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LSI Financial Services Pvt. Ltd.

# OPPORTUNITIES IN ASSAM

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The Associated Chambers of Commerce and Industry of India

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# Introduction

Assam, the state of the India is considered to be the largest state in the north-eastern part of the country. The state shares its borders with Arunachal Pradesh, Nagaland, Manipur, Mizoram, Meghalaya, Tripura and West Bengal. As a land bridge between South Asia and Southeast Asia, it is the only region in India to share borders with five countries: Bangladesh, the People’s Republic of China (PRC), Myanmar, Bhutan, and Nepal. It has entry points into all these countries that connect it onward to the Association of Southeast Asian Nations (ASEAN) both by land and sea.



This north eastern part of the country is recognized for its ensemble natural beauty and geographical diversity. This part of India is situated between some of the fastest emerging economies across the globe.

Assam, which is shaped roughly like a Y laid on its side, is a land of full of hills, plains and river valleys. The State accounts for nearly 2.4% of India’s total geographical area. One important geographical feature of Assam is that it contains three of six physiographic divisions of India – The Northern Himalayas (Eastern Hills), The Northern Plains (Brahmaputra plain), and Deccan Plateau (Karbi Anglong). The Brahmaputra basin covers an area of 5,80,000 sq. km. out of which 70,634 sq. km. falls within Assam.

The climate of Assam is typically ‘Tropical Monsoon Rainforest Climate’, with high levels of humidity and heavy rainfall. People here enjoy a moderate climate all throughout the year, with warm summers and mild winters. The heaviest rainy season generally arrives here in June, stays through September, and often causes widespread and destructive flooding. The state’s annual average rainfall varies from about 70 inches (1,800 mm) in the west to more than 120 inches (3,000 mm) in the east and the range is ranked among the highest in the world.



### Exhibit 1: Assam – Facts and Figures

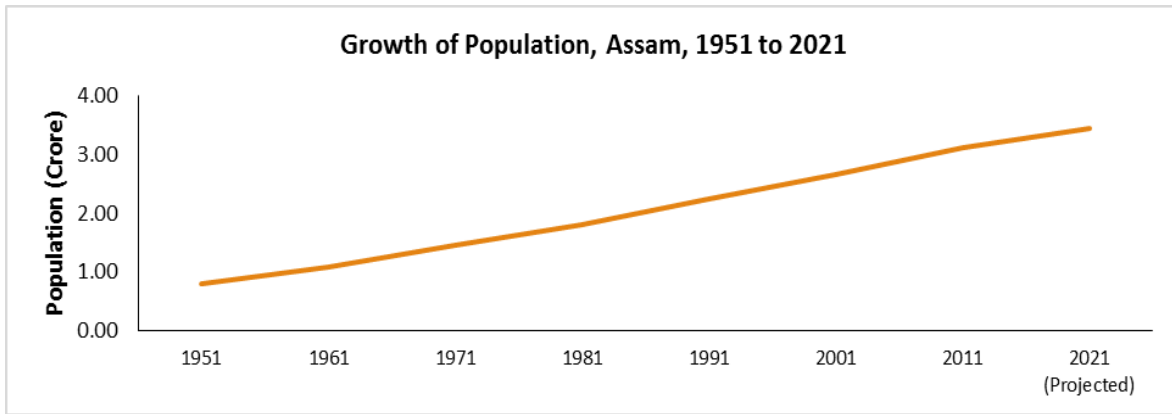
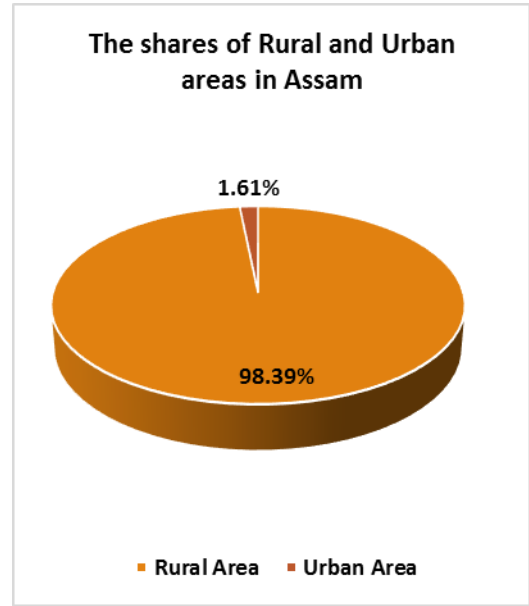
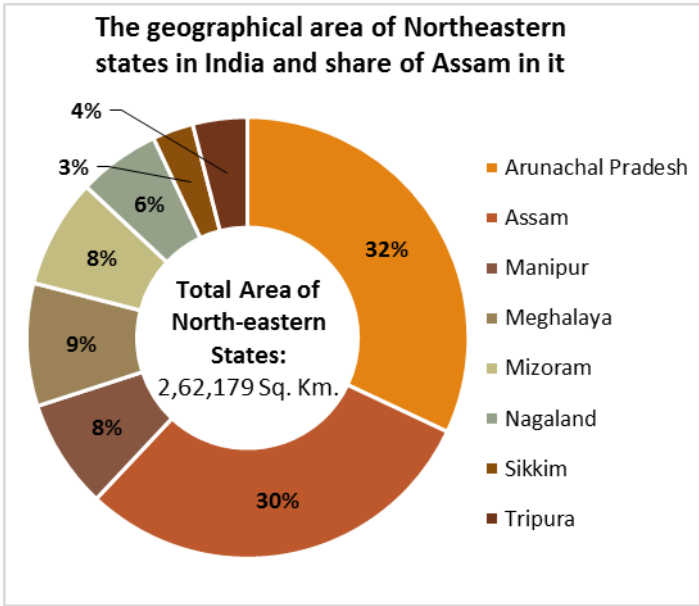


Capital	• Dispur
Total Area	• 78,438 Sq. Km.
Population (Till 2020)	• 3.44 Crore (Projected)
Administrative Districts	• 33
Largest City	• Guwahati
Literacy Rate	• 85.9%
Life expectancy at birth (in years) between 2014 to 2018	• 66.2
Birth rate (per 1000) in 2018	• 21.1
Death rate (per 1000) in 2018	• 6.4
Total fertility rate (per cent) in 2018	• 2.2
Infant mortality rate (per 1000 live births) in 2018	• 41
GSDP at Current Prices (FY20)	• INR 3.51 Trillion
Budget Allocation (FY21)	• INR 1.03 Trillion
Share of State in Central Tax Revenue (FY21)	• 1.28%

Source: Government of Assam, Economic Survey'FY21, National Statistical Office, PRS Legislative Research, LSI Research



**Exhibit 2: Geographic and Demographic Snapshot of Assam**



Source: North Eastern Council Government of India, LSI Research

## Opportunities in Assam



### Largest Economy of the North-eastern India

Assam's GSDP is projected to be INR 4.09 Trillion in FY21 which is about 2% of India's GDP. According to recent analysis, Assam's economy is showing signs of improvement. Growth of industrial and agricultural sectors, investment towards the infrastructure have been some of the favourable factors for the rise of this state's economy.



### Growth of the Agriculture sector

Assam economy continues to be predominantly an agrarian economy as more than 90% of the population is living in the rural areas and more than 52% of the total labour force are found to be engaged in agriculture and allied activities. The principal food crops produced in the state are rice (paddy), maize (corn), pulses, potato, wheat, etc., while the principal cash crops are tea, jute, oilseeds, sugarcane, cotton and tobacco. Crops like paddy, wheat and plantation crops like tea are grown here extensively. The share of agricultural sector in the Assam's economy was 17% in FY20.



### Abundant Natural Resources

Assam is rich in resources such as natural oil and gas, rubber, tea and minerals, granite, limestone and kaolin. Amongst mineral resources, oil takes the top place. Oil was first struck more than one hundred years ago and the oil well of Digboi and other areas is a major source of fuel for not only the North-East but for the country as a whole.



### Locational Advantage for foreign trade

Assam is the Gateway to the North Eastern States and the state is placed in such a manner that it can serve the market needs of the other north-eastern Indian states and access the larger markets of the surrounded countries as well. Its geographical location is advantageous for foreign trade with neighbouring countries like Bhutan, Bangladesh, Nepal, Myanmar, Thailand, China etc.



**Preferable Tourism Destination**

Apart from being the gateway of the north eastern India, Assam is an attractive tourist hub. Everything from the ancient temples, the wildlife sanctuaries, soothing climate, the scenic beauty of the Brahmaputra, and its unique culture give some of the best tourist places in Assam. Assam holds an immensely special position in terms of the intriguing wildlife. Assam's protected areas include 6 national parks and 18 wildlife sanctuaries.



**Favourable demography for the expansion of Infrastructure**

Expanding infrastructure in the north-eastern region and timely completion of projects is currently among one of the top priorities of the Central and north-eastern state governments. The major modes of transportation in Assam are roadways, railways, airways and inland waterways. Assam has total road length of approximately 69,000 kms. Work towards the development of infrastructure, with a view to strengthening the support base will help Assam to achieve uninterrupted economic growth.



**Opportunities for Industrial growth**

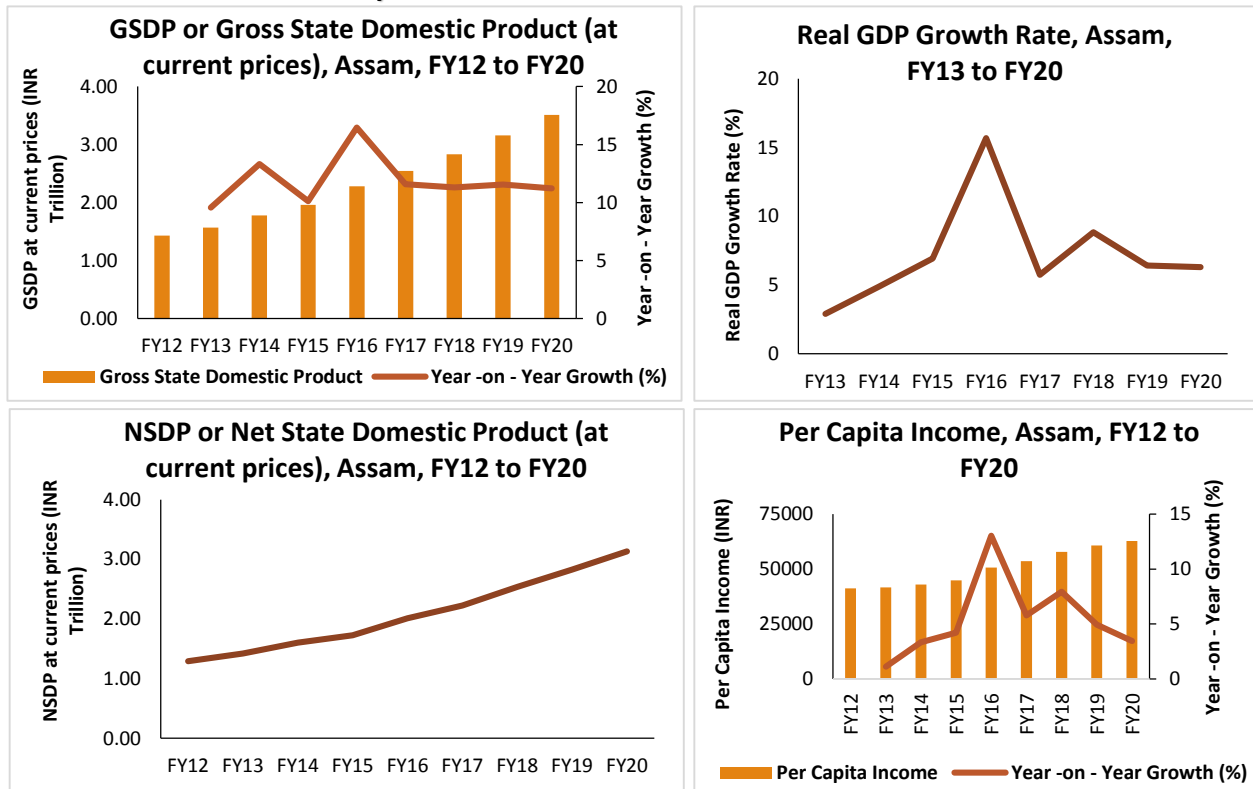
With the availability of quality infrastructure, the state offers a favourable environment for industry. Assam has a vibrant industrial base. Apart from having the oldest tea industry and huge onshore oil production, Assam has 20 industrial estates, 3 industrial growth centres, 11 Integrated Infrastructure Development Depots, 17 industrial areas, 12 growth centres, 8 mini industrial estates, 1 export promotion park and 1 food processing industrial park. In FY20, the share of industry in the Assam's GSDP was 39%.



# 3 The Economy of Assam and the Role of Key Sectors

Growth rate of Assam's income has not kept pace with that of India's during the Post-British Era; differences increased rapidly since the 1970s. While the Indian economy grew at 6% per annum over the period of 1981 to 2000, the same of Assam's grew only by 3.3%. In the post-liberalised era (after 1991), the gaps between growth rates of Assam's and India's economy widened further. However, in the current decade, according to the analysis, Assam's economy is showing signs of improvement. The growth path of the economy can be better understood from the following charts.

