



Strategy for Government of Gujarat to enable India to become a USD 5 trillion economy

Submitted by,
Task Force Committee,
Chaired by Dr. Hasmukh Adhia, IAS, Retd,
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To,
Shri Bhupendrabhai Patel,
Hon'ble Chief Minister of Gujarat,
Gandhinagar

Subject – **Submission of report on “Strategy of Government of Gujarat for enabling India become a Five Trillion Economy”**

Respected Sir,

The Government of Gujarat in the Finance Department had setup a Task Force Committee on 8th February 2022, under my Chairmanship for working out the strategy of Government of Gujarat for making India a USD 5 trillion economy as per the vision of Hon'ble Prime Minister of India.

The committee met six times in a period of three months. The committee also held stakeholder consultations with many sectoral experts, through a series of 15 workshops organized by various universities / State government departments. Individually also I had individual meetings to solicit the views of some of the most prominent industrialists of Gujarat.

After all these deliberations, the Task force committee is pleased to present herewith the final report. We are pleased to say that the Committee has submitted its report well in time of 3 month given to it. The report clearly gives out a strategy to Government of Gujarat, sub-divided in sectoral strategies and sub-strategies. The report also gives implementation map for achieving the best results.

We are grateful to you for giving us this opportunity.

With Warm Regards,



Dr. Hasmukh Adhia, IAS, Retd.,
Former Finance Secretary, GoI,
Chairman of Task Force Committee



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Member



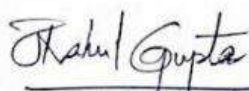
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List of abbreviations

| Abbreviation | Description |
|---------------|---|
| AAI | Airport Authority of India |
| AI | Artificial Intelligence |
| AMC | Asset Management Companies |
| AP | Andhra Pradesh |
| BARC | Bhabha Atomic Research Centre |
| BAU | Business As-Usual Scenario |
| BILD | British Institute of Learning Disabilities |
| BIS | Business Induced Scenario |
| Bn | Billion |
| BPCL | Bharat Petroleum Corporation Limited |
| BPM | Business Process Management |
| CAGR | Compound Annual Growth Rate |
| CAPEX | Capital Expenditure |
| CMM | Capability Maturity Model |
| COE | Centre of Excellence |
| Cr | Crore |
| DEPC | District Export Promotion Committee |
| DFC | Dedicated Freight Corridors |
| DFCCIL | Dedicated Freight Corridors Corporation of India Limited |
| DGCA | Directorate General of Civil Aviation |
| DGCIS | Directorate General of Commercial Intelligence and Statistics |
| DIFC | Dubai International Financial Centre |
| DL | Delhi |
| DSIR | Dholera Special Investment Region |
| DTU | Delhi Technological University |
| EMD | Earnest Money Deposit |
| EoDB | Ease of Doing Business |
| EoLI | Ease of Living Index |

List of abbreviations

| Abbreviation | Description |
|------------------|---|
| EPF | Employees' Provident Fund Organization |
| EXIM | Export Import |
| FAME | Faster Adoption and Manufacturing of Electric and Hybrid Vehicles |
| FDI | Foreign Direct Investment |
| FEPA | Financial Education Programme for Adults |
| FI | Financial Intermediaries |
| FPI | Foreign Portfolio Investment |
| FSI | Floor Space Index |
| FY | Financial Year |
| GCT | Gati Shakti cargo terminal |
| GDP | Gross Domestic Product |
| GFCI | Gross Fixed Capital Investment |
| GHMIS | Gujarat Hospital Management Information System |
| GIC | Global In-House Centre |
| GIDB | Gujarat Infrastructure Development Board |
| GIDC | Gujarat Industrial Development Corporation |
| GIFT City | Gujarat International Finance Tec-City |
| Gitex | Gulf Information Technology Exhibition |
| GJ | Gujarat |
| GMB | Gujarat Maritime Board |
| GoG | Government of Gujarat |
| GoI | Government of India |
| GPLCL | Gujarat Port and Logistics Company Limited |
| GRIDE | Gujarat Rail Infrastructure Development Ltd |
| GSDP | Gross State Domestic Product |
| GSFC | Gujarat State Fertilizers and Chemicals |
| GSPC | Gujarat State Petroleum Corporation |
| GSRDC | Gujarat State Road Development Corporation Limited |
| GSVA | Gross State Value Added |
| GUJSAIL | Gujarat State Aviation Infrastructure Company Limited |

List of abbreviations

| Abbreviation | Description |
|--------------|--|
| GSVA | Gross State Value Added |
| GW | Giga Watt |
| HCL | Hindustan Computers Limited |
| HNI | High Net-Worth Individual |
| HPCL | Hindustan Petroleum Corporation Limited |
| IFC | International Financial Center |
| IFSC | International Financial Service Center Authority |
| IFSCA | International Financial Service Center Authority |
| IIIT | Indian Institute of Information Technology |
| IIM | Indian Institute of Management |
| IIT | Indian Institute of Technology |
| INR | Indian National Rupee |
| INR | Indian Rupees |
| IOCL | Indian Oil Corporation Limited |
| IoT | Internet of Things |
| IPO | Initial Public Offering |
| IR | Indian Railways |
| IT | Information Technology |
| ITeS | Information Technology Enabled Services |
| JCI | Joint Commission International |
| KN | Karnataka |
| KYC | Know Your Customer |
| LEADS | Logistics Ease Across Different States |
| LPG | Liquified Petroleum Gas |
| LRS | Liberalized Remittance Scheme |
| MGHL | MHC Global Healthcare Ltd. |
| MH | Maharashtra |
| MICE | Meetings, Incentives, Conferences, and Exhibitions |
| Mn | Million |
| MoHFW | Ministry of Health and Family Welfare |

List of abbreviations

| Abbreviation | Description |
|-----------------|---|
| MoU | Memorandum of Understanding |
| MRO | Maintenance-repair and overhaul |
| MT | Metric Ton |
| M-TIPB | MSME Trade and Investment Promotion Bureau |
| MTPA | Million tonnes per annum |
| MVT | Medical Value Travel |
| NAAC | National Assessment and Accreditation Council |
| NCR | National Capital Region |
| NER | Net Enrolment Ratio |
| NH | National Highway |
| NHAI | National Highway Authority of India |
| NIRF | National Institutional Ranking Framework |
| NIT | National Institutes of Technology |
| NITI | National Institution for Transforming India |
| NIWS | National Institute of Water Sports |
| NOC | No Objection Certificate |
| NRI | Non-Residential Indian |
| NSE | National Stock Exchange of India Limited |
| NW | North West |
| OPEX | Operating expenses |
| PCPIR | Petroleum, Chemicals and Petrochemicals Investment Region |
| PFM | Personal Financial Management |
| PhD. | Doctor of Philosophy |
| PLI | Production Linked Incentive |
| PM MITRA | Prime Minister Mega Integrated Textile Region and Apparel |
| PPP | Public-Private Partnership |
| R&D | Research and Development |
| RBI | Reserve Bank of India |
| ROW | Right of Way |
| SDG | Social Development Goals |

List of abbreviations

| Abbreviation | Description |
|---------------|---|
| SEBI | Securities and Exchange Board of India |
| SEPC | State Export Promotion Council |
| SEZ | Special Economic Zone |
| SGST | State Goods and Services Tax |
| SGX | Singapore Stock Exchange |
| SIPC | Smart Industrial Port City |
| SIR | Special Investment Regions |
| SoU | Statue of Unity |
| SPECS | Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors |
| STPI | Software Technology Parks of India |
| TANSIM | Tamil Nadu Startup and Innovation Mission |
| TCS | Tata Consultancy Services |
| TN | Tamil Nadu |
| Tr | Trillion |
| UAE | United Arab Emirates |
| UK | United Kingdom |
| ULIP | Unified Logistics Interface Platform |
| UNESCO | United Nation Educational Scientific and Cultural Organization |
| UP | Uttar Pradesh |
| US | United States |
| USA | United States of America |
| USD | United State Dollar |
| VAT | Value Added Tax |



Preface by Chairman

Preface by Chairman

If India has to achieve the target of GDP of USD 5 Trillion by FY 2026-27, Gujarat has to run faster because Gujarat is the growth engine of India. Gujarat has a share of 8.36 % in the national GDP in 2021. We need to accelerate our growth rate and achieve a share of 10% in the national GDP. This means Gujarat has to achieve target of GSDP of USD 500 billion by FY 2026-27. This would mean that Gujarat's growth rate in the next 5 years has to be at a CAGR of 14.5 % in nominal terms as against the track record of 12.3% in the last decade.

The main growth driver of Gujarat has been manufacturing sector so far. The manufacturing sector in Gujarat has contributed 30% in the GSDP, which is the highest in the country. If we include energy & transport sector the share of industry is 48.40% in FY 20-21. However, the share of services in Gujarat's GSDP is 32.4 % in FY 20-21 as compared to share of services sector at 54% in India's GDP. The share of agriculture in Gujarat has remained more or less constant in the GSDP over several years.

This report makes out a case for completely revamping the growth strategy of Gujarat in the next five years. The report suggests a number of strategies and sub strategies- sector wise in order to achieve this reorientation. Some of the main points suggested in report are as follows:

- The traditional manufacturing sectors of Gujarat have more or less saturated. This report identifies nine winning sectors, a mix of new as well as existing sectors, where the state government needs to focus. Gujarat should move into newer areas of smart manufacturing and green manufacturing in order to leverage their multiplier effects. Emerging technologies and better practices related to supply chain rationalization should boost traditional industries like textiles.
- The state needs to focus on all the services sector mainly IT/ ITES, Fintech, Tourism including medical value travel. The state needs to invest lot of money on providing high quality infrastructure for all these sectors. The government needs to spend money for attracting top class IT companies and tourism sector promoters. State needs to develop five or six clusters of tourism on the line of State of Unity (SoU) cluster.
- International connectivity from four or five major airports is urgently required to attract investment in services sector. All possible modern amenities, and cruise services, should be made available to develop Gujarat as a major destination for coastal and inland water tourism. Private sector participation, governmental interventions, and PPP models must be leveraged.
- Gujarat's strategic location provides it with the opportunity to be a leader in this regard by investing heavily in coastal development; strengthening economic opportunities for coastal communities; sustainably exploiting coastal ecosystem services; unleashing the region's potential for tourism; and boosting port activities. In the process, Gujarat could emerge as India's blue boulevard.
- Gujarat has to develop a robust ecosystem for industry-ready human capital, resulting in the rapid increase of the state's workforce. Opportunities afforded by the gig economy should be exploited. Quality improvement in higher education and lot of upskilling of workforce is required.
- The state has to go in a big way in promoting renewables, micro grids and electric mobility. The state is already ahead in renewable sector, but we need to go whole hog in promoting these sectors. Promoting green hydrogen and semiconductor manufacturing has to be in our radar.
- In agriculture the crop economy has more or less stagnated. However, precision farming with the help of technology can definitely increase the agriculture productivity substantially. There is larger scope of increasing rural income by way of promoting animal husbandry, horticulture, fisheries and poultry farming.
- Gujarat's blue economy has hardly been exploited to India's advantage despite the country's long coastline.

Preface by Chairman

- The services sector growth is around urban agglomeration. Gujarat needs to create many world class urban centres such as GIFT City. A lot of investment is required in urban sectors to provide all amenities such as metro rail, ring roads, urban mass transport, urban housing etc.
- Gujarat is a state of entrepreneurs. The state can promote this spirit by having a top-class ecosystem for promoting start-ups.
- While Gujarat is already ahead in exporting manufacturing items, we need to establish a leadership in export of services also. Measures are suggested in this report to promote this.

This report builds upon the existing knowledge of senior government officials, private sector stakeholders and consultant. The wide stakeholder consultations have enabled bringing all these ideas to enable Gujarat's accelerated growth in one place in this document. We are confident that the state government will make best use of this report by putting in place a robust implementation mechanism.



Acknowledgement

Acknowledgement

At the outset Task Force Committee is grateful to Hon'ble Chief Minister of Gujarat, Shri Bhupendra bhai Patel, for having given us this opportunity to prepare such a report. We are also grateful to the Hon'ble Finance Minister and Principal Secretary Finance for initiating this work.

This report is a result of continuous and coordinated efforts from all the Task Force Committee Members that include Shri M.K. Das, IAS (Additional Chief Secretary, Ports and Transport Department), Smt. Mamta Verma, IAS (Principal Secretary, Energy & Petrochemicals Department), Shri Milind Torawane, IAS (Secretary (Economic Affairs), Finance Department), Shri Rakesh Shankar, IAS (Secretary (Planning), General Administration Department) and Shri Dr. Rahul Gupta, IAS (Industry Commissioner).

The study has also benefitted from the suggestions and inputs of Co-opted Members of the Task Force Committee that includes Shri Tapan Ray, IAS Retd., (Managing Director and Group CEO, GIFT City Co. Ltd), Shri Punamchand Parmar, IAS Retd., (Former Additional Chief Secretary, Agriculture, Farmers Welfare and Cooperation Department), Shri Mukesh Puri, IAS (Additional Chief Secretary, Agriculture, Farmers Welfare and Cooperation Department), Shri Manoj Agrawal, IAS (Additional Chief Secretary, Health & Family Welfare Department), Shri S.J. Haider, IAS (Principal Secretary- Education Department (Higher & Technical Education)), Smt. Anju Sharma, IAS (Principal Secretary, Labour, Skill Development and Employment Department), Shri Vijay Nehra, IAS (Department of Science and Technology), Shri Hareet Shukla, IAS (Secretary, Tourism, Devasthanam Management, Civil Aviation & Pilgrimage), Shri Dr. Vinod R. Rao, IAS (Secretary (Primary & Secondary Education), Education Department), Shri Jai Prakash Shivhare, IAS (Managing Director, GUVNL, Vadodara, Former Commissioner of Health, Medical Service & Medical Education and Ex-officio Secretary (Public Health & Family Welfare)) and Shri Rajkumar Beniwal, IAS (Additional CEO, Gujarat Urban Development Mission).

Task force committee acknowledges participation and support received from Mr. Lalit Narayan, Director, Directorate of Employment & Training and Mr. Rakesh Pandya, Director, Directorate of Economics & Statistics, GoG.

Our sincere thanks to Shri Dr. Rahul Gupta, IAS (Member Secretary) for the providing overall coordination support between the Task Force Committee Members, Co-opted Members and all other key relevant stakeholders concerned.

The Task Force Committee expresses sincere gratitude to Shri S.J. Haider, IAS (Principal Secretary- Higher & Technical Education) and his department for organizing insightful workshops / seminars to brainstorm and gather insights on how sectors such as Disruptive Technologies, Blue Economy, Energy & Renewables, Tourism & Hospitality, Manufacturing & MSME, Healthcare, Medical services and Nutrition, Rural economy, Desert economy, Natural resource and forest products, Ports transport & logistics, Sports sector, Education sector and IT / ITeS, can contribute and help Gujarat towards achieving India's target of USD 5 trillion economy. The Task Force Committee is also thankful to Shri Mukesh Puri, IAS (Additional Chief Secretary, Agriculture, Farmers Welfare and Cooperation Department) and Shri Manoj Agarwal, IAS (Additional Chief Secretary, Health & Family Welfare Department) for organizing consultative workshops for Agriculture & Allied activities and Healthcare sector respectively.

Timely efforts and sharing of key data points required for this study from various state departments including Agriculture, Farmers Welfare & Co-Operation Department, Industries Commissionerate, Department of Science & Technology, Industrial Extension Bureau (iNDEXTb), Directorate of Economics and Statistics, Finance Department, Energy & Petrochemicals Department, Labour, Skill Development and Employment Development, Ports and Transport Department, Gujarat Infrastructure Development Board, etc. are commendable.

Acknowledgement

The Committee would also like to thank Mr. Nimit Patel (General Manager-GIDB) and Smt. Priyanka Kumar (Senior Manager (Projects)-GIDB) for overall program management and implementation of this mandate.

The Task Force Committee acknowledges the valuable assistance provided by PricewaterhouseCoopers Pvt Ltd (PwC) team led by Mr. Mohammad Athar (Partner) along with Mr. Rohan Shah (Associate Director) as overall project manager in assisting the Task Force committee in timely preparing and delivering a high-quality study report. The Committee also appreciates support from other PwC team members that include Mr. Shashank Tripathi (Partner), Mr. Manoranjan Pattanayak (Executive Director), Mr. Hitesh Chaniyara (Executive Director), Mr. Sudhanshu Bohra (Director), Mr. Probal Ghosh (Director), Mr. Nimish Vora (Director), Mr. Mehul Gupta (Director), Mr. Nishant Shah (Associate Director), Mr. Mandeep Ahuja (Associate Director), Ms. Archita Bose (Associate Director) and Ms. Srividya Krishnan (Manager) for providing their valuable inputs on respective sectors.



Executive summary

Executive summary

Economic growth ambition for Gujarat

India intends to achieve the target GDP of USD 5 trillion by 2026-27 in nominal terms¹. In 2021-22, India became a USD 3.09 trillion economy in nominal terms. Average annual nominal growth for the last 10 years (2012-13 to 2021-22) is nearly 10.5 percent. Therefore, if the past growth rate is sustained, India would be USD 5 trillion economy by 2026-27 in nominal terms.

The target of USD 5 trillion economy by 2026-27 is contingent on growth at the State level. Five states, i.e., Gujarat, Tamil Nadu, Maharashtra, Uttar Pradesh, and Karnataka constitute approximately 49 percent of the nominal GDP of the country. All five states have grown at an average annual nominal growth of nearly 10 percent or more during the pre-COVID period (2012-13 to 2019-20) and have the potential to grow at a rapid pace in the coming years.

It is anticipated that Gujarat would make an important contribution towards the economic growth of the country. Accordingly, the State may propose a target to become a USD 500 billion economy by 2026-27 in nominal terms and have nearly 10 percent share in India's GDP by 2026-27 from 8.36 percent in 2020-21. To achieve this goal, Gujarat has to attain a higher growth in industry and services sector. Over the last several years, the agriculture sector has benefited from significant productivity gain and the productivity is plateauing now. The sector is expected to grow at slightly lower rate in the next few years. To account for the resulting shortfall in GDP, the Industry sector would need to grow at 14.9 percent and services at 16.3 percent; up from last ten years annual average growth of 13.3 percent and 11.8 percent respectively. The enhanced role of the service sector is expected to be supported by factors such as increasing purchasing power, leading to demand for services such as professional services, tourism spending, business services, and financial services. Detailed suggestions on supply-side of services sectors is provided in subsequent paragraphs.

Economic growth strategy framework

The framework builds on the economic pillars of Gujarat economy i.e., 1) Agriculture, 2) Manufacturing and 3) Services sector. Growth drivers in form of Focus sector and sub-sector opportunities have been proposed to be identified within these pillars. In addition, to enable growth of these Pillars and Focus sector opportunities, "Enablers" have been identified which include - 1) Transport infrastructure & Logistics, 2) Energy and 3) Education, Skilling and Start-up eco-system development.

Lastly, strategic interventions (Investment targets, Policy initiatives, Infrastructure project development, Institutional interventions, etc) shall be proposed that not only help in addressing current challenges, but also help achieve a higher / induced economic growth for the State of Gujarat.

¹ Article on "India to become a 3 trillion Dollar Economy this year and a 5 trillion Dollar Economy by 2024-25" by Press Information Bureau, Government of India, dated 05 July 2019. <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1577411>

Agriculture & allied activities

In the socio-economic context of Gujarat, Agriculture has a very significant role, as more than 40% of the State population is directly or indirectly dependent on it for their livelihood. Crop and Livestock sector contributes ~15% in the state's GVA reflecting its significance. Contribution of agriculture and allied sectors (crop and livestock sub-sector) to the state's nominal GVA has declined from 17.80% to 14.20% during FY 2011-12 to 2020-21. The major reasons for the decline are increase in GSVA contribution of manufacturing & services sectors and decrease in net sown area due to factors such as erratic rainfall in the past few years.

Crops sub-sector remains the major contributor over the period; however, the contribution of allied sub sectors has increased during the last five years. This reflects the scope of allied sectors to augment the contribution of the sector to the state's GVA. However, there is stagnation in production of agricultural crops which reflects the need for diversification. The Gujarat government has taken several initiatives to boost agricultural sector growth and support the farmers. In continuation to this growth process, Government of Gujarat aims at a holistic and sustainable growth of agriculture and food sector. The State is in line with the national vision of doubling farmer's income, increasing agricultural productivity & production, reducing wastage across the supply chain and ensuring food security for all in the state.

To attain desired vision, the task force recommends following five thematic areas for the overall improvement and growth of the agricultural and allied sectors:

- i. **Incremental growth to efficient growth** through (1) Scientific and timely use of high-quality seeds and planting material, (2) Har khet ko pani: Increasing the net irrigated area, (3) Improving farm mechanization level, (4) Improving crop intensity and (5) Increased push on extension programmes such as Krushi Mahotsav etc.
- ii. **Innovation and creative disruptions:** Creating creative disruptions in the current agricultural practices through innovations to improve the share of agriculture and horticulture in the state GVA.
- iii. **Market orientation and processing:** Strengthening the marketing and processing infrastructure of the state to ensure better price realization and improved value addition.
- iv. **Shift towards diversification** by increasing the share of horticulture, dairying, fisheries, poultry, and goat and sheep sub sectors among the livestock sectors.
- v. **Agriculture Extension Bureau:** Setting up of a separate division/cell on the lines of INDEXTb for promotion of investment in agribusiness and food processing.

Manufacturing sector

The manufacturing sector in Gujarat has contributed around 32% to the overall GSDP during FY 15 to FY 20². Gujarat's economic profile is similar to that of the leading global manufacturing hubs like, China, Thailand, South Korea, etc. wherein the manufacturing sector contributes around 30% of the GSDP. Gujarat is also the no.1 state in India in terms of share of manufacturing sector in GSDP. Manufacturing GSVA has witnessed around 13% CAGR (Nominal) during FY 13 to FY 22³.

Gujarat shall aspire to transition towards an industry mix that is dominated by sectors that are high on value addition (GSVA / Output) and have comparatively higher employment generation potential (No. of new jobs per crore investment). Parameters like global trade, local market share, local growth, national imports, investment attractiveness and inclusion in any of the GoI initiative has been considered to identify focus sectors for

² Report on State Domestic Product, Gujarat State 2019-20 (Base Year 2011-12), Directorate of Economics and statistics, Govt. of Gujarat. Value at current price

³ Report on State Domestic Product, Gujarat State 2019-20 (Base Year 2011-12), Directorate of Economics and statistics, Govt. of Gujarat. Value at current price

Executive summary

Gujarat. Focus sectors identified are; 1) Automobile, 2) Apparel, 3) Basic metals, 4) Electronics, 5) Electrical machinery & equipment, 6) Food processing, 7) Pharmaceuticals and 8) Textiles.

Within each of these focus sectors, the following subsector and emerging sectors have been identified: 1.1) Motor vehicles (Electric vehicles, Alternate fuel vehicles), 2.1) Wearing apparel (including knitted & crocheted fabrics), 3.1) Basic iron and steel, Precious and other non-ferrous metals (green steel, specialty steel), 4.1) Electronic components and domestic appliances (mobile manufacturing, semiconductor and fab manufacturing), 5.1) Batteries and accumulators (Li / Hydrogen batteries, Advanced Chemistry Cell battery, Solar PV), 6.1) Processing and preserving of fruit and vegetables, 7.1) Pharmaceutical, medicinal chemical & botanical products and 8.1) Spinning, weaving and finishing of textiles (technical textiles).

To promote growth in the above-mentioned sector and sub-sector opportunities, the task force recommends hard and soft interventions around key strategic intents as follows:

Timely execution of new manufacturing investments - It is proposed that the state shall be required to attract new investments worth around INR 5 Lakh crore in focus sectors by end of FY 23 and ensure that these projects start commercial production by FY 25 / FY 26. The state might consider setting up a new committee/Task force to enable investments in priority sectors along with exploration of new investment promotion avenues.

Enhanced and diversified Industrial infrastructure – After review of the current supply and demand for next 5 years i.e., till FY 27, it is estimated that there is need for development of new industrial parks of around 19000 acres. Vadodara (2,892 acre), Surat (2,521 acre), Jamnagar (2483 acre), Mehsana (2,410 acre), Valsad (1,298 acre), and Rajkot (1,144 acre) are the key districts having land supply deficit. The sectors contributing to the overall land demand in the districts comprise Basic metals, Electronics, Electrical machinery & equipment and Automobiles.

It is recommended to expedite development of the sectoral parks in the state namely a) PM MITRA Park (1,142 acre) at Navsari, b) Bulk Drug park (1007.71 acre) at Bharuch, c) Ceramics park (1,051 acre) at Morbi, d) Toy park (241 acre) at Ahmedabad & Rajkot, e) Bio-tech park (16 acre) at Vadodara as well as industrial areas like Dholera SIR, Mandal-Becharaji SIR. The state shall also consider / evaluate development of new thematic / sectoral industrial parks such as Coastal economic units, Special Economic Zones, Export related CFCs for Testing & Certification, Electronic Manufacturing clusters, Future of mobility parks (Auto, EV, Batteries), High tech engineering park (Machinery, Electrical machinery, Other equipment's), Mega food processing parks, Chemical clusters, Green Hydrogen park / Hydrogen valley, Metal clusters, Power and Renewable energy equipment park and Mega Leather cluster in the state.

Competitive incentive policy – After review of sectoral policies of the focus sectors in other key progressive Indian states, it is proposed that GoG may also introduce specialized incentive scheme or amend the existing Industrial policy 2020 for reducing the cost of doing business and improving the investment attractiveness to target focus sector investments into Gujarat.

Export enablement - To enhance export potential of the state, it shall target 17% CAGR in manufacturing exports from FY 22 to FY 27. Setting up a state level Export Promotion Council (Gujarat Export Promotion Council) at Gandhinagar shall also be considered. In addition to this, the state government shall initiate dialogue with Government of India so that they negotiate with foreign embassies for having favorable / competitive tariff structure in target markets i.e., USA, Germany, France, China, UK, Belgium, Mexico, Spain, Canada, Hong Kong, Japan, Singapore, Italy and Switzerland. This shall enable scaling up exports to the existing destinations as well as open up new export markets for Gujarat.

Implementation of the strategic interventions discussed above shall not only enable the state to achieve the targeted growth but also enable integrations with global value chains through targeting manufacturing and export opportunities that have high demand in the global trade. Lastly, the State may promote sustainable manufacturing through decarbonization and Net-zero initiatives in the identified focus sectors and sub-sectors.

Service Sector

The Service sector is an integral part of the Indian Economy, contributing 61% in FY21 to the Indian GSVA⁴, and employing ~32% (2020) of the total employed population of India⁵. The GSVA of the service sector in India grew at a CAGR of 7.6%⁶ from FY16 to FY21.

Gujarat's Service sector GSVA has shown higher growth rate than India at 10.5% from FY16 to FY21, also increasing its contribution to the GSVA from 35.6% to 37.3% in the same time period⁷. However, Gujarat ranked 7th in its contribution to the National Services sector GSVA in FY20⁸. To enable Gujarat to play a greater role in India's vision of USD 5 trillion, this report identifies strategic interventions in the key focus sectors within the Service sector. It is targeted that Gujarat's service sector nominal GSVA grows at a CAGR of 16.3% between FY22 and FY27, to reach USD 171.5 Billion by FY27.

To enable this growth, key focus sectors are identified within services, through a strategic framework which considers three criteria: (i) Historical Trends, (ii) Future Outlook and (iii) Champion Services. To support the growth of the Services sector, the Task Force recommends that a Commissionerate may be established exclusively for services, housed under an appropriate department, for undertaking of interventions in close coordination with relevant departments.

The focus sectors identified are IT & ITeS, Financial Services, Healthcare, Tourism, Real Estate and Transport and Logistics, where Transport and Logistics is an enabling sector. An overview of the key growth opportunities, challenges and strategic interventions for each of the focus sectors are given below.

IT – ITeS sector

The Indian Information Technology/ Information Technology Enabled Services (IT/ITeS) sector has contributed immensely to positioning India as a preferred investment destination amongst global investors. From 2016-2021, revenue from this sector has grown at a CAGR of 6%⁹ to \$195 bn in FY 2020-21 (E) with a GDP contribution of 8%¹⁰. The growth is led by IT exports. According to a NASSCOM report, it is projected to be a USD 350 billion industry by FY 2026¹¹.

In Gujarat, the IT-ITeS sector exports grew at 14% annually between 2017-18 and 2020-21¹², they were valued at INR 3,976 Cr¹³ in 2020-21. To boost the growth of the sector, the state government has come up with a new IT/ITeS policy 2022-2027¹⁴. It has set an ambitious target of INR 25,000 crores of exports by 2027. To achieve this, private investment would have to be attracted and an IT ecosystem needs to be developed.

At present, Gujarat has a low footprint of IT companies and needs to address key challenges to strengthen factors such as human capital, innovation ecosystem, air connectivity and infrastructure. The IT/ITeS policy addresses a lot of these challenges and its implementation should be fast tracked. Further, for attracting more

⁴ Handbook of Statistics on Indian Economy, Components of Gross Value Added At Basic Prices, RBI, 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701> <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20408>

⁵ India - Employment In Services (% Of Total Employment), Trading Economics, Available at: <https://tradingeconomics.com/india/employment-in-services-percent-of-total-employment-wb-data.html>

⁶ Handbook of Statistics on Indian Economy, Components of Gross Value Added At Basic Prices, RBI, 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701> <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20408>

⁷ PwC analysis, Data source: Socio-Economic Review: Gujarat State, Directorate of Economics and Statistics, 2022, Available at: https://gujcostat.gujarat.gov.in/uploads/publicationsecmanagment/SER202122eng03_03_22_13_39_12.pdf

⁸ Handbook of Statistics on Indian States, Gross State Value Added by Economic Activity - Services (Current Prices), RBI, November 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701>

⁹ Revenue trend, MeitY, Available at <https://www.meity.gov.in/revenue-trend>

¹⁰ Software and services sector, MeitY, Available at <https://www.meity.gov.in/content/software-and-services-sector>

¹¹ Indian-it-sector-growing-at-almost-twice-the-rate-of-eco, Shila Phadnis, 2022, Available at <https://timesofindia.indiatimes.com/business/india-business/indian-it-sector-growing-at-almost-twice-the-rate-of-eco/articleshow/89602308.cms>

¹² STPI Annual Reports, Software Technology Parks of India, Available at <https://stpi.in/en/stpi-annual-reports>

¹³ STPI Gandhinagar, MeitY, Available at <https://gandhinagar.stpi.in/en/about-stpi-gandhinagar>

¹⁴ IT/ITeS Policy 2022-2027, Department of Science and Technology, Gujarat, 2022, Available at <https://gil.gujarat.gov.in/Media/DocumentUpload/IT%20POLICY-FInal-2022.pdf>

investments, the state should encourage creation of channels of dialogue between the government and the senior leadership of the top IT companies.

For human capital development, promotion of English skills by introducing in non-English medium schools, setting up of more English medium schools, teacher training courses and dual language textbooks may be done. Fast tracking the setting up of 7 CoEs in universities, notified in Jan 2022¹⁵, in addition to the AI School/ CoE (envisaged in the state IT / ITeS policy) should be ensured. To encourage innovation, creation of sandboxes for IT industry, where live testing of new products or services can take place in a controlled environment as done for Financial services in GIFT should be done. The coverage of the Electronics and IT/ITeS Start-up policy (2016-21) and SSIP 2.0 policy (2022-27) may have a deeper focus on encouraging startups in the state, especially in sectors such as health-tech and fin-tech.

Financial Services

The Financial Services sector in India has been growing at 9.4% CAGR, from FY16 to FY20¹⁶, contributing ~9% to India's GSVA in FY20. Further, the Financial Services sector projected outlook in India is positive, especially for capital markets and the FinTech market. The FinTech market is projected to grow at ~48% from FY20 to FY25.

The Banking and Insurance sector GSVA of Gujarat, grew fast at ~11% CAGR from FY16 to FY20, ranked 4th ¹⁷ in Banking and Insurance and contributed around 7% to the Indian Banking and Insurance GSVA. The State can strengthen its Financial sector by utilizing the already strong infrastructure where Gujarat's GIFT City is well positioned, to become the International Financial Gateway of the country. The International Financial Services Centre (IFSC) is becoming preferred destination for International Financial Services Activities.

In order to attract investments, Gujarat needs to address key challenges at IFSCA and strengthen factors such as Business Environment, Reputation, Human Capital and Infrastructure. The long time for setting up a Business (90-120 days) and stringent KYC norms need to be addressed at IFSCA, along with providing a level playing field to IFSC under the Liberalized Remittance Scheme. While the state has some clear advantages as an investment destination, it needs to further strengthen key areas such as state competitiveness, start-up ecosystem, innovation ecosystem, enabling FinTech's, skilling for Financial services and in English language, access to schooling and connectivity to International Finance Centers.

Strategic interventions aim at accelerating GIFT City's growth as a Global Financial Center and in becoming a FinTech hub. These interventions may create a favorable ecosystem for financial activities and attract key financial sector players to make investments in the state. Some key interventions for growth as a financial hub include promoting Global In-House Centre (GIC) at GIFT IFSC, establishment of International Arbitration center and separate court, preferential treatment to IFSC for Investment in India, developing new products for trading at IFSC Exchanges, and development of foreign currency clearing and settlement system. To develop human capital, it is recommended that an International Fintech Institute be set-up and partnerships with FinTech industry for digital skills may be developed. To promote innovation and startup, Gujarat may look at providing Startup Seed grant and Accelerator kit and enabling knowledge exchange for Innovation.

Healthcare sector

Indian healthcare market is growing at a fast rate and this growth has been led by the hospital industry comprising 80%¹⁸ of the market. With rising income levels and ageing populations, the demand in hospital industry, both in the domestic and international markets is expected to grow further.

¹⁵ Education department, Government of Gujarat

¹⁶ PwC analysis, Data source: Handbook of Statistics on Indian States, Gross State Value Added by Economic Activity - Banking and Insurance (Current Prices), RBI, November 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20697>

¹⁷ Maharashtra, Delhi and Tamil Nadu rank above Gujarat

¹⁸ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunitiesHealthcareSector_0.pdf

Gujarat has been the best performing state in the Sustainable Development Goals (SDG) 3 (good health and wellbeing goal) as per SDG India Index & Dashboard, 2020-21 of NITI Aayog¹⁹. It has renowned local multi-specialty hospitals but certain infrastructural gaps, including no. of beds, physicians, and nurses, exist in the state. The state can strengthen its healthcare industry by using the opportunity to attract leading national hospital chains, which presently have a low footprint in the state.

To further growth of the healthcare industry, Gujarat needs to implement strategic interventions for the overall healthcare sector, Medical value travel and Health tech. To address the immediacy of the issues, the government needs to increase healthcare expenditure as a portion of budget by 50% (from the current 5% of budget to 7.5% of budget).²⁰ For increasing private sector participation, PPP models should be encouraged for setting up specialty and super specialty hospitals, especially in Tier 2 or 3 cities. To enhance Medical value travel, benefits related to capital subsidy and electricity duty which are provided to hotels as part of the state tourism policy, should be provided to Medical Value Travel (MVT) players as well.

To aid human capital development, private investment in medical education needs to be encouraged. A health recruitment board for recruiting doctors, nurses, etc. May be set up on the lines of police recruitment board to make the process more effective. Innovation ecosystem for health tech may be promoted by creating a healthcare Innovation fund. In addition to this, healthcare startups should be encouraged similar to any other startup receiving benefits under the State's startup policy/ IT/ITeS policy.

Tourism

Gujarat has long been a key tourist destination in the country. The tourism sector contribution to the state GDP has experienced high growth from 5% in FY 2015 to 8% in FY 2020. The tourist footfall has also increased at a CAGR of 15% between 2009- 2018. However, it has not realized its full potential ranking 9th and 12th in domestic and international footfall, respectively. Further, majority of the domestic tourists are intra-state.

The state have potential to improve its air connectivity with key source countries for international tourist. Gujarat has been strong in tourism segments like nature, cultural, religious, spiritual tourism etc.; However, it can diversify its product offerings to other segments like rural tourism, ecotourism, cruise tourism, adventure tourism etc.

Gujarat can overcome these challenges and propel tourism further in the state through strategies and interventions categorized under three key objectives of increasing tourist footfall, increasing length of the stay and diversifying products and offerings. Statue of Unity (SoU), Kevadia can be developed as an iconic tourism village in a phased and planned manner through master planning and vision plan for 20 years, by adopting a phase wise approach for unlocking land. Gujarat should liaise for national and international recognition of its tangible and intangible assets for global marketing. Promotion of International Buddhist circuit can be a key initiative in driving international tourist footfall in the state. The state can develop key circuits like the SoU Circuit and the Saurashtra Circuit to extend length of stay of the visitors. Gujarat has many key festivals and planning events around these festivals can elongate the length of stay of the visitors. It can diversify its product offering through exploring segments like eco-tourism, adventure tourism, sea cruise, geo tourism etc. Government of Gujarat can leverage central government's revamped Swadesh Darshan Scheme to develop new tourism circuits in the state.

Improvement of air connectivity, both internationally and domestically, will be critical for the sector. Improved domestic air connectivity in the Saurashtra region can give a significant boost to tourism in the region. The state can prioritize developing/ improving connectivity (road, rail and airport) to at least its five key tourism destinations. Gujarat can enhance the quality and quantity of hospitality infrastructure in the state by rationalization of license requirements, single window clearance with defined timeline for hospitality sector and

¹⁹ https://www.NITI.gov.in/writereaddata/files/SDG_3.0_Final_04.03.2021_Web_Spreads.pdf

²⁰ Times of India, available at https://timesofindia.indiatimes.com/city/ahmedabad/states-allocation-to-health-dipping/articleshow/82416176.cms#aoh=16512797317976&referrer=https%3A%2F%2Fwww.google.com&_tf=From%20%251%24s

by providing industry status to hospitality sector. Easing regulations and setting guidelines for creating tourism assets in regulated areas of Gujarat would drive and encourage private investment in tourism product creation. The Tourism Department will require enhanced financial outlay to undertake the necessary interventions through large infrastructure development projects, encouraging private investment and marketing destination in Gujarat.

Real Estate

The real estate sector in India witnessed a rapid growth over the last 2 - 3 years and remained resilient even during the COVID - 19 pandemic. The construction sector was one of the Top 3 sectors that received maximum FDI in India during 2020 - 2021. This growth was made possible due to several policy reforms brought in by the Government of India which was conducive to growth such as Real Estate Investment Trusts (REITs) going live, increase in the cap of FDIs to 100% in the real estate sector, housing for economically weaker sections, reduction in stamp duty and a stable repo rate. Currently, the sector is the second largest employer in the country after agriculture, employing about 52 million people.

Currently, the organized real estate market in India is dominated by activity in the 7 cities of NCR, Mumbai, Pune, Kolkata, Bangalore, Chennai and Hyderabad. The activity is primarily driven by commercial space offtake by IT/ITeS tenants triggering demand for allied asset classes like residential, retail, hospitality, etc. Gujarat's organized real estate activity is currently limited to Gujarat International Finance Tec-City (GIFT) city at Gandhinagar and few developments at Ahmedabad, Surat and Rajkot. The development, albeit at nascent stages, has gained head start with announcement of new IT/ITeS policy (2022 – 2027). However, it is to be noted that Gujarat has significant potential to unlock in this segment as 2 of the top 10 growing cities in India viz. Rajkot and Surat are in the State.

As per Ministry of Electronics and Information Technology (MeitY), it is proven that the IT/ITeS sector is one of the biggest employment generators and has spawned several ancillary industries such as transportation, real estate and catering, security, housekeeping etc.. Further, the IT/ITeS sector is one of the highest employment generators, creating four indirect employment for every direct employment generated. The employees in the IT/ITeS sector are also among the highest paid employees in the country, earning 24 per cent higher than the national median, thereby having a higher spending propensity. It is therefore suggested that there may be renewed focus on promoting IT/ITeS and Banking & Financial services in Gujarat to replicate the success stories of top markets like Bengaluru, Hyderabad, etc.

Further, as mentioned above, the growth trajectory of the real estate segment is triggered by the growth of key economic drivers of the city as every asset class under the real estate sector houses the demand triggered by economic drivers. Hence, to galvanize the cogs of growth for the real estate sector, the key interventions that would be required for Gujarat is devised to be a 4-point agenda which is an amalgamation of policy triggers, institutional reform support, infrastructure enabler, soft power via. branding and promotion that promotes high address value and top of the mind city/ State recall. In a nutshell, some of the strategic interventions required are revised masterplan to be formulated that would identify clusters of growth and provide Floor Space Index (FSI) relaxation in specific growth clusters (such as 1 km along the ORR be demarcated as special development zone – lesser conversion charges, shorter approval timeframe (while majority of the approvals have been moved online and happening in timebound manner) effective implementation of the already existing schemes would be critical, stamp duty/ registration charges rebate and FSI relaxation for commercial utilization), land monetization strategy for underutilized government land parcels and transit-oriented land parcels – to be evaluated via. Public Private Partnership (PPP), incentives by the Government to developers who develop Environmental, Social and Governance (ESG) compliant buildings, single window clearance to reduce turnaround time on approvals, reviving of riverfront development projects at Sabarmati, Tapi, etc. through revalidating product mix and allowing PPP with international developers to bring best in class infrastructure with a mix of high revenue, high footfall generating assets such as high end commercial (IT & BFSI parks), food & beverage hub, river facing premium residential, hospitality, etc. which possess a strong potential to convert as organized Central Business District (CBD) of the cities. Further, granting of a 99-year

lease for private developers would ensure recurring cash flows. To complement the popular Statue of Unity (SoU), creation of a niche positioning for the zone by way of demarcating a special tourism zone in the area would add value to the entire ecosystem.

Additionally, branding and promotion of the policy along with infrastructure interventions would be critical to achieve high address value and top of the mind recall both Nationally and Internationally. This would include promoting ESG compliant buildings, branding and positioning the SoU as an alternative Meetings, Incentives, Conventions and Exhibitions (MICE) destination which would put the State on the global map. The same can be achieved via aggressive branding and promotion methodologies such as social and digital media campaigns, creating and airing infomercials, hosting flagship events, active participation in Global Investor Meets, etc.

The next section describes the position of Gujarat in terms of key economic enablers i.e., i) transport infrastructure & logistics, ii) energy and iii) education, skilling and iv) financing that shall enable the growth drivers over the coming years as well as recommended key strategic interventions that shall be implemented to further strengthen the enabling ecosystem of the state.

Transport Infrastructure & Logistics

Gujarat has always been at the forefront to develop the transport & logistics sector to complement the overall economic growth of the State. The 5 key segments across the transport and logistics sector of Gujarat have been evaluated: Ports, Roads, Rail, Aviation infrastructure and Logistics infrastructure and services. Gujarat is a port-led economy, as it accounts for ~40% of all cargo handled at the Indian port. With India aiming to achieve USD 5 trillion cargo, the port traffic at GMB ports is expected to reach above ~750 Mn MT by FY2027 creating the opportunity for significant port capacity augmentation across the coastline of Gujarat. From the road infrastructure standpoint, Gujarat has a relatively better 2 and 4-lane road infrastructure than other key states contributing to India's GDP. With an increase in economic activity across the state, majority of the traffic is expected to be utilizing the road network of the state. . For the next 3-5 years, the Government of Gujarat (GoG) may focus on the augmentation of the road capacity at major production and consumption clusters across Gujarat to reduce overall congestion on the roads. With respect to rail infrastructure, Gujarat has better rail connectivity in comparison with neighboring states; further, DFC connects key industrial centers with the rail line. Within the next 5 years, augmentation of rail capacity is required especially near key industrial and commercial hubs to increase modal shift from roads to rail especially from freight standpoints. With respect to Gujarat's aviation infrastructure, Ahmedabad followed by Surat are key airports witnessing growth in passenger and freight traffic; other regional airports are unable to attract traffic due to cost competitiveness with other modes. GoG may partner with the Central Government agencies such as AAI and DGCA to enhance air freight and passenger movement in Gujarat. In the logistics infrastructure, Gujarat leads the State logistics ranking for three consecutive years and has maintained its rank through strong policy initiatives and logistics-related institutional mechanisms. A sustained focus on monitoring logistics gaps and identifying opportunities to reduce logistics and economic costs for all the stakeholders is imperative for GoG to align with the steep economic growth aspiration.

Energy

Energy is the key enabler for growth across sectors. Considering the accelerated economic growth leading to \$500b economy by FY27, power utilities would witness 40% growth of energy consumption over the next 5 years. The Government of Gujarat has already decided to not add any conventional power capacity in Gujarat. Further, GoI's 'Panchamrita' concoction for COP26 climate commitment would raise the Renewable energy (RE) Purchase Obligations steeply to achieve 50% of electricity from renewable energy by 2030. It is estimated that by 2027, Gujarat utilities would need to procure additional 21 GW of renewable energy. That will increase the share of RE from 27% to 56% in terms of capacity and from 11% to 35% in terms of energy over next 5 years. Such a huge scale of additional variable and intermittent RE capacity into the power grid will have significant impact on the grid management and the way the remaining generation capacity operates.

Gujarat is a leader in terms of quality power supply. To accelerate economic growth, the cost of electricity for industries require optimization. RE capacity would grow at 4.7 times faster than intra-state transmission capacity. Ramp rates for conventional capacity would need to rise six-fold from the present unless grid balancing mechanism are introduced. It needs a strategic approach to prevent major constraints in faster economic growth.

Energy Strategy maybe centered around three drivers - ensuring reliability of the power supply, sustainability with growth, and affordability for all. For energy utilities, the focus may be on rapid up-scaling of distributed renewable energy generation, migrating power supply to agriculture during daytime with renewables, preferring RE-Hybrids for utility-scale procurement, attracting private capital in emerging areas of offshore wind/ floating solar, etc., and advanced planning to protect grid-stability in high RE environment. In addition, Green Hydrogen Parks, Green Tariff, RE powered electric mobility and export of RE to other states would boost investments in the state.

Action points are proposed on policy and regulatory matters, institutional interventions, enabling ecosystem, supporting Infrastructure and driving innovation in the energy sector of Gujarat.

Education, Skilling and Start-up Ecosystem

All Sectors of the economy require a skilled workforce that is Industry ready and can contribute effectively to improved productivity and higher growth of the sector. For inclusive development of a Nation, it is important to provide Quality Education to all.

Gujarat in 2019-20 had a Gross Enrolment Ratio (GER) of around 93.8 for elementary level, (standard 1 to standard 8), 77.4 for secondary (standard 9-standard 10), and 43.3 at higher secondary (standard 11-standard 12). Gujarat ranks at 4 in School Education Quality and has high percentage of qualified teachers at all education levels. The state therefore may look at further increasing enrollment and nurture the young minds to make them future ready. While the State has already taken several initiatives, it should also continue to focus on academic research and grooming the education providers/facilitators.

For higher education, Gujarat ranks second²¹ in India in total number of universities, with more than 100²² universities. The state has also several sectoral universities like IITRAM²³, IITE²⁴, Rashtriya Raksha University, Kamdhenu University, etc. Further, to create an enabling environment for quality education, the state government has come up with a roadmap for accelerating the effective implementation of the National Education Policy 2020. The state government is also going to support and nurture the ideas of youth in different verticals such as i-Hub and Student Startup and Innovation Policy (SSIP 2.0).

Given the Technological revolution, focus on promotion of digital content development and last mile delivery of higher education centers via open sources to train in such disruptive technologies, shall also play a key role in educating the students and making them digitally literate. For enabling growth especially through disruptive technology, strengthening the startup ecosystem in the state shall also be a priority. India is the 3rd largest startup ecosystem in the world²⁵ and with Gujarat's strong foundation, especially with the new IT and ITeS policy and Startup and Innovation Policy, there is an immense potential for the startups to contribute to Gujarat's growth story.

The State needs to implement strategic interventions for strengthening the Education, Skilling and the Start-up ecosystem. For education, a talent pool in sync with aspirations for future should be developed, English education curriculum should be promoted, ESG compliance related courses should be introduced,

²¹ International conference of Academic Institutions, Jan 2022, Available at <http://gksgujarat.org/icaibrochure.pdf>

²² Education department, Government of Gujarat

²³ Institute of Infrastructure, Technology, Research and Management

²⁴ Indian Institute of Teacher Education

²⁵ Key Highlights of Economic Survey 2021-2022, PIB, 2022, Available at: <https://pib.gov.in/PressReleasePage.aspx?PRID=1793829#:~:text=The%20highlights%20of%20the%20Economic,real%20terms%20in%202022%2D23.>

establishment of Centers of Excellence may be fast tracked, and ongoing initiatives shall be augmented. To further develop the skills of the workforce, skill development may be mainstreamed in education, reskilling and upskilling requirements should be identified, skilling programmes should be aligned to future needs, and collaboration may be encouraged not only for workforce training but also for capacity development of trainers. The state may also take initiatives to promote Startups and disruptive technology through implementation of Student Startup policy.

Financing High growth trajectory

The Government of Gujarat can boost services sector through various means. One of the channels is establishing an enabling policy and regulatory environment for services sector in Gujarat. This has been adequately elaborated in the preceding paragraphs. In addition, the Government can also develop services sector through provisioning of 'public good'. Public good due to positive externalities are normally under-provisioned. The Government of Gujarat can ensure effective provisioning of such public goods such as enabling infrastructure for IT/ITeS, Tourism, and Healthcare, and availability of adequate skilled workforce through establishment of educational institutions meeting the service industry requirements.

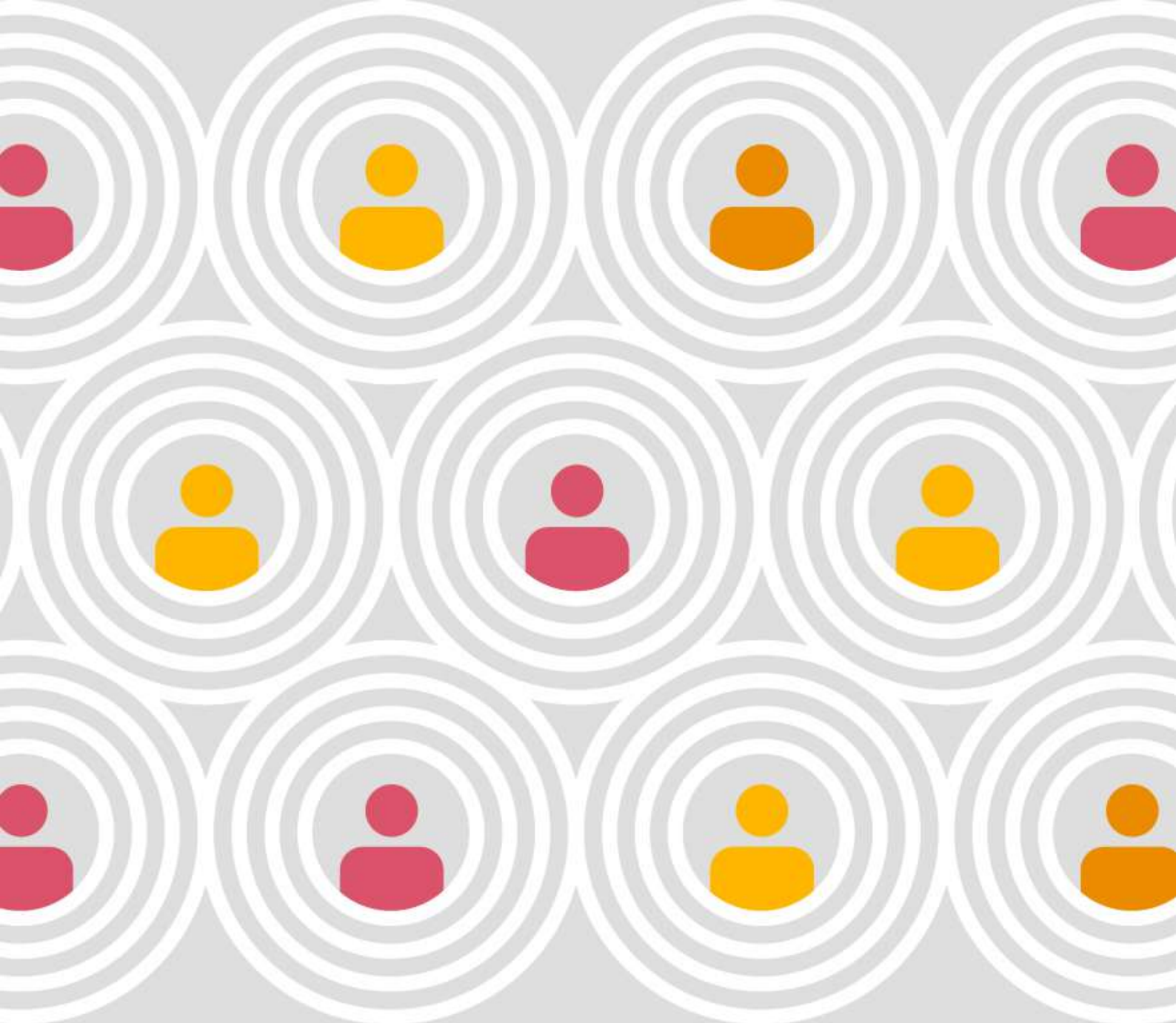
Gujarat would require (i) increase in public spending and (ii) reorientation of public spending towards services sector. Gujarat had spent 10.3 percent of GSDP in 2019-20 while other states with similar per-capita income reported higher public spending as percent of GSDP, i.e., Andhra Pradesh (16 percent), Haryana (13.6 percent), Karnataka (13.2 percent), Kerala (13.9 percent), Maharashtra (12.4 percent), Tamil Nadu (13.4 percent), and Telangana (14.2 percent). Similar trend emerges if public spending is normalized by population. Public Spending, for the purpose of analysis, includes revenue expenditure, capital outlay and loans and advances given by the State Government. Further, Gujarat has sufficient fiscal headroom to enhance public spending. A comparison of budgeted fiscal deficit (1.64 percent of GSDP) for 2022-23 and fiscal limit (3 percent of GSDP) shows that the State has additional resource envelope of nearly INR 29,961 crore in 2022-23. Public Debt of the State is also within limits. As per 2021-22 RE, public debt as percentage of GDP was 16.5 percent as against the FRBM target of 27.1 percent of GSDP. In 2022-23 BE, it is budgeted to go down to 15.88 percent. Therefore, the State has enough resource envelope and efforts need to be made to develop quality project proposals in the services sector.

Apart from direct borrowings by the State, the Government of Gujarat can also provide guarantees to the public sector enterprises so that these public sector enterprises can raise funds from the market. In 2021-22 RE, outstanding guarantees were to the tune of INR 3,089 crore as against the permissible limit of INR 20,000 crore. This provides additional fiscal space to the State of Government.

Apart from increasing public spending, the Government of Gujarat can also reorient resources to services. The State spends nearly 11 percent of the total expenditure in subsidies and nearly 70 percent of the subsidies are spent on energy and petrochemicals, and industries and mines. Reallocation of resources to services sector is expected to support growth ambition of Gujarat in the coming years.

Way forward

It is proposed that a full time Program Management Unit (PMU) may be set up in the concerned State government agency (GIDB or Industry Commissionerate, GoG) for next 5 years, which helps the concerned departments in implementing the interventions proposed and also helps the Government of Gujarat to monitor and evaluate the status of implementation of the proposed strategic interventions.



1.

Introduction

1. Introduction

1.1. Background

A high-level Task Force Committee was formed under the chairpersonship of Dr. Hasmukh Adhia IAS, Retd., Former Finance Secretary, Government of India on 8th February 2022 for working out the strategy of Government for making India a USD 5 trillion economy as per the vision of the Honorable Prime Minister of India. The purpose of the Task Force is to work out the strategy of Government of Gujarat for making India a USD 5 trillion economy.

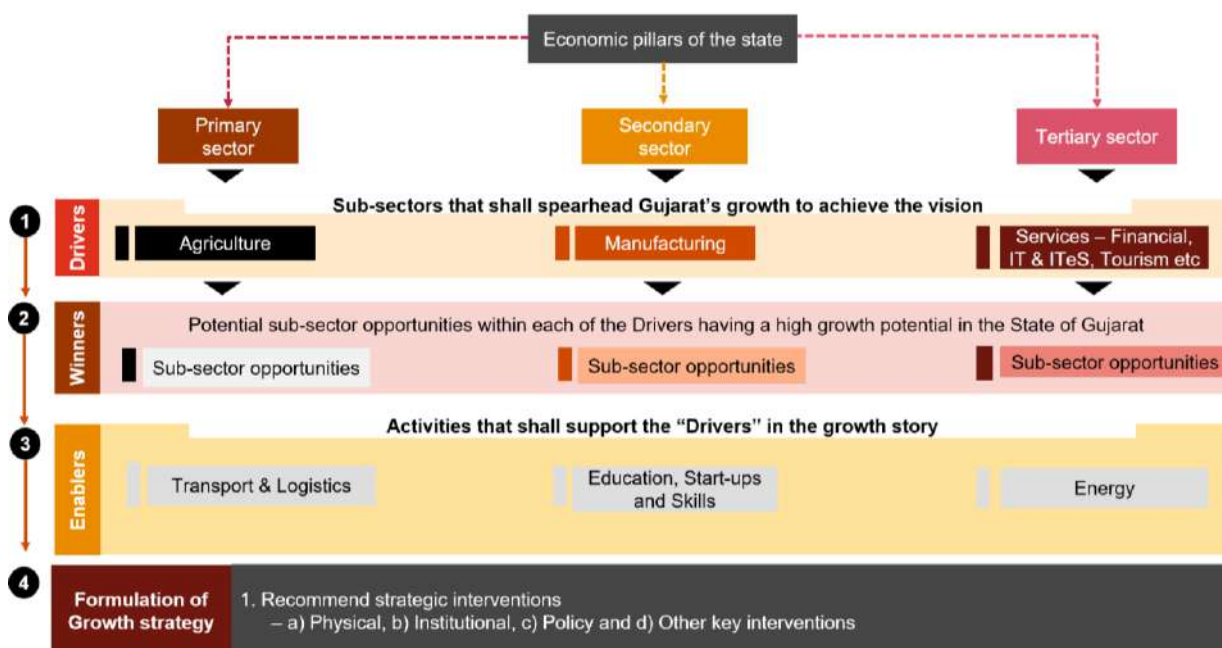
The Task Force deep-dived on three major drivers of the economy - Agriculture and allied services, manufacturing, and services sector, with the target of growing Gujarat to a USD 500 billion economy (nominal) by FY 2026-27. The Task force undertook exercise of arriving at the following items in the report:

1. Economic growth projections with growth and investment targets for drivers of the economy - Agriculture and allied services, manufacturing and services sector
2. Highlight focus sectors/sub-sectors with high future growth potential under each of the three drivers.
3. Identify the key growth opportunities and challenges for the focus sectors/ sub-sectors
4. Identify specific strategic interventions for focus sectors that will enable Gujarat to contribute to India's vision of becoming a USD 5 trillion economy.

