



Assam – India's expressway to ASEAN

Interim presentation to Government of Assam

May 2018

ADB

Objectives and approach

Objectives

- Outward Looking Strategy to achieve higher growth rates
- Develop Services and Manufacturing centers for South and South East Asia

Developing multi-modal transport corridors to South and South East Asia

- Key Gateways (Airports, Ports, Water Terminals, BCPs)
- Routes (NH, SH, NW,)/Key modes (road, rail, air, waterways)
- Key Logistics hub/infrastructure (MMLPS, ICDs)

Identifying potential manufacturing and services industries

- Mapping key products/industries to potential markets
- Value Chain analysis to show industry dependence on multi-modal infrastructure
- Analysis of potential Services Sectors
- Projects worth USD 3,400 million have been identified

Approach for identification of Economic Centers and development strategy

- Land Notification
- Priority ECs
- Enablers
- Power ; Utilities; Urban Infrastructure ; Skills

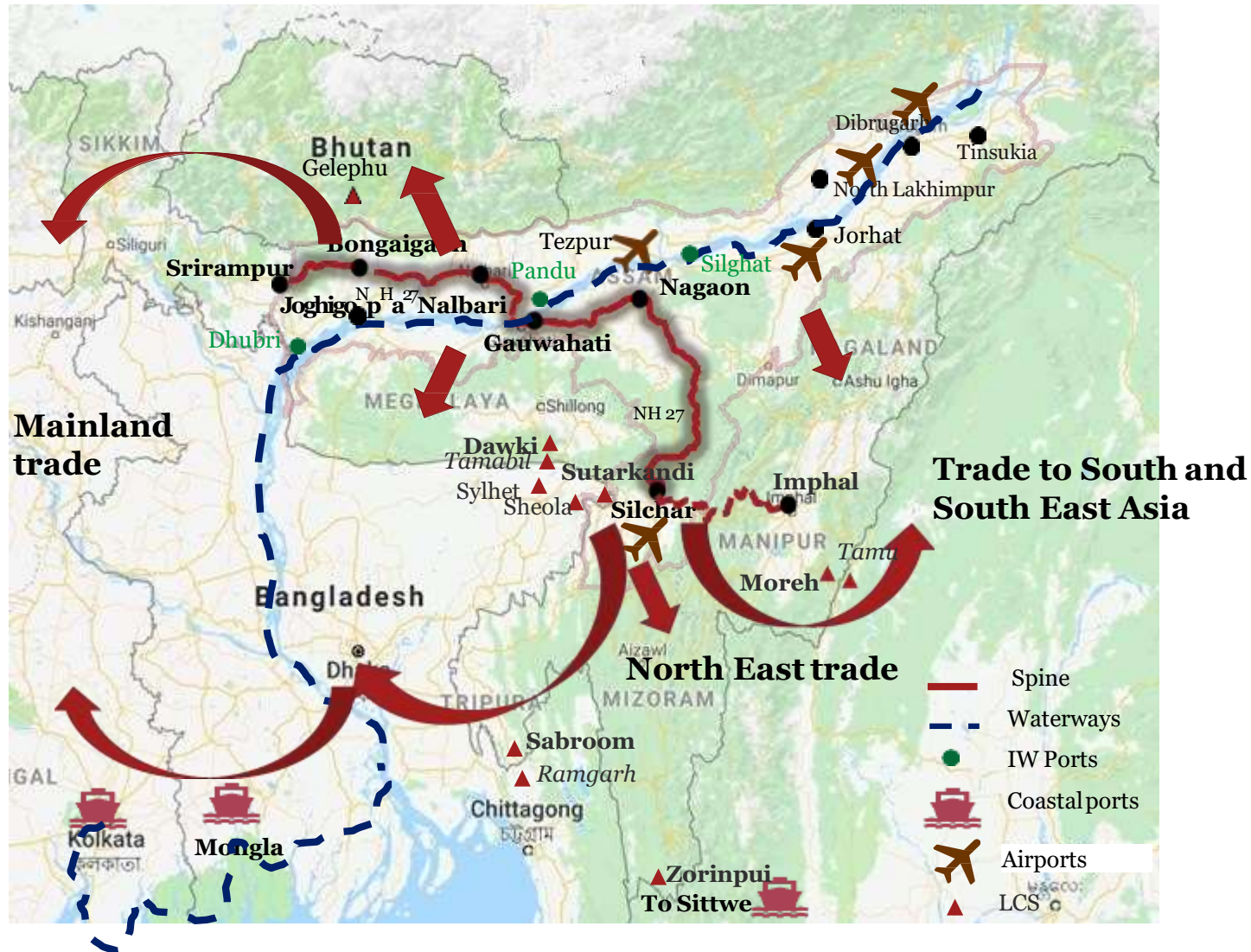
Institutional and Regulatory issues for outward looking strategy

- Regulatory and Institutional aspects

Impact: GDP Growth, Export enablement and Manufacturing and Services GVA

*Development of multi modal
transport corridor – Infra
assessment*

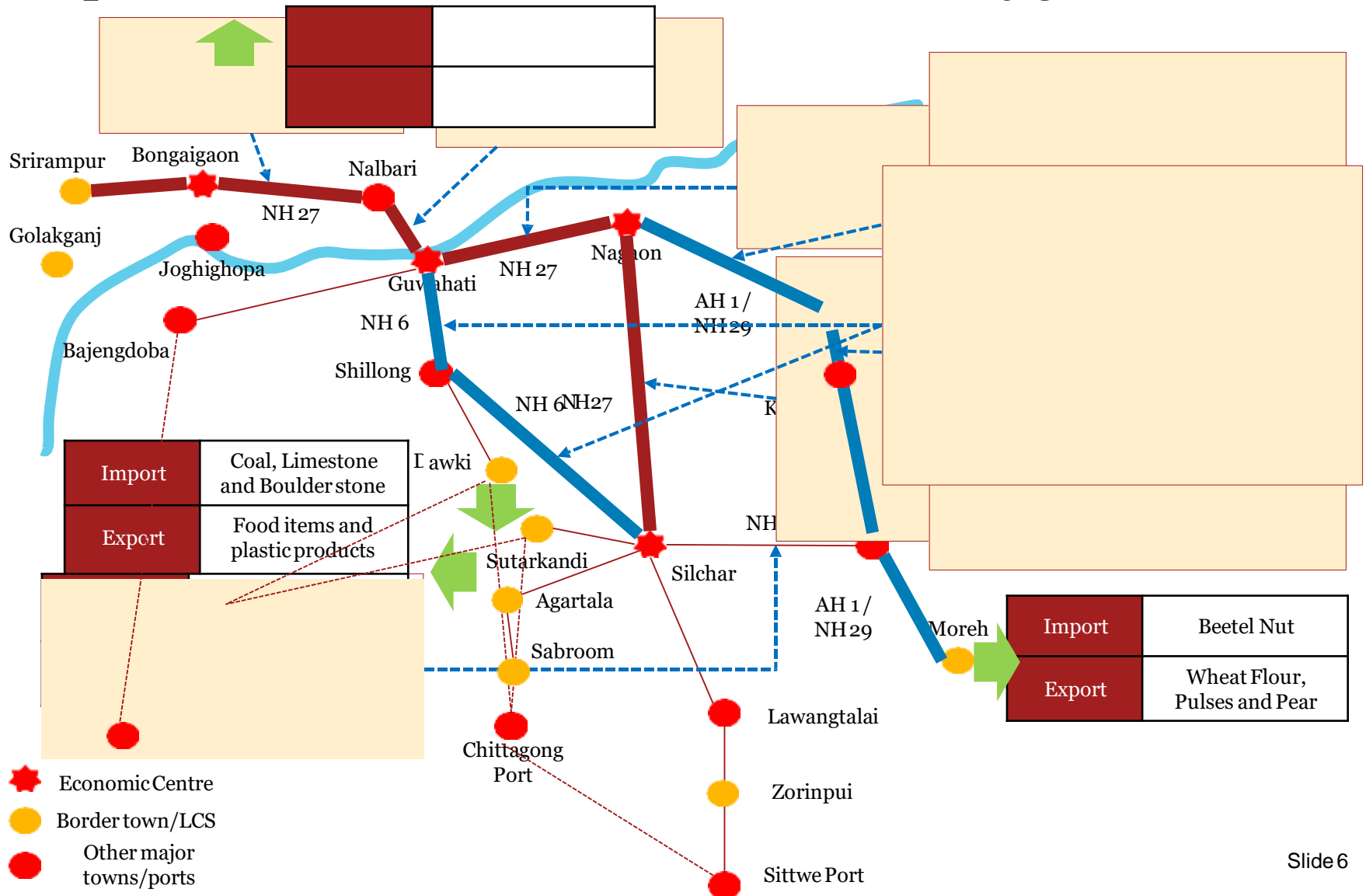
Development of multi-modal transport corridors critical to be India's expressway to ASEAN



Proposed Spine, NH 27, enables seamless linkages with key gateways, markets and synergises with flagship projects



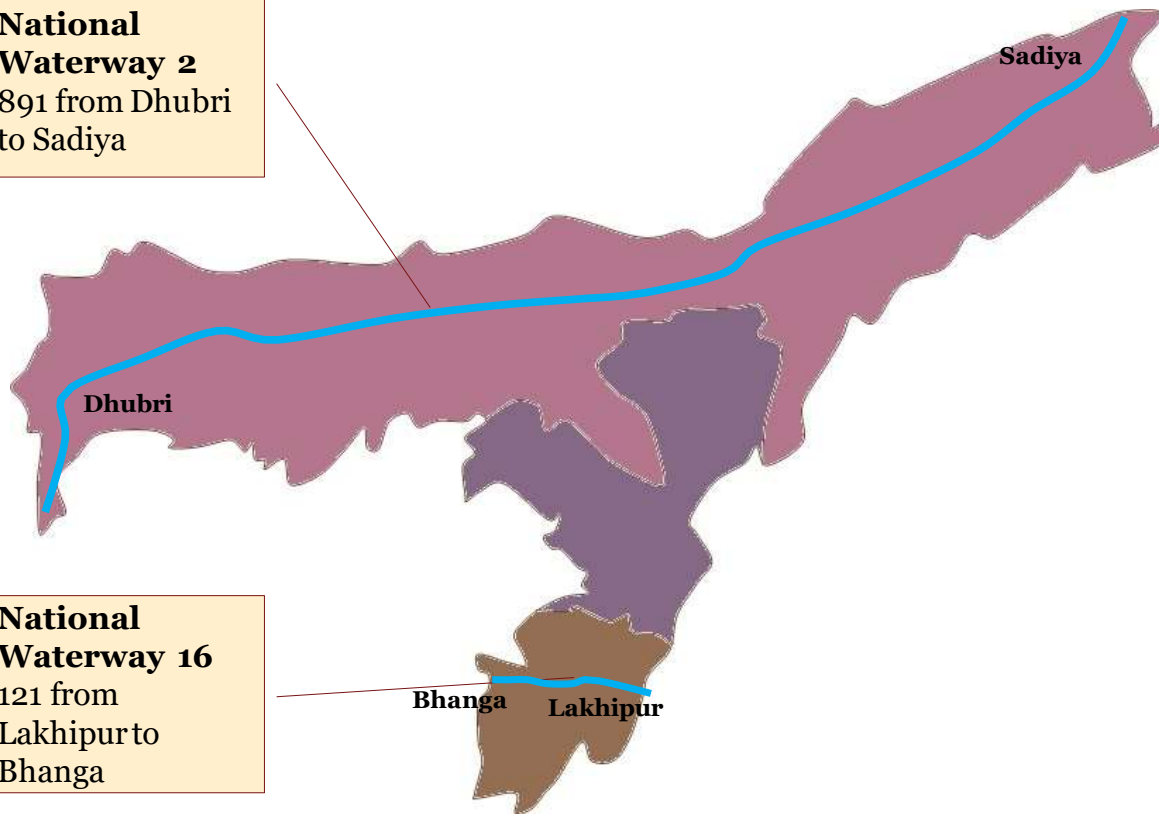
Road network of and along proposed spine needs improvement to ensure seamless movement of goods



