediu m	3	1	3	3		10	0.50	5	
Ber	neficial Impact lev	/el	Assigned S	core								,					
Low	dium		1														
NA			0														

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Execution Complexity:

List of Initiatives Overall Priority		Execution Complexity				Execution Complexity					Execution Complexity Quotient				
No	Initiative Name	Score	Rating	People	Process	Trade	Technology	People	Process	Trade	Technology		Absolute Score	Relative score	Relative score scaled to 10
1	Deployment of Forklift	7.9	Medium	High	High	High	Low	1	1	1	5		8	0.53	5
2	Deployment of Palletization Machine	7.2	Low	Medium	High	High	Low	3	1	1	5		10	0.67	7
3	Deployment of Road Cleaning Truck	8.1	High	Low	Medium	Low	Low	5	3	5	5		18	1.20	12
5	Establishment of SOP	8.1	High	Medium	Low	Low	Low	3	5	5	5		18	1.20	12
6	Developing an effective training program for labour/ manpower	7.1	Low	Low	Low	Medium	Low	5	5	3	5		18	1.20	12

Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5



Cost Quotient:

List of Initiatives		Overa	II Priority		Quotient Scor	Cost			
No	Initiative Name	Score	Rating	Benefit quotient 50%	Execution quotient 25%	Cost quotient 10%	Time quotient 15%	Total Cost (iNR lacs)	Score (from 1 to 10)
1	Deployment of Forklift	7.9	Medium	4.5	1.3	1.0	1.1	12.50	10
2	Deployment of Palletization Machine	7.2	Low	3.5	1.7	1.0	1.1	3.00	10
3	Deployment of Road Cleaning Truck	8.1	High	3.0	3.0	0.6	1.5	70.00	6
5	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1	-	10
6	Developing an effective training program for labour/ manpower	7.1	Low	2.5	3.0	0.8	0.8	30.00	8

Cost from		Cost to	Score
	0.00	25.00	10
	25.00	50.00	8
	50.00	75.00	6
	75.00	100.00	4
	100.00	125.00	2

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Implementation Time:

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	7.9	Medium	
2	Deployment of Palletization Machine	7.2	Low	
3	Deployment of Road Cleaning Truck	8.1	High	
5	Establishment of SOP	8.1	High	
6	Developing an effective training program for labour/ manpower	7.1	Low	

Implementation Duration						
Duration	Score (from 1 to 10)					
6 - 12 months	7					
6 - 12 months	7					
< 6 months	10					
6 - 12 months	7					
12-24 months	5					

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2



14.2. ICP Agartala

List of Initiatives			Overall Quotient Score (1 to 10) Priority					
No	Initiative Name	Score	Rating		Benefit quotient	Execution quotient	Cost quotient	Time quotient
					50%	25%	10%	15%
1	Deployment of Forklift	8.9	High		4.5	2.3	1.0	1.1
2	Deployment of Reach Stacker	7.6	Medium		5.0	1.0	0.8	0.8
3	Deployment of Pelletizing Machine	7.9	Medium		3.5	2.3	1.0	1.1
4	Deployment of Industrial Vacuum Cleaner	8.2	High		3.0	2.7	1.0	1.5
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High		4.0	2.7	0.4	1.1
6	Establishment of SOP	8.1	High		3.0	3.0	1.0	1.1
7	Developing an effective training program for labour/ manpower	7.4	Low		2.5	3.3	0.8	0.8

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Beneficial Impact on Business Lever:

Lis	t of Initiatives	Overa	ll Priority		Bene	eficial Impa	ct on business l	ever	Quantita	ative scorin	g of each busin	ess lever	Bei	nefit Quoti	ent
No	Initiative Name	Score	Rating		Decrease in TAT	Increase in cargo handling capacity	Improvement in quality of work	Improved EODB	Decrease in TAT	Increase in cargo handling capacity	Improvement in quality of work	Improved EODB	Absolute Score	Relative Score	Relative score scaled to 10
					1.00	1.00	1.00	1.00							
1	Deployment of Forklift	8.9	High		High	High	Medium	High	5	5	3	5	18	0.90	9
2	Deployment of Reach Stacker	7.6	Medium		High	High	High	High	5	5	5	5	20	1.00	10
3	Deployment of Pelletizing Machine	7.9	Medium		Medium	Medium	High	Medium	3	3	5	3	14	0.70	7
4	Deployment of Industrial Vacuum Cleaner	8.2	High		NA	NA	Medium	NA	0	0	3	0	3	0.60	6
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	-	Medium	Medium	High	High	3	3	5	5	16	0.80	8
6	Establishment of SOP	8.1	High		Medium	NA	Medium	Medium	3	0	3	3	9	0.60	6
7	Developing an effective training program for labour/	7.4		-											
	manpower		Low		Medium	Low	Medium	Medium	3	1	3	3	10	0.50	5

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Beneficial Impact level	Assigned Score
High	5
Low	1
Medium	3
NA	0

Execution Complexity:

List of Initiatives Overall Priority			Execution Complexity					Execution	Comple	Execution Complexity Quotient					
No	Initiative Name	Score	Rating		People	Process	Trade	Technology	People	Process	Trade	Technology	Absolute Score	Relative score	Relative score scaled to 10
1	Deployment of Forklift	8.9	High	N	Medium	High	Low	Low	3	1	5	5	14	0.93	9
2	Deployment of Reach Stacker	7.6	Medium	N	Medium	High	High	High	3	1	1	1	6	0.40	4
3	Deployment of Pelletizing Machine	7.9	Medium	N	Medium	High	Low	Low	3	1	5	5	14	0.93	9
4	Deployment of Industrial Vacuum Cleaner	8.2	High		Low	High	Low	Low	5	1	5	5	16	1.07	11
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High		Low	High	Low	Low	5	1	5	5	16	1.07	11
6	Establishment of SOP	8.1	High	N	Medium	Low	Low	Low	3	5	5	5	18	1.20	12
7	Developing an effective training program for labour/ manpower	7.4	Low		Low	Low	Low	Low	5	5	5	5	20	1.33	13

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Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5

Cost Quotient:

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	8.9	High	
2	Deployment of Reach Stacker	7.6	Medium	
3	Deployment of Pelletizing Machine	7.9	Medium	
4	Deployment of Industrial Vacuum Cleaner	8.2	High	
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	
6	Establishment of SOP	8.1	High	
7	Developing an effective training program for labour/ manpower	7.4	Low	

	Cost
Total Cost (iNR lacs)	Score (from 1 to 10)
12.50	10
50.00	8
3.00	10
3.50	10
80.00	4
-	10
30.00	8

Cost from	Cost to	Score
0.00	25.00	10
25.00	50.00	8
50.00	75.00	6



75.00	100.00	4
100.00	125.00	2

Implementation Time:

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	8.9	High	
2	Deployment of Reach Stacker	7.6	Medium	
3	Deployment of Pelletizing Machine	7.9	Medium	
4	Deployment of Industrial Vacuum Cleaner	8.2	High	
5	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	
6	Establishment of SOP	8.1	High	
7	Developing an effective training program for labour/ manpower	7.4	Low	

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	Implementation Duration
Duration	Score (from 1 to 10)
6 - 12 months	7
12-24 months	5
6 - 12 months	7
< 6 months	10
6 - 12 months	7
6 - 12 months	7
12-24 months	5

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2



14.3. ICP Petrapole

	List of Initiatives	Ov Pr	verall iority	Quotient Score (1 to 10)				
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient	
				50%	25%	10%	15%	
1	Deployment of Hydraulic Conveyor Belt	8.1	High	5.0	1.7	0.4	1.1	
2	Deployment Road Cleaning Truck	8.1	High	3.0	3.0	0.6	1.5	
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Medium	3.0	2.7	0.8	1.5	
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High	4.0	2.7	1.0	1.1	
5	Establishment of SOP	8.4	High	3.0	3.3	1.0	1.1	
6	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8	