1.2. Methodology adopted

As highlighted in figure below, a four-step approach was followed to identify growth drivers and winners and accordingly frame growth strategy for Gujarat. From amongst the three economic drivers of primary, secondary and tertiary sectors, sub-sectors that shall spearhead Gujarat's growth to achieve the vision were selected. These were the growth drivers and included agriculture and allied services, manufacturing, and services sector.

Figure 1: 4-step approach to identify growth drivers and winners and accordingly frame growth strategy for Gujarat



Introduction

To shortlist sectors within the drivers a framework was created. The framework included analyzing historical and future growth trends to identify sub sectors with high growth potential for the state of Gujarat. The shortlisted sectors have been termed as focus sectors.

For the focus sectors, trends and challenges were identified based on secondary research. This analysis along with views of the sector experts, both internal and external, was used to find key sub-sector opportunities within each of the identified and shortlisted focus sectors.

The next step involved formulation of the growth strategy. Based on secondary research, strategic interventions to make most of the growth opportunities were identified. The interventions included physical, Institutional, policy and other key interventions. The trends, challenges and strategic interventions for the focus sectors were presented to the Task Force Committee and their recommendations were taken. For primary research, consultations and seminars with key stakeholders were organized. As highlighted in Table 1, around 15 seminars / workshops were on various themes / sectors to brainstorm and gather insights on how such sectors can contribute to the growth story of Gujarat. Key learnings from these workshops have been provided in **Annexure 1**. The inputs from these exercises were incorporated in the strategic interventions.

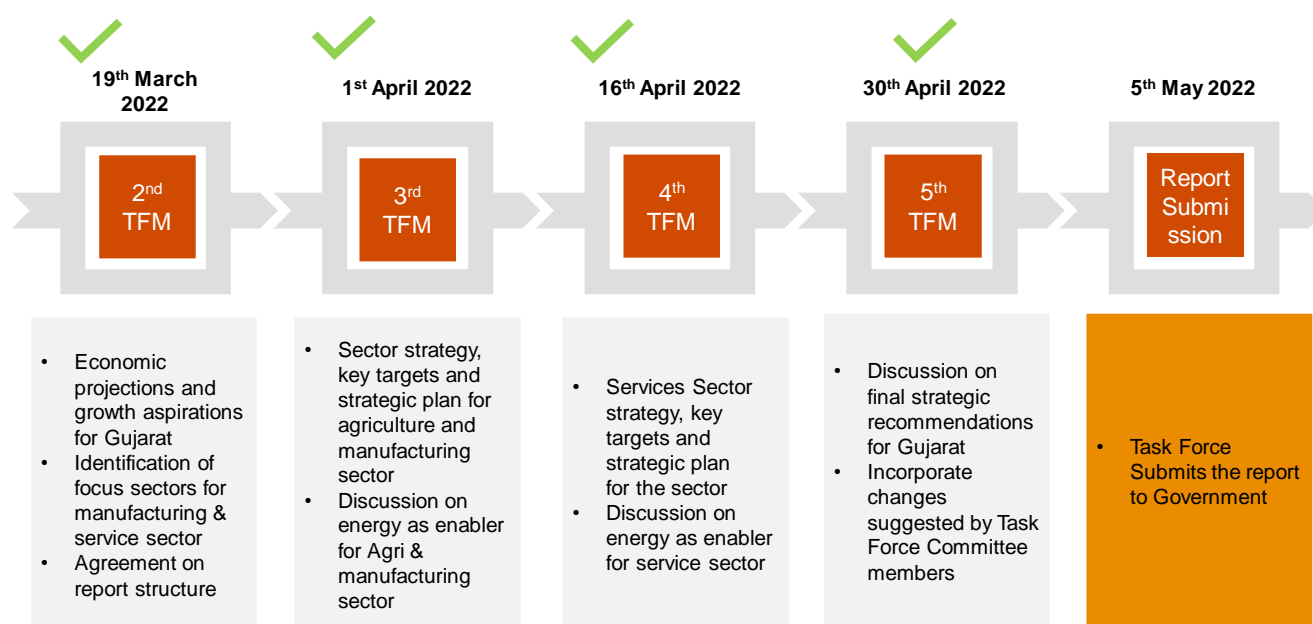
Table 1: List of workshops conducted by the state government for this study

| S. No. | Name of workshop | Date | Location | Nodal Agency |
|--------|--|------------|---|---|
| 1. | Roundtable Discussion on “Strengthening Ports, Transport and Logistics Infrastructure of Gujarat towards achieving India’s target of USD 5 trillion economy” | 30.03.2022 | Double tree hotel | Ports & Transport Department |
| 2. | Workshop organized by Agriculture, Farmers Welfare and Co-operation Department, Government of Gujarat | 04.04.2022 | Shree Tribhuvandas Patel Sahkar Bhavan | Agriculture, Farmers Welfare and Co-operation Department, Government of Gujarat |
| 3. | Brainstorming for 5 Trillion economy - Renewable Energy Sector | 04.04.2022 | Virtual conference | Energy & Petrochemical Dept., Climate Change Dept. |
| | Brainstorming for 5 Trillion economy - Renewable Energy Sector | 05.04.2022 | Pandit Deendayal Energy University | |
| 4. | Working out the Strategy of Gujarat for Making India a USD 5 Trillion Economy” With Focus on Health Care, Medical Service and Nutrition | 06.04.2022 | Syndicate Hall, Gujarat University | Health & Family Welfare Department |
| 5. | Stakeholder Consultation Meet on Role of Healthcare sector in boosting state’s economy to achieve USD 5 Trillion Indian Economy | 06.04.2022 | Auditorium Building, GMERS Medical College Hospital campus, Gandhinagar | Health & Family Welfare Department |

| S. No. | Name of workshop | Date | Location | Nodal Agency |
|--------|---|------------|---|---|
| 6. | Stakeholders' Consultative Workshop on "Working out the Strategy of MSME & manufacturing of Gujarat towards achieving India's target of USD 5 trillion economy" | 07.04.2022 | Saurashtra University | Industries & Mines Department |
| 7. | Stakeholder consultative workshop on Desert Economy sector | 11.04.2022 | Kachchh University | Panchayat, Rural Housing and Rural Development Department |
| 8. | Round table meet on the role of disruptive technologies- A step towards making India a USD 5 trillion economy | 11.04.2022 | GTU Chandkheda | Education Dept., Science and Technology Department, Industries & Mines Department |
| 9. | Stakeholder Consultative workshop on Tourism & Hospitality Sector | 12.04.2022 | IIIT-Surat and VNSGU | Industries & Mines Department |
| 10. | Stakeholder Consultative workshop on Natural Resources and Forest Produces | 12.04.2022 | Birsa Munda Tribal University | Forest & Environment Department |
| 11. | Working out the Strategy of Gujarat for Making India a USD 5 Trillion Economy" in the context of Rural Economy | 13.04.2022 | Maharaja Krushkumarsinghji Bhavnagar University | Panchayat, Rural Housing and Rural Development Department |
| 12. | Stakeholder Consultative workshop on Blue Economy | 13.04.2022 | Gujarat Maritime University | Ports & Transport Department |
| 13. | Stakeholder Consultative workshop on Sports sector | - | Swarnim Gujarat Sports University | Sports, Youth and Cultural Activities Department |
| 14. | Stakeholder Consultative workshop on Education Sector | | L.D. College of Engineering | Education Department |
| 15. | Stakeholder Consultative workshop on IT / ITeS | 23.04.2022 | IIIT- Surat and IIIT- Vadodara | Science & Technology Department |

The finalized strategy and list interventions were presented to the Task force committee (TFC) meetings held on 16th March 1st April 16th April and 30th April and feedback from the TFC members was sought and accordingly incorporated in this report. Please refer the below figure highlighting agenda of these meetings:

Figure 2: List of TFC meetings and broad agenda of such meetings



Sign offs were taken on the interventions and the draft reports from the task force chairman and the nodal officers for each focus sector as showcased in the sub-section below.

1.3. Consultation with key officers in Gujarat Government

The following Member / Co-opted members of the Task Force Committee had been consulted for this study. Key areas relevant as per the study were mapped with key State departments led by these officials as highlighted in the table below:

| S. No. | Chapter | State Government official | Designation | Department |
|--------|---------------------------------|----------------------------------|-----------------------------------|---|
| 1. | Economic growth ambition | Shri Milind Torawane, IAS | Secretary- Economic Affairs | Finance Department |
| 2. | Agriculture | Shri Punamchand Parmar, IAS Retd | Former Additional Chief Secretary | Agriculture, Farmers Welfare and Cooperation Department |
| | | Shri Mukesh Puri, IAS | Additional Chief Secretary | |
| 3. | Manufacturing | Shri Dr. Rahul Gupta, IAS | Industries Commissioner | Industries Commissionerate |
| 4. | Services | | | |
| 4.1 | IT / ITeS | Shri Vijay Nehra, IAS | Secretary | Science & Technology Department |

| S. No. | Chapter | State Government official | Designation | Department |
|-----------|---|----------------------------|--|--|
| 4.2 | Financial services | Shri Tapan Ray, IAS Retd | Managing Director and Group CEO | GIFT City Co. Ltd. |
| 4.3 | Healthcare | Shri Manoj Aggarwal, IAS | Additional Chief Secretary | Dept of Health & Family Welfare |
| 4.4 | Tourism | Shri Hareet Shukla, IAS | Secretary | Tourism, Devasthanam Management, Civil Aviation & Pilgrimage |
| 4.5 | Real Estate | Shri Rajkumar Beniwal, IAS | Additional CEO | Gujarat Urban Development Mission |
| 5. | Enablers | | | |
| 5.1 | Transport & Logistics (Road, Railway, Port, Airport and Logistics) | Shri M.K. Das, IAS | Additional Chief Secretary | Ports & Transport Department |
| 5.2 | Energy | Smt. Mamta Verma, IAS | Principal Secretary | Energy & Petrochemicals Department |
| 5.3 | Education (Primary & Secondary) and Start-ups | Shri S.J. Haider, IAS | Principal Secretary-Higher & Technical Education | Education Department |
| 5.4 | Skill development | Smt. Anju Sharma, IAS | Principal Secretary | Labour, Skill Development and Employment Department |
| 6. | Resource mobilization | Shri Milind Torawane, IAS | Secretary-Economic Affairs | Finance Department |

Guiding inputs from these officials have been also incorporated in this study report.

1.4. Report coverage

Chapter 2: Economic growth ambition for Gujarat:

This chapter discusses about India's vision of becoming a USD 5 trillion economy and how Gujarat based on its historic performance needs to perform to contribute to this vision

Chapter 3, 4, and 5: Agriculture, Manufacturing and Services

These chapters discuss about the economic overview, economic growth ambition, identification of key focus sectors / winners, and recommend strategic interventions to achieve the aspirational growth targets.

Chapter 6: Enablers

This chapter discusses about the key strategic interventions required related the key enablers i.e., Transport infrastructure & logistics, Energy and Education, Skilling & Startup ecosystem development.

Chapter 6: Implementation roadmap

This chapter highlights the key strategic interventions for each of the focus sector / sub-sector opportunities identified.

Chapter 7: Financing high growth trajectory

This chapter discusses the recommendations around budget prioritization and allocation of the state to enable each of the economic drivers contribute and help the state achieve the stated target.



2.

Economic growth ambition
for Gujarat

2. Economic growth ambition for Gujarat

2.1. India's vision of USD 5 trillion economy

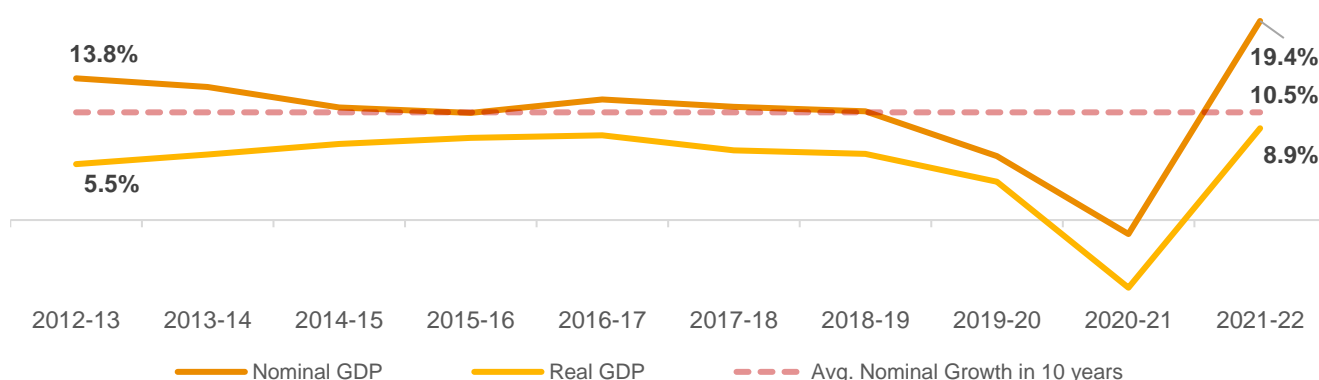
India is currently the sixth largest economy in the World with GDP of USD 2.6 trillion in 2020 in current USD (or in nominal terms)²⁶. While United States (\$20.9 tn), China (\$14.7 tn), Japan (\$5 tn), Germany (\$3.8 tn) and United Kingdom (\$2.7 tn) are ahead of the Indian economy, robust growth in the last three decades has helped the country in improving its World ranking from 12th in 1990 to 6th in 2020.

In the year 2020-21, COVID-19 impacted both lives and livelihood globally and India was no different. Indian economy contracted by 6.6 percent in 2020-21 in real terms. The economy in 2021-22 bounced back and grew at 8.9 percent real growth making it among the fastest growing large economies in the World. International Monetary Fund (IMF) in its April 2022 World Economic Outlook has projected India to grow at 8.2 percent in 2022-23 and 6.9 percent in 2023-24 in real terms.

While economies globally are recovering from pandemic, the war in Ukraine has generated uncertainty towards speedy recovery. IMF in April 2022 downgraded World GDP growth for 2022 by 0.8 percentage points (in real terms) relative to the projections made in January 2022 for the same year. Ukraine together with Russia are one of the leading producers of several agricultural products and inputs such as wheat, maize, sunflower seeds and oil and gas. War in Ukraine and consequent sanctions on Russia has impacted prices globally especially for food and impacted production of several commodities contingent on inputs from Russia and Ukraine. Disruption in supply of agriculture commodities from Ukraine has also led to other countries putting restrictions on export of substitutes to control prices in domestic markets (e.g., Indonesia bans on palm oil exports).

Despite these challenges, India is confident in achieving the target of USD 5 trillion economy by 2026-27 in nominal terms. This is due to the performance of the economy despite several headwinds and its future potential. In nominal terms, the Indian economy has grown at annual average growth rate of 10.5 percent between 2012-13 to 2021-22. If it continues with the same growth, which seems possible, India will achieve USD 5 trillion GDP in nominal terms by 2026-27. The key assumptions that would play an essential role for India to meet its target are: (i) No further major outbreak of COVID-19 (ii) Oil prices to remain around USD 100 a barrel over the medium term, (iii) the USD exchange rate remain stable around 76.4, (iv) Exports continue to remain buoyant, (v) India continues to attract FDI to fill the resource gap for investments

Figure 3: India's GDP Growth (Nominal and Real) in percentage



Source: National Accounts Statistics, Ministry of Statistics and Programme Implementation, Government of India

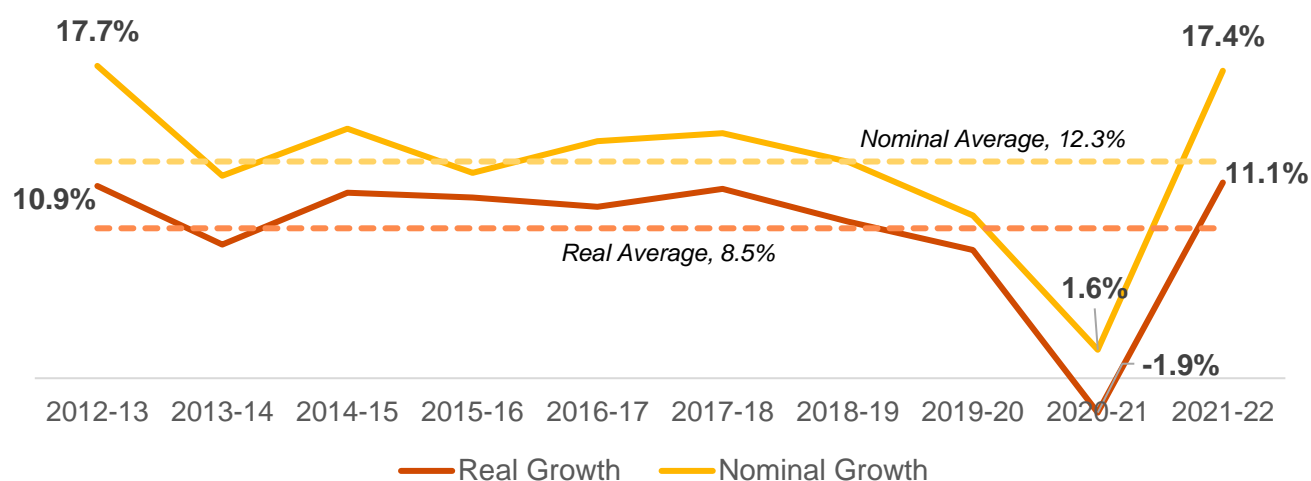
²⁶ The year 2020 refers to 2020-21.

2.2. Historical growth of Gujarat and its contribution to Indian economy

India's achievement of USD 5 trillion target by 2026-27 in nominal terms would be contingent on growth prospects at the State level. Five states, i.e., Gujarat, Tamil Nadu, Maharashtra, Uttar Pradesh, and Karnataka constitute approximately 49 percent of GDP in 2020-21 in nominal terms. Therefore, the economic performance of these five states would have significant bearings on overall performance of the country. All five states have grown at an average annual nominal growth of nearly 10 percent or more during the pre-COVID period (2012-13 to 2019-20) and have strong potential to grow at a rapid pace in the coming years.

Gujarat with a GSDP of USD 216.74 billion in 2020-21 in nominal terms constituted 8.36 percent of India's GDP in 2020-21 at 2.59 USD trillion. Gujarat has grown at an average annual nominal growth rate of 12.3 percent between 2012-13 and 2021-22, despite the wrath of the Covid-19 pandemic (Figure 4).

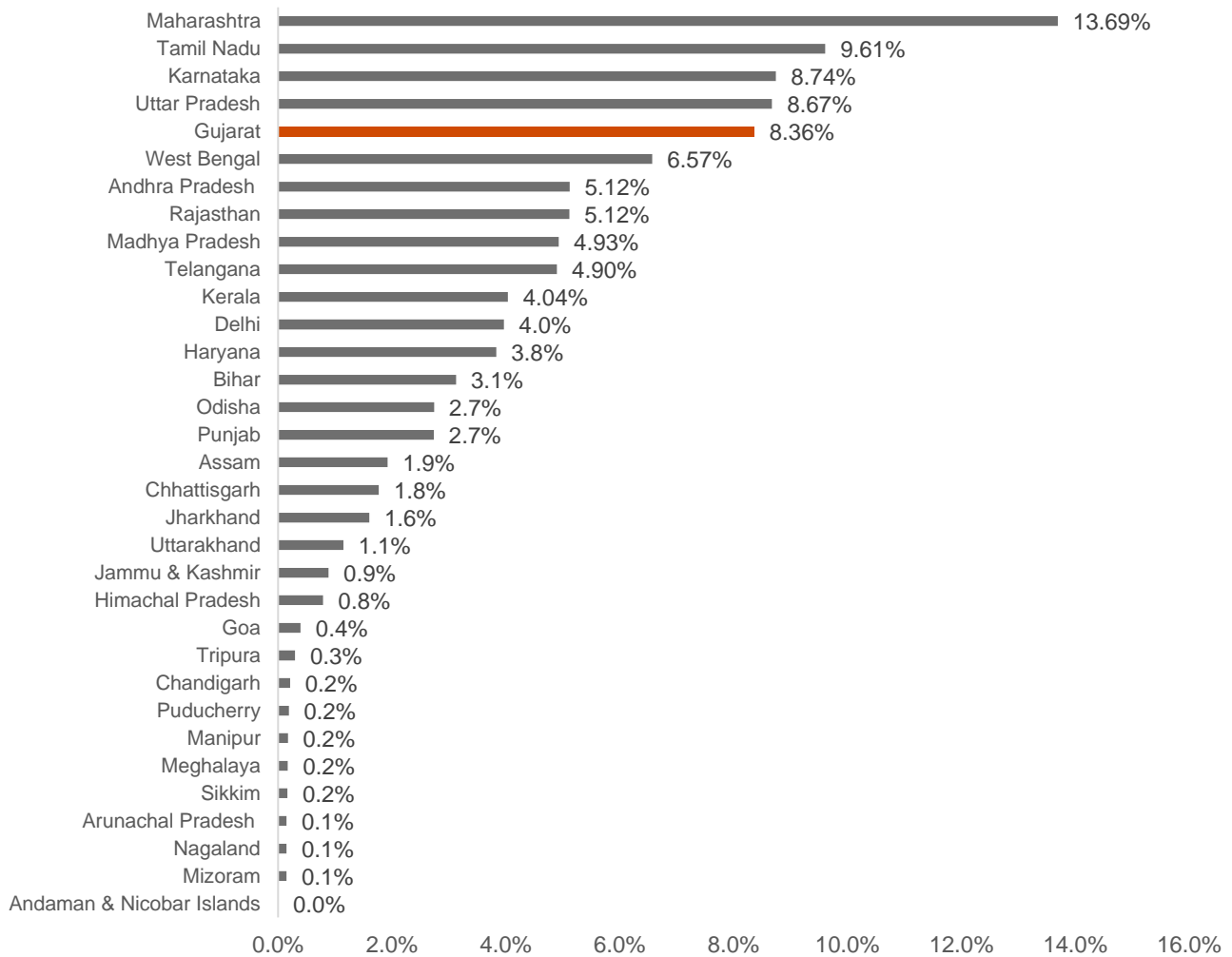
Figure 4: Gujarat's GSDP growth in real and nominal terms between 2012-13 to 2021-22



Source: Directorate of Economics and Statistics, Gujarat

As illustrated in Figure 5, in 2020-21, Gujarat was the fifth largest state in terms of its share in India's GDP. Uttar Pradesh, Karnataka, Tamil Nadu, and Maharashtra have higher GDP size than Gujarat. Different states have different growth drivers and opportunities. While demand side data on private consumption and gross fixed capital formation at the state level is not available for the states, supply side data do suggest difference in economic structure. While Maharashtra possess strong financial and real estate sector, Karnataka has strong IT/ITES sector. Similarly, Tamil Nadu has sizeable automobile sector and auto ancillary industries. Uttar Pradesh is large in terms of population, area and has strong consumption base with untapped potential in manufacturing, and agriculture which would create economic spillover benefits for services. Gujarat, on the other hand, has significant manufacturing base and exporting industries. Manufacturing contributed more than 35 percent of Gujarat's GSVA in 2021-22 which is among the highest in India. Therefore, opportunities to accelerate growth for different states would be dependent on existing economic structure, geographical advantages and infrastructure. In the subsequent section, we shall discuss in detail the sectoral growth drivers in Gujarat.

Figure 5: State-wise GSDP share in India GDP 2020-21, Nominal



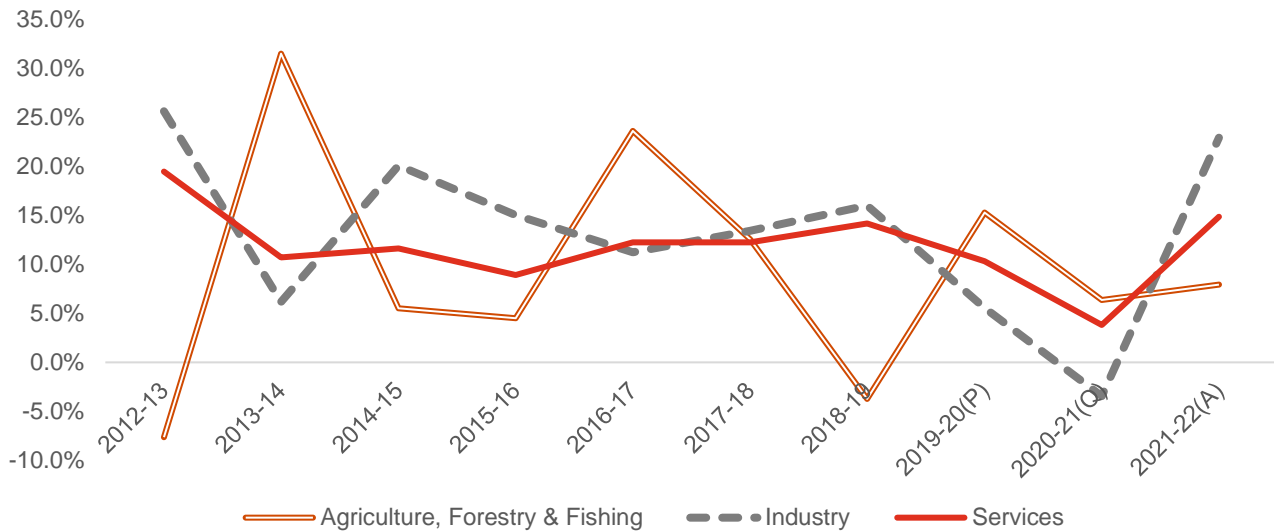
Source: National Accounts Statistics, Ministry of Statistics and Programme Implementation

In nominal terms, agriculture, forestry and fishing has grown at 9.6 percent during the period 2012-13 to 2021-22. On the other hand, industry sector has grown at approximately double the rate at 13.3 percent and services sector at 11.8 percent during the same period.

The services sector has been more stable than industry and agriculture and allied activities. Except COVID-19 affected years (2020-21 and 2021-22), the industry sector grew in nominal terms in the range of 6 percent to 26 percent (Figure 6). Similarly, services sector grew in nominal terms in the range of 9 percent to 19 percent reflecting more stability. On the other hand, agriculture, fishing and forestry sector grew in nominal terms in the range of (- 8) percent to 31 percent. It shows the volatility in the agriculture, fishing and forestry sector which could be due to overplay of exogenous factors like nature. While the agriculture, fishing and forestry sector share in overall GSDP is low, it does employ a large workforce (46.4 percent in 2019-20²⁷), therefore, measures to moderate such uncertainty would be critical for sustainable growth in the future.

²⁷ Source: Periodic Labour Force Survey, 2019-20

Figure 6: Sector wise Nominal Growth, 2012-13 to 2021-22 (in percentage)

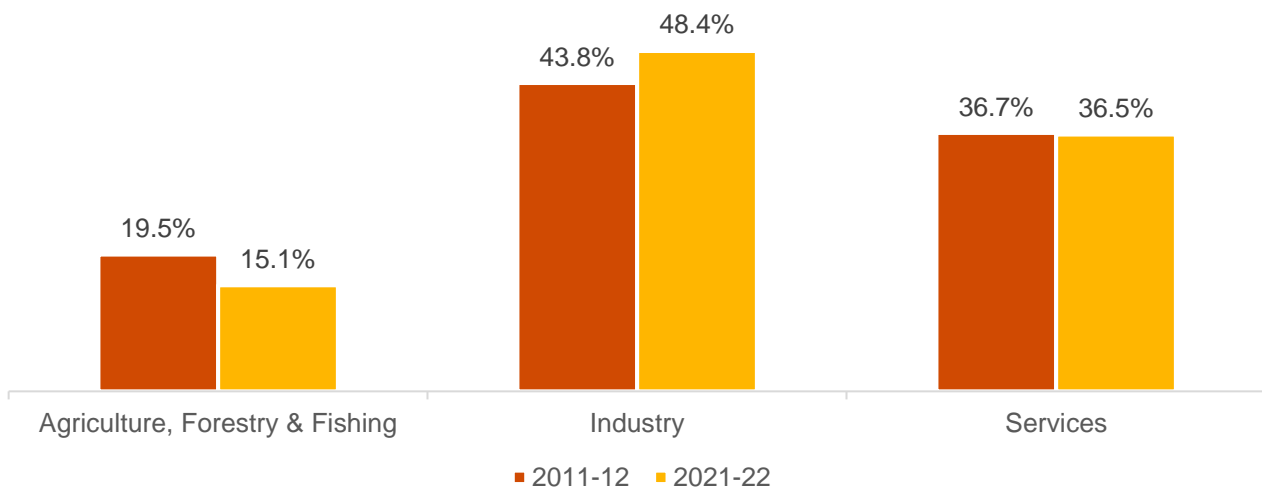


Source: Directorate of Economics and Statistics, Gujarat

Composition of GSVA

In the last 10 years, the state has witnessed a positive structural transformation. Share of Industry has increased significantly owing to massive effort of the government to make Gujarat the industrial hub of the country. While the Industry share has increased from 43.8 percent to 48.4 percent, Service sector share has remained more or less stagnant over this period.

Figure 7: Sectoral Share in GSVA in nominal terms (2011-12 and 2021-22), in percentage



Source: Directorate of Economics and Statistics, Gujarat

Gujarat's next phase of growth would come from the Services. Highly industrialized nature of the State economy would generate the thrust for the demand of more services. However, pro-active actions will also be required to attract investment in some of the services sector like Banking, Financial Services, Insurance, IT and ITes, Tourism, organised retail etc. It is discussed in detail in the service sector section of the report.

2.3. Economic growth ambition of Gujarat: A USD 500 billion economy by 2026-27

In order to become a USD 500 billion economy by 2026-27 in nominal terms, Gujarat has to attain a higher growth in Industry and services sector. As shown in Table 2, in the last 10 years in nominal terms, agriculture, forestry and fishing sector has grown at 9.6 percent average rate, while industry and services sector grew at 13.3 percent and 11.8 percent respectively.

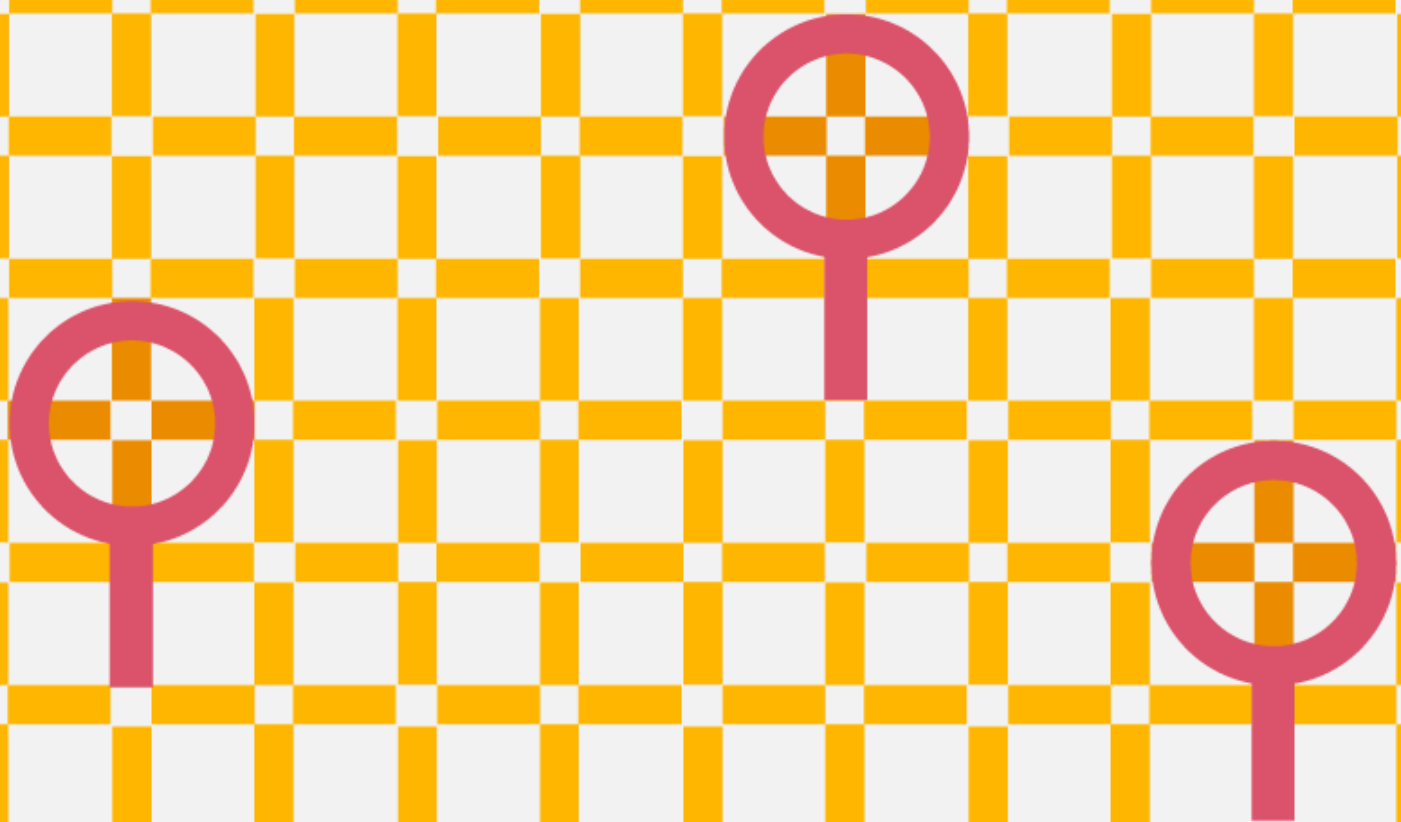
Table 2: Sector wise growth requirement until 2026-27 (Nominal), in percentage

| Sectors | Average Annual Growth Rate (2012-13 to 2021-22) | Required Average annual growth to achieve USD 500 bn by 2026-27 |
|--|---|---|
| Agriculture, Forestry & Fishing Sector | 9.6 | 8.4 |
| Industry Sector | 13.3 | 14.9 |
| <i>Out of which Manufacturing</i> | 14.8 | 16.0 |
| Services Sector | 11.8 | 16.3 |
| GSDP (Nominal) | 12.3 | 14.5 |

We understand that achieving higher growth in agriculture sector maybe a challenge as the sector has achieved significant productivity gain over the last several years. Therefore, we have assumed a slightly lower growth rate than the past trend. On the other hand, industry sector can accelerate its growth further by 1.6 percentage points from 13.3 percent in the last decade to 14.9 percent in coming years. Manufacturing sector could support acceleration in growth in the industry sector with focus on export promotion, improving competitiveness, promoting MSMEs and labour-intensive sectors. Detailed suggestions are provided in the manufacturing sector section.

As per the latest data of Annual Survey of Industries for the year 2018-19, there is approximately one worker per INR 1 crore output produced. While it shows the capital-intensive nature of production in the State which has resulted in higher output, further impetus to growth may come from the sector which could generate higher employment especially in the MSME sector which are labour intensive. That would propel the consumption engine and demand for various other goods and services.

It is important that service sector should pick up and grow at even higher rate than industry sector. Historically, services sector grew at annual average growth of 11.8 percent in the last decade. The Sector has the potential to grow at even higher rate of 16.3 percent. Services sector in 2021-22 constituted (i) Trade, Repair Services and Hotels & Restaurants contributing 12 percent of GSVA, (ii) Transport, Storage, Communication & Services related to broadcasting contributing 5 percent of GSVA, (iii) Financial Services contributing 6 percent, and (iv) Real estate, Ownership of dwelling & Professional services contributing 6 percent of GSVA. As per national accounts statistics 2022, at national level, share of services in private final consumption has gone up from 41 percent to 46 percent in the last 10 years (2011-12 to 2020-21). Similar estimates at the state level are not available. Therefore, it is expected that overtime with increasing purchasing power, demand for services such as professional services, tourism spending, business services, financial services would pick-up in the State and appropriate supply-side interventions can propel growth in the services sector. Detailed suggestions on supply-side of services sectors is provided in the subsequent sections.



3.

Agriculture & allied
activities sector

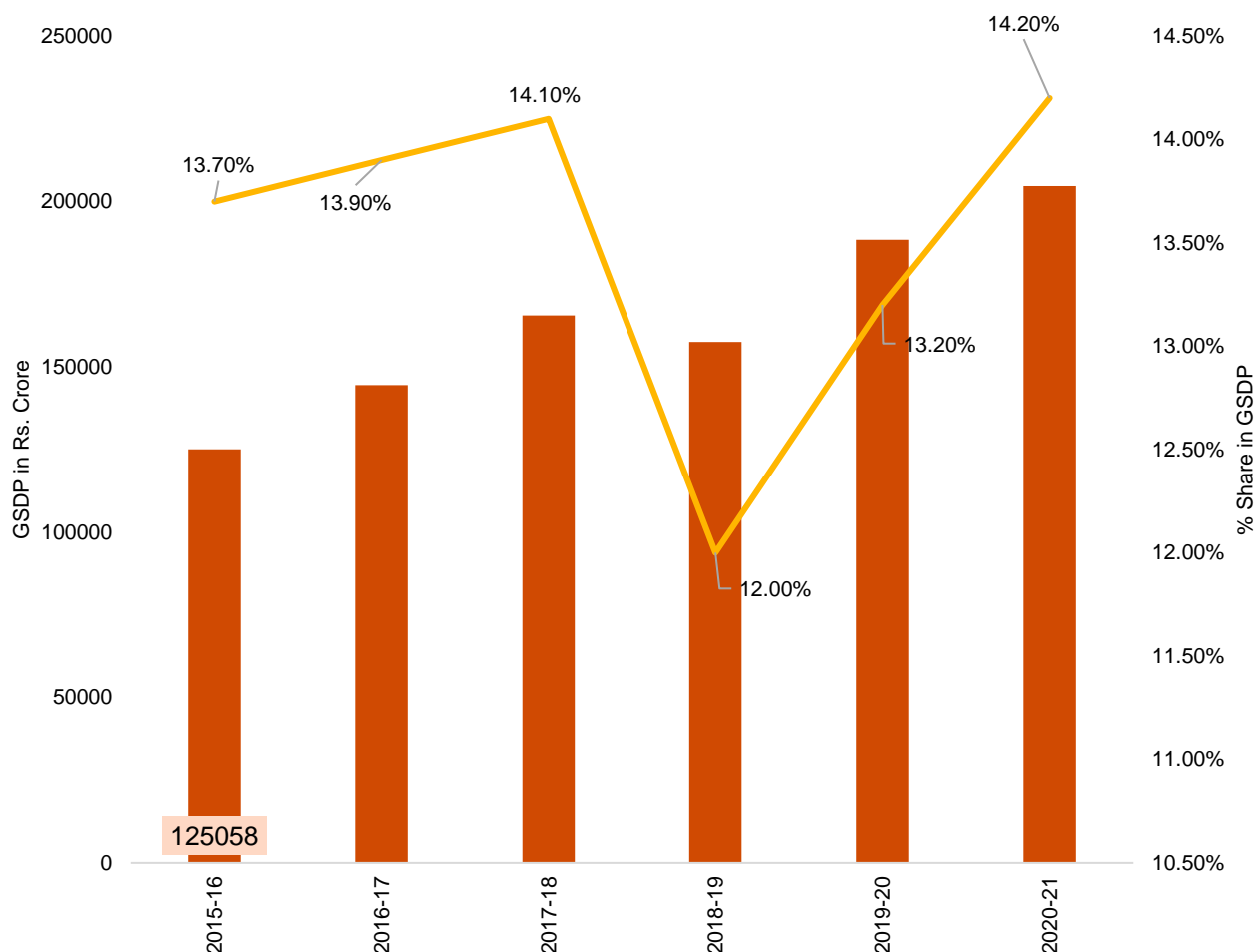
3. Agriculture & allied activities sector

3.1. Overview

Crop and Livestock sector contributes ~15% in state's GSVA reflecting its significance

Contribution of agriculture and allied sector (crop and livestock sub-sector) to state's nominal GSVA has decreased from 17.80% to 14.20% during FY 2011-12 to 2020-21. (Figure 1). One of the major reasons for decline in GSVA could be increase in contribution of other sectors like manufacturing and services compared to agriculture. Another reason for this could be the decline in the net cultivable area by 2% during the same period. However, decrease in net cultivable area may be due to various factors like rapid urbanization, industrialization etc. Crop and Livestock sub-sector has exhibited a CAGR of 7.64% during the last 10 years. Also, the pandemic-related disruptions have significantly reduced the annual growth rate of the sub-sector from 19.65% in 2019-20 to an estimated rate of 8.58% in 2020-21²⁸.

Figure 8: Contribution of Crop and Livestock Sector in State's GSVA at Current Prices



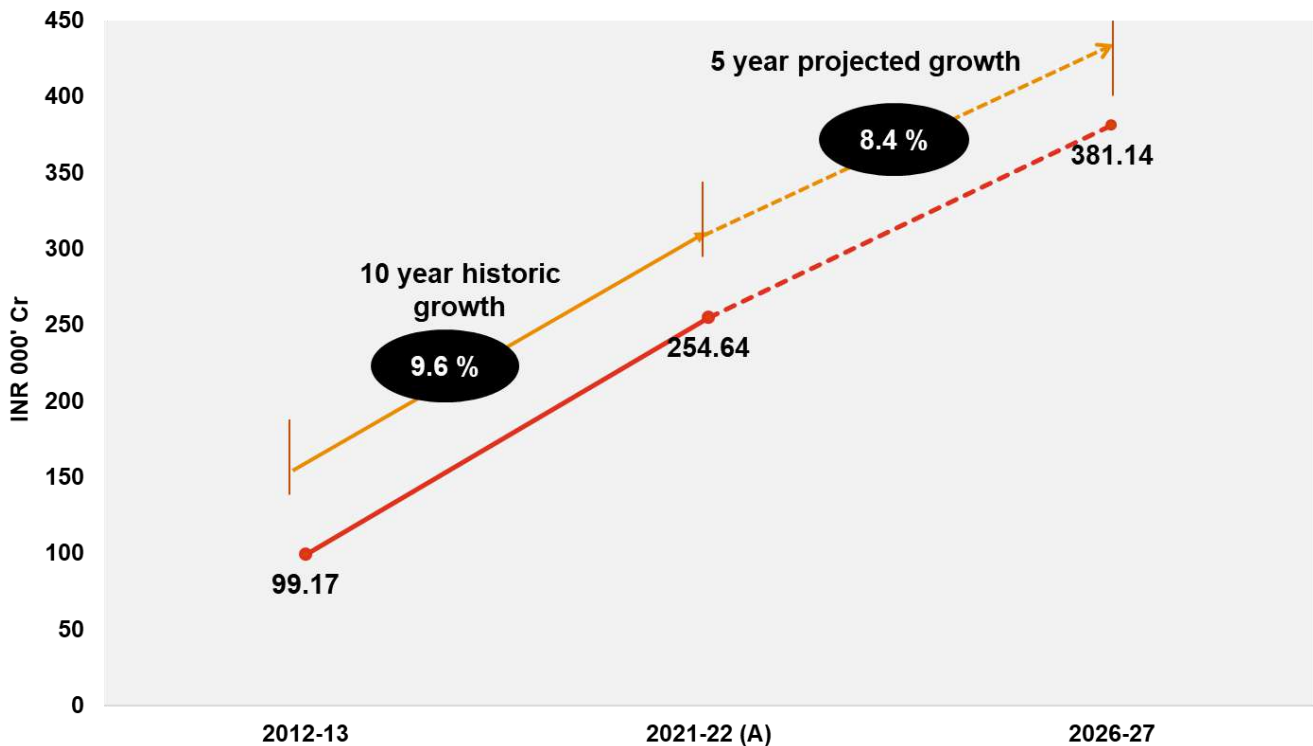
Source: Socio economic Review 2021-22, GoG

²⁸ Statistical Abstract of Gujarat State 2020, GoG

3.2. Growth ambition

To achieve the vision of USD 500 Bn economy by FY 27, it is estimated that Agriculture & Allied Sectors (excluding Mining & Quarrying) nominal GSVA needs to grow at a CAGR of 8.3 % during FY 22 to FY 27.

Figure 9: Historic growth in Agriculture & Allied sector GSVA of Gujarat and projected growth required by FY 27



Source: Statistical Abstract of Gujarat State 2020, GoG

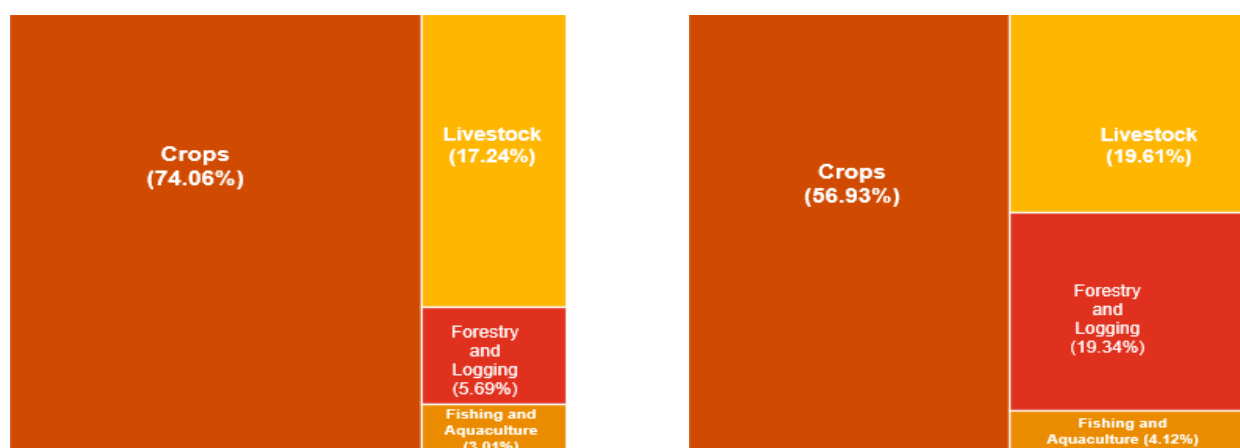
Gujarat's Agriculture and Allied sector (excluding Mining & Quarrying) GSVA was INR 99.17 thousand crore in FY 13. By FY 22, output has grown to INR 254 thousand crore, at an average annual growth rate of 9.6%. The sector GSVA with a growth rate of 8.4% would be INR 381.14 thousand crore by FY 27.

3.3. Identification of focus sectors

Crops sub sector remains as the major contributor over the period. However, the contribution of allied sub sectors has increased during the period

A comparative breakup of the contribution of four constituents of Agriculture and allied sector namely crops livestock, forestry & logging, and fishing & aquaculture has been depicted in Figure 10. The figure highlights the change in the contribution to Gujarat's GSVA at current prices during the FY 2011-12 to 2018-19. It is observed that the contribution of livestock, forestry & logging and fishing & aquaculture has increased while that of crops has decreased during FY 2012-19. This reflects the scope of allied sectors to augment the contribution of the sector to the state's GDSP. It is also important to note that the crops sector also includes horticulture sub-sector which has grown over this period. This indicates that the sectoral contribution from grains sector has decreased by more than 17%.

Figure 10: Sectoral contribution to Gujarat's GVA (2011-12) at current prices



Source: Statistical Abstract of Gujarat State 2020, GoG

While there needs to be a continuous effort for promoting the existing sectors, a focus shift shall be required for channelized efforts in horticulture, fisheries, milk and milk production and other similar high value-added sectors.

3.4. Growth opportunities & challenges

Production trends of Agriculture and allied sectors

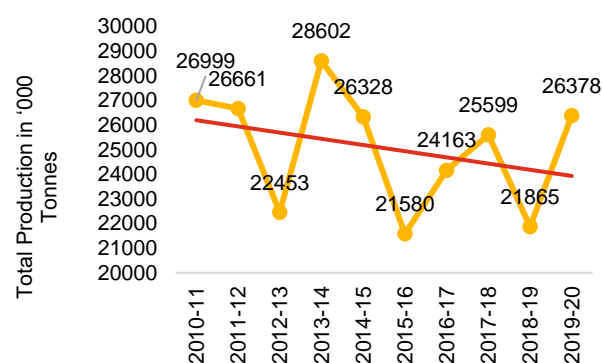
Contribution of Agriculture & Allied sector to Gujarat's Real GSVA aligns with national trend. However, there is stagnation in production of Agricultural crops which reflects the need for diversification

Among the sub-sectors, the crops subsector includes both agricultural and horticultural crops. Agriculture sector of Gujarat is the largest producer of Cotton and Groundnut in India. As a major producer of groundnut, Gujarat accounted for 45.99 % of the total groundnut production in India in the year 2019-20 and 43% in the year 2018-19. Gujarat is also the largest producer of Castor in the world.

Production trends in Agriculture crops

Figure 11 depicts that the total production of agricultural crops in Gujarat has remained almost stagnant during the period from 2011 to 2020. In fact, the production in FY 2019-20 is less than that in FY 2010-11. Decline in the net cultivable area, limited availability of irrigation and fragmentation of land could be the major reason for the stagnation. Also, despite having largely fertile land, as compared to the productivity of food grain in Punjab (4519 kg/ha), Haryana (3891 kg/ha) or agriculture intensive states of Andhra Pradesh (3038 kg/ha) and Tamil Nadu (2988 kg/ha), the productivity in Gujarat is 2236 kg/ha which is less than national food grain productivity of 2325 kg/ha. The productivity of groundnut and cotton in Gujarat are higher than that of national level. However, it is lower than the top performing state, indicating the scope for improvement. The detailed analysis is given in Annexure 2.

Figure 11: Production of Agricultural Crops in Gujarat



Source: Socio economic Review 2021-22, GoG

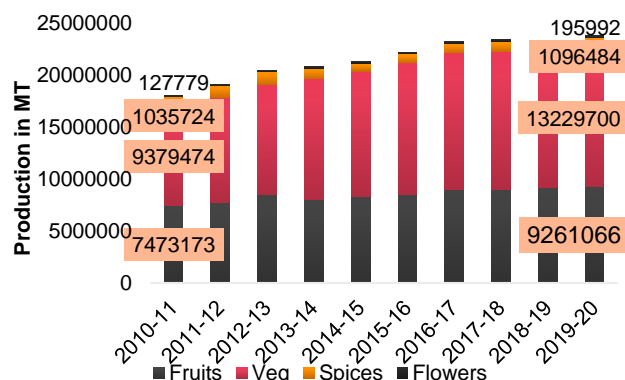
Production trends in Horticulture crops

However, an increasing trend is observed in the production graphs of horticulture during the period FY2011-20. The CAGR of the total horticulture production in the state is 3.13 % with 2.41% for fruits, 3.90% for vegetables, 0.64% for spices and 4.87% for flowers. Various schemes under the National Horticulture Mission have functioned as an impetus for the growth of the sector. In 2021, the state also announced a scheme called Mukhyamantri Bagayat Vikas Mission', which aims at allotment of unproductive lands to farmers, organizations, individuals, or partnership firms for cultivation²⁹.

There is a significant increase in the state share of spices at the national level from 8% in 2018-19. Also, the area under new and exotic fruit crops viz. Tissue Culture Date Palm, Dragon Fruit and Strawberry is increasing day by day.

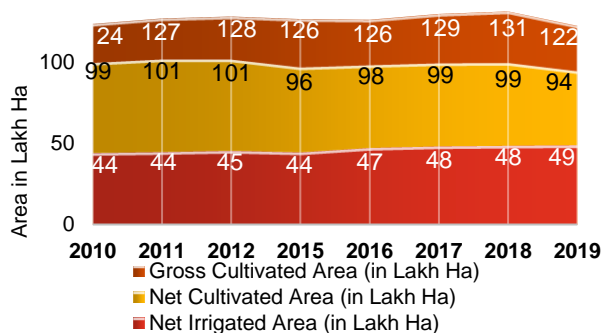
One of the major reasons for production related issues in agriculture and horticulture crops is decrease in gross and net cultivated area. Figure 6 highlights that the gross and net cultivated area have declined in the state over the years from FY 2010-11 to 2018-19, which could be a reason for the fall in contribution of agriculture to GSVA of Gujarat. However, the net irrigated area has increased steadily during the same period, which highlights the efforts of the government to ensure accessibility of water to agricultural farms.

Figure 12: Production Trend in Horticultural Crops



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

Figure 13: Land Utilization Pattern for Agriculture



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

²⁹ Mission launched for horticulture push, The Times of India, Jan 20, 2021

Production trends in Fisheries

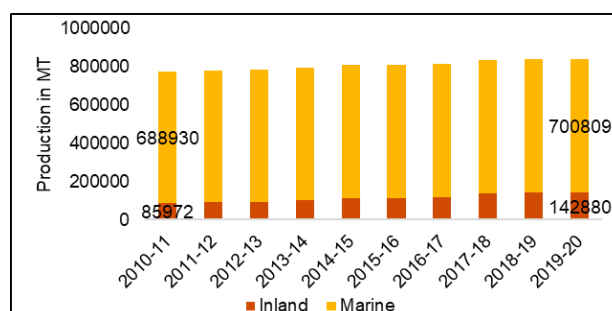
Gujarat, being a state with huge coastal area covering 1/5th part of India, has been the top producer of marine fish in the country. It accounted for 6% of total fish production in India in 2019-20 with 19% of marine and 2% of inland production. During the period FY2011-12 to 2019-20, the total production of fish in Gujarat has grown at a CAGR of 1.14%. However, it is less than the CAGR of fish production at the national level (6.22%). Moreover, the CAGR of inland fish production (6.96%) as well as the marine fish production (0.19%) of Gujarat are less than the CAGR of inland fish production (8.57%) and the marine fish production (1.53%) of India. This reflects the need to augment the growth of the sector with dedicated efforts to promote inland fisheries. The state is also a major exporter of fish from India. During 2019-20, the state had exported 279751 tonnes of fish and fish products, earning a foreign exchange of ₹5,019.48 crore. There is huge potential for the fisheries sector of Gujarat to increase their share in export market of fish and fish products³⁰.

Production trends in Milk and milk products

Gujarat is the 5th largest milk producer in India accounting for 7.7% of milk produced in the country during 2019-20. The state is one of the major milk processors in India and owns a highly organised dairy sector with 19522 co-operative milk societies in the State.

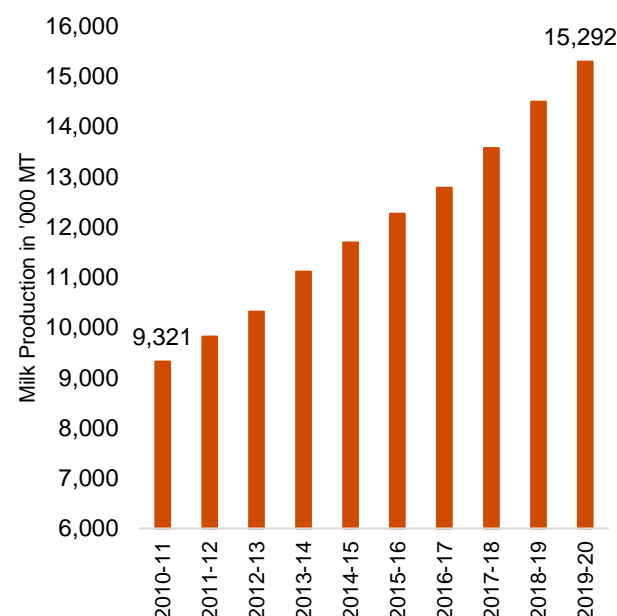
The Anand Pattern Cooperative Societies is widely accepted model across the country. During the year 2019-20, per day 203.43 lakh litres milk has been received in 22 Co-operative dairy plants whose per day capacity was 262.63 lakh litres milk³¹. Amul Dairy is Asia's biggest dairy and has been ranked 8th largest milk processor in the world by the International Farm Comparison Network (IFCN), a global dairy research network. During the period FY2011-20, the total production of milk in Gujarat has grown at a CAGR of 5.7% which is aligned with the national CAGR of 5.6%. However, the share of Gujarat in export of milk from India was 19% in 2019-20 which is much less than that of Maharashtra (28%), the leading exporter from India. This reflects the untapped potential of dairy sector of Gujarat.

Figure 14: Production Trend in Fisheries



Source: Statistical Abstract of Gujarat State 2020, GoG

Figure 15: Production Trend in Milk



Source: Statistical Abstract of Gujarat State 2020, GoG

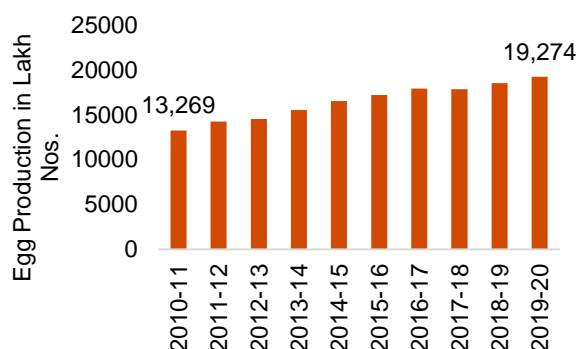
³¹ State Focus Paper 2022-2023, NABARD

Production trends in Egg

The egg production in Gujarat State during 2019-20 was 19274 lakh eggs, showing an increase of 3.93% over the previous year's production of 18544 lakh eggs. The share of the State towards the total egg production in the country is only 1.69%.