Infrastructure Assessment

Waterways

National Waterway 2
891 from Dhubri to Sadiya



National Waterway 16
121 from Lakhimpur to Bhanga

The Brahmaputra Valley

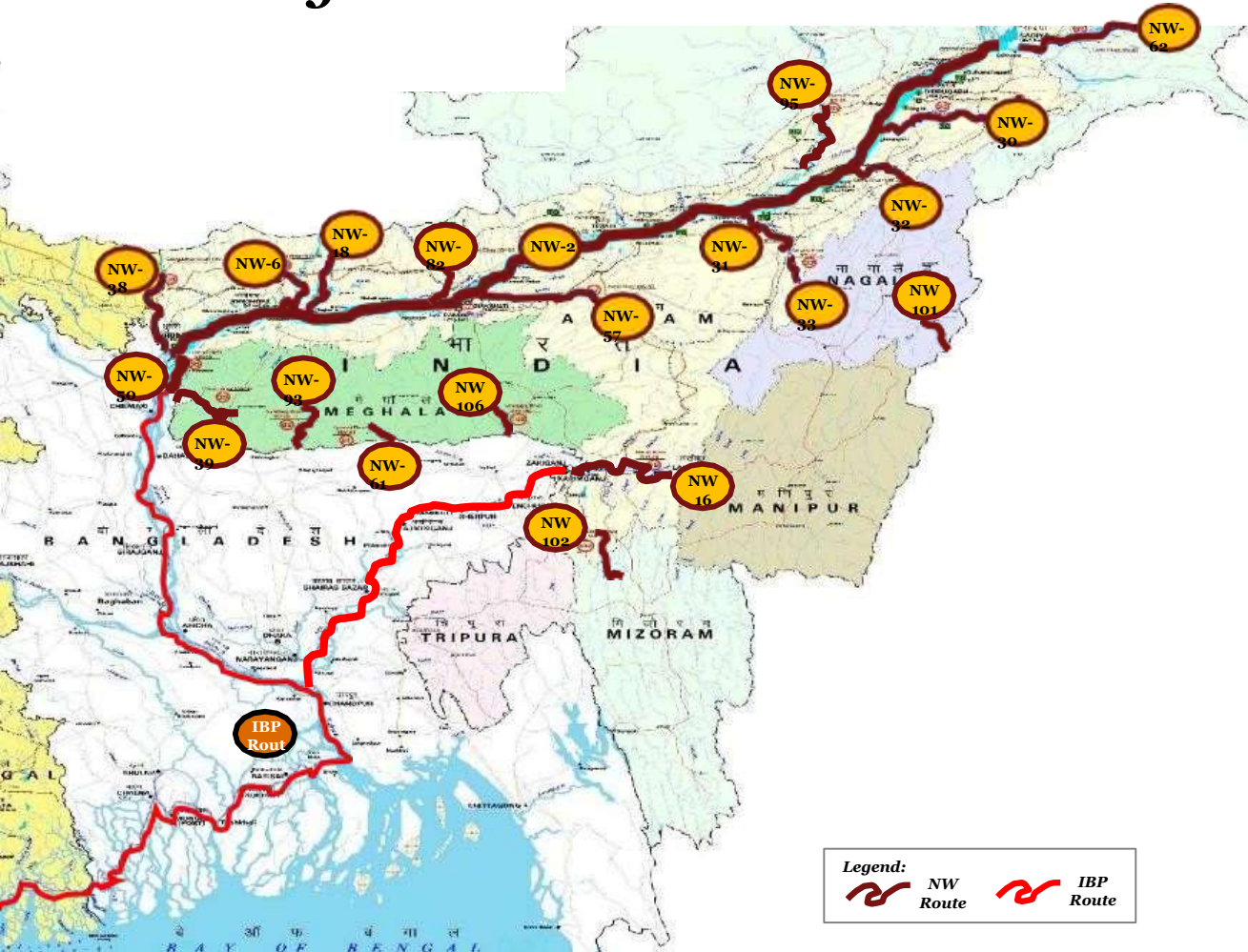
- National Waterway 2 (Brahmaputra) passes through the middle of the valley for its entire length
- Most of the urban and industrial centres of Brahmaputra Valley are located within ~30 of NW1
- The Brahmaputra Valley accounts for ~85% of Assam's population of 31 million

The Barak Valley

- National Waterway 16 (Barak) is strategically placed to serve the Barak Valley.
- The Barak Valley accounts for ~11% of Assam's population of 31 million

National Waterway 2 and National Waterway 16 are strategically placed to serve ~96 % of Assam's population

20 out of 111 national waterways planned, lie in the North East Region

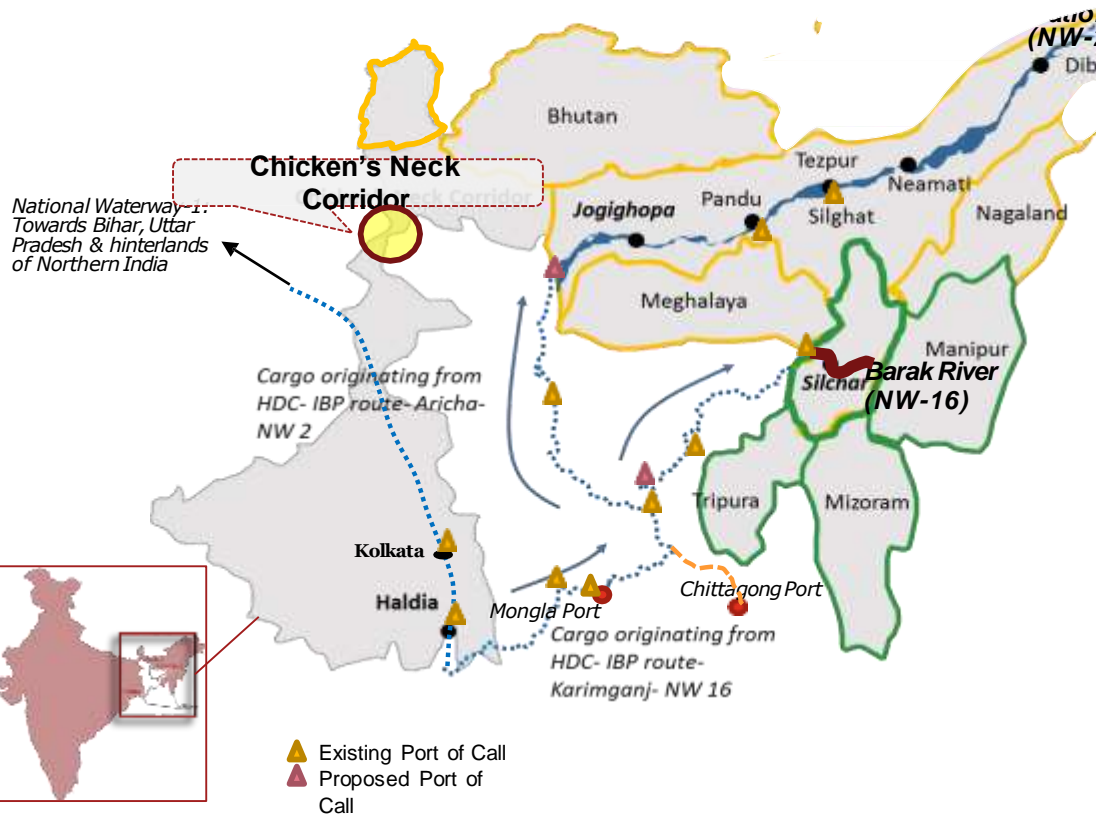


- Of the 111 National Waterways (NWs) declared in India, [20 NWs](#) lie in the North-East region

While Brahmaputra River (NW-2) & Barak River (NW-16) are being developed, feasibility studies are underway for other NWs

These NWs together provide hinterland connectivity to parts of Nagaland, Tripura, Manipur, Mizoram and Arunachal Pradesh

Around 49 million cargo moves through the corridor annually, resulting in heavy congestion. However, around 3 million tonne of cargo can easily be diverted to IWT



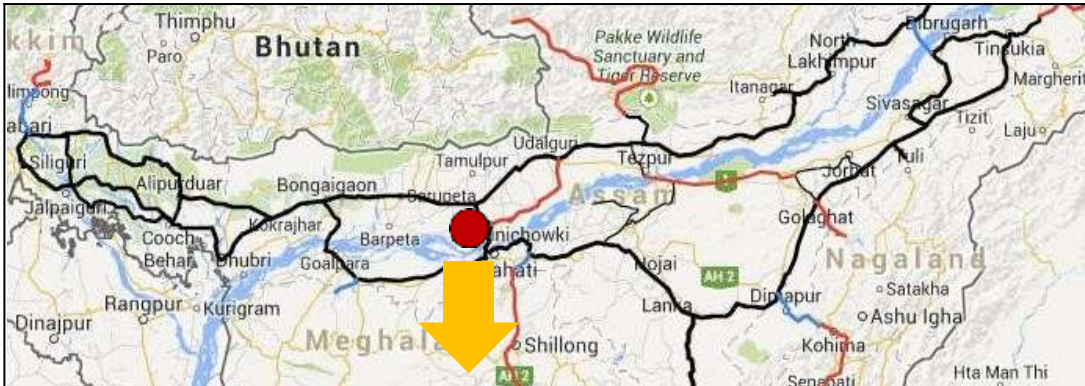
- Cargo movement towards/ outwards of North-east - done via Chicken's Neck (Siliguri Corridor).
- Only one National Highway (NH-31/31C) & only one railway line (broad gauge) passing through Corridor.
- ~ 49 million tonne cargo moved through the corridor annually, resulting in heavy congestion of route
- An immense potential of connecting North East with mainland India through Indo-Bangladesh Protocol (IBP) route
- NW-2 provides alternate access to Bhutan via Jogighopa
- NW-16 can provide alternative route to access Manipur, Mizoram, Tripura and Southern part of Assam via IBP route
- Around 3 million tonne cargo is readily divertible on IWT without much interventions

Infrastructure Assessment

Waterways –Future development plans

- NW 2 – New Terminals:
 - Bogibeel (south bank) 28 downstream of Dibrugarh - to cater 8 districts of upper Assam
 - Silghat (south bank) – close to major refineries & cement plants
 - Neamati (south bank) – Gateway to Majauli Island
- NW 16 – Phase 1
 - The dredging of river Barak in 1 St Phase has commenced in November, 2017 for maintaining LAD of 2 m. It is expected that the initial dredging work would be completed by July, 2019.
 - The upgradation of terminals at Badarpur & Karimganj is scheduled to be completed by 2021 - Consultancy work for setting up of terminal at Badarpur and Karimganj is in progress.

Rail network in Assam majorly coincides with trunk road routes but plays limited role in trade facilitation....



Organized logistics facilities in Assam are majorly concentrated around industrial clusters around Guwahati



Rail movement of bulk-break bulk cargo is through Indian Railways' Goods Sheds—New Guwahati (B.G. Godown) and Changsari

- East-west railway line spans the entire state of Assam. It connects to the rest of India through Bongaigaon/ Jorai
- North-south connection towards Silchar and further to Agartala is available both from Guwahati and Tinsukhia
- The section from the border of Assam and West Bengal to Lumding is almost completely Broad Gauge Double Line
- The rest of the core railway network in Assam is Broad Gauge Single Line

- For BG Godown facility-
 - Inbound commodities (2.76 MMT in FY 17) include cement, fertilizers, edible oil, iron goods, and sugar.
 - The outbound traffic is negligible, majorly being petroleum coke and cement.
- Changsari majorly handles food grains, including rice and wheat. It handled 0.23 MMT in FY2017, with rice comprising 90% of it

...however with effective implementation of network development plans, it will act as an enabler of trade

Route expansion plans

With the under construction and sanctioned projects, electrification of the entire main-line section of the North East Frontier Railway has been covered, except, the southern part of Lumding, few branch lines, and, the Rangiya-Mukongselek section.

- Rail connectivity between Aizawl & Imphal would be in place by 2020 with a double gauge track
- Sum of Rs 5,606 crore has been earmarked for 15 new rail lines and 6 double track projects
- Guwahati, Itanagar & Agartala already had double tracks, while Imphal would be double-tracked by next year

All NER capitals to be connected by double gauge line by 2020

Trans-national railway connectivity

- Connectivity to the railway network of Myanmar to link up with the 81,000 km-long Trans-Asian Railway Network (TARN)
- Jiribam-Tupul-Imphal line, 111 km, to provide connectivity to Moreh
- Linking Agartala with Bangladesh's southeastern city of Akhaurah, which is connected to Chittagong port, resource-rich Sylhet and capital Dhaka.

Improvement of air connectivity and supporting infrastructure will provide major boost to services sector



Aviation as a key enabler for all industrial segments

- Overcoming terrain challenges of the region and particularly Assam by abetting industry and trade by supporting pax movement (even in the absence of freight movement)
- Critical for education, pharmaceutical, tourism and medical tourism sectors
- Would support all aspects of trade
 - *Connectivity to hinterland (mainland India) – Guwahati as a main hub*
 - *Connectivity within NER-under UDAN*
 - *Connectivity to Neighboring countries – under proposed UDAN II*

Regional airports can complement development of civil aviation sector

Airport	Pax 2016-17
Guwahati	3,789,656
Tezpur	7,889
Silchar	212,228
Dibrugarh	305,796
Lilabari	11,042
Jorhat	58,266




Key interventions to propel the growth in the sector

- Air cargo terminal at Guwahati Airport for enabling export of sectors like pharmaceuticals, agriculture and food processing
- Silchar Airport – Enhancing connectivity and utilization of the airport to capitalize on geographical dividend
- Aerotropolis at Guwahati (proposed by MoCA)
- Training institutes encompassing various job-roles in the sector
- Route dispersal guidelines under UDAN-2 covering 19 aviation destinations in the NE region including 5 cities of Assam
- Guwahati as hub station and main MRO base for small turbo-prop aircraft

Projects such as the Jogighopa MMLP are critical to help the State emerge as a logistics hub



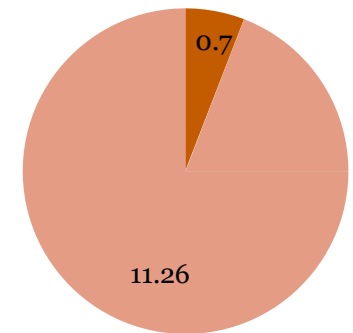
-  Movement from neighbouring states
-  Movement to India Mainland

Origin Destination Analysis finds following major transit of break bulk goods

- Tea originates in Upper Assam and moves to mainland India
- Cement originates from Meghalaya and moves to mainland India
- FMCG goods move from mainland India to North East
- Iron and steel, food grain and seeds and machinery item move from mainland India to Assam.