**Exhibit 3: The Economic Snapshot of Assam**



Source: Ministry of Statistics and Programme Implementation, LSI Research

- GSDP is the sum total of value added by different economic sectors (Agriculture, Industry & Services) produced within the boundaries of the state calculated without duplication during a year.
- At current prices, the Gross State Domestic Product (GSDP) of Assam is **INR 4.09 Trillion** (US\$ 58.47 billion) in FY21. Assam's share in India's GDP was **2%** in FY21.
- Between FY12 to FY20, the GSDP at current prices of the state had increased at the Compound Annual Growth Rate or CAGR of **11.87%**. Between FY12 to FY20, the year-on-year growth rate of GSDP at current prices was maximum in FY16 with **16.47%**.
- Real GDP is an inflation adjusted measure which reflects the value of all goods & services produced by a

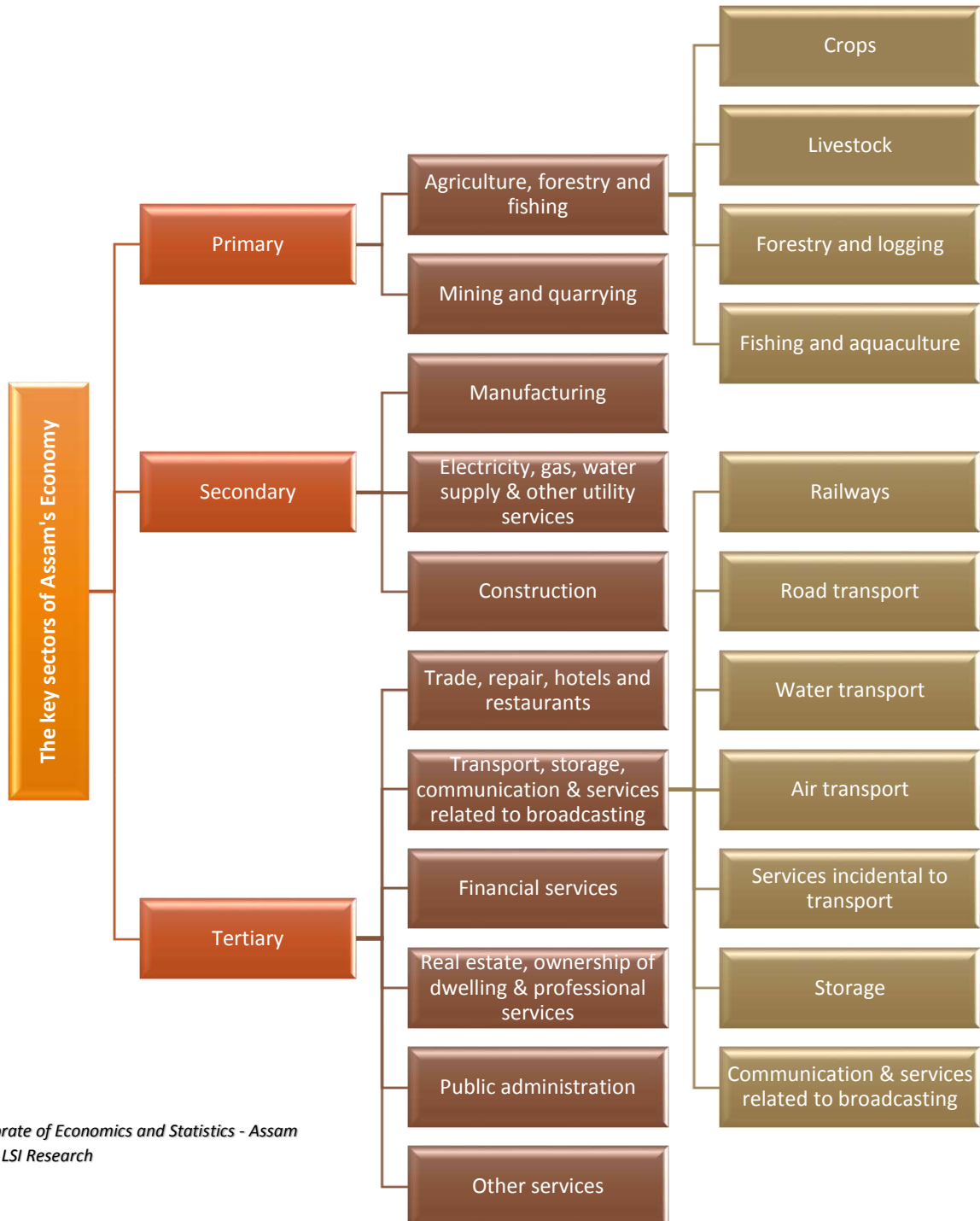




state in a given year. Through this indicator, the growth of the state can be measured appropriately. In FY20, the Real GDP Growth Rate of the state was **6.3%**. The year-on-year growth rate was maximum in FY16 with **15.67%**.

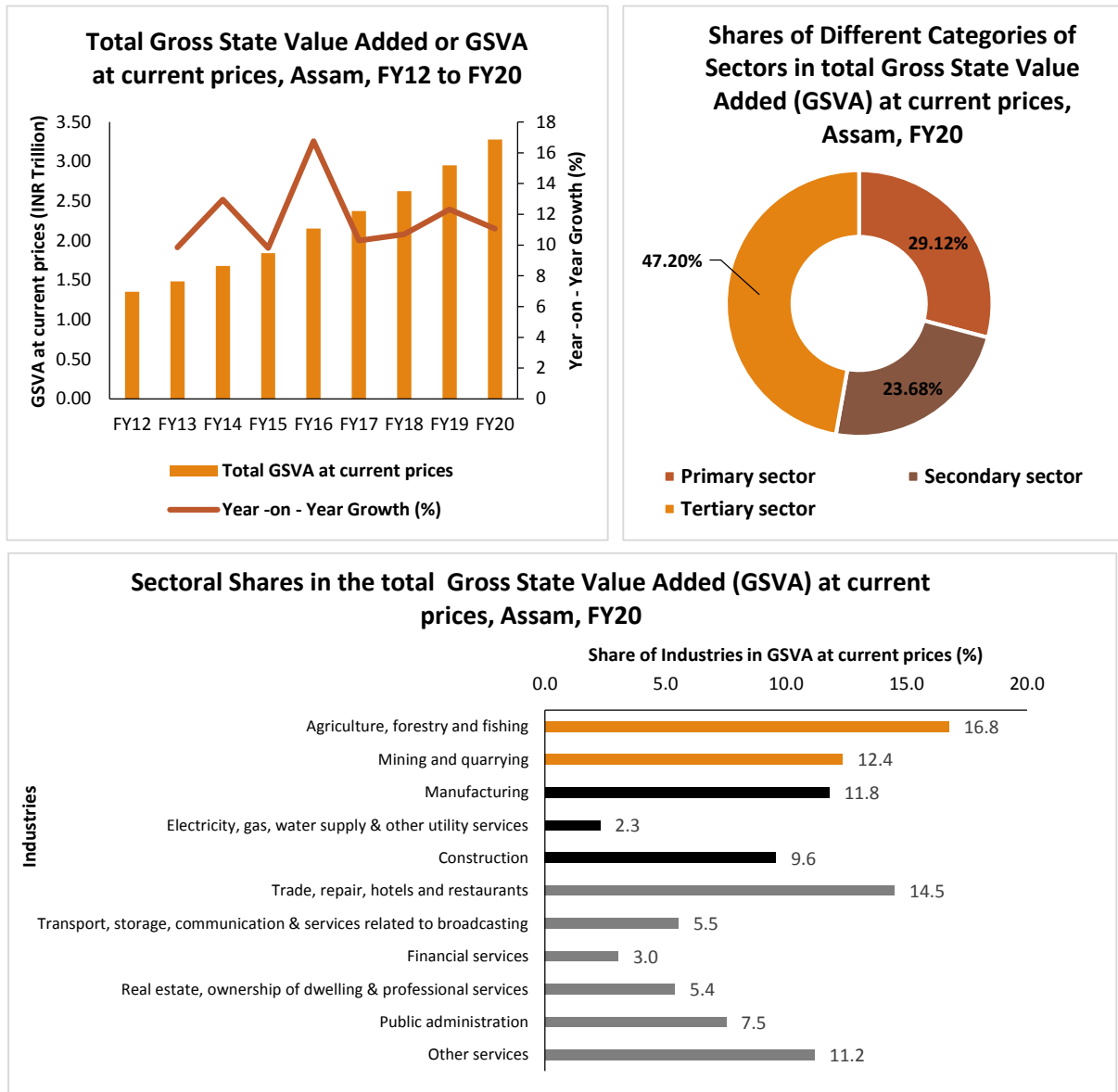
- Net State Domestic Product (NSDP) is an annual measure of the economic output of a state that is calculated by subtracting depreciation from Gross Domestic Product (GSDP). The NSDP of Assam had increased at a CAGR of **11.68%** between FY12 to FY20.
- Per Capita Income measures the average income earned by a person in a state in a given year. Assam’s per capita income had increased at the CAGR of **5.43%** between FY12 to FY20.
- According to a recent report, the per capita income of the state became **INR 1, 30,970** in FY21.

#### Exhibit 4: The Key sectors of Assam’s Economy



Source: Directorate of Economics and Statistics - Assam State Portal, LSI Research

### Exhibit 5: The Contribution of Sectors in Assam’s Economy



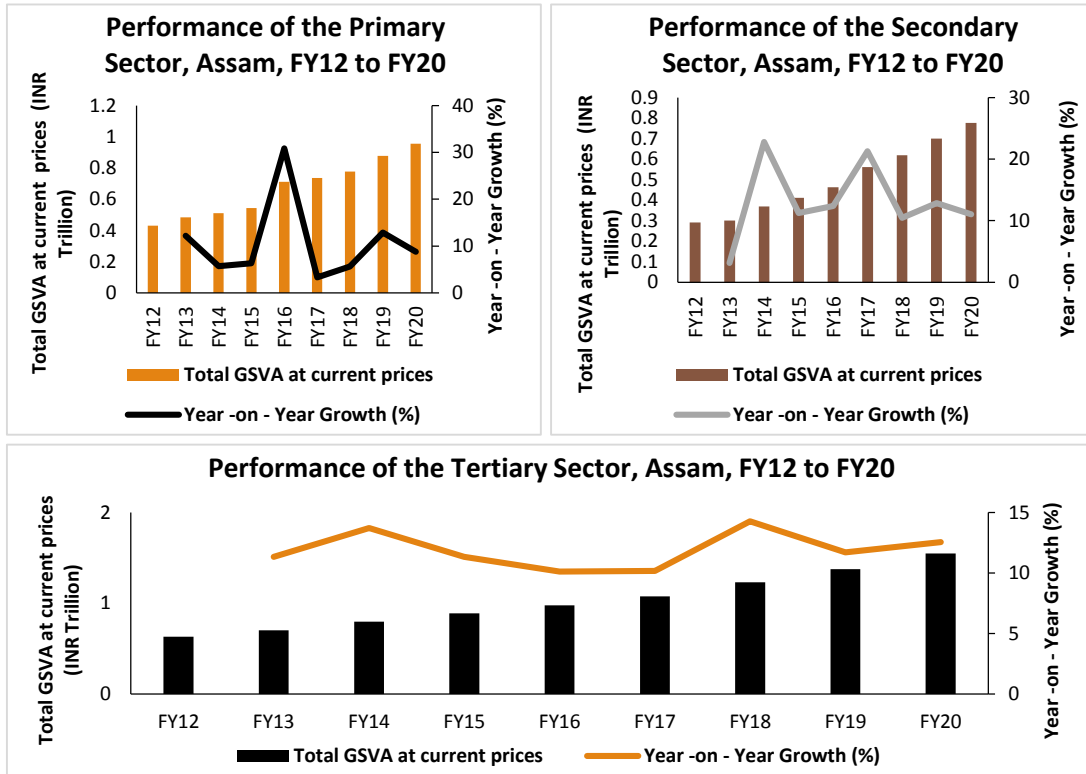
Source: Directorate of Economics and Statistics - Assam State Portal, LSI Research

Gross State Value Added (GSVA) is defined as the value of output less the value of intermediate consumption. It is used to measure the output or contribution of a particular sector. When such GSVAs from all sectors are added together and adding taxes (product) and reducing subsidies (product), we can get the GDP (at market price). GSVA thus shows the production contribution of a particular sector.

- The total GSVA at the current prices of the state had increased at the CAGR of **11.7%** between FY12 to FY20.
- Among all the three sectors, the share of Tertiary sector in the GSVA at the current prices was maximum in FY20.
- The state which is primarily an agrarian economy had maximum contribution from the agriculture sector towards the GSVA at the current prices of Assam with the share of **16.8%** in FY20.
- In the recent years, the tertiary sector has surpassed the performance of primary and secondary sectors in Assam.
- Although the state is yet to develop large-scale industries, it accounts for half of India's tea production and has minor oil reserves, as well as India's highest production of onshore natural gas.