. The GoI is focused on promotion of improved desi poultry. This approach could provide opportunity for small farmers, especially weaker sections, to derive benefit out of poultry production and promote inclusive growth. In Gujarat, 22% poultry eggs come from desi eggs, so promotion of backyard poultry farms with low input technology birds in the light of incentives available under GoI scheme, would act as an impetus to improve the growth of the sector.

Figure 16: Production Trend in Egg



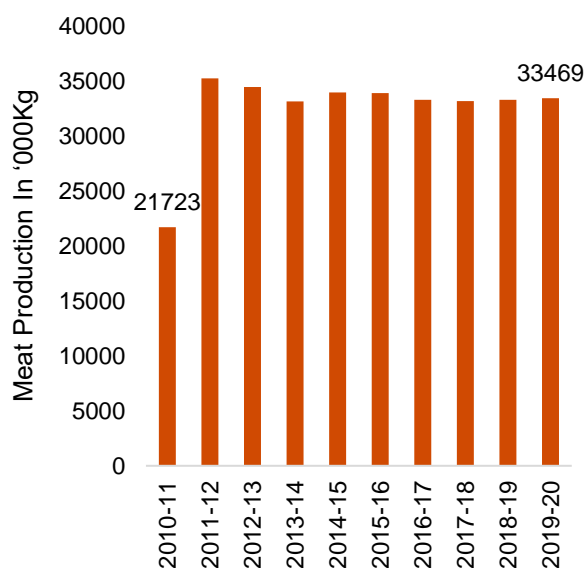
Source: Statistical Abstract of Gujarat State 2020, GoG

Production trends in Meat

The Overall meat production in Gujarat (including Livestock Meat & Poultry Meat) during 2019-20 was 33469 metric tonnes, excluding the production at unregistered slaughterhouses, showing an increase of 0.42% over the previous year's production of 33329 metric tonnes. Though there is a slight increase in meat production, the contribution of the state to national production is only 0.4%. Also, the CAGR of meat production in the state during FY 2011- 12 to 2019 - 20 was 4.9% which is lower than India's CAGR of 6.4%. However, there is a great opportunity for the industry to grow with the changing eating habits and behavior of consumers in the State and to contribute to the growth of GSVA.

Based on the current scenario and potential of agriculture, sub sectors of **horticulture, poultry, dairy, and fisheries has been identified as precursor for agricultural sector growth.**

Figure 17: Production Trend in Meat



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

Existing Government schemes / support

Government of Gujarat is carrying out several programmes to support the farmers. However, more focused efforts are required towards modern agricultural practices and agri-allied sectors

Agriculture holds a very important position in the socio-economic structure of Gujarat as more than 40% of the State population is directly or indirectly dependent on it for their livelihood. It is a diversified agricultural economy, and has witnessed a shift towards high value crops like cotton, groundnuts, fruits and vegetables. Some of the key initiatives of the Gujarat Government in the field of agriculture and food are mentioned below:

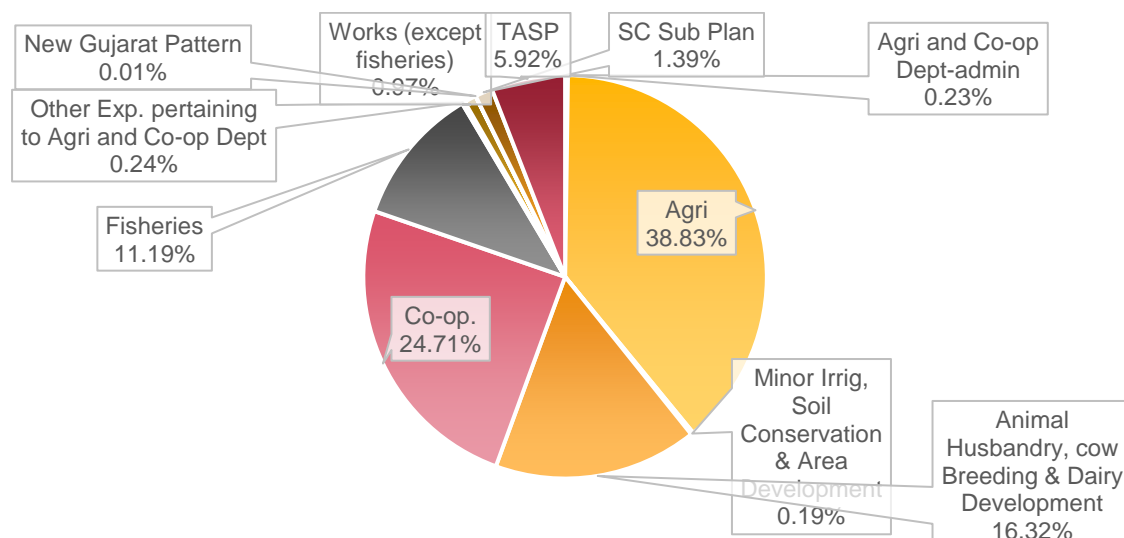
1. Gujarat has been one of the few states which has started a large-scale Soil Health Card Programme. The state has so far analyzed more than 86 lakh farmers' soil samples and distributed soil health cards to farmers in cycle II of the Soil Health Card scheme.
2. Realizing the importance of horticulture in agriculture growth, the state has formed the "Gujarat State Horticultural Mission (GSHM)" for growth in the field of horticulture through development of post-harvest infrastructure and marketing facilities. The Mission covered about 21 districts in the state with a major focus on Mango, Chikoo, Amla, Banana, Papaya, Lime, Cumin, Fennel, Flowers, Medicinal and Aromatic crops. Remaining districts have been covered by the state fund.
3. Under Indo-Israel collaboration, the state has set up 6 Centre of Excellence (CoE) and 4 new CoE are under formation. These centres provide training and financial support for the use of technology to enhance production and quality of horticultural crops.
4. Realizing the importance of good quality seeds for higher productivity and production in the agriculture sector the state is committed to provide quality seeds to the farmers. The Gujarat State Seeds Corporation Limited has so distributed about 3.05 lakh quintals seeds worth 248.27 INR in 2020-21.
5. The State has identified Agro & Food Processing Industries as one of the thrust industries and is committed to accelerate the development of Agro based industries in the state. State has launched Mukhya Mantri Crop Storage Yojana which aids with setting up small godowns on farm to reduce post-harvest losses. Assistance of Rs.29.21 crore provided for 12571 crop storage structures in the year 2020-21.
6. One of the initiatives of the state government to reduce post-harvest losses and double farmer income was launch of Kisan Parivahan Yojana which aids farmers for the purchase of vehicles to market their produce.
7. The state has given due attention to accelerate the pace of water resources development to increase the net water availability by creating additional storage, improvement in water use efficiency, bridge the gap between the irrigation potential created and its utilization, restoration and modernization of old irrigation system, participation in water conservation programmes among other initiative to save, conserve and judiciously use water for crop irrigation.
8. Another initiative of the state government is Mukhyamantri Kisan Sahay Yojana, under which farmers suffering from any Kharif crop loss due to drought, excessive rainfall or unseasonal rain, will get compensation without paying any premium.
9. The state has recognized the need for increasing water use efficiency through micro irrigation systems; and is implementing the Micro Irrigation Scheme through the Gujarat Green Revolution Company. Under Pradhan Mantri Krishi Sichayi Yojana, the government has provided irrigation in 1.02 lakh ha in 2020-21.

In continuation to this growth process, **Government of Gujarat aims at a holistic and sustainable growth of agriculture and food sector.** The State in line with the national vision of doubling farmer's income, increasing agricultural productivity and production, reducing wastage across the supply chain and ensuring food security for all.

In the state budget of FY 22-23, provision of ₹7736.29 crore for Agriculture, Farmers Welfare and Cooperation Department, out of which 39% (₹3003.68 crore) has been allocated to Agriculture department schemes, 25% (₹1911.30 crore) to Cooperative department, 16% (₹1263.47 crore) to Animal Husbandry department, 11% (₹865.28) to Fisheries department etc.

Out of the provision of ₹7736.29 crore, ₹5613.45 crore has been allocated for outcome-based schemes. ₹4877.55 crore has been for state funded schemes, ₹733.86 crore, and ₹2.04 crore for centrally sponsored schemes. Out of ₹4877.55 crore, INR 1000 crore is allocated for Financial Assistant to Farmers for Interest Subvention, which is about 21% of the state funded schemes. Government may introduce more sustainable interventions to reduce the burden of state expenditure.

Figure 18: Allocation of State Agriculture, Farmers Welfare and Cooperation Department Budget 22-23



Source: Outcome Budget, 2022-2023, GoG

Agriculture & Cooperation department along with the other concerned departments has already been working on the development of the agriculture sector and also ensuring food security in the state. Some of the present initiatives of the Government of Gujarat and its alignment with the strategies proposed are detailed in **Annexure 2**.

3.5. Growth strategy

The Gujarat State Government may adopt following five thematic areas for the overall improvement and growth of the agricultural and allied sectors:

- Incremental growth to efficient growth** through (1) Scientific and timely use of high-quality seeds planting material, (2) Har khet ko pani: Increasing the net irrigated area, (3) Improving farm mechanization level, (4) Improving crop intensity and (5) Increased push on extension programmes such as Krushi Mahotsav etc.
- Innovation and disruptions:** Creating disruptions in the current agricultural practices through innovations to improve the share of agriculture and horticulture in the state GSVA.
- Market orientation and processing:** Strengthening the marketing and processing infrastructure of the state to ensure better price realization and improved value addition.
- Shift towards diversification** by increasing the share of horticulture, dairying, fisheries, poultry, and goat & sheep sub sectors.
- Agribusiness Extension Bureau:** Setting up of a separate division/cell on the lines of iNDEXTb for promotion of investment in agribusiness and food processing.

1. Incremental growth to efficient growth

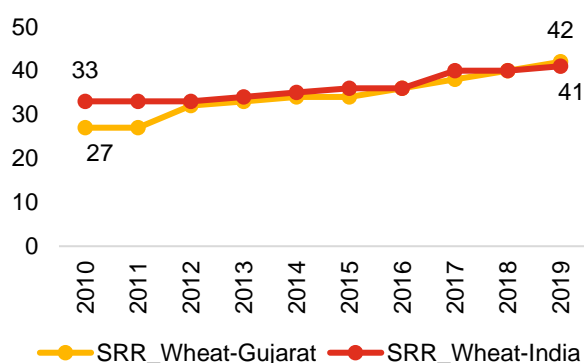
To achieve efficient growth, improving the Seed Replacement Ratio (SRR) & cropping intensity and promotion of micro irrigation & farm mechanization are inevitable

It is evident from the studies that there is a strong association between agricultural prices and agriculture growth. However, it reflects that if agricultural prices do not rise faster than other prices, then the growth rate of agriculture is likely to fall, which then becomes a major cause for agrarian distress and would have adverse effect on the overall economic growth. Thus, there arises a need to sustain agricultural growth limiting the food price inflation within the acceptable limits and to incentivize farmers to increase production without draining the pockets of consumers³². The solution seems to be shift in strategy from incremental growth to efficient growth and it requires scientific and timely use of high-quality seeds and planting material and improving the seed replacement ratio, har khet ko pani: Increasing the net irrigated area, improving farm mechanization level, improving crop intensity and increased push on extension programmes such as Krushi Mahotsav etc.

Seed:

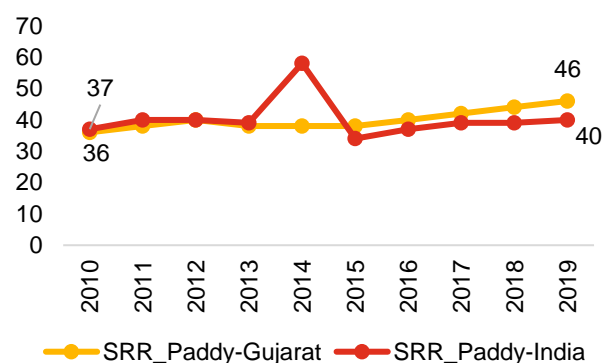
One of the most critical factors for enhancing agricultural production is quality seed. It is estimated that direct contribution of quality seed alone to the total production is about 15-20 percent, depending upon the crop.³³

Seed Replacement Ratio (SRR) of Wheat



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

Seed Replacement Ratio (SRR) of Paddy



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

The **Seed Replacement Ratio (SRR)** of wheat and paddy in Gujarat is almost at par with national average while that of groundnut is less than national average. Apart from these efforts, there is also scope for improvements in the areas such as reducing cost of seed and the storage losses, improving the efficiency of conversion of breeder seed to certified seed and availability of quality seeds, creating awareness about benefits of quality seed, increasing participation of the private seed sector.

³² Transforming Agriculture for Challenges of 21st Century, Ramesh Chand, 2019

³³ Optimizing Seed Replacement Rates in Jharkhand: Present Scenario, Challenges and Opportunities

Action plan

- To formulate and notify an Agriculture Seed Policy with an objective to attract both public and private sector investments in the areas of seeds.
- To increase production of certified seed in the State Agriculture Farm and seed villages.
- To augment the centralized procurement by Gujarat State Seeds Corporation Ltd, popularly known by its brand name "GURABINI" for better and timely seed supply
- To improve the genetic potential of the various crops especially ones with high industry demand by means of releasing new (processable) varieties and hybrids in association with agricultural, food processing and business management universities.
- To strengthen seed distribution system through establishment of agriculture business centres & krishi clinics along with PACS & LAMPS in each district.

Seed production and its supply

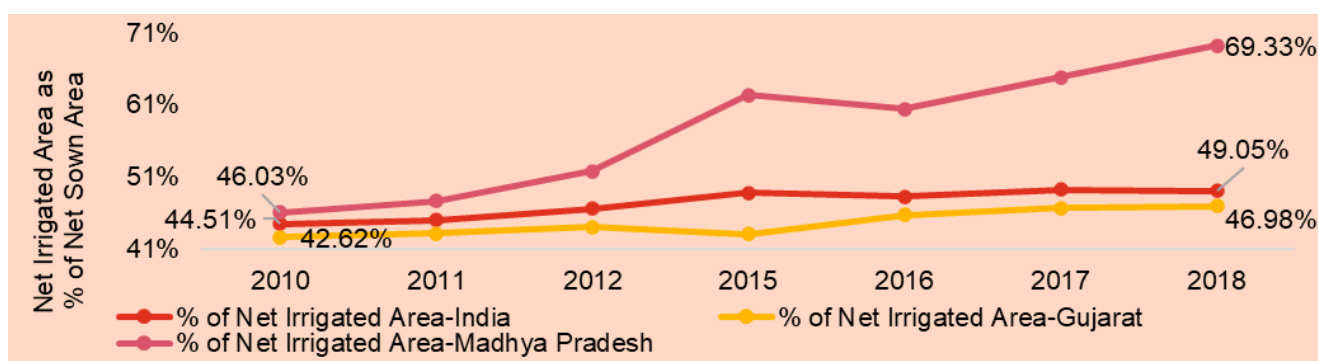
- Collaboration with various state agricultural universities and research centers need to be strengthened for supply of improved variety of seeds developed in the recent past.
- Production of certified seeds should be increased, and demand estimation survey should be conducted at proper periods for proper demand planning.
- The supply chain of GSSC needs to be revamped to ensure timely availability of seeds in the sowing season
- Also, government owned seed processing units need to be refurbished to increase supply as well as improve the accessibility of farmers to good quality seeds at reasonable price

Irrigation:

Crop productivity is critically dependent on irrigation, and irrigation application at critical stages of crop is inevitable. The State receives average annual rainfall of 1137 mm (in 2020) and the ultimate irrigation potential through surface water is assessed at 48.68 lakh hectares which includes 18.45 lakh hectares through Sardar Sarovar (Narmada) Project. Also, it is estimated that about 22.59 lakh hectares can be irrigated through ground water resources. Thus, total ultimate irrigation potential through surface and ground water is estimated to be 71.27 lakh hectares.

The government is already carrying out several initiatives to meet the irrigation requirement of the state. Gujarat Water Users Participatory Irrigation Management Act 2007 was passed to cover maximum possible command area under Participatory Irrigation Management and under the scheme, 3406 Water Users Associations have been covered as on 30 September 2020. Also, Micro Irrigation Scheme is being implemented in the state by the Gujarat Green Revolution Company since 2005 and as on November 2020, 19.48 lakh Ha area have been covered under the scheme.

Figure 20: % of Net Irrigated Area



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

Rainfed agriculture is prevalent in the State and it faces the challenge of frequent droughts caused by low and erratic rainfall leading to wide variation in production and productivity. The State has about **47% net irrigated** area which is almost at par with national **average of 49%** out of the net sown area; however, it is significantly less than the best performing state, Madhya Pradesh with 69% net irrigated area. The State looks forward to significantly improve the net irrigated area and move towards irrigated agriculture to decrease the climate dependency of farmers.

In the backdrop of undulating topography of the State and rainfed agriculture, micro irrigation system is the most suited practice. State is promoting micro-irrigation techniques (drip irrigation, sprinklers) to increase water use efficiency and apply water soluble fertilizers (fertigation) efficiently through assistance from Central Government.

Action plan

To increase crop productivity and bringing in more fallow land under cultivation, the State should put more focus towards increasing net irrigated area. To ensure national vision of **har khet ko pani**, Gujarat may:

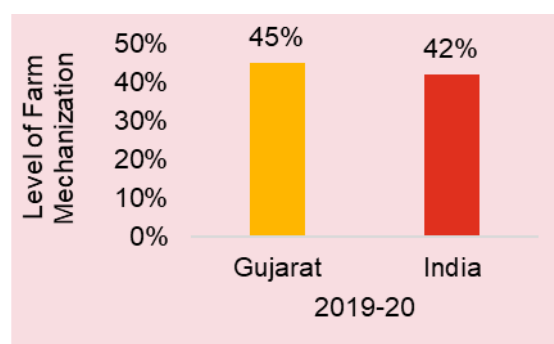
- Provide water assurance through completion of the ongoing activities for creation of several minor-, medium- and long-term irrigation projects.
- Increase the irrigation acreage in rainfed areas through development of micro-level water resources.
- Increase area under micro irrigation through effective implementation of Pradhan Mantri Krishi Sinchai Yojana (PMKSY).
- Support construction of rainwater harvesting structures like farm pond/ dobha and farm bund in all villages.

Farm mechanization:

One of the major aspects of agricultural production is the use of agriculture machinery for crop cultivation, harvesting and post harvesting. The State should focus on increasing the use of different agricultural machinery to reduce the time spent in various crop cultivation processes and to also bring in increased efficiency in the sector.

The average farm power availability in the state is **2.56 kW/ha** which is higher than **national average of 1.73 kW/ha**. However, there is huge potential for farm mechanization in the state.

Figure 21: Level of Farm Mechanization



Source: Agriculture, Farmer Welfare and Cooperation Department, GoG

Action plan

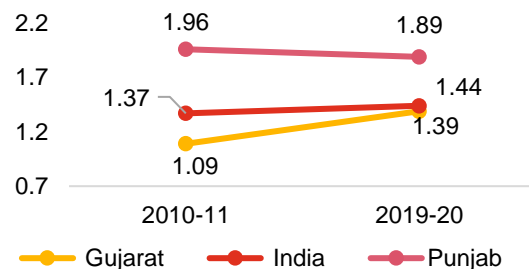
The state is committed to increase mechanization in agriculture to increase efficiency and to reduce human drudgery. This may be attained through:

- Establishment of small agriculture equipment bank at panchayat level through Women SHG and large agriculture equipment bank at Block level which would act as custom hiring centre.
- Continuation of distribution of equipment on subsidized rate to promote farm mechanization.

Cropping intensity:

The State of Gujarat has a cropping intensity of about 1.39 against national average of about 1.44. This is attributed to multiple factors as the hydrology is different at varied parts of Gujarat and the irrigated area is less than national average, the availability of farm machines is less with only one tractor available for 150 hectares of land and the use of fertilizers is less³⁴.

Figure 22: Cropping Intensity



Source: State Focus Paper 2022-2023, NABARD

Action plan

- Introduction of intercropping and sequence cropping pattern to harvest higher yield and more economic return.
- Growing of low water guzzling crop with short duration variety.
- Increase in irrigation potential to provide water at critical stages of irrigation.
- Promotion of usage of Zero till seed cum fertilizer drill to save time to utilize left over moisture for cultivation of succeeding crop in Rabi season.
- Introduction of multiple cropping with one catch crop/ relay crop between two main crops.
- Selection of short duration crop variety for Kharif as well as Rabi season to accommodate double crop
- Conversion of fallow land into cultivable land.

2. Innovation & disruptions

Adoption of innovative and disruptive measures like crop specific precision agriculture, satellite mapping, Integrated Nutrient Management (INM) and Integrated Pest Management (IPM) are necessary for sustainable agriculture with increased productivity

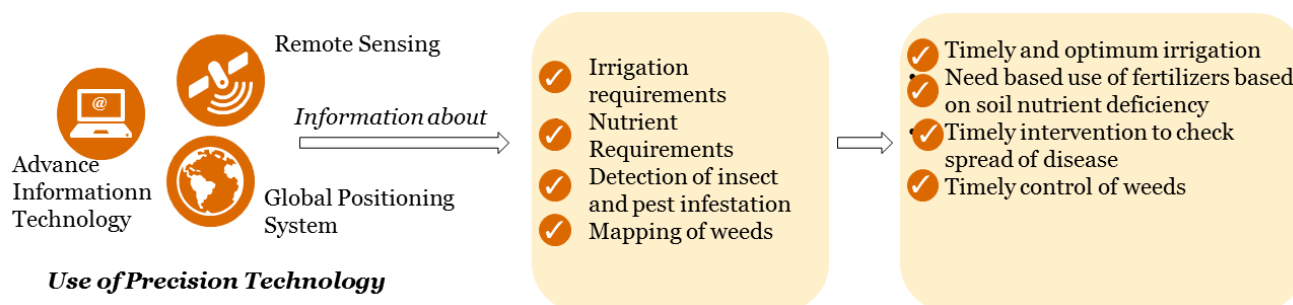
Technological advancement is the key to success for increasing crop productivity with limited natural resources. In Gujarat, there is great opportunity to increase the technology adoption by farmers, which is currently low due to lack of awareness among the farmers and poor access to research institutes.

Adoption of crop specific precision agriculture practices:

Promoting the practice of Precision Agriculture is critical for efficient growth of the sector and for improving the contribution of the sector to the GSDP. Towards this, Government shall plan to pilot the **precision agriculture** in different agro climatic zones of the state with the help of State Agriculture University/ private players and then roll out in the entire State. Precision Agriculture is an approach to farming which identifies the critical factors that determine the growth of the plant/crop. These critical factors stretch right across the various developmental stages of the crop. For instance, some of the factors affecting the growth of the crops are time of sowing/planting, soil health, nutritional status of the soil, availability of water for the crops, pest and insect infestation level etc. The current agricultural scenario in India is majorly characterized by traditional farming

³⁴ Cropping Intensity: Methods and Spatial Pattern – UPSC, Lotus Arise, March 11, 2021

techniques and the introduction of precision agriculture will not only help in increased productivity but will also help in sustainability of the agriculture sector.



Moreover, the incorporation of innovative technology like high-resolution, multispectral satellite or aerial imagery, robotics, artificial intelligence, machine learning, and computer vision algorithms with precision agriculture helps in precise and timely data collection and its translation into management solutions for crop health and improved production targets. It also facilitates the post-harvest management decisions like procurement, processing & storage and assessment of extent and intensity of crop damage for insurance claims. Thus, these innovations would help in developing an effective data management system resulting in efficient planning.

Action plan

| Project Name: Precision Agriculture | |
|---|---|
| Strategy to be covered: Phase wise introduction of area into precision agriculture | |
| Related indicator Increase in Productivity Net sown area under Precision Agriculture | |
| Timeline for execution: Five-year (2022-2023 to 2026-2027) | Location: Across select locations in Gujarat |
| Description: Around 4.69 lakh hectares (5% of the net sown area as of 2019) will be brought under Precision Agriculture within 5years. The project will include training of extension officer about Precision Agriculture, training to farmers about precision agriculture, provision of high-quality seeds and other agricultural inputs. The project will also include frequent agriculture extension services to the farmer with respect to the time of agricultural inputs such as use of seeds, fertilizers, plant protection chemicals, water etc. | |
| Projection of Agriculture Production Value of Gujarat: Projected increase in the value of agriculture produces in 2026-27 through adoption of precision in agriculture is USD 0.38 Bn / INR 2954 Crores | |

Integrated Nutrient Management (INM) and Integrated Pest Management techniques (IPM):

Crop management is of crucial importance which influences the crop growth and crop productivity. Further, crop management techniques also affect the environment through discharge of chemical fertilizers used for crop nutrition and pesticides used of crop protection. Care needs to be taken that current crop management techniques are sustainable and aims at the providing the best practices without negatively affecting the environment. In such a scenario there needs to an increased focus on crop specific INM and IPM.

3. Market orientation and processing

Strengthening the marketing and processing systems/ infrastructure of the state would lead to better price realization by farmers and reduced price spread between farm and fork

Market orientation is a business approach which reflects the extent to which production and marketing decisions are based on market information and needs and desires of consumers. Agriculture, being agribusiness, need to align its production and marketing decisions with the requirements of the processing sector to ensure better demand. Also, an efficient marketing system provides better prices to producers and improve the availability of competitively priced produce to consumers. However, agri-markets mostly fail to provide remunerative prices to producers, resulting in distress. While farmers complain of low farm harvest prices, consumers complain of high retail prices and both groups suffer from wide price spread between farm and fork³². Strengthening the marketing infrastructure of the state is essential to narrow the price spread and to ensure better price realization.

Promote weekly markets during the harvest season, at locations distant from regulated agriculture markets, e-NAM integration and e-commerce platform to increase farmers' access:

Farmers often face marketing problems especially in the harvest season when there is a huge supply in the market. Farmers resort to practices such as distress selling which render the producer with losses for his produce. In such cases, during the harvest season, weekly markets or mandis could be organized in areas that are distant from the regulated markets to increase the farmer's access to markets and help them realize optimum prices for their produce. Also, Rural Haats should be promoted to bring ease for small and marginal farmers to market their produce.

Out of the 224 APMCs in the state, only 122 APMC mandis are on e-NAM portal. In addition, farmers do not get full benefit of e-NAM due to lack of collection points at the village level, leading to the farmers carrying their produce to the market. Collection points may be established at village level to facilitate farmer to sell his produce without the hassle of carrying produce to the mandis. Also, the one-nation-one-agri-market initiative of e-NAM should be promoted across all major mandis in the state and the services in e-NAM should be extended to certification of commodities through technological innovations along with trading.

Produce from natural farming technique has high demand in the market. E-commerce platform like Amazon, Flipkart, Big basket, Grofers etc. may be used to market farmers' produce like cereals, vegetables, fruits and dairy products at premium price.

Formation of Farmer Produce Organization (FPOs):

Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India has identified Farmer Producer Organization as the most appropriate institutional form to mobilize farmers and build their capacity to collectively leverage their production and marketing strength. The primary objective of mobilizing farmers into member-owned producer organizations, or FPOs, is to enhance production, productivity, and profitability of farmers. Moreover, a specific FPO policy for continuous handholding and support of FPOs after initial funding need to be developed by the state. The Gujarat State Government should aim at creating crop specific FPOs with specific focus towards its market linkage. FPO-industry interaction should be strengthened with focus on promoting processable varieties. Minimal processing infrastructure for sorting, grading and packaging will boost farmers income.

Develop integrated storage (dry and cold) network across the state with a common ICT based information platform to access updated information about space availability:

Cold storages require huge initial capital and has high operation and maintenance cost. The cold storages need to be sufficiently utilized throughout the year to offset the costs incurred in maintaining the cold storage. It thus becomes essential to have an updated information about the space availability in cold storages across the

state. This will help cold storages users (private traders, farmers, cooperatives, and FPO, other local trade groups) to utilise the available space and store their produce to increase the shelf life of their produce. This can be successfully achieved by developing an integrated storage network through ICT so that information about location wise space availability is visible to potential users of cold storage facilities. The integrated storage network should also include details of dry storage facilities.

Develop Integrated Cold Chain Network:

Gujarat currently has about 38.22 lakh metric tonnes (MT) of cold storage capacity and is ranked second in the country in terms of total cold storage capacity. The state government must further increase the total cold storage capacity and develop an integrated cold chain network which involves pre-cooling units, cold storages, pack houses, refrigerated trucks, ripening units, etc. Further, the government also needs to focus on use of renewable energy such as solar energy and biomass energy to generate electricity to run the cold storage facilities. This will help in reducing dependence of conventional energy sources and help Gujarat promote and contribute towards sustainability and environment friendliness.

Moreover, the state may encourage accreditation and registration of godowns/cold storages to facilitate Small and Marginal Farmers to keep their produce against Negotiable Warehouse Receipt.

Develop agro & food processing clusters and establish integrated food processing parks catering to entire value chain to reduce wastage:

The state needs to give particular focus to develop major food processing cluster and integrated food processing parks to increase food processing in the state. Creation of modern post-harvest infrastructure with a high-tech value addition centre and a cold storage engaged in grading, sorting and packing of agricultural and horticultural produces are necessary to promote the sale of produce at national as well as international market. The raw materials produced from farms can directly be sent to these centers for processing which will help in wastage reduction, ensure assured market for farmers and value addition of produce.

4. Shift towards diversification

Diversification towards horticulture, fisheries & poultry and strengthening dairying sector by improving cattle productivity & promotion of exports would augment the share of the sector in State's GSVA

The Economic Survey 2021-22 states that growth in allied sectors including livestock, dairying and fisheries has been the major drivers of overall growth in the sector. Increasing importance of allied sectors including animal husbandry, dairying and fisheries in growth and income of the farmers indicates that focus needs to shift more towards harnessing the potential of allied activities. The allied sectors have been stable sources of income across groups of agricultural households accounting for about 15 % of the average monthly income³⁵. The Economic Survey 2021-22 also pitches need to promote crop diversification towards horticulture, pulses and oilseeds by the governments addressing the core issues of irrigation, investment, credit, and markets linkage.

Horticulture:

Demand for high value commodities is increasing rapidly with the rising per capita income, growing urbanization, and unfolding globalization. The cultivable land resource of the State has good potential for higher production of horticulture products. Many high value agriculture activities such as horticulture, dairy, apiary, mushroom cultivation and animal husbandry generates good income.

The agro-climatic conditions in Gujarat are very conducive for development of various horticulture crops. In the state, while horticulture crops cover only 14% share in area, it contributes to about 40 % share in the overall farm income. The major horticulture crops of the State are, fruit crops like Mango, Sapota, Banana, Aonla and

³⁵ Centre needs to prioritize crop diversification, allied sectors, promote alternative fertilizers: Economic Survey, The Economic Times, Jan 31, 2022

Dates, vegetables like Okra, Beans, Cucurbits, Onion, Potato, spices like Cumin, Fennel, Chilly, Coriander, Garlic and flower crops like Rose, Lily, Marigold, Jasmine and Tuberose. Tissue Culture Date Palm, Dragon Fruit, Strawberry, Grape, Cashew nut, Aloe Vera and Palmarosa are emerging as potential new crops in suitable areas of the state.

There is good export potential for horticulture crops from the states and the major commodities being exported from the State are Banana, Mango, Cumin, Fennel, Isabgol and Onion.

Action plan

- Promote premium fruit crops of the state through area expansion programme with adequate backward and forward linkages and establishment of crop clusters. Dry land horticulture of suitable crops like Mango, Sapota, Ber, Guava, Custard Apple, Date Palm, Amla, spice crops like Cumin, Fennel etc. and high-density orchards of processable varieties of crops like mango, guava, pomegranate, etc. with high industry demand need to be promoted by the government.
- Collaboration with producer groups, research institutes, processing industries and management institutes need to be ensured to popularize such package of practices and to provide technical assistance and extension services.
- Promote low-cost nursery models for horticultural crops in villages to ensure quality planting material available at affordable prices to the farmers.
- Promote formation of FIGs, FPOs/FPCs and linking farmers to market for high value crops through systems like contract farming.
- State government initiative to build on-farm storage structure is vital to reduce post-harvest losses; however, only INR 12.65 crore with a target of around 500 structures has been allocated for FY 22-23. The Government should increase the target of such schemes to reap maximum benefits across the state.

Project Name: Increase in Share of Horticulture in GSDP through Crop Diversification, Promotion of Export and Reduction in Post-Harvest Losses

Strategy to be covered:

- Crop diversification from field crops to Potato, Onion, Mango, Dragon fruit, Strawberry
- Increase in productivity by High Density Planting, increase net irrigated area, availability of quality planting material through tissue culture, hi-tech nursery etc.
- Increase in share of Export of horticultural produce from Gujarat by 20% from export in 2020-21
- Reduction in post-harvest losses of horticulture produce by 2%
- Crop diversification of 60,000 Ha. (including cultivable fallow land and land under field crops) to horticultural crops

Related indicator

- Increase in export of horticulture from Gujarat
- Increase in share of horticulture sector in State's GSVA

Timeline for execution: Five-year (2022-2023 to 2026-2027)

Location: Across select locations in Gujarat

Projection of Horticulture Production Value of Gujarat:

Projected increase in the value of horticulture produces in 2026-27 through crop diversification, increase in productivity & share of export and reduction in post-harvest losses is USD 4.28 Bn / INR 32923 Crores

Fisheries:

Fisheries sector in Gujarat is characterized by both Marine and Inland fishery resources. There is coastal length of 1,600 km., continental shelf of 1.84 lakh sq. km., 121 fish landing centers and more than 65,300 families' together in marine fisheries, reflecting the importance of fisheries in the State. Moreover, Gujarat has emerged as a leading fish exporting state in the country. The state promotes and supports the needs of fisheries sector through Fish Farmers Development Agency and Brackish Water Fish Farmers Development Agency. However, the growth rate of the inland and marine fisheries sector of the state are less than that of the respective sectors at national level, reflecting the need to augment the growth of the sector with dedicated efforts.

Action plan

- a. Gujarat government shall develop incentive plans to promote the utilization of zero earning saline affected water-logged land for fish or shrimp farming. The successful model of Punjab can be referred for devising the plan.
- b. The state may facilitate deep sea and cage fishing for improving the production of marine fisheries
- c. There is huge potential for augmenting production of Inland fisheries through species diversification, horizontal and vertical expansion, adoption of new technology like RAS, biofloc, etc., and promotion of cage fishing and shrimp production
- d. The 'Aqua zone' model of Andhra Pradesh can be introduced in the state with required adaptations to promote aqua cluster development and to streamline aquaculture development in the state by more closely regulating land and water use.
- e. For improvement in the Fisheries sector, the priority areas of investment (Government/ Private/ PPP) are strengthening of marketing arrangements, multi storage cold chains, drying units and renovation of old fishponds and additional infrastructural requirements for aquaculture farms such as supply of potable water, electricity and road connectivity. Creation and expansion of harbors and promotion of export-oriented infrastructure near the ports would act as an impetus for fisheries production and export supply chain of fish products
- f. Setting up of modern fish market, multi storage cold chain, auction halls and landing places is necessary to keep fish in hygienic condition till it reaches consumers. Also, establishment of organized market centers with storage facilities in potential areas shall assist fish farmers in realizing remunerative prices
- g. Many brackish water aquaculture farms in the state are in marshy remote areas and establishment of well-connected road, potable water; electricity lines to these areas are needed to strengthen the farms.
- h. Gujarat government may carryout extension activities to familiarize the benefits of insurance amongst the fishing community or subsidize the insurance premium for fisheries.
- i. To ensure easy credit availability in the sector, appropriate risk mitigation measures needed to be adopted. Moreover, there is a need to integrate credit and insurance on the line of Pradhan Mantri Fasal Bima Yojana under fisheries sector for the safety of the farmers as well as the banking institutions.

Fish seed production and its regulation

- Only INR 12.10 crore has been allocated for fish seed production and inland fisheries resources (in non-tribal area) by the Commissioner of Fisheries. As in recent past we have seen that fisheries farm is facing shortage of seeds, hence government should allocate more fund towards seeds production.
- The state may devise extensive policy for regular supply of quality seeds of freshwater fish and freshwater prawns to the farmers. The policy shall ensure support to and incentive for producer organizations / private players in establishing commercial seed hatchery units and small inland fish feed mills.
- The government should promote stocking of advanced fish seed fingerlings in all potential in land water bodies.
- Quality aquaculture seed is most important for enhancement of aquaculture production & productivity. So, to prevent unethical and illegal practices on production of spurious aquaculture seed and to implement Quality Control measures in Aquaculture Seed Business in the state, the government may enact and implement Act like “Andhra Pradesh Aquaculture Seed (Quality Control) (Amendment) Act 2020. Also, similar measures need to be taken to ensure quality control in fish feed, which accounts for 60% of the operational cost in Aquaculture

Project Name: Increase in Share of Fisheries in GSDP through Promotion of Inland Fisheries and Modernization of Infrastructure for Capture & Culture Fisheries

Strategy to be covered:

- Phase wise Increase in Production of Fisheries from Gujarat by ~5% Y-o-Y during 2019-20 to 2026-2027
- Creation and modernization of infrastructure for capture & culture fisheries
- Promotion of inland fisheries through government schemes
- Establishment of fish brood tanks in States for quality fish seed production
- Increase in export of fish products from Gujarat
- Establishment of fishing harbors

Related indicator

- Increase in production of fish from Gujarat
- Increase in share of fisheries sector in State's GSVA

Timeline for execution: Five-year (2022-2023 to 2026-2027)

Location: Across select locations in Gujarat

Projection of Fisheries Production Value of Gujarat:

Projected increase in the value of fisheries produces in 2026-27 through promotion of inland fisheries and modernization of infrastructure for capture & culture fisheries is USD 0.69 Bn / INR 5307 Crores

Animal husbandry-dairying;

The animal husbandry sector of Gujarat plays a vital role in GSDP of the state by contributing about 5.08 % share to it. Moreover, the state has a huge livestock population of 26.9 Million. Gujarat is also famous for high yielding indigenous breeds of cattle and buffaloes including Gir and Kankrej breed of Cattle and Mahesani, Jafarabadi and Banni breeds of buffaloes. However, deficiency of feed and fodder followed by inadequate breeding and reproduction and increasing diseases among animals have emerged as major challenges among livestock farmers. Also, Gujarat's contribution in export of milk from India (19% in 2019-20) is much less than that of Maharashtra (28%), the leading exporter from India, reflecting the untapped potential of dairy sector³⁶.

Action plan

- a. Promote the project under Rastriya Gokul Mission scheme to facilitate establishment of Breed Multiplication Farms through entrepreneurship model, for making available High Genetic Merit heifers of cattle and buffaloes breeds to farmers.
- b. Setting up of a network of Satellite Dairy Farms especially in low performing states to augment milk production and produce better stock through scientific breeding techniques. This can be carried out through collaboration of GLDB with Amul Research and Development Association (ARDA) and National Dairy Development Board (NDDDB). The identified farmers in a panchayat will be provided with one cow each and high energy cattle feed at subsidized rate. The model is expected to evolve into self-sustaining townships, that can be replicated in other districts³⁷.
- c. The state shall devise an incentive plan to attract startups, private investments, or commercial enterprises to venture into the segment and establish such units.
- d. There is a need for concerted efforts and interventions to handle deficit feed and fodder situation in the state on various fronts like proper utilization of rain/river water, development of community gauchar lands either with high yielding fodder varieties or with silvi pastoral systems, silage making units in scarcity blocks etc.
- e. The infrastructure facilities at the veterinary and epidemiology units are required to be strengthened for diagnostic, surveillance and control of emerging pathogenic and zoonotic diseases.
- f. The Gujarat government may plan for a dairy cattle insurance scheme akin to Gol scheme to cover all the districts and the dairy farmers.
- g. The State government must also promote and make arrangement for organizing cattle fair at various location and establishment of specialized cattle markets by APMCs to ensure availability of good quality animals at fair prices.

Project Name: Tapping Export Potential of Dairy Sector: Increase in Share of Dairying in GSDP through Promotion of Export

Strategy to be covered:

- Phase wise Increase in Share of Export of Dairy Products from Gujarat to 25% of India's Projected Export of Dairy Products in 2026-2027
- Measures to improve price competitiveness, productivity and production efficiency, product diversification, integrated value chain management, quality enhancement and adherence to international standards, process innovation and innovative approach in international marketing
- Phase 1 (2022-24) : Tackling domestic challenges ; Phase 2 (2024-25) : Exploring International Market Opportunities ; Phase 3 (2025-27) : Increasing Export

³⁶ APEDA Agri exchange Website

³⁷ KLDB to set up satellite dairy farms, The Hindu, September 02, 2011

Project Name: Tapping Export Potential of Dairy Sector: Increase in Share of Dairying in GSDP through Promotion of Export

Related indicator

- Increase in export of dairy products from Gujarat
- Increase in share of dairy sector in State's GSVA

Timeline for execution: Five-year (2022-2023 to 2026-2027)

Location: Across select locations in Gujarat

Projection of Dairy Production Value of Gujarat:

Projected increase in the export value of dairy products in 2026-27 is USD 0.78 Bn / INR 6038 Crores

Poultry:

Poultry population in the state has registered good growth from 150.05 lakh in 2012 to 217.73 lakh in 2019. The concerted efforts of the government is one of the reasons for the growth. However, in comparison to national average, Gujarat is only having 27 eggs per annum whereas national average is 86 eggs per capita per annum in 2019-20. Per capita meat availability in Gujarat is 491 gm per year against the national average of 6450 gm per year. **Thus, there is a scope to promote the backyard poultry farms with low input technology birds in the light of incentives available under Gol scheme and commercial poultry production to fill the existing gap in egg and meat production.** Increasing productivity and production is the major objective of the state to reach to self-sufficiency.

Action plan

- a. By collaborating with National Cooperative Development Corporation, a policy should be devised for promotion of backyard and commercial poultry cooperative in the state. The cooperatives shall focus on establishment of cluster of poultry units and backyard poultry farms with low input technology birds by society and its members, assistance to societies for infrastructure such as incubators, hatcheries, poultry dressing units and accessories, marketing of products, financial assistance to societies and imparting training to the members³⁸.
- b. The Gujarat government may plan for a poultry insurance scheme with low premium and organize extension activities to create awareness among famers regarding the same.
- c. The infrastructure facilities at the veterinary and epidemiology units for poultry are required to be strengthened for diagnostic, surveillance and control of emerging pathogenic and zoonotic diseases including mobile services.
- d. Ensure availability of quality concentrated poultry feed free of toxins to provide balanced ratio at affordable prices.
- e. Promote value chain management approach through formation of Farmer Interest Groups, Farmer Producer Organizations, Producer Company and linking farmers to market & commercial buyers through systems like contract farming.
- f. Training and support in the form of genetic stocks and improved technologies, scientific advice, extension, particularly on bio-security measures such as spacing between the sheds, system of housing, vaccination schedule, etc.

³⁸ National Cooperative Development Corporation website

Project Name: Increase in Share of Poultry in GSDP through Promotion of Backyard & Commercial Poultry Cooperatives

Strategy to be covered:

- Phase wise Increase in production of egg and poultry meat from Gujarat through:
 - Promotion of Backyard Poultry among rural households
 - Promotion of commercial broiler and layer farms by incentivizing the private players
 - Promotion of improved breeds of layer and broiler
 - Improved veterinary services, feed management, etc.
- Promotion of cooperatives in poultry sector
- Increased domestic/ international trade

Related indicator

- Increase in production of egg and poultry meat from Gujarat
- Increase in share of poultry sector in State's GSVA

Timeline for execution: Five-year (2022-2023 to 2026-2027)

Location: Across select locations in Gujarat

Projection of Poultry Production Value of Gujarat:

Projected increase in share of Poultry in GSDP through promotion of Backyard Poultry Cooperatives in 2026-27 is USD 0.31 Bn / INR 2372 Crores

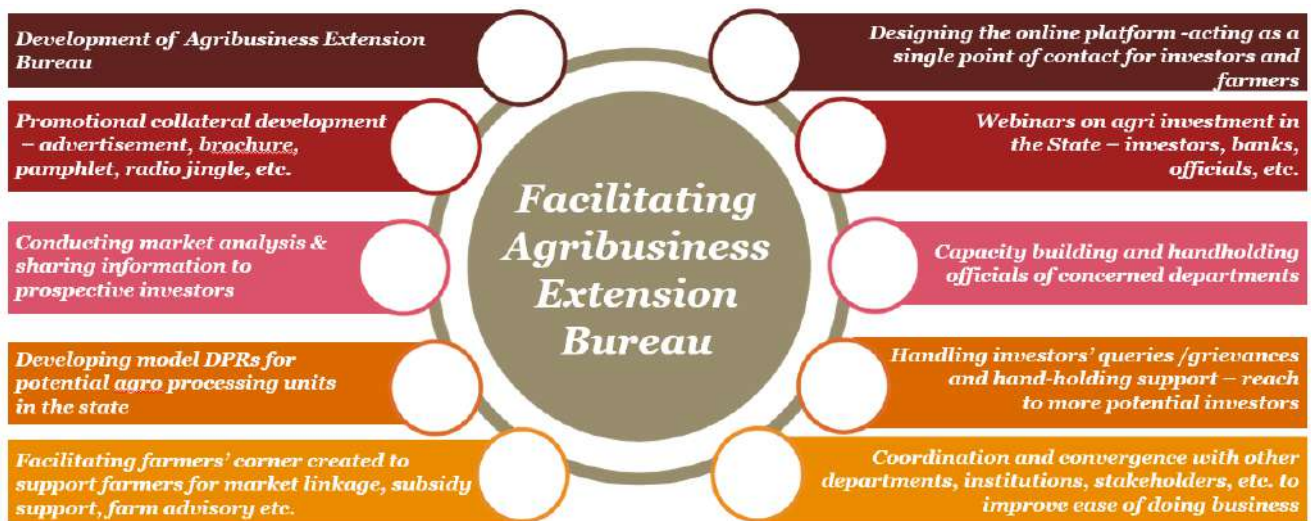
5. Agribusiness Extension Bureau

Developing Agribusiness Extension Bureau is essential to improve the ease of doing business in agri-processing domain and to attract small, medium and large entrepreneurs/ investors, addressing the unique hurdles in the agri and allied sectors

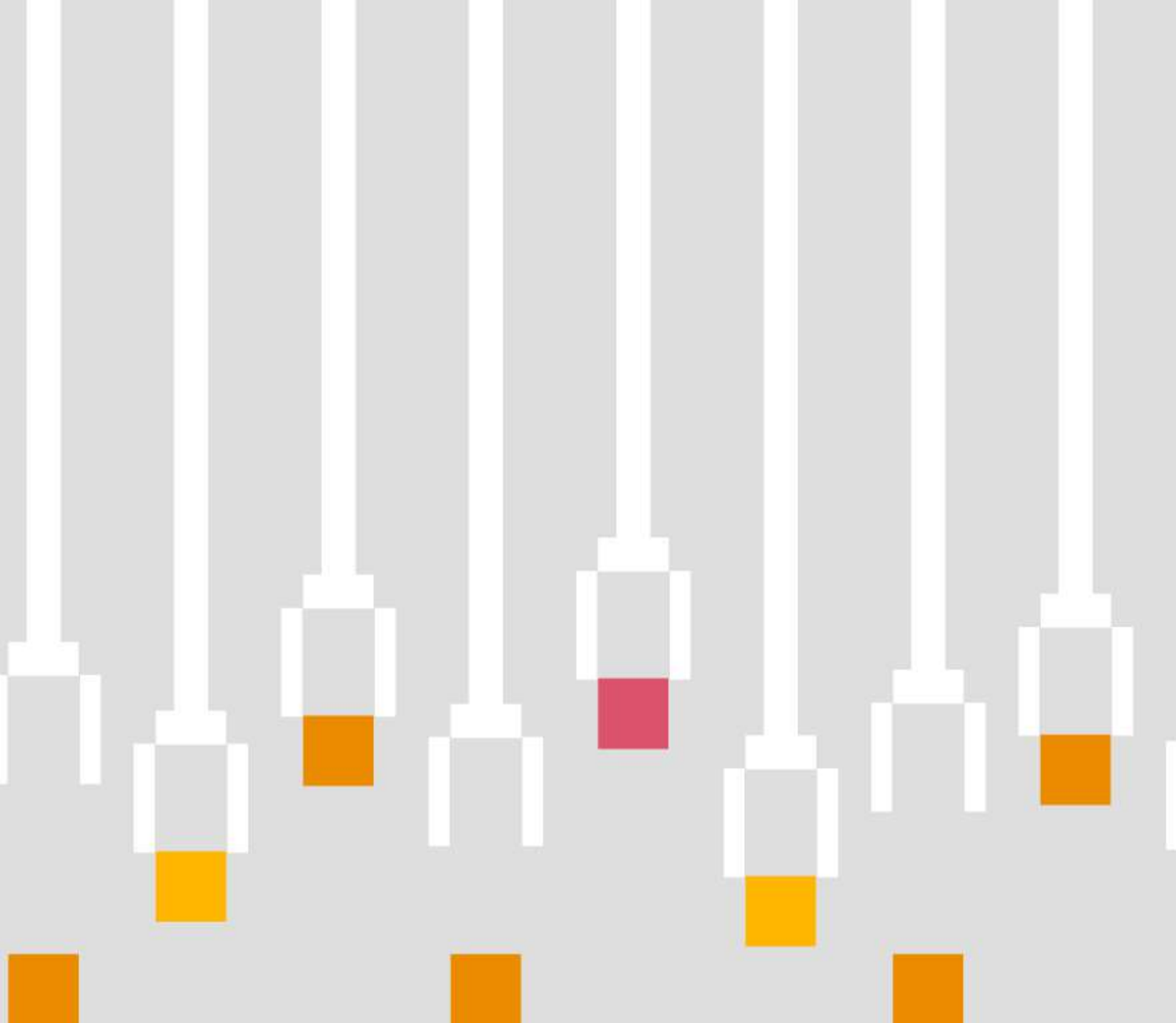
INDEXTb is Industrial Extension Bureau, an investment promotion agency of Gujarat. It focuses on facilitation, handholding, and grievance redressal of investors. Bureau also acts as a repository of information for potential investors and proactively reaches out to the new as well as existing investors. It functions as an interface between investors and the government for establishing industrial ventures thus improving the ease of doing business in the state.

On similar lines, Agribusiness Extension Bureau, a separate department/ division need to be developed for promotion/ resolution of issues for the agribusiness and food processing sectors. It should act as a common portal for all the stakeholders in agri and allied sectors. It will primarily function as an interface between agri-investors and the government, acting as a single point of contact for investors seeking opportunities in agribusiness and post-harvest infrastructure development domain in Gujarat. It will also facilitate farmers or individual beneficiaries as a one stop shop to avail subsidies or assistances under different government schemes. A Technical Support Agency (TSA) can be hired to facilitate development and implementation of Agribusiness Extension Bureau. Functions of the TSA has been given in the Figure 23.

Figure 23: Facilitating Development and Implementation of Agribusiness Extension Bureau



Source: Study Team Analysis, iNDEXTb website



4.

Manufacturing sector

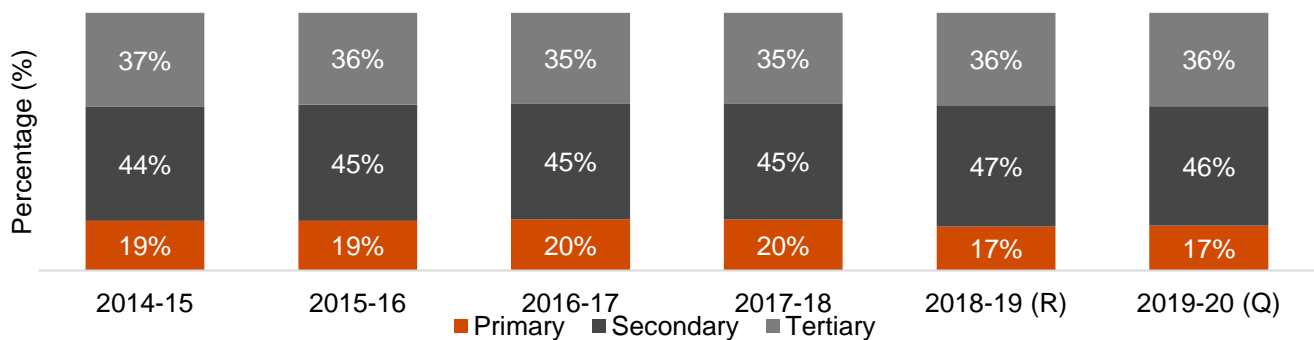
4. Manufacturing sector

4.1. Overview

Secondary sector is one of strongest performer in Gujarat's economy contributing ~45% in state's GDP

The secondary sector (manufacturing, utility services and construction) is the largest contributor in Gujarat's Gross Domestic Product out of the three economic drivers of Gujarat,. As per quick estimates for the year 2019-20, the secondary sector contributed around 46% in Gujarat's GDP as shown in Figure 24.

Figure 24: Trends in sectoral share in Gujarat's GDP (2014-'15 to 2019-'20)



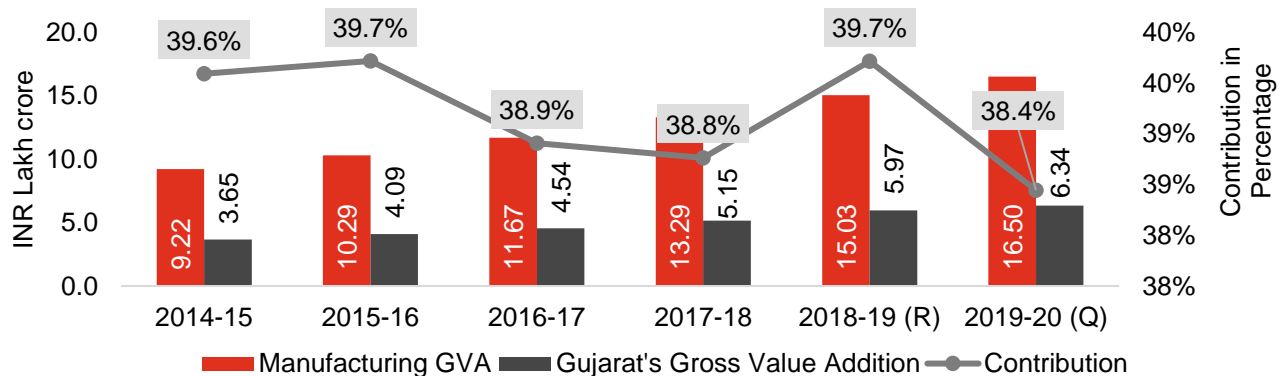
Source: Report on State Domestic Product, Gujarat State 2019-20 (Base Year 2011-12), Directorate of Economics and statistics, Govt. of Gujarat. All values at current price. Base year 2011-12. R- Revised, Q-Quick estimates.

Note: Secondary sector includes manufacturing, Electricity, Gas, Water Supply & Other utility services and construction.

Manufacturing sector contributes around 38% in overall GSDP since 2014-15

The manufacturing contributes more than 1/3rd in terms of Gross Value Addition to the state. The manufacturing sector generated Gross State Value Addition (GSVA) of INR 3.87 lakh crore in 2018-19. This underlines the importance of the manufacturing sector in propelling the state's growth over next 5 years as shown in Figure 25.

Figure 25: Contribution of manufacturing sector in state's GDP in last 5 years (INR lakh crore)



Source: Report on State Domestic Product, Gujarat State 2019-20 (Base Year 2011-12), Directorate of Economics and statistics, Govt. of Gujarat. All values at current price. R- Revised, Q-Quick estimates

A deep dive into sectoral composition within the manufacturing indicates that the industry mix of Gujarat is dominated by sectors like Chemicals (24% share in GSVA), Oil & Gas (17% share in GSVA), etc. These two sectors are driving the manufacturing growth of Gujarat, contributing around 41% share in Gujarat's Gross Value Addition. A close comparison with similar industrialized state, Tamil Nadu, highlights that the industry mix of Tamil Nadu is dominated by sectors that having a high value addition (GSVA / Industrial output) rate and / or also high employment intensity (No. of jobs per INR Crore investment) like Automobiles (18%), Machinery & Equipment (11%), Textiles and Apparels (17%), Transport equipment (5%), etc. Analysis on this sectoral GSVA contribution is provided in Annexure 3 (I).

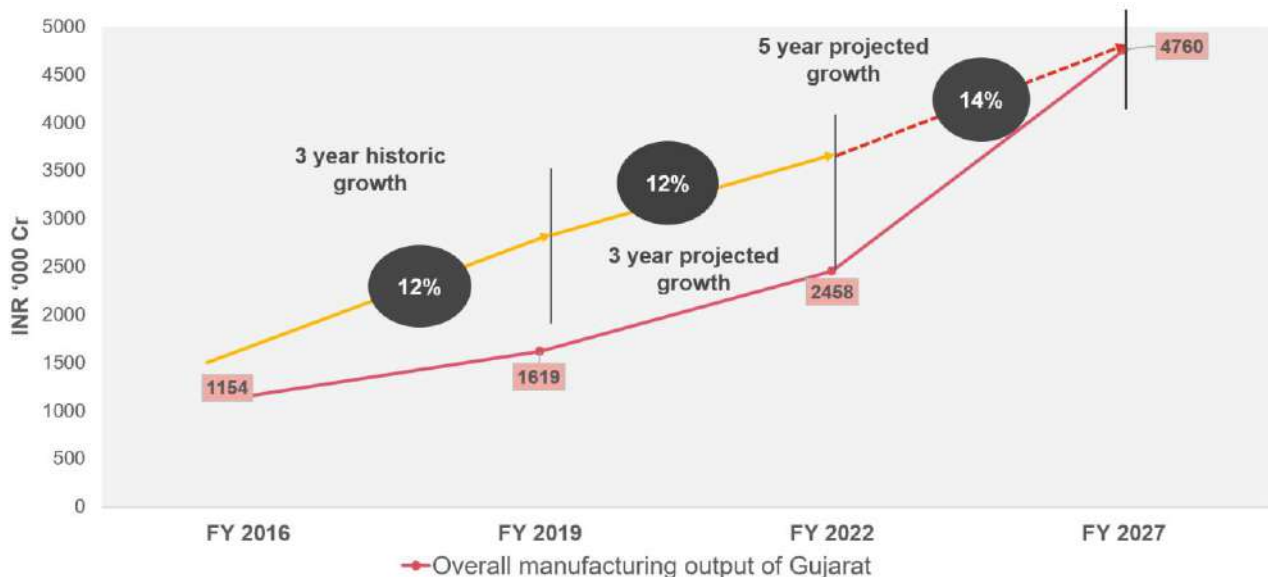
Similar parallels can be drawn between Gujarat's current industry mix and change in industry mix in China during past 20-25 years. Over the years, China's economy has gradually transitioned from an industry mix that was dominated by sectors like chemicals, non-metallic minerals, leather, rubber and plastic to high-tech engineering and high value add sectors such as Measuring and Transporting equipment's, Computer and Electronic equipment's and Electrical Machineries. Analysis on this case study is provided in Annexure 3 (II).