Container cargo moves to Haldia Port with Upper Assam, Meghalaya and Rest of North East contributing 81%, 14% and 5% respectively.

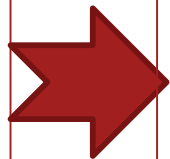
Total market for Cargo in Assam in MMT



-  EXIM Cargo
-  Domestic Cargo

Key Challenges

- Road infrastructure needs to be expanded.
- Non availability of cold storage facilities.
- Multiple service providers for different services leading to cost and time in efficiencies
- Inadequate usage of multimodal facilities



Key Enablers

- Road infrastructure development. Both for connectivity to MMLP and for transportation within state.
- Development of railway network and inland waterway to promote multi modal logistics.
- Adoption of technology to reduce cost and improve ease for business. i.e. Automated and Integrated Border Solution, Integrated Mobile Inspection System. etc

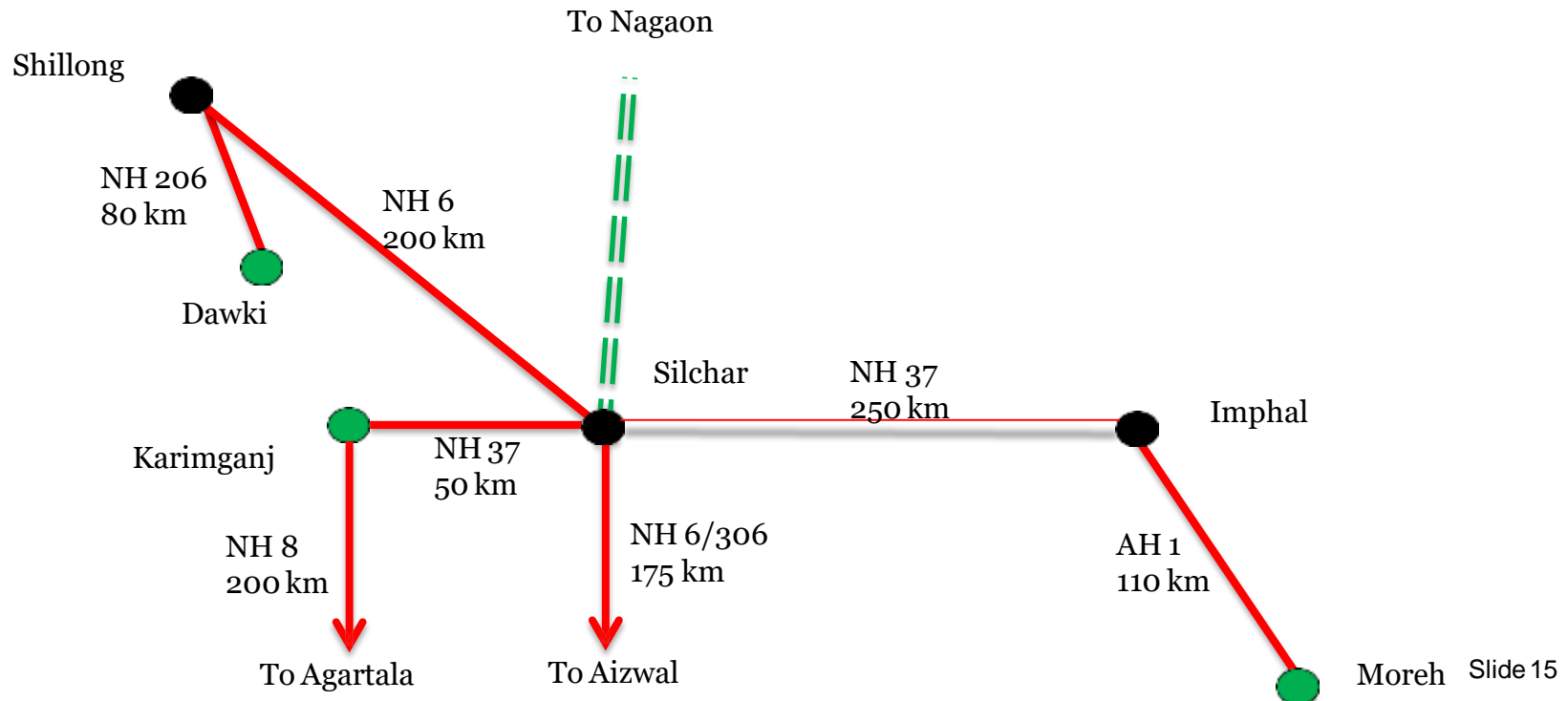
Major Commodity

- Tea
- Cement
- Iron, Iron Goods and Steel
- FMCG Products
- Food Grain & Seeds
- Machinery Item & Hardware

Silchar – natural candidate for multi modal logistics park

- Highways – NH 6, NH 27, NH 37
- Highways to: Assam, Meghalaya, Manipur, Tripura, Mizoram
- Inland Waterway – 2 (Barak River)
- Access to Bangladesh and Myanmar
- Rail and Air links

(Government has identified 35 acre of land for MMLP)



Assessment of manufacturing and services sector

Economic centres have been mapped with target markets' demand for selected industrial sectors to understand their relative significance for connectivity

Economic Centres	Traditional and potential Industry	Potential foreign markets				
		Myanmar	Bhutan	Thailand	Bangladesh	Nepal
All economic centers	Agriculture and food processing*	●	★		●	★
Guwahati, Nagaon, Silchar, Nalbari	Cement	+	●		●	●
Nagaon, Nalbari, Bongaigaon, Guwahati	Base Chemicals (including fertilizers)	★	★	●	★	★
Guwahati, Dhubri, Barpeta, Bongaigaon	Apparel and textiles	★		★	★	
Barpeta, Guwahati, Silchar, Chirang, Dhubri	Automobile	★	★	★	★	★
Barpeta, Bongaigaon, Guwahati, Chirang, Silchar	Engineering goods		★	●	★	★
Guwahati	Medicinal plants			●		
Barpeta, Bongaigaon, Guwahati, Chirang, Silchar	Metal based (steel fab.)	●	●	★	★	★
Guwahati, Nagaon, Nalbari, Barpeta, Bongaigaon	Paper and paper products	●				★
Chirang, Guwahati	Petrochemical		★	●	●	●
Guwahati	Pharmaceuticals	●		★		
Barpeta, Bongaigaon, Guwahati, Silchar, Darrang	Plastic and plastic products	★	●	●	★	★
Guwahati, Kokrajhar, Karbi Anglong, Nagaon, Silchar	Tea	★	★	+	+	★
Guwahati, Silchar, Nagaon, Nalbari, Barpeta, Bongaigaon	Wood based products		★			+
Guwahati, Silchar	Glass and glass products	●	+	●	★	+

* Includes processed fruits and vegetable processing and grain mill products

● Current demand

★ Consistent future demand

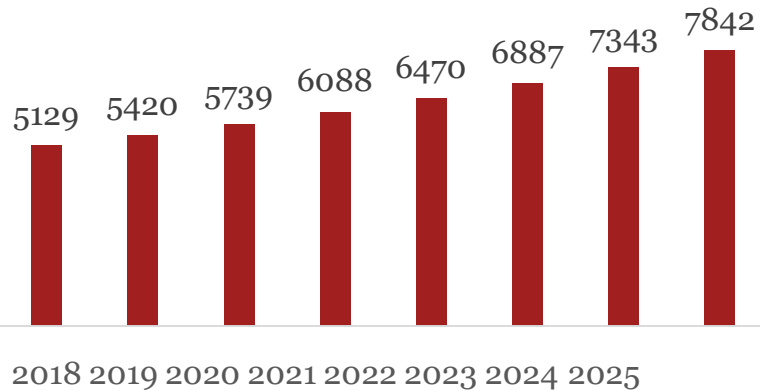
+ Upcoming demand

Data from ITC Trademap, analysis by PwC

Assam has the opportunity to capture 1.3 billion USD market for electrical equipment of NE by 2025

The power demand of North Eastern region is expected to be around 8 GW owing to economic growth and 24X7 Power for All targets undertaken by State Governments

Power Demand in North Eastern Region (MW)



	2019	2020	2021	2022	2023	2024	2025
33/11 kV S/S	14.8	15.4	18.5	20.9	24.3	26.2	28.2
33 kV Lines	3.2	3.3	3.9	4.4	5.2	5.6	6.0
11 kV Lines	2.3	2.1	2.5	2.8	3.3	3.6	3.9
DTR	62.3	65.7	79.3	89.2	103.2	112.1	121.8
LT Lines	2.4	2.4	2.8	3.2	3.7	4.0	4.3
ABC	834.0	881.9	932.6	986.3	1043.1	1103.2	1166.8
Total	919	971	1039	1107	1183	1255	1331

Figures in Million USD

- Growing power demand in North Eastern Region will lead to a electrical equipment market (33 kV and below) size of around 1.3 billion USD by 2025.
- Based on our discussion with utilities, we understand the utilities are dependent on Eastern India based equipment manufacturers for sourcing the equipment leading to quality and reliability issues

- There is a significant market for electrical equipment in neighboring countries. In 2015 Bangladesh, Nepal and Myanmar imported transformers and wires of total volume USD 450 million.
- China and India contributes around 70% to the total import volume of these nations

Source: CEA LGBR, PwC Analysis, Perspective Infrastructure Development Plan, ITC Trademap

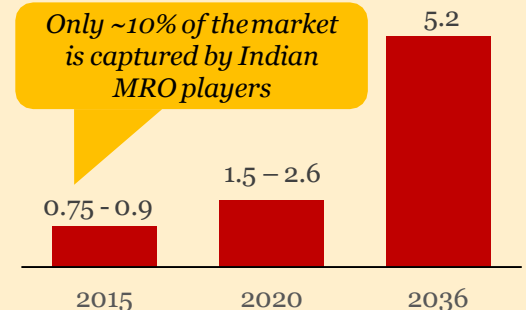
Currently, scheduled domestic airlines in India outsource 90% of their MRO requirements

With Indian carriers expected to increase their fleet size by ~5 times by 2020, the domestic MRO market is projected to be worth \$5.2 billion by 2036

- For advanced services, airlines use MRO hubs in SE Asia, Sri Lanka & Middle East
- 90% of C- and D- check services for aircraft are outsourced, particularly Engine and APU overhaul
- Assam has an opportunity to tap into this huge potential by catering to 3% of MRO services requirement, particularly of small aircraft like ATR-72

Source: Indian Aircraft MRO Market, Defence ProAc

Existing and Projected MRO market in India (USD bn)



Source: Indian Aviation 2016, FICCI and India MRO Forum

Key interventions required

Infrastructure

OEM-led manufacturing clusters for reduction of dependency on import of aircraft components

Aircraft Maintenance Engineers (AME) training institutes- currently only 1 in entire NER- in Assam

Integrated-airport infrastructure development providing for more hangars, testing air-strips- particularly at Guwahati

Regulatory

GST parity between foreign and domestic MRO service providers; foreign ones zero rated

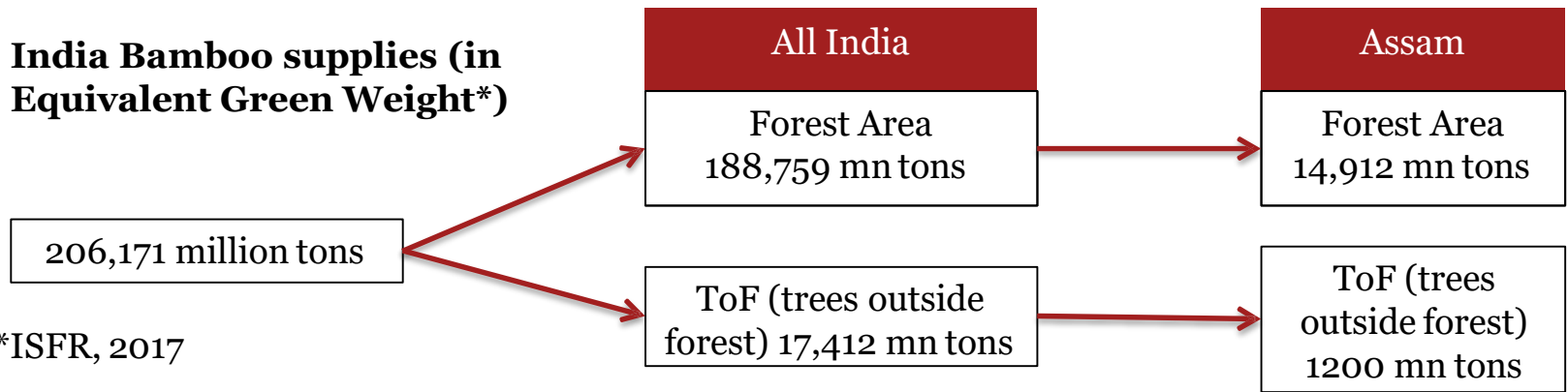
Reduction of customs duty on consumables

‘Sustainable Bamboo’ - strong potential to position Assam globally & repeat the miracle of Assam Tea

- “The global demand for bamboo-based products is growing across a wide range of application. These include – handicrafts, constructions, paper, apparel, furniture, interiors like floor tiles, petroleum (ethanol), food, etc.
- Sustainable bamboo is also seen as a replacement for many of the daily used consumer plastic items.
- Bamboo has demonstrated to have the strength greater than steel in many of its applications.
- The plant also has the advantages of carbon sequestering



Holistic development of bamboo value chain is necessary to take advantage of the trends towards green materials. Assam to take lead in developing a US\$ 1 Billion bamboo product International value chain 8-10 years



*ISFR, 2017

ToF – scattered supplies of bamboo in rural homesteads, on edges of fields, in plantations, that can be harvested & used commercially without violating the Indian Forest Act.