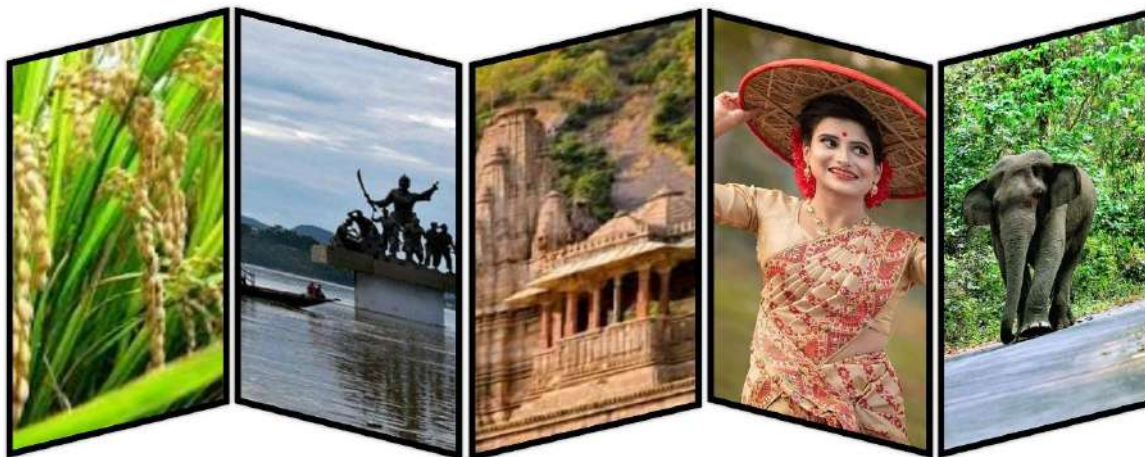
**Exhibit 6: The Sectoral Performance in the Assam's Economy over the Years**



Source: Directorate of Economics and Statistics - Assam State Portal, LSI Research

All the north eastern states including Assam is regarded as the new drivers of India's growth. However, despite having abundant potential, the state has often witnessed social and political turbulence post-Independence, which have disrupted its economic growth. Though Assam provides the country with two of the primary requirements of almost every household-tea and petroleum still it does not come in to the top 10 states. It is 17th in terms of GSDP among India's states.

However, in the past five years, the state has seen significant progress when it comes to road connectivity. With the proper investment towards infrastructure and by exploring the existing potential of the various industries the state can easily fasten the economic growth in the coming years.





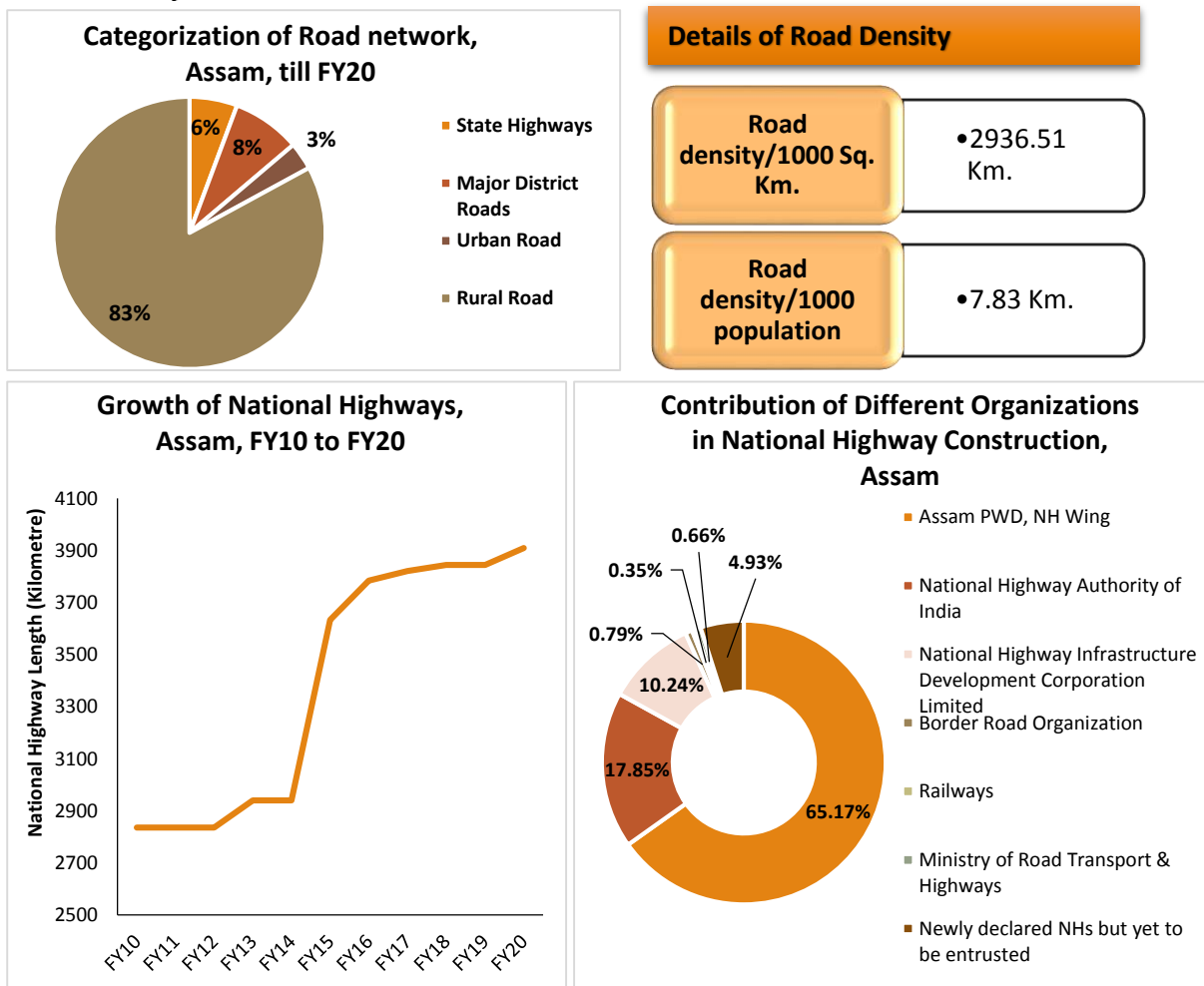
## Infrastructure in Assam

One of the key developmental bottlenecks in Assam is infrastructure. While a lot of progress has been achieved during the past few decades by creating new roads, inland waterways and other modes of transportation, the current status is far below adequate. The state is connected by rail and road with the rest of India only through the 22km-wide Siliguri Corridor. Added to this, inadequate infrastructure within the region and the lack of connectivity with the neighbouring countries have contributed considerably to the slow pace of growth in the region.

### ➤ Road network

Being inexpensive and easier, road transport is an important mode of travel in hilly areas in comparison to other modes of travel.

**Exhibit 7: Expansion of Road Network in Assam**



Source: Assam Road Asset Management System, Ministry of Road Transport and Highways, Statista, Government of Assam, LSI Research

- Assam accounts for approximately 60% of the total road length in the North-east.
- There are 39 National Highways running through Assam with a total length of 3909 Km. The major towns in the state are connected by National Highways.
- Between FY10 to FY20, the construction of National Highway had increased at the CAGR of **3.26%** in Assam.
- Roads of the state have been maintained by different sectors of the Government like Public Works Department, Zilla Parisad, Gram Panchayet, Panchayet Samity and PMGSY.
- During the next five years, the Government will strive for the development of roads specifically in the industrial areas.
- Addressing infrastructure problems will help the state to spur its economic growth.

### Major Challenges:

Poor intra-state connectivity.

Lack of adequate physical infrastructure for connecting Assam and other North-eastern states to the other parts of the country.

Monsoon and annual flood make the road maintenance process challenging and sensitive.

Inadequate funding for the execution of road projects.

Poor road connectivity impacts the communication.

### Ways of improvement:

Hiring road construction agency with the capacity of executing sound policies, planning, engineering practices, business processes, and asset management.

Road sector modernization programme with the initiatives like e-procurement, road sector rehabilitation and resettlement policy and the introduction of annual maintenance plans.

Effective collaboration between different agencies for rehabilitation and resettlement plans.

Effective execution of land acquisition and utility shifting.

Incorporation of latest technologies in the road construction process.

Timely deployment of contractors and ensuring high quality of works.

Upgrading of national highways and construction of roads in the rural areas.

Construction of secondary roads (A road supplementing a main road, usually wide enough and suitable for two-way, all-weather traffic at moderate or slow speeds.).

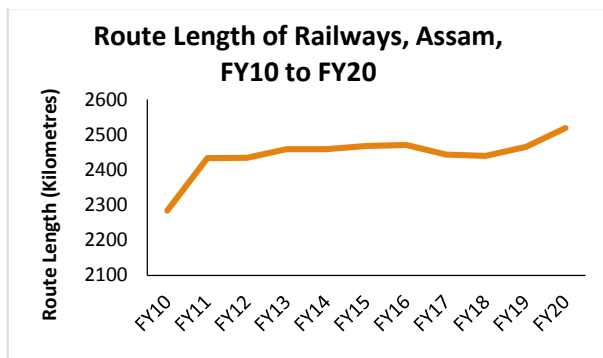
Maintaining the road safety measures.

➤ **Railways**

The Northeast Frontier Railway (abbreviated NFR), is one of the 18 railway zones of the Indian Railways. It is headquartered in Maligaon, Guwahati in the state of Assam, and responsible for operation and expansion of rail network all across North-eastern states and some districts of Bihar and West Bengal. Assam has a convenient railway network connecting the state to the rest of the country. Within Assam, broad gauge rail network connects all the major towns.

Recently, Indian Railways has successfully conducted the trial run of an electric locomotive for the very first time in Assam. The new locomotive will support the Indian Railways to provide electric rail connectivity in the isolated north-eastern parts of the country.

**Exhibit 8: Expansion of Railway Network in Assam**



Source: Statista, Indian Railways Civil Engineering Portal, LSI Research

Railway network in Assam (in Km.) till FY20	
Total Railway Track	•3,662
Total Running Track	•2,702
Total Railway Route	•2,519

**Major Challenges:**

Inadequate railway siding capacity.

Difficulties in expansion of the railway tracks due to the hilly region.

These difficulties absorbs more investment to confront diverse challenges.

The incidents of landslides and annual flood hinders the maintenance of the railway tracks.

**Ways of improvement:**

Assam can be represented as a strategic regional rail corridor to get integrated with global and regional value chains.

The major railway stations of the major towns like Guwahati and Bongaigaon can be used to be served as ideal manufacturing centres for heavy electrical given their access to raw materials and proximity to gateways.

Upgrading the railway siding infrastructure to support loading and unloading of heavy material for a smooth logistics system.

Implementing the initiatives of launching high speed railway system in Assam for connecting the neighbouring countries.

Maintenance of the sensitive areas of the railway tracks and drainage systems during the time of monsoon.

### ➤ Airways

The airborne transport network in Assam is critical for both domestic and international connectivity as the state is prone to floods and landslides, which disrupt land- and water-based modes. Helicopters provide essential evacuation services to remote locations during emergencies. Assam’s existing airport infrastructure provides good coverage within the state and connectivity to remote locations.

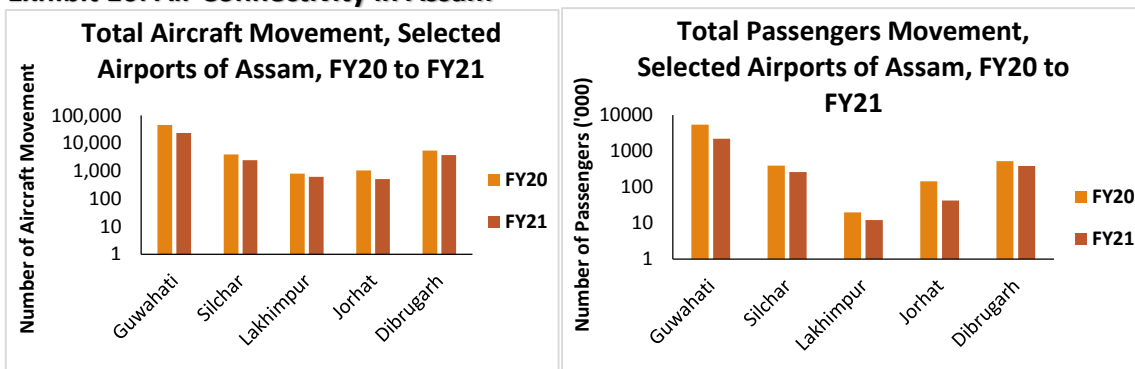
#### Exhibit 9: List of Airports in Assam

Sl.No.	Airport	City	Category	Sl.No.	Airport	City	Category
1	Dibrugarh Airport	Dibrugarh	Domestic	5	Rupsi Airport	Dhubri	Domestic
2	Lokpriya Gopinath Bordoloi International Airport	Guwahati	International	6	Shella Airport	Shella	Domestic
3	Jorhat Airport	Jorhat	Domestic	7	Silchar Airport	Silchar	Domestic
4	Lilabari Airport	North Lakhimpur	Domestic	8	Tezpur Airport	Tezpur	Domestic

Source: IndiAirport – Exhibition on Airport Technology

As of now air connectivity in Assam follows a hub and spoke model, with Guwahati and Kolkata (West Bengal) functioning as the hub and small airplanes providing connectivity to the smaller airports.

#### Exhibit 10: Air Connectivity in Assam



Source: Airports Authority of India, LSI Research

#### Ways of Improvement:

Representing Assam as the aviation hub of the north-eastern region by implementing suitable initiatives.

Expansion of the state's connectivity to remote location through airways.

A proper air connectivity can boost the trade and commerce of Assam with rest of the country.

Airports like Guwahati and Silchar seem to be over utilized sometimes which causes delay in operations. Hence, the capacity utilization of the other airports of the state needs to be increased.

Expansion of cargo handling capacity of all the airports.