Hence, Gujarat will have to channelize its efforts to enable such transition from having an industry mix that is dominated by high value addition, high-tech and employment intensive sectors, compared to the current industry mix that is dominated by low tech / value add sectors.

4.2. Growth ambition

To achieve the vision of USD 500 Bn economy by FY 27 and for manufacturing sector to achieve GSVA growth of 16% in the next 5 years, it is estimated that manufacturing output needs to grow at a CAGR of 14% during FY 22 to FY 27 and shall require improvement in value addition through targeting investments into high value add sectors.

Figure 26: Historic growth in manufacturing output of Gujarat and projected growth required by FY 27



Source: Study team analysis, Annual Survey of Industries (2013-2019), Ministry of Statistics and Programme Implementation, Government of India. All values at current price. Note: Values from FY 19 to FY 22 are projections as actual data is not yet published.

As highlighted in Figure 26, Gujarat's manufacturing output was ~INR 1,154 thousand crore in FY 16. Over a period of three years, the output grew at a rate of 12% at a value of ~INR 1,619 thousand crore in FY 19. It is assumed that the manufacturing must have grown at Business-As-Usual rate of 12% from FY 19 to FY 22. To achieve manufacturing GSVA growth target of 16% from FY 22 to FY 2027, it is projected that the manufacturing output shall grow at 14% CAGR from FY 22 to FY 27.

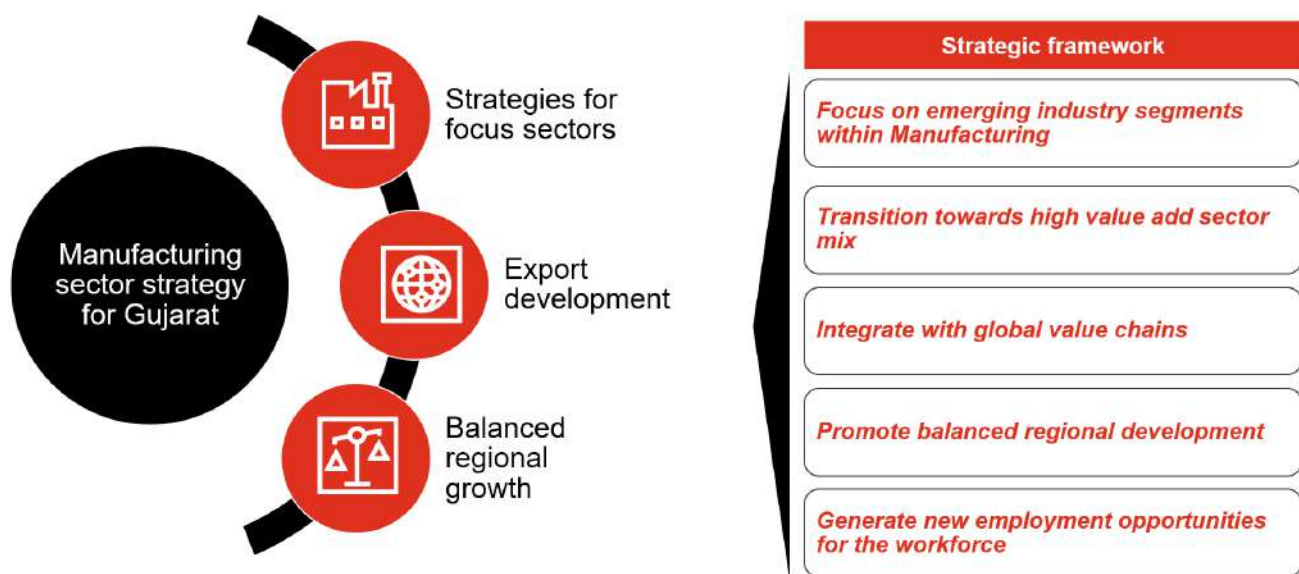
4.3. Strategic framework for enabling growth

The next 5-year plan for manufacturing for the state needs to have a 3-pronged strategy

As discussed in section 3.1.2, Gujarat might consider having a heterogenous sectoral mix in the economy with an emphasis on development of high-tech engineering & value add and employment intensive sectors for the next 5 years.

To support this, a three-pronged strategy has been proposed that focusses on i) identification of focus sectors and sub-sector opportunities that are high on value addition and have a promising future potential, ii) developing and enhancing export potential to cater to global markets and iii) balanced regional growth that enables economic development in regions that are currently underdeveloped/lagging. Figure 27 summarizes the proposed strategy for overall manufacturing sector of the state.

Figure 27: Three-pronged strategy for development of manufacturing sector in Gujarat



Source: Study team analysis

To work upon this strategy, addressing questions as to i) **What to pursue within this focus sectors-** i.e., Identification of focus sectors and sub-sector opportunities and ii) **How to pursue-** i.e., what will be the strategic interventions required to enable those sectors to support Gujarat's growth plan) will be crucial to charter the future strategy. Table 3 highlights and elaborates this framework for chartering manufacturing sector growth strategy for Gujarat.

Table 3: Framework for manufacturing sector growth strategy

| Key questions | Strategic intent | Context |
|------------------------|---|---|
| What to pursue? | Identification of “Winners” within the manufacturing sector | Focus sectors and sub-sector opportunities within manufacturing sector that shall drive the future growth of the state |
| How to pursue? | Investment promotion: | For achieving higher manufacturing growth, it is critical to attract new investments that shall drive growth that's incremental to that of BAU scenario |
| | Industrial infrastructure development | Provision of developed industrial plots to industries planning to make new investments envisaged is also critical to enable a higher manufacturing growth |
| | Manufacturing competitiveness (Through policy initiatives) | Companies shall only invest in Gujarat if it is commercially attractive to manufacture their products in Gujarat when compared to any other State in India. Hence, it is critical to provide incentives to mitigate any cost related disabilities they may have |
| | Export enablement | While we may target accelerated growth for Manufacturing activity, the demand / consumption shall grow at BAU rate only. Hence, it is critical that we target to achieve a higher export growth / contribution |
| | Power supply | Ensure that good quality of power supply at affordable rates is made available to the Industry |
| | Skill availability | Ensure that the required manpower and skillsets are made available to the target investor units |
| | Transport & Logistics infrastructure / Gateway access | Provide access to key domestic and international markets through such infrastructure and provide supportive logistics infrastructure. |

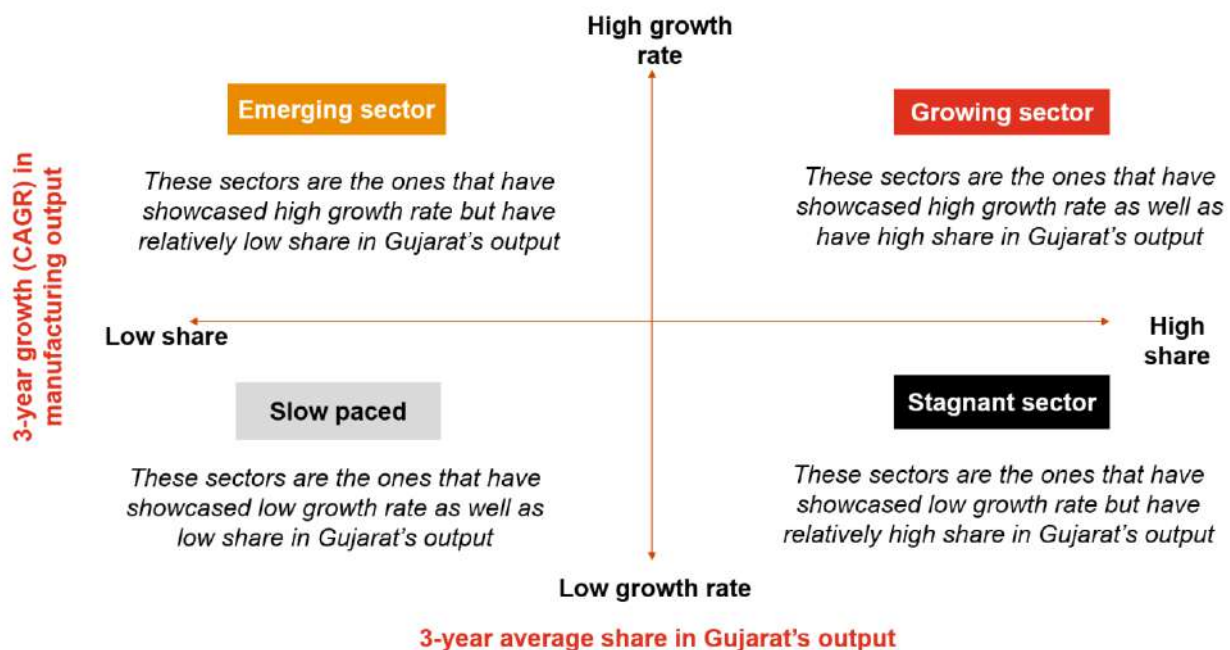
The subsequent sections detail out each of these strategic intents in terms of framework adopted for identification of focus sectors and sub-sector opportunities as well as analysis and recommendation on what shall be required by each of these winners in terms of investment, infrastructure, export, policy initiatives and skill availability. Please note that Energy / Power supply and Transport & Logistics infrastructure have been separately discussed in this report.

4.4. Identification of focus sectors

For Gujarat to achieve sustained growth, a sector selection framework has been developed that focuses on the state's "Traditional strengths" and the "Sunrise" sectors.

In order to achieve the stated vision both in terms of GSVA and output, it shall be necessary for Gujarat to identify the sectors that not only have been traditionally strong but also those sectors that have higher growth prospects in the coming future. Analysis of such sectoral mix requires different approaches and hence, two sets of frameworks were developed to identify and shortlist "Traditional sectors" as well as "Sunrise sectors". Figure 28 showcases the framework adopted for identification of traditional sector in Gujarat.

Figure 28: Framework adopted to identify Traditional sectors

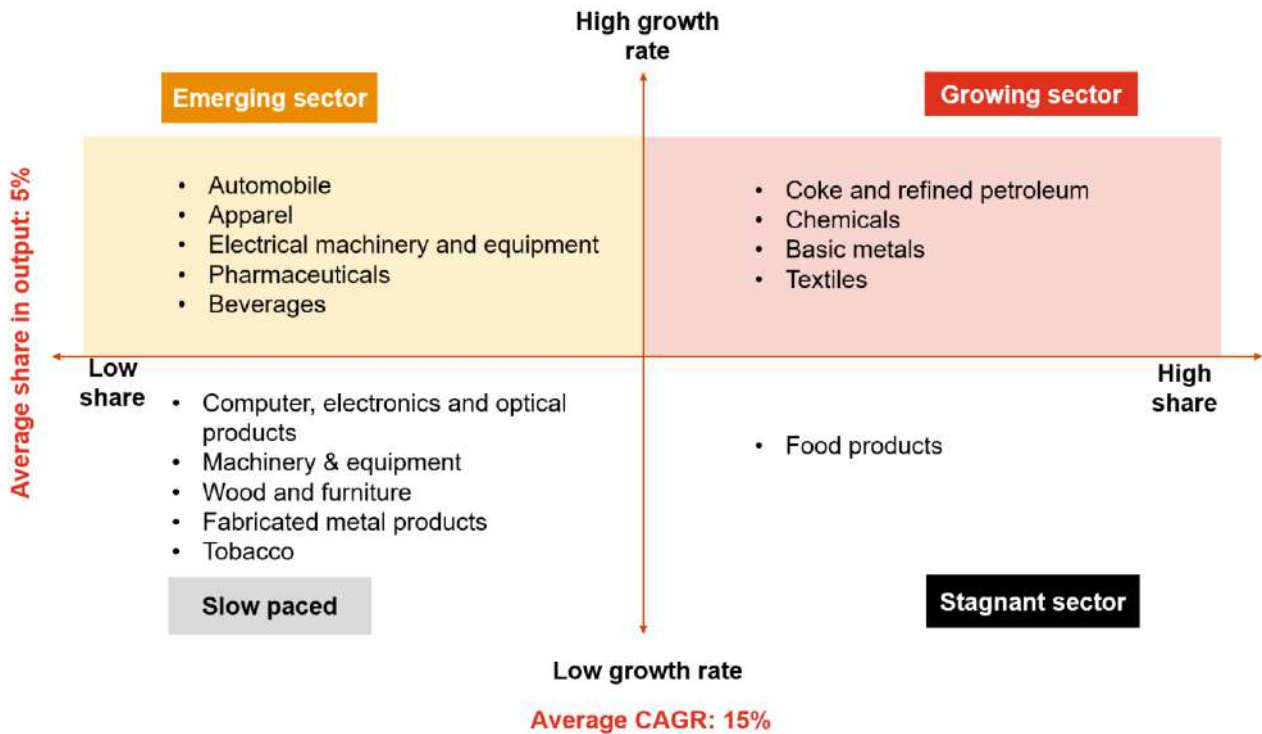


Source: Study team analysis

Figure 28 highlights the approach wherein manufacturing sectors are analyzed based on two parameters- i) Sectoral contribution (3-year average share in Gujarat's output) and ii) Sectoral growth (3-year average growth (CAGR) of manufacturing output produced by the sector). The 1st quadrant (top right) of the 2x2 matrix highlights those sectors that have showcased higher share as well as higher growth. These are termed as "Growing sectors". Similarly, 2nd quadrant (top left) of the 2x2 matrix highlights those sectors that have showcased higher growth rate but has relatively low share and are termed as "Emerging sectors". Moving down the matrix, sectors with low growth and low share are termed as "Slow paced" and those having higher share and low growth are "Stagnant sectors".

Figure 29 showcases quadrant wise mapping of the manufacturing sectors. As highlighted, around 4 sectors are identified as "Growing sectors" namely i) Coke and refined petroleum products, ii) Chemicals. iii) Basic metals, iv) Textiles and 5 sectors are identified as "Emerging sectors" namely i) Automobile, ii) Apparel, iii) Electrical machinery & equipment, iv) Pharmaceuticals and v) Beverages.

Figure 29: Identification of Growing and Emerging sectors



Source: Study team analysis

Having identified the growing and emerging sectors of the state based on their historic performance, another framework has been applied to evaluate and identify the set of sectors that have high growth potential from national and international perspective. Figure 30 highlights the framework for short-listing such as Sunrise sectors which Gujarat might want to pursue:

Figure 30: Framework for shortlisting of Sunrise sectors



Manufacturing sector sector

Figure 31 showcases the evaluation of sectors based on the initial three parameters. It highlights that Petrochemicals, Gems & Jewellery, Textile and apparels, Chemicals and Pharmaceuticals are the top contributors to Global trade i.e., imports during 2018 to 2020. Similarly, Electronics, Machinery & Equipment's, Automobiles, Petrochemicals and Electrical machinery are top contributors to India's imports. Lastly, Automobile, Chemicals, Metals, Electrical machinery and Pharmaceutical sectors have been identified as top contributors to FDI investments into India during 2018 to 2020. The analysis related to the same is highlighted in Figure 31:

Figure 31: Identification of sunrise sectors



In addition, it has been mapped whether these sectors are currently part of any of the State or Central government policy initiatives or not. Consideration within government initiatives such as PLI scheme³⁹, sectoral policies of Gujarat, FAME 2.0⁴⁰, SPECS⁴¹ clusters etc have been reviewed. Table 4 highlights the same:

Table 4: Sectors prioritized by the Government of Gujarat as well as under various central government schemes

| Sectors | PLI Scheme | Aatmanirbhar Bharat | Sector incentivized through various GoG schemes | Focus sectors under VG 2022 | High tech sectors defined under Gujarat SDG Vision 2030 |
|---|------------|---------------------|---|-----------------------------|---|
| Other sectors that the government might focus on | | | | | |
| Aerospace and defense | | √ | √ | √ | √ |

³⁹ PLI Scheme: Production Linked Incentive is a GoI initiative that provides incentives to domestic as well as foreign industries to boost local production.

⁴⁰ FAME 2.0: Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India is a GoI initiative to incentivize production and consumption of electric vehicles in India.

⁴¹ SPECS: The Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) is a GoI initiative wherein financial assistance is provided for setting up new / expansion units for domestic manufacturing of electronic components and semiconductors.

Manufacturing sector sector

| Sectors | PLI Scheme | Aatmanirbhar Bharat | Sector incentivized through various GoG schemes | Focus sectors under VG 2022 | High tech sectors defined under Gujarat SDG Vision 2030 |
|--|------------|---------------------|---|-----------------------------|---|
| Energy storage sector | √ | | √ | √ | √ |
| High efficiency solar PV modules | √ | | √ | √ | √ |
| Semiconductor | √ | | √ | | √ |
| Mobile Manufacturing and Specified Electronic Components | √ | | √ | | √ |
| Biotechnology | | √ | | | √ |
| Telecom and Networking products | √ | | | | √ |
| Medical Devices | √ | | | | √ |
| Advanced Chemistry Cell Battery. | √ | | | | √ |
| Toys and games | | √ | | | |
| Drug Intermediaries & API | √ | | | | |
| White goods | √ | | | | |

| | | | |
|----------------|--------------------|----------------------|--------------------|
| Legend: | Immediate priority | Medium term priority | Long term priority |
|----------------|--------------------|----------------------|--------------------|

Source: PIB Delhi, Production Linked Incentive Scheme. Ministry of Commerce & Industry dated 10 March 2021, Official websites of Make in India, Vibrant Gujarat, GIDB and Industries Commissionerate

Based on these frameworks, a total of 9 manufacturing sectors have been identified as “Winners” that shall help charter the manufacturing sector growth story of Gujarat

Based on the above approach and frameworks, following 9 sectors have been shortlisted that shall drive the projected growth of manufacturing sector of Gujarat till 2026-27 and in the future.



Automobile



Apparel



Basic metals



Electronics



Electrical machinery & equipment



Food processing



Gems & Jewellery



Pharmaceuticals



Textiles

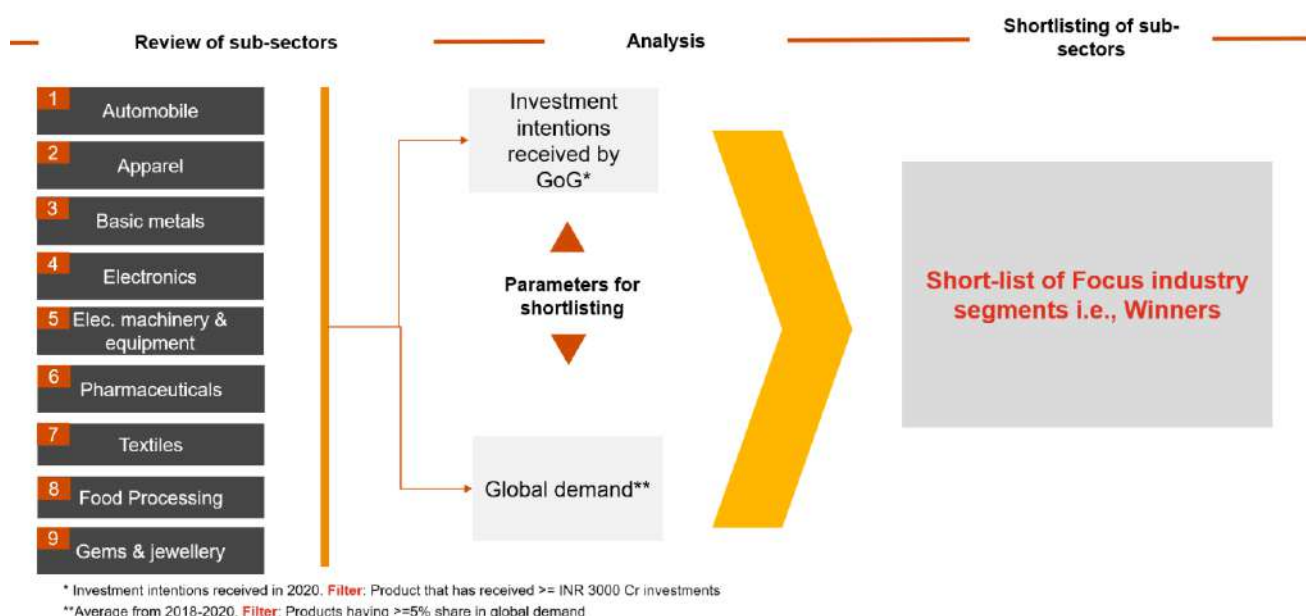
The subsequent section explains framework and approach as to specifically which industries / opportunities within these focus sectors the state shall target.

A framework that considers past and forward-looking indicators has been adopted to shortlist sub-sector opportunities within each of the focus sectors

Having identified the broad focus sectors, it shall be necessary to evaluate as to which are the sub-sector industries / opportunities that the state shall focus upon for its development in Gujarat. For instance, within Automobile sector, shall the state focus upon manufacturing of motor vehicles, including the trends of Electric Vehicles / Hybrid Vehicles or shall the state focus on manufacturing of automobile components.

To evaluate such opportunities at micro level, a framework has been adopted that focusses on two key parameters i.e., i) Global demand- Sectors that are high on demand globally (Global imports) and ii) Investment intentions in Gujarat - which are those sub-sectors wherein investors have recently showed their interest in Gujarat in 2022. Figure 32 showcases the framework adopted for identification of sub-sector opportunities within the focus sectors in Gujarat.

Figure 32: Framework for identification of sub-sector opportunities within focus sectors



Source: Study team analysis, Official website of International Trade Centre (ITC-Trade map), Investment intentions data for 2022 received from Industrial Extension Bureau, Govt. of Gujarat

As highlighted in Figure 32, based on the framework, a combination of those sub-sector opportunities has been shortlisted that have received >= INR 3,000 Cr of investments in 2022 as well as those having >= 5% share in global demand / imports. ((Please refer Annexure 3 (III and IV) for detailed analysis).

With this forward-looking approach, 10 sub-sector opportunities have been identified within the focus sectors as highlighted in Table 5 below. In addition, these sub-sector opportunities have been tested to review if they are having a high value add (GSVA / Output) and high employment intensity ratio (No. of jobs per INR crore investment) compared to that of national average or not. For instance, manufacture of motor vehicles, basic iron and steel and basic precious and other non-ferrous metals shall need efforts and interventions to enhance value addition as well as employment intensity.

Table 5: Shortlisted sub-sector opportunities within focus sectors

| Focus sectors | Sub-sector opportunities | Investment intention (INR Cr) for 2022 | Share in global demand (2018-20) | Value addition ratio (2019-20) | Employment intensity ratio (2019-20) | Gol schemes |
|-------------------|---|--|----------------------------------|--------------------------------|--------------------------------------|-----------------------|
| Automobile | Motor vehicles (including Electric Vehicles, alternate fuel vehicles) | 23,167 | 5% | 15% | 2 | PLI Scheme FAME-II |
| Apparel | Wearing apparel (including knitted & crocheted fabrics) | 3,509 | 1% | 27% | 21 | PM MITRA Apparel park |

Manufacturing sector sector

| Focus sectors | Sub-sector opportunities | Investment intention (INR Cr) for 2022 | Share in global demand (2018-20) | Value addition ratio (2019-20) | Employment intensity ratio (2019-20) | Gol schemes |
|---|--|--|----------------------------------|--------------------------------|--------------------------------------|---|
| Basic metals | Basic Iron and Steel (including green & specialty steel) | 1,72,242 | 2% | 13% | 1 | PLI (Specialty steel) |
| | Basic precious and other non-ferrous metals | 16,000 | 3% | 12% | 1 | |
| Electronics | Electronic components (including semi-conductor and fab manufacturing) | 88,000 | 2% | 24% | 7 | PLI scheme SPECS Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme |
| Electrical machinery and equipment | Batteries and accumulators (including Li / Hydrogen batteries) | 12,901 | 0.1% | 17% | 4 | PLI scheme (ACC battery) |
| | Domestic appliances | - | 7% | 21% | 6 | PLI scheme (White goods) |
| Food processing | Processing and preserving of fruit and vegetables | 8,618 | 3% | 23% | 6 | Mega Food Park scheme |
| Pharma | Pharmaceutical, medicinal chemical & botanical products | 14,218 | 5% | 34% | 6 | Bulk drug park PLI scheme Medical devices park |
| Textiles | Spinning, weaving and finishing of textiles (including technical textiles) | 6,891 | 1% | 18% | 7 | PM MITRA PLI scheme |

Legend:

Cells highlighted in yellow indicates sectors falling below national average in value addition ratio or employment intensity ratio

Source: Study team analysis, Official website of International Trade Centre (ITC-Trade map), Investment intentions data for 2022 received from Industrial Extension Bureau, Govt. of Gujarat, Annual Survey of Industries (2018-19), Ministry of Statistics and Programme Implementation, Govt. of India. All values at current price. 1 USD = INR 75.

Note: Value addition ratio: GSVA / output. Employment intensity: Employment generated per INR 1 Cr of investment. National average for value addition ratio is 18%. National average for employment intensity is 3. Cells highlighted in yellow indicate

As discussed in section 4.3, identification of the focus sectors as well as sub-sector opportunities, addresses the 1st question as to what to pursue as a part of the growth strategy framework. Now, the subsequent sections discuss the proposal for addressal of 2nd question of the growth strategy framework which include plan for attracting new investments, development of industrial infrastructure, providing policy incentives to enable manufacturing competitiveness, skill availability and plan to enable export growth.

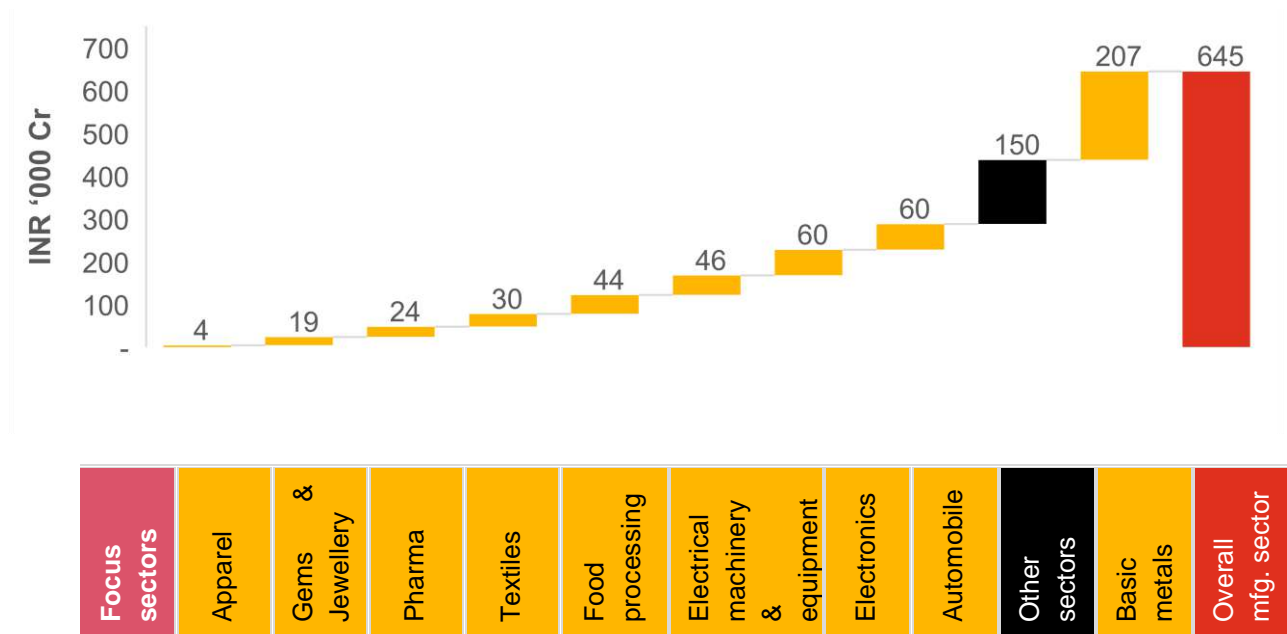
4.5. Growth strategy

I. Attracting investments in manufacturing sector

It is envisaged that a total of ~INR 4.95 lakh crore shall be required within focus sectors; Investments to the tune of ~INR 3.45 lakh crore have already been filed in 2022 in Gujarat

To achieve the growth ambition of 16% manufacturing GSVA growth in next five years (FY 22 to FY 27), it is envisaged that a total of INR 6.45 lakh crore of investments shall be required⁴² by the manufacturing sector in the state during the same time period (Please refer Figure 33). Of this, 77% (~INR 4.95 lakh crore) shall be required by the 9 focus sectors identified.

Figure 33: Projected investment requirement in the manufacturing sector by FY 27



Source: Study team analysis. Methodology for estimating investment requirement is provided in **Annexure 3 (V)**.

However, against this requirement, the state has already received investment intentions to the tune of ~INR 5.5 lakh crore in 2022 for the overall manufacturing sector⁴³, almost 85% of the overall investment requirement. Within this, the focus sub-sectors have received intentions to the tune of ~INR 3.45 lakh crore. Table 6 showcases investment intentions received by few major players against the sectoral investment requirement.

⁴² Investment requirement is calculated based on ICOR ratio calculated by dividing 8-year average share of incremental output to incremental investments.

⁴³ Excluding investments in power, oil, gas, social sector, education, skill, tourism, etc.

Table 6: Mapping of Investment targets v/s Investment intentions already received

| Focus sectors | NIC Code | Shortlisted sub-segments | Proposed sectoral investment requirement (INR Lakh Cr) | Investment intentions at sub-segment level in 2022 (INR Lakh Cr) | List of few major companies |
|------------------------------|----------|--|--|--|---|
| Basic metals | 241 | Manufacture of basic iron and steel | 2.07 | 1.72 | Adani, Vedanta Copper, IndoAsia copper, Hindustan Inox Ltd., Kuber industries, etc. |
| | 242 | Manufacture of basic precious and other non-ferrous metals | | 0.16 | |
| Electronics | 261 | Manufacture of electronic components | 0.60 | 0.88 | Next orbit venture, Vedanta-Foxconn, Invers Semiconductors Limited, etc. |
| Automobile | 291 | Manufacture of motor vehicles | 0.60 | 0.23 | Suzuki, Ather, Pvt. Ltd, Tata motors, Captain Tractors etc. |
| Electrical machinery & equip | 272 | Manufacture of batteries and accumulators | 0.46 | 0.13 | Excide Leclanche, Matter motor works Pvt. Ltd., Manikaran Lithium Pvt. Ltd. Etc. |
| | 275 | Manufacture of domestic appliances | | 0.00 | - |
| Food processing | 103 | Processing and preserving of fruit and vegetables | 0.44 | 0.14 | Tirupati Balaji Agri Link, Blue Bird Foods (I) Pvt. Ltd. Eagle food products |
| Textiles | 131 | Spinning, weaving and finishing of textiles | 0.30 | 0.07 | Madura industrial textiles ltd., Falcon yarns, Ashima Dyecot Private Limited, etc. |

Manufacturing sector sector

| Focus sectors | NIC Code | Shortlisted sub-segments | Proposed sectoral investment requirement (INR Lakh Cr) | Investment intentions at sub-segment level in 2022 (INR Lakh Cr) | List of few major companies |
|--|----------|---|--|--|--|
| Pharma | 210 | Manufacture of pharmaceuticals, medicinal chemical and botanical products | 0.24 | 0.14 | Intas, Emcure, Pharmedica (India) Pvt. Ltd |
| Apparel | 141 | Manufacture of wearing apparel, except fur apparel | 0.04 | 0.04 | Madura, Texport industries, Vishwesh Knitting & Dyeing Mills Private Limited, etc. |
| Total of shortlisted sub-segments within focus sectors | | | 4.75 | 3.45 | |
| Total of remaining sub segments within focus sectors (Gems and Jewellery) | | | 0.19 | 0.12 | |
| Total of other sectors | | | 1.50 | 1.93 | |
| Overall manufacturing | | | 6.45 | 5.5 | |

Source: Office of Industries Commissionerate, Govt. of Gujarat, Industrial Extension Bureau, Govt. of Gujarat. NIC Code: National Industrial Classification Code as published by Central Statistical Organization, Ministry of Statistics and Programme Implementation, Govt. of India.

Going by the rule of thumb that around 40-60% of the investment intentions are actually realized, it would be crucial for the state government at the highest level to channelize the efforts and aggressively pursue for realizing the investments. Activities such as marketing and investment promotion are recommended. Creating a pull in the sector from select anchor investors (globally / nationally recognized sectoral brands) will eventually create a push factor in the market.

II. Development of industrial infrastructure

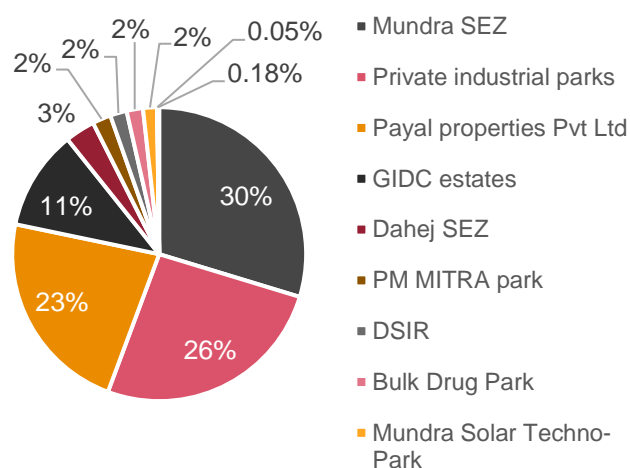
It is estimated that around 54,000 acre of developed industrial land shall be required to cater to demand from new manufacturing investments till FY 27; against this supply of around 35,000 acre is already available in the state

Having set the investment targets for the focus sectors and sub-sector opportunities, it would be critical to plan for development / provision of industrial infrastructure which is a pre-requisite for setting up a manufacturing unit.

Presently in Gujarat, around 35,000 acres of supply in terms of developed industrial parks is available (vacant plots) offered by the government and private industrial parks. Out of this, around 77% is supplied by private industrial parks and rest from the government estates (GIDCs, PM MITRA park, Bulk drug park, Dahej SEZ, Biotech park, DSIR, SIPC Kandla).

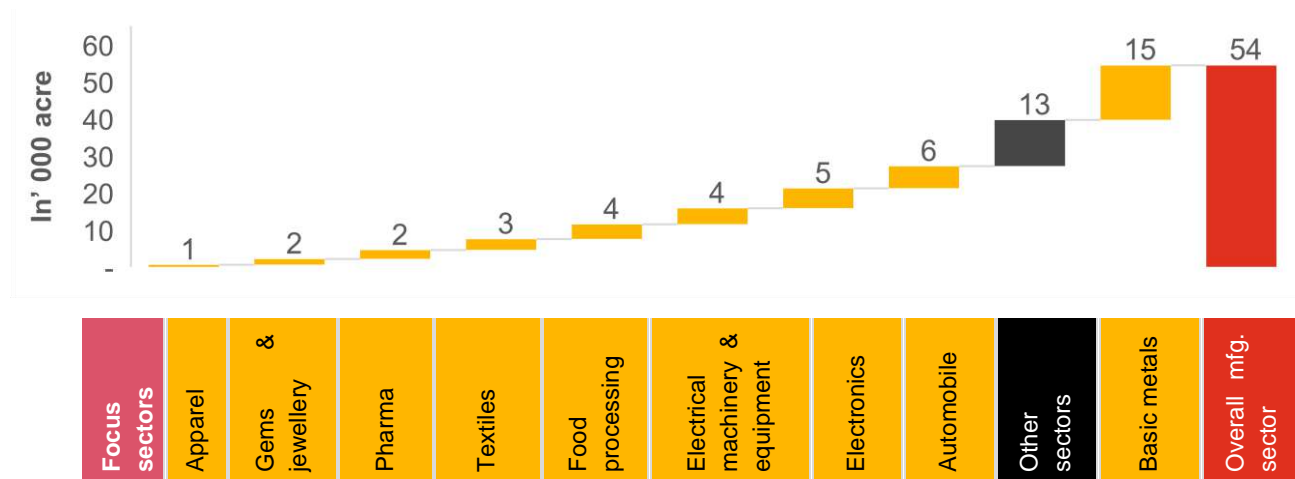
At district level, Kutch has the highest land supply with around 32% share followed by Bharuch (28%) and Ahmedabad (18%).

Figure 34: Current supply of land in Gujarat



Source: Study team analysis, Official website of Gujarat land bank, inputs from INDEXTb on private industrial parks. Base (34,735 acre)

Figure 35: Industrial land required by manufacturing sector in FY 27



Source: Study team analysis. Methodology for estimating investment requirement is provided in Annexure 3 (V).

As highlighted in Table 7, total of 54,000 acre of land shall be required by the overall manufacturing sector to achieve the stated projections by FY 27. Of this, around 42,000 acres of industrial land will be required by focus sectors. The study team has undertaken a district-wise and sector wise demand supply gap assessment for Industrial infrastructure till FY 27. The study team has assessed demand for industrial infrastructure land in districts separately for each sector based on review of – i) Presence of respective sectors in key districts of Gujarat, ii) Identification of emerging hotspots based on review of location preferences in Investment intention data of Gujarat and iii) Planned supply of Sectoral parks (for e.g., PM MITRA Park for Textiles and Apparels, of Bulk Drug park for Pharmaceutical unit) in key districts of Gujarat (indicating that it might target major share of investments into that region). Below table highlights the demand supply scenario at district as well as sectoral level.

Manufacturing sector sector

Table 7: District wise and sector wise demand supply assessment

| | District | Demand from focus sectors | Demand from other sectors | Supply | Difference |
|---|------------------|---------------------------|---------------------------|--------|------------|
| | Vadodara | 2,505 | 1,375 | 988 | -2,892 |
| ⚓ | Surat | 1,962 | 1,250 | 692 | -2,521 |
| ⚓ | Jamnagar | 107 | 2,500 | 124 | -2,483 |
| | Mehsana | 1,276 | 1,250 | 116 | -2,410 |
| | Valsad | 866 | 500 | 68 | -1,298 |
| | Rajkot | 1,234 | 0 | 91 | -1,144 |
| ⚓ | Bharuch | 9,708 | 1,000 | 9,794 | -914 |
| | Kheda | 837 | 125 | 141 | -821 |
| | Banaskantha | 800 | 0 | 1 | -799 |
| | Gandhinagar | 747 | 0 | 94 | -653 |
| | Panchmahal | 683 | 125 | 205 | -603 |
| | Surendranagar | 2,348 | 875 | 2,748 | -475 |
| | Sabarkantha | 400 | 0 | 52 | -348 |
| ⚓ | Kutch | 10,925 | 375 | 11,039 | -261 |
| | Ahmedabad | 6,251 | 0 | 6,134 | -117 |
| ⚓ | Amreli | 300 | 125 | 309 | -116 |
| | Navsari | 966 | 375 | 1,278 | -63 |
| | Botad | 40 | 0 | 15 | -25 |
| | Other districts* | 0 | 2,625 | 848 | -1,777 |
| | Total | 41,955 | 12,500 | 34,735 | -19,720 |

| | | | |
|----------------|--------------------|--|------------------------------------|
| Legend: | Priority districts | ⚓ Port based Industrial areas may be developed | - Negative value indicates deficit |
|----------------|--------------------|--|------------------------------------|

Source: Study team analysis, Official website of Gujarat land bank, inputs from iNDEXTb on private industrial parks, inputs from GIDC, Master plan of DREAM CITY. *Other districts include Tapi, Narmada, Porbandar, Dahod, Patan and Anand.

Manufacturing sector sector

As depicted above, availability of land across the state is not even, hence for catering to demand from new manufacturing investments in Gujarat during next 5 years, it is estimated that there is a deficit of ~19,000 acre. The highlighted districts (Vadodara, Surat, Jamnagar, Mehsana, Valsad and Rajkot) are where current land supply is comparatively less than the demand and can be prioritized by GIDC / GoG for development of new industrial estates. Detailed analysis is provided in Annexure 3 (VII).

In addition to this, as highlighted in Table 8, Gujarat may consider development of following sector specific industrial parks for improving manufacturing competitiveness of focus sectors.

Table 8: Development of sector specific industrial parks at proposed key locations in Gujarat

| Industrial park type | Sub-segments | Proposed Locations | Gol schemes that can be leveraged |
|--|--|---|--|
| Auto and Auto Components | <ul style="list-style-type: none"> Future of mobility park focusing on Electric Vehicles, Batteries and related components | <ul style="list-style-type: none"> Sanand-Halol belt / Surendranagar / Dholera | - |
| Electrical Machinery | <ul style="list-style-type: none"> High-tech engineering parks | <ul style="list-style-type: none"> Dholera – Ahmedabad, Rajkot and Vadodara | - |
| Machinery and Equipment | | | - |
| Food processing | <ul style="list-style-type: none"> Food processing units | <ul style="list-style-type: none"> Mehsana and Surat | <ul style="list-style-type: none"> Mega Food Park Scheme |
| Electronics | <ul style="list-style-type: none"> Built to suit facilities across key urban centers and Testing facilities across key electronics clusters Air cargo facilities in Ahmedabad and Vadodara Training of manpower on key activities like soldering and moulding | <ul style="list-style-type: none"> Ahmedabad, Vadodara, and GIFT City | <ul style="list-style-type: none"> Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme |
| Chemicals | <ul style="list-style-type: none"> New Chemical manufacturing zones in close proximity to ports Deep sea discharge pipeline | <ul style="list-style-type: none"> Bharuch | - |
| Hydrogen Valley / Green Hydrogen Park | <ul style="list-style-type: none"> Green hydrogen manufacturing clusters Enabling infrastructure for transportation of Green Hydrogen Dedicated incentive scheme for Green Hydrogen manufacturing | <ul style="list-style-type: none"> Jamnagar and Kutch | - |

Manufacturing sector sector

| Industrial park type | Sub-segments | Proposed Locations | Gol schemes that can be leveraged |
|---|---|---|--|
| Metals | <ul style="list-style-type: none"> Iron, Steel, other non-ferrous metals, Specialty steel, Green steel | <ul style="list-style-type: none"> Kutch | - |
| Power and Renewable energy equipment | <ul style="list-style-type: none"> Equipment for Renewable Energy as well as power manufacturing unit | <ul style="list-style-type: none"> Kutch, Ahmedabad and Dahej | <ul style="list-style-type: none"> Scheme for setting up a manufacturing zone on pilot basis for Power and Renewable energy |
| Coastal Economic Units | <ul style="list-style-type: none"> Apparel Auto and auto components | <ul style="list-style-type: none"> Kutch, Saurashtra, Junagadh, Amreli and Bhavnagar | <ul style="list-style-type: none"> Sagarmala Programme |
| Leather Park | <ul style="list-style-type: none"> Leather industries | <ul style="list-style-type: none"> Kutch, Mehsana and Kheda | <ul style="list-style-type: none"> Mega Leather Cluster scheme |

Lastly, it is also recommended that the Government of Gujarat through Gujarat Industrial Development Corporation and Dholera Industrial Development Company Ltd (DICDL) goes ahead and develops the priority industrial parks already in pipeline.

These proposed sectoral parks promise enabling manufacturing growth, generation of new employment opportunities and help in attracting new investments into the State as highlighted in Table 9.

Table 9: Envisaged economic impact to be generated from creation of sectoral parks in the state

| Industrial park | Total area (Acre) | Envisaged investment generation (INR Cr) | Envisaged direct employment (Nos.) | Envisaged in-direct employment (Nos.) |
|---|-------------------|--|------------------------------------|---------------------------------------|
| PM MITRA Park | 1,142 | 4,568 | 27,408 | 32,890 |
| Bulk Drug Park | 1,008 | 7,054 | 21,162 | 25,394 |
| Ceramics Park | 1,051 | 3,468 | 13,873 | 16,648 |
| Toy Park | 241 | 2,600 | 15,600 | 18,720 |
| Dholera Special Investment Region* | 5,560 | 10,000 | 60,000 | 72,000 |

Source: Study team analysis, inputs from GIDC. Note: For calculation of indirect jobs 1.2x of direct jobs is considered. *Activation are of DSIR has been considered.

Hence, it would be critical for GoG to consider funding such development even in case they don't get selected under respective Gol schemes.

III. Export development

On an average, Gujarat's manufacturing exports contributed to around 34% of the manufacturing output during FY 15 to FY 19. It has been proposed to target increasing this share to 38% by FY 27 by achieving around 17% CAGR during FY 22 to FY 27

While the Manufacturing sector is targeted to grow at an accelerated growth rate, it is assumed that the local demand / consumption may grow at standard growth only and hence, it would be critical to accelerate the Export growth from Gujarat (to achieve a higher market share in international markets) so that the additional supply / manufacturing output also from Gujarat shall get absorbed. As shown in Figure 37, Gujarat's manufacturing exports stood at USD 101 billion in FY 22. On an average (FY 15 to FY 19), exports from Gujarat contributes around 34% in overall manufacturing output. It is estimated that exports have grown at a CAGR of 14.5% during FY 19 to FY 22 (similar to that during FY 15 to FY 19).

Figure 36: Manufacturing exports and its contribution to Manufacturing output of Gujarat during FY 15 to FY 19

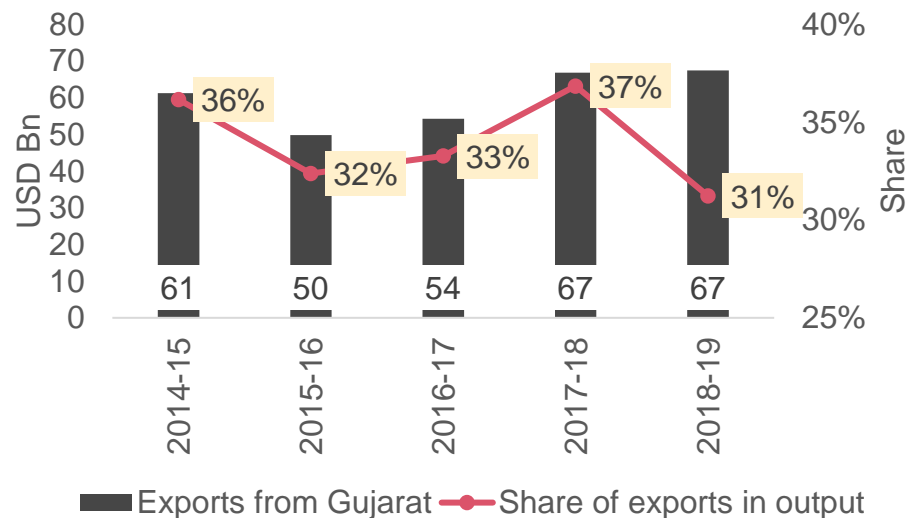
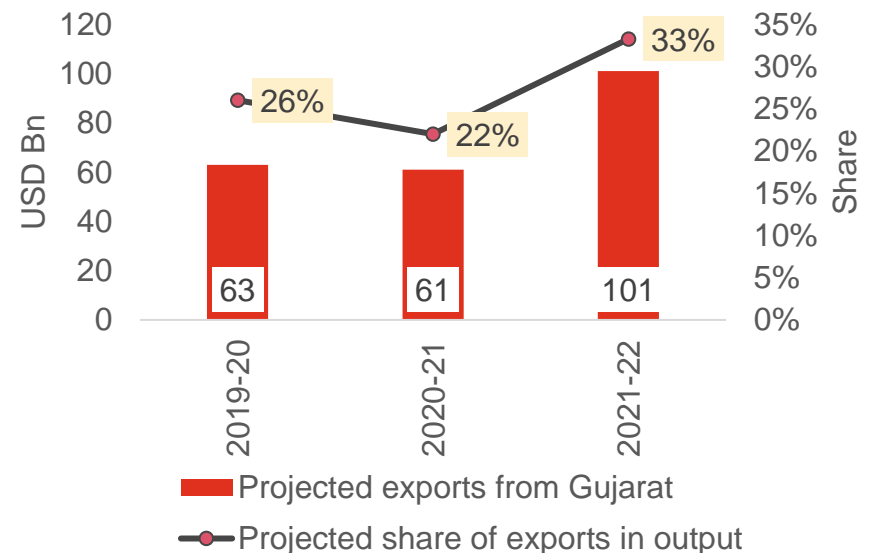


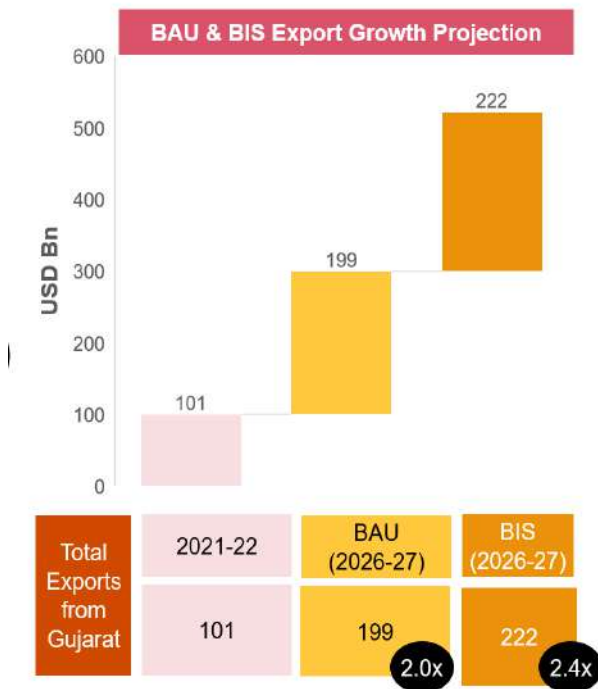
Figure 37: Projected manufacturing exports and its contribution to manufacturing output of Gujarat from FY 20 to FY 22



Source: Annual Survey of Industries 2014-19, Official website of DGCIS. Note. Actual manufacturing output data from 2019 onwards is not published and are projected based on assumptions. All values in current price. 1 USD = INR 75.

As stated above that the local demand may growth at a BAU / standard rate compared to accelerated growth targeted for manufacturing activity (supply); the incremental output may only find its demand in global market through increasing current share of exports from Gujarat. As shown in Figure 38, two scenarios for export enablement in the state has been proposed.

Figure 38: BAU and BIS export projections for FY 27



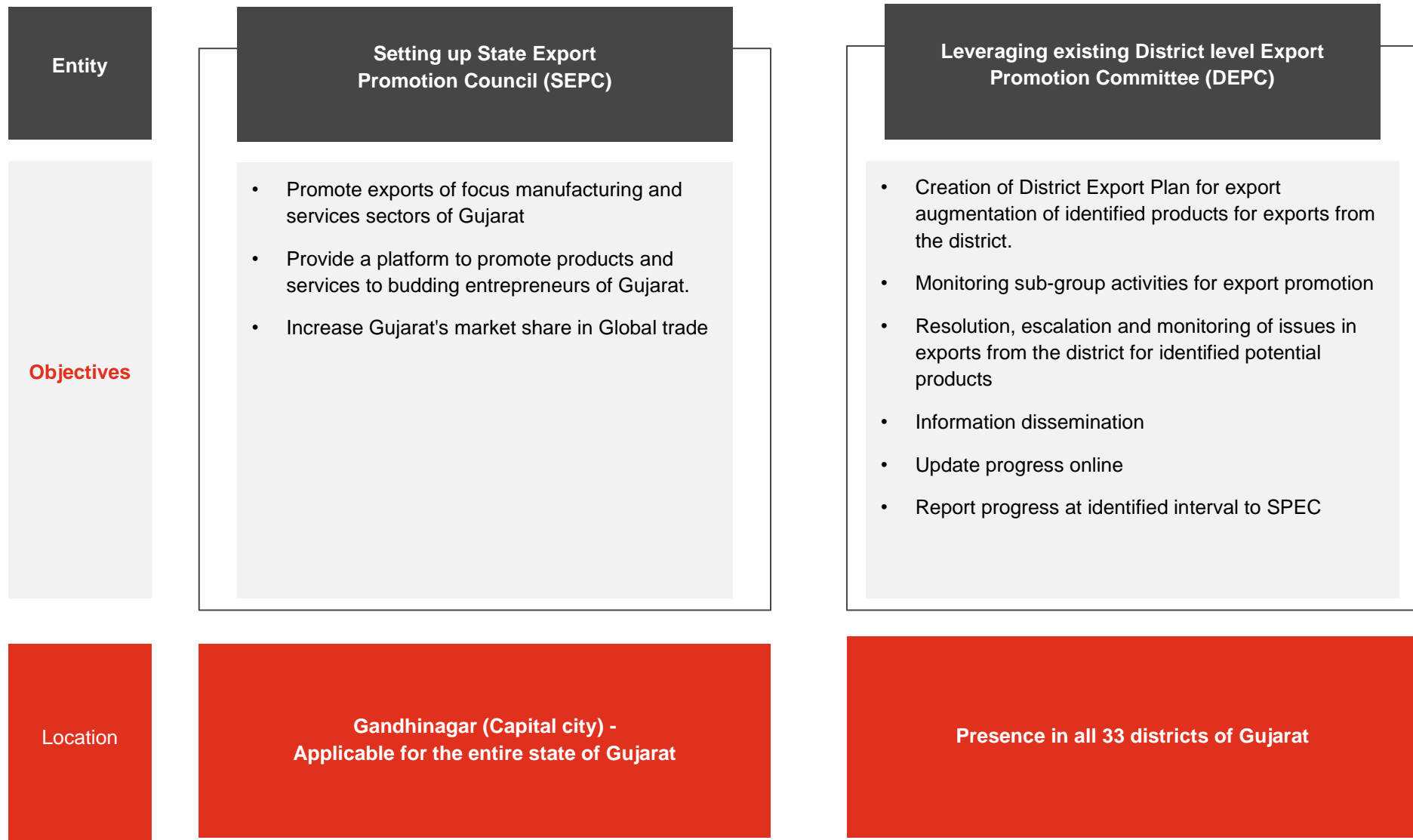
1. **Scenario-1: Business As Usual growth (BAU)-** Exports expected to grow at the same rate of 14.5% for the next 5 years (FY 22 to FY 27). With this assumption, it is expected that the export to manufacturing ratio shall remain around 34% in FY 27.
2. Under this scenario, total manufacturing exports from Gujarat is expected to grow by 2.0 times from USD 101 Bn in FY 22 to USD 199 Bn in FY 27.
3. **Scenario-2: Business Induced Scenario (BIS)-** Accelerated growth in exports by increasing its share in manufacturing output from current share of 34% to 38% in FY 27 and cater to global market demand. With this assumption, it is expected that exports shall grow at a CAGR of ~17% from FY 22 to FY 27.
4. Under this scenario, total manufacturing exports from Gujarat are expected to grow by 2.4 times from USD 101 Bn in FY 22 to USD 222 Bn in FY 27.

1) Export promotion - The state needs to have a two-tier institutional structure at district as well as state level to provide institutionalized export promotion assistance and contribute to the accelerated export targets

The accelerated target growth set for exports from Gujarat will require a proper institutional framework for implementation of the same. Hence, a two-tier institutional structure has been proposed with District Export Promotion Committees at district level and an apex State Level Export Promotion Council at an overall state level. While the state has already established District level Export Promotion Committees across Gujarat⁴⁴, SEPC shall be required to support the ambition as well as for providing institutionalized export promotion assistance to budding exporters in the State of Gujarat.

⁴⁴ Constitution of District Export Promotion Committee for Developing Districts as Export Hubs. Government Resolution No.- MIS-102020-65-P, Industries & Mines Dept. Government of Gujarat. Dated 12/02/2020. Same can be accessed in Annexure 3 (VIII).