Developing \$1 billion Sustainable Bamboo Value Chain from Assam for Global Markets

- Benchmark Learning from Development of Mekong Region Bamboo Value Chain
- Lead Global Efforts on Development of Certification Standards for Sustainable Bamboo.
- Develop Production Clusters (ToF) Map for Assam & rest of North East
- Benchmark Farm level productivity to reach global levels of 14 tons/ha
- Identify connectivity gaps between production clusters & the existing/proposed connectivity corridors
- Support private sector led DPR - pilot value chains in Assam for clusters that meet minimum requirements

- Bamboo Product Classification
 - Premium processing (eg. flooring, laminated furniture)
 - Middle and Lower part of large clums
 - Medium value processing (eg. chopsticks, mat boards)
 - Mid quality parts
 - Low value and bulk processing (eg. charcoal, paper & pulp)
 - Upper parts of large clums & residue parts
 - Unprocessed culms (eg. scaffolding and traditional construction)
 - Bamboo Shoots: human consumption

Bamboo Product Chains Evolving & Highly Differentiated Business Opportunity

Risks

- Climate related Disasters
- Regional Security
- Regional Tariff Measures
- Slower development of connectivity

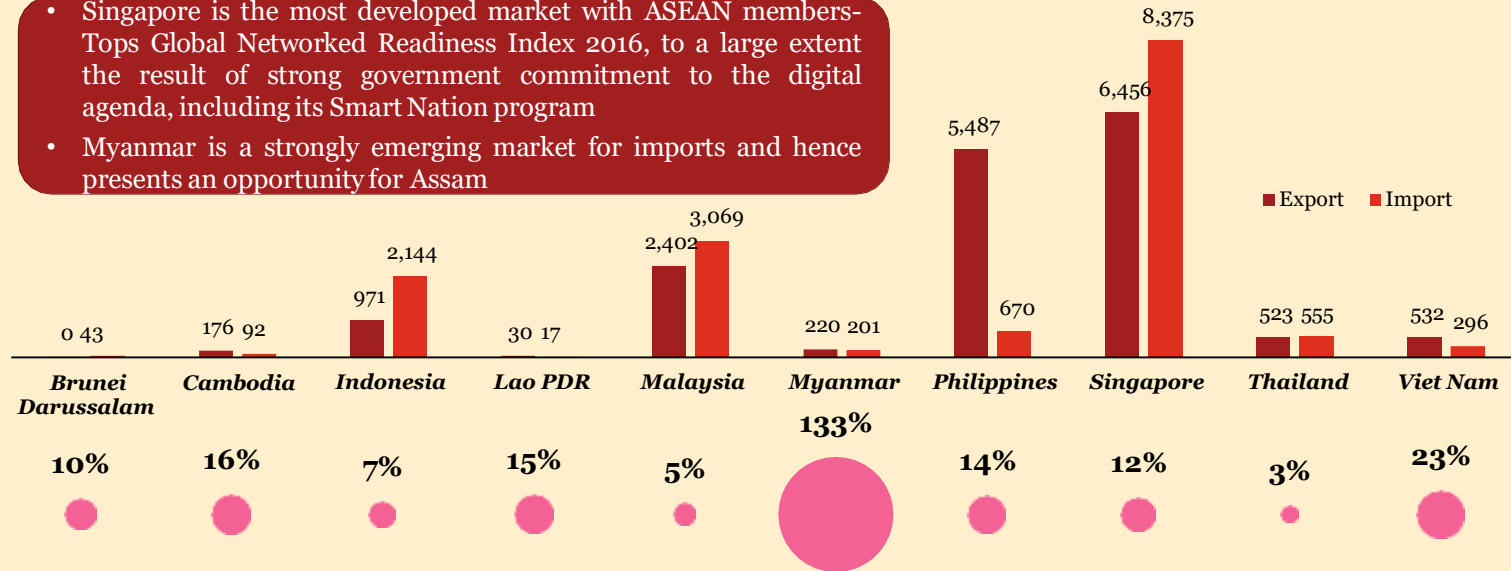
- Dispersed Sourcing & processing locations
- Development of new markets
- Increase service component & Develop off shore value addition

Mitigating measures

ASEAN market represents an import market of 15.5 bn (2016) for IT services import which grew at a CAGR of 10% between 2011 and 2016

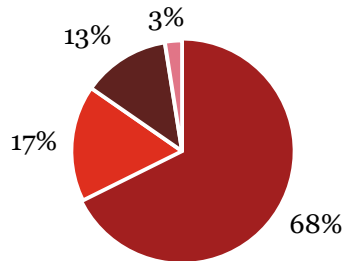
Imports and Exports of IT services in ASEAN region in USD Mn (2016)

- Singapore is the most developed market with ASEAN members-Tops Global Networked Readiness Index 2016, to a large extent the result of strong government commitment to the digital agenda, including its Smart Nation program
- Myanmar is a strongly emerging market for imports and hence presents an opportunity for Assam



Source- ASEAN Secretariat and Global Information Technology Report 2016 by World Economic Forum

Imports CAGR (2011-2016)



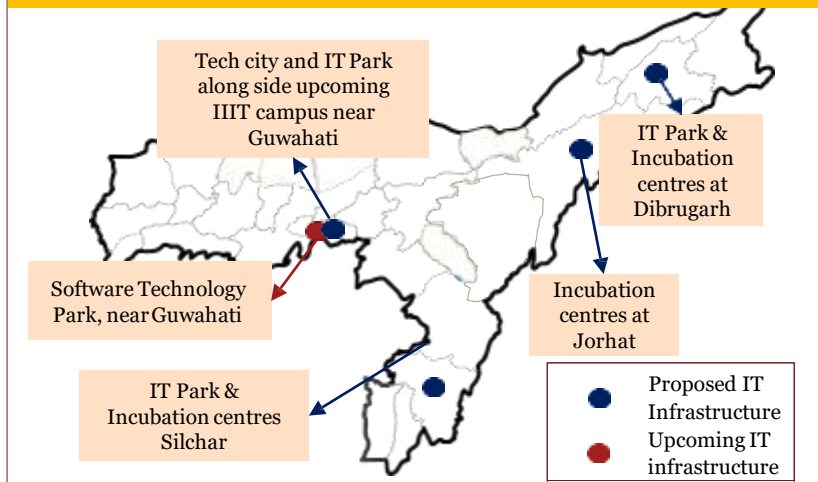
Share of IT exports from India in various region (2014 – 15)

Eastern India contributed to only 2.5% of IT exports with West Bengal dominating in the region, this presents huge potential for Assam to develop its IT / ITeS industry for export.

Source: Department of Industries and Commerce, Govt. of India

Assam needs a holistic approach to combine India's global competitiveness while creating cutting-edge technological infrastructure to emerge on global IT landscape

Assam is in the process of creating basic enabling infrastructure for IT industry to meet demands of both manpower and technological capability



Key focus areas

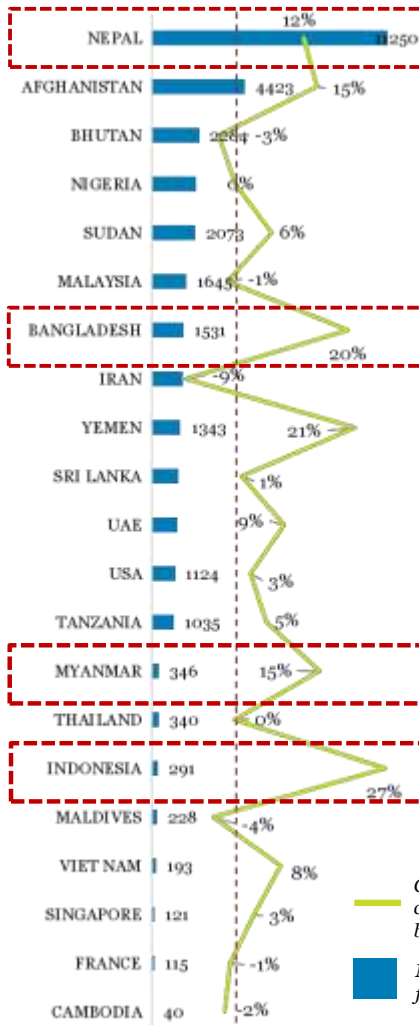
- IT services, BPM, software product companies, shared service centres
- BPM domain - knowledge services, data analytics, legal services, Business Process as a Service (BPaaS), cloud-based services.
- IT Services - Solutions and services around SMAC, IS outsourcing, IT consulting, software testing.
- Engineering and R&D - telecom & semiconductors: mainly wafers fab

Key interventions required

- **Creation of technology infrastructure**
 - Last mile connectivity to around 75000 Govt. institutions & 26000 villages
 - Extension of connectivity from Cox Bazar international gateway (Bangladesh) to Guwahati
 - Integration of laying of optical fibres along with construction of Asian Highway stretches
 - Enabling establishment of certified Tier-4 datacentre in PPP mode to serve needs of countries like Nepal and Bhutan (no presence upto Thailand currently)
 - High performance computing capability
 - String RS-GIS infrastructure with PPP support like in Asian Institute of Technology in Bangkok
- **Developing skilled manpower**
 - Increasing the batch size of graduating engineers from 4,000 currently
 - Creating industry-driven skill development infrastructure
- **Maximum utilisation of policy Initiatives**
 - North East BPO Promotion Scheme
 - Assam Electronics & IT Innovation Scheme, 2015
 - IT & Electronics Policy of Assam, 2017

Assam is currently capturing 0.4% of International students in India, potential is much higher from South Asia

Nepal, Bangladesh, Myanmar & Indonesia are strong markets for Higher education services



No. of foreign students enrolled in India in 2016-17

47575

South Asia
20763, 18% of total outflow from the region

South East Asia
2976, 1.3% of total outflow from the region

Assam
has a share of 0.4% in the number of foreign students enrolled in India

CAGR of no. of students from the country which enrolled in India between 2011-12 & 2016-17

No. of India-bound students from the country as in 2016-17

Leveraging the Study in India Program 2023

- Government has announced scheme to achieve 2 lakh foreign students by 2023
- Scholarships and waivers to meritorious students

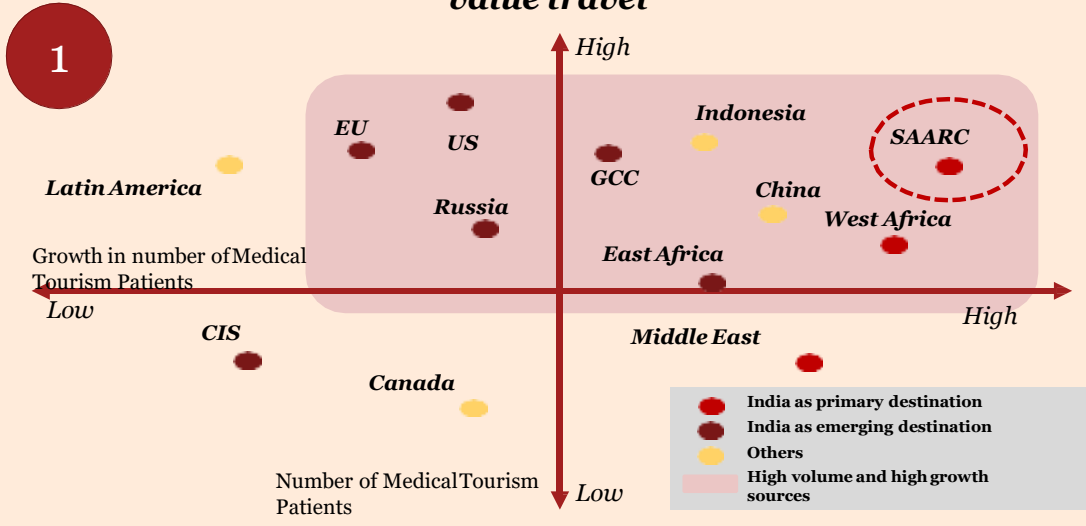
Key drivers for South Asian Students in India:

- Government scholarships and embassies connect
 - Affordable travel and easy visa approval
 - Quality of education
- Active promotion by private sector firms in focus markets
 - Quality urban infrastructure