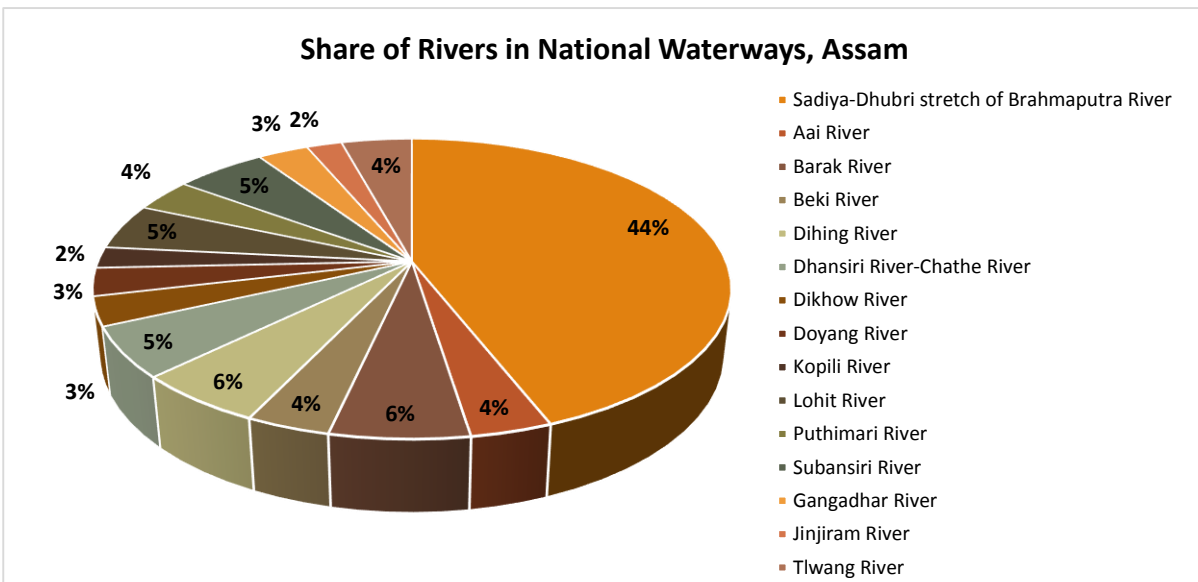
➤ **Waterways**

With around 15 national waterways in the state, Assam has a natural advantage in this form of transportation which is the cheapest though slowest mode. Inland waterways transport along the course of rivers is a cheaper, though less flexible, alternative to road and rail in landlocked regions.

The Directorate of Inland Water Transport (IWT) and Central Inland Waterways Corporation of Assam operate water transport services along the Brahmaputra and Barak rivers on a commercial basis. These services are used to transport passengers and goods across the state & to West Bengal. Moreover, Assam's internal waterway network connects it to Bangladesh, giving it access to the ports of Chittagong, Kolkata and Haldia.

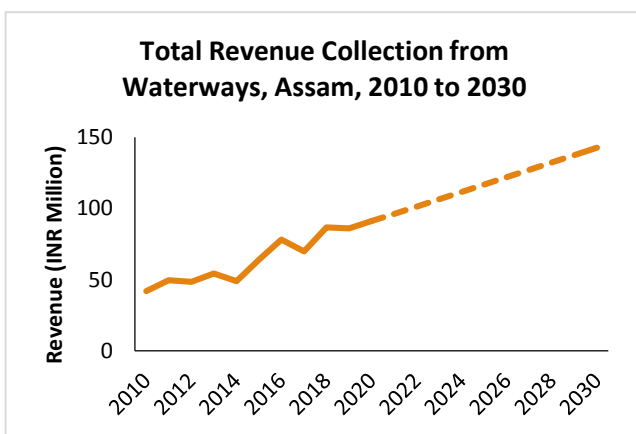
Assam's major river routes are along the Brahmaputra & Barak Rivers, with a navigable length of 891 km and 121 km respectively. The river Brahmaputra has been declared as the 2nd National Waterway of the country.

**Exhibit 11: Expansion of Waterways in Assam**



**Waterway network in Assam, till FY20**

- Total Length of the Rivers/ Canals/ Lakes** • 4716 Kms.
- Navigable Length** • 1938 Kms.
- Percentage of Navigable Length to Total Length** • 41.09%



Note: Dotted line denotes forecast

Source: Assam Inland Water Transport Development Society, Ministry of Ports, Shipping and Waterways, Inland Water Transport-Government of Assam, LSI Research





## Major Challenges:

Poor utilization of waterways for movement of people and goods.

The basic requirement for water based transport is the consistent availability of water flow. The annual flood or the soil erosion of uplands impact the depth of water throughout the years.

Construction of dams, increasing agricultural and industrial activities also impact the river streams.

The market and user confidence of using the waterways for trade and commerce is still not properly developed.

Lack of private participation leads to lesser investment.

Lack of existence of a driving cargo stream of significant volume.

The industrial and market locations are not always found to be near to the waterbodies. Hence, the cargo has to be loaded and unloaded more than while transporting by rail or roadways which results in cost increase, delay and even raises the risk of damage.

Inadequate funding for the upgradation of the sector.

## Ways of Improvement:

Identifying districts with high potential for inland water transport.

Upgradation of infrastructure throughout inland waterway networks, along with all the terminals.

Approval of the projects which would enhance the connectivity with other ASEAN countries.

Upgrading the existing waterways and concentrating on creation of new riverine pathways.

Working on facilitating quicker and shorter transport between North Eastern Region and mainland India through waterways in Bangladesh through the protocol route.

Improving the cargo handling and passenger services.

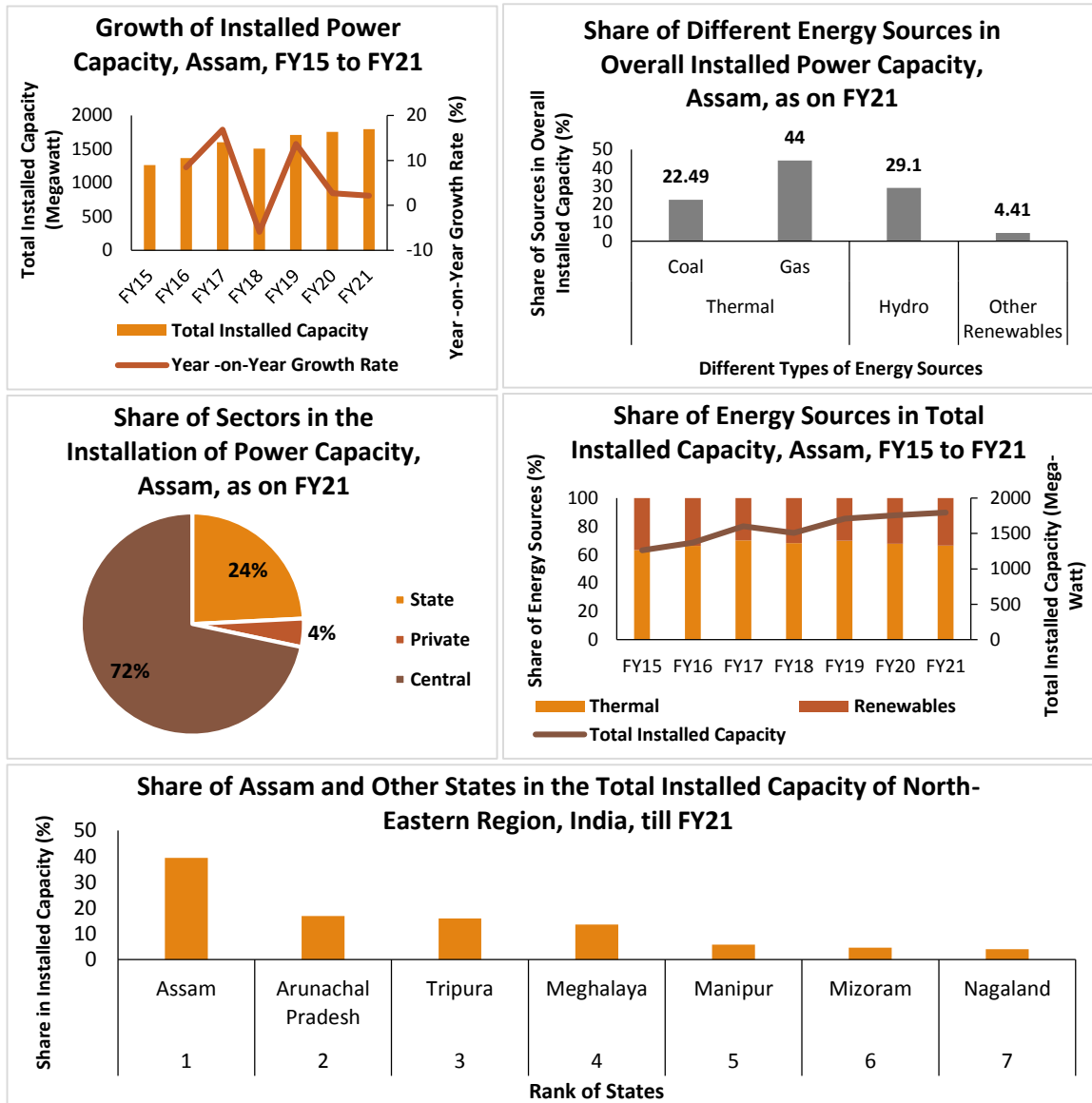
Getting connected with the global value chains by leveraging the connectivity of river bodies.

Controlling the pollution measures and maintaining the ecological balance of the water bodies.

➤ **Power**

Power, the crucial component of Infrastructure plays a significant role for the economic growth. Just like the several other parts, the power industry in Assam is quite diversified with the various ranges of power generation sources.

**Exhibit 12: Expansion of Installed Power Capacity in Assam**



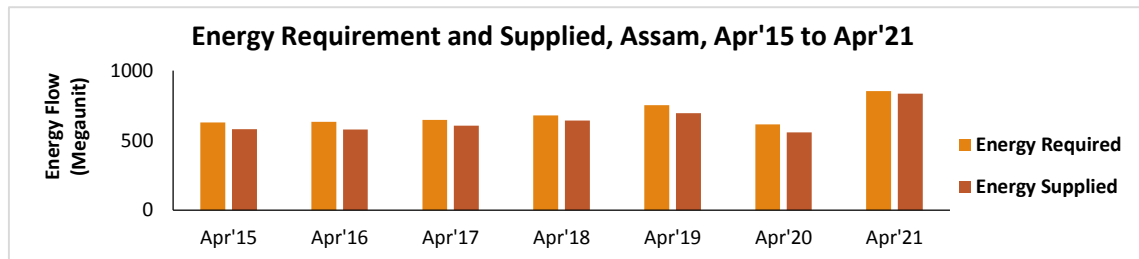
Source: Central Electricity Authority, LSI Research

- As on FY21, Assam has an installed power capacity of **1794.1 Mega-Watt (MW)**.
- The installation of power capacity had increased at the CAGR of **6.02%** between FY15 to FY21.
- The share of thermal power had been maximum in the overall power production with **66.49%**. Moreover, the share of Natural gas from the thermal power had the highest share among the all the other sources of installed power capacity.
- The installation of the Thermal power capacity had increased at the CAGR of **6.9%** between FY15 to FY21, whereas the installed capacity of the Renewable energy sources had grown at the CAGR of **4.42%** between the same period.
- On the sectoral basis, the involvement of the Private sector and the Central government had increased at the CAGR of **17.06%** and **9.46%** whereas the share of State government had decreased by **1.88%** between FY15 to FY21.



- In the overall installed capacity of power in the North-eastern region, the share of Assam is maximum. In FY21, Assam had **39.45%** of total installed capacity in the North-eastern region of India.

### Exhibit 13: Energy Demand-Supply Scenario in Assam



Source: Central Electricity Authority, LSI Research

- Between FY15 to FY21, the energy demand and energy supply had increased at the CAGR of **5.25%** and **6.22%** respectively. It caused the reduction in the power deficit of Assam by **14.01%** between the same time period.
- The Government has set a target to generate **6500 MW** power in the state by 2030.

### Major Challenges:

Inefficient power transmission and distribution infrastructure.

States are connected to the national transmission network mainly at 220 kV and 132 kV. The power distribution system in the North-easter states runs on an ageing 33 kV network that is prone to high technical and nontechnical losses as well as frequent interruptions.

Difficulties in land acquisition, rehabilitation, logistical challenges, infrastructure deficits in the hilly terrain, mitigation of environmental fall out, and engineering challenges in a flood and earthquake prone make it difficult to achieve smooth power accessibility.

Non- availability of transmission lines as many of the project sites are found to be in the remote areas and not connected with state grid.

Limited power generation capacity of its own which makes the state depending heavily on power procured from external agencies to meet its demand.

Overdependence on external agencies and inefficiencies of state-owned agencies' power generation and distribution (along with poor financial health) cause high tariff of power.

The high power tariffs discourage industrial growth in Assam where cost of power comprises nearly 60% of the production cost on an average, making industrial units uncompetitive.

Inconsistent power supply also hampers the agricultural production leading to crop loss.

**Ways of Improvement:**

Implementing various projects to enhance the state’s own power generation capacity.

According to a recent data, solar energy has the highest potential in Assam with 13,760 MW capacity, followed by biomass with 279 MW, wind energy with 246 MW, and small hydro projects with 202 MW capacities. Hence launching of suitable projects in the different districts of the state is needed for utilizing the full potential of renewable energy sources.

Setting up of 50 MW of small solar power plants on barren or fallow land of farmers.

Around 40% of the 150GW hydro power potential of India is said to be lying in this region. Hence, the power deficit problem of the state can also be addressed with hydel power produced in this area.

A shift in policy toward ensuring 132 kV/220 kV connectivity to the North-eastern states with the national transmission network for proper voltage management and lower distribution losses.