Figure 39: Proposition of two-tier institutional framework for enablement of exports from the state

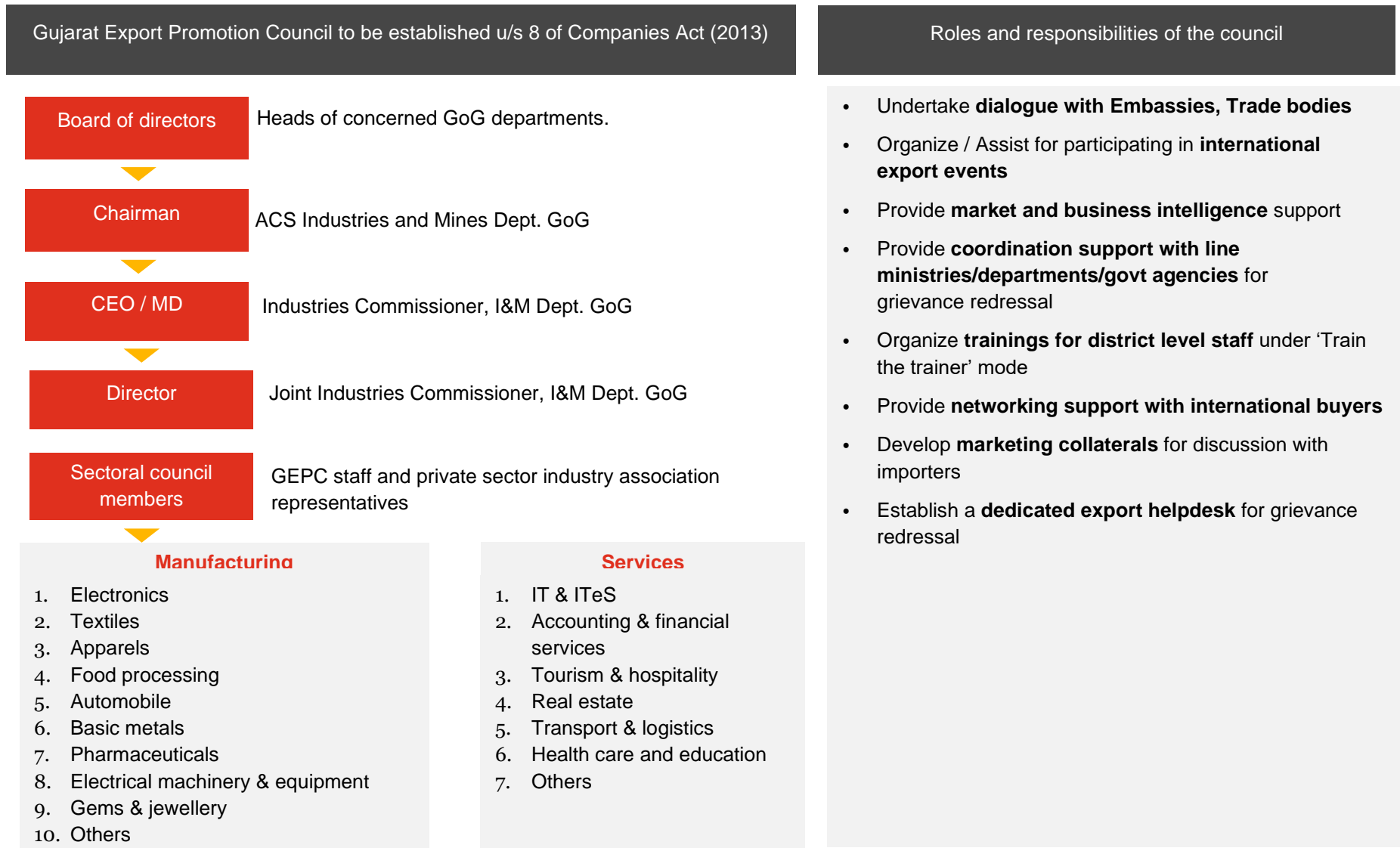


States such as Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Jammu & Kashmir and others have already established state level export promotion council with broad objective of:

- Undertake **dialogue with Embassies, Trade bodies**
- Organize / Assist for participating in **international export events**
- Provide **market and business intelligence** support
- Provide **coordination support with line ministries/departments/govt agencies** for grievance redressal
- Organize **trainings for district level staff** under 'Train the trainer' mode
- Provide **networking support with international buyers**
- Develop **marketing collaterals** for discussion with importers
- Establish a **dedicated export helpdesk** for grievance redressal

Taking into cognizance the importance of such institutional mechanism, an indicative organization structure, roles and responsibilities for the proposed SEPC in Gujarat has been proposed in Figure 40.

Figure 40: Proposed organization structure, roles and responsibilities of State Export Promotion Council in Gujarat



2) Opening new markets through tariff negotiation - Support from the Government of India shall be required to negotiate tariffs with target nations where India is not having a favorable tariff structure and open new markets for Gujarat's exporters and accordingly boost exports from the State

Lastly, for Gujarat to cater to the global market, it would be necessary to open new markets wherein there is no / minimal presence of Gujarat due to unfavorable tariff structures.

To identify uncharted markets, focus sector wise list of top of 5 global import markets has been identified along with the existing tariff duty structure of these markets with India and sector specific top 3 competing nations. These imports markets/destinations are then divided into following three categories:

- A. **Countries with favorable tariff structure-** Destinations where India has a favorable tariff duty structure (Free Trade Agreement / Most Favored Nation)
- B. **Countries with competitive tariff structure-** Destinations where India has same or similar tariff duty structure with competing nations (Top 3 exporters).
- C. **Countries with non-favorable tariff structure-** Destinations where India has to pay higher tariff duty structure compared to competing nations.

For instance, India has a tariff duty of 8.18% for exporting auto components to Germany compared to 3.47% for Japan (Non-competitive tariff structure). On the other hand, for exporting automobile to USA, India and Germany has the same tariff structure of 3.44%. Figure 41 summarizes key countries identified for focus sectors based on trade competitiveness.

Figure 41: Country wise trade competitiveness assessment for focus sectors of Gujarat

| Trade competitiveness overview | | | Trade competitiveness overview | | | Trade competitiveness overview | | |
|--------------------------------|--|---|---|--|--|---|---|---|
| Category | Top 5 target markets | Competing nations | Category | Top 5 target markets | Competing nations | Category | Top 5 target markets | Competing nations |
| Automobile | <ul style="list-style-type: none"> USA Germany France China UK Belgium | <ul style="list-style-type: none"> Germany Japan USA | Apparels- Apparels and ready-made garments, knitted or crocheted | <ul style="list-style-type: none"> USA Germany Japan UK France Spain | <ul style="list-style-type: none"> China Bangladesh Vietnam | Pharma- Medicaments used for therapeutic or prevention of disease (prophylactic) | <ul style="list-style-type: none"> USA Germany Belgium Switzerland China | <ul style="list-style-type: none"> Germany Switzerland USA |
| Auto components | <ul style="list-style-type: none"> USA Germany China Mexico Spain Canada France | <ul style="list-style-type: none"> Germany Japan USA | Electrical machinery | <ul style="list-style-type: none"> China USA Germany Japan Singapore | <ul style="list-style-type: none"> China USA South Korea | Pharma- Blood, antisera, vaccines, toxins and cultures | <ul style="list-style-type: none"> USA Germany Belgium Switzerland China | |
| Electronics- Telephone sets | <ul style="list-style-type: none"> USA Hong Kong China Germany Japan | <ul style="list-style-type: none"> China Taipei USA | Basic Metal (Iron and Steel) | <ul style="list-style-type: none"> USA Germany China Italy France | <ul style="list-style-type: none"> Germany Japan USA | <p>Favourable tariff structure</p> <p>Competitive tariff structure</p> <p>Non-favourable tariff structure</p> | | |

Source: Study team analysis, Official website of International Trade Centre (ITC-Trade map)

A detailed analysis on each of these sectors has been provided from Annexures 3 (X to XIV). Interventions from the Government of India shall be required to initiate dialogues with these countries where India has a non-favorable or competitive tariff structure to ease the tariff, open new markets for Gujarat's exporters and accordingly boost exports from the State.

The role of State Export Promotion Council shall play a crucial role in initiating dialogues with the central government for implementing interventions such as Free Trade Agreement / Most-Favored Nation agreement in place between India and above identified countries.

IV. Enhancing manufacturing competitiveness through policy initiatives

It would be critical to incentivize new investments into focus sectors through providing Policy / Scheme based incentives and thereby improving manufacturing competitiveness i.e., reducing cost of doing business in Gujarat

With Ease of Doing Business being an important decision parameter for investors to ground their investments in the state, on a similar note the Cost of Doing Business is also a crucial parameter. It takes in to account various factor costs of manufacturing that determines the manufacturing competitiveness of a particular location and eventually the investment decision.

For providing with competitive Cost of Doing Business environment in Gujarat, a benchmarking exercise was conducted for various incentives offered by select progressive states in India for attracting investments into the focus sectors identified for Gujarat as highlighted in Table 10.

Table 10: Policy benchmarking with similar progressive states in India

| Focus sectors | Sub sector | States other than Gujarat having sector specific policies | Sectors covered under state industrial policy |
|--------------------|--|---|---|
| Electronics | <ul style="list-style-type: none"> Manufacture of electronic components | <ul style="list-style-type: none"> Karnataka Special Incentives Scheme for ESDM 2020 Tamil Nadu Electronics Hardware Mfg. Policy 2020 Andhra Pradesh Electronics Policy 2021 Maharashtra Electronics Policy, 2016 | |
| Automobile | <ul style="list-style-type: none"> Manufacture of motor vehicles | <ul style="list-style-type: none"> Tamil Nadu EV policy 2019 Haryana EV policy 2021 | |
| Textiles | <ul style="list-style-type: none"> Spinning, weaving and finishing of textiles | <ul style="list-style-type: none"> Karnataka Textile Garment Policy 2019 TN New Integrated Textile Policy 2019 Maharashtra Textile Policy 2018 | |
| Apparels | <ul style="list-style-type: none"> Manufacture of wearing apparel, except fur apparel | | |

Manufacturing sector

| Focus sectors | Sub sector | States other than Gujarat having sector specific policies | Sectors covered under state industrial policy |
|--|---|--|---|
| Basic metals | <ul style="list-style-type: none"> Manufacture of basic iron and steel | | <ul style="list-style-type: none"> Karnataka, Tamil Nadu, Haryana, Maharashtra |
| | <ul style="list-style-type: none"> Manufacture of domestic appliances | | |
| Electrical equip. and machinery | <ul style="list-style-type: none"> Manufacture of batteries and accumulators | | <ul style="list-style-type: none"> Karnataka, Tamil Nadu, Haryana, Maharashtra |
| | <ul style="list-style-type: none"> Manufacture of domestic appliances | | <ul style="list-style-type: none"> Karnataka, Tamil Nadu, Haryana, Maharashtra |
| Pharmaceuticals | <ul style="list-style-type: none"> Manufacture of pharmaceuticals, medicinal chemical and botanical products | | <ul style="list-style-type: none"> Karnataka, Tamil Nadu, Haryana, Maharashtra |
| Food processing | <ul style="list-style-type: none"> Processing and preserving of fruit and vegetables | <ul style="list-style-type: none"> Karnataka Agro Business Policy 2016-21 Uttar Pradesh Food Processing Industry Policy 2017 | <ul style="list-style-type: none"> Maharashtra Chhattisgarh |

A careful review of the focus sector wise incentives offered by the Gujarat's Industrial Policy 2020 vis-à-vis other similar states indicate that the incentives offered by the state is not competitive / attractive compared to other India's states that are targeting investments into Focus sectors of Gujarat. Table 9 highlights state to state comparison of capital subsidy (which is only one of the key fiscal instruments used to incentivize new investments under Industrial Policy of any State) offered in focus sectors by respective Indian states that have been considered for this comparison exercise.

Table 11: State wise summary of capital subsidy offered in focus sectors

| Focus sector | Gujarat Industrial Policy 2020 | Karnataka Industrial Policy 2020 | TN Industrial policy 2021 / MSME policy 2021 / EV Policy 2019 | Haryana EV Policy 2021 / Enterprise policy 2020 | Maharashtra Industrial policy 2019 |
|-------------------|---|---|--|--|------------------------------------|
| Automobile | <p>For MSME: 10% - 25% up to INR 35 lakhs</p> <p>For Large units: 6% - 12% (No ceiling)</p> | <p>For MSE: Up to 30% up to INR 1.1 crore</p> | <p>For MSME: 25% up to INR 1.5 crore</p> <p>For Large units: 10% - 25%</p> | <p>For MSME: 20% - 25% up to INR 50 lakhs</p> <p>For Large: 10% up to INR 20 crore</p> | |

| Focus sector | Gujarat Industrial Policy 2020 | Karnataka Industrial Policy 2020 | TN Industrial policy 2021 / MSME policy 2021 / EV Policy 2019 | Haryana EV Policy 2021 / Enterprise policy 2020 | Maharashtra Industrial policy 2019 |
|-----------------------------|---|--|---|---|--|
| Textile and Apparels | | For MSME: 15%-30% For Large: 10%-25% | 10% up to INR 30 lakhs – 2.25 crore | - | 25%-50% (no upper ceiling) |
| Apparel | - | | | | |
| Electronics | For Gross Fixed Capital Investment up to INR 10 cr: 10% up to 1 cr. | 25% on land and 20% on Plant and Machinery | 12%-30% over a period of 12 years | - | - |
| Food processing | 25% of eligible project cost subject to maximum Rs. 50.00 lakhs- Agro & food processing units | 35% of eligible cost; max. Rs. 65 lakh; Interest subsidy of 6% per annum for 7 years for new units | - | - | 10% of project cost in addition to central funding, 5% interest subsidy for 5yrs for new units |

Note: For Food processing: Comprehensive Agro Business Policy (2016-21) for Gujarat, Karnataka Agro Business Policy (2016-21), and Maharashtra State Industrial Policy 2017 has been considered. Capital subsidy to be considered on eligible fixed capital investment.

After review of sectoral policies of the focus sectors in other key progressive Indian states, it is proposed that GoG may also introduce specialized incentive scheme or amend the existing Industrial policy 2020 for reducing the cost of doing business and improving the investment attractiveness to target focus sector investments into Gujarat.

V. Skill availability

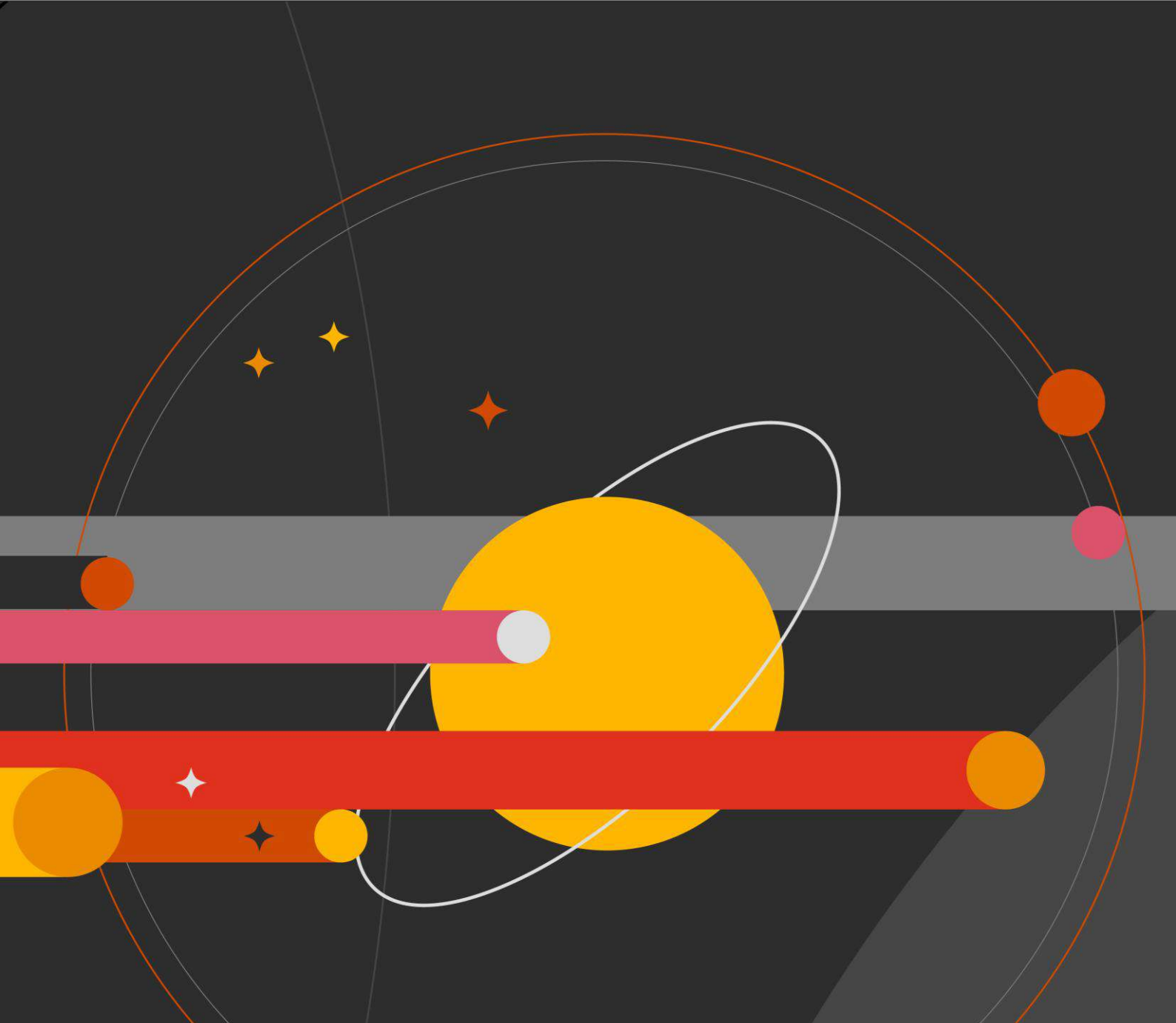
Interventions to strengthen the core skill and work towards shortening gaps in skill deficits shall be taken up through skill development and related interventions

Availability of necessary skill sets will be crucial for the manufacturing entities intending to setup their units in Gujarat for the focus sectors. Knowledge of the required core skill along with a view on skill deficit shall be useful for the government to take timely action and bridge the skill gap. Table 12 highlights the necessary skill requirement as well as skill gap for focus sectors in Gujarat.

Table 12: Skill gap analysis for focus sectors in Gujarat

| Focus sectors | Required core skills | Required allied skills | Skill deficit |
|------------------------------|--|---|--|
| Automobile | Motor Mechanic, Diesel Mechanic, Fitter, Welder, Fabricators | Electrician, Wireman | Specialized welders in Arc welding who can work in extreme conditions on advanced fabrication equipments |
| Textile & Apparel | Ring frame operator, weaver, processing operator (CDR, Stenter), Bar-coding machine operator | Electrician, Wireman, Fitter | The industry has high attrition rates in operator roles (semiskilled) owing to extreme working conditions |
| Food processing | Agronomist, Chemist, Chilling center operator, Dairy operator | Packers and loaders, operators, checkers and supervision | Communication skill, inability to operate advanced machinery, lack of experience in manufacturing process |
| Electrical machinery | Electronics, PPO, Electrical, Instrumentation | Fitter | PPO trade is a key deficit in all industries involving plastic processing Electronics and Instrumentation |
| Electronics | Knowledge about the latest technology and industry trend, experience in VLSI and embedded domain | Knowledge of quality certifications | Lack of understanding of latest technologies, Insufficient exposure to practical training, lack of knowledge of system integration |
| Pharmaceuticals | Process Operator, Packaging Operator, Process Technicians, Lab QC Technicians | Electrician, Instrumentation | Bioinstrumentation |
| Basic metals | Fitter, Welder, Turner, Electrician | Melter, Boiler Operator | PCB instrumentation |
| Gems and Jewellery | Bagger and Flueter, Casting machine operator, Filer and assembler, Assayer & hall marker | Designer-CAD, Designer-Hand sketch, Enameling Goldsmith, CAD-CAM operator | Insufficient compute knowledge, lack of formal training for operators, lack of hand-on experience from other training institutes |

Source: District wise skill gap study for the state of Gujarat (2012-17, 2017-22), National Skill Development Corporation, Other sector specific skill report published by National Skill Development Corporation



5.

Services sector

5. Services sector

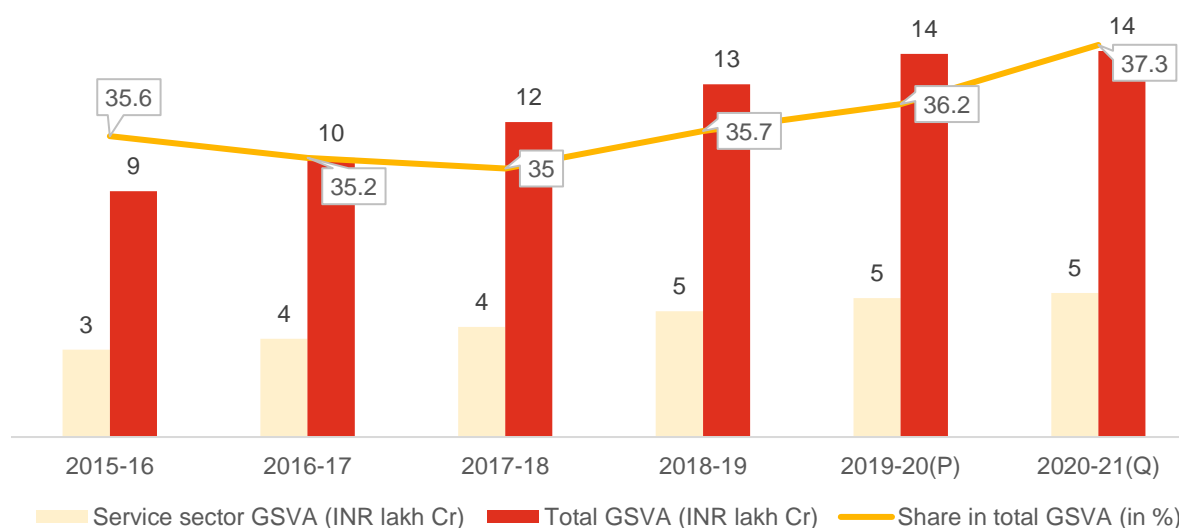
5.1. Overview

Contribution of Gujarat's services sector to the state's GSVA is growing, however the contribution to the national GSVA remains low at 5.2%

The Service sector is an integral part of the Indian Economy contributing 61% in FY21 to the Indian GSVA⁴⁵, and employing ~32% (2020) of the total employed population in India⁴⁶. Service export crossed pre-pandemic levels in Q4 of 2020-21 and grew by 21.6% in H1 of 2021-22⁴⁷. The GSVA of the service sector in India grew from INR 76 Tr to INR 109 Tr from FY16 to FY21 at a CAGR of 7.6%⁴⁸.

Gujarat's Service sector GSVA has grown at a rate higher than India's, at a CAGR of 10.5% from FY16 to FY21, with Service sector contribution to the GSVA increasing from 35.6% in FY16 to 37.3% in FY21⁴⁹ (figure below).

Figure 42: Contribution of services sector in state's GSVA in last 5 years (at constant prices) (INR lakh crore)



However, in terms of contribution of state service GVA to National services GSVA in FY20, Gujarat at 5.2% ranks 7th (figure below)⁵⁰

⁴⁵ Handbook of Statistics on Indian Economy, Components of Gross Value Added At Basic Prices, RBI, 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701> <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20408>

⁴⁶ India - Employment In Services (% Of Total Employment), Trading Economics, Available at: <https://tradingeconomics.com/india/employment-in-services-percent-of-total-employment-wb-data.html>

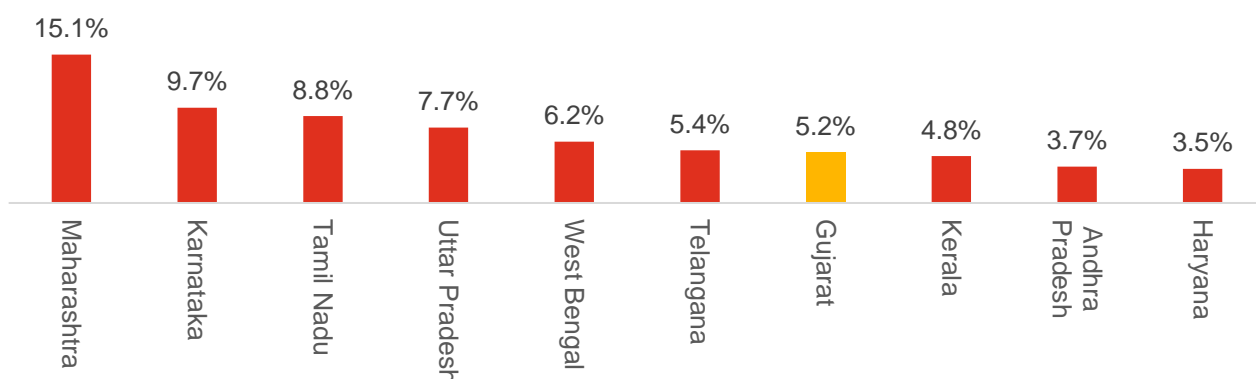
⁴⁷ Economic Survey 2021-22, Chapter 9: Services, Ministry of finance 2022. Available at: <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap09.pdf>

⁴⁸ Handbook of Statistics on Indian Economy, Components of Gross Value Added At Basic Prices, RBI, 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701> <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20408>

⁴⁹ PwC analysis, Data source: Socio-Economic Review: Gujarat State, Directorate of Economics and Statistics, 2022, Available at: https://gujcostat.gujarat.gov.in/uploads/publicationsecmanagment/SER202122eng03_03_22_13_39_12.pdf

⁵⁰ Handbook of Statistics on Indian States, Gross State Value Added by Economic Activity - Services (Current Prices), RBI, November 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20701>

Figure 43: Contribution of state service GSVA to National services GSVA

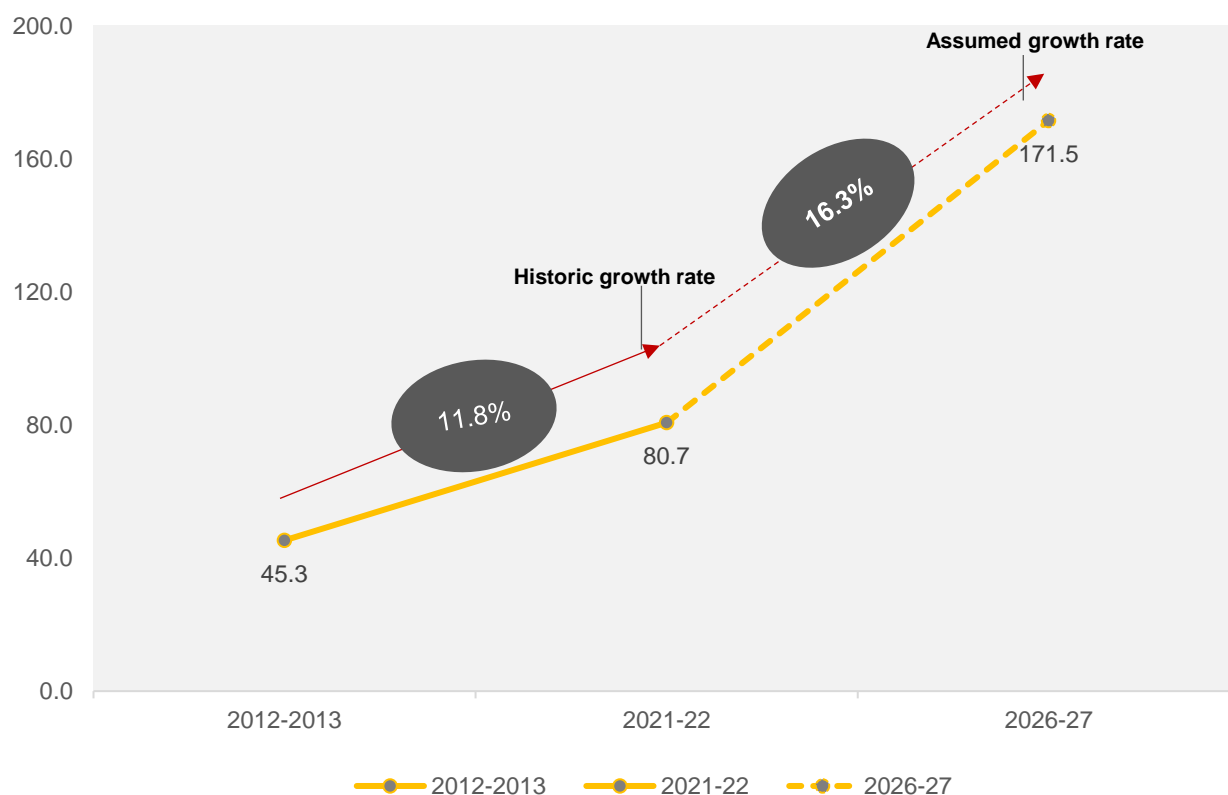


Gujarat's service sector thus needs to make higher contribution to national GSVA in order to play a greater and an integral part in India's USD 5 trillion growth story.

5.2. Growth ambition

For Gujarat to achieve the vision of USD 500 Bn economy by FY 27, it is estimated that Services sector nominal GSVA needs to grow at a CAGR of 16.3% during FY 22 to FY 27.

Figure 44: Historic growth in Services GSVA of Gujarat and projected growth required by FY 27



Source: Study team analysis, Ministry of Statistics and Programme Implementation, Government of India

As highlighted in Figure 1, Gujarat's service sector GSVA was USD 45.3 billion in FY 13. By FY 22, output had grown to USD 80.7 billion, at a rate of 11.8%. The sector GSVA with a growth rate of 16.3% would be USD 171.5 billion by FY 27.

5.3. Strategic framework

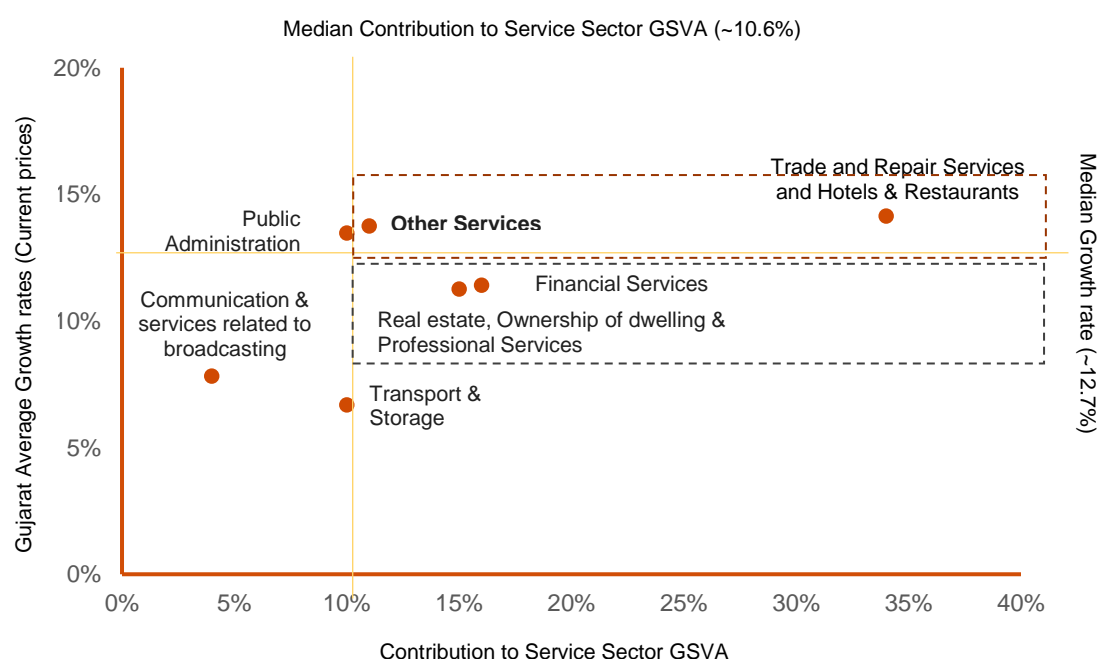
The following section provides the strategic framework for identification of the focus sectors within services which can play a vital role in propelling growth of not only services but also of the state's economy.

The strategic framework takes historical trends and future outlook of the service sub-sectors into consideration, along with the sectors listed as Champion Service sectors by the Government of India

Focus sectors have been identified from the larger set of Service sub-sectors which include 1) Trade and Repair Services and Hotels and Restaurants, 2) Financial Services, 3) Real estate, ownership of dwelling, and Professional Services, 4) Transport & Storage, 5) Communication and Services related to broadcasting, 6) Public Administration, 7) Other Services. The sub-sector wise share in the service sector has largely been the same over the years with Trade and Repair services and Hotels and restaurants contributing the highest percentage to the State's service GVA⁵¹. In the framework developed, sub- sector wise GSVA contribution is an important variable that has been considered. The framework to identify the focus sectors takes into consideration the following three criteria – (i) Historical Trends, (ii) Future Outlook and (iii) Champion Services. This is explained below:

- i. **Historical Trends⁵²:** Shortlisting of sectors that have **historically shown above average growth rate of GSVA in Gujarat and have significantly contributed to the state's economy**. As can be seen from the figure below, this includes sectors in two quadrants:

Figure 45: Services sub-sector GSVA growth rate and contribution to State GSVA



⁵¹ Details in Appendix

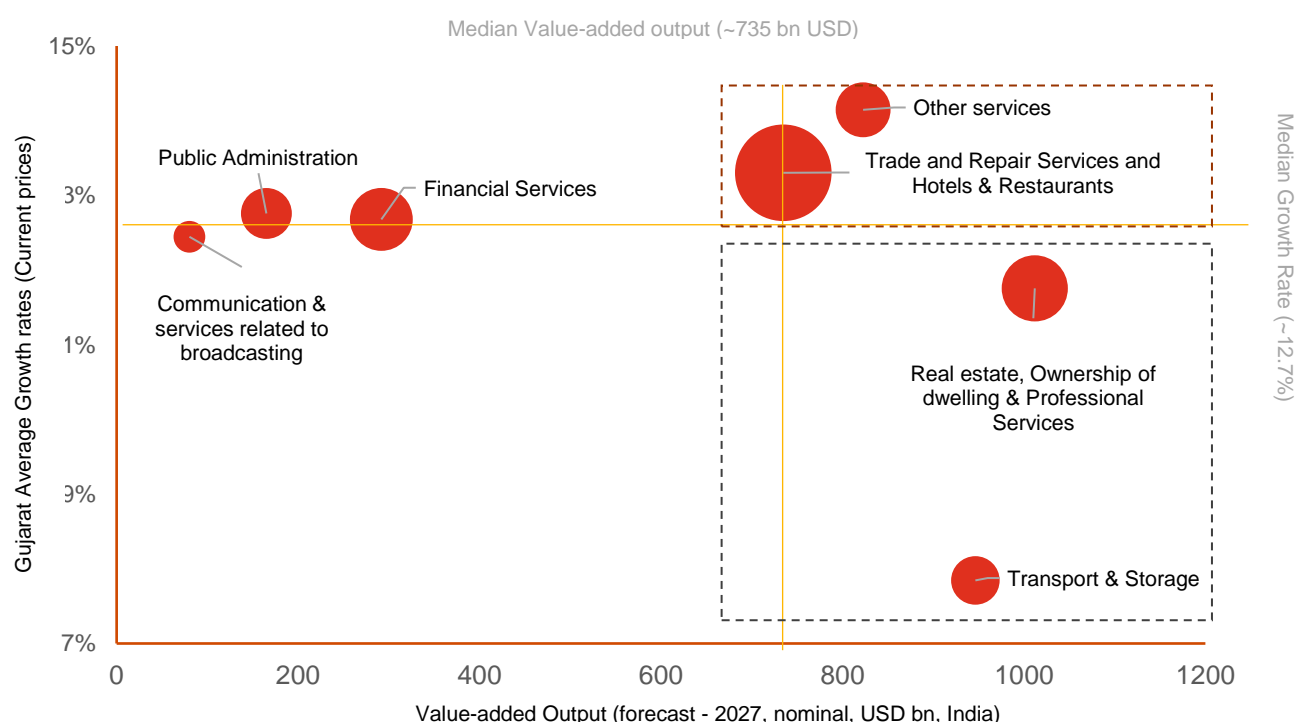
⁵² Data from Socio-Economic Review: Gujarat State, Directorate of Economics and Statistics, 2022, Available at: https://gujecostat.gujarat.gov.in/uploads/publicationsecmanagment/SER202122eng03_03_22_13_39_12.pdf

Services sector

- Sectors in the top right quadrant that have high growth rate and high contribution to service sector GSVA. This segment comprises of Trade and Repair Services and Hotels & Restaurants sector. These are the sectors of Gujarat's economy which have historically been its strength and can potentially keep driving growth.
- Sectors in the bottom right quadrant have moderate growth rate and high contribution to service sector GSVA. It includes Financial Services and Real estate, Ownership of dwelling & Professional Services. These are the sectors that have showcased lower growth rates but significantly contribute to Gujarat's GSVA.

ii. **Future outlook:** Sectors that are **forecasted to have high value-added output⁵³ share at national level by 2027**, as can be seen from the figure below, includes those in the following two quadrants:

Figure 46: Expected Value added and growth rate of sectors in 2027 (Size of bubble denotes size of sub-sector GSVA in 2019-20)



- In the top right quadrant are the sectors expected to have high Value-added output and high growth rate in 2027. These include Trade and Repair Services and Hotels & Restaurants sector and other services. These sectors shall be key in driving growth with the projected large value-added output.
- In the bottom right quadrant are the sectors expected to have high Value-added output and moderate growth rate by 2027. These are Real estate, Ownership of dwelling & Professional Services and Transport and Storage. These sectors which are projected to be large in the future shall be key enablers.

⁵³ Value added output data from EMIS database, GSVA data and growth rates analyzed from Socio-Economic Review: Gujarat State, Directorate of Economics and Statistics, 2022, Available at: https://gujecostat.gujarat.gov.in/uploads/publicationsecmanagment/SER202122eng03_03_22_13_39_12.pdf

- iii. **Champion Services Sectors:** There are 12⁵⁴ sectors that have been **identified as Champion Service Sectors by the Government of India**. The Government wants to specifically focus on promoting the development of these high potential sectors and provide support in realizing their full potential.

The following section lists the sectors that fits all three criteria and have therefore been identified as focus sectors under Services.

5.4. Identification of focus sectors

Focus sectors are - IT & ITeS, Financial Services, Healthcare, Tourism, Real Estate and Transport and Logistics

Based on the historical trends, projected trends and Government of India's Champion Service sectors, the focus sectors have been shortlisted. Following focus sectors have been identified under services:

Table 13: List of Focus Sectors

| S. No. | Sectors | Sub-Sectors (Focus sectors) | Champion Service |
|--------|--|--|------------------|
| 1. | Communication & services related to broadcasting | IT & ITES | √ |
| 2. | Financial Services | Financial Services | √ |
| 3. | Other Services | Healthcare (including Medical Value Travel) | √ |
| 4. | | Tourism & Hospitality Services | √ |
| 5. | Real estate, Ownership of dwelling & Professional Services | Real Estate ⁵⁵ | √ |
| 6. | Transport & Storage | Transport & Logistics Services (enabling sector) | √ |

To support growth of the Services sector, the Task Force recommends that a Commissionerate may be established exclusively for services, housed under an appropriate department and headed by a Commissioner, for undertaking of interventions across Services in close coordination with relevant departments.

The following sections highlight the key growth opportunities, challenges and strategic interventions in each of the identified focus sectors.

⁵⁴ Champion Services include Information Technology & Information Technology enabled Services (IT & ITeS), Tourism and Hospitality Services, Medical Value Travel, Transport and Logistics Services, Accounting and Finance Services, Audio Visual Services, Legal Services, Communication Services, Construction and Related Engineering Services, Environmental Services, Financial Services and Education Service

⁵⁵ Under Real estate Construction and engineering related services is a Champion Service sector

5.5. Growth opportunities & Challenges

IT and ITeS sector

IT - ITeS Sector in India has witnessed high growth in export and domestic markets and is largely driven by IT services

The Indian Information Technology/ Information Technology Enabled Services (IT/ITeS) sector has contributed immensely to positioning India as a preferred investment destination amongst global investors. As of 2021, it has also been creating huge number of job opportunities with **44.7 lakhs professionals**⁵⁶ working in IT. From 2016-2021, revenue from this sector has grown at a CAGR of almost 6%⁵⁷ to \$194⁵⁸ bn in FY 2020-21 (E) with a GDP contribution of 8%⁵⁹. According to a NASSCOM report, the industry revenue is projected to reach \$350 billion by FY 2026⁶⁰. Exports contribute to more than 75%⁶¹ of the total IT/ITeS revenue and majorly cover US, UK and EU markets with 62%, 17% and 11%⁶² of total IT/ITeS exports respectively.

The IT / ITeS sector comprises four key segments - IT services, business process management (BPM), software products & engineering services and hardware. IT services is the largest segment with market size of \$99.1 billion in FY 21⁶³, followed by software products with \$40.3 billion, BPM with \$38.5 billion, and hardware with \$16.1 billion respectively.

IT - ITeS Sector in Gujarat is largely dependent on exports and is growing slow

In Gujarat, the IT-ITeS sector exports grew at 14% annually between 2017-18 and 2020-21⁶⁴. At the national level, based on STPI annual report⁶⁴, the software exports from Gujarat comprised of only 0.74% of total national software exports for the year 2018-19. **The share of Gujarat's IT exports was 0.62% of the total state exports in 2018-19⁶⁵. In the same year, Karnataka's (1st rank) IT-ITeS sector exports were ~57⁶⁶ times that of Gujarat.** Other states above Gujarat include Maharashtra, Telangana, Tamil Nadu, Haryana, Uttar Pradesh, West Bengal and Kerala. In FY 20-21, the total IT-ITeS sector export of Gujarat was reported to be INR 3976 crores⁶⁷. Thus, Gujarat has a huge potential to increase the share of IT-ITeS exports.

⁵⁶ Software-and-services-sector, MeitY, Available at <https://www.meity.gov.in/content/software-and-services-sector>

⁵⁷ IT-BPM sector in India, NASSCOM, Available at <https://nasscom.in/knowledge-center/publications/the-it-bpm-sector-india-2018-amplify-digital>

⁵⁸ TECHNOLOGY SECTOR IN INDIA 2021, NASSCOM, 2021, Available at <https://community.nasscom.in/communities/bpm/technology-sector-india-2021-new-world-future-virtualstrategic-review>

⁵⁹ Software-and-services-sector, MeitY, Available at <https://www.meity.gov.in/content/software-and-services-sector>

⁶⁰ Indian-it-sector-growing-at-almost-twice-the-rate-of-eco, Shila Phadnis, 2022, Available at <https://timesofindia.indiatimes.com/business/india-business/indian-it-sector-growing-at-almost-twice-the-rate-of-eco/articleshow/89602308.cms>

⁶¹ Revenue Trend, MeitY, Available at <https://www.meity.gov.in/revenue-trend>

⁶² Export-Destinations, MeitY, Available at <https://www.meity.gov.in/content/export-destinations>

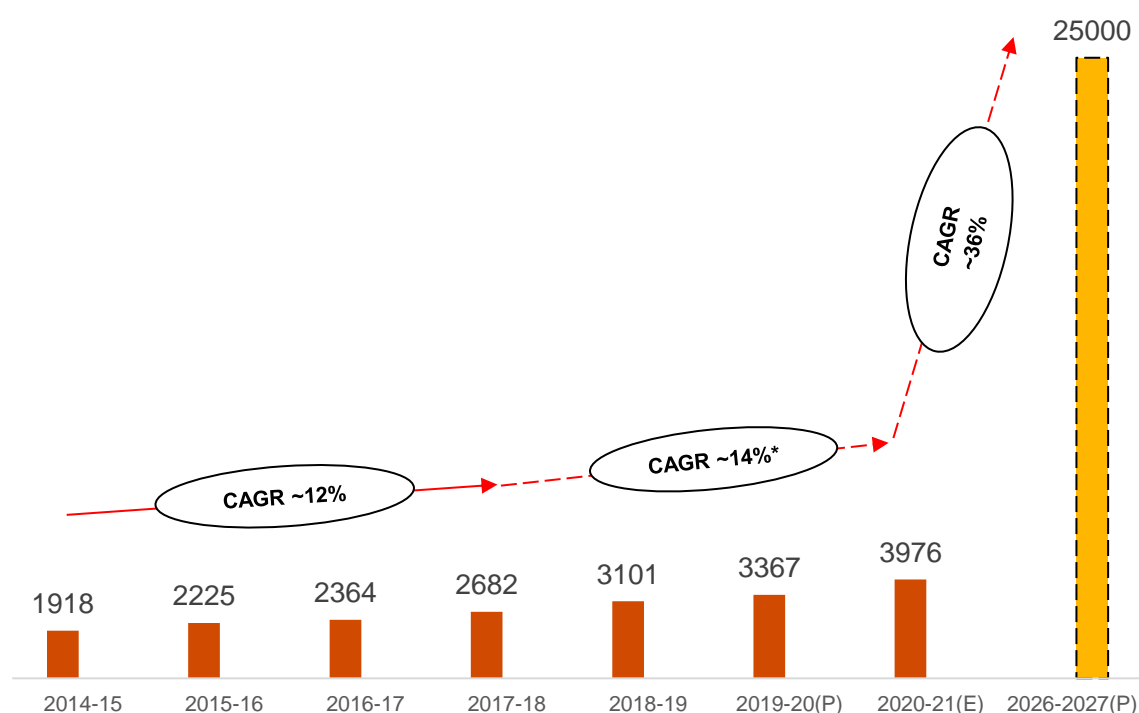
⁶³ Economic Survey 2021-22, Department of Economic Affairs, 2022, Available at <https://www.indiabudget.gov.in/economicsurvey/>

⁶⁴ STPI Annual Reports, Software Technology Parks of India, Available at <https://stpi.in/en/stpi-annual-reports>

⁶⁵ IT/ITeS Policy 2022-2027, Department of Science and Technology, Gujarat, 2022, Available at <https://gil.gujarat.gov.in/Media/DocumentUpload/IT%20POLICY-Final-2022.pdf>

⁶⁶ STPI Annual Reports, Software Technology Parks of India, Available at <https://stpi.in/en/stpi-annual-reports>

⁶⁷ About STPI Gandhinagar, Available at <https://gandhinagar.stpi.in/en/about-stpi-gandhinagar>

Figure 47: Trend in IT sector exports of Gujarat⁶⁸ (INR Crore)

Gujarat presently has a low footprint of IT companies and needs to address key challenges to strengthen factors such as Human Capital, Innovation Ecosystem, and Infrastructure

Gujarat's IT-ITeS sector has huge growth opportunities especially after the announcement of state IT-ITeS policy 2022-27 which provides attractive financial incentives and support for organizations. The policy aims to bring in more investments and IT offices of top IT companies into Gujarat. The details of this policy are covered in the next section.

Presently, the total number of IT offices of major IT companies in Gujarat is low compared to other states. Most of these tech giants like Infosys, HCL, Mindtree do not have a footprint in Gujarat. Others like TCS and Tech Mahindra do have offices, but the number is small compared to their presence in other leading states. Most of the companies present in Gujarat are small.

To identify the key issues underlying Gujarat's low IT company footprint, a comparison based on the location decision criteria for IT & ITeS companies across states of Karnataka, Telangana, Maharashtra, and Gujarat was carried out. Based on the key parameters, several gaps have been identified that need to be plugged to attract IT companies:

- Disconnect between the Industry and workforce with respect to skill:** There is a gap between the skills required by the IT Industry and skills of youth in the State. With only 6 engineering colleges in Gujarat that rank in top 200 of NIRF⁶⁹, the number is low compared to the other states like Karnataka and Maharashtra both of which have 19 top ranking colleges each. According to the India Skills report⁷⁰, the state ranks 8th in employability of talent. This has led to low availability of industry ready workforce in Gujarat.

⁶⁸ STPI Annual Reports, Software Technology Parks of India, Available at <https://stpi.in/en/stpi-annual-reports>

⁶⁹ India Rankings 2021: Engineering, Ministry of Education, 2021, Available at <https://www.nirfindia.org/2021/EngineeringRanking.html>

⁷⁰ India Skills_Report_2021, CII, 2021, Available at <https://cii.in/PublicationDetail.aspx?enc=tqg4pk6AY1Uj+SwRfF02NuhANNZpm6EphC2TftkV66SkeTczScuqT3wpYnWVhLcT9Vh5LMTqIGTQF8P+TxyI71RrzUKJ1PE76p8laO0ZB3Z8mnhdMqylkNKVhz90uV5Ovlo2nLvxAy3kp/tr7EygARD03AeMiT3bxGremku3ID+QSOsxytGrsGAVY6sTpgs>

Innovation ecosystem of Gujarat needs to be strengthened. The future growth in IT/ITeS sector would be led by emerging technologies such as cloud, artificial intelligence and other digital services⁷¹. Gujarat must upscale its innovation and tech adoption to make the most of this opportunity. Presently, Gujarat ranks 8th in state wise ranking of India Innovation Index for 2020⁷² with Karnataka and Maharashtra taking the lead.

Limitation in international air connectivity: The number of direct flights to key international IT hubs and major markets is low. Gujarat has very few direct flights to US, UK and countries like Nigeria in Africa which are emerging as new demand centers for IT services. As several emerging economies including that of Africa and Latin America look to digitize, improving air connectivity may attract new opportunities for the IT-ITeS sector in Gujarat.

Social Infrastructure*: Gujarat is well placed in the ease of living index⁷³ with Ahmedabad, Surat and Vadodara ranking 3rd, 5th and 8th respectively in it. Further improvements may be considered in other areas of social infrastructure; for example, number of hotel rooms⁷⁴ may need to be increased compared to those in other states with strong IT sector. In terms of the total retail market size⁷⁵, Ahmedabad may aspire to rank in the top 6 cities all of which have strong IT sector. Based on the school education quality index⁷⁶, Gujarat ranks 4th in the overall performance; however, score in terms of access outcomes (a key parameter of the index) needs to be improved as it is behind Maharashtra and Karnataka.

For Gujarat to become a “destination of choice” for IT companies and increase its exports to INR 25,000 crore as set by the IT/ITeS policy 2022-2027, the above gaps need to be filled. Policy interventions along with an increase in private investment will be needed to overcome these challenges.

Financial Services sector

The Financial Services sector outlook in India is positive, especially for capital markets and the fintech market

Financial Services sector is a vital part of the economy, enabling savings and credit for citizens, guarding against uncertainty, aiding businesses to start, and raising capital in the primary and secondary markets. Emerging technologies have further enabled growth of this sector, easing financial transactions and trading. The financial services sector while employing only 2% of all non-agricultural employees⁷⁷, is a high labour productivity sector with value add per person employed at INR 1.3 Mn in FY19⁷⁸. **Indian Banking and**

⁷¹ Indian IT industry to touch \$300-350 billion in five years, Economic Times, 2021, Available at <https://economictimes.indiatimes.com/tech/technology/mckinsey-says-indian-it-industry-to-touch-300-350-billion-in-five-years/articleshow/81093397.cms?from=mdr>

⁷² India Innovation Index for 2020, NITI Aayog, 2021, <https://www.niti.gov.in/sites/default/files/2021-01/IndiaInnovationReport2020Book.pdf>

⁷³ Ease of Living Index 2020, Ministry of Housing and Urban Affairs, 2020, Available at: https://smartnet.niua.org/sites/default/files/resources/final_web_ease_of_living_report_2020_.pdf

⁷⁴ India Hospitality Industry overview 2019, HVS, 2019, Available at: https://api.anarock.com/uploads/research/HVS%20India%20Hospitality%20Industry%20Overview%202019_Annual%20Report.pdf. India Hospitality Industry overview 2020, HVS, 2020, Available at: <https://api.anarock.com/uploads/research/HVS%20ANAROCK%20Indian%20Hospitality%20Overview%202020.pdf>. India Market Monitor 2021, CBRE, 2021, Available at: <https://www.cbre.co.in/insights/figures/india-market-monitor-2021>. PwC Analysis

⁷⁵ Think India.Think ‘Connected’ Retail, Retailers Association of India, KnightFrank, 2017, Available at: <http://rls.net.in/images/think-india-think-connected-retail-2017-4441.pdf>

⁷⁶ The success of our Schools: Scholl Education Quality Index, NITI Aayog, 2019, Available at: https://www.niti.gov.in/sites/default/files/2019-09/seqi_document_0.pdf

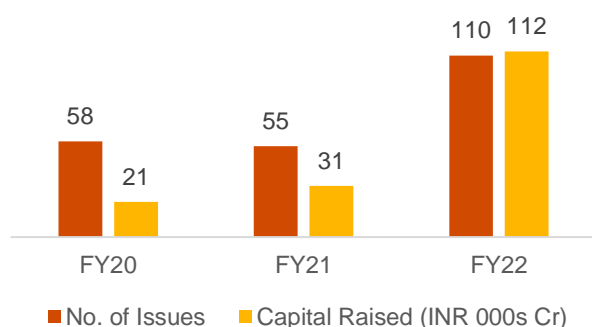
*Further details can be found in the annexure 4

⁷⁷ PwC analysis, Data source: Measuring Productivity at the Industry Level – The India KLEMS Database, RBI, September 2021, Available at: <https://rbi.org.in/Scripts/KLEMS.aspx>

⁷⁸ Measuring Productivity at the Industry Level – The India KLEMS Database, RBI, September 2021, Available at: <https://rbi.org.in/Scripts/KLEMS.aspx>

Insurance sector contributed ~9% to the national GSVA in FY20⁷⁹, and has been growing at 9.4% CAGR, from INR ~7,200 Bn in FY16 to ~INR 10,000 Bn in FY20⁸⁰.

Figure 48: No. of IPO issues and capital raised in India



This sector may be segmented into three verticals – Banking, Insurance and Capital Markets, with the FinTech sector cutting across all three verticals. The overall Financial sector outlook in India is positive. For the banking sector, loans and deposits are projected to increase at over 8% CAGR between FY20 and FY25⁸¹. The online individual insurance market is projected to touch USD 1.25 Bn by FY25, at a CAGR of ~30%⁸². The **Indian FinTech Industry is projected to grow at ~48% CAGR and reach USD 150 Bn by FY25⁸³**. Further in capital markets in India, capital raised in FY22⁸⁴ was over 3.5x that of FY21, crossing a record INR 1 lakh crore mark, through 110 issues⁸⁵. According to a survey⁸⁶, **India is expected to be one of the top three countries to have most IPOs and capital raised by 2030⁸⁷**.

Gujarat, while growing fast, ranks 4th in Banking and Insurance GSVA contribution to the Indian Banking and Insurance GSVA

Gujarat's Banking and Insurance sector's contribution to GSVA has been growing fast at ~11% between FY16 and FY20; however, the state is ranked 4th in terms of contribution to National Banking and Insurance GSVA, contributing ~7% in FY20⁸⁸. Maharashtra, Delhi and Tamil Nadu are the top three contributors in this sector.

⁷⁹ PwC analysis, Data source: Handbook of Statistics on Indian Economy, Components of Gross Value Add at Basic Prices, RBI, September 2021, Available at: <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=20408>

⁸⁰ PwC analysis, Data source: Handbook of Statistics on Indian States, Gross State Value Added by Economic Activity - Banking and Insurance (Current Prices), RBI, November 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20697>

⁸¹ BFSI – Banking sector, Invest India, April 2022, Available at: <https://www.investindia.gov.in/sector/bfsi-banking>

⁸² BFSI – Insurance sector, Invest India, March 2022, Available at: <https://www.investindia.gov.in/sector/bfsi-insurance>

⁸³ BFSI – FinTech & Financial Services sector, Invest India, April 2022, Available at: <https://www.investindia.gov.in/sector/bfsi-fintech-financial-services>

⁸⁴ FY22 data available only up to Feb22

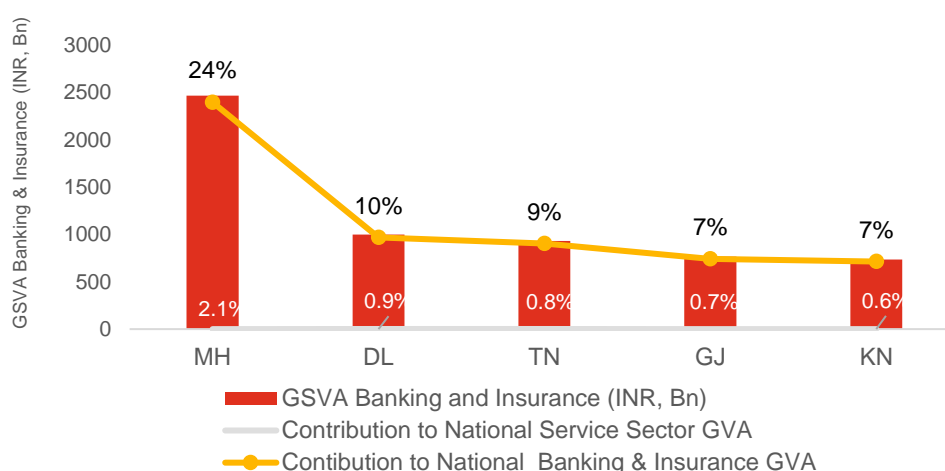
⁸⁵ Monthly SEBI Bulletin, SEBI, Available at: <https://www.sebi.gov.in/sebiweb/home/HomeAction.do?doListing=yes&sid=4&ssid=80&smid=107>

⁸⁶ The Economist Intelligence Unit, on behalf of PwC, surveyed 370 equity capital market participants from developed & emerging markets.

⁸⁷ Capital Markets in 2030: The future of equity capital markets, PwC and The Economist Intelligence Unit, 2019 Available at: <https://www.pwc.com/gx/en/audit-services/capital-market/publications/capital-markets-2030.pdf>

⁸⁸ PwC analysis, Data source: Handbook of Statistics on Indian States, Gross State Value Added by Economic Activity - Banking and Insurance (Current Prices), RBI, November 2021, Available at: <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20697>

Figure 49: Banking and Insurance Sector GVA (FY20, current prices), and growth rates (%)



| State | Maharashtra | Delhi | Tamil Nadu | Gujarat | Karnataka |
|---|-------------|-------|------------|---------|-----------|
| Banking & Insurance GVA CAGR (FY16 to FY20) | 8% | 8% | 12% | 11% | 11% |

Further, while innovation and adoption of technology has given a fillip to the FinTech sector in India, Gujarat has a long way to go with **number of FinTech startups in Ahmedabad ~12x lesser⁸⁹ (June 2020) than leading cities like Bengaluru and Mumbai⁹⁰**. These cities have an ecosystem conducive to the development of a FinTech hub.

The state can further strengthen its overall Financial Service Sector utilizing the already strong infrastructure and institutional support (Startup and Innovation Policy, IFSCA, etc.) that exists in the state. GIFT city, with India's only International Financial Service Center (IFSC), should be leveraged to make it a key contributor to Gujarat's growth story.

The following section outlines the opportunities for Gujarat to achieve its full-potential and be a key contributor to India's USD 5 trillion ambition.