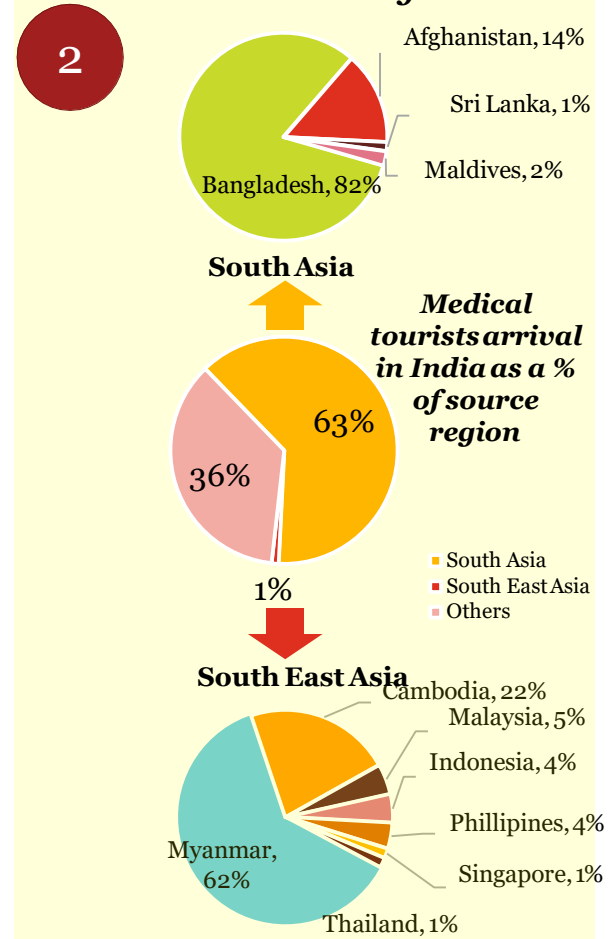
Guwahati on the model of (Pune and Manipal) to be developed as an education hub
 Promote participation of successful private Universities in Assam (Manipal, LPU, Amity)
 Active support of Government of India in establishing consulates for promotion of Guwahati as a hub

Assam has the potential to become a regional hub for medical value travel for South and South East Asia

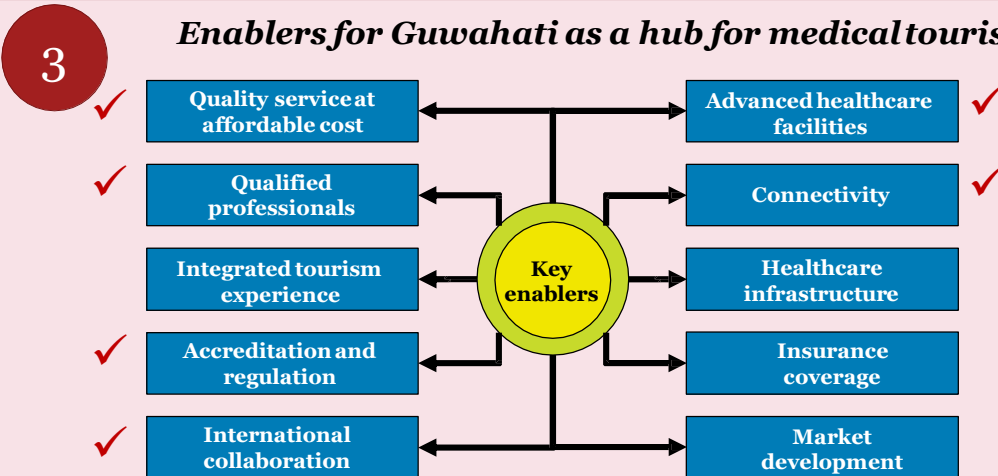
SAARC region is emerging as a major demand source for medical value travel



India is a preferred destination for medical value travel for South Asia and Myanmar



Enablers for Guwahati as a hub for medical tourism



Origin Destination analysis for key sectors

Priority Industries	Proposed development location	Raw Material Source	Markets	Mode Choice	Key routes	Key border cities/towns	Gateways
Cement	Nagaon, Guwahati	Karbi anglong, Dima Hasao, Meghalaya	Nepal, Bhutan, Bangladesh and NE	Road, Rail, Waterways	NH 6, NH 206, NH 37, NH 27, NW 2 and NW 16	Dawki, Karimganj and Golakanj	Chittagong
Agro/Food Processing	Nagaon, Bongaigaon, Silchar, Guwahati	Dima Hasao, Morigaon, Darang, Sonitpur	Nepal, Bhutan, West Asia and Bangladesh	Road, Air	NH 27, NH 6, NH 206, NH 37	Dawki, Karimganj and Golakanj	Guwahati, Chittagong, Dhaka, Silchar
Plastics	Guwahati, Nagaon	Dibrugarh, Tinsukia, Sibsagar	Indian Hhnterland	Road	NH 27, NH 15	Srirampur	
Bamboo Wood	Nagaon, Bongaigaon, Silchar, Guwahati	Nagaland and Meghalaya	Japan, Indian hinterland	Road	NH 6, NH 206, NH 37, NH 27	Srirampur	Chittagong, Dhaka
Pharmaceuticals	Guwhati and Nagaon	Air Cargo, Meghalaya, Dima Hasao, Karbi Anglong	ASEAN	Air, Road	NH 29, NH 37, NH 27, NH 6, Guwahati Airport	Moreh, Galephu, Zorinpui	Moreh, Zorinpui
Electronics	Guwahati	Gateways	Indian Hinterland	Air	Guwahati Airport		Guwahati, Chittagong, Dhaka, Silchar
IT/ITEs	Guwahati and Silchar	Local educational institutions and NE	ASEAN-LMICS	Air	Guwahati, Silchar Airports		Guwahati, Silchar
Medical Tourism	Guwahati	Bangladesh, Myanmar and NE	BBN and ASEAN	Air, Rail, Road	NH 29, NH 37, NH 27, NH 6, Guwahati and Silchar Airport	Dawki, Karimganj and Golakanj	Guwahati, Silchar
Education	Guwahati, Silchar	Bhutan, Bangladesh, Myanmar and NE	BBN	Air, Rail, Road	NH 29, NH 37, NH 27, NH 6, Guwahati and Silchar Airport	Dawki, Karimganj and Golakanj	Guwahati, Silchar

Projects and Investments required

Asset	Number of projects	Indicative Investment (in Cr)
Roads	10	5000
Rail	14	450
Energy	17	15000

Key road stretches

Section	NH/ AH	Length (km)	Assam (km)	Lanes	Type
Kacharipara to Dimapur	AH 1	135	120	2	Spine Connectivity
Shillong to Silchar	NH 6	200	60	2	Spine Connectivity
Silchar to Imphal	NH 37	250	50	2	Spine Connectivity
Silchar to Aizwal	NH 6	175	50	2	Spine Connectivity
Silchar to Agartala	NH 8	200	100	2	Gateway Connectivity
Silchar to Karimganj	NH 37	50	50	2	Gateway Connectivity

Multiple generation projects are planned to cater to load growth and establish the state as power house of the region

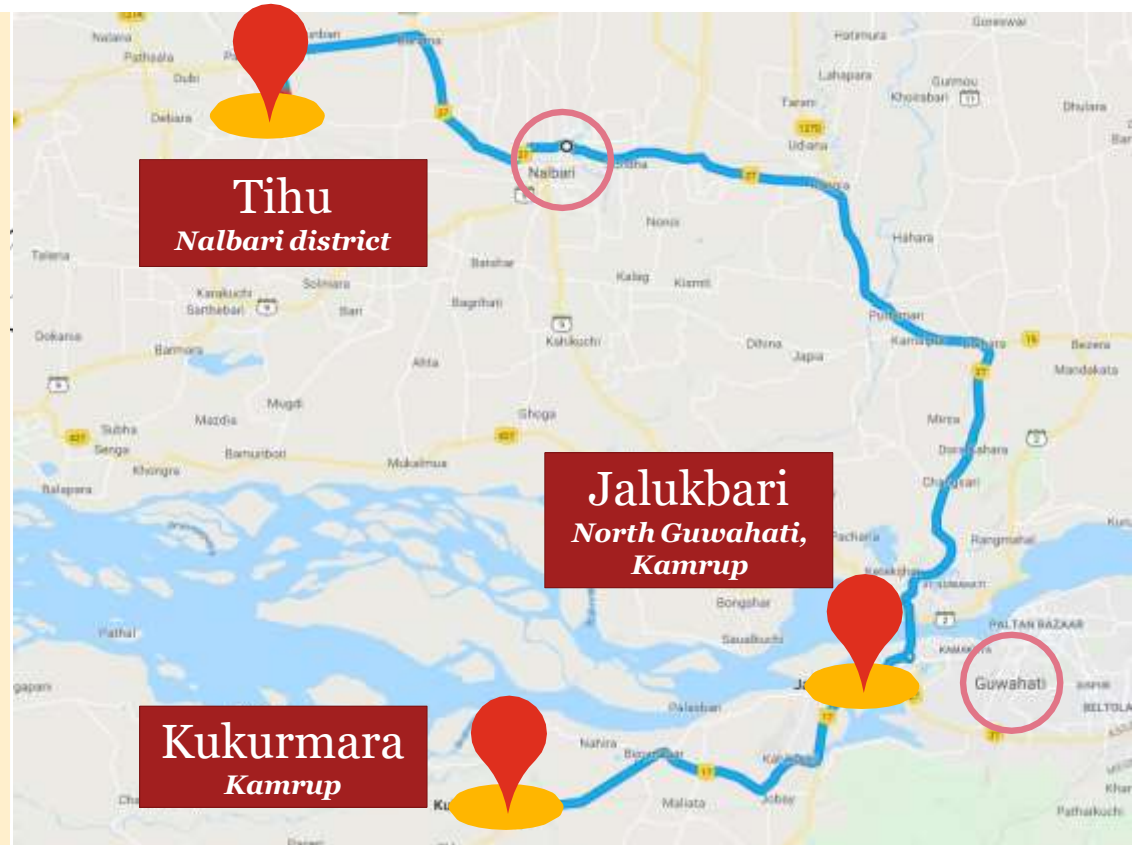
Project	Planned Investment (INR Cr)	Status
2X800 MW coal based supercritical power project in Margherita	10,700	<ul style="list-style-type: none"> • DPR under preparation • 661 acres of land allotted by GoA • Power evacuation proposed from 220/132 kV Tinsukia Sub-station
80 MW solar power project at Amguri	458	<ul style="list-style-type: none"> • Land development under progress • DPR is being prepared • Power evacuation point identified
1000 MW solar power project in Char area	5000	<ul style="list-style-type: none"> • 9 sandbars (~1875 hectare) identified • Evacuation strategy being developed
45 MW solar power project	225	<ul style="list-style-type: none"> • 8 prospective locations identified • Evacuation strategy being developed
67 MW solar project in Sontipur	469	<ul style="list-style-type: none"> • 135 hectare land area identified
20 MW SHP at Dhansiri	206	<ul style="list-style-type: none"> • DPR prepared • Land acquisition done
21 MW SHP at Amring	267	<ul style="list-style-type: none"> • DPR prepared • Evacuation strategy finalised

Identification and prioritisation of economic centers

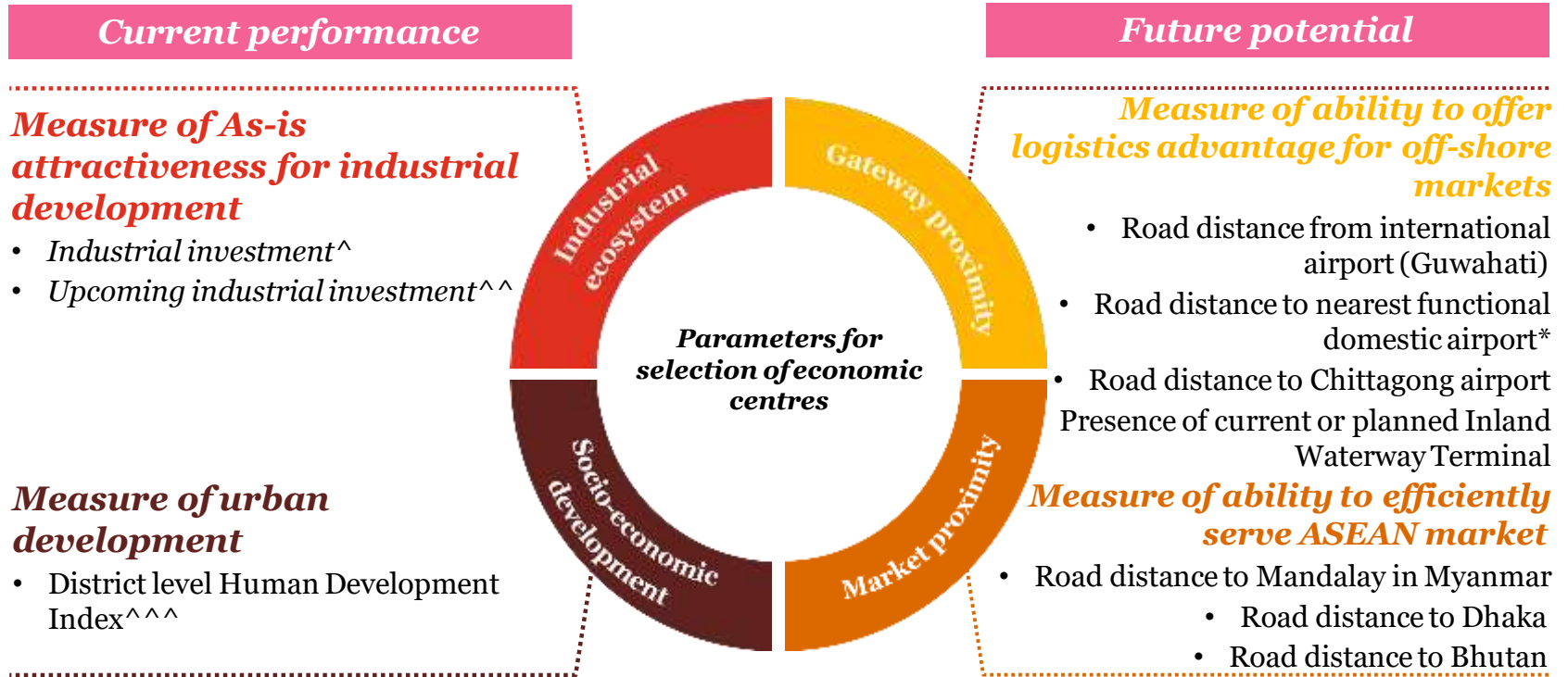
Instead of prioritising economic centers based on land availability, notification model can be adopted by GoA

To enable focused development under this approach, we may identify smaller stretches around existing industrial clusters

- The State Government has notified areas within 1 km on either sides of
 - NH 37 from Jalukbari (on the outskirts of Guwahati in Kamrup Metro district) to Kukurmara (Kamrup Rural district) (30 km)
 - NH 31 from Jalukbari to Tihu (Nalbari district) (90km)
- as Industrial Zone***
- This area excludes tribal belts and blocks, wet lands, notified forest land, VGR, and PGR lands.
 - 500 meters of land on both sides of National Highway will be kept free from industries
 - ***Following the notification, the restriction on use of arable land for industrial purpose has been removed***



Based on the composite capability of districts to enable outward-looking industrial development...