Reducing delays in commissioning of power projects.

Strengthening power evacuation infrastructure in the region to ensure 24x7 availability of power.

Development of Transmission & Distribution infrastructure.

Ensuring universal access to reliable power at an affordable rate for all citizens of Assam.

With the increasing share of renewable energy in the overall power generation in Assam, the transmission system will not only need strengthening of the load dispatch function but also changes in grid design, technology, and operation.

Planning on attracting investments in system strengthening, modernization, and technological enhancement.

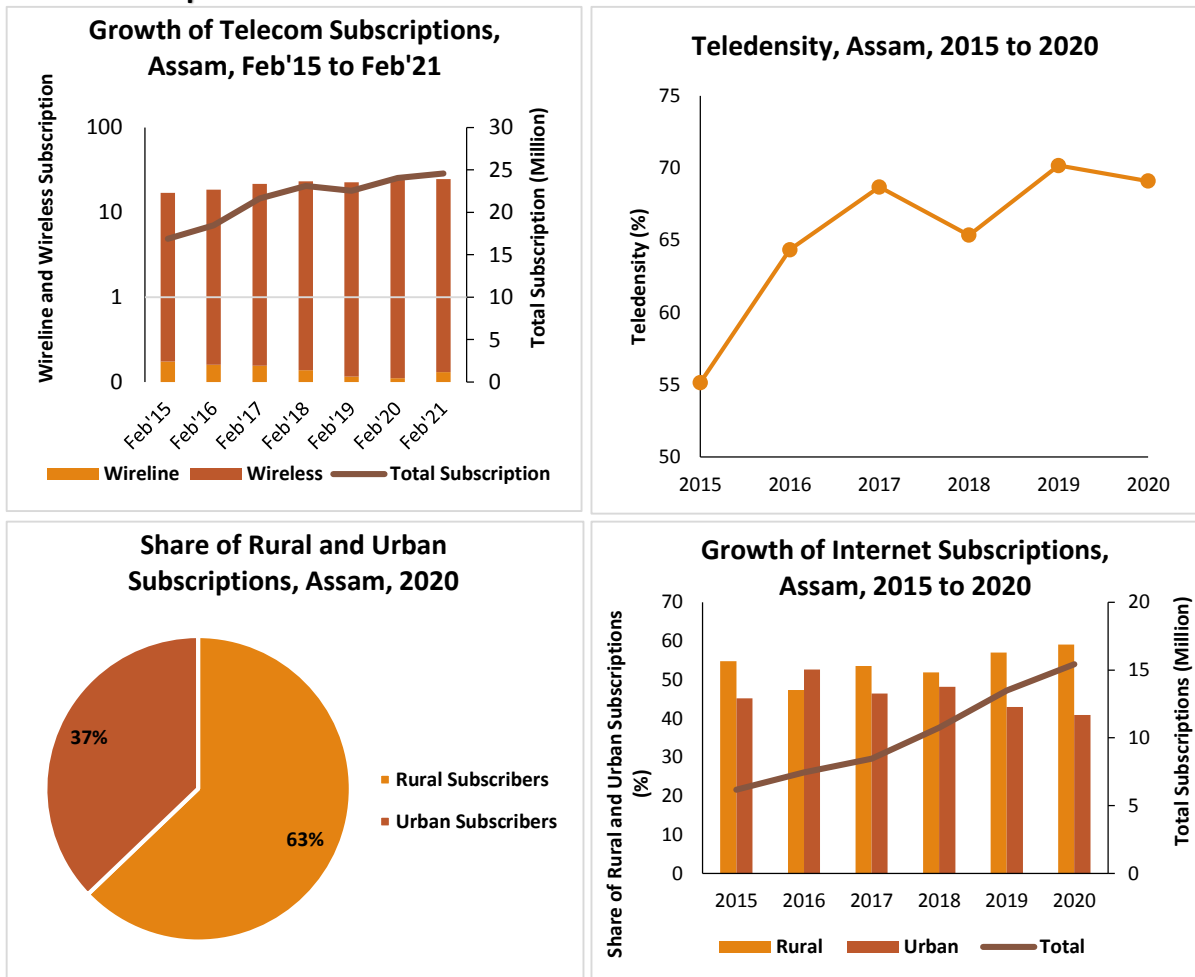
Mobilizing private investment through public– private partnership (PPP) models to bring in latest technology, increase project bankability, viability, and cost efficiency.

Enhancing the cross border power trade by following appropriate protocol.

➤ **Telecom**

Over the past decade, Assam telecom sector has witnessed many positive developments in the state. Assam Telecom Circle has achieved a lot in this sector in terms of accessibility and connectivity throughout the state. Different network service providers are playing a vital role by effectively delivering a new hub and implementing distribution strategy for rural markets in the area. The penetration of landlines as well as cell phone telephony is high & is steadily increasing in Assam. However, thousands of villages are yet to be covered by tele connectivity.

**Exhibit 14: Expansion of Telecommunication in Assam**



Source: Telecom Regulatory Authority of India, LSI Research

- Between Feb'15 to Feb'21, the overall telecom subscription had increased at the CAGR of **6.45%** in Assam. Due to the growth in the wireless services, the wireline serviced had reduced at the CAGR of **4.77%** during this period.
- The Rural and Urban Subscription both grew at the CAGR of **6.4%** and **5.97%** respectively between Feb'15 to Feb'21.
- The tele-density of the state increased to **69.1%** in Feb'21.
- The internet subscription of the state had increased by **20.1%** between Feb'15 to Feb'21, in which the rural and urban subscription grew at the CAGR of **21.93%** and **17.73%** respectively.
- During the mentioned period, the broadband services of the state had increased at the CAGR of **43.63%**.

**Major Challenges:**

Hilly landscape impacts the faster expansion of wireless coverage.

Placing Optical Fiber Cable (OFC) is not always found to be physically and economically viable across the hilly terrain.

Limited number of OFC Points of Presence (POP) causes pertinent bandwidth problem and slow data transmission to some extent.

Road widening work and frequent landslides lead to fiber cuts leading to long-term disruption to services.

Such adversities delays execution of multiple projects.

**Ways of Improvement:**

Identifying investments opportunities and subsidy schemes.

Implementing e-governance initiatives, including improving the public grievance system.

Improving digital connectivity to provide cashless, paperless and faceless services.

Capacity building, skill development and job creation through the telecom sector.

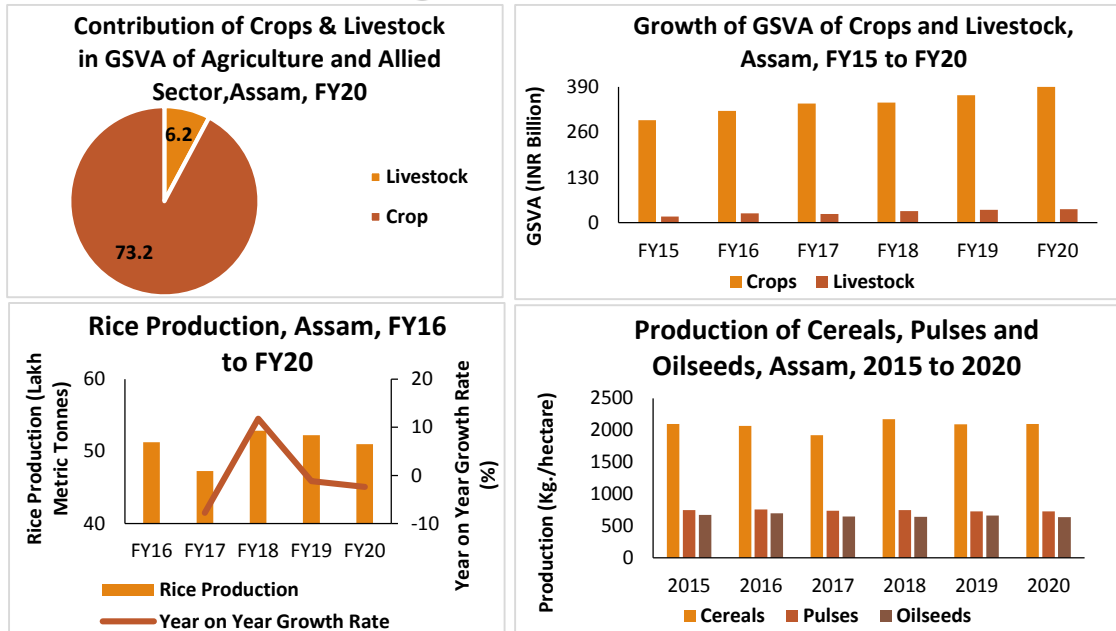
Planning needs to be done on creation of technology infrastructure (international internet gateway extension, optical fibre network, tier-4 certified data centers, remote sensing and geographic information systems infrastructure), development of skilled human resources, and effective utilization of policy incentives.



## Agriculture & Food Processing

Assam is located in a sub-tropical zone characterized with hot & wet summers and cool & dry winters. The favourable agro-climatic conditions with six agro climatic zones creates opportunity for cultivation of enormous varieties of food grains, fruits and vegetables, spices and various other types of crops throughout the year. Agriculture is a major contributor to Assam’s economy. Assam has a net cultivable area of 28.11 lakh hectares, out of which 88% of the total land is available for cultivation. Majority of the Assamese population depends on this sector for livelihoods.

### Exhibit 15: Production of Food grains and their Contribution for Economic Growth



Source: Ministry of Agriculture & Farmers' Welfare, Press Information Bureau, Ministry of Statistics and Programme Implementation, LSI Research

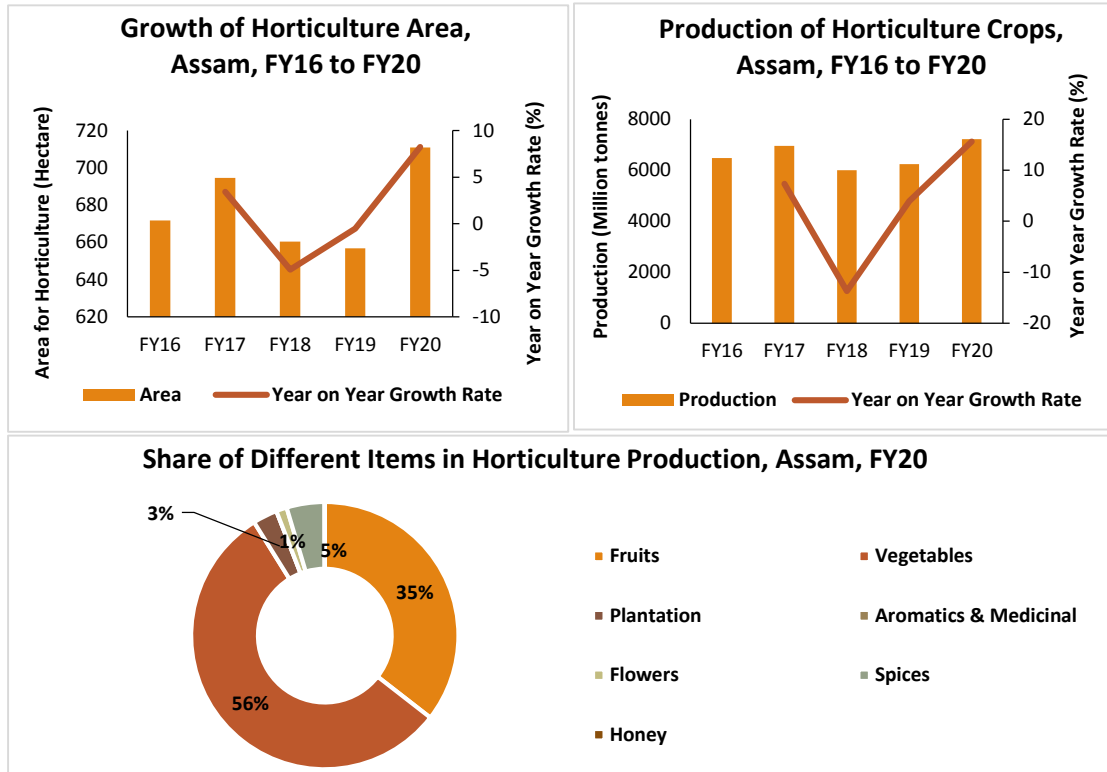
- The contribution of crops and livestock in the Gross State Value Addition of Assam had increased at the CAGR of **5.77%** and **17.33%** respectively between FY15 to FY20.
- Assam accounts for a fair share of India’s production of rice, rapeseed, mustard, jute, potato, sweet potato, banana, papaya, areca nut, turmeric and many more crops.

### Examples of some of the agricultural crops produced in Assam

Rice	Pulses	Fibres	Cereals	Oilseeds
<ul style="list-style-type: none"> <li>• Autumn Rice</li> <li>• Winter Rice</li> <li>• Summer Rice</li> </ul>	<ul style="list-style-type: none"> <li>• Mug</li> <li>• Masoor</li> <li>• Tur</li> <li>• Matikalai</li> </ul>	<ul style="list-style-type: none"> <li>• Cotton</li> <li>• Jute</li> <li>• Mesta</li> </ul>	<ul style="list-style-type: none"> <li>• Maize</li> <li>• Wheat</li> <li>• Small Millets</li> </ul>	<ul style="list-style-type: none"> <li>• Castor</li> <li>• Linseed</li> <li>• Sesamum</li> </ul>

Assam’s agro-climatic conditions support the cultivation of a wide range of horticultural and plantation crops, flowers, spices, medicinal and aromatic plants, nuts, and tubers. Over 600 varieties of orchids grow naturally in Assam.