Gujarat's GIFT City is well positioned to become the International Financial Gateway of the country. IFSC is becoming preferred destination for International Financial Services Activities

There is immense opportunity for Gujarat in the capital markets and FinTech especially after the formation of unified regulator in GIFT city. **GIFT city is well positioned to become the International Financial Gateway of the country.** IFSC in GIFT city is becoming the preferred destination for International Financial Services activities. Several expert committees have been formed such as Committee of Experts on Setting up of

⁸⁹ Details in Data analysis Appendix – Financial Services sector

⁹⁰ India FinTech Report: 2nd Edition Executive Summary, Medici, 2020, Available at: <https://www.fintechcouncil.in/pdf/India-Fintech-Report-2020-Executive-Summary.pdf>

Longevity Finance Hub in GIFT IFSC, Committee of Experts on Sustainable Finance, Committee of Experts on Ship Financing & Leasing, etc. These committees look into legal and regulatory, global best practices, taxation and other aspects relevant to the concerned subject. Additionally, given that India is the 3rd largest domestic aviation market in the world⁹¹, IFSCA has issued a framework for Aircraft Operating Lease. For Fund management, IFSCA released the International Financial Services Centers Authority (Fund Management) Regulations, 2022 which have been benchmarked against global regulations. In the capital market, NSE IFSC-SGX Connect will strengthen the overall financial ecosystem for trading activity in GIFT IFSC and can move significant capital onshore from Singapore.

While there is a strong foundation at GIFT IFSC, increasing security trading activity requires **attracting intermediaries like stockbrokers, share transfer agents, Asset Management Companies (AMC), investment banks, etc. to Gujarat**. Presently, leading foreign banks like Mizuho Bank, SMBC, DBS etc and International Merchant banks and investment banks such as Credit Suisse, Morgan Stanley, Goldman Sachs, etc. do not have a physical presence at GIFT city. GIFT city also needs to target more FinTechs to develop a vibrant FinTech ecosystem and become a leading FinTech hub in India and the world. FinTechs are presently headquartered in cities like Mumbai, Delhi, Chennai and Bangalore. FinTech unicorns are mostly headquartered in other states, for instance, Acko and Coin DCX in Maharashtra; Razorpay, Groww and CRED in Karnataka; Paytm, Pine Labs and Bharatpe in Delhi-NCR and Chargebee in Tamil Nadu.

Gujarat needs to address key challenges of GIFT IFSC and strengthen factors such as Business Environment, Reputation, Human Capital and Infrastructure

For GIFT city to witness more traction in the space of financial services, the key challenges of IFSCA need to be addressed. These include:

1. **Ease of doing business at GIFT IFSC:** The current structure of setting up a business at GIFT IFSC requires registration with SEZ Authority, IFSC Authority, GST Authority, Lease deed registration with Sub registrar, obtaining NOC from home regulator (SEBI / RBI). This process takes about 90-120 days. This needs to be improved by moving to a single window concept for approvals
2. **Stringent KYC norms:** Existing KYC norms are stringent and not at par with global standards. Therefore, KYC norms needs to be aligned with other centers like Singapore relaxed to provide ease of access to Foreign Investors in GIFT IFSC.

IFSC is not at a level playing field with other International Financial Centers. Currently, under the Liberalized Remittance Scheme (LRS), amounts not invested within 15 days are to be remitted back to the Indian bank account. No such obligations are ordained for LRS remittances to other financial centers. Need for multiple regulatory clearances should be rationalized.

To attract investments in the Financial Service sector, Gujarat also needs to address challenges in areas which potential investors consider before investing in a certain region. These **location decision criteria include parameters of Business Environment, Reputation, Human Capital and Infrastructure**⁹². The following is the analysis on the four areas:

1. **Business Ecosystem:** While Gujarat ranks 10th in EoDB⁹³, doing better than the states in comparison⁹⁴, it is ranked 6th in State competitiveness⁹⁵, below all states compared in this assessment. In terms of a policy

⁹¹ GIFT City - Aircraft Leasing and Financing, IFSCA, Invest. Available at: https://www.ifsc.gov.in/Document/Slider/IFSCA_Aircraftleasing_Digital_18122021.pdf

⁹² Details of parameters in Data Analysis appendix – Financial Service sector

⁹³ Handbook of Statistics on Indian States, State-wise Ease of Doing Business Rank, RBI, October 2020, Available at: <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=20117>

⁹⁴ States compared are Maharashtra, Delhi, Tamil Nadu and Karnataka

⁹⁵ State Competitiveness Report, Institute for Competitiveness, 2017, Available at: <https://competitiveness.in/state-competitiveness-report/>
State competitiveness is measured based on 4 major pillars which are Factor conditions (human resource capital, physical infrastructure, scientific and technological infrastructure, etc.), Demand conditions (sophistication of local needs, e.g., safety and environment standards), Supporting and related

push, Gujarat presently does not have a FinTech policy unlike other leading states of Maharashtra and Tamil Nadu, which released FinTech policies in 2018 and 2021 respectively. Further, Gujarat shall target featuring its 1 or 2 cities in the Global Start-up Ecosystem rankings which currently includes Bangalore, New Delhi, and Mumbai at 10th, 14th, and 16th ranks respectively⁹⁶. Gujarat has however already released the Startup & Innovation Policy 2022, which may be crucial to the establishment and growth of start-up ecosystems in Gujarat over the coming years.

2. **Reputation:** Gujarat is known for its vibrant entrepreneurial spirit where manufacturing plays a key role; however, a similar reputation for services is to be built. The state needs to innovate to develop a reputation as Services hub and in particular, as a Financial hub. Presently, Gujarat scores ~23.6 in NITI Aayog's India Innovation Index 2020, ranking 8th among the large Indian states⁹⁷. Further, Ahmedabad is ranked 147th in the Findexable Global FinTech rankings, with New Delhi at 13th, Bangalore at 20th, Mumbai at 23rd, and Chennai at 73rd ⁹⁸.
3. **Human Capital:** Skilled manpower in Gujarat is also a key challenge. Gujarat ranks 8th in the top 10 states with highest employability; all states compared under Financial Services, here, ranking above it⁹⁹. It scores low in the innovation index human capital pillar, which considers a total of 7 variables such as enrollment in PhD., Higher Education institutes with NAAC grade A and above, Pupil teacher ratio in higher education, National Achievement Survey scores (class X), etc¹⁰⁰.
4. Further, it does not rank in the top 10 states with available skills in English as 2nd language¹⁰¹, an ability important to development of a region as a global financial hub. The state needs better skill availability and higher number of industry ready employable youth to develop the financial services sector. Additionally, while Gujarat scores better in Infrastructure & Facilities outcome domain in NITI Aayog's School Education Quality Index, it scores lower than the states compared in access outcomes domain. Access outcomes domain includes variables such as Adjusted Net Enrolment Ratio (NER), transition rate and percentage of identified out of school children mainstreamed in last completed academic year¹⁰².
5. **Infrastructure:** Gujarat has a comparative advantage in real estate costs for office space and residential spaces, when compared to other leading states. Cost of renting office space is ~2.7x lower in Ahmedabad than in Mumbai, and 2x lower than in Delhi. Residential market price in Ahmedabad is ~2.5x lower than Mumbai and 1.5x lower than Delhi¹⁰³. Gujarat should look to take advantage of this by developing supporting infrastructure and addressing challenges mentioned above. The state also needs to improve air connectivity to major international destinations like UK, US for easy travel to and from leading Financial hubs around the world. Further, Gujarat needs to improve its social infrastructure including facilities which young employees working in Finance may be able to use for recreational activities.

To make Gujarat one of the top Global Financial Hubs and to provide a vibrant and thriving FinTech Ecosystem, the above gaps need to be bridged. Policy interventions with a focus on increasing private investment are required to address these challenges.

industries (Availability of suppliers, presence of clusters), and Context for firm and strategy rivalry (Local rules and incentives, openness to foreign markets, etc.).

⁹⁶ Global Startup Ecosystem Index 2021, StartupBlink, 2021, Available at: <https://report.startupblink.com/>

⁹⁷ India Innovation Index 2020, NITI Aayog, 2020, Available at: <https://www.niti.gov.in/sites/default/files/2021-01/IndiaInnovationReport2020Book.pdf>

⁹⁸ Global Fintech Rankings Report: Bridging the gap, Findexable Limited, 2021, Available at: <https://findexable.com/wp-content/uploads/2021/06/Global-Fintech-Rankings-2021-v1-23-June-21.pdf>

⁹⁹ Skills Development, CII, Available at: <https://cii.in/Publications.aspx?enc=4REpuTyAzESAxzG5irNsE7F+QdVKoq6AksG1vZ6AeTtm9bFGAmfTK7Qo8HP1HvwnHGtW9M8MjTytgJgOyQ1IT4iu6ZGKnVYDCVhHFvfaUD/VZ9zvn9yqt3sX5JMOmPoSRGc+/hq4mMUU52C1edwZTgl3kuFVvzDSn5n/GgulmsLFzUoLdBFlmihW7xlyXtqDSOm04cMJ54zWrLF06h36Ahgx4D4oOT3861eN/FDPGb1A/3G42XaRA8f0kUkA1WdyuD6c5gwLq3CUiG98yAilwyM8L7RxbLK6kOXk9jzKmo=>

¹⁰⁰ Global Startup Ecosystem Index 2021, StartupBlink, 2021, Available at: <https://report.startupblink.com/>

¹⁰¹ Skills Development, CII, Available at: <https://cii.in/Publications.aspx?enc=4REpuTyAzESAxzG5irNsE7F+QdVKoq6AksG1vZ6AeTtm9bFGAmfTK7Qo8HP1HvwnHGtW9M8MjTytgJgOyQ1IT4iu6ZGKnVYDCVhHFvfaUD/VZ9zvn9yqt3sX5JMOmPoSRGc+/hq4mMUU52C1edwZTgl3kuFVvzDSn5n/GgulmsLFzUoLdBFlmihW7xlyXtqDSOm04cMJ54zWrLF06h36Ahgx4D4oOT3861eN/FDPGb1A/3G42XaRA8f0kUkA1WdyuD6c5gwLq3CUiG98yAilwyM8L7RxbLK6kOXk9jzKmo=>

¹⁰² The success of our Schools: Scholl Education Quality Index, NITI Aayog, 2019, Available at: https://www.niti.gov.in/sites/default/files/2019-09/seqi_document_0.pdf

¹⁰³ PwC Analysis, Data from: India Real Estate Residential and Office Market - July - December 2021, Knight Frank, 2021, Available at: <https://content.knightfrank.com/research/2377/documents/en/india-real-estate-residential-and-office-market-2021-8699.pdf>

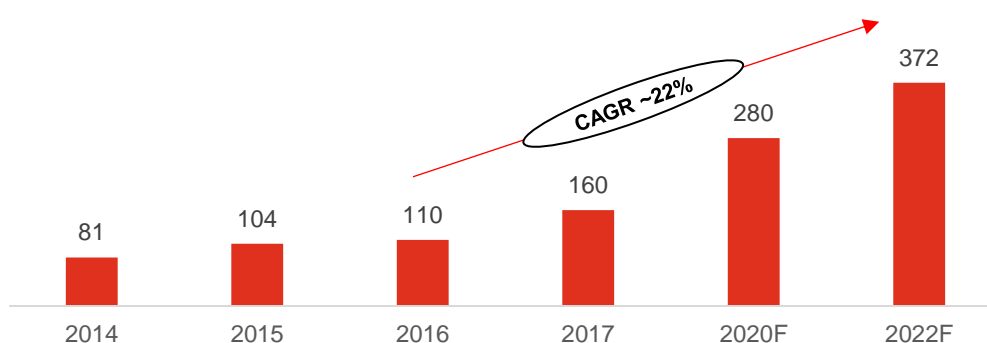
Healthcare

Indian healthcare market is growing at a fast rate and the growth is being led by the hospital industry

The Indian Healthcare market has grown at a CAGR of 22% since 2016.¹⁰⁴ It is expected to become a USD 372 Bn market by 2022.¹⁰⁵ The rising purchasing power and aging population are the key demand drivers of Healthcare Sector. The percentage of population with an income of more than INR 2 Lakhs per annum has doubled to 35% over the last decade.¹⁰⁶ Similarly, the percentage of population with age more than 45 years is projected to touch 29% from 18% reported in 2011.¹⁰⁷

The healthcare sector has seven key segments including hospitals and infrastructure, health insurance, pharmaceuticals and biotechnology, medical devices, medical tourism, home healthcare as well as telemedicine and other technology-related health services.¹⁰⁸ The Hospital segment accounts for 80% of the total healthcare market.¹⁰⁹ The expenditure required for growth of this segment will come mostly from private sector as it contributes to 73% share of total healthcare expenses.¹¹⁰

Figure 50: India's Healthcare Market (USD Bn)



Gujarat is a top-ranking state in health, but there's still some scope of improvement which is keeping it away from unlocking its full potential

While Gujarat ranked 6th on NITI Aayog's Health Index for 2019-20, it is the top-ranking state among large states category in SDG India Index 2020-21 for the Good health and wellbeing goal (SDG no. 3).¹¹¹ The number of physicians, nurses and midwives per 10,000 population was reported 41 which was higher than the national average of 37 but lower than the target of 45.¹¹²

The following section will deep-dive into the strengths of the country and the state in the sector to give insights on the key opportunities and challenges which will contribute towards unlocking the full potential of Gujarat and emerge as the leading contributor towards India's USD 5 trillion ambition.

¹⁰⁴ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf

¹⁰⁵ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf

¹⁰⁶ IBEF Healthcare Report

¹⁰⁷ IBEF Healthcare Report

¹⁰⁸ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf

¹⁰⁹ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf

¹¹⁰ NITI Aayog Report – Investment Opportunities in India's Healthcare Sector, Available at https://www.NITI.gov.in/sites/default/files/2021-03/InvestmentOpportunities_HealthcareSector_0.pdf

¹¹¹ SDG India Index & Dashboard 2020-21, Available at https://www.NITI.gov.in/writereaddata/files/SDG_3.0_Final_04.03.2021_Web_Spreads.pdf

¹¹² SDG India Index & Dashboard 2020-21, Available at https://www.NITI.gov.in/writereaddata/files/SDG_3.0_Final_04.03.2021_Web_Spreads.pdf

Gujarat needs to capitalize on the opportunities aimed at enhancing domestic and international market coverage while also ensuring a deeper penetration in the underserved market

This section deep dives into the key opportunities and challenges for Gujarat to increase the healthcare service sector contribution in the state GDP. The opportunities highlighted below are focused on enhancing (1) domestic market coverage, (2) international market coverage and (3) underserved market coverage.

1. Private sector participation to enhance domestic market coverage:

Public sector hospitals face capital / cash flow constraints that leads to several spill over constraints which hinder them from:

- a. Upgrading to new and latest infrastructure and technologies
- b. Investing into improved management
- c. Maintaining a robust and efficient procurement/ supply chain
- d. Including additional services/ skills (e.g., specialty services) or even expanding their service capacity especially with digitization of healthcare

Hence, it is important to increase private sector participation in the hospital segment. Gujarat has renowned local multi-specialty hospitals, e.g., Kiran multi-specialty hospital in Surat, Zydus, KD hospitals in Ahmedabad etc. However, there is a great opportunity to attract other leading private sector hospital chains which do not have footprint in Gujarat, e.g., Max, Manipal, Fortis, etc. In order to attract more private sector participation in hospital industry of Gujarat, its challenges need to be addressed. The key challenges are highlighted below:

- **Barriers to entry due to high risk profile:** There are mainly 3 types of risks associated i.e., general and financial risk, planning / design and construction risk (land acquisition and planning, design, changes in planning/ approvals, construction, cost overruns, completion delays, latent defects, changes in legislation or guidelines) and operating risk (including clinical performance). These risks make it tough for the Private Sector to enter into different markets (from low to high/ high to low income) and prevents them from diversifying their investments. Diversifying investments is crucial for mitigating risks as it helps in increasing the volume and market share.¹¹³
- **High cost of real estate** is a major bottleneck that the private sector faces in establishing and expanding themselves.¹¹⁴ Although the real estate cost is low in Gujarat, the cost incurred by private sector is substantial.

2. Medical Value Tourism specially to enhance international market coverage:

- Medical Value Travel (MVT) in India is a fast-growing market projected to reach USD 13 Bn in 2022.¹¹⁵ Approximately, 40% of the medical tourists are from west Asia and Africa.¹¹⁶ **Cost is one of the major drivers of MVT.** India has a cost advantage to attract international tourists for medical treatments which are at a cost much lower than the West (US) and leading Asian countries (Thailand, Singapore, Korea). For example, the cost of knee replacement in India is one-eighth of the cost in the US, half of the cost in Thailand and Singapore and one-third of the cost in Korea.¹¹⁷

¹¹³ PwC Report – PPPs in Healthcare, Available at <https://www.pwc.com/gx/en/healthcare/assets/ppps-in-healthcare.pdf>

¹¹⁴ Data Analysis Appendix for Healthcare

¹¹⁵ Financial Express article: Medical value tourism in India: What makes the country a leading medical tourism destination, Available at <https://www.financialexpress.com/lifestyle/travel-tourism/medical-value-tourism-in-india-what-makes-the-country-a-leading-medical-tourism-destination/2338644/>

¹¹⁶ India Tourism Statistics 2019, Available at <https://tourism.gov.in/sites/default/files/2020-04/India%20Tourism%20Statistics%202019.pdf>; Appendix 4

¹¹⁷ Data Analysis Appendix for Healthcare

- **Private sector is leading in MVT** owing to the brand, cost efficiency, standardization of services, and accreditations. Examples of a few internationally acclaimed hospitals in India which have well-developed offices globally as well include:
 - Apollo has patients from 110+ countries and 8 JCI Accreditations including one at Ahmedabad. The Apollo Proton Cancer Center is India's first and only JCI accredited cancer hospital. They have a dedicated website and messaging service for international patients who can easily schedule personal consultations for their treatment in India.¹¹⁸
 - Max has 3 JCI accredited hospitals and has associations with BILD Foundation, Germany and the American Foundation (USA). They have also established a wholly owned subsidiary MGH in Nigeria and have incorporated a wholly owned subsidiary in UAE for activities in connection with the solicitation of overseas patients.¹¹⁹

While Gujarat has renowned local multi- specialty hospitals, there is a great **opportunity to attract leading national hospital chains** which have low footprint in the state.¹²⁰

3. Health Tech to enhance underserved market coverage:

Indian Health Tech market is expected to reach USD 21 billion by 2025.¹²¹ This growth is attributable to the fast-growing emerging health tech landscape in the following areas:

- **Telemedicine:** This will improve accessibility to rural, tribal and hard to reach areas. This will also enable effective utilization of the already available resources.¹²²
- **Artificial Intelligence (AI):** AI doctors can provide surgical solutions for remote areas and NLP for clinical research.¹²³
- **Internet of Things (IoT):** This will help in enabling machine-to-machine communication, Information exchange and data movement.¹²⁴
- **Big Data:** Predictive Big Data Analytics would increase accuracy of diagnosis and treatment in personal medicine¹²⁵
- **Wearable technology:** This will help in treating and preventing lifestyle-linked problems like stress and anxiety through monitoring, e.g., increase in adoption of smart-health watches.¹²⁶

Gujarat has also introduced and adopted several telehealth initiatives including the following:

a. Initiative introduced:

- **GHMIS:** The Gujarat Hospital Management Information System (GHMIS) project was conceptualized by the Department of Health & Family Welfare to ensure quality healthcare, provide standard clinical & diagnostic tools, hospital management tools and integration of management information at the state level to ensure online review & monitoring.¹²⁷

¹¹⁸ Apollo Annual Report 2021, Available at [https://www.apollohospitals.com/apollo_pdf/AHEL-AR21-Full-Report-eVersion\(20210811\).pdf](https://www.apollohospitals.com/apollo_pdf/AHEL-AR21-Full-Report-eVersion(20210811).pdf)

¹¹⁹ Max Annual Report 2021, Available at https://max-website20-images.s3.ap-south-1.amazonaws.com/Annual_Report_FY_2020_21_1bab38c3ff.pdf

¹²⁰ Data Analysis Appendix for Healthcare

¹²¹ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

¹²² Data Analysis Appendix for Healthcare

¹²³ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

¹²⁴ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

¹²⁵ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

¹²⁶ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

⁶⁴ Official Website of Gujarat Informatics Ltd. (GIL), Available at <https://gil.gujarat.gov.in/ghmis>

- **1100 helpline:** This provides medico psychosocial support services to citizens for general medical advice and psychosocial support, follow-up of discharged patients of COVID-19 and follow-up of patients of COVID-19 on home isolation.¹²⁸

b. National initiatives adopted:

- **eSanjeevani:** This is a doctor-to-doctor telemedicine system which is being deployed nationally by the MoHFW at Health and Wellness Centres under Ayushman Bharat Scheme of the Govt. of India¹²⁹
- **1100 helpline:** This provides medico psychosocial support services to citizens for general medical advice and psychosocial support, follow-up of discharged patients of COVID-19 and follow-up of patients of COVID-19 on home isolation.¹³⁰
- **Tele-ECG:** Bhabha Atomic Research Centre (BARC), Govt. of India has developed a portable, light weight Mobile Controlled ECG machine, providing virtual instantaneous ECG diagnostic service¹³¹
- **Tele-ICU:** This provides real-time exchange of health information between hospital critical care unit and multiple care centers regardless of their locations.¹³²
- **Telemedicine has the maximum potential in the health tech segment** especially in the rural areas of Gujarat which have limited access to reputed hospitals in the urban centers. It is growing at a CAGR of 31% and is expected to touch USD 5.4 Bn by 2025.¹²¹ Covid has accelerated the adoption of Telemedicine especially in the rural areas. The Government of India's decision to release telemedicine guidelines early during the lockdown has fueled this growth. This growth is evident from the growth in telemedicine startups in India. Prominent telemedicine startups including myUpchar, Practo, Tattvan, Lybrate and mFine have witnessed around 3x jump with new users since the lockdown. Practo, which claims to be India's largest digital healthcare platform has increased its doctor base by 50%.¹³³

Tourism Sector

The Travel and Tourism Sector in India has been witnessing a slow down since 2015, however it is projected to pick up and grow at a CAGR of ~23% to reach INR 38 Tr by FY27

India is well known for its natural beauty, bountiful culture and heritage and holistic tourist destinations that de-stress and rejuvenate travelers. The country houses 40 World Heritage sites.¹³⁴ With all these intrinsic offerings, the country ranked 34th amongst 140 economies on World Travel, Tourism Competitiveness Index 2019 published by World Economic Forum¹³⁵. In the pre pandemic time, India's Tourism sector was growing with a CAGR of ~7% (2015 to 2018) and was then hit hard during the pandemic, like rest of the world. However, with ease in restrictions on travel, the industry is on its way to recovery, and is estimated to grow with a CAGR of ~23% through 2020 to 2027, reaching a revenue of INR 38.4 Tr in 2027¹³⁶.

¹²⁸ National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India, Available at <https://nidm.gov.in/covid19/PDF/covid19/state/gujarat/110.pdf>

¹²⁹ Desh Gujarat. Available at <https://www.deshgujarat.com/2020/10/08/e-sanjeevani-opd-scheme-for-free-online-medical-consultation-launched-in-gujarat/>

¹³⁰ National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India, Available at <https://nidm.gov.in/covid19/PDF/covid19/state/gujarat/110.pdf>

¹³¹ Official Website of Bhabha Atomic Research Centre (BARC), Govt. of India, Available at <http://barc.gov.in/technologies/ecg/index.html>

¹³² Official Website of Bhabha Atomic Research Centre (BARC), Govt. of India, Available at <http://barc.gov.in/technologies/ecg/index.html>

¹³³ India's eHealth Market Opportunity Report, Available at <https://inc42.com/reports/indias-ehealth-market-opportunity-report-2021/>

¹³⁴ <https://whc.unesco.org/en/statesparties/in>

¹³⁵ https://www3.weforum.org/docs/WEF_TTCR_2019.pdf

¹³⁶ <https://economictimes.indiatimes.com/industry/services/property/-construction/property-market-to-touch-usd-1-trillion-by-2030-number-of-people-employed-in-sector-to-grow-at-7-cr-housing-secretary/articleshow/84613894.cms>

Gujarat, meanwhile, has seen an above average growth due to its abundance of tourism assets, which is further supported by the government initiatives

Gujarat has long been a key destination of the country. The tourism sector contribution to the state GDP has experienced high growth from 5% in FY 15 to 8% in FY 20¹³⁷. The tourist's footfall of Gujarat has also increased at a CAGR of ~15% between 2009- 2018. Gujarat was one of the top 10 performing states in Domestic Tourist Visits in 2020, while it stood 12th in terms of foreign tourist footfall.¹³⁸

There is an abundance of tourism assets in Gujarat, ranging from the world's only white desert, 4 National parks, 23 wildlife sanctuaries, wildlife like Asiatic lions, 4 UNESCO Heritage Sites and India's first World Heritage City by UNESCO – Ahmedabad, in addition to multiple circuits across the state. The state houses the historical site of Indus Valley Civilization. The splendor of events and festivals of the state are Rann Utsav, International Kite Festival and Navratri.¹³⁹

Further, to support the Tourism sector, the state government has undertaken multiple initiatives by introducing policies like Gujarat Tourism Policy 2021-25, Gujarat Heritage Tourism Policy 2020-25 and Gujarat Homestay Policy. Proposed policies include Cinematic Tourism Policy, Guidelines for Wellness Tourism, Adventure Sports Policy.

Yet, the state has been facing challenges and has not been able to realize its full potential

Some of the challenges faced by the state tourism sector are as highlighted below:

- a. Pre Covid-19, Gujarat's foreign tourist footfall grew at a rate of 20% surpassing the country average at a CAGR of 8% during the period 2015 - 2019¹⁴⁰. However, Gujarat's share to the country's total foreign tourist footfall remains low, as Gujarat ranked 12th in terms of its share of foreign tourist visits and contributes only 1.78%. This is significantly lower than the leading states like Tamil Nadu which ranks 1st and contributes 22%, Maharashtra 18% and Uttar Pradesh 15% to the foreign tourist visits of India. A closer look at these states reveal key factors driving tourism like robust international connectivity, an abundance of internationally (UNESCO) recognized sites, a significant services sector ecosystem, and major footfall of non-resident Indians from these state, amongst others.

According to Ministry of Tourism Statistics 2019, Gujarat ranked 9th in domestic tourists footfall, , with a share of around 3% which is relatively low when compared with states like Tamil Nadu and Andhra Pradesh whose share in the domestic footfall was 21% and 10% respectively. However, Gujarat's domestic tourist footfall has experienced a growth of 13% between the period of 2015 to 2019 while Tamil Nadu and Andhra Pradesh experienced slower growth of 10% and 4% respectively.¹⁴¹

However, reviewing the tourist mix who visited the state during the year 2018-19, the major share was of intra state tourists, contributing 72% to the total domestic tourists' footfall, followed by Inter -state (26%) and Foreign Tourist (2%)¹⁴²

To cater to the varied tourist expectations, as well as to increase competitiveness compared to other leading states, Gujarat can look at diversifying the tourism product offerings, thus catering to a larger segment of tourists like friends & family, business traveler, solo traveler, etc. For instance - rural & impressive experience and beaches as a type of asset are emerging and engaging segments of tourism, and the state has humongous scope to improve and further increase its tourist footfall through these segments. As a key enabler,

¹³⁷ Statista

¹³⁸ Government of India tourism statistics report for 2009,2019,2020

¹³⁹ <https://whc.unesco.org/en/statesparties/in>, https://wii.gov.in/nwdc_national_parks, https://wii.gov.in/wildlife_sanctuaries, state tourism website,

¹⁴⁰ <https://tourism.gov.in/sites/default/files/2021-09/English%20Tourism%202021.pdf>

¹⁴¹ <https://tourism.gov.in/sites/default/files/2020-04/India%20Tourism%20Statistics%202019.pdf>

¹⁴² <https://timesofindia.indiatimes.com/city/ahmedabad/71-of-tourists-in-gujarat-are-from-within-the-state/articleshow/69909253.cms>

the state also needs to improve the support infrastructure which a tourist always looks for, to ensure memorable experiences and repeat visits. A closer and comprehensive review of hotel assets and connectivity infrastructure suggests a scope for further improvement and augmentation. Further, the state can also develop leisure infrastructure both in terms of retail, F&B assets as well as theme/ amusement parks.

Based on the above analysis, the following section deep dives into the opportunities which are focused on (i) enhancing tourist footfall, (ii) increasing length of stay, and (iii) diversifying products & offerings. Through these objectives, the state may aim to realize the untapped potential of the sector and increase tourism sector contribution to the state GDP.

Real estate sector

The real estate sector in India witnessed a consistent growth over the years and the sector remained resilient even during the testing times of COVID – 19 pandemic. IT/ITeS sector along with construction received the maximum investment ~ top 3 sectors in India that received FDI inflow in 2020 - 2021

The real estate sector plays a crucial role in the overall growth of the economy as it is reflective the health and quality of life of the population in a country. Real estate as a sector shares strong synergies with all other sectors such as manufacturing and other services and is the cradle that houses the demand and needs that are being triggered by the growth of the other sectors and the overall economic development achieved by the State.

India, with a GDP of USD 2.7 trillion, is one of the fastest growing countries accompanied by rapid urbanization. The urban population is expected to reach 46 per cent by 2025 up from 31 per cent in 2011. An estimated 88 crore people will be living in the urban areas by 2050 as opposed to the current 46 crores. This is likely to create a huge demand for houses, roads, commercial spaces and other infrastructure requirements. As a result of this, the real estate sector is projected to reach a market size of USD 1 trillion by 2030 from USD 120 billion in 2017 and contribute 13 per cent to the GDP of the country.¹⁴³

The real estate sector comprises of four sub-sectors – housing, retail, hospitality and commercial. Currently, the residential sector contributes to approximately 80 per cent of the real estate sector. The key drivers for housing are rapid urbanization, population expansion, rise in nuclear families, repatriation of NRI's and rise in disposable income.

Currently, the share of organized retail accounts for a small portion of the real estate market. . However, there are notable emerging trends in the retail segment such as booming consumerism in India, young population demographic having exposure to global trends and entry of MNC retailers. As a result, the retail sector including the e-retail sector is growing at a rate of 25-30 per cent annually.^{144 145}

Hospitality sector comprises of hotels, service apartments and convention centers. Government initiatives to promote tourism in tier II and tier III cities is expected to positively impact the demand for stay options, especially in the budget segments in these cities

In the commercial sector, is dominated by few large developers possessing a pan-India presence. The office market has been driven by the growth in ITeS/IT, BFSI, consulting and manufacturing industries. In 2019, the commercial real-estate market registered a growth of 27 per cent year-on-year¹⁴⁶.

¹⁴³ <https://economictimes.indiatimes.com/industry/services/property/-construction/property-market-to-touch-usd-1-trillion-by-2030-number-of-people-employed-in-sector-to-grow-at-7-cr-housing-secretary/articleshow/84613894.cms>

¹⁴⁴ <https://www.investindia.gov.in/sector/retail-e-commerce>

¹⁴⁵ <https://www.ibef.org/industry/retail-india>

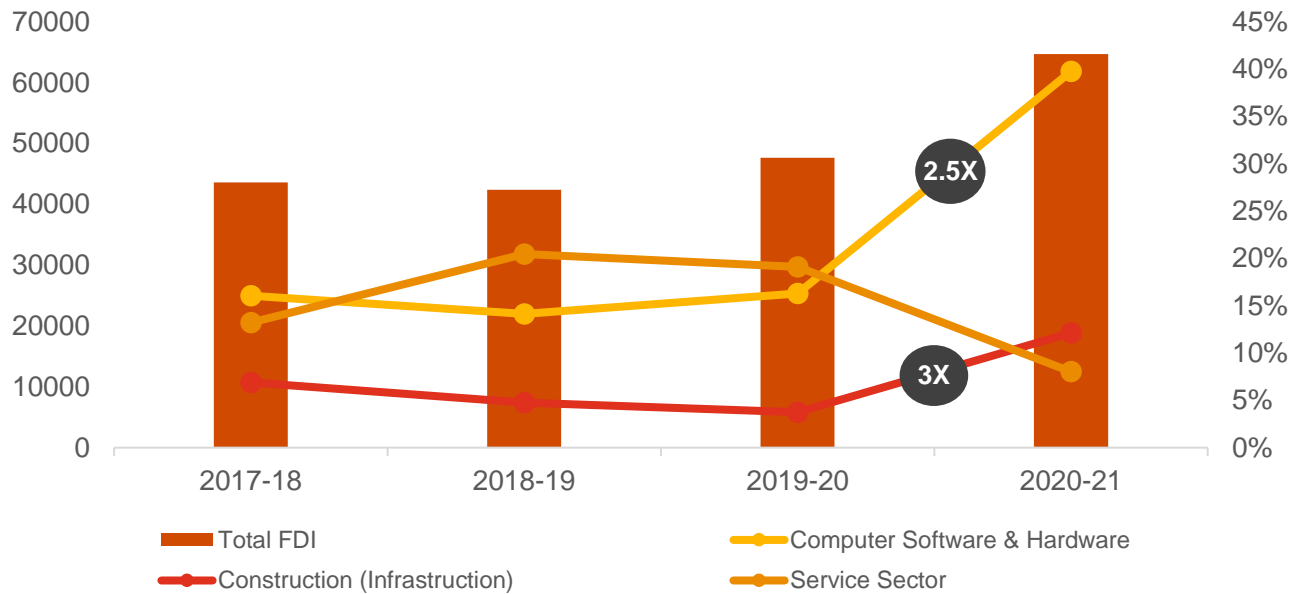
¹⁴⁶ <https://content.knightfrank.com/research/659/documents/en/india-real-estate-july-december-2019-6897.pdf>

Services sector

Further, growth in manufacturing has led to a raise in the requirement for logistics and warehousing spaces. This, in turn, has led to Grade A developers slowly starting to take positions in India such as Indospace Logistics, ESR, etc.

Due to its capital-intensive nature, the sector has a potential to attract significant global investment. The sector has remained resilient to the Covid-19 pandemic, attracting about 13 per cent of the total FDI in India in 2020-21¹⁴⁷. The sector attracted three times the FDI it attracted in 2019-20, as shown in Figure below:

Figure 51: FDI inflow in India (USD billion) and percentage contribution of top sectors to the FDI in last 5 years



Source: Ministry of Commerce and Industry, Government of India

The growth in FDI in the real estate sector is a combination of multiple factors including the conducive, policy initiatives taken by the Government. The government has been making multifaceted efforts to boost investments from foreign and domestic investors in the real estate sector. Some of the major initiatives taken by the government are Real Estate Investment Trusts (REITs)¹⁴⁸, increasing the cap of FDIs to 100 per cent in the real estate sector, housing for economically weaker sections, reduction in stamp duty and a stable repo rate.

The Government has allowed 100 per cent FDI for townships and settlements development projects. The relaxation of foreign exchange regulations, together with other tax and regulatory reforms has made India a lucrative investment option among foreign investors. Mumbai is the 5th most attractive destination in Asia Pacific in office space. The India real estate attracted US \$ 5 billion institutional investments in 2020¹⁴⁹.

Affordable housing refers to the development of housing units to cater to the housing requirements of low- and middle-income households. Conferring 'infrastructure' status on the housing segment makes borrowing for projects easier since it permits increased tenure for loans, reduced interest rates and improved terms. This brings down the cost of housing by reducing the developers' cost for borrowing.

¹⁴⁷ Study team analysis based on data from sources like DPIIT, Govt. of India

¹⁴⁸ REIT is a SEBI registered investment vehicle that owns and operates real estate assets and allows institutional and retail investors to earn stable and low risk income generated through ownership of commercial or retail real estate.

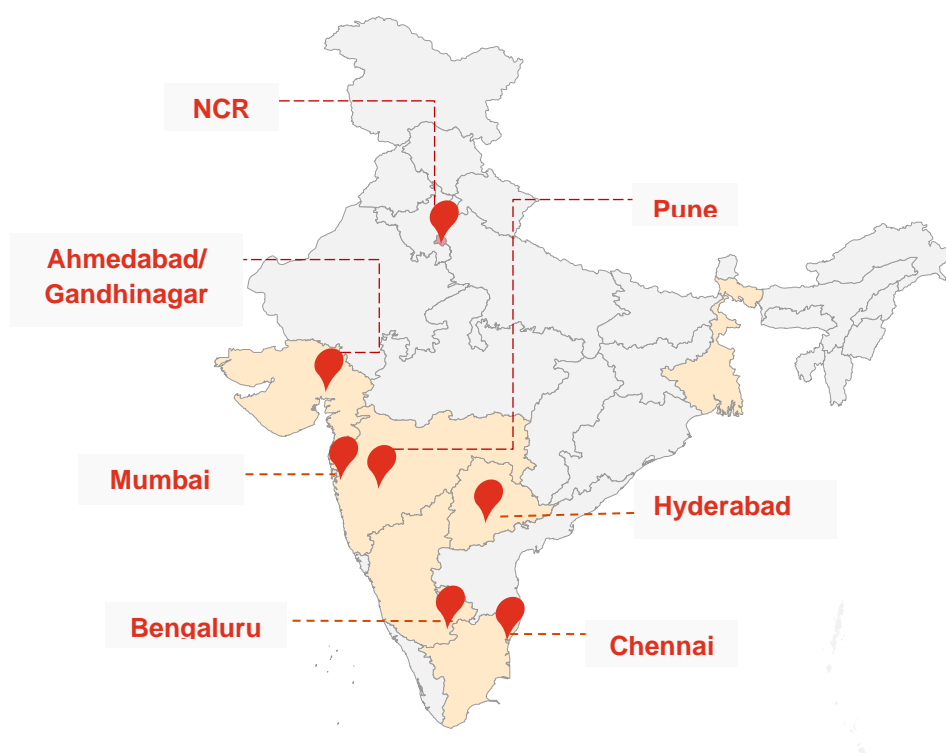
¹⁴⁹ IBEF

Stamp duty rates across the states in India have seen a reduction, thereby encouraging real estate development.

The repo rate at 4 per cent and reverse repo rate at 3.35 per cent remained unchanged to mitigate the impact of Covid-19¹⁵⁰. This is expected to drive housing demand and drive sales by 35-40 per cent as home loan rates remain stable.

The organized real estate landscape of the country is dominated by 7 cities ~ activity driven by commercial space offtake by IT/ITeS tenants triggering demand for allied asset classes like residential, retail, hospitality, etc. Currently, organized real estate activity in Gujarat is concentrated in cities of Ahmedabad, Gandhinagar, Rajkot, Surat, etc. (driven by regional developers)

Figure 52: Top real estate clusters in India



Source: Study team analysis

¹⁵⁰ The Reserve Bank of India

Table 14: Comparison of top real estate clusters in India

| Rank | City | Commercial Office (Mn sft) | Residential (DUs) | Retail (Mn sft) | Hospitality (keys) |
|------|---------------------------|----------------------------|--------------------|-----------------|--------------------|
| 1 | Bengaluru | 174.1 | 450,000 – 4,80,000 | 12.8 | 14,000 |
| 2 | Mumbai | 130.6 | 400,000 – 500,000 | 11.1 | 14,400 |
| 3 | NCR | 129.5 | 350,000 – 400,000 | 19.7 | 22,200 |
| 4 | Hyderabad | 83.6 | 2,83,300 | 11 | 10,000 |
| 5 | Chennai | 71.3 | 250,000 – 3,00,000 | 4.9 | 10,000 |
| 6 | Pune | 59.9 | 150,000 – 200,000 | 4.4 | 7,100 |
| 7 | Kolkata | 42.5 | 125,000 – 150,000 | 7 | 5,000 |
| 8 | Ahmedabad/ Gandhinagar | < 25 | <140,000 | <2 | < 4,000 |

Source: CBRE, JLL, Cushman & Wakefield

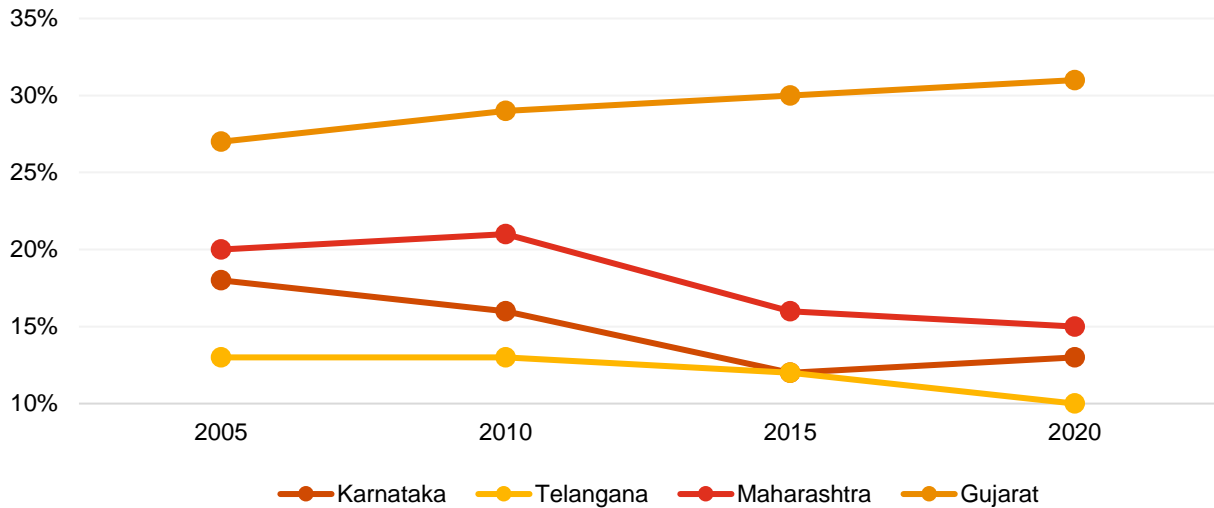
75 per cent of India's office activity comes from four cities, i.e., Bengaluru, Mumbai, NCR and Hyderabad. Expansion in the commercial office space triggers the expansion of allied sectors like residential, retail and hospitality due to increase in demand by the growing population.

Currently, Gujarat's organized real estate activity is currently limited to GIFT city at Gandhinagar and few developments at Ahmedabad, Surat and Rajkot. The development albeit at nascent stages has gained head start with announcement of new IT/ITeS policy (2022 – 2027). However, it is to be noted that Gujarat has significant potential to unlock in this segment as 2 of the top 10 growing cities in India viz. Rajkot and Surat are in the State.

The contribution of Gujarat's GSVA from IT/ITeS is much lower than other States. IT/ITeS activity is a key driver for commercial office space offtake triggering demand for other allied real estate asset classes

Gujarat has established itself as the largest manufacturing hub in India with the GSVA in manufacturing growing at 15.9 per cent annually between FY 2012 to FY 20 to touch INR 5.11 lakh crore according to the data released by RBI. Gujarat shall now target positioning itself in the service sector, which is a key driver for commercial office space offtake and in turn triggers demand for other allied real estate asset classes.

Figure 53: Share of Manufacturing GSVA in the GSDP of top states in India



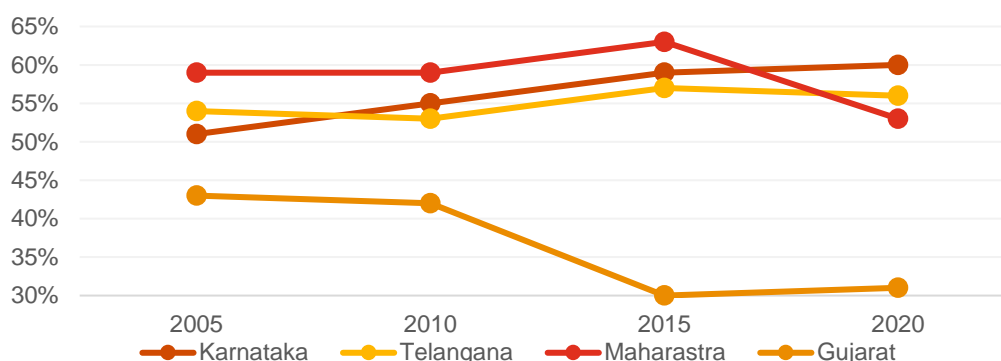
Source: Study Team Analysis

It is important to note that increased focus in promoting growth of services sector with major focus on IT/ITeS and BFSI activity is imperative as it is a proven that the IT/ITeS sector is one of the biggest employment generators and has spawned the mushrooming of several ancillary industries such as transportation, real estate and catering, Security, Housekeeping etc. as per MeitY. Further, the IT/ITeS sector is one of the highest employment generator, creating four indirect employment for every direct employment generated. The employees in the IT/ITeS sector are also among the highest paid employees in the country, earning 24 per cent higher than the national median, thereby having a higher spending propensity. The IT sector has thus been the key driver for the trigger in Real Estate development in the top four cities as per Table 14.

Keeping the same in perspective, it is opined that renewed focus on IT/ITeS, Banking & Financial services as key economic driver triggering real estate demand coupled with planning and policy firming to incentivize real estate, a need of the hour in Gujarat, to replicate the success stories of top markets like Bengaluru, Hyderabad, etc.

Given below is the share of the services GSVA in the GSDP of top states in India.

Figure 54: Share of Services GSVA in the GSDP of top states in India



Source: Economic Survey, Statistics Times, Govt of Telangana, CBRE Research

States like Karnataka, Telangana and Maharashtra have garnered higher share of GSVA via services vis-à-vis manufacturing which has led to a trickle-down effect on the real estate sector further fueling the growth of this sector.

In the next section, a benchmarking assessment has been undertaken to understand the critical success factors that drove the real estate demand in Hyderabad, and so the key learnings from the same could be applied whilst formulating the strategic inversions for Gujarat.

The growth and evolution of the city's real estate sector was backed by the growth in the services sector and several policy and infrastructure led interventions by the Government to support the growth

The contribution of services sector in the GSDP of Telangana (driven by Hyderabad) grew from 36 per cent pre 1997 to over 61 per cent today. The rapid growth can be divided into five phases, driven by policy support and government interventions.

Pre 1997, the Service sector contribution to the GDP of the State was 36 per cent. During this phase, Hyderabad was a traditional economy driven by trading & manufacturing – dominated by pharmaceuticals, biotechnology, electronics and precision engineering.

In the period between 1998 and 2000, the service sector contribution rose to 44 per cent of the State's GDP. This growth was led by diversification of the State's economy that was initiated in this period. HITEC city, a USD 350 million knowledge enclave was initiated in Hyderabad post 1997 with an objective to develop an integrated township for IT professionals that promoted walk to work concept with best in class amenities comprising of housing, retail, entertainment, etc. as part of this large integrated township development.

The HITEC city was initially developed as a joint venture between Larsen and Toubro's Special Purpose Vehicle, L&T Infocity Limited and erstwhile Andhra Pradesh Industrial Infrastructure Corporation (APIIC)¹⁵¹. The project was developed on over 300 acres¹⁵² of land with 250 acres of dedicated IT space and about 100 acres of residential space.

From 2000 to 2010, contribution of the service sector rose to 49 per cent. During this phase, Financial district was developed in Gachibowli to cater to the growing demand from the service sector. Large parcels of land were allotted to anchor developments in BFSI and IT/ITeS sector. This was the period where Hyderabad

¹⁵¹ <https://www.adityacc.com/why-hitec-city-is-the-top-real-estate-investment-zone/>

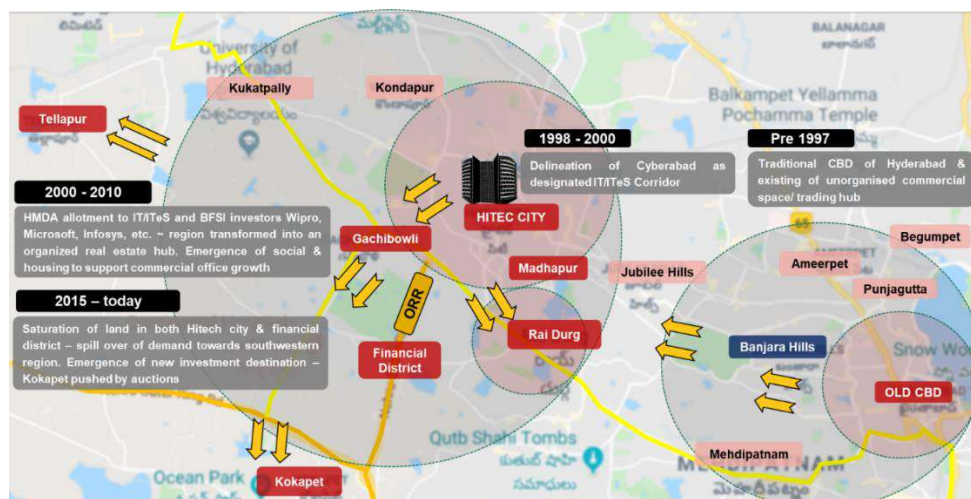
¹⁵² <http://naredco.in/news-updates-details.asp?id=26794&prYear=2019>

witnessed establishment of the companies of the likes of Microsoft (first office in India), TCS, Infosys, Wipro, Tech Mahindra etc. The service sector expansion was also complemented with rapid infrastructure development in the city. The then Government of Andhra Pradesh formed a Special Purpose Vehicle (SPV) for the development of the Outer Ring Road, called the “Hyderabad Growth Corridor Limited” (HGCL), under the Companies Act 1956 on 26th December 2005. The ORR is developed as an expressway of 8 lanes divided with access control and has a total of 19 access points. The ORR has a length of 158 km and connects several key areas of the city¹⁵³. The Rajiv Gandhi International Airport, which became operational in 2008 is the largest airport in India by area (5495 acres). The airport is a joint venture formed as a consortium between GMR Group (63%), Government of India (13%), Government of Telangana (13%) and Malaysia Airports Holding Bhd (11%). Institutes of national importance like ISB and IIIT Hyderabad were also established during the same period to push skill development in the region¹⁵⁴.

Between 2010 to 2014, though the service sector contribution increased to 57 per cent of the State’s GDP, it was a period of lull due to the political instability owing to the bifurcation of the State.

From 2015 onwards, the service sector contribution increased to 61 per cent. The first ICT Policy came into implementation in 2016 with an objective to position Telangana as the leading global hub for the entrepreneurship and innovation and to position Telangana as the preferred destination for IT companies. A Comprehensive Master Plan For 1 Km belt on either side of the Outer Ring Road (Hyderabad Outer Ring Road Growth Corridor) has also been approved by the Government in this period. The Strategic Road Development Plan (SRDP) was also developed which included roads widening, construction of bridges, underpass & over bridge to ease connectivity (42 nodes across city) to accommodate the rapid urbanization of the city. The State government is also offering additional incentives for industrial units coming up in non-western parts of the city including power unit incentives and anchor incentives, besides developer and infrastructural incentives under the GRID Policy. Further, the State government will also indulge in branding and promotional activities on behalf of these companies. The FSI norms in the central areas of the City like Secunderabad, Cantonment etc. have been relaxed to encourage development of high-rise buildings. Several masterplans have been integrated into a single Hyderabad Metropolitan Development Authority (HMDA) earmarking 7,257 sq.km.¹⁵⁵ making Hyderabad the largest Urban Area in India. TSIC strategically unlocked several land parcels in phased manner via auctions to create new growth vectors (Kokapet, Tellapur, Khanamet, etc.) as illustrated in the Figure below.

Figure 55: Spatial movement in Hyderabad: Conscious zone-wise development



¹⁵³ <https://www.hmda.gov.in/orr.php>

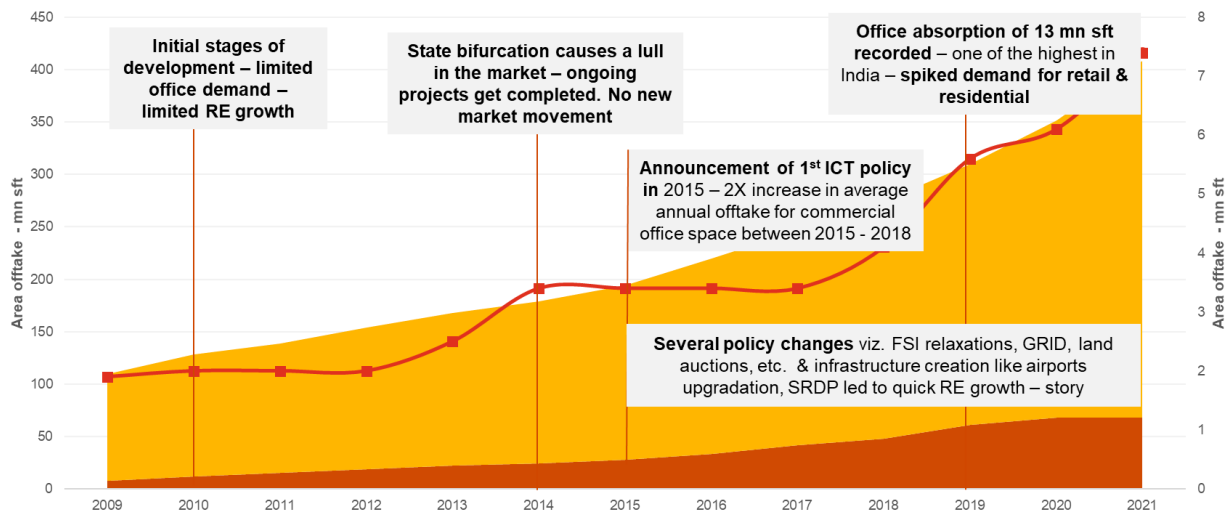
¹⁵⁴ https://www.hyderabad.aero/pdf/Airport_City_Brochure_09_APR_2018.pdf

¹⁵⁵ <https://www.hmda.gov.in/About.php>

Services sector

IT/ITeS, BFSI sectors are the key drivers for commercial office demand triggering multiplier effect on housing & allied retail/ entertainment avenues. A long-term game backed by constant policy support & physical infrastructure initiatives is critical to unlock the benefits.

Figure 56: Movement in commercial office offtake triggering growth of allied real estate asset classes



Source: Study team analysis, for the purpose of this analysis average unit size of approx. 1,500 sft per DU has been assumed to extrapolate the housing demand

The growth trajectory of the real estate segment is triggered by the growth of key economic drivers of the city as every asset class under real estate sector houses the demand triggered by economic driver

The real estate development in any city is directly dependent on several factors like employment growth, GDP, infrastructure and population growth. The key real estate classes and the economic triggers fueling the growth in each sector are represented in the Figure below.

Figure 57: Key real estate asset classes and economic triggers

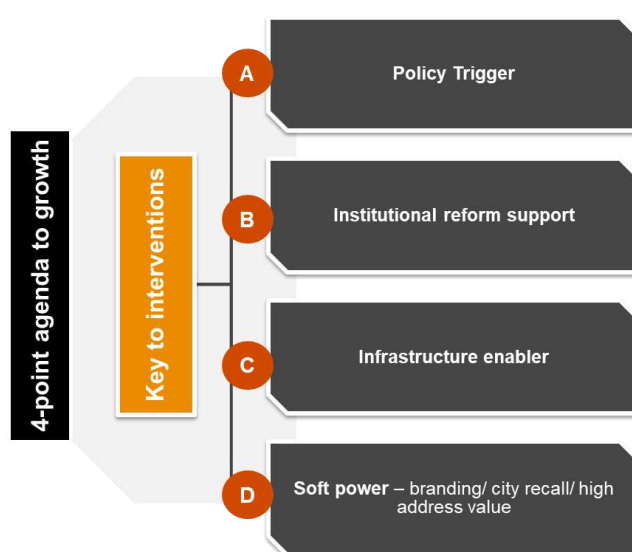


Source: Study team analysis

In order to galvanize the cogs of growth for real estate sector, the key interventions that would be required for Gujarat is devised to be a 4-point agenda which is an amalgamation of the following:

1. Policy triggers
2. Institutional reform support
3. Infrastructure enabler
4. Soft Power - Branding and promotion (that promotes high address value and top of the mind city/ State recall)

Figure 58: Agenda for strategic interventions to drive real estate growth in the State



Further, Table 15 highlights the potential triggers owing to economic growth that would lead to the demand in the real estate sector and the locations in Gujarat that would house the same:

Table 15: Potential economic triggers and corresponding demand impact on the real estate asset classes

| Regions in Gujarat | Economic Trigger | Real Estate Asset Classes – Potential Demand Areas |
|--|--------------------------|---|
| Ahmedabad, Surat, Rajkot, Mundra, Kandla, Jamnagar | Manufacturing, Logistics | <ul style="list-style-type: none"> Industrial parks Manufacturing zones Integrated townships Multi modal logistics park Grade A warehousing Support real estate (healthcare, education, etc.) |
| Ahmedabad, Gandhinagar, Surat | IT/ITeS, BFSI, Logistics | <ul style="list-style-type: none"> Grade A commercial office Retail, Residential, Hospitality, MMPL, Grade A warehousing, etc. |

| Regions in Gujarat | Economic Trigger | Real Estate Asset Classes – Potential Demand Areas |
|--|------------------|---|
| Ahmedabad, Vadodara, Kevadia (Statue of Unity), Dwaraka, Rann of Kutch, Saputara, Gir, Dholavira, etc. | Tourism | <ul style="list-style-type: none"> Wayside amenities Hospitality Entertainment – Museum, eco-village, outdoor activity, indoor activity, etc. Support real estate |

5.6. Growth strategy

I. IT and ITeS sector

In addition to fast tracking implementation of the IT/ITeS policy, Gujarat may implement additional strategic interventions to attract new investment, develop human capital, promote innovation ecosystem, enable startups and further inclusive growth

The Government of Gujarat has already announced the new IT/ITeS policy 2022-2027¹⁵⁶ to attract investment in IT-ITeS sector. In addition to these interventions, the following steps may be taken for the development of the IT ecosystem of Gujarat and reaching the export target of INR 25,000 crore by financial year 2026-27.