Beneficial Impact on Business Lever:

List of Initiatives Overall Priority			Beneficial Impact on business lever				Quantitative scoring of each business lever				Benefit Quotient				
N o	Initiative Name	Scor e	Rating		Decreas e in TAT 1.00	Increas e in cargo handlin g capacity 1.00	Improveme nt in quality of work 1.00	Improve d EODB 1.00	Decreas e in TAT	Increas e in cargo handlin g capacity	Improveme nt in quality of work	Improve d EODB	Absolut e Score	Relativ e Score	Relativ e score scaled to 10
1	Deployment of Hydraulic Conveyor Belt	8.1	High		High	High	High	High	5	5	5	5	20	1.00	10
2	Deployment Road Cleaning Truck	8.1	High	-	NA	NA	Medium	NA	0	0	3	0	3	0.60	6
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Mediu	-	NA	NA	Medium	NA	0	0	3	0	3	0.60	6
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High	-	Medium	Mediu m	High	High	3	3	5	5	16	0.80	8
5	Establishmen t of SOP	8.4	High		Medium	NA	Medium	Medium	3	0	3	3	9	0.60	6
6	Developing an effective training program for labour/ manpower	7.4	Low	-	Medium	Low	Medium	Medium	3	1	3	3	10	0.50	5

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Beneficial Impact level	Assigned Score
High	5
Low	1
Medium	3
NA	0



Execution Complexity:

List of Initiatives Overall Priority		Execution Complexity				Execution Complexity				Execution Complexity Quotient			y Quotient		
No	Initiative Name	Score	Rating	People	Process	Trade	Technology	People	Process	Trade	Technology	Absolı Scor	ute e	Relative score	Relative score scaled to 10
1	Deployment of Hydraulic Conveyor Belt	8.1	High	High	High	Low	Medium	1	1	5	3	10		0.67	7
2	Deployment Road Cleaning Truck	8.1	High	Low	Medium	Low	Low	5	3	5	5	18		1.20	12
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Medium	Low	High	Low	Low	5	1	5	5	16		1.07	11
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High	Low	High	Low	Low	5	1	5	5	16		1.07	11
5	Establishment of SOP	8.4	High	Low	Low	Low	Low	5	5	5	5	20		1.33	13
6	Developing an effective training program for labour/ manpower	7.4	Low	Low	Low	Low	Low	5	5	5	5	20		1.33	13

Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5

Cost Quotient:



	List of Initiatives	Overa	all Priority				
No	Initiative Name	Score	Score Rating		Score Rating		Total Cost (iNR lacs)
1	Deployment of Hydraulic Conveyor Belt	8.1	High		100.00		
2	Deployment Road Cleaning Truck	8.1	High		70.00		
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Medium		30.00		
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High		25.00		
5	Establishment of SOP	8.4	High		-		
6	Developing an effective training program for labour/ manpower	7.4	Low		30.00		

	Cost
Total Cost (iNR lacs)	Score (from 1 to 10)
100.00	4
70.00	6
30.00	8
25.00	10
-	10
30.00	8

Cost from	Cost to	Score
0.00	25.00	10
25.00	50.00	8
50.00	75.00	6
75.00	100.00	4
100.00	125.00	2

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Implementation Time:

	List of Initiatives					
No	Initiative Name	Score	Rating			
1	Deployment of Hydraulic Conveyor Belt	8.1	High			
2	Deployment Road Cleaning Truck	8.1	High			
3	Deployment of Truck Mounted Water Sprinkler System	8.0	Medium			
4	Deployment of X-Ray Cargo Baggage Scanner	8.7	High			
5	Establishment of SOP	8.4	High			
6	Developing an effective training program for labour/ manpower	7.4	Low			