**Exhibit 16: Horticulture activities in Assam**



Source: Department of Agriculture, Co-operation and Farmers' Welfare, LSI Research

- The horticulture production in the state had increased at the CAGR of **2.72%** between FY16 to FY20.
- The horticulture cultivation also achieved a significant yearly growth in FY20 with **15.59%**.
- Among all types of horticulture products, the share of vegetables production was maximum in FY20 with **55.61%**.

**Examples of some of the horticultural crops produced in Assam**

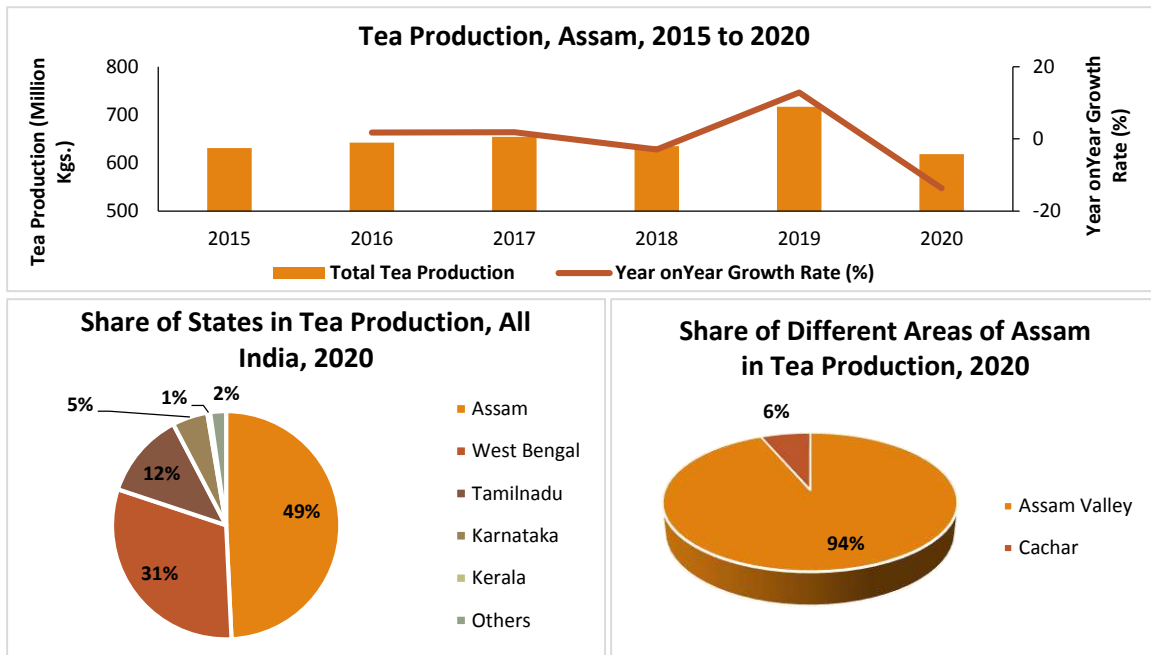
Fruits	Spices	Vegetables	Plantation	Flower
<ul style="list-style-type: none"> <li>•Banana</li> <li>•Pineapple</li> <li>•Orange</li> <li>•Lemon</li> <li>•Guava</li> <li>•Jackfruit</li> </ul>	<ul style="list-style-type: none"> <li>•Chilli</li> <li>•Turmeric</li> <li>•Ginger</li> <li>•Garlic</li> <li>•Black pepper</li> </ul>	<ul style="list-style-type: none"> <li>•Potato</li> <li>•Cucumber</li> <li>•Sweet Potato</li> <li>•Carrot</li> <li>•Tapioca</li> </ul>	<ul style="list-style-type: none"> <li>•Sugarcane</li> <li>•Arecanut</li> </ul>	<ul style="list-style-type: none"> <li>•Marigold</li> <li>•Gerbera</li> <li>•Anthurium</li> <li>•Lilium</li> <li>•Tube rose</li> </ul>

The tea industry in Assam is about 180 years old. Assam has the single largest tea growing area in the world, constituting around one-seventh of the global tea production. It has its own variety Camellia assamica. The state accounts for over 50% of the country’s overall tea production. The state houses Guwahati Tea Auction Centre (GTAC), one of the largest CTC tea auction centres in the world.





**Exhibit 17: Tea Production in Assam**



Source: Tea Board of India, Indian Tea Association, LSI Research

- All major tea players have presence in Assam.
- Both the processed and blended tea are produced from Assam.
- The Government of Assam has secured a Geographical Indication (GI) tag for the tea produced in the state and as a result Assam tea is known as ‘Assam Orthodox Tea’.
- Though Assam plantations generally produce black tea, the region also produces smaller quantities of green and white teas. Tea in Assam is primarily grown in the Brahmaputra and Barak plains.
- Some of the tea gardens have their own air-strips and aircrafts

Hence, the state produces sizable marketable surpluses across a wide range of food grains, fruits, vegetables, spices, flowers, medicinal and aromatic plants, mushrooms, honey and so many things which represents its true potential to initiate a promising food processing industry.

**What is food processing?**

Food processing is the transformation of agricultural products into food, or of one form of food into other forms. The process can involve one or a combination of various processes including washing, chopping, pasteurising, freezing, fermenting, packaging, cooking and many more.

Food processing also includes adding ingredients to food for good to extend shelf life.

Food processing constitutes about 10% of India’s total manufacturing sector GDP. India permits 100% FDI in the food processing sector through the automatic route. However, the industry is still considered to be in infantry stage in Assam.



### Major challenges for the growth of food processing industry in Assam:

Post-Harvest losses of agriculture in general and horticultural commodities in particular are very high as horticultural commodities are perishable in nature.

Lack of effective marketing mechanism and real-time pricing information.

Lack of processing and cold chain facilities.

Supply glut and wastage during peak seasons leading to lower income realization by farmers.

High logistics cost for movement of raw or processed fruits and vegetables to the rest of India.

Building quality and reliability in such an environment demands focus on the long-term and patient investment in value chains which most companies are unable to do.

Issue of linking farmers with market.

### Recommendations:

The requirement of raw materials and the quality need to be clearly determined well in advance, so that the farmers can be ready to produce abundantly to act as feeder of these industries.

Reducing the post-harvest losses so that the income of farmers can be increased.

Encouraging the organic cultivation in the state.

Promoting cultivation of high value horticulture products can lead to balanced growth and diversification of risk, particularly in those districts of Assam where industries are not widespread.

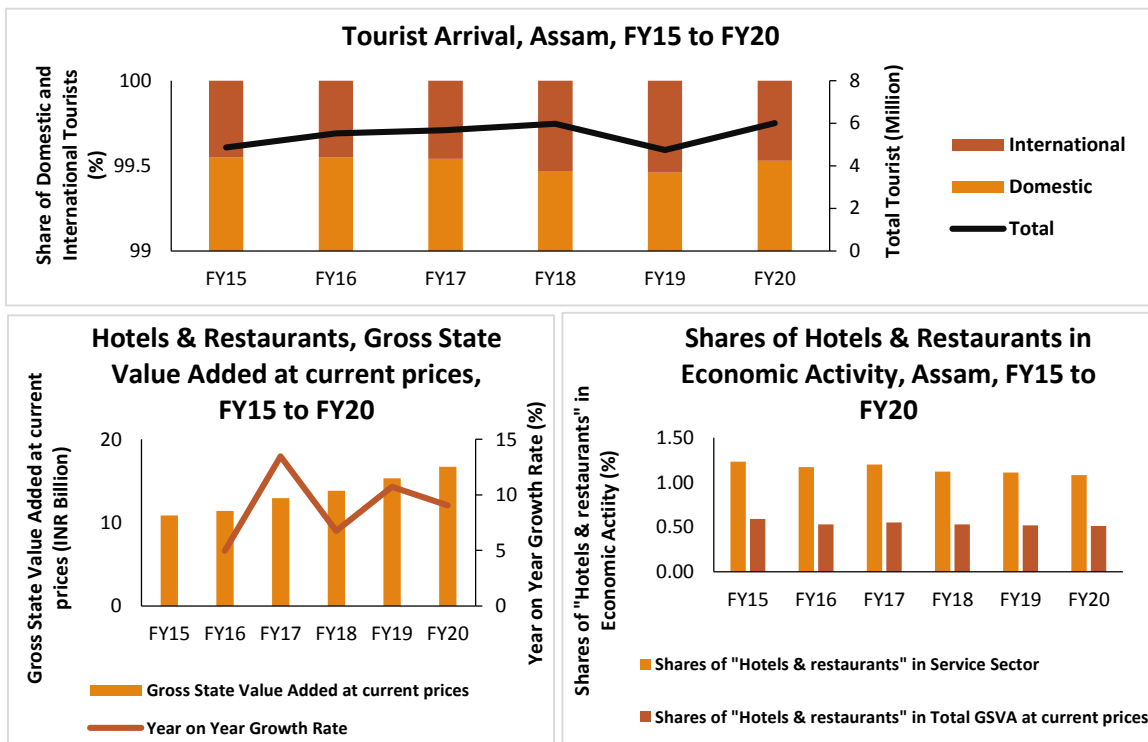
Improving the value chain to access the required raw materials and supply the ultimate processed products nationally and internationally.

Easing the land acquisition and other regulatory norms enabled through a single window service.

Launch of virtual platform where stakeholders can learn about latest initiatives and opportunities available in the field of food industries.

Tourism is a fastest growing service sector industry in Assam. The industry is not only a growth engine but also an important source of generating large scale of employment both directly and indirectly.

**Exhibit 18: The Status of Tourism in Assam**



Source: Assam Tourism Development Corporation Ltd, Ministry of Statistics and Programme Implementation, LSI Research

- Between FY15 to FY20, the domestic and international tourist arrivals in Assam had increased at the CAGR of **4.34%** and **5.32%** respectively.
- The economic value of the hotels and restaurants in the state had increased at the CAGR of **8.95%** between the same time frame.
- The Shares of gross value addition from the "Hotels & restaurants" in the Service Sector had decreased from **1.23%** to **1.08%** between FY15 to FY20. Moreover, the shares of gross value addition from the "Hotels & restaurants" in the overall Gross Value Addition at current prices of the state had reduced from **0.59%** to **0.51%** between the same period.

Tourism in Assam is based on wildlife, natural beauty, unique flora & fauna, holy shrines, lush green tea gardens, turbulent rivers, vibrant and colourful cultural festivals. The tourism sector is a major investment prospect in the state of Assam.



### Exhibit 19: Some of the Popular Tourist Attractions in Assam

					
<p>Kaziranga National Park</p> <p>Manas National Park</p> <p>Orang National Park</p>	<p>Kamakhya Temple</p> <p>The Hermitage of Vasistha</p> <p>Asvakranta Temple</p>	<p>Digboi</p> <p>Guwahati</p> <p>Haflong</p>	<p>Rock cut caves</p> <p>Barbarua Maidam</p> <p>Kachari Fort</p>	<p>Guwahati Planetarium</p> <p>Purvabharti Museum</p> <p>Assam Forest Museum</p>	<p>Bihu Dance Festival</p> <p>Elephant Festival</p> <p>Rongali Utsav</p>

### Major Challenges:

Limited Accommodation Facilities. The largest concentration of elite, comfortable or versatile ranges of hotels and resorts can generally be found in Guwahati and Kaziranga followed by Dibrugarh, Jorhat, Tinsukia and Silchar.

The hospitality industry in rest of the state seems to be mainly dominated by local players with smaller inventories and limited tourism offerings.

Shortages of big land parcels at ideal locations, land ownership issues, logistical issues amongst others, hamper the growth of the industry.

Lack of Tourism Infrastructure. Absence of quality roads, air and river connectivity with the rest of the country.

Lack of initiatives towards the proper marketing and promotion of Assam Tourism.

Safety and Security have always been major concerns for growth of tourism in Assam. Insurgencies and ethnic violence in the region have adversely affected sentiments of the tourists over the years.

### Ways of Improvement:

Increase in the marketing and promotional campaigns for tourism. Maximum utilization of digital platforms, mobile based applications, participation at major national and international fairs etc. for promoting the state.

Time bound completion of existing infrastructure to achieve an improved road, air, rail and river connectivity in the state.

Development of adequate parking spaces and tourist information centres, wayside amenities such as lounge, cafeteria, availability of tourist cars, clean drinking water and first aid facilities, accessibility of well-maintained waiting rooms and toilets etc.

Collaborative efforts from the government and private sector to explore the immense opportunities of tourism in the state.

Easing of ownership of lands for attracting big investments for constructing hotels and resorts in suitable places.

Identifying new tourism concepts like wellness tourism, tea tourism, adventure tourism, agri-tourism, rural tourism, and building new tourist circuits based on that.

Ensuring safety and security through the deployment of tourist polices. Implementing appropriate norms for lodging and transportation, effective handling of enquiries and complaints, regular surveillance and taking prompt action in case of any misconduct.

Effective implementation of ecotourism guidelines for reducing the environmental degradation and protecting the eco-sensitive areas.

### Impact of COVID-19 pandemic on Assam Tourism:

The effect of COVID-19 pandemic acts has been terrible for several businesses, but tourism is among the most affected sectors.