1. Interventions to attract more investment

A. Implementation of the new IT/ITeS policy of Gujarat covering several fiscal incentives for IT companies:

i. Financial Incentives for firms with GFCI up to INR 250 crore

CAPEX: One time CAPEX support of up to 25% of capex expenditure up to INR 50 crore

OPEX: 15% of eligible annual OPEX up to INR 20 crore per year, for 5 years

ii. Financial Incentives for Mega projects with GFCI of more than INR 250 crore

a. **CAPEX:** One time CAPEX support of up to 25% of capex expenditure up to INR 200 crore

OPEX: 15% of eligible annual OPEX up to INR 40 crore per year, for 5 years

Early mover advantage: The first three companies with investments of minimum INR 100 crore in GFCI will be considered as Mega projects

Enhanced Incentive component: Over and above the benefits mentioned in the policy, a high-powered committee may consider to create a tailored incentive package for mega projects after consultation with all the stakeholders

iii. **Co-working space:** Development of ready to occupy co-working space will be supported by the government at easy to commute locations in government facilitated and empanelment mode. For units starting operations in above modes, monthly rental support of 50% for first two years and 25% for next 3 years will be available.

iv. **Aatmanirbhar Gujarat Rozgar Sahay Yojana:** Companies can claim reimbursement in employers EPF contribution for five years for employees working in Gujarat based offices. The reimbursement is 100% for female employees and 75% for males.

B. Other key interventions to attract investment in IT industry are as following:

¹⁵⁶ IT/ITeS Policy 2022-2027, Department of Science and Technology, Gujarat, 2022, Available at <https://gil.gujarat.gov.in/Media/DocumentUpload/IT%20POLICY-Final-2022.pdf>

- i. **Channels of dialogue:** Creation of channels for dialogue between the government and the senior management of top IT companies in India may be encouraged. IT investment summit may be organized for this purpose. A dedicated agency/organization may be created to plan and implement such initiatives.
- ii. **International Delegations:** Government and IT/ITeS industry led delegations should be sent abroad to attend international events like IT Exhibition & Conferences, such as Cebit(Germany), Gitex-Dubai etc.
- iii. **Encourage and incentivize Gujarati HNIs and NRIs:** Create a channel of dialogue between the state government and High net worth individuals (HNI) and Non-residential Gujarati's for them to leverage their strong network and potentially set up their offices in the state.
- iv. **Emerging economies:** The demand for quality and cost-effective IT services is rising in emerging economies as they look to digitize. Gujarat has well established ties with economies of Africa, as state's manufacturing sector exports to 51 of the 54¹⁵⁷ African countries. Summits may be organized for IT companies in Gujarat to showcase their capabilities and tap into the markets of Africa, southeast Asia and Latin America.

2. Human capital development

Implementation of the state IT/ITeS policy (2022-27) include several provided incentives for skill development and mitigating the gap between the skills required by the IT Industry and skills of youth in the State. These include (i) setting up of an AI school/ Center of Excellence (ii) upskilling industry ready talent with Direct Benefit Transfer for completing ICT courses (iii) IEC programmes for promoting Digital literacy will also be organised. In addition to these, the following steps can be taken:

- a. **Promotion of English language:** Presently, Gujarat ranks low in availability of skills in English as second language. Currently, basic English is introduced from class 4 in Gujarati medium schools affiliated to state education department. In 2021, the state decided to change this to class 1 from the upcoming year¹⁵⁸, so that students become more conversant in the language. More can be done by setting up of more English medium schools, teacher training courses and dual language textbooks.

Centers of Excellence (CoE): Gujarat government notified CoE status to seven universities¹⁵⁹ in Jan 2022. The list includes Nirma University, Pandit Deendayal Energy University amongst others. It is important to fast track the setting up of these CoEs in addition to the AI School/ Center of Excellence (envisaged in the state IT / ITeS policy).

Increase number of Science and Technology programs: The state needs to create more colleges with information and communications technology (ICT), technical, engineering and scientific programmes to augment the supply of skilled workforce.

Targeted skilling: The Government needs to undertake targeted skilling of youth as per the specific requirements of the industry.

3. Interventions to promote innovation ecosystem

The following interventions have been taken by the government to encourage innovation in the state:

- **For developing a Cloud ecosystem:** Incentives to be given for setting up of cable landing stations and data centres which include-

¹⁵⁷ In a first, Vibrant Gujarat Summit to observe 'Africa Day' with eye on China, Indian Express, 2018
<https://indianexpress.com/article/cities/ahmedabad/in-a-first-vibrant-gujarat-summit-to-observe-africa-day-with-eye-on-china-5498291/>

¹⁵⁸ English to be introduced from class 1, News18, 2021,
 Available at <https://www.news18.com/news/education-career/english-to-be-introduced-from-class-1-in-non-english-medium-schools-in-gujarat-4886318.html>

¹⁵⁹ Education Department, Government of Gujarat

- a. **One-time CAPEX** support of 25% of capex expenditure

Power tariff subsidy for five years

- **For setting up of R&D centre and laboratory:** One time CAPEX support for 60% of cost of machinery and equipment, hardware and software

Additionally, **establishment of regulatory sandboxes** specifically for IT/ITeS to promote and regulate innovative and emerging technologies. A regulatory sandbox already exists in GIFT City, but it is for financial services. More sandboxes need to be created specifically for IT where live testing of new IT/ITeS products or services can take place in a controlled environment.

4. Other key Interventions for startups and inclusive growth

- a. **Assistance in Quality certifications:** Government may provide assistance in the form of cost reimbursements for quality certifications like CMM level 2 upwards to startups and local IT companies.

Expanding benefits to Tier 2 and 3 cities: Providing infrastructure, financial support and incentives to companies to shift to Tier 2 and Tier 3 cities may be done by Gujarat. This would lead to more holistic growth of the state.

IT and emerging tech events: In major cities like Ahmedabad and Gandhinagar, IT and emerging tech events may be organized. Such events may also take place in Tier 2- Tier 3 cities to attract investors to these locations.

Direct international flights: Increasing number of direct flights to tech hubs of the developed economies like San Francisco, Singapore etc, and to new markets in the emerging economies like Africa.

Innovation ecosystem: Linkages between R&D institutes, industry and government should be encouraged to give a boost to the innovation and startup ecosystem. The IT sector of Gujarat should focus on creation of emerging technology led new products which will act as a pull factor to get more companies into the state.

Startups: The State has a separate Electronics & IT/ITeS Start-up policy (2016-21) to promote inclusive growth of start-ups in IT/ITeS sector. The state also has SSIP 2.0 policy (2022-27) to promote student centric innovation and incubation ecosystem across academia. The coverage of these policies may have a deeper focus on encouraging startups in key sectors such as health-tech and fintech where IT plays a major role.

Social infrastructure: Enhance social infrastructure in terms of number of hotel rooms, tourist attractions, malls, etc. to attract and retain young IT workforce.

II. Financial services sector

Strategic interventions can accelerate GIFT City's growth as a Global Financial Center and in becoming a FinTech hub

The proposed strategic interventions aim at accelerating GIFT City's growth as a Global Financial Center and in enabling it to become a world-class FinTech hub. These interventions also aim to create a favourable ecosystem for financial activities and attract key financial sector players such as leading Financial intermediaries, international merchant banks, Global in-house centers, FinTechs, etc., to make investments in the state. The Gujarat Government has taken a major step to push the Financial Services Sector through the development of GIFT city and the establishment of the IFSCA. The steps taken by IFSCA, FinTech Policies of Maharashtra and Tamil Nadu were studied, primary interviews of key stakeholders were conducted, and secondary research was carried out to identify the following interventions for the Financial Services sector:

1. Interventions for GIFT IFSC

- a. **Single window mechanism:** The Government of Gujarat may write to Ministry of Finance for single window mechanism. Single window clearance to all the entities for licensing and business approvals through a single nodal office will potentially improve the ease of doing business within GIFT – IFSC.

KYC norms at par with financial centers: The Government of Gujarat may write to Ministry of Finance for KYC norms at par with leading financial centers.

Remove restrictions for LRS: The Government of Gujarat may write to RBI to remove existing restrictions for Liberalized Remittance Scheme (LRS) in IFSC. Removal of the obligation will encourage more business under LRS at IFSC, GIFT city. The Overseas Direct Investment rules may also be revised to provide easy access to domestic investors.

Foreign University Regulations: Ministry of Finance announced setting up of foreign university campus at GIFT City and it would be exempted from domestic regulations. IFSC Authority would provide framework for foreign universities to set up campus in GIFT City. It is proposed that regulations should be light touch and provide freedom for repatriation of fund, designing courses, fees etc. The Government of Gujarat may work closely with GIFT City to attract foreign universities in GIFT City.

2. Strategic interventions identified through Policy benchmarking¹⁶⁰

- a. **Governance:** The state should look at establishing Governance Structures (advisory groups, implementation agency, etc.) such that priorities of the FinTech industry are considered in implementation of government policies.

Promotional Events reimbursement: Gujarat may reimburse a part of cost of exhibition / global event participation for FinTechs registered in Gujarat.

FinTech Registry: Gujarat may set-up a FinTech registry for all FinTech companies. All FinTech start-ups incorporated in the state should register and be the member of this common platform.

Startup Seed grant: Gujarat may earmark funds for FinTech startups under the seed support system.

FinTech Accelerator Kit: Gujarat should provide incentive to reduce initial product development costs and help scale FinTech business swiftly.

3. Other strategic interventions for GIFT city's growth as a Global Financial Center and FinTech hub¹⁶¹

- a. **Knowledge exchange for Innovation:** International co-operation and MoU with other regulators of IFCs may be signed for linking remittance systems in other countries to facilitate cross-border payments and information sharing.

Innovative financial service in remittance: IFSCA / Gift City may support policies that initiate/augment the innovation and testing of innovative financial service ideas in remittance space through Accelerators, Sandboxes, etc.

Partnerships between FinTech & FIs: Establish an online marketplace to facilitate partnership between FinTechs & FIs and increase FinTech accessibility to clients (FIs).

Financial Service Exchange Programme: GIFT City may establish a financial services exchange programme with leading International universities & education institutions to build capacity and assure continued availability of talent.

Developing International Fintech Institute: GIFT City to develop International Fintech Institute jointly with the

¹⁶⁰ Maharashtra FinTech Policy 2018 and Tamil Nadu FinTech Policy 2021 were studied (Details in Data Analysis Appendix – Financial Service sector)

¹⁶¹ Recommendations from primary research and Developing GIFT City into a Global Services Hub, IUKFP, September 2021, Available at: <https://www.thecityuk.com/media/04od4n2k/iukfp-developing-gift-city-into-a-global-services-hub.pdf>

Asian Development Bank.

Secondments: IFSCA could promote secondments of professionals by identifying opportunities under the new UK-India Migration and Mobility Partnership – Young Professionals Scheme.

Partner with FinTech Industry: Partner with the FinTech Industry to narrow the digital skill gap. Launch a portal, which acts as an open online course provider as well as a marketplace for job seekers and job providers.

- a) **Data Laws:** To enable cross-border data flows, exceptions in data protection laws should be provided for IFSC jurisdiction, while keeping in place proper safeguards for ring-fencing and transparency.
- b) **Foreign currency Clearing and Settlement System:** Development of foreign currency clearing and settlement system will enable real time settlement of foreign currency transactions carried out in IFSC and will eliminate settlement risk arising from time gap of settlement.
- c) **Promoting Global In-House Centre (GIC) at GIFT IFSC:** The Govt. of Gujarat should promote GIFT City as a hub for GIC activities. This would create huge employment in the state. GICs employ more than 1 million high skilled people in India. The recent IT/ITeS incentive policy announced by the Govt. of Gujarat may be promoted to attract Global In-House Centres of financial institutions in GIFT IFSC. A detailed roadmap and action plan may be prepared jointly by Dept. of Science and Technology, Govt. of Gujarat and GIFT City.
- d) **International Arbitration centre and separate court:** A state-of-the-art International Arbitration Centre and Separate Courts needs to be established in GIFT IFSC similar to DIFC and Abu Dhabi. The Government of Gujarat may work closely with Department of Legal & Justice, Government of India to implement the same.
- e) **Developing new products for trading at IFSC Exchanges:** IFSC Exchanges may develop new products including spot contracts for commodities on the lines of other International Exchanges to attract foreign investment.
- f) **Preferential treatment to IFSC for Investment in India:** The maiden IFSC has been established and operationalized by the Government of India, to bring back the international financial services transactions generated from India and gradually emerge as a regional/global hub for international financial services. The existing restrictions for investments under FPI and FDI route from GIFT IFSC may be removed to attract Global financial Institutions in GIFT IFSC.
- g) **Developing tri-city connectivity:** Ahmedabad, Gandhinagar and GIFT City may be positioned together to leverage existing infrastructure and ecosystem. For e.g., GIFT City may connect with leading educational institutes in Ahmedabad and Gandhinagar.
- h) **Branding and promotion of key projects of Gujarat:** Govt. of Gujarat may develop detailed marketing strategy to promote key projects. Reports and articles may be published regularly highlighting strengths of Gujarat, ease of operations, availability of talent etc. Govt. of Gujarat may work closely with bodies such as Invest India and Embassy offices of India globally.

The advantages that Gujarat possesses along with the strategic interventions can position Gujarat's GIFT as a Global Financial hub. With the technological advancement and its innovative implementation in financial services, this sector has the power to contribute to a faster and more inclusive growth. The strategic interventions that include the development of a more innovative, vibrant and conducive ecosystem will propel the growth of the Financial Services sector in Gujarat.

GIFT City is being developed as the global financial and IT services hub in Gujarat. It is a host to global companies such as Bank of America, Oracle, Standard Chartered Bank, HSBC and many other financial institutions. GIFT City is competing with leading financial centers such as Singapore, Dubai, Hong Kong etc. These centers have developed required social infrastructure facilities to cater to the need of young talent. Govt. of Gujarat should create and promote similar social infrastructure to attract Global Financial Institutions in GIFT City, Gujarat. These may include developing and promoting International Schools, high-end restaurants, entertainment zones, sports facilities, business clubs etc.

III. Healthcare

For growth of the healthcare industry, Gujarat needs to implement strategic interventions to increase public expenditure in healthcare, increase private sector participation, enhance the skills of the health workforce available in the state, promote medical value travel and support innovation in health tech

1. Key interventions for overall healthcare sector

Enhance the capabilities of the overall healthcare sector in the state through the following skilling and policy interventions:

- a. **Private investment in medical education:** Attract more private investment in medical education to enhance the number of physicians, nurses and midwives per 10,000 population from the current 41 to the target of 45¹⁶². Creation of brownfield medical colleges in PPP model may be allowed.

Skilling of mid-level service providers: Develop mid-level service providers such as nurse practitioners and public health personnel

Increase public expenditure on health: Increase healthcare expenditure as a portion of state budget by 50% (from the current 5% of state budget to 7.5% of state budget) in Gujarat. According to NITI Aayog, Healthcare expenditure should be 8% of the annual budget.¹⁶³

Increase the number of hospital beds: Number of hospital beds need to be increased from the current 0.9 to 2 per 1000 population¹⁶⁴ and close the accessibility gap mainly in sub-urban and rural parts of the state.

PPP Model: Setting up of hospitals with private sector based on PPP model to boost the number of specialty and super specialty hospitals.¹⁶⁵

Promote investments: Promote investments from private equity and venture capital investors in the healthcare delivery space in Gujarat.

Health insurance coverage: Increase the health insurance coverage to 90% of the Gujarat population either through government or private insurance schemes.

Graded fiscal incentives: Promote a good quality healthcare ecosystem in Tier 2 and 3 cities by providing graded fiscal incentives for setting up healthcare infrastructure in Tier 2 and 3 cities as per the facility density.

Home Healthcare: Promotion of healthcare services at patient's premises, especially to cater to increasing geriatric population.

Health Recruitment Board: For recruitment of doctors, nurses, etc., Government may consider setting up of a health recruitment board on the lines of police recruitment board.

2. Key interventions for Medical Value Travel

Leverage the national advantages in Medical Value Travel through the following:

- a. **Regulation of unorganized players:** Regulate the unorganized players as they make false commitments to overseas patients which leads to reputational damage of the state

¹⁶² SDG India Index & Dashboard 2020-21, Available at https://www.NITI.gov.in/writereaddata/files/SDG_3.0_Final_04.03.2021_Web_Spreads.pdf

¹⁶³ Business Standard Article, India's Health spend low, needs to be made a priority: NITI Aayog's V K Paul, Available at https://www.business-standard.com/article/current-affairs/india-s-health-spend-low-needs-to-be-made-priority-NITI-aayog-s-v-k-paul-120111901013_1.html

¹⁶⁴ The Centre for Disease Dynamics, Economics and Policy, State-wise estimates of current hospital beds, intensive care unit (ICU) beds and ventilators in India: Are we prepared for a surge in COVID-19 hospitalizations?

¹⁶⁵ Data Analysis Appendix for Healthcare

Tourism policy benefits to MVT players: Benefits related to capital subsidy, interest subsidy, power tariff, electricity duty which are provided to hotels as part of state tourism policy should be provided to MVT players as well. In this way, MVT players can offer treatments at more competitive prices that will attract tourists. Hence, whenever a tourism policy is being framed, Health Department may also be consulted specifically for MVT

Improve air connectivity: For medical tourists from both developed and emerging economies. Specific focus should be on more direct international flights to countries having Gujarati diaspora like Nairobi, Kenya, etc.

Health treatment packages: Offer attractive health treatment packages in cooperation with private healthcare industry.

Wellness centres: Adopt a PPP model for wellness centers at exotic tourist places.

Annual conclaves: These can be organized at foreign locations by insurance companies; embassies abroad should also liaison with them to create more awareness about India's healthcare industry.

Single window clearance: This is required to ease the process and promote satisfaction of medical services offered in Gujarat for all medical tourists as well as medical students from abroad.

Clinical outcome documentation: This is important to ensure overseas patients are aware about efficiency of the services being delivered in India.

Medical & Wellness Tourism Board: Establish a Medical & Wellness Tourism Board / Society to promote Medical Value Travel and Wellness tourism and monitor the progress.

3. Key interventions for Health Tech

Capitalize on the emerging Health Tech market through the interventions listed below:

- a. **PPP Model in Health Tech:** Expand digital utilization in healthcare through a PPP model with private hospitals.

Healthcare Innovation fund: Improve health access and outcomes by developing healthcare innovation fund which will boost R&D in healthcare.

Support startups: Facilitate partnerships between industries, educational and R&D institutes to support startups. Healthcare startups can be encouraged similar to any other startup receiving benefits under the Education Department's startup policy.

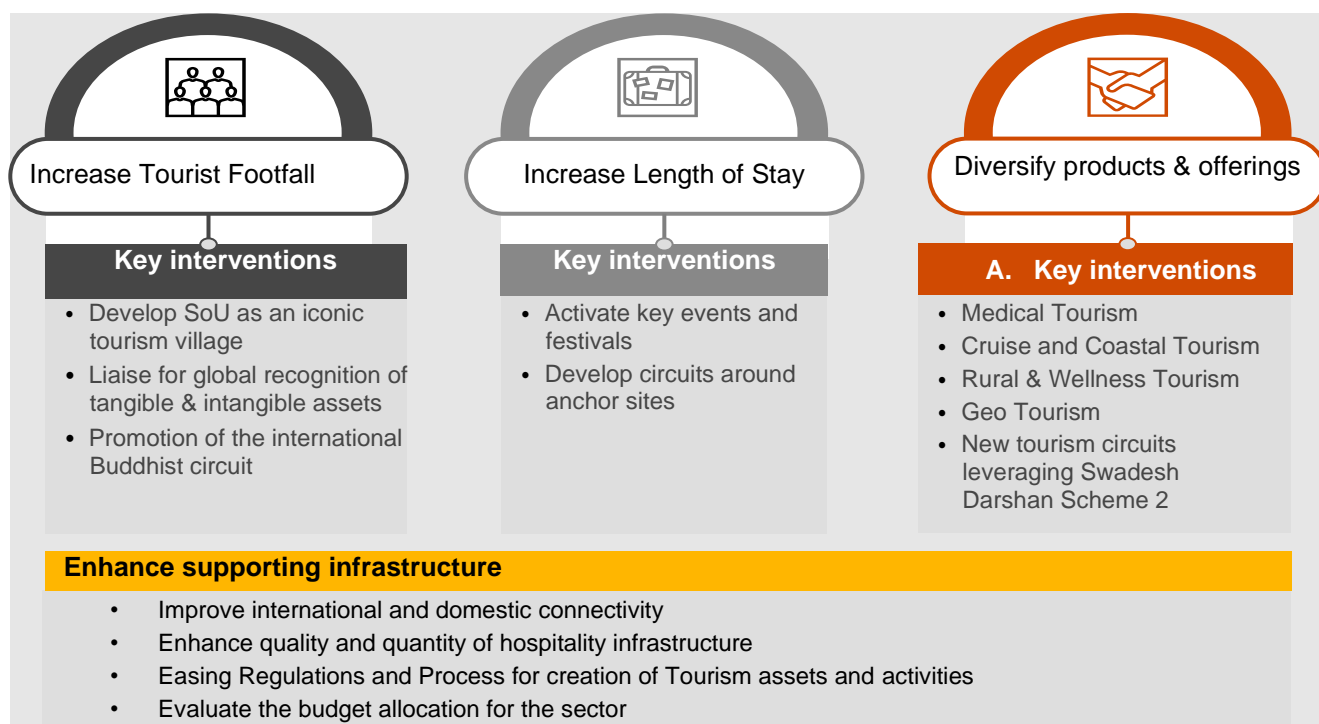
Artificial Intelligence (AI): Encourage hospitals to adopt AI for precision health treatments especially surgeries.

IT platforms and verticals: Ensure efficient medical data collection by creating **IT platforms** for interoperability of data and **IT verticals** integrated with hospitals. The data collected can be used for Big Data Analytics which will increase accuracy of diagnosis and treatment in personal medicine.

IV. Tourism

Gujarat can overcome the challenges identified in earlier section and propel tourism further in the state through strategies and interventions categorized under three key objectives of increasing tourist footfall, increasing length of the stay and diversifying products & offerings

Figure 59: Proposed Tourism Sector Interventions meeting three identified objectives



Increase Tourist Footfall

Develop SoU as Iconic Tourist Village - Anchor assets supported by holistic and integrated development have been successful in garnering tourist footfall globally

Tourist footfall at a destination is primarily driven by an anchor site(s) of the location, with tourists planning their itinerary centered around such anchor site. The Statue of Unity is already a key anchor asset in the state making Kevadia a major tourist destination on the country. Since the development of SoU, the state has continuously improved the region with multiple other attractions like the butterfly garden, river cruise tourism and the much recent addition of the highest space observatory. The region now has the potential to be developed as an iconic tourism village with multiple world class attractions, activities and supporting infrastructure in phased & planned manner to put Gujarat into the domestic and international tourism maps. **The proposed interventions can be implemented in short, medium and long terms to maximize return on investments.**

Table 16: Proposed interventions for Developing SoU as Iconic Tourist Village

| Short Term Activation Anchor assets play a key role in attracting footfall | In the short-medium term Complementing SoU with unique architectural and experiential assets (theme parks, museums etc.) can increase footfall | In the long term Kevadia can be developed as an iconic tourism village (a Special Tourism Zone) |
|--|--|--|
| Interventions <ul style="list-style-type: none"> Short term activation - Plan multiple activities and events in SoU and its proximity Marketing & promotion of SoU as a World Class Destination | Interventions <ul style="list-style-type: none"> Offer land at competitive prices & fiscal incentives Details of incentives given for Disneyland Paris has been annexed. | Interventions <ul style="list-style-type: none"> Prepare a 20-year master plan for the zone with a phased development plan Offer special incentives & regulatory framework for the zone |
| Example:- Taj Mahal in UP and Eiffel Tower Paris attracting ~39% (2007) and 50% (2011) of total international tourist footfall respectively. ¹⁶⁶ | Example:- Post inauguration of Gehry's Guggenheim Museum of Bilbao, in 1997 an innovative and challenging architecture, , over 20 million people have visited the museum, a majority being foreigners | Example:- Tourism zones have positively impacted other nations as a result of adoption of integrated tourism zone development approach in Philippines, Singapore and South Korea. Refer to Annexure 4 (V). |

Global recognition of tangible and intangible assets can be a good tool to market the locations nationally, and more importantly internationally

Global recognition of tangible and intangible assets can be a good tool to market the locations nationally, and more importantly internationally. Taking the case of Kaiping Diaolou and villages in China which got UNESCO World heritage tag in 2007, tourist growth in the region registered a CAGR of 16% from 2008 to 2015 compared to CAGR of 10% from 2003 to 2007.¹⁶⁷

The Government of Gujarat may look at liaising with key agencies to obtain national/ international recognitions

Tangible Asset - Presently, all UNESCO heritage sites in Gujarat are recognized under the "Cultural Heritage Sites". Gujarat can liaise with UNESCO to recognize sites such as **Gir National Park/ Marine National Park/ Wild Ass Sanctuary in Little Rann of Kutch** as UNESCO "Natural Heritage Sites"

Intangible Asset - Recently UNESCO has accorded Intangible Cultural Heritage Tag to West Bengal's Durga Puja. The Government of Gujarat is already coordinating with UNESCO to obtain an Intangible Cultural Heritage Tag for the Navratri Festival. In addition, the state can also look at obtaining Geographical Indication tags for products like Kutch Embroidery, Surat Zari Craft etc.

¹⁶⁶ <https://tourism.gov.in/sites/default/files/2020-04/ITS2007E.pdf>, <https://www.statista.com/statistics/620227/eiffel-tower-visitor-numbers/>, <https://www.statista.com/statistics/664962/international-tourist-arrivals-hotels-paris/>

¹⁶⁷ <https://journals.vilniustech.lt/index.php/IJSPM/article/view/10854/9374>

Promotion of Buddhist circuit including historical caves dating back to 2nd century B.C. will be instrumental in attracting international tourists.

Gujarat hosts many historical caves with a beautiful combination of history, spirituality, mystery, meditation, and adventure. Starting from Kutch to Saurashtra up to Bharuch, the coastal region of Gujarat is dotted with many such Buddhist caves. These caves were dug out between 2nd century B.C. and 6th century A.D. Planned development and selective marketing and promotion of these Buddhist sites by forming a circuit around Junagadh- Gir-Somnath- Bharuch-Kutch- Bhavnagar- Rajkot- Mehsana can help in attracting international tourists to the state.

Government of Gujarat is already developing the Buddhist Circuit through assistance from the Government of India's Swadesh Darshan Scheme. However, to establish and promote the Buddhist Tourism Circuit further, the Government of Gujarat may undertake the following interventions:

- Short term activation of the sites through activities such as light & sound shows, shows on cave history, programs etc.
- Development and addition of multiple attractions, activities based on cave themes such as Cave museum, cave restaurant, cave accommodation etc in Junagadh- Gir-Somnath- Bharuch-Kutch- Bhavnagar- Rajkot- Mehsana - in a phased & planned manner
- Selective marketing & promotion activities specially targeting international tourists
- Encouraging tour operators and travel agents (including international) to promote the Buddhist Tourism Circuit
- Improving connectivity between circuit destinations and with the airport, provision for wayside amenities etc.

Increase Length of Stay

Navratri to Diwali as a 3 week to a month-long festival - Destinations around the globe have developed programmes around their key events and festivals to offer enthralling experiences to the visitors and increase their length of stay

Destinations around the globe have developed programmes around their key events and festivals to offer enthralling experiences to the visitors and increase their length of stay. For example, Venice Carnival, a world-famous annual carnival known for its elaborate masks, lasts for 2 weeks & is visited by 3,000,000 visitors annually

Gujarat can plan to make Navratri to Diwali as a 3 week to month long festival through multiple interventions like

Organizing Pre-Navratri activities for Travelers

- A trip in the Sankheda village, Chhota Udepur district to witness the creativity behind the internationally famous Sankheda dandiya sticks. Connectivity and support infrastructure for the selected districts will need to be improved.
- Create art & craft circuit which allows travelers to experience embroidery, bead work, wood crafts, printed and woven clothes, pottery and tribal art as an expression of the folklore and festivals. The official Gujarat destination website can offer tours covering the major hubs for these artworks like Ahmedabad, Saurashtra, Kutch, Surat etc.

Active Promotion of the Festival

- Social media campaign, documentaries in international travel channels, mentions in news & international event blogs, tourism souvenirs and an UNESCO Intangible Heritage tag for Navratri Festival can help in actively marketing the festival to international and national travelers.

Developing Tourism Circuits to extend length of stay

Developing Statue of Unity Circuit

Developing tourist circuit with State of Unity and Kevadia as the Anchor site connected with Ahmedabad, Vadodara and Panchmahal will help in extending the length of the stay of tourists by 4-5 days. For example, Mumbai- Pune- Aurangabad Circuit drives majority of international tourist footfall in Maharashtra (Annexure 4 (V)). As per 2011-12 Nielsen Survey, more than 95% of foreign visits in Maharashtra visited sites in Mumbai, Pune and Aurangabad. The USPs of destinations in the proposed SoU Tourism circuit is as follows:

| Ahmedabad | Vadodara- Panchmahal | SoU- Kevadia |
|-----------------------------------|--|--|
| India's First World Heritage City | UNESCO Heritage Site & Cultural Capital of Gujarat | World Largest Statue (& proposed iconic tourism village) |

To establish and promote the SoU Tourism Circuit, the Government of Gujarat may undertake the following interventions:

- Improve connectivity of Ahmedabad Airport with International Destinations such as US, Europe
- Develop quality wayside amenities including restrooms, restaurants along the highways connecting circuit destinations

- Marketing & promotion of SoU Tourism Circuit highlighting USPs & top attractions of each destination on Gujarat Official Tourism Website
- Encouraging tour operators and travel agents to promote SoU Tourism Circuit
- Quality accommodation & restaurant facilities near the Champaner Pavagadh Archeological Park may attract international tourists

Developing Saurashtra Tourism Circuit

In Gujarat, Somnath and Dwarka are the two most popular pilgrimage sites for domestic tourists. Religious tourists traveling to Gujarat, generally travel to both these destinations in the same trip. Gir National Park and Junagadh are other popular sites near Somnath. Already an important pilgrimage destination of the state, this circuit in Saurashtra can further promote tourism by integrating religious places, beaches and wildlife. Integrated & planned development of the circuit will help in increasing the length of the stay of tourists traveling to Gujarat. The tourism circuit may cover:

- Pilgrim places in Somnath, Dwarka and Junagadh
- Beaches in Somnath, Dwarka, Porbandar
- Lion and Wildlife in Gir National Park

To establish and promote the Saurashtra Tourism Circuit, the Government of Gujarat may undertake the following interventions:

- a. Development of multiple attractions, activities and supporting infrastructure in destinations - Gir, Somnath, Dwarka, Porbandar and Junagadh - in a phased & planned manner.

Development of a spiritual theme park with activities such as mythological light & sound shows, religious/spiritual theatres, programs like devotional songs & artforms in Dwarka and Somnath.

Marketing & promotion of Saurashtra Circuit highlighting key USPs & top attractions of each destination on Gujarat Official Tourism Website.

Encouraging tour operators and travel agents to promote Saurashtra Tourism Circuit.

Improving airport connectivity and developing international standard facilities in Saurashtra region airports at Dwarka, Porbandar/ Keshod airport with provision for landing of larger domestic planes on the runway.

Diversify Product and Offering

Exploring Rural & Eco Tourism in Gujarat as it is fast emerging as a keen area of interest for international travelers and millennials alike

Post Covid pandemic, the demand for rural and eco-tourism has further increased with travelers preferring offbeat destinations and close to the nature.

Gujarat has an opportunity to diversify its products and offerings at destinations which are intrinsically competitive to offer unique rural and eco-tourism experiences to the travelers. Dang is one of such location which is far away from the hustle bustle of city life and can be positioned as a destination for eco and rural tourism. The place is known for its abundance of rare medicinal herbs such as Chanothi (cough, cold), Khapat (skin disease), Khair, Bael, Kantali Bhaji (kidney stone) and many more. The site also has many agricultural plantations. The weather is relatively pleasant throughout the year with the highest average temperature of 32 Degree Celsius in May and the lowest average of 17 Degree Celsius in January.

The Government can develop and promote rural & eco-tourism in Dang through a variety of interventions

- **Create an ecotourism and Rural Tourism Circuit around Ahwa, Dang and Saputara**

- Saputara - Only Hill Station in Gujarat ideal for eco-tourism,
- Ahwa is located approximately 50 Kms from Saputara and can be a potential destination to promote rural Tourism



- **Promotion of Agro Tourism**

- Collaboration with other departments like the Forest Department to promote eco/ agro-tourism
- Development of accommodation and restaurant facilities for tourists who wish to spend vacation close to nature and farms
- Tourist centers promoting agro tourism may be recognized by the government, enabling them to receive special benefits (through an agro-tourism policy)

Promoting Adventure Sports along the coast

With the longest coastline in India, at 1,600 kms, beach tourism in Gujarat has been relatively nascent and should be given special focus to achieve its potential. Promoting adventure sports would be one of key areas for the state to drive and promote beach tourism in the state.

Select interventions to Promote beach, coastal & adventure tourism in state may include:

- Plan and organize short term activation through focused marketing and events catering specifically to adventure enthusiasts

Formulate a water sports regulation policy for operators, activities etc. to ensure safety in water sports activities for the tourist

Recognized agencies may be appointed to provide trained and certified resources. A Committee for Conformity comprising State Authorities and Stakeholders may be created for periodic inspection

A Water Sport Institute or an adventure institute, as one similar to NIWS Goa, may be established to offer skilling opportunities for the service providers. The institute can provide training for water based, land based and air-based adventure sports in Gujarat.

Development of comprehensive infrastructure facilities at key beaches, including focus on hygiene and cleanliness will be critical for repeat visits

Standard guidelines may be developed for regulation and authorization of equipment used in adventure tourism, sports tourism, etc.

Sea cruise service from Surat/Dwarka/ Porbandar to Mumbai/Goa to cater to the growing demand for leisure activities

Although being a newer concept in India, cruise tourism has been gaining popularity amongst leisure travelers. Nearly four-fold jump in cruise callings on the Indian ports from 2017 to 2019 is a testament to

| | |
|----------------------------------|---------------------------------|
| 28 mn | |
| Global cruise tourists in 2018 | |
| 0.16 mn | 139 |
| Cruise tourists in India in 2018 | Cruise vessels in India in 2018 |

the same. The sea cruise market would be ideal for Gujarat due to following reasons.¹⁶⁸

- a. Gujarat is amongst the top 10 states with highest GSDP per Capita in 2018-19, at 158% of India's average. As per Nielsen Survey 2010, Gujarat was amongst top 2 state for interstate leisure domestic travel to Maharashtra.

Select interventions for promoting sea cruise service in Gujarat may include:

- a. Creation of a dedicated cruise terminal at ports of Surat/ Dwarka/ Porbandar & development of the landing area of Cruise tourists at selected locations

Development of cruise facilitation cell to handle cruise and passenger vessels

Easing out regulatory policies for cruise ships like ousting priority for cruise vessels, faster clearance of cruise passengers, reduction of port tariffs, anchorage charge waivers etc.

Private players who own and operate Cruises can be brought in to operate for selected routes from Gujarat

Government jetties shall be permitted to be utilized during off-peak duration for operating cruise, seaplanes, floating restaurants etc.

Promotion of Geo Tourism in Gujarat

The Indian subcontinent is a storehouse of interesting geological features, owing to the varied geological processes through ages. Gujarat alike does have geological sites which are unique and cannot be found in other part of India. The tourism map of Gujarat would be greatly enriched by the inclusion of these geological sites, so that the visitors from the country and abroad can have an insight on the formation of these sites and its unique flora and fauna.

Interventions

- a. Kutch has spectacular geological features and sites which can be developed as a National Geopark to promote geo-tourism in state.

Government of Gujarat may identify sites in Gujarat with potential for geo tourism and liaise with the Geological Survey of India (GSI) to get the tag of geological sites.

Leverage revamped Swadesh Darshan Scheme of the Central Government for development of tourism circuits in Gujarat such as coastal, ecotourism, rural tourism etc.

Under the Swadesh Darshan scheme, the Ministry of Tourism, Government of India provides Central Financial Assistance – CFA to State Governments, Union Territory Administrations for the infrastructure development of circuits.

Gujarat has potential to develop multiple circuits across various themes identified under the Government of India scheme. Government of Gujarat may identify, propose and pursue different circuits in emerging themes such as rural, eco-tourism, coastal tourism etc. under the Revamped Swadesh Darshan Scheme for central government financial assistance.

¹⁶⁸ Source <https://www.financialexpress.com/lifestyle/cruise-tourism-india-clocks-four-fold-jump-in-last-two-years/1759037/>, Dawn of Cruise Tourism in India.; Study team analysis, Future of Consumption in Fast-Growth Consumer Markets: INDIA

Enhance Supporting Infrastructure

Improve International and Domestic Connectivity - the state currently lacks connectivity to key source countries for international tourists

Bangladesh, USA, UK, Australia, Canada and China are the top 6 source countries for international tourists in India, with Bangladesh being a major source for medical tourism visitors. In addition, Gujarati diaspora is a significant ~33% of the total Indian Diaspora worldwide, with most of them residing in **USA, UK, Canada, Australia, South Africa and New Zealand**. Non-resident Gujaratis can be a major source of tourism footfall for the state with them wanting to come back to their roots and engage with various destinations.

Out of all these countries mentioned above, Ahmedabad has direct flight connectivity only with UK, with only 3 flights/ week. Direct flight connectivity with these countries will be key to driving international tourist footfall in the state.¹⁶⁹

Select Interventions proposed for improving connectivity

- a. **Improving international connectivity** - The state may thus look at increasing flights serving the countries from where India is receiving majority of international tourists and improving the connectivity of Ahmedabad airport with top countries where the Gujarati Diaspora exists. The Government of Gujarat can look at expansion and broadening of the existing runways to land larger international and domestic aircrafts.

Improving domestic connectivity - Due to limitation on expansion of the existing Rajkot airport, Government of Gujarat is envisaging development of Chotila Airport for improving connectivity of other regions of the state with important cities of India. Last mile connectivity and robust connectivity with important cities in Gujarat and rest of the country will play a crucial for the success of airport. Improving airport connectivity and developing international standard facilities in Saurashtra region airports at Dwarka, Porbandar and Keshod Airport with provision for landing of larger domestic planes on the runway, will improve access to the region.

The state can prioritize developing/ improving connectivity (road, rail and airport) to at least five key tourism destinations in Gujarat. In case the airports are not in proximity and development of new airports is not feasible, the government may evaluate developing airstrips within 60 kms of these key destinations.

Improving last mile connectivity – Not just connectivity to the gateways, last mile connectivity to the destinations as well as intra-destination ease of travel is very critical for giving a fillip to the footfall, especially through repeat tourism. Holistic transportation plans for key tourism destinations may be prepared, for private, public, IPT as well parking.

Enhance quality and quantity of hospitality infrastructure

One of the major issues for hospitality players in India is the requirement of plethora of licenses at every stage of the asset development cycle from pre-construction to pre-opening. Many of these licenses require regular renewals. Currently, on an average, 35 Licenses/ Permits/ approvals are required to establish a hotel in Gujarat and out of which 22 Licenses/ Permits/ Approvals are issued by the State Government and 12 licenses are already available on the Investor Facilitation Portal (IFP). Further during the operational phase, electricity charges form 8-10% of operating cost of the hotels.

Gujarat shall consider initiatives like according an industry status to hospitality sector, single window mechanism for hotel licensing, substantial reduction in number of license requirement and change in renewal requirements for select licenses/permissions from the current annual renewal to every 5 years.

¹⁶⁹ Source: https://timesofindia.indiatimes.com/india/mini-gujarat-straddles-129-out-of-worlds-190-countries/articleshow/45723987.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Select Interventions proposed for enhancing quality and quantity of hospitality infrastructure in Gujarat:

- Reduce unnecessary and duplicate licenses through rationalization of licenses with local authorities/ health department/ GPCB/ Labour Department etc.
- Single window clearance with defined timelines to get pre-operational approvals for hospitality sector
- Increase duration for annual renewal of the licenses like lodging house license, eating house license, police permissions
- Reduce tariff rates, especially power rates, to reduce operational cost of the hotels by giving industry status to the Hospitality sector.

Easing regulations and setting guidelines for creating tourism assets in regulated areas of Gujarat

Gujarat has huge potential for developing multiple tourism products and assets in its forest areas, eco sensitive zones, Coastal Regulatory zones and other such regulated areas. However, development in these areas has been limited due to restrictions, lack of proper guidelines, procedures for the developers, including state government agencies.

Select interventions proposed for tourism asset creation in regulated areas:

- Formation of clear tourism asset development guidelines in regulated areas like forest areas, Coastal Regulatory Zones (CRZs).
- The guidelines can have provisions for the state tourism department, in association with other concerned departments, to undertake select development activities, along with guidelines for participation of the private sector.
- Gujarat has huge potential to develop tourism activities such as river cruise, floating restaurants, floating amusement park etc. on water bodies, dams, jetties owned by the government. However, the state has not been able to utilize these resources for tourism activities due to tough regulations, multiple permission requirement, restrictions to private player participation etc. The government can develop guidelines for private sector to develop tourism assets on such water bodies. The government can also look at developing model tender documents and concession agreements for promoting private participation.

Evaluate the budget allocation for the sector to enable the departments to undertake the necessary interventions

Currently, the Financial Outlay of Tourism Department is less than INR 500 crore. The Tourism Department will require enhanced financial outlay to undertake the necessary interventions through large infrastructure development projects, encouraging private investment, and marketing destination Gujarat.

Other Interventions

- Maximizing the utilization of existing tourism assets of the state by exploring options like transferring the existing assets to private sector.
- Exploring possibility of unlocking the potential of unutilized and underutilized government land parcels for tourism purpose.
- Gujarat is already exploring and developing other products like border tourism in Nada bet and marine museum in Lothal etc. to promote tourism in state. Availability of support infrastructure, last mile connectivity, marketing etc. will play a key role for the success of the destination.
- Exploring Wellness Tourism in Gujarat.

V. Real estate sector

Policy Triggers

In order to aid real estate growth that is being triggered by economic growth from other sectors, the pro-active policy initiatives by the Government of Gujarat would be a key driver that would help with grounding real estate investments. Some of the interventions are:

Revised masterplan for Ahmedabad to be initiated – encourage public participation & cover aspects of the following aspects:

- Identify clear clusters of growth & green conversation zones, riverfront development areas
- FSI relaxation and zone coverage for commercial/ residential usages in only growth clusters
- Increase mandatory parking provisions under revised GDCR
- 1 km along the ORR be demarcated as special development zone – lesser conversion charges, shorter approval, stamp duty/ registration charges rebate and FSI relaxation for commercial utilization

Land monetization strategy for underutilized government land parcels & transit-oriented land parcels – to be evaluated via. PPP. allow private participation to increase non box revenue and allow higher FSI utilization as part of adjoining land banks. The potential cities in which the same could be undertaken as pilot projects are the cities of Surat, Rajkot and Ahmedabad.

Incentives by the Government to developers who develop ESG compliant buildings - In order to reduce the carbon footprint and promote sustainability in line with the current developments globally such as rapid climate change and global warming, the State can gain a first mover advantage via. incentivizing developers to adopt ESG compliant building practices. The pilot projects for the same could be identified as Dholera Special Incentive Region (SIR) and GIFT City.

Institutional Interventions

Some of the institutional reforms that would positively impact the overall investment climate in the real estate segment are:

Single Window Clearance: Currently, while several interventions have been taken by the Government such as moving and providing building approvals online, timebound reply within 48 hours is also provided, it is imperative to ensure that the same is implemented effectively with consistent recourse if required. Mechanisms for continuous monitoring of such approvals from time to time will be good to ensure that any delay is averted.

Infrastructure Interventions

While policy and institutional interventions are working on the background to ease flow of investments, infrastructure interventions would be on the foreground and visible tangible output of change initiated by the Government. Some of the interventions highlighted are:

Land monetization strategy for riverfront projects by way of reimagining PPP and revitalizing the existing projects - Currently asset classes in Sabarmati and Tapi Riverfront are long gestation, lower return, under FSI utilized products. There is a significant potential to rejig the product mix and revalidate to increase footfalls and revenue generation from the same. Some of the things to be evaluated under this umbrella are:

- PPP with international developers (who can potentially come in as master developers)
- **Potential Asset classes** - High end commercial (IT & BFSI parks), Food & Beverage hub, river facing premium residential, hospitality, etc. - potential to convert as organized CBD of the cities
- 99-year leasehold rights to be granted for development

- Investment promotion to attract anchor investors – developers, tenants, hospitality operators, entertainment operators
- Good utilization of waterfront and area - boating jetting, water sports, etc. run by private operators with rental revenue to the Government
- Relaxation for approvals and licensing for utilizing government water bodies will boost water-based activity with complementary real estate impact

Special tourism/ development zone for Narmada riverfront at Statue of Unity – Further, in order to create a niche positioning for the already popular Statue of Unity, the following can be undertaken as part of creating the overall eco-system and special development zone in and around Statue of Unity:

- Vision plan for 20 years (adopting a phase wise approach for unlocking land)
- Provision of way side amenities in the form of small restaurants, restrooms, support retail, etc.
- Development of iconic tourism village with a private sector participation (premium restaurants, cultural tour, reading zone, viewing zone, alfresco dining)
- **MICE (Meetings Incentive Conventions and Exhibitions) destination** - Trade exhibitions, cultural fares, shopping festivals, host world and national conventions (can be promoted as an alternate to Mumbai and Ahmedabad)
- Attract hospitality anchor investors who are in the space of wellness and resorts – to utilize the current demand in the market for staycations and weekend getaways.

Gujarat can take inspiration from the dramatic redevelopment of the riverfront district of Clarke Quay in Singapore which has been successful in drawing tourists and locals to historic riverfront. A 4-fold increase in foot traffic and a major hike in rental values were witnessed in the revitalized Clarke Quay. The redevelopment also resulted in a change in the nightlife of Singapore and houses with Clarke Quay's signature events happening once every quarter. The riverfront development of Clarke Quay is shown in Figure 60.

Figure 60: Case in Point: Riverfront Promenade- Clarke Quay, Singapore



Key Features of riverfront development in Clarke Quay:

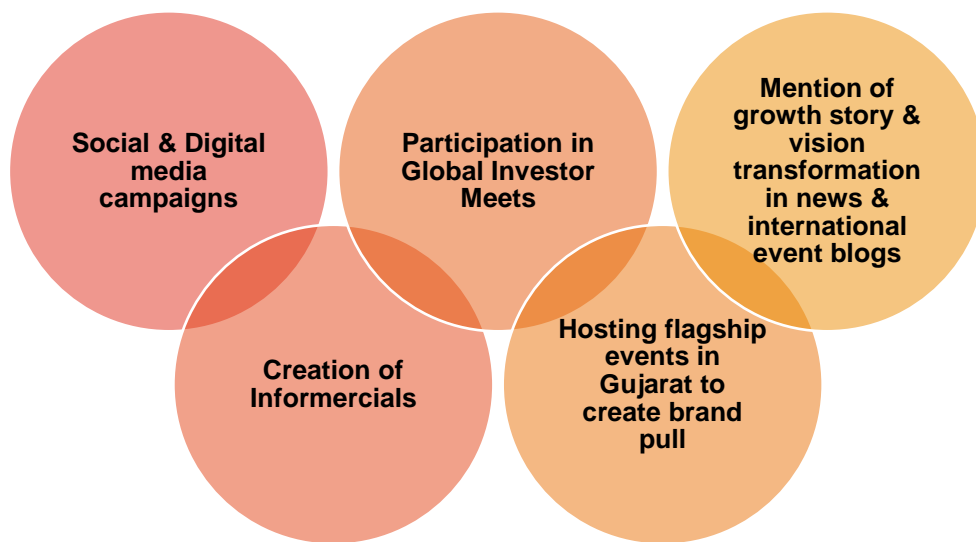
- i. The Angel Structures are made from high performance thermoplastic film.
- ii. Around the river's edge, striking bluebell canopies over lily pads revitalize the area, helping to create a new trend in outdoor dining and entertainment.
- iii. Mixed-use scheme- designed to increase commercial and leisure activities, gives the riverfront area a new identity and re-positions Clarke Quay as a vibrant and attractive destination.
- iv. Retail offering, commercial offices with tall structures, eat street, boating jetty options, culture walks, etc. have been developed in the area.

Soft Power

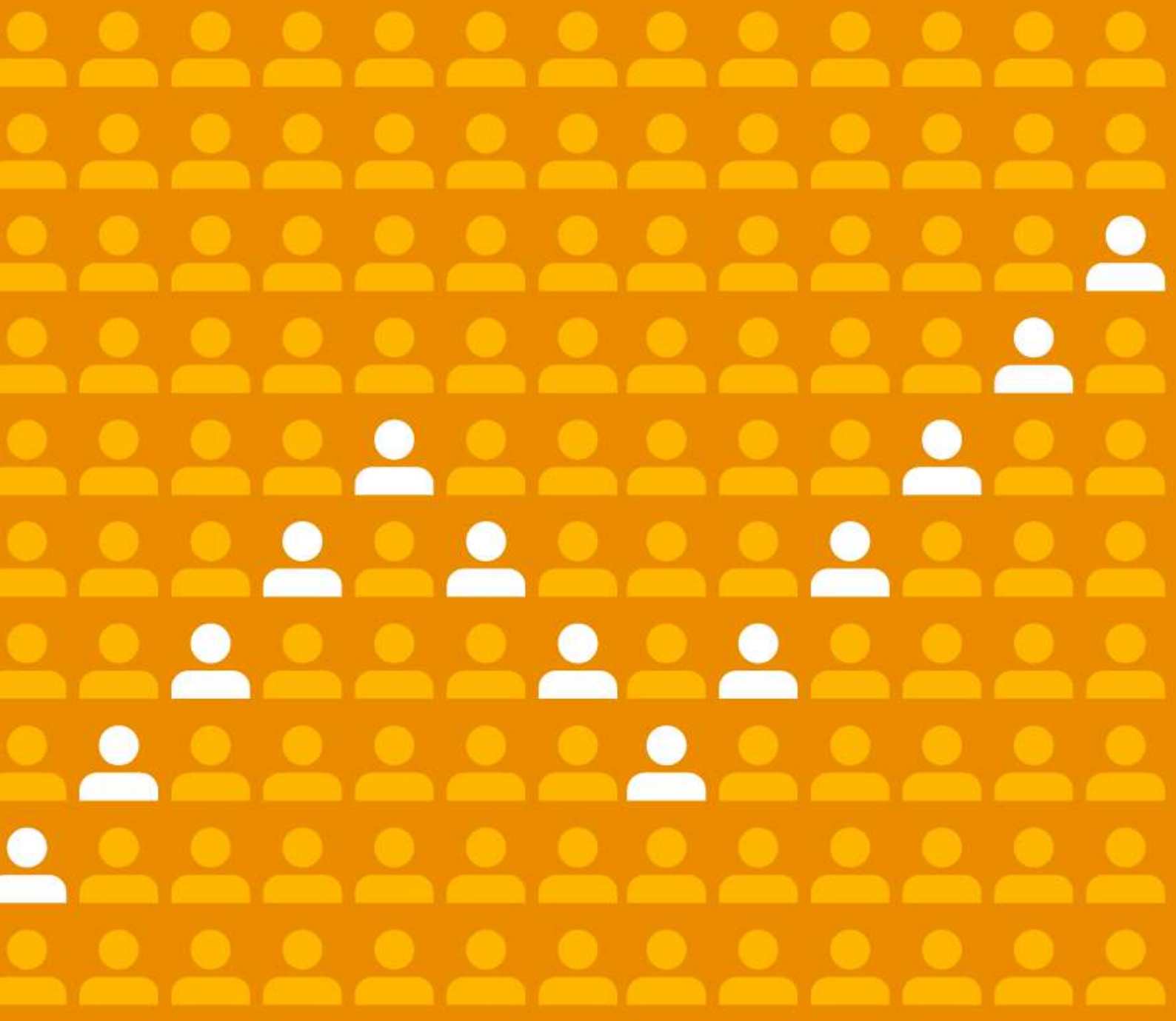
Branding and promotion of the policy along with infrastructure interventions would be critical to achieve high address value and top of the mind recall both Nationally and Internationally. This would in turn lead to increased flow of investments. Some of the initiatives to promoted are:

- Promote ESG compliant real estate – potential unique selling proposition (USP) for the State in India due to first mover advantage – strong material for branding the real estate in the State.
- Brand the region as an International MICE destination – will put the State on Global map and proposes a potential to tie up with International operators
- Opportunities to explore include Technology summits in textile, metal, petrochemicals, cultural festivals, shopping festivals, etc.

Figure 61: Branding and Promotion Methodologies



Source: Study team analysis



6.

Enablers

6. Enablers

6.1. Transport infrastructure & Logistics

Gujarat has always been on the forefront in developing the transport and logistics sector to complement overall economic growth of the State

Gujarat is one of the India's most industrialized states and is a leading hub for manufacturing chemicals, petrochemical, dairy, pharmaceuticals, cement, ceramics, textiles, gems and jewelry and engineering in India. Over the last few years, transport and logistics services have received great impetus with the steady growth in the manufacturing sector. Gujarat is one of the first Indian states to formulate 'Gujarat integrated logistics and logistics park policy 2021'. It has been at the forefront of initiatives to improve the overall logistics ecosystem in the State. Further, the State has managed to secure top ranking in LEADS (Logistics ease across different States) for the third consecutive year in 2021. Gujarat has been one of the first states to grant the industry status to the logistics sector and extended special incentives and provisions for the logistics stakeholders. The transport and logistics sector typically comprises 5 key segments: Ports, Road, Rail, Aviation infrastructure, and Logistics infrastructure and services.

Gujarat is a port-led economy as it accounts for ~40% of all cargo handled at the Indian ports

Gujarat is India's leading maritime state with a coastline of ~1600 kilometers. Gujarat Maritime Board (GMB) controls the state's 48 non-major ports. Bulk, breakbulk, liquid and containers are handled at private ports of Gujarat. Further, the state has one major port, Kandla, which also handles all the commodities.

Gujarat accounts for ~65% of the cargo handled by non-major ports in India, followed by Maharashtra at ~13%¹⁷⁰. The state has the advantage of excellent connectivity with a huge hinterland that stretches over Northern, Western, Central and parts of the Southern India. This results in a considerable demand for the services provided by Gujarat's non-major ports. The private sector's investment in Gujarat's non-major ports has been a key contributor to the development of overall infrastructure and service ecosystem.

Gujarat has a relatively better 2 and 4 lane road infrastructure than other key states contributing to India's GDP

Gujarat has one of the country's most extensive and traffic-intensive highway networks. As of 2020-21, it had a combined total road of 17,000 km of State highway and 6000 km of National highway. Gujarat's national highway network has benefited from the Golden Quadrilateral and the National Highway Development Program. The state's share in golden quadrilateral stands at 18% of the length of the highways. 30% of the length of the new Mumbai-Delhi expressway will pass through Dahod – Godhra – Vadodara – Surat.

As compared to other states, Gujarat has relatively a better share of 2 and 4 lanes National Highways (NHs) of the total length of NHs ¹⁷¹. Major industrial zones of Gujarat - Ahmedabad, Vadodara, Surat, Ankleshwar and Rajkot have NH connectivity, contributing to freight traffic on the highways. Further, with defined road safety policy and measures, Gujarat reported 6.8 accidents/10,000 vehicles which is relatively lower than the neighboring states.

¹⁷⁰ <https://shipmin.gov.in/sites/default/files/BPS2020.pdf>

¹⁷¹ Source: MorT&H

Gujarat has better rail connectivity in comparison with neighboring states; further, DFC connects key industrial centers with rail line

Gujarat has a total rail network of 5300 kms and its track km per capita is 4.3 which is relatively higher than Rajasthan and Maharashtra at 3.5 and 2.5 respectively¹⁷². In terms of freight movement, in 2020, Gujarat moved ~91 million MT which is 0.7X of the total rail freight movement in Maharashtra¹⁷³. Gujarat's freight carrying capacity is supplemented with a Dedicated Freight Corridor (DFC) and 6 key nodes are connected to the DFC – Dholera SIR, PCPIR SIR, Mandal Becharaji SIR, Ankleshwar Industrial area, Mehsana Industrial area and Surat-Hazira industrial hub. Gujarat Infrastructure Development Board (GIDB) has already developed a railway masterplan for Gujarat. Most of the non-Major and Major ports have rail connectivity. However, few ports handling bulk cargo such as Magdalla, Navlakhi, and Okha need improvement in rail connectivity.

Ahmedabad followed by Surat are key airports witnessing growth in passenger and freight traffic; other regional airports are unable to attract traffic due to cost competitiveness with other modes

Gujarat has 11 operational airports with 2 international and 9 regional airports¹⁷⁴. Further, 11 more airports are to be developed across the State along with 4 water aerodromes¹⁷⁵. Due to industrial activity and tourism, Ahmedabad and Surat are key airports witnessing growth in passenger and freight traffic. Smaller airports such as Bhavnagar, Kandla, Porbandar, etc. are not able to attract traffic on account of competition with rail / road from a pricing standpoint and non-profitable sectors for airline operators. In terms of freight traffic, Gujarat's air freight traffic is 50% of Maharashtra¹⁷⁶. Ahmedabad and Surat are the key airports operating as air freight terminals, while other airports have limited air freight movement. Surat is an emerging hub for air freight movement owing to growth in E-commerce and agri exports. However, EXIM movement happens only through Ahmedabad airport; no air freight stations (AFSSs) are available to serve the air freight market.

Gujarat leads the State logistics ranking for three consecutive year and has maintained its rank through strong policy initiatives and logistics related institutional mechanisms

In 2021, Government of Gujarat (GoG) approved the 'Gujarat Integrated Logistics and Logistics Park Policy 2021'. The State has set up a robust institutional mechanism for logistics by appointing State and City level logistics coordination committees. As per the policy, the 'State logistics cell' under GIDB is the nodal cell for the development of the logistics sector across Gujarat. The policy has granted special financial assistance to develop logistics infrastructure in the State. Further, Gujarat Port and Logistics Company Limited (GPLCL) is also created which will act as a development and implementation agency for logistics projects in Gujarat. The state logistics cell has already initiated the formulation of a city logistics master plan for all the municipal corporations of Gujarat¹⁷⁷.