[^] Industrial investment in districts from 2011 till Feb 2018 have been considers;

^{^^} INR 5 Cr.+ Industrial investment declared in districts between March 2016 to March 2017

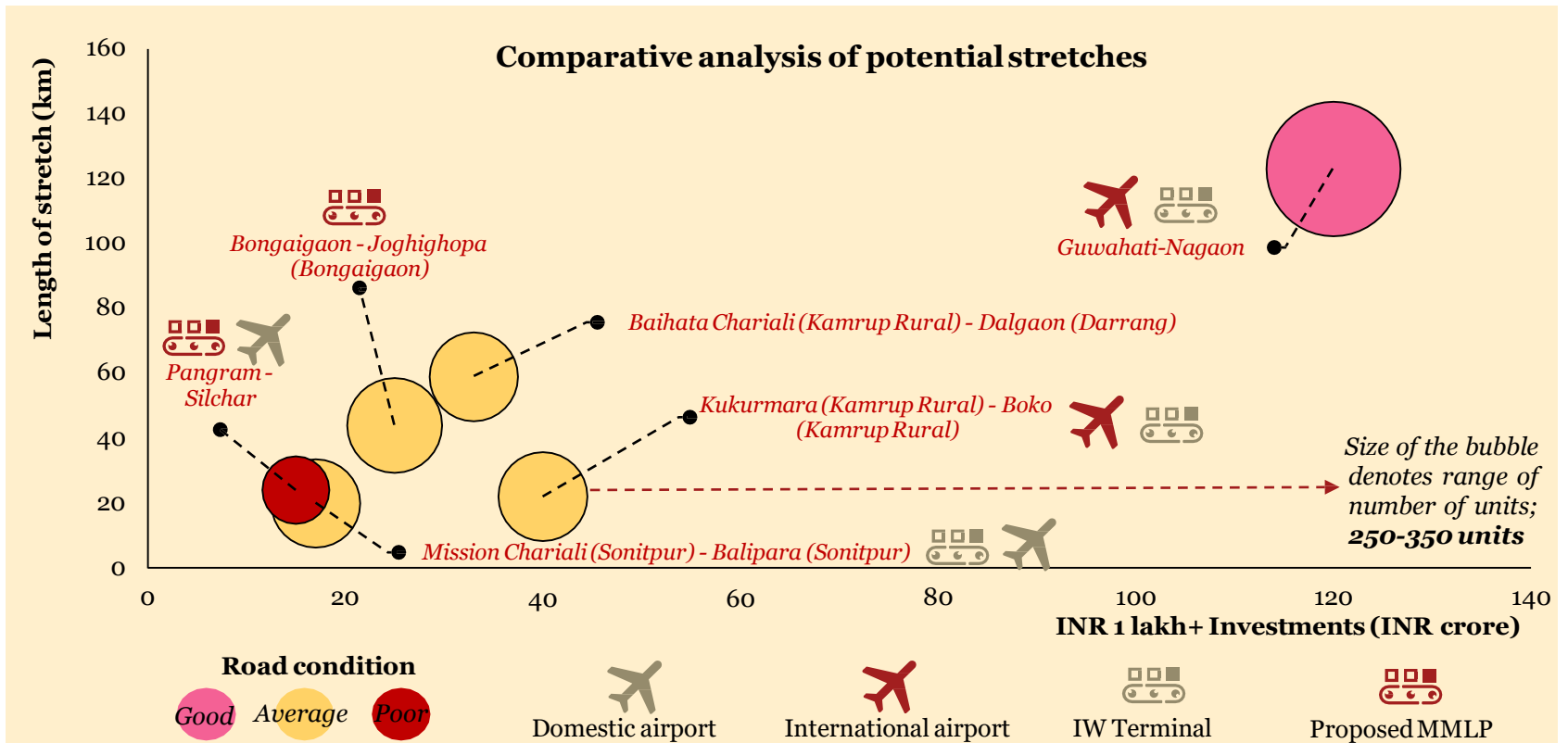
* Domestic airports are crucial for grounding organised sector investment. They will assume much more significance when the second version of the UDAN scheme will be launched which will facilitate connectivity between NER and capitals of ASEAN member countries

^{^^^} Human Development in Assam- A District Level Analysis, EPRA International Journal of Economic and Business Review

...Guwahati (including Amingaon), Bongaigaon, Silchar and Nagaon are the most attractive economic centres

Potential economic centers	Reason for prioritisation
<i>Guwahati</i>	Highly industrialized, proximate to international airport, well connected both within and across State(s)
<i>Amingaon</i>	
<i>Bongaigaon</i>	High potential for Inland Water Transport, proposed MMLP, proximity to Nepal and Bhutan
<i>Silchar</i>	High potential for Inland Water Transport, proposed MMLP, proximity to Bangladesh and Myanmar
<i>Nagaon</i>	Heavily industrialized, proximity to both Inland Waterway Terminal and airport, 4-laned connectivity with Guwahati
Other potential centres	Reasons for exclusion
<i>Morigaon</i>	Although labour availability is an advantage but low industrial density and potential to support large scale development
<i>Darrang</i>	Low potential to support large scale industries, currently industrial profile scattered and low scale

We have analysed six potential stretches which have the potential to be notified as industrial zones

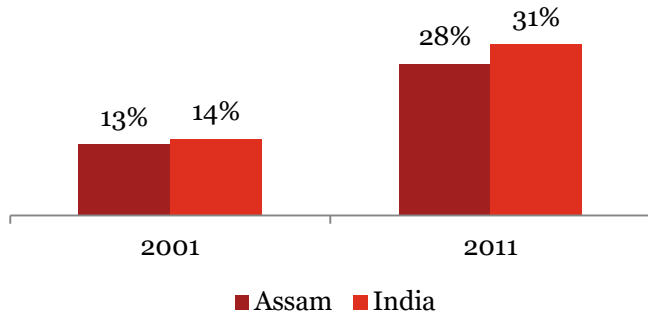


Three stretches emerge out to be strong contenders for future industrial zones based on mix of presence of industries, proximity to gateways and quality of stretch-road:

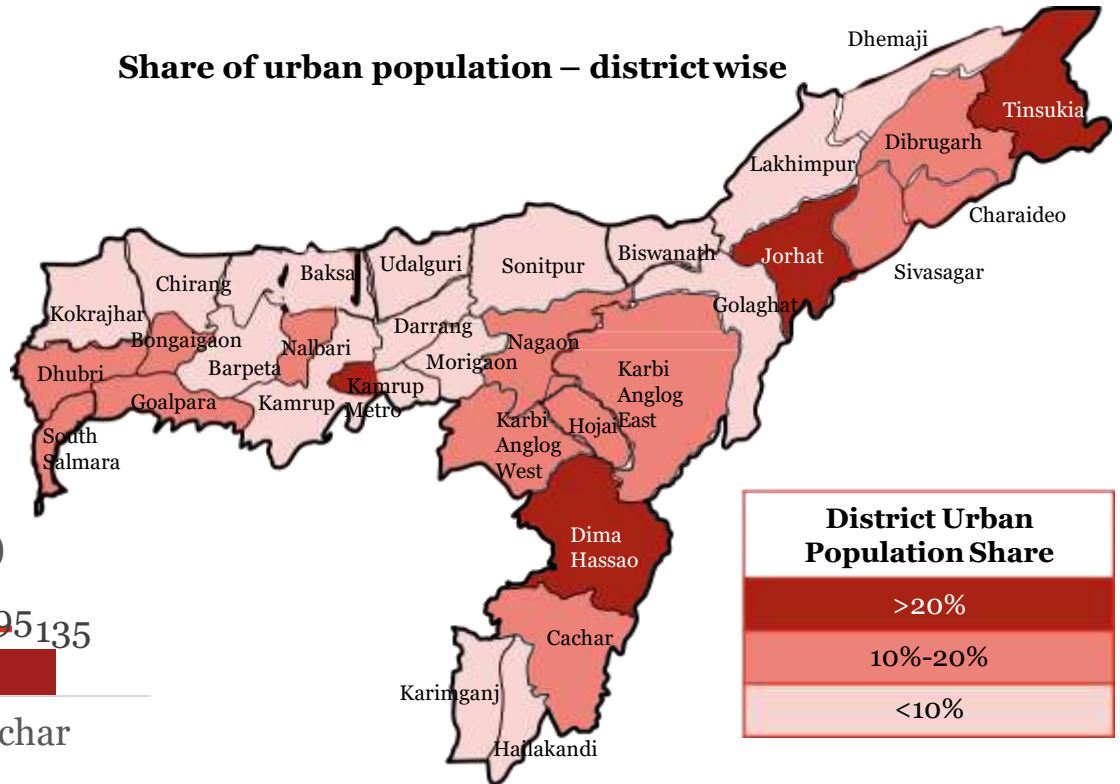
- Guwahati-Nagaon
- Bongaigaon-Joghghopa
- Mission Chariali-Balipara

Over one third of the states urban population resides in 4 districts

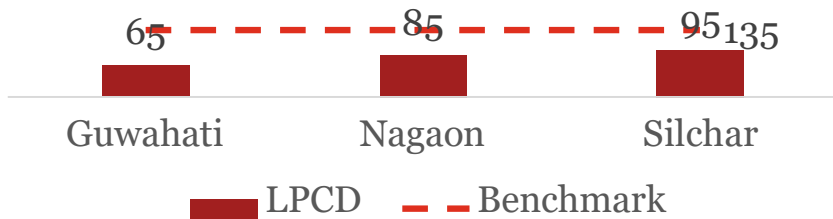
Rates of urbanization in India and Assam



Share of urban population – districtwise

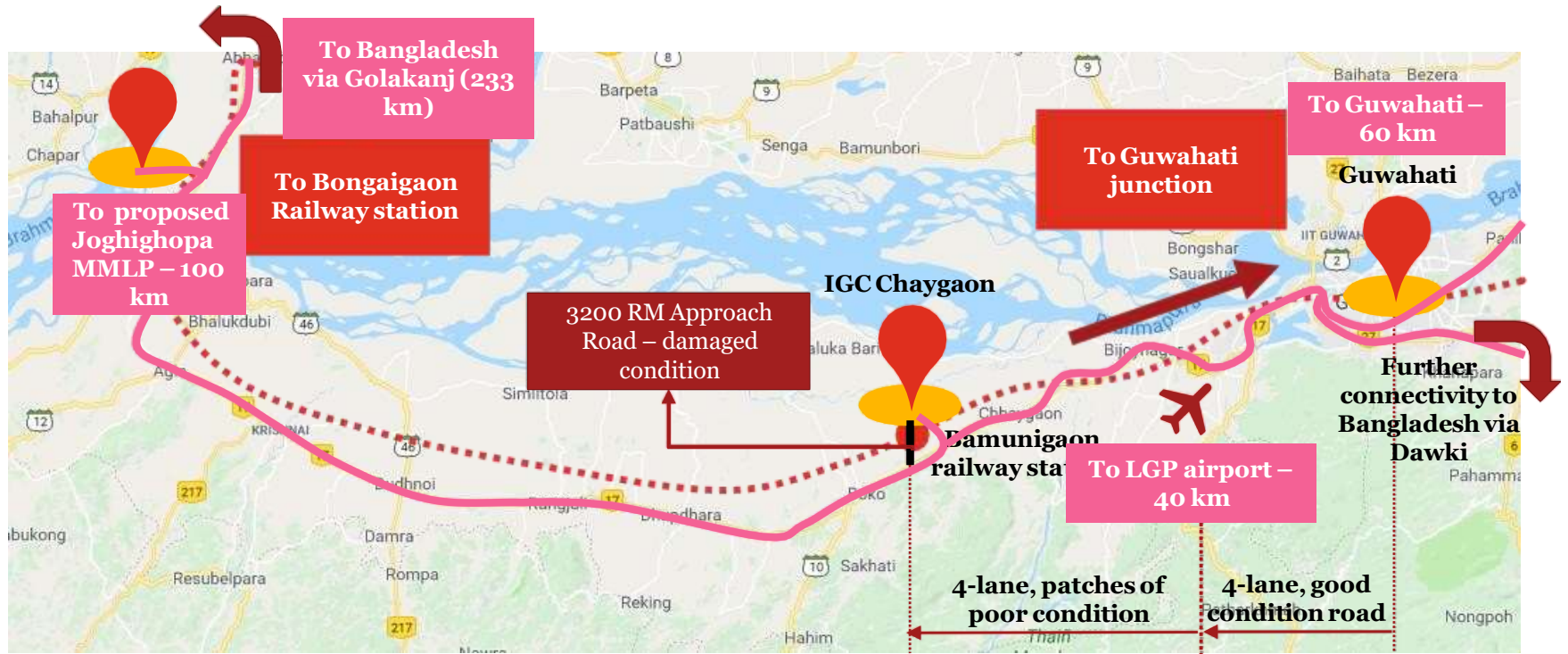


Per capita water supply (in LPCD)



- The household coverage and per capita water supply in AMRUT cities is lower than the benchmarks
- Projects over INR 650 cr have been identified of which over 85% pertains to water supply projects
- The Assam Urban Infrastructure Investment Program is a key urban infrastructure initiative of the Government of Assam (GoA), and aims to improve the urban environment and quality of life in the cities of Guwahati and Dibrugarh

Urban Case study-Kamrup rural



Investors are keen to invest in areas around IGC Chaygaon like Bangaon Mouza due to its proximity to Guwahati and accessibility to airport, railway station & NH

Investments to the tune of INR 1000 Cr have been committed by investors with projected employment generation of 7000 nos.