	Implementation Duration
Duration	Score (from 1 to 10)
6 - 12 months	7
< 6 months	10
< 6 months	10
6 - 12 months	7
6 - 12 months	7
12-24 months	5

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2

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14.4. ICP Raxaul

	List of Initiatives	O\ Pr	/erall iority		Quotient Score	e (1 to 10)		
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient	
				50%	25%	10%	15%	
1	Establishment of Standard Operating Procedure	7.7	Medium	3.0	2.7	1.0	1.1	
2	Developing an Effective Training Program	7.4	Low	2.5	3.3	0.8	0.8	

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Beneficial Impact on Business Lever:

List of Initiatives		nitiatives Overall Priority		Beneficial Impact on business lever					Quantitative scoring of each business lever					Benefit Quotient			
N o	Initiative Name	Scor e	Rating	Decreas e in TAT	Increas e in cargo handlin g capacity	lmproveme nt in quality of work	lmprove d EODB		Decreas e in TAT	Increas e in cargo handlin g capacity	lmproveme nt in quality of work	lmprove d EODB		Absolut e Score	Relativ e Score	Relativ e score scaled to 10	
				1.00	1.00	1.00	1.00										
1	Establishment of Standard Operating Procedure	7.7	Mediu m	Medium	NA	Medium	Medium		3	0	3	3		9	0.60	6	
2	Developing an Effective Training Program	7.4	Low	Medium	Low	Medium	Medium		3	1	3	3		10	0.50	5	

Beneficial Impact level	Assigned Score
High	5
Low	1
Medium	3
NA	0

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Execution Complexity:

List of Initiatives		Overall Priority		Execution Complexity				Execution Complexity					Execution Complexity Quotient			
No	Initiative Name	Score	Rating	People	Process	Trade	Technology	People	Process	Trade	Technology	Ab: S	solute core	Relative score	Relative score scaled to 10	
1	Establishment of Standard Operating Procedure	7.7	Medium	Medium	Low	Medium	Low	3	5	3	5		16	1.07	11	
2	Developing an Effective Training Program	7.4	Low	Low	Low	Low	Low	5	5	5	5		20	1 33	13	

Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5



Cost Quotient:

	List of Initiatives	Overa	ll Priority	
No	Initiative Name	Score	Rating	Total Cost (iNR lacs)
1	Establishment of Standard Operating Procedure	7.7	Medium	
2	Developing an Effective Training Program	7.4	Low	30.00
3	Creating a Proper Maintenance Schedule for Equipment	9.4	High	

	Cost
Total Cost (iNR lacs)	Score (from 1 to 10)
	10
30.00	8
	10

Cost from	Cost to	Score
0.00	25.00	10
25.00	50.00	8
50.00	75.00	6
75.00	100.00	4
100.00	125.00	2

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Implementation Time:

	List of Initiatives	Overa	Overall Priority			
No	Initiative Name	Score	Rating			
1	Establishment of Standard Operating Procedure	7.7	Medium			
2	Developing an Effective Training Program	7.4	Low			
3	Creating a Proper Maintenance Schedule for Equipment	9.4	High			

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Implementation Duration										
Duration	Score (from 1 to 10)									
6 - 12 months	7									
12-24 months	5									
6 - 12 months	7									

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2

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14.5. ICP Jogbani

	List of Initiatives	Ov Pr	verall iority	Quotient Score (1 to 10)							
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient				
				50%	25%	10%	15%				
1	Deployment of Lawnmower	6.1	Low	1.0	3.0	1.0	1.1				
2	Deployment of Tractor Trolley	6.1	Low	1.0	3.0	1.0	1.1				
3	Deployment of Grass Cutting Machine	6.1	Low	1.0	3.0	1.0	1.1				
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	4.5	2.7	0.4	1.1				
5	Deployment of Handheld Detector	9.2	High	4.5	2.7	1.0	1.1				
6	Establishment of Standard Operating Procedure	7.7	Medium	3.0	2.7	1.0	1.1				
7	Developing an Effective Training Program	7.4	Low	2.5	3.3	0.8	0.8				