- Assam tourism engages, directly or indirectly, around 1 million of its population. The whole tourism value chain across hotels, restaurants, resorts, travel agencies, tour operators as well as dhabas and fast food businesses directly or indirectly associated with the tourism sector in the state have hobbled. Hence, the pandemic has impacted all of them and caused huge surge of unemployment rate in this industry.
- In the mid-2020, a loss of revenue of around INR 500 crore was estimated by the government from this state tourism industry due to this pandemic.
- COVID-19 will also bring about a huge change in the field of tourism of Assam. It is difficult to say how long this situation will sustain. The appropriate health treatment, vaccination of all the people are highly required to reduce the spread of the disease among the mass. Till then, the people also need to adapt themselves for a 'New normal' where they will maintain the hygiene, social distancing and other required health measures.
- The interstate connectivity between the States like Nagaland, Manipur, Tripura, Sikkim, Meghalaya, Mizoram, Assam and Arunachal Pradesh needs to be improved for the overall growth of the entire region.
- Government will have to take requisite measures to boost the sector for the revival of this industry.

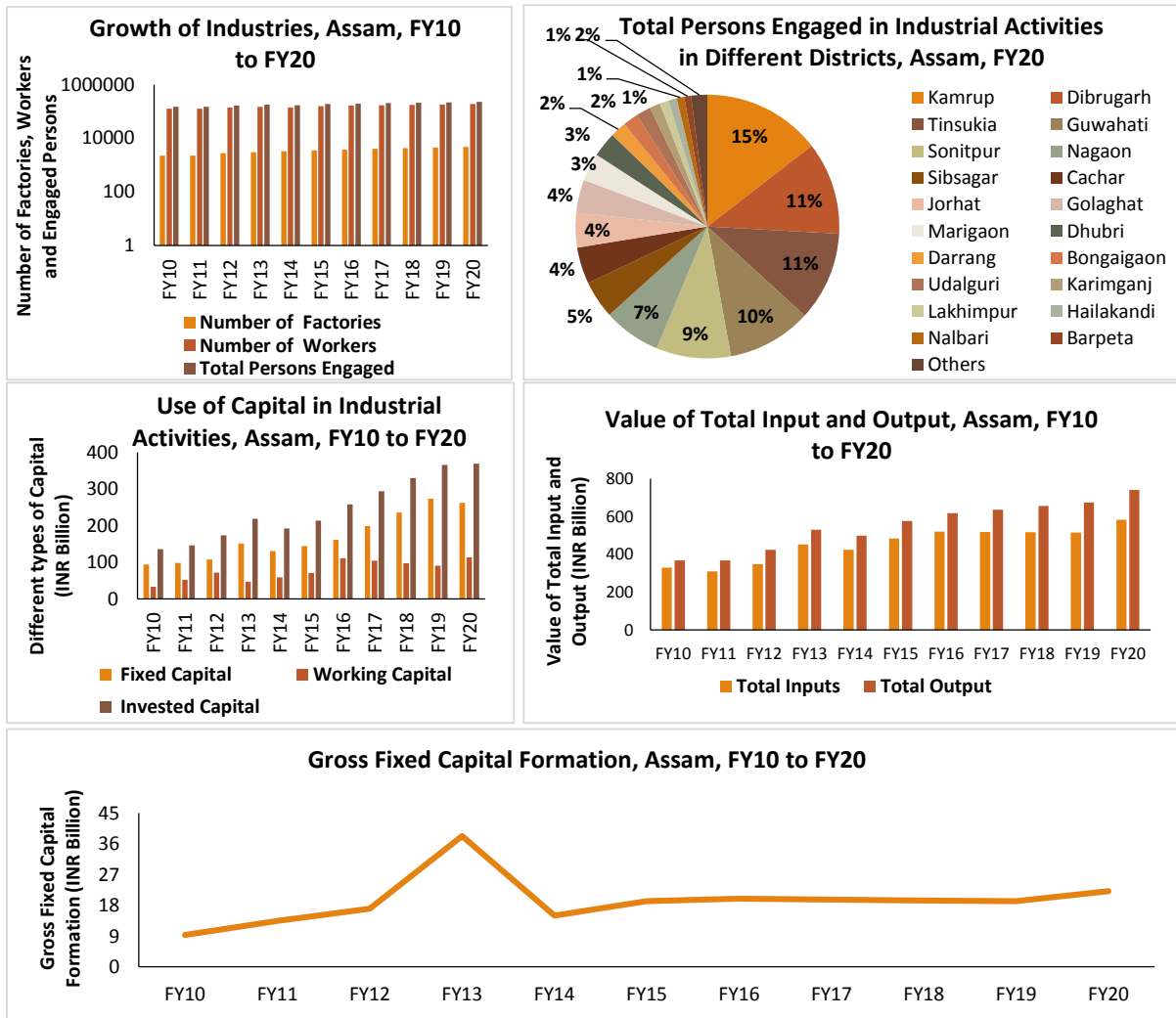


## Industries & Logistics

Assam, along with other north eastern states in India, has a huge potential for industrial development with the abundance of natural resources and unique locational advantage. The region shares almost 96% of its borders with other countries. The first oil refinery, the first tea plantation and the first coalfields can be attributed to Assam, but today, the region accounts for less than 2% of the country's medium and large industries.

There has not been much growth in large-scale industries and the industrial sector in the region primarily consists of small and medium enterprises. Most of the large industries are based in Assam related to refining, cement, chemical and fertilizers, paper and paper products.

**Exhibit 20: The Status of Industrial Activities in Assam**



Source: Ministry of Statistics and Programme Implementation, LSI Research

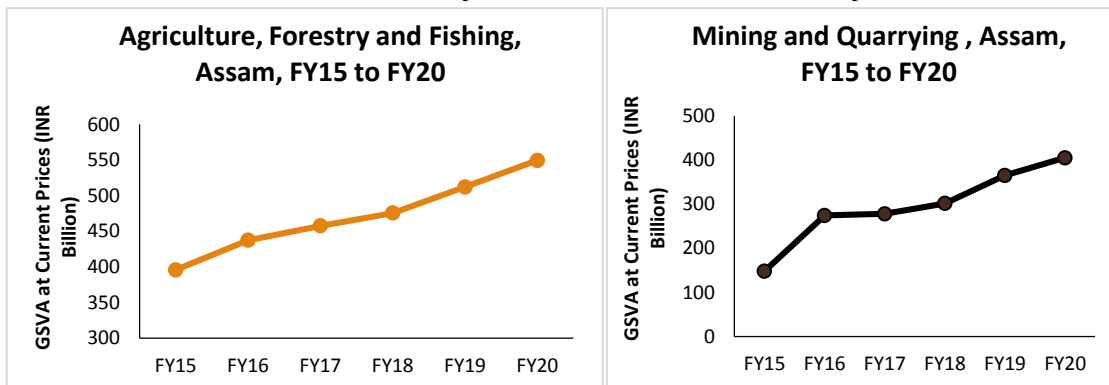


- The number of factories had been estimated to have increased by **8.07%** between FY10 to FY20 in Assam.
- The number of workers and the total persons engaged in the industrial activities had been estimated to rise by **4.01%** and **4.2%** respectively between the same time frame.

**CAGR (Compound Annual Growth Rate) of other factors between FY15 to FY20**

Item	CAGR	Item	CAGR
Fixed Capital	10.81%	Total Inputs	5.86%
Working Capital	12.99%	Total Output	7.25%
Invested Capital	10.5%	Gross Fixed Capital Formation	9.02%

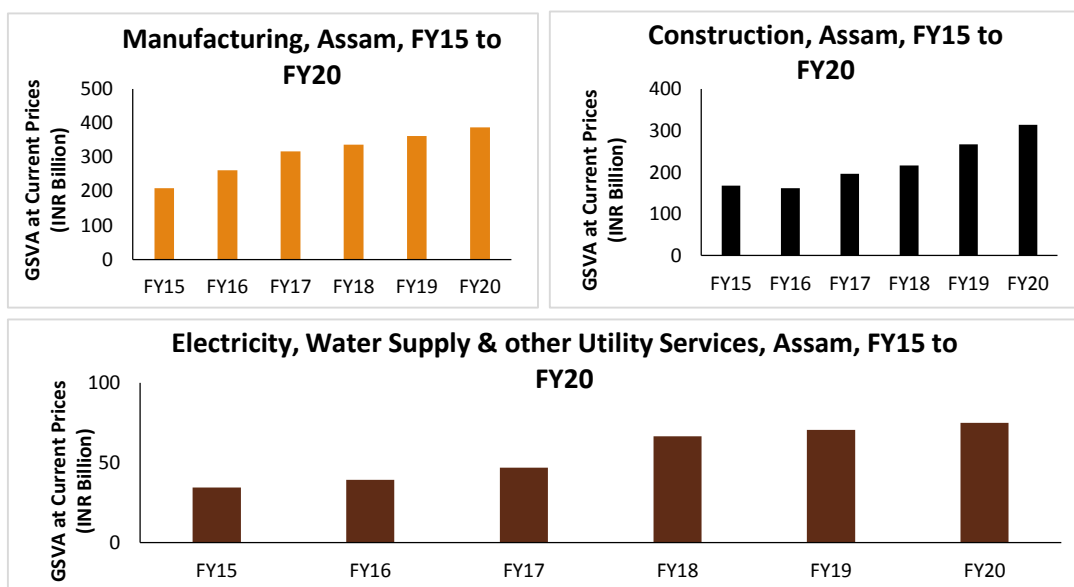
**Exhibit 21: Growth of Different Key Industries under the Primary Sector**



Source: Ministry of Statistics and Programme Implementation, LSI Research

Industry	CAGR (FY15 to FY20)	Industry	CAGR (FY15 to FY20)
Agriculture, Forestry and Fishing	6.77%	Mining and Quarrying	22.29%

**Exhibit 22: Growth of Different Key Industries under the Secondary Sector**

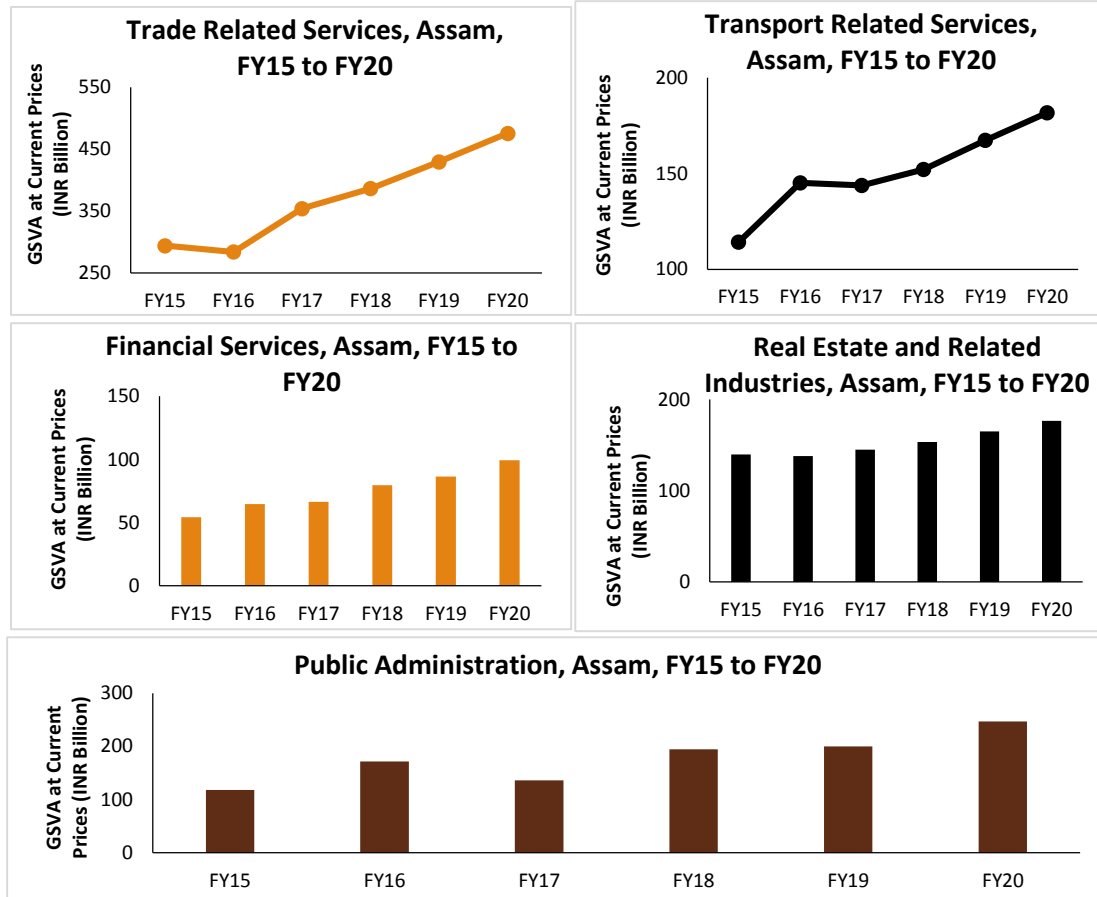


Source: Ministry of Statistics and Programme Implementation, LSI Research



Industry	CAGR (FY15 to FY20)
Manufacturing	13.08%
Construction	13.37%
Electricity, Water Supply & other Utility Services	16.83%