Units housed here are exporting products within sectors like Agriculture and food processing and plastic processing to neighbouring countries, mainly Bangladesh

Upgradation of existing urban infrastructure key to enhancing industrial competitiveness

	Issue	Cause	Requirement
Power issues	<i>Voltage fluctuation and tripping during rainy season</i>	Overloaded single transmission line from Bhalukata grid sub-station	Double circuit transmission line from Bhalukata sub-station
	<i>Power deficit of upto 10 MW/day</i>	Lower capacity transformer (1 no. of 15 MVA)	Another transformer of 15 MVA needed
Urban issues	<i>Pollution of nearby waterbodies and water logging</i>	Poor drainage and release of untreated effluent and sewage	Construction of effluent and sewage treatment plants, outlet storm-water and other internal drains
	<i>Land constraint</i>	Almost full occupancy	Identification of suitable land outside IGC suitably connected with key markets and gateways
	<i>Poor street lighting</i>	Obsolete and faulty street lighting technology	Solar lighting systems
Transport infrastructure issues	<i>Around 300-350 heavy-load trucks enter and exit Chaygaon daily, Poor accessibility to IGC premises</i>	Poor condition of approach roads (3.2 RM for Chatabari premise and 1.2 RM for Jambari premise), current thickness of just 20 mm and width of 5.5 m (1.5 lane) which gets regularly damaged during rainy seasons	Cement concrete RCC pavers block road with width of 7.5 m
	<i>Inadequate market access infrastructure</i>	<ul style="list-style-type: none"> • 2-laned poor condition roads to Golakganj (for reaching Bangladesh) • No dedicated air cargo carriers operating out of Guwahati 	Expedited implementation of roads and airport expansion plans
	<i>Other requirements for development of industrial ecosystem</i>		Common conference room, fire fighting facility, bank, canteens

Upgradation/creation of these facilities will also help users of Food Processing Park managed by Assam Small Industries Development Corporation Ltd.

Critical Challenges of State Power Sector



Availability

- Power demand is expected to be 4200 MW in 2025 (2.5 times escalation compared to 2016-17 levels)
- Transmission infrastructure for most of the identified districts is loaded beyond threshold level of 70%
- Poor financial health of Discom prevents it from investing in system strengthening and expansion.



Affordability

- Industrial tariff in Assam is lower than Gujarat, MP & Maharashtra (Rs 6.65 to 7.20 per kWh), but higher than CG, Odisha, Myanmar, Malaysia, Bangladesh, Thailand (for medium and large industries)
- Dependence on central generating stations has resulted in increase in power procurement cost for the Discom (20% escalation in last 3 years).



Reliability

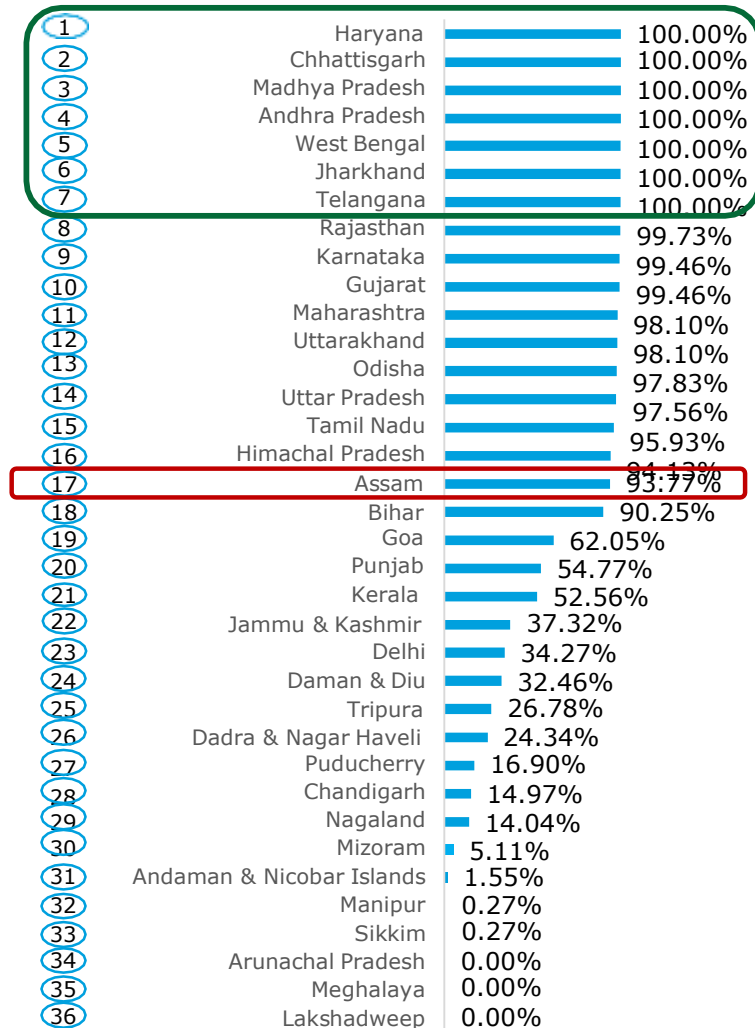
- Average duration of supply interruption in Assam is higher at 50.31 hours/ month compared to MH (0.51), Guj (1.35), TN (2.2), AP(5.13)
- Number of interruptions per month in Assam is also significantly higher at 88.7 per month compared to MH (1.2), Guj (2.2), TN (3.47) and AP (4.5)

Regulatory and institutional

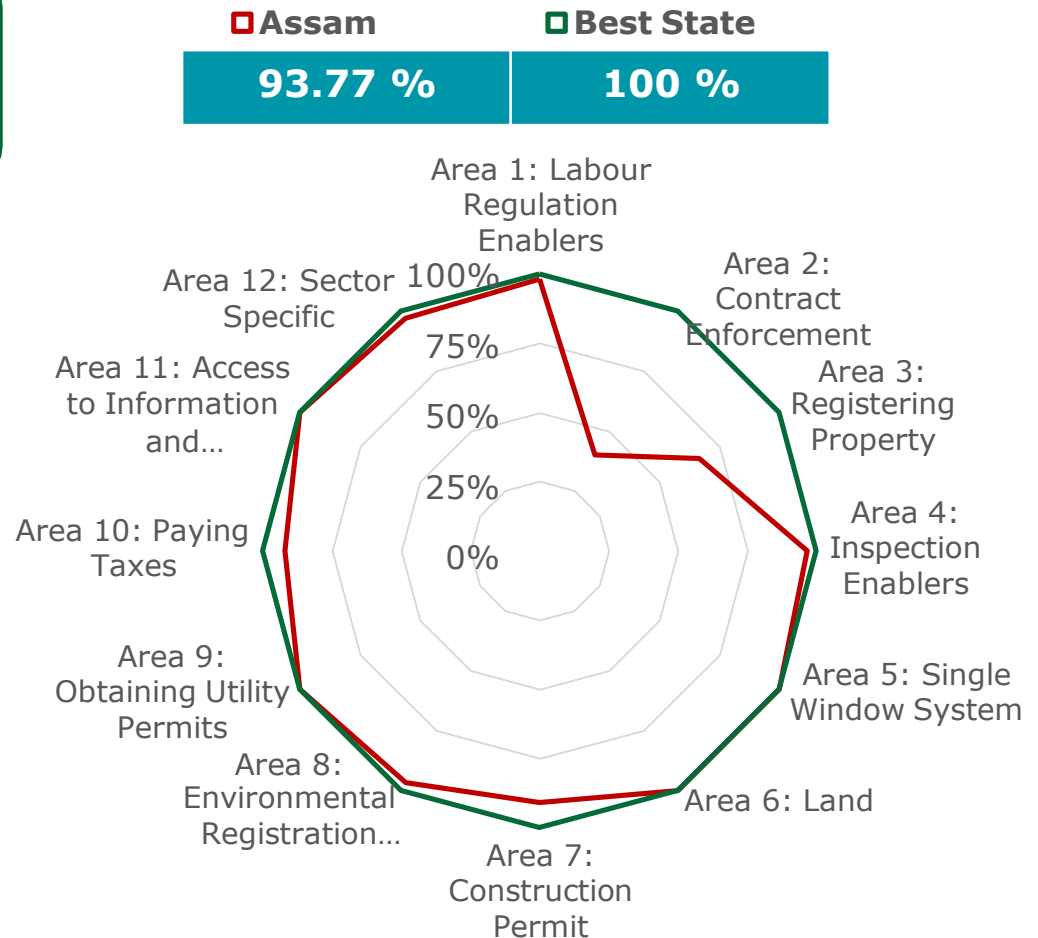
Assam EODB 2017 Baseline

Benchmarking with other states in India (as per DIPP assessment)

Ranking Overall implementation status



Assam ranks 17 out of 36 states/UTs



Source: DIPP EoDB Scoring 2017 (as on April 30, 2017)

EoDB Reforms – Quick Win Opportunities

Inspection Enablers

- Exemption to green industries with a history of satisfactory compliance
- Computerized system for identifying building/area that need to be inspected based on risk assessment

Construction Permit

- Introduction of uniform building code/building by-law for the state
- Design and development of online system for building approval (Auto-DCR or equivalent), integrated with other State departments / agencies and applicable Central Government department / agencies

Payment of Taxes

- Defining clear timelines mandated through legislation regarding all levies imposed by State and Local Bodies
- Implement process for third party viewing of past payments by entering connection number to verify records

Property Registration

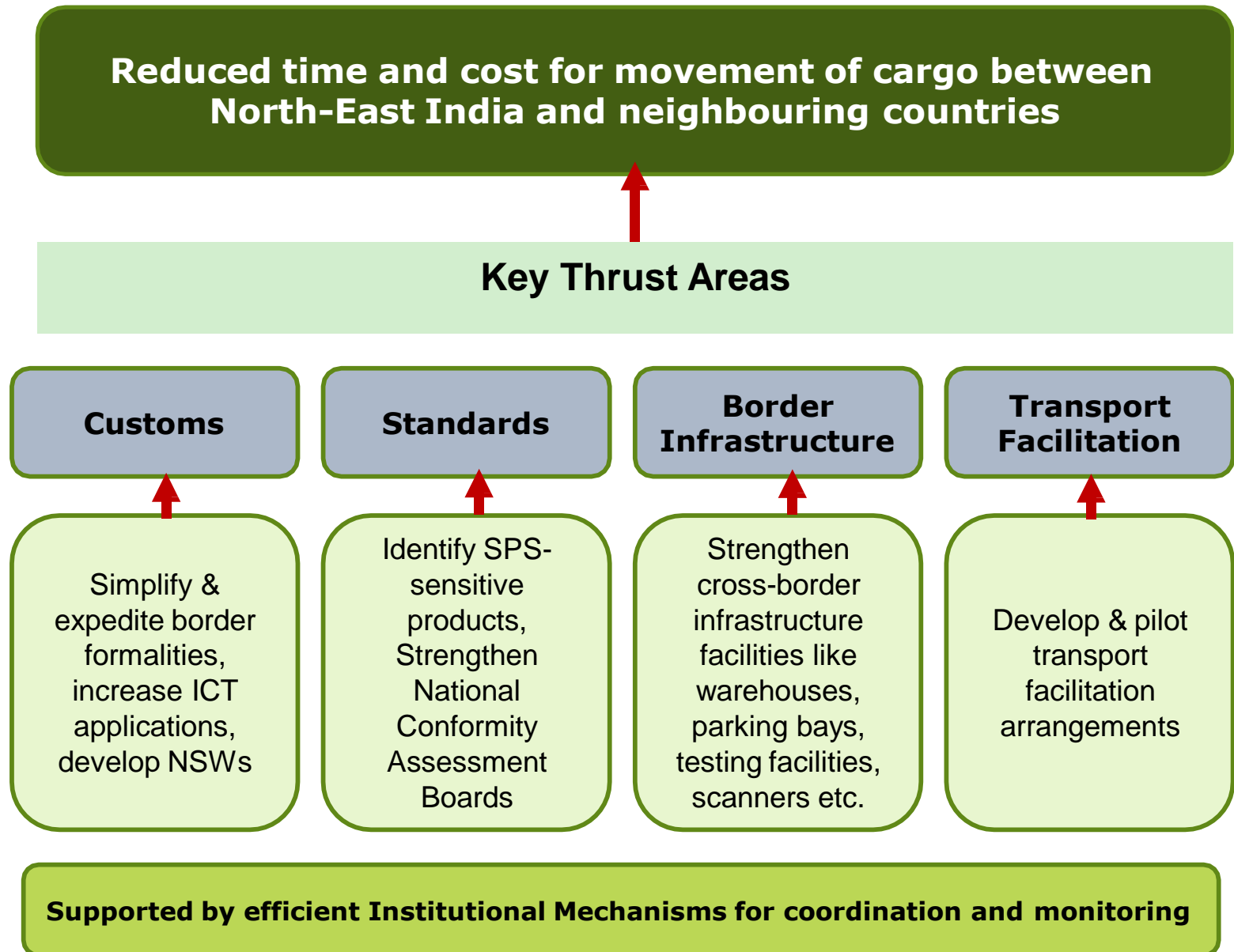
- Digitization of cadastral maps of all rural areas
- Integration of registration and mutation process of properties
- Integration of land record database with judicial databases; with details of land disputes available in public domain

Others

- Provision for self / 3rd party certification for boilers during use
- Reduction of the number of documents required for obtaining trade license to only two

Readiness for BRAP+ recommendations: focus on sector-specific clearances (agri, mining, hospitality etc.)