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Beneficial Impact on Business Lever:

Lis	t of Initiatives	es Overall Priority		Beneficial Impact on business lever				Q	uantita	ative scorin	ig of each busir	ness lever	Benefit Quotient			
N o	Initiative Name	Scor e	Rating	Decreas e in TAT 1.00	Increas e in cargo handlin g capacity 1.00	Improveme nt in quality of work 1.00	Improve d EODB 1.00	De e i	ecreas n TAT	Increas e in cargo handlin g capacity	lmproveme nt in quality of work	lmprove d EODB		Absolut e Score	Relativ e Score	Relativ e score scaled to 10
1	Deployment of Lawnmower	6.1	Low	Low	NA	Low	NA		1	0	1	0		2	0.20	2
2	Deployment of Tractor Trolley	6.1	Low	Low	NA	Low	NA		1	0	1	0		2	0.20	2
3	Deployment of Grass Cutting Machine	6.1	Low	Low	NA	Low	NA		1	0	1	0		2	0.20	2
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	High	Mediu	High	High		5	3	5	5		18	0.90	9
5	Deployment of Handheld Detector	9.2	High	High	Mediu m	High	High		5	3	5	5		18	0.90	9
6	Establishmen t of Standard Operating Procedure	7.7	Mediu m	Medium	NA	Medium	Medium		3	0	3	3		9	0.60	6
7	Developing an Effective Training Program	7.4	Low	Medium	Low	Medium	Medium		3	1	3	3		10	0.50	5

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Beneficial Impact level	Assigned Score
High	5
Low	1
Medium	3
NA	0



Execution Complexity:

List of Initiatives Overall Priorit		Ill Priority		Executio	ity		Execution	Comple	Execution Complexity Quotient						
No	Initiative Name	Score	Rating	People	Process	Trade	Technology	People	Process	Trade	Technology		Absolute Score	Relative score	Relative score scaled to 10
1	Deployment of Lawnmower	6.1	Low	Medium	Low	Low	Low	3	5	5	5		18	1.20	12
2	Deployment of Tractor Trolley	6.1	Low	Medium	Low	Low	Low	3	5	5	5		18	1.20	12
3	Deployment of Grass Cutting Machine	6.1	Low	Medium	Low	Low	Low	3	5	5	5		18	1.20	12
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	Low	High	Low	Low	5	1	5	5		16	1.07	11
5	Deployment of Handheld Detector	9.2	High	Low	High	Low	Low	5	1	5	5		16	1.07	11
6	Establishment of Standard Operating Procedure	7.7	Medium	Medium	Low	Medium	Low	3	5	3	5		16	1.07	11
7	Developing an Effective Training Program	7.4	Low	Low	Low	Low	Low	5	5	5	5		20	1.33	13

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Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5



Cost Quotient:

	List of Initiatives	Overa	ll Priority
No	Initiative Name	Score	Rating
1	Deployment of Lawnmower	6.1	Low
2	Deployment of Tractor Trolley	6.1	Low
3	Deployment of Grass Cutting Machine	6.1	Low
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High
5	Deployment of Handheld Detector	9.2	High
6	Establishment of Standard Operating Procedure	7.7	Medium
7	Developing an Effective Training Program	7.4	Low

	Cost
Total Cost (iNR lacs)	Score (from 1 to 10)
0.10	10
2.00	10
0.25	10
80.00	4
0.10	10
	10
30.00	8

Cost from	Cost to	Score
0.00	25.00	10
25.00	50.00	8
50.00	75.00	6
75.00	100.00	4
100.00	125.00	2



Implementation Time:

	List of Initiatives	Overall Priority			
No	Initiative Name	Score	Rating		
1	Deployment of Lawnmower	6.1	Low		
2	Deployment of Tractor Trolley	6.1	Low		
3	Deployment of Grass Cutting Machine	6.1	Low		
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High		
5	Deployment of Handheld Detector	9.2	High		
6	Establishment of Standard Operating Procedure	7.7	Medium		
7	Developing an Effective Training Program	7.4	Low		