**Exhibit 23: Growth of Different Key Industries under the Tertiary Sector**



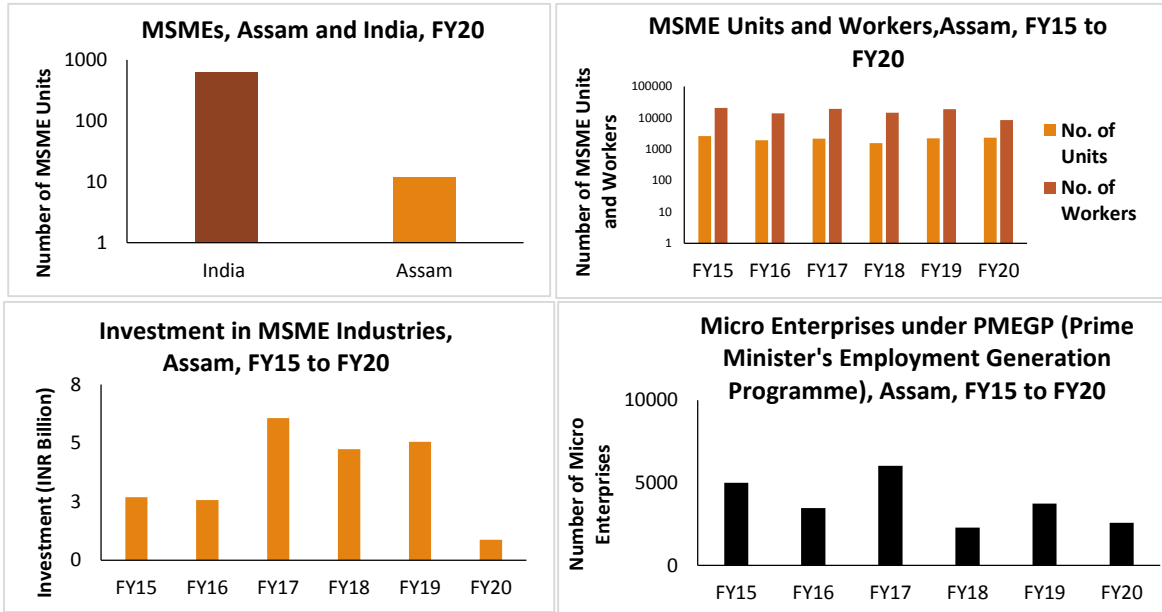
Source: Ministry of Statistics and Programme Implementation, LSI Research

Industry	CAGR (FY15 to FY20)
Trade Related Services	10.09%
Transport Related Services	9.75%
Financial Services	12.85%
Real estate and Related Industries	4.84%
Public administration	15.93%

Different parts of India have diverse industrial advantages; while the southern and western parts of India are industrial belts, northern and eastern parts have agricultural landscapes. Small Scale Industries have played a vital role in fulfilment of socioeconomic development in Assam. This sector has also been playing an essential role in self-employment and employment generation in the state. The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly in the economic and social development of the country by fostering entrepreneurship and generating large employment opportunities at comparatively lower capital cost, next only to agriculture.



### Exhibit 24: Expansion of MSME sector in Assam



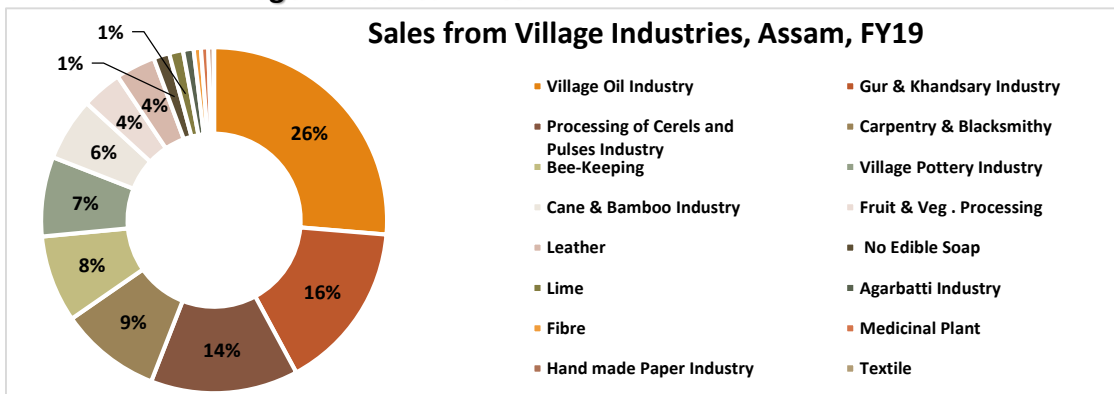
Source: Ministry of Micro, Small and Medium Enterprises, Journal of Development Economics and Management Research Studies, LSI Research

- According to a latest report, Assam is said to have 12.14 Lakh MSME units among which the share of micro units is 99%.
- Assam has 1.9% of total MSMEs in India.
- PMEGP or Prime Minister’s Employment Generation Programme focuses on generating self-employment opportunities through micro-enterprise establishments in the non-farm sector by helping unemployed youth and traditional artisans. 35% of all micro enterprises of the north eastern states were in Assam in FY20 under the PMEGP scheme.

Recently Assam’s Industries and Commerce Department has signed a Memorandum of Understanding (MoU) with Small Industries Development Bank of India (SIDBI) under which a Project Management Unit (PMU) will be deployed by SIDBI with Government of Assam. The PMU will support the State Government in making necessary interventions for enhancing efficacy of MSMEs in the state.

Ministry of Micro, Small & Medium Enterprises envisions a progressive MSME sector by promoting growth and development of the Sector, including Khadi and various Village Industries, in cooperation with concerned Ministries/Departments, State Governments and other Stakeholders, through providing support to existing enterprises, adopting cutting edge technologies and encouraging creation of new enterprises. The activities of multiple industries in villages of Assam are also sound.

### Exhibit 25: The Village Industries in Assam



Source: Ministry of Statistics and Programme Implementation, LSI Research



### Major Challenges:

The economic and basic infrastructural facilities, which includes power, transport and communication facilities etc. are not yet satisfactorily developed in the state.

Multiple difficulties related to land acquisition, power, transport and logistics, credit disbursal, marketing and taxation issues discourage the investors to explore the state.

Poor rate of capital formation.

Natural calamities and political risks.

Lack of innovations and entrepreneurship.

Lack of effort to utilise the abundant level of natural resources.

### Ways of Improvement:

Promotion of the traditional Industries like Tea, Bamboo, Horticulture and Floriculture.

Developing townships and industrial areas along with the ports.

Promoting industrial infrastructural growth by leveraging its geostatic location.

Identifying sectors with high export potentials.

Investment from the government for generating large scale employment.

The state is majorly agrarian. Expansion of rural based and small scale industries would be helpful for industrialisation across the whole state.

Identifying core economic activities in different districts for the expansion of industrialisation.

Construction of Industrial Parks and integrated infrastructure to leverage connectivity through roads and ports.

Development of Industrial training institutes for skilling the people from employable age group.

Greater number of PPP (Public-Private Partnership) for the greater expansion of industrial projects.

Development of several types of industrial units like industrial growth centres, industrial infrastructure development centres, industrial estates etc. for strengthening the infrastructure support of the state.

## The status of Logistics in Assam

### Major Challenges:

Lack of public and private collaboration is hindering the development of logistics and transportation in this state.

Lack of capacity of roads connecting border towns to take heavy-duty trucks.

Inadequate railway siding capacity.

Such situations make the state use the ports of other states for exporting products.

High logistics cost for movement of agricultural and industrial products to rest of India.

### Ways of Improvement:

Assam's geostrategic location is well-suited to meet the import demand of neighbouring countries with the improved logistics system.

Local and private entrepreneurship must be encouraged to setup logistics and marketing infrastructure.

Development of multimodal logistic park for lowering overall freight costs, reducing vehicular pollution and congestion, and cutting warehousing costs.

By getting connected with global and regional value chains, Assam could leverage the strategic regional corridors passing through it such as the East–West Corridor, Asian Highway 1, South Asian Association for Regional Cooperation (SAARC) Rail Corridor 1, SAARC Rail Corridor 5 etc.

Logistical connectivity to key port gateways in the neighbouring areas of Assam like Chattogram (Bangladesh), Haldia (India), and Sittwe (Myanmar) etc. can enhance the economic activities in the state.

Using different logistics hubs to improve the movement of agricultural and industrial products to the rest of the country and to export in other countries.

Initiatives to reduce the logistical costs for boosting the trade activities.

Development of roads, expansion of railways and inland waterways to connect different industrial and agricultural hubs.

## Strategic Recommendations

### Advantages of the Assam Economy:

Assam, one of the most vibrant parts of the north eastern India is considered to be a green paradise which has greater variety and colour in its natural scenery and in the cultural treasures of the people that inhabit it.

Assam is the north-eastern hub of natural resources. The land is quite wealthy with some very special natural resources; like natural gas, coal, granite, oil, rubber, wood, limestone, bamboo and many more things.

Presence of an ethnic tribal culture each with unique customs and traditions.

The celestial and amazing diversity of the state has huge potential to attract tourists.

Assam, a tea country, has two of the oldest plantations of Assam, Sensua and Gatodnga,. The tea states, spanning over hundreds of acres not only enhance the natural beauty and attract tourists but the state alone produces half of India's tea production.

The presence of two giant valleys, Brahmaputra and the Barak has made Assam an agriculture rich state. These two valleys' lands are very fertile for producing different types of agro crops. Besides, Assam's weather is also very compatible for producing crops like Sugar, Jute, Coconut, Cotton, Potato, Wheat, Areca nut, etc.

Ample water resources which can be a strong medium for inland waterways and also for generating hydropower.

This state enjoys a pride of place in the country with its rich heritage of artistic craftsmanship. Handloom and weaving is a skill acquired by the local community. The basketwork and mats of Kamrup, Sibsagar and Nagaon are well known and Cachar district is known for its very special sital pattimats.

Proximity to SAARC countries of Bhutan, Nepal and Bangladesh gives foreign investors the advantage of International Trade.

Availability of skilled, semi-skilled and educated manpower at extremely competitive cost. The proportion of working age population (15-59 years) is also expected to become 65% by 2035.

### Disadvantages of the Assam Economy:

However, in contrast to the abundant natural serenity, the state has often witnessed social and political turbulence post-Independence, which have impacted its economic growth. Assam's GSDP is projected to be INR 4.09 Trillion in FY21 which is about 2% per cent of India's GDP. Despite this, the economic performance of the state is not being considered among the top 10 states in India.

The state has the history of violence, agitation and multiple militant activities which are some of the prime factors for its slower growth. Cross-border migration and conflicts have always been fuelling the geo-political tension in the state. This is why despite its strategic geographic location as India's gateway to Southeast Asia, has failed to exploit its full potential.

Around 32% of the Assam's population lives below the poverty line. With a record of lower per capita income compared to other Indian states, the poverty reduction in the state has been difficult. Rising poverty is causing lower spending capacity. In the rural segment, there is high poverty concentrations in areas where a large part of land is barren, unsuitable for cultivation, making lives of the poor even more difficult.

Floods, soil erosion, landslides in monsoons make places inaccessible. Assam receives both the monsoon rains and water from the rivers originating from the Himalayas – of which the Brahmaputra is by far the biggest. The glacial melt in summer coincides with the monsoon, intensifying downstream, causing the annual flooding.

Deficiencies in infrastructures like poor road conditions or non- accessibility, poor solid waste management system, have been affecting state since a long time. A large part of the state comprises of a hilly terrain which makes the states dependent on the road network which is not yet properly developed. Also lesser number of airports also hampers smooth connectivity.

Complex land acquisition rules limit the involvement of private sector investments.

Overuse and commercialisation of eco- sensitive zones could lead to depletion of resources.

### Recommendations to achieve a better growth path for the Assam Economy:

Priority should be given to those sectors that have both comparative advantage and high linkages with other sectors.

Initiatives like project execution, job generation leading to hike in per-capita income needs to be increased to achieve an economic growth greater than the national average. Picking up of economic growth by 2% to 3% in short term can bring huge differences in long run.

Steady pick up in investment rate in relation to state income.

Developing Trade Corridors, Industrial Parks and integrated infrastructure to leverage connectivity through roads and ports.

Maintenance of the important role of the public sector in areas like irrigation, infrastructure and social sectors where private investment might not come forward.

Encouraging the PPP (Public–private partnership) collaboration for the broader expansion of worthy project implementation.

Appropriate marketing of vast natural resources such as oil, natural gas and minerals, hydro energy, diverse agro-climatic zones, forest resources and medicinal plants for attracting investors.

Monsoon causing flood has been an annual natural calamity in Assam. Implementing the embankment method where artificial ridge of soil or rock are built by the side of a river and designed for preventing the river from flooding during times of high water for mitigating the flood for short term without affecting the environment.

For a strong flood controlling movement, an “integrated basin management” system should ideally be created in all the basin-sharing countries on board. Appropriate flood management system can improve the accessibility to certain parts of the states during monsoons, which can be developed as tourist spots.

Creation of virtual platform for the local artisans. This would provide them, especially those involved in bamboo-based handicrafts and indigenous handlooms, a platform to sell their products.

Encouraging formation of cooperatives and Self Help Groups (SHG’s) for commercial purposes of handlooms and handicrafts.

Skill development initiatives for the people of employable age group.

Training of artisans/SHG leaders/NGOs in capacity building.

Creation of animal corridors, by creating overhead bridges/shifting roads for conserving eco hotspots.

Creating a forest resource management plan and implementing the schemes for expanding forestry near water bodies.

Promoting sustainable development and technical upgradation in agriculture.

Implementation of centrally sponsored schemes for the development of sericulture and the silk industry.

Passing appropriate bills for the expansion of industrial and manufacturing activities in the state.

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