Framework for assessing cross-border trade issues



Customs-related issues

Electronic data exchange

- EDI system is not accessible at all LCSs in North-East
- Need for seamless information flow through integration of different systems like EDI used by India and ASYCUDA used by Bangladesh

Document harmonization

- Information / documentation sought as part of exim documents of respective countries not standard across the region

National Single Window

- Need for strengthening institutional coordination among border agencies, supported by an online NSW platform

Container Cargo movement

- Mandatory border check for movement of container cargo; changes to custom regulations to permit inland checks and reduce processing time

Standards-related issues: SPS and TBT

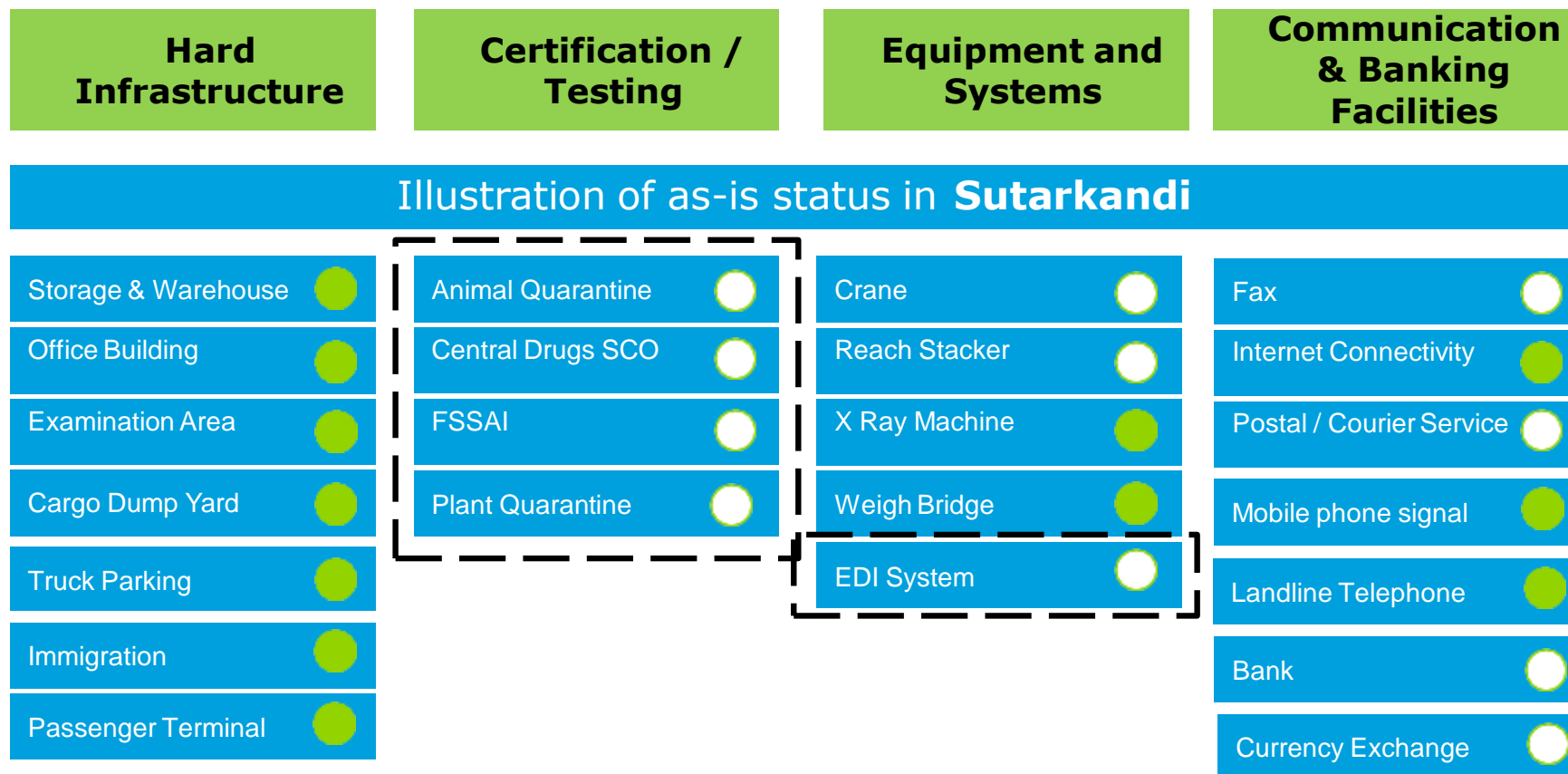
Sanitary and phyto-sanitary (SPS) barriers to trade

- Testing Laboratories / plant quarantine management facilities not present at LCPs / ICPs
- Single laboratory not always equipped / accredited to conduct all requisite tests in most countries, results in delays
- Limited institutional arrangements to ensure coordination among public agencies associated with administering SPS regime

Technical Barriers to trade (TBTs)

- Labelling & packaging regulations mandate different languages and information disclosure requirements across the region
- Certain countries like Bangladesh make it mandatory for importers to secure import licenses for products that fall under the list prepared under Mandatory Certification Marks Scheme (MCMS)

Border Infrastructure-related issues



- Ongoing / planned projects in Sutarkandi (on NH-37) include the following:
 - Sutarkandi-Karimganj road + connectivity onto Silchar and Aizawl
 - Shahbazpur (Bangladesh)-Mahishasan(India) rail linkage
- Sheola on Bangladesh connects to the Karimganj – Sylhet road

Transport Facilitation-related issues

Protocols need to be defined under the Bangladesh-Bhutan-India-Nepal (BBIN) and India-Myanmar-Thailand (IMT) Motor Vehicle Agreements

- 1 • Electronic cargo tracking system, with regional electronic tracking platform for efficient tracking of cross-border movement of cargo vehicles
- 2 • Inland movement of cargo for off-border clearance
- 3 • Standardization of road-wise axle load limits
- 4 • Recognition of insurance policies across the participating countries

Strengthening Logistic performance in the state

Assam ranked 20/22 in the LEADS study: one of key reasons is inadequacy of logistic infrastructure

Key Issues

- Deficiency in logistic-related infrastructure
- Dominated by informal sector – impacts service quality
- No separate focus on regulatory and other interventions in logistics sector

Potential Solutions

- Planning & development of MMLPs: issues of land end-use, FAR, fiscal incentives, SW clearance for all such MMLPs
- Focus on attracting large logistic players – incentives, financing availability for smaller players, online e-marketplace for buyer-seller matchmaking for logistic services
- Skilling initiative for stakeholders: industry participation, logistic-specific courses
- Establishment of a dedicated cell within Industries Department focused on Logistics: responsiveness to stakeholder requirements

Assam has the potential to be the economic hub of North East and ASEAN by promoting investments in manufacturing, services and Trade

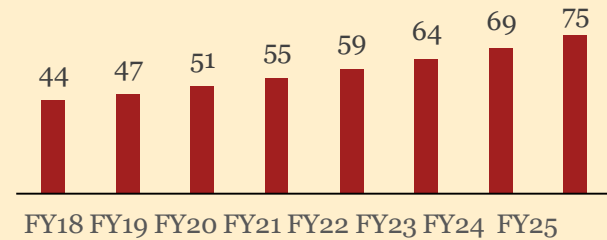
1

Assam has a trade opportunity of USD 840 billion from the BBN and ASEAN markets

2

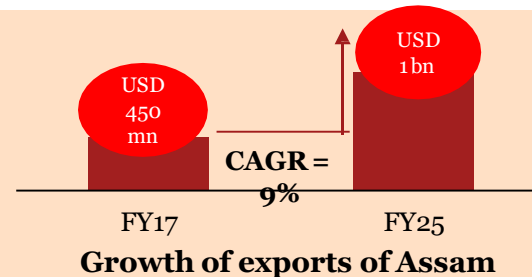
Assam as a USD 75 billion economy by 2025, grow at 8% against current average of 6.1%

Growth of GSDP of Assam, USD bn



3

Potential for USD 1 billion of exports from Assam, from current USD 450 million



Increase in investments in the manufacturing and services sector

Key messages

- Guwahati (including Amingaon), Nagaon, Bongaigaon and Silchar – Key Economic Clusters to tap into ASEAN and BBN markets
- Seven industries – new and traditional - to drive manufacturing, trade and exports
- Position as Education, medical services and IT/ITes as Key Service Sectors
- Industrial Zone Notification model to be used for promoting new development
- Multi-modal infrastructure to be the back bone of this framework:
 - Roads would continue to be the backbone of the logistics network
 - 3 key road routes will be critical for access to markets and gateways; require interventions to enhance linkages with spine, gateways and hinterland
 - The following projects therefore assume importance – Nagaon Silchar 4 laning, Silchar-Moreh, Guwahati – Dawki 4 laning
 - Waterways can play the role of an enabler for international trade
 - Railways can play 2 main functions 1) Supplement transport along the spine 2) Provide direct linkage Indian Hinterland 3) SAARC Rail Connectivity
- Airports
 - UDAN I and UDAN II Critical
 - Timely expansion of Airport terminal in Guwahati critical, requires an air-cargo terminal
 - Silchar airport important as a manufacturing and logistics hub
- Multi Modal Logistics Park
- Expedite Jogighopa and plan for Silchar

Thank You!

Border Infrastructure-related issues



Dawki-Tamabil

Sutarkandi-Sheola

Moreh-Tamu

Road / Rail Infrastructure

Road connecting Dawki to Shillong requires upgrade

- The DPR for the improvement of NH-40 connecting Shillong and Dawki and construction of Dawki bridge was submitted in October, 2017

Weight restriction on bridge leading to Dawki

- Load restriction of 6 tonnes adversely impacts transport

Ongoing road project to connect Sutarkandi to Karimganj (NH 37), along with rail project to connect Mahishasan in vicinity to Shahbazpur in Bangladesh.

Sheola linked to Karinganj-Sylhet road

Multiple Check Posts adding to delays on NH - 39 and 53 (across Manipur and Nagaland) leading to Moreh

- It has been indicated that there are 53 check posts belonging to various departments of the Government of Manipur and Nagaland from Moreh to Dimapur on NH-39 and as many as 12 check-posts belonging to the Government of Manipur on NH-53

Parking / Warehousing Facilities

Lack of parking space

- Results in congestion on the roads leading to Dawki LCS

Temporary parking facilities

Part of the proposed port site in Sheola is located in a flood plain, which floods annually during monsoon and is used as parking facility during dry season

Inadequate warehousing facilities

- Sutarkandi LCS has a dumping ground situated in a low lying area which gets inundated during the rainy seasons
- Due to presence of coal open stack yards in Sheola, there is scope for uncontrolled discharge of runoff or fugitive emissions of coal dust, which could threaten local waterways, floodplains and groundwater bodies

Warehouse capacity constraint

- Food items from Myanmar have to be unloaded at warehouses at Moreh for inspection. As the warehouse has a capacity of 200 MT, goods from Myanmar can only be transported when the custom warehouse is vacant

Equipment / Communication / Testing Facilities

Absence of testing laboratories

Absence of cranes & stackers and linkage with EDI systems

Absence of testing and quarantine facilities

Absence of testing laboratories

- Imported food samples are sent to Imphal with the entire process comprising dispatch of food samples, testing and declaration of results taking around 15 days

Banking Facilities

Lack of banking & currency exchange facilities

- SBI has a branch at Dawki which cannot deal with foreign exchange
- Nearest domestic bank from Tamabil is at Jaintapur (14 km away). However, they don't provide international banking facilities and the same have to be availed at Sylhet

Nearest bank (United Bank of India, Karimganj) from Sutarkandi is 14 kms away by road.

Lack of banking and currency exchange facilities

- UBI at Moreh which deals in foreign exchange has inadequate manpower and infrastructure
- Presently, foreign banks in other countries are being used for transactions with high currency conversion rates
- SBI branch in Moreh has not declared as designated bank for foreign exchange transactions