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Implementation Duration										
Duration	Score (from 1 to 10)									
6 - 12 months	7									
6 - 12 months	7									
6 - 12 months	7									
6 - 12 months	7									
6 - 12 months	7									
6 - 12 months	7									
12-24 months	5									

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2

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14.6. ICP Srimantapur

	List of Initiatives	Ov Prie	erall ority	Quotient Score (1 to 10)							
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient				
				50%	25%	10%	15%				
1	Deployment of Forklift	8.9	High	4.5	2.3	1.0	1.1				
2	Deployment of Industrial Vacuum Cleaner	8.2	High	3.0	2.7	1.0	1.5				
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	4.0	2.7	0.4	1.1				
4	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1				
5	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8				

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Beneficial Impact on Business Lever:

List of Initiatives		O Pi	verall riority		Beneficial Impact on business lever						tive scorin		Benefit Quotient				
N o	Initiative Name	Scor e	Rating	Dec e in 1.	creas 1 TAT .00	Increas e in cargo handlin g capacit y 1.00	Improveme nt in quality of work 1.00	Improve d EODB 1.00		Decreas e in TAT	Increas e in cargo handlin g capacit y	Improveme nt in quality of work	lmprove d EODB		Absolut e Score	Relativ e Score	Relativ e score scaled to 10
1	Deployment of Forklift	8.9	High	High	h	High	Medium	High		5	5	3	5		18	0.90	9
2	Deployment of Industrial Vacuum Cleaner	8.2	High	NA		NA	Medium	NA		0	0	3	0	-	3	0.60	6
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	Mec	dium	Mediu	High	High		3	3	5	5		16	0.80	8
4	Establishment of SOP	8.1	High	Med	dium	NA	Medium	Medium		3	0	3	3		9	0.60	6
5	Developing an effective training program for labour/ manpower	7.4	Low	Mec	dium	Low	Medium	Medium		3	1	3	3		10	0.50	5
Ben	eficial Impact level	A	ssigned Sco	re						_	1		_		-		_
High	High 5																
Low	Low 1				4												
Med	Medium 3																
NA		0]												



Execution Complexity:

List of Initiatives		Ove Pric	Overall Priority		I	Execution	Complex	kity		Execution	Comple	exity	Execution Complexity Quotient				
No	Initiative Name	Score	Rating		People	Process	Trade	Technology	People	Process	Trade	Technology	Absol Scoi	ute e	Relative score	Relative score scaled to 10	
1	Deployment of Forklift	8.9	High		Medium	High	Low	Low	3	1	5	5	14		0.93	9	
2	Deployment of Industrial Vacuum Cleaner	8.2	High		Low	High	Low	Low	5	1	5	5	16		1.07	11	
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High		Low	High	Low	Low	5	1	5	5	16		1.07	11	
4	Establishment of SOP	8.1	High		Medium	Low	Low	Low	3	5	5	5	18		1.20	12	
5	Developing an effective training program for labour/ manpower	7.4	Low		Low	Low	Low	Low	5	5	5	5	20		1.33	13	

Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5



Cost Quotient:

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	8.9	High	
2	Deployment of Industrial Vacuum Cleaner	8.2	High	
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High	
4	Establishment of SOP	8.1	High	
5	Developing an effective training program for labour/ manpower	7.4	Low	

	Cost
Total Cost (iNR lacs)	Score (from 1 to 10)
12.50	10
3.50	10
80.00	4
-	10
30.00	8

Cost from	Cost to	Score
0.00	25.00	10
25.00	50.00	8
50.00	75.00	6
75.00	100.00	4
100.00	125.00	2

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Implementation Time:

	List of Initiatives						
No	Initiative Name	Score	Rating				
1	Deployment of Forklift	8.9	High				
2	Deployment of Industrial Vacuum Cleaner	8.2	High				
3	Deployment of X-Ray Cargo Baggage Scanner	8.1	High				
4	Establishment of SOP	8.1	High				
5	Developing an effective training program for labour/ manpower	7.4	Low				

Implementation Duration						
Duration	Score (from 1 to 10)					
6 - 12 months	7					
< 6 months	10					
6 - 12 months	7					
6 - 12 months	7					
12-24 months	5					

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2

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14.7. ICP Sutarkandi

	List of Initiatives	Ov Pr	verall iority	Quotient Score (1 to 10)				
No	Initiative Name	Score	Rating	Benefit quotient	Execution quotient	Cost quotient	Time quotient	
				50%	25%	10%	15%	
1	Deployment of Forklift	8.6	High	4.5	2.0	1.0	1.1	
2	Deployment of Backhoe Loader	7.6	Medium	4.0	2.0	0.8	0.8	
3	Deployment of Industrial Vacuum Cleaner	8.2	High	3.0	2.7	1.0	1.5	
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	4.5	2.7	0.4	1.1	
5	Establishment of SOP	8.1	High	3.0	3.0	1.0	1.1	
6	Developing an effective training program for labour/ manpower	7.4	Low	2.5	3.3	0.8	0.8	



Beneficial Impact on Business Lever:

Li	st of Initiatives	O' Pr	verall iority		Bene	ficial Impa	act on business	lever	Quantitative scoring of each business lever			Be	Benefit Quotient		
N o	Initiative Name	Scor e	Rating		Decreas e in TAT 1.00	Increas e in cargo handlin g capacit y 1.00	Improveme nt in quality of work 1.00	Improve d EODB 1.00	Decreas e in TAT	Increas e in cargo handlin g capacit y	lmproveme nt in quality of work	lmprove d EODB	Absolut e Score	Relativ e Score	Relativ e score scaled to 10
1	Deployment of Forklift	8.6	High		High	High	Medium	High	5	5	3	5	18	0.90	9
2	Deployment of Backhoe Loader	7.6	Mediu m		Medium	Mediu m	High	High	3	3	5	5	16	0.80	8
3	Deployment of Industrial Vacuum Cleaner	8.2	High		NA	NA	Medium	NA	0	0	3	0	3	0.60	6
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High		High	Mediu m	High	High	5	3	5	5	18	0.90	9
5	establishment of SOP	8.1	High		Medium	NA	Medium	Medium	3	0	3	3	9	0.60	6
6	Developing an effective training program for labour/ manpower	7.4	Low		Medium	Low	Medium	Medium	3	1	3	3	10	0.50	5
Ben	eficial Impact level	As	signed Sco	re											
High	High 5														
Med	Medium 3														
NA 0															
<u> </u>									 						



Execution Complexity:

List of Initiatives Ove		Il Priority		Execution Complexity			Execution Complexity				Execution Complexity Quotient			
Initiative Name	Score	Rating	People	Process	Trade	Technology	People	Process	Trade	Technology	Absolute Score	Relative score	Relative score scaled to 10	
Deployment of Forklift	8.6	High	Medium	High	Low	Medium	3	1	5	3	12	0.80	8	
Deployment of Backhoe Loader	7.6	Medium	Medium	High	Low	Medium	3	1	5	3	12	0.80	8	
Deployment of Industrial Vacuum Cleaner	8.2	High	Low	High	Low	Low	5	1	5	5	16	1.07	11	
Deployment of X-Ray Cargo Baggage Scanner	8.6	High	Low	High	Low	Low	5	1	5	5	16	1.07	11	
establishment of SOP	8.1	High	Medium	Low	Low	Low	3	5	5	5	18	1.20	12	
Developing an effective training program for labour/	7.4													
	Initiative Name Deployment of Forklift Deployment of Backhoe Loader Deployment of Industrial Vacuum Cleaner Deployment of X-Ray Cargo Baggage Scanner establishment of SOP Developing an effective training program for labour/ manpower	Initiative NameScoreInitiative NameScoreDeployment of Forklift8.6Deployment of Backhoe7.6Loader7.6Deployment of Industrial Vacuum Cleaner8.2Deployment of X-Ray Cargo8.6Baggage Scanner8.6Baggage Scanner8.1Developing an effective training program for labour/ manpower7.4	Initiative NameScoreRatingDeployment of Forklift8.6HighDeployment of Backhoe7.6MediumDeployment of Industrial Vacuum8.2MediumDeployment of Industrial Vacuum8.2HighDeployment of X-Ray Cargo8.6HighDeployment of X-Ray Cargo8.6HighDeployment of SOP8.1HighDeveloping an effective training program for labour/ manpower8.1Low	Initiative NameScoreRatingPeopleDeployment of Forklift8.6HighMediumDeployment of Backhoe7.6MediumDeployment of Industrial Vacuum7.6MediumDeployment of Industrial Vacuum8.2MediumDeployment of X-Ray Cargo8.6HighLowDeployment of X-Ray Cargo8.6HighLowDeployment of SOP8.6HighLowDeveloping an effective training program for labour/ manpower8.1HighMedium	Initiative NameScoreRatingPeopleProcessDeployment of Forklift8.6HighMediumHighDeployment of Backhoe7.6MediumMediumDeployment of Industrial Vacuum7.6MediumMediumDeployment of Industrial Vacuum8.2MediumHighDeployment of X-Ray Cargo8.6HighLowHighDeployment of X-Ray Cargo8.6HighLowHighDeployment of SOP8.6HighLowHighestablishment of SOP8.1HighLowHighDeveloping an effective training program for labour/ manpower7.4LowLowLow	Initiative NameScoreRatingPeopleProcessTradeDeployment of Forklift8.6HighMediumHighLowDeployment of Backhoe7.6MediumMediumHighLowDeployment of Industrial Vacuum8.2MediumHighLowDeployment of X-Ray Cargo8.6HighLowHighLowDeployment of X-Ray Cargo8.6HighLowHighLowDeployment of SOP8.1HighLowLowLowLowDeveloping an effective training program for labour/ manpower8.1LowLowLowLowLow	Initiative 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Difficulty of Implementation level	Assigned Score
High	1
Medium	3
Low	5

Cost Quotient:

	List of Initiatives	Overall Priority		
No	Initiative Name	Score	Rating	
1	Deployment of Forklift	8.6	High	
2	Deployment of Backhoe Loader	7.6	Medium	
3	Deployment of Industrial Vacuum Cleaner	8.2	High	
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High	
5	Establishment of SOP	8.1	High	
6	Developing an effective training program for labour/ manpower	7.4	Low	

Cost				
Total Cost (iNR lacs)	Score (from 1 to 10)			
12.50	10			
30.00	8			
3.50	10			
80.00	4			
-	10			
30.00	8			

Cost from	Cost to	Score	
0.00	25.00	10	
25.00	50.00	8	
50.00	75.00	6	
75.00	100.00	4	
100.00	125.00	2	



Implementation Time:

List of Initiatives		Overa	ll Priority
No	Initiative Name	Score	Rating
1	Deployment of Forklift	8.6	High
2	Deployment of Backhoe Loader	7.6	Medium
3	Deployment of Industrial Vacuum Cleaner	8.2	High
4	Deployment of X-Ray Cargo Baggage Scanner	8.6	High
5	Establishment of SOP	8.1	High
6	Developing an effective training program for labour/ manpower	7.4	Low

Implementation Duration				
Duration	Score (from 1 to 10)			
6 - 12 months	7			
12-24 months	5			
< 6 months	10			
6 - 12 months	7			
6 - 12 months	7			
12-24 months	5			

Implementation Time	Score
< 6 months	10
6 - 12 months	7
12-24 months	5
> 24 months	2

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Land Ports Authority of India, Department of Border Management, Ministry of Home Affairs, Government of India