Gujarat is one of the leading states with respect to logistics infrastructure capacity per capita for inland container depots (ICDs), container freight stations (CFSs), private freight stations (PFTs), rail goods sheds, warehouses and cold storages¹⁷⁸.

¹⁷² Source: Leads 2021, PwC Analysis

¹⁷³ Source: DGCIS data

¹⁷⁴ 11 operational airports in Gujarat include Ahmedabad domestic and international, Surat, Vadodara Rajkot, Kandla Jamnagar, Porbandar, Bhavnagar, Bhuj, Keshod

¹⁷⁵ 11 planned airports in Gujarat include Dwarka, Morbi, Ankleshwar, Ambaji, Dahej and Rajpipla (Source: GUJSAIL.website)

¹⁷⁶ Source: Airport Authority of India

¹⁷⁷ Municipal corporations include Ahmedabad, Surat, Rajkot, Vadodara, Jamnagar, Junagarh, Gandhinagar and Bhavnagar

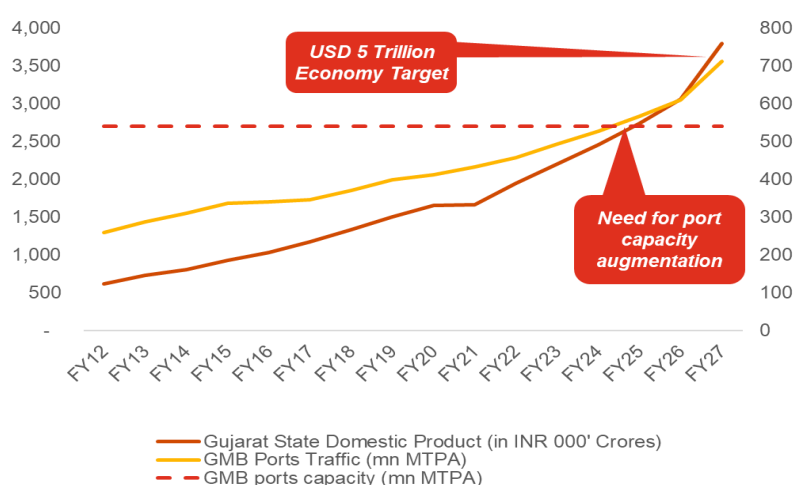
¹⁷⁸ Source: LEADS, 2021

With the development of the overall economy of Gujarat, the transport & logistics sector also requires focus in tandem. The key growth opportunities across ports, road, rail, air transport and overall logistics sector have been identified in this section, keeping in mind the key requirements and challenges presently faced.

Greenfield and brownfield expansions of ports is required to align with Gujarat's economic growth

In FY2019, the port capacity utilization of non-Major ports in Gujarat (542 Mn MT) was ~76% and is expected to be saturated by FY2025 as shown in Figure 10. It is anticipated that the port traffic will reach above ~750 Mn MT by FY2027 creating the opportunity for significant port capacity augmentation across the coastline of Gujarat.

Figure 62: Gujarat GDP and Port traffic at non-major ports of Gujarat



Source: GMB, PwC Analysis

In order to increase the overall port capacity, a planned approach of constructing new greenfield ports as well as brownfield expansion of existing ports needs to be undertaken. This is expected to improve the cargo handling capacity across the coastline of Gujarat. As part of the development of brownfield and greenfield ports, GoG should initiate master planning of Gujarat ports and related ecosystem for the next 20 years.



A. Greenfield construction and brownfield expansion of multipurpose ports across Gujarat



B. Development of greenfield liquid terminals/ berths to cater South and Central Gujarat chemical manufacturing and trading belt



C. Development of greenfield terminals to cater increasing LPG imports along with blending facilities

Development of satellite ports and collaboration with other states would support coastal shipping and reduce road congestion owing to traffic growth

As the Indian economy grows, there is a significant expected increase in domestic traffic movement between Gujarat and the other state, primarily through the road. This would lead to future traffic congestion and the need for alternative modes of domestic transport. The opportunity for increasing the traffic through short-sea coastal shipping movement between the western coastal states of Maharashtra, Karnataka, Kerala, etc., and Gujarat may be explored for holistic port development of the state. This shall assist in reducing road congestion as well as the carbon footprint of the state. In order to promote coastal shipping, GoG freight subsidy scheme for modal shift, similar to incentives offered by Kerala and incentives to coastal vessel operators voyaging between Gujarat and partner States can be evaluated.



Development of existing smaller ports as satellite ports for coastal hub and spoke movement especially for containers



Collaborate with other State government to develop coastal and allied infrastructure such as storage silos, warehouses, cold storages, etc.

Development of port for offshore wind power project to boost the development of blue economy in the State of Gujarat

Offshore wind farms as a source of energy have witnessed substantial growth in the past five years and in the future, it is expected to play an important role in energy requirements of the world. In 2018, offshore wind provided a tiny fraction of the global electricity supply, but it is set to expand strongly in the coming decades into a USD 1 trillion business¹⁷⁹. Developed countries such as the UK and Netherlands have made considerable progress in developing offshore wind farms. Gujarat has an opportunity to be a frontrunner in the development of offshore wind farms. This will give impetus to the growth in the overall blue economy and renewable energy sector of Gujarat. Mithi Viridi, south of Bhavnagar, can be a potential location for development of port to service 20 GW offshore power plant for logistics requirements of wind power project.



Dedicated Port in logistics support of 20 GW wind power project in gulf of Khambhat

¹⁷⁹ Offshore Wind Outlook, 2019. International Energy Agency (IEA)

Construction of elevated freight corridor is needed in Ahmedabad and Surat to cater for consumption and production led traffic in city

Ahmedabad and Surat are witnessing high growth in urbanization. These cities are also key industrial and commercial hubs. With growth in economy, freight moving through these cities is also expected to increase and may lead to road congestion especially in these cities. Urban development authorities can evaluate developing elevated freight corridor in these cities to ease out road congestion. This will assist in improving the overall flow of the traffic through major industrial hubs.



Development of elevated freight corridors to support industrial/business hubs at Ahmedabad, Surat

Improving the road connectivity for some of the non-major ports in Gujarat is needed for seamless and uninterrupted cargo traffic movement

With the increase in Gujarat's manufacturing and consumption economy, growth in port traffic is also envisaged. Port connecting road infrastructure is expected to act as a bottleneck to cargo movement while industries access the port terminals. Port connectivity roads of a few non-major ports such as Navlakhi, Bhavnagar, and Jamnagar require capacity augmentation. The existing road is capacity constrained, on account of the 2-lane highway approaching the port. Further, the cargo evacuation through city traffic increases overall cargo transaction time. Improving the road connectivity to the non-major ports will help in increasing the overall congestion and effective movement of cargo. The road widening project from two-lane to four-lane will be undertaken for Navlakhi Port.



Expand capacity of existing road infrastructure for non-major ports with two or less lanes serving for movement

Enhancing road capacity in Gujarat to reduce traffic congestion across major industrial and commercial centers

The Roads and Buildings (R&B) department has initiated multiple road development projects to improve road connectivity and congestion across key commercial hubs; for instance, the 200 km, 6 lane highway connecting Rajkot and Ahmedabad. This project is 50% complete and expected to be completed within the next 2 years. Further, the R&B department has identified ~100 railway over bridge projects across Gujarat with a budget of ~INR 5000 crore and will be executed in the next 5 years. R&B department is also planning to initiate up gradation and development of missing links along the coastal road of Gujarat starting from Umargam in South Gujarat to Narayan Sarovar in Kutch and is expected to complete the same within next 5 years.



Enhance road capacity to connect key commercial and industrial centre across Gujarat

- 6 lane Rajkot-Ahmedabad highway
- ~100 rail over bridge projects
- Upgradation and development of missing link along coastal road between Umargam in South Gujarat and Narayan Sarovar in Kutch

Expediting rail connectivity and capacity augmentation projects for already identified projects as part of Gujarat Railway Masterplan

In alignment with the Gujarat railway master plan developed in 2018, Gujarat Rail Infrastructure Development Limited (G-RIDE) is implementing the projects to reduce overall connectivity and capacity for cargo movement across Gujarat. These projects include - Kotasani- Becharaji- Ranui; Bedi Port Rail connectivity; Hazira- New Gothangam DFC connectivity; and Bhimnath - Dholera rail line. These are critical projects and have a direct impact on the key commercial and industrial hubs of Gujarat such as Ahmedabad, Mehsana, Surat, and Jamnagar district. G-RIDE is on the verge of completing the Bedi port rail connectivity projects, while other projects are in implementation stage.



Expedite implementation of rail connectivity and capacity augmentation projects identified as part of railway masterplan

Some of the rail lines at key industrial areas or ports are operating at optimal utilization levels; which will require doubling with growth expected in manufacturing GDP and in subsequent cargo traffic

The state has witnessed steady growth in the volume of freight being transported by rail. With rail lines already operating at optimum capacity especially connecting the ports and key industrial areas (Okha-Kalanus, Viramgam-Mehsana, Rajkot-Veraval)¹⁸⁰ there is a need to increase the capacity by doubling the existing rail line. Western Railways have already initiated doubling Viramgam – Samiakhiali and Palanpur - Samakhiali rail lines. This will further lead to an increase in the utilization of rail as the preferred mode of transport.



Augmentation of rail track capacity by doubling the existing rail line

Development of feeder lines connecting to DFC rail line will further assist in improvement of the overall logistics costs

Currently, there is a gap in the connectivity between industrial areas and the DFC line. In order to augment the effectiveness of connectivity between major industrial areas to the DFC, feeder liners must be planned to connect all major industrial areas with the DFC line.



Development of feeder liners connecting all major industrial areas with DFC line

¹⁸⁰ Source: Railway Master Plan

Development of semi high speed rail connectivity between Ahmedabad and Rajkot will assist in improvement of overall logistics and economic costs and time

Currently, 90% of the cargo movement between Ahmedabad and Rajkot happens via road and it takes around 4 hours to reach from Ahmedabad to Rajkot. With the growth in the economy, Rajkot and nearby regions in Saurashtra has emerged as the major key industrial hubs. The proposed semi-high speed rail project is expected to reduce 60% of the travel time between Rajkot and Ahmedabad and shall get integrated with the Ahmedabad-Mumbai High-speed rail at the proposed Sabarmati hub. Gujarat Rail Infrastructure Development Company (G-RIDE) has already conducted the detailed technical and financial feasibilities studies of the project and the Detailed Project Report (DPR) is ready and project viability is established. Further, G-RIDE needs to coordinate with multi-lateral agencies, Central Government and India Railway for project funding.



Development of high-speed rail, Semi high-speed rail connectivity between Ahmedabad and Rajkot

Development of air freight hub in Surat can be an alternative to Mumbai for cargo owners in western India; air cargo infrastructure can be modernized at a few regional airports to promote agri-exports; further, tourism in Kutch and Saurashtra can be aided by upgrading regional airports

Currently, Gujarat's air freight traffic is approximately half of that handled by Maharashtra. Gujarat cargo owners prefer Mumbai airport both for domestic and EXIM air freight movement on account of better connectivity options and competitive freight rates. Further, Mumbai airport is equipped with adequate infrastructure such as hangars and parking bays for larger freighters attracting air freight operators at Mumbai airport.

The development of air freight hub can be evaluated with specialized parking bays and hangars to accommodate large air freighters, cargo storage and AFSs. The state also needs to undertake modernization of the available cargo facilities at regional airports including cold storages, packaging facilities, truck docking stations, PGA facilities, etc.

In addition, the regional airports need to improve their passenger operations for enhancing overall experience and achieving cost efficiency to attract more passenger traffic, which are currently using other modes of travel. As most of the regional airports in Gujarat is under Airport Authority of India (AAI), GUJSAIL should partner with AAI to upgrade cargo handling infrastructure of Surat Airport and passenger infrastructure of all regional airports.



Development of air freight hub at Surat with specialized parking bays and hangars to accommodate large air freighters, cargo storage, AFSs proximity to the airport



Upgradation of regional airports from standpoint of both passenger experience and airline operations



Modernization of cargo facilities at regional airports including cold storages, packaging facilities, truck docking stations, PGA facilities, etc.

Developing maintenance-repair and overhaul (MRO) ecosystem in Gujarat can have a direct impact of costs for domestic air carriers

Currently, domestic carriers need to source MRO service requirements from Singapore and Europe. MRO manpower costs in India range from \$30 to \$35 per hour which is ~60% cheaper than that in Europe. MRO requires importing and stocking of components which if not stocked in bonded warehouses are subject to import duties. Therefore, there is an opportunity for establishment of an end-to-end maintenance-repair and overhaul (MRO) hub in Gujarat.



Establish maintenance-repair and overhaul (MRO) hub near a major airport for the aviation industry

International air connectivity to airports of Gujarat is imperative for improved EXIM air cargo movement as well as strengthening the tourism sector in Gujarat

Currently, there is inadequate direct international connectivity at Ahmedabad airport from key tourist countries. The tourist countries include US, Europe, Australia and Canada which account for ~30% of international tourists to India¹⁸¹. GoG needs to co-ordinate with Directorate General of Civil Aviation (DGCA) to increase international connectivity between Ahmedabad and USA and Europe.



Increase international connectivity between Ahmedabad and USA and Europe



Development of Grade A warehousing; rail freight terminals or MMLPs complementing the SIR/ Industrial parks in the State and Port led industrial clusters to enable EXIM trade ecosystem and increase port throughput is needed in the logistics sector in Gujarat

Ahmedabad leads in Grade A warehouse stock infrastructure with a capacity of ~6 million MT¹⁸² with regional developers dominating the Grade A warehouse market in Gujarat. Surat and Vadodara have recently witnessed developments in Grade A warehouse capacity. The key drivers for these developments in Grade A warehousing in Gujarat are shown in Figure 63:

¹⁸¹ Ministry of Tourism Statistics, 2020

¹⁸² Knight Frank Report 2021

Figure 63: Growth drivers for Grade A warehousing in Gujarat

| | |
|---|--|
|  <p>Growth in urbanization in Gujarat leading to increase in consumption led industries</p> | <ul style="list-style-type: none"> • ~42% of population in Gujarat is urban. Ahmedabad, Surat and Vadodara are the leading districts in urbanization • As a result, growth in consumption led industries is expected such as E-Commerce, FMCG, modern retail and consumer durables • These sectors have adopted or transitioning to Grade A warehousing to meet their consumption led demand across key urban centres |
|  <p>Increase focus on global standards across few manufacturing sectors</p> | <ul style="list-style-type: none"> • Automotive, pharmaceuticals, consumer electronics are a few sector adopting global manufacturing practices • These sectors have set up their manufacturing industries primarily across Ahmedabad, Surat and Vadodara region • These sectors are transitioning to Grade A warehousing for both raw material storage and distribution centres to increase their operational efficiency |

These drivers create a significant opportunity for the development of Grade A warehousing to enable these industry sectors and lower the overall logistics cost. Gujarat Ports and Logistics Company Limited (GPLCL) which is a development and implementation agency of logistics projects in Gujarat, is also focusing on development of Grade A warehousing and liquid tank farms.

In addition, there are various Special Investment Regions (SIRs) that are developed in Gujarat to boost the economic growth through targeted investments to increase cargo production in specific regions as shown in

Figure 64. The cargo movement is currently planned to be majorly moved via roads in these SIRs. To promote rail as an alternate mode of transport, there is a need for rail connectivity and terminals near these SIRs. Rail freight terminals can be developed at key SIRs in Ahmedabad¹⁸³, Vadodara and Bharuch district as per the 'Gati Shakti Cargo Terminal (GCT) Policy' of Indian Railways (IR)¹⁸⁴.

Figure 64: Key Special Investment Regions (SIRs) in Gujarat





| Bharuch (Dahej PCPIR) | Ahmedabad (Dholera SIR) | Vadodara (Halol Savli SIR) |
|--|--|---|
| <ul style="list-style-type: none"> • ~450 sq km of PCPIR • OPAL is the anchor tenant with investment of INR 30,000 crore • 180 plants / factories already commissioned in Dahej PCPIR | <ul style="list-style-type: none"> • 920 sq. km of SIR ; ~115 sq km allocated for industries • 22 sq. km to be developed in Phase 1 • Key investors: Tata, Chiripal group, Polycab, Avada | <ul style="list-style-type: none"> • ~123 sq km of SIR • Existing area of GIDC industrial estate also part of Halol-Savli SIR • Areva, Bombardier, FAG, Siemens key existing players |
| <p>Committed investments of ~USD 15 billion in PCPIR in next few years is expected to drive cargo demand for both EXIM and domestic logistics requirements</p> | <p>Dholera SIR expected to attract more investments due to its strategic location which is expected to drive cargo growth in the region</p> | <p>With Halol –Savli emerging as an engineering hub in future, growth in both domestic and EXIM cargo is expected</p> |

In addition to this, GRIDE and GPLCL are also planning to develop rail freight terminals in Morbi, Ahmedabad district and at Bedi port in Jamnagar district under GCT policy to cater the growing EXIM and domestic freight traffic in the region.

¹⁸³ Adani has initiated development of Multimodal Logistics Park (MMLP) at Virochannagar in Ahmedabad district. The proposed rail freight terminals under GCT policy in the district is to serve the future traffic of Dholera SIR

¹⁸⁴ Development of rail freight terminal at Mandal Bechraji SIR is not considered as Maruti is the anchor tenant of the SIR with its own private siding from its plant for transportation of Automobiles

Figure 65: Global Benchmarks of Port led industrial clusters

| Global Benchmarks | | |
|---|--|--|
| |  Jafza Dubai |  Distriparks Rotterdam |
| Strategic intent  | Developed as a free economic trade zone by leveraging Jebel Ali port | Designed for industries and LSPs to develop Rotterdam as a maritime EXIM hub |
| Value proposition for investors  | Fiscal incentives such as direct & indirect tax exemptions | Dedicated access to port terminals and multimodal facilities |

In addition to the logistics infrastructure, GoG can focus on the development of port-led industrial clusters to enable the EXIM trade ecosystem and increase port throughput. Global leading ports such as Jebel Ali, Rotterdam and Singapore had developed port-based industrial centers with a strategic intent of increasing the throughput of their ports. These clusters are developed in proximity to the port land. The clusters can be enabled with logistics facilities: warehousing & storage; rail freight terminal, packing/labeling/ kitting, etc.



Development of Grade A warehousing to enable domestic consumption and production led economy



Development of Gati Shakti rail cargo terminals to

- complement all the SIRs/ Industrial parks in the State
- support the growing traffic near major cargo clusters



Development of liquid tank farms to reduce logistics cost of chemical traders based out of Gujarat



Development of Port led industrial clusters to enable EXIM trade ecosystem and increase port throughput

There is an opportunity to enhance digitization in logistics sector in Gujarat through development of Digital Centre of Excellence (CoE)

The development of Digital Centre of Excellence (CoE) for designing and developing digital initiatives across the logistics and port sector of Gujarat can be evaluated. The Digital CoE can assist in the implementation/ up-gradation of ERPs across the port and logistics ecosystem. Further, GIDB is planning to develop a logistics data center to monitor the freight traffic flows as well as the logistics cost to improve the overall logistics ecosystem of Gujarat. This initiative can also be a part of Digital CoE and in the future, it can also assist in coordination with central government agencies for the logistics data of the state of Gujarat required for integration with the Unified Logistics Interface Platform (ULIP)¹⁸⁵.

¹⁸⁵ ULIP is designed to enhance efficiency and reduce the cost of logistics in India by creating a transparent, one window platform that can provide real-time information to all stakeholders. ULIP will provide real-time monitoring of cargo movement while ensuring data confidentiality with end-to-end encryption, comprehensive reduction in logistic cost resulting in competitive costing.



Development of Digital Centre of Excellence (COE)

- *Freight logistics data centre*
- *Implementation/ upgradation of ERPs across port and logistics ecosystem*



Development online services/ NOCs approval portal for logistics sector with existing Investment Facilitation Portal (IFP)

Other opportunities in logistics sector in Gujarat include promotion of private sector investment and integrating existing initiatives in skilling, cross-sectoral capacities and professional development

Other opportunities in the logistics sector in Gujarat include the formulation of Model Concession Agreements (MCAs) to encourage and invite private sector investment in the logistics sector. The state can also look into the opportunities to integrate existing initiatives in skilling, cross-sectoral capacities and professional development.



Formulation of Model Concession Agreements (MCAs) to encourage and invite private sector investment



Integrating existing initiatives in skilling, cross-sectoral capacities and professional development

6.2. Energy

Gujarat is a top performing state in terms of providing quality power supply. All the distribution utilities of Gujarat received A+ rating in the 9th Annual Integrated Rating for State Power Distribution Utilities published by Power Finance Corporation in July 2021. The state has consistent track record of profitable operations, healthy cash collections and adequate subsidy support from the state government. Subsidy dependency is primarily for agriculture consumers, which allows maintaining affordable tariff for other consumer categories. Gujarat is a highly industrialized state with many carbon-intensive industries. With proactive initiatives, the state is able to achieve 1st rank in the State Energy & Climate Index published by NITI Aayog in April 2022.

Gujarat was the first state to introduce solar policy in 2008, which initiated the transformation towards clean energy. It was also the first state to introduce solar wind hybrid policy in 2018. First RE hybrid project of Gujarat with capacity of 250 MW is under pipeline, of which 17.6 MW was commissioned in February 2022. In terms of renewable energy installed capacity, Gujarat ranks 1st in rooftop solar capacity, 3rd in ground mount solar capacity and 2nd in wind capacity, which has been possible due to favorable policy and regulatory regime. To

(<https://pib.gov.in/PressReleasePage.aspx?PRID=1801807>)

maintain state's leadership, the growth plan focuses on three key pillars which are ensuring reliability of the power supply to all the growth engines, sustainability with growth and affordability of the power supply.

Electricity generation, transmission and distribution is categorized under Secondary sector of GSDP under 'Electricity, gas, water supply and other utilities' category, with INR 46,000 Crore GSDP in FY20. To support the growth across sectors, GSDP contribution of electricity, gas, water supply and other utilities needs to grow at a CAGR of 11.7% to achieve INR 1 lakh crore by FY27, compared to historic CAGR of 8.6%.

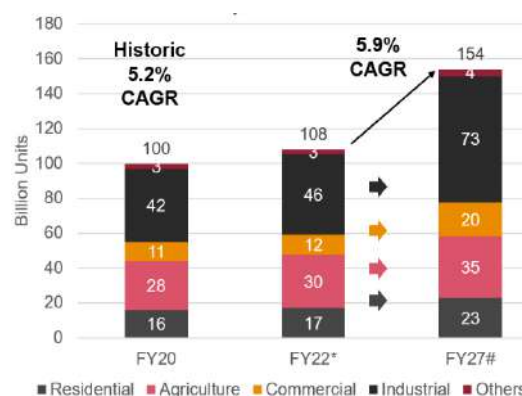
Growth drivers for energy sector: Power utilities would witness 40% growth of energy consumption over next 5 years

Gujarat power utilities sold about 108,073 MU to consumers in FY22, which reflected CAGR of 5.2% over a period of last five years. Considering the accelerated economic growth leading to USD 500 bn economy by FY27, expected growth of consumption by agriculture, industrial, commercial and residential sectors would be steeper as compared to their historical growth due to key factors mentioned below. As a result, **Reliable** power supply needs to be ensured for consumption growth at CAGR of 5.9% (Annex 6-A).

Table 17: Electricity requirement growth rate

| End-use | CAGR FY15-FY20 | CAGR FY23-FY27 | Key factors adding to the growth |
|-------------|----------------|----------------|--|
| Agriculture | 2.8% | 2.1% | Sector growth |
| Industrial | 6.8% | 9.5% | Sector growth |
| Commercial | 6.8% | 12.8% | Sector growth EV charging |
| Residential | 4.7% | 6.1% | Historic growth with added requirement for cooking and heating |

Figure 66: Electricity sold to consumers

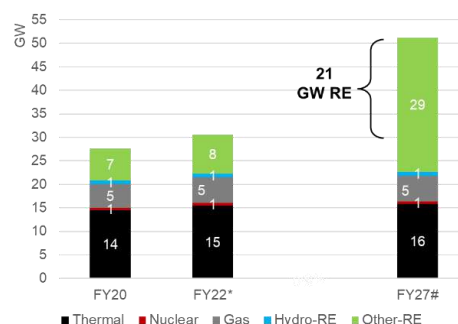


Source: Study team analysis. GERC tariff orders

Note: * GERC approved tariff order; # projected value

From total installed power generation capacity of Gujarat of 42,207 MW¹⁸⁶, 30,284 MW is procured by distribution utilities (Annex 6-B) and remaining 11,643 MW belongs to captive generators and open access generators. **To achieve the economic growth in a sustainable manner**, the incremental demand should be served only through renewable energy (RE) sources. We have estimated that ~20,594 MW of RE capacity addition would be needed by FY27 to serve the growing demand. Over the next five years, this will increase the share of RE from 27% to 56% in terms of capacity (MW) and from 11% to 35% in terms of energy (kWh)

Figure 67: Power procurement capacity of distribution utilities



Source: Study team analysis. GERC tariff orders

Note: * GERC approved tariff order; # projected value

¹⁸⁶ Central Electricity Authority, Installed Capacity Report - March 2022

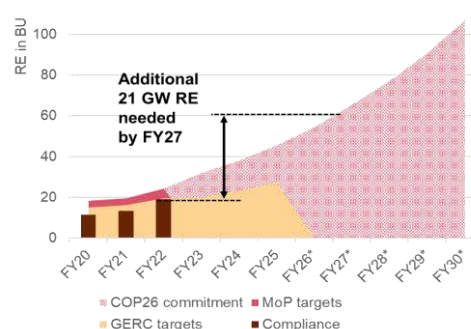
Total RE installed capacity in the state is 16,588 MW as on March 2022, out of which 8,275 MW (and additional 779 MW of large hydro) is procured by distribution utility(Annex 6-B). The remaining capacity is either captive generation or open access generation. Due to non-availability of data on captive generation and open access generation / consumption, only procurement mix of distribution utilities is discussed further.

Gujarat has capacity addition plan of around 30,268 MW of RE capacity by 2027 (Annex 6-C), of which 10,400 MW is planned under large-scale wind and solar projects category, 18,215 MW is planned under distributed RE projects category (rooftop solar, PM-KUSUM, small scale / wasteland PV) and 1,653 MW is planned under emerging technologies projects (offshore wind, floating solar, biomass, waste-to-energy and small hydro).

RE procurement obligations would rise steeply going ahead

GERC has set 20.70%¹⁸⁷ as the total RPO for FY25. Compared to the Gol guided trajectory, Gujarat's target is set lower by 4% to 8% over next three years, which need upward correction. Gol's 'Panchamrita' concoction for COP26 climate commitment requires 50% of electricity consumption to come from RE sources by 2030. Based on which, the RPO for FY27 would be about 36%, which equates to 20,959 MW of RE capacity.

Figure 68: RPO targets in accordance with COP26 commitment



Source: GPCL, GERC orders on Procurement of Energy from Renewable Sources; MoP order on RPO, PIB

Note: *Projected values

Constraints in the growth journey: costly electricity for industries, gestation of intra-state transmission capacity, multi-fold rise in ancillary (ramping) requirement due to higher share of RE

The average revenue generated per unit of electricity sold to industrial consumer is INR 7.67 per kWh compared to national average of INR 7.41 per kWh in FY20 (Annex 6-G). Affordable electricity supply is imperative for the growth of industrial and commercial sectors in the state.

Economic growth will uplift electricity demand profile. The base load would increase from 13.9 GW to 15.8 GW by FY27. Gujarat would need RE capacity addition growth at 28% CAGR starting from FY23. GETCO is set to add substation capacity at CAGR of 5.9% (Annex 6 E), which aligns with the anticipated sales growth of 5.9%.

As of March 2022, 2,942 MW of RE capacity is connected to Inter-state Transmission System (ISTS) and 13,333 MW of RE capacity is connected at Intra-state

Table 18: Transmission capacity for RE

| Transmission Capacity (MW) | |
|-----------------------------|---------|
| Interstate | ~17,000 |
| Intra state (available) | ~15,000 |
| Intra state (planned FY 27) | ~7,500 |

Source: GETCO

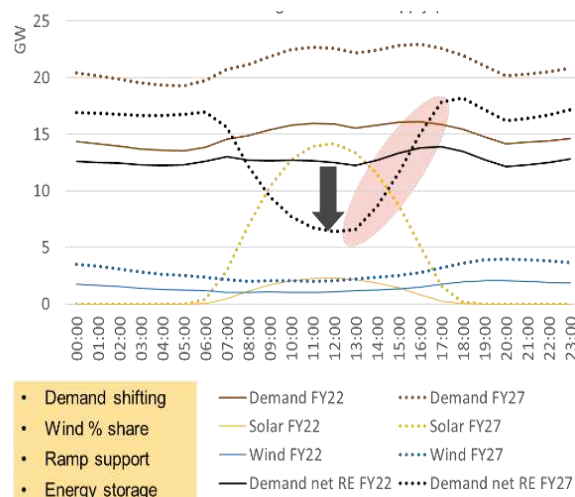
Figure 69: Estimated avg. demand & supply profile

¹⁸⁷ GERC Procurement of energy from renewable sources (3rd amendment) regulations, 2022

Transmission System (InSTS). From ~15,000 MW available intra-state transmission capacity, Central & Southern Gujarat accounts for ~7,000 MW, but RE penetration is very less in that region. Also, equal amount of transmission capacity is under planning which will come up around FY27. (Annex 6 D). Hence, intra-state transmission network may face constraint for absorbing more RE in near term.

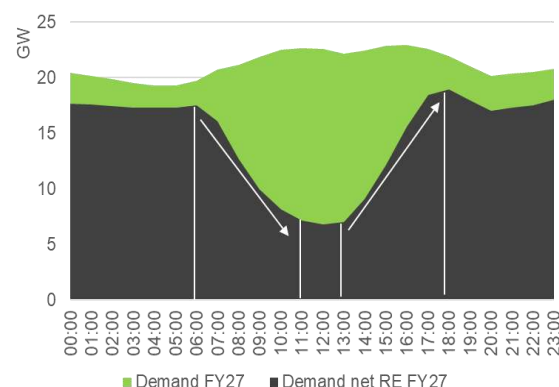
Since GoG has already decided for not adding any conventional power plant in Gujarat, the existing conventional capacity of 21.5 GW would witness improvement in average PLF from present 58% to 67% by FY27. Increased share of variable RE capacity would require steeper ramp-down (from 6am to 11am) and ramp-up (from 1pm to 6pm) of conventional power plants. Ramp rates would need to **rise six-fold** from present 0.6 GW/hour to 3.5 GW/hour by FY27.

Integration of additional 21 GW of variable and intermittent RE capacity into the grid will have significant impact on the net electricity demand (i.e., gross demand minus RE generation). For grid **stability**, necessary balancing measures (such as ancillary services, energy storage, etc.) needs to be planned and implemented in a time-bound manner.



Source: Study team analysis, SLDC

Figure 70: Estimated avg demand profile FY27



Source: Study team analysis

Strategies for energy utilities to enable desired growth should be centred around decarbonisation, decentralisation and digitalisation.

Table 19: Mix of capacity addition by power utilities of the state would be needed by FY27

| Distributed RE | Large-scale RE | Minor & Emerging RE |
|--|--|--|
| <ul style="list-style-type: none"> Rooftop Solar: 5.8 GW (~50% of residential need) PM-KUSUM*: 7.8 GW (~45% of agriculture need) Small-scale / wasteland RE: 3.5 GW | <ul style="list-style-type: none"> Solar & Wind hybrid RE parks: 3 GW | <ul style="list-style-type: none"> Floating solar: 0.5 GW Small Hydro / Biomass / Waste-to-Energy: 0.15 GW Off-shore wind: 0.5 GW |

Waiver of inter-state transmission charges is applicable to solar and wind projects which are commissioned by 30 June 2025. Gujarat shall avail maximum benefit of this waiver while procuring large-scale RE even if it is stationed in Gujarat.

Rapid up-scaling of distributed renewable energy generation: target 50% of residential and 45% of agriculture electricity requirement to be met through distributed RE. This will help distribution utilities to achieve RPO compliance at no additional cost and save in cost-to-serve, would create headroom for relaxing tariff for industries.

Solarizing consumers in cross-subsidized categories (i.e., residential and agriculture) will benefit the distribution utilities, government and consumers in a win-win setup. In the recent years, Gujarat has led implementation of rooftop solar projects in India with cumulative capacity of 1.8 GW, around 73% of them are in residential category, mostly in urban areas, and remaining in commercial and industrial category. In residential category, the gap between average revenue realized by distribution utility and average cost-to-serve in FY21 was INR 1.38¹⁸⁸ per kWh. In case of rural consumers, this gap would be even higher. Targeting 50% of the total electricity requirement of residential category will add 5.8 GW of solar capacity.

Electricity to agriculture consumer is supplied for eight hours per day with weekly rotation in supply timings. In FY22, on an average, 55% of the electricity requirement of agriculture consumers was provided between 6am to 6pm. Shifting agriculture load to daytime will save INR 693 Crore. Localized generation can save additional INR 182 Crore in T&D losses (Annex 6-F). Feeding remaining at 45% of the electricity requirement in daytime with solarization (equivalent to 7.8 GW solar capacity) will avoid T&D losses and ease loading on intra-state transmission network.

Gujarat had been early mover with its Suryashakti Kisan Yojana (SKY) scheme and Kisan Suryodaya Yojna (KSY) program (Annex 6-H). GoI's PM-KUSUM scheme brings an opportunity to implement learnings from above programmes while evolving the state-specific programme under PM-KUSUM, especially under its component A and C. GoI support under PM-KUSUM is limited to pump size of 7.5 hp or less; whereas, Gujarat has nearly 34% of irrigation pumps above that threshold. The average pump size found in MGVCL, PGVCL and UGVCL area of supply is above 7.5 hp (Annex 6-I). There is a correlation between hp rating of pump with the ground water level - deeper the water level needs higher pump size. Northern regions (served by UGVCL) have the deepest ground water level (below 40 meters) and has the highest average pump size of 23 hp. Therefore, providing more hours of supply for irrigation in these areas need careful assessment of groundwater irrigation and agriculture / crop preferences of the farmers, needing a broader policy outlook.

Gujarat has 1,325 MW of rooftop solar projects in residential category and 106 MW capacity under SKY scheme, which are implemented with estimated financial support of INR 3,500 Crores (Annex 6-J) from the state and central governments. These projects are bundled with five years of O&M contracts which would expire by FY27. It is therefore necessary to develop ecosystem for proper O&M of these assets to retain economic utility of public spending done under these programs.

Proposed interventions:

- a. Enable more urban residential consumers to achieve 'net zero' by allowing virtual net metering for rooftop solar in a phased manner, which will avoid the need of open roof area within the same premise.

Additional facilitation for rooftop solar for residential consumers in semi-urban and rural areas.

Recognize wind rooftop systems similar to solar rooftops in standalone as well as hybrid mode.

Categorize RE projects with ownership of 51% and above as 'captive', instead of 100%.

Large consumers face restriction of 1 MW rooftop solar. Such threshold should be relaxed up to contracted capacity, provided net injection into power grid is capped at 1 MW.

Assess 'energy-water-agriculture' correlation at district level to identify appropriate component(s) and business model(s) under PM-KUSUM; and up-scale the programme in targeted manner.

¹⁸⁸ Category-wise cost of service study for GUVNL, December 2021

To cover solarization of pumps beyond 7.5 hp in MGVCL, PGVCL and UGVCL areas of supply, GoG can top-up its contribution to neutralize capping of Gol subsidy, in the targeted districts through the 'energy-water-agriculture' correlation.

Converge multiple programs and institutions working in energy and water efficient irrigation

Review of tariff cap for small scale distributed solar

Designate one of the state government entities to take up O&M of distributed RE projects as a commercial venture.

Establish centers for centralized monitoring of generation from decentralized RE projects

Attracting private capital in emerging technologies: Conduct techno-commercial pilot of emerging RE technology projects for improving access to commercial finance

Emerging RE technologies such as offshore wind generation, floating solar generation, waste-to-energy generation and biomass-based power generation have considerable potential in Gujarat, given the concerns around limitation on land, transmission capacity and environmental sustainability.

Offshore / nearshore wind generation / solar thermal power:

GUVNL has planned to procure 1 GW power from offshore/nearshore wind projects at APPPC rate of the year of commissioning along with financial assistance from the central government. Solar thermal power storage projects can be fully indigenous and become cost-effective with volumes. This can be configured as a techno-commercial pilot to improve investability and bankability for larger adoption subsequently.

Table 20: Potential of emerging RE technologies

| | |
|-----------------------|------------|
| Offshore wind | 36 GW |
| Floating solar | 5 to 27 GW |
| Biomass | 900 MW |

Source: MNRE, TERI, GEDA

Floating solar generation: Floating solar generation projects eliminate need of land area, prevent loss of water in evaporation, offers higher energy production due to cooling effect of surrounding water. State is planning 500 MW floating solar projects by FY27. However, to scale-up this capacity, The state government is recommended to notify a policy and facilitate measures to attract private sector investment in setting-up of floating solar projects.

Biomass-based generation and Waste to Energy: For reliable power supply in constrained conventional fuel scenario, other alternatives like biomass/ torrefied municipal solid waste (MSW) would address both fuel and environmental problems. 60 MW of biomass-based projects are planned till FY27. Biomass co-firing in thermal plants is a proven technology which needs to be scaled. A structured pilot project for biomass supply chain, and scale-up of Waste to Energy in urban areas would reduce risk perception of financial institutions for such projects in Gujarat.

Proposed interventions:

- Conduct phase-wise techno-commercial pilot (200, 300, 500 MW) for offshore wind projects and solar thermal power projects.

Notify policy on off-shore wind projects, including clearances required, etc. for speedy roll-out.

Evolve policy to improve coordination and financial sustainability for Waste-to-Energy projects.

Assess suitability of water reservoirs for hosting floating solar projects, structure PPP projects.

Create pilot supply chain for biomass in 2-3 districts for reducing the risk profile of biomass as a fuel. Improve co-firing ratio of biomass in coal-based projects.

Careful approach for procuring electricity from utility-scale RE projects: RPO reclassification, preferring RE Hybrids, create databank to de-risk the projects

Gujarat Power Corporation Limited (GPCL), has acquired 35,800 hectares of land area for 7,500 MW of RE projects in Gujarat. Additional land for planned capacity will be identified in phase wise manner.

It can be observed that pure wind projects required much larger land compared to pure solar or hybrid projects. Further, hybrid projects offer CUF of around 50% compared to 21%-25% in pure solar and 32%-36% in pure wind projects.

Table 21: Land area identified by GPCL for various RE parks

| RE Technology | Location | Capacity (MW) | Area (Ha) | Area per MW (Ha) |
|-------------------|-------------------------------|---------------|-----------|------------------|
| Solar | Dholera Ultra Mega Solar Park | 700 | 1,400 | 2 |
| Solar Wind Hybrid | RE Park at Khavda, Kutch | 5,700 | 11,400 | 2 |
| Wind (SECI) | RE Park at Khavda, Kutch | 1,100 | 23,000 | 20 |

Source: GPCL

Proposed interventions:

- Upward revision of RPO in accordance with COP26 commitment and re-assess classification of RPO among Mature, Minor and Emerging RE.

Among utility-scale RE procurement, GUVNL should prefer hybrid RE projects against pure solar/ wind power projects.

Designate agency to identify and compile unified database of land parcels for developing RE projects in districts specifically having proximity with intra/ inter-state green energy corridor.

Create prefeasibility data bank for investment-ready wind projects, given the higher lead time for development of wind projects.

Prudent supply and demand planning for grid-stability in high RE environment: shifting agriculture demand to daytime, interstate banking for seasonal peaks demand, upgrading old-age conventional capacity to improve flexibility, expediting pumped hydro storage projects, explore battery energy storage to improve grid balancing.

Gujarat experiences a seasonal demand of 2 GW from 2-6 PM between April and June as shown here.

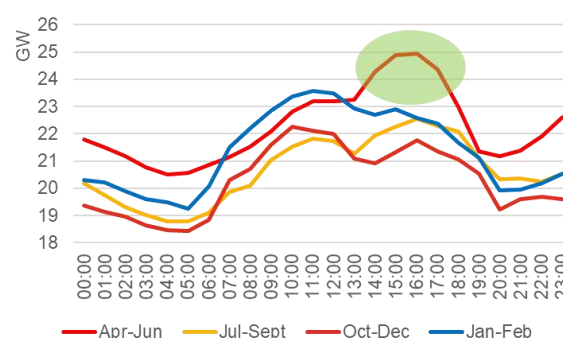
Proposed interventions:

- Demand curve would need reshaping over next 2-3 years. Residual 45% of agriculture demand should be shifted during daytime to mimic supply curve to reduce the ramping requirement.

Heighted urban real-estate should be encouraged for deploying solar powered water pumping.

Seasonal peak demand of 2 GW during April to June should be served through a suitable bilateral energy banking contract with another state with complementary need.

Figure 71: Seasonal variation in demand profile of FY27



3 GW of conventional power capacity is operating beyond its normative life. Upgrading conventional power plants based on learnings from Germany can allow improvement in ramp rates.

Wind power generation in Gujarat correlates well with its peak demand period. Techno-commercial assessment is needed to identify preferred mix of wind and solar power generation capacity in hybrid RE arks.

Pumped hydro storage for 240 MW (at Kadana) and 1,200 MW (at Sardar Sarovar) should be exploited on fast-track by public finance through green bonds for meeting near-term constraints on grid balancing in Gujarat.

Based on satellite imagery, identify potential sites for off-river pumped storage hydro projects within the state. In parallel, conduct competitive procurement of ISTS-connected pump storage hydro services from anywhere in the country.

Around 3-4 GW of Battery Energy Storage Service (BESS) for four hours would be needed for grid balancing (Annex 6-N). A phase-wise procurement of such services is needed to ensure both commercial demonstration as well as upgrading technology.

Green hydrogen (GreenH₂) parks as RE capacity booster: Gujarat has strategic advantage of already huge local market of hydrogen, cheaper RE power within its RE parks, and abundant water availability due to long coastline

Hydrogen demand in India is estimated at around 6.9 mn tonnes per year of which 53% is consumed in petroleum refineries and 44% in fertilizer plants. The demand is expected to rise to 12 mn tonnes per year¹⁸⁹ by 2030. It is estimated that 2.03 mn tonnes of hydrogen per year is consumed in refineries and fertilizers sector of Gujarat (Annex 6-K). Govt aims to achieve 5 mn tonnes¹⁹⁰ of green hydrogen production by 2030. Since the state's share is of 30%, at least 1.5 mn tonnes of green hydrogen production will be required in Gujarat by 2030. Given ESG/ Net Zero commitments/ and regulations in the export markets, several sectors including steel are transitioning to green steel production, which will further add to the state's demand for green hydrogen. All these will translate to at least 1 mn tonnes of hydrogen production per year by FY27 in Gujarat, which will need around 13 GW of RE capacity. Large private sector users have earmarked investments for 7.5 GW for this.

¹⁸⁹ Argus media article on 'India eyes hydrogen as cleaner fuel source', 03 August 2021

¹⁹⁰ PIB article on Ministry of Power notifies Green Hydrogen/ Green Ammonia Policy, 17 Feb 2022

The cost of green hydrogen is expected to reduce to USD 2.13 per kg for an industrial cluster in Gujarat¹⁹¹ (Annex 6-I). In the cost of green hydrogen, the cost of electrolyzers and hydrogen storage contribute to 50% and 20% share respectively. Specific interventions by the Government of Gujarat on green hydrogen production ecosystem can significantly reduce this cost. Gujarat can become supplier of Green Hydrogen not only for its own demand, but also to fetch market from neighboring states.

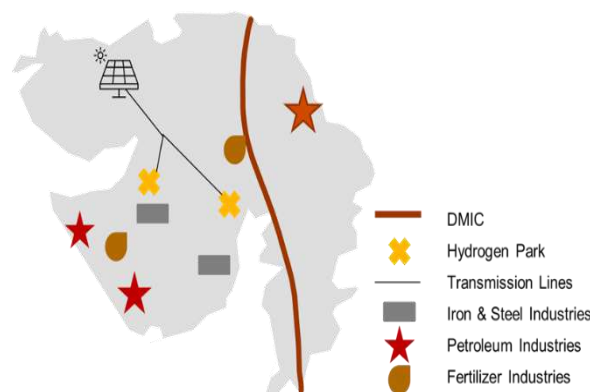
Proposed interventions:

- a. Market assessment for hydrogen consumption in Gujarat and implement novel concept of **GreenH2 Parks** located near demand centers which will reduce the transportation and storage costs. **Central grid** connectivity should be provided to them to reduce transmission and variability challenges.

RE capacity for GreenH2 should be situated in **desert RE parks** only to address challenges in land allocation. They should be connected with central grid to address stability challenge of state grid and take advantage of cost-free evacuation till 2025.

Develop a comprehensive policy on green hydrogen/ ammonia with appropriate structures to economize the cost of green hydrogen in Gujarat, attract investments in RE capacity and electrolyzer manufacturing, suitable linkage with water ecosystem, and fertilizer/ steel/ petrochemical industries, improve ease of doing business and fetch hydrogen market beyond Gujarat.

Figure 72: Potential green hydrogen demand in Gujarat



Green tariff and RE banking services to enthused consumers as RE capacity booster: Utilities can avoid the flight of sustainability enthused consumers by offering green tariff and energy banking as a priced service

There are several corporates and multinational companies which made commitments under ESG/ RE100/ Net Zero. Some of them serve the international markets which have carbon tax/ regulations like European Union's carbon tax under 'Carbon Border Adjustment Mechanism' which would be applied with a transitional period starting from 2023 on sectors of Iron & Steel, Aluminum, Cement, and Fertilizers. These products accounted for INR 5,780¹⁹² crores worth of Gujarat's export to EU in FY21. More sectors will be included in the framework in phase wise manner.

Utilities procurement beyond RPO will allow offering 'Green Tariff' and "Energy Banking' as a service which such consumers would like to avail to bridge the timing between generation and consumption of power.

- a. For ESG/ Net Zero/ RE100 committed consumers, assess commercial aspects of Green Tariff for the end-user and utility perspective, define the credible mechanism to ensure the clean attribute of such power is singularly accounted for the end-user and get the regulatory approval in its pricing and the process involved.

Assess techno-commercial impact of RE banking services to the end-users, design methodology for pricing such services, getting regulatory approval for that.

¹⁹¹ TERI report on Potential of hydrogen in India, 2020

¹⁹² Annual survey of Industries , Directorate of Economics and Statistics, Govt. of Gujarat. Annual Survey of Industries (2019), Ministry of Statistics and Programme Implementation, Govt. of India

Renewable Energy powered Electric Mobility as RE capacity booster: Promoting EV would add electricity requirement of 400 MU per year by FY27

Gujarat's EV policy in 2021 aims to add 2 lakh electric vehicles by FY25. From about 26,000 EVs in Mar'22, it would require CAGR of 97% in EV adoption over the next three years. Electricity for charging would increase from 15 MU to 400 MU per year by FY27.

Govt. of Gujarat itself is a big user of mobility services. GoG and GSRTC can be anchor adopters of the e-mobility to kick start wide roll-out of EV charging infrastructure and private sector participation with commercial viability.

Proposed interventions:

- a. GoG's diesel/ CNG fueled vehicles operating on lease should be replaced with e-mobility. Designated state PSU can act as a demand aggregator and service provider for all departments of GoG. It can introduce PPP model within its own commercial venture to transition GoG on electric vehicles. This will make it an anchor adopter of e-mobility around state capital region, and EV charging ecosystem would become viable under public-private partnership model.

With around 20% of existing fleet being over-aged, GSRTC has an opportunity to transition to electric buses for intra-state transport. Battery swapping and fast charging options should be assessed on techno-commercial aspect and a roadmap for transition to e-mobility for public transport buses should be developed.

Inter-state export of 4 GW of RE power will facilitate other states in meeting their renewable purchase obligation while boosting RE capacity investment in Gujarat

From 17 GW of available untied evacuation capacity on inter-state transmission network, about 13 GW would get utilized for Green Hydrogen production within Gujarat. Remaining 4 GW of RE capacity can be utilized for exporting RE power. Further, such capacity integration before June 2025 will enjoy waiver on transmission charges as notified by Gol.

Gujarat is a torchbearer in leading actions on addressing climate change

Gujarat is already experiencing effect of climate change in the forms of earthquakes, cyclone, flood, heat wave etc. Gujarat is the first state in Asia to have an exclusive Climate Change Department. There is a continued focus on climate resilient infrastructure and adequate disaster risk reduction approach in the state. *Climate Change Fund of Gujarat* is in its advance stage of finalisation. It aims to provide financial assistance to governmental, non-governmental and private organisations for development of projects focusing on climate change mitigation and adaptation. In 2016, GoG had notified policy to derive energy from the waste produced from municipal, agriculture and allied activities. Gujarat is also focusing on carbon capture utilisation and storage (CCUS) through increasing Mangrove cover, social forestry, urban forests, afforestation on waste land and restoration of forest ecosystem are under focus. Gujarat is developing a vision document to achieve the Net Zero Gujarat by 2070 and aims to develop a long-term framework and pathway for making Gujarat climate resilient in the long-term.

Proposed interventions:

- a) Mandate disclosure of energy efficiency details of commercial and high-end residential buildings at the time of sale/ purchase/ lease transaction. This will enhance user awareness, develop energy auditor's market, and market driven pricing ecosystem in the state.

Table 22: Investment requirement till FY27 in generation, storage and T&D segments

| Description | Unit | FY22 | FY23 | FY24 | FY25 | FY26 | FY27 |
|--|------------------------|--------|--------|--------|--------|--------|--------|
| Power generation projects (conventional) | MW Cumulative | 21,230 | 21,590 | 21,590 | 21,590 | 21,590 | 21,590 |
| | MW Addition | | 800 | 0 | 0 | 0 | 0 |
| | INR Crore [#] | | 4,800 | 0 | 0 | 0 | 0 |
| Power generation projects (large hydro) | MW Cumulative | 779 | 779 | 779 | 779 | 779 | 779 |
| | MW Addition | | 0 | 0 | 0 | 0 | 0 |
| Power generation projects (renewable) | MW Cumulative | 8,275 | 10,673 | 13,766 | 17,755 | 22,900 | 29,537 |
| | MW Addition | | 2,398 | 3,093 | 3,989 | 5,145 | 6,637 |
| | INR Crore [^] | | 11,990 | 15,465 | 19,947 | 25,727 | 33,183 |
| Battery energy storage | MWh | | | | | | 3,000 |
| | INR Crore [*] | | | | | | 18,000 |
| Total generation | MW Cumulative | 30,284 | 33,042 | 36,135 | 40,124 | 45,269 | 51,906 |
| | MW Addition | | 3,198 | 3,093 | 3,989 | 5,145 | 6,637 |
| Investment in generation and storage segments | INR Crore | | 16,790 | 15,465 | 19,947 | 25,727 | 51,183 |
| Investment in transmission and distribution segments | INR Crore | | 8,395 | 7,732 | 9,973 | 12,864 | 16,592 |

Cost INR 6 Crore per MW; ^ Cost INR 5 Crore per MW; *Cost INR 6 Crore per MW

6.3. Education, Skilling, and Startup ecosystem development

Gujarat ranks high in School Education Quality and has high percentage of qualified teachers. There is potential to increase GER and nurture the young minds to make them future ready

Quality Education for all is an extremely important part of a Nation's inclusive development. Sustainable Development Goal 4 aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." India has the largest school going population among all countries, at >250 million¹⁹³, and is a nation with a demographic dividend. The nation and states therefore need to implement strategic interventions that result in high quality education and develop capacity that prepare the young population to be future ready.

¹⁹³ Education and Training Industry, IBEF, Available at: <https://www.ibef.org/industry/education-sector-india>

As of 2019-20, the National Gross Enrolment Ratio (GER) for elementary level (Standard 1 to Standard 8) stood at 97.8. Similarly, for secondary education (standard 9-standard 10), and higher secondary (standard 11-standard 12), the national average stood at 77.9 and 51.4 respectively. For Gujarat, GER stood at 93.8 for elementary, 77.4 for secondary and 43.3 for higher secondary level¹⁹⁴. Gujarat consistently performs well at the Performance Grading Index (PGI) and is amongst top states in the country. As in the latest report, Gujarat ranked 4th at School Education Quality Index (SEQI)¹⁹⁵. It also has a lower proportion of underqualified teachers at all education levels compared to most states, needing relative improvement only for pre-primary teachers¹⁹⁶. Gujarat, therefore, needs to strengthen Transition Rate for better GER in School Education, while continuing to strengthen education quality even further.

Gujarat has implemented series of Technology Driven Initiatives to improve online real-time monitoring through Vidya Samiksha Kendra. These initiatives include Data Driven Approach to achieve Universal Enrolment and Tracking of each child by integrating the data of Health Department, Daily Online Attendance of Students and Teachers, Centralized Summative and Periodic Assessment Tests, Accreditation of All Schools, Providing Holistic Report Cards to each Student for each Subject and Test and Technology enabled Learning facilities. Vidya Samiksha Kendra is an innovative best practice which can be a role model for other states in the Country to improve the quality of education.

Gujarat is committed to native language but at the same time it has recognized the importance of global language along with native language and introduced English as a subject from Grade 1, bilingual terminologies from Grade 3 and bilingual Textbooks from Grade 6 to 12.

Gujarat ranks second¹⁹⁷ in India in total number of universities, with more than 100¹⁹⁸ universities. Several sectoral universities like IITRAM¹⁹⁹, IITE²⁰⁰, Rashtriya Raksha University, Kamdhenu University, National Forensic Sciences University, Children's university have been set up. (While interventions to increase participation of young minds in the state to avail education will continue to be important, it shall be crucial for Gujarat to make them future ready pertaining to skills that shall drive the upcoming industry trend and growth. The role of disruptive technologies is enormous in achieving the desired goal of five trillion-dollar economy. While industries and other demand side actors shall focus on disruptive technologies, nurturing the students for their disruptive ideas shall be necessary. For this purpose, the Education Department has introduced topics including AI, ML, Internet of Things, Blockchain and Drone technology in the school syllabus.)

Further, efforts may also be made to ensure better industry academia collaboration by engaging industry experts and professors / teachers. This shall help align the education imparted with the industry needs. Need based skill development centers shall be formed to help the students have a hands-on experience of the current skills. Involvement of industries in co-developing curriculum with educational institutes can have a twofold benefit; i) education institutes / students can be at par with the current industry trends and the required skill sets and ii) industries can by continuous education and soft skill courses for their employees through such institutional tie-ups.

Not only students, but the education providers (teachers / professors) shall need to have a know-how of such industry practice and the current market demand of necessary skill sets. For this, more focus shall be on academic research and grooming the education providers. Drafting and implementing initiatives such as "Faculty Entrepreneurial Policy", already being implemented in the prominent institutions such as IITs, IIMs and other national research institutions shall be considered.

¹⁹⁴ Handbook of Indian States- State wise Gross Enrolment Ratio (2019-20), Reserve Bank of India, Govt. of India

¹⁹⁵ India Innovation Index 2020, NITI Aayog, 2020, Available at: <https://www.niti.gov.in/sites/default/files/2021-01/IndiaInnovationReport2020Book.pdf>

¹⁹⁶ <https://unesdoc.unesco.org/ark:/48223/pf0000379115.locale=en>

¹⁹⁷ International conference of Academic Institutions, Jan 2022, Available at <http://gksgujarat.org/icai-brochure.pdf>

¹⁹⁸ Education department, Government of Gujarat

¹⁹⁹ Institute of Infrastructure, Technology, Research and Management

²⁰⁰ Indian Institute of Teacher Education

In the current digital era, focus on promotion of digital content development and last mile delivery of higher education centers via open sources to train in such disruptive technologies shall also play a key role in educating the students and make them digitally literate. However, to ensure penetration of such digital initiatives, removal of the digital divide shall be important to eliminate disparity among rural and urban education and services. IT and digital platforms shall be leveraged to propagate education for all, anywhere and anytime and thereby address the shortage of qualified teachers and schools.

To create an integrated education content platform, with customizable local language content, a PPSC (Public- Private-Social Organization and CSR) framework can be created to promote such initiatives. Utilizing the student data to enable innovation that can address educational competency gaps and strengths of individual students can be considered.

India is the 3rd largest startup ecosystem in the world and with Gujarat being the startup growth engine, there is an immense potential for the startups to contribute to Gujarat's growth story

As per the Economic Survey of India 2021-22, India became the 3rd largest startup ecosystem in the world after the US and China²⁰¹. As per Startup Ranking Framework 2019, Gujarat was recognized as the Best Performer and was at the forefront in Startup ranking among all Indian states and UTs²⁰². Conducive policies and established startup ecosystem have led the state ranked 1st in the nation.

With the importance of digital era kicking in, the focus on using disruptive technologies towards Gujarat's contribution to make India a 5 trillion US\$ economy shall be essential. For this, strengthening the startup ecosystem in the state shall be a priority. The state government is going to support and nurture the ideas of youth in different verticals such as i-Hub and Student Startup and Innovation Policy (SSIP 2.0). Targeting incubation centers to align them with this vision shall be a focus as these centers are the fountain head of innovations, including disruptive innovations. For disruptive technology laid innovation and startups, separate financial mechanism shall be developed as the nature and value chain of such innovative startups are different from conventional business. The state government through its various policies such as Scheme for assistance for Startups/ Innovation – Gujarat Industrial Policy 2020, Student startup and Innovation policy by education department, Incubators and Startups under Electronics & IT/ITeS Startup Policy for the state of Gujarat and Student Startup and Innovation Policy for the state of Gujarat (SSIP 2.0) is providing support to various elements of the startup ecosystem at grass-root level.

The following section provides the strategic interventions for strengthening the Education, Skilling and the Start-up ecosystem of the state.

Strategic Interventions

Gujarat will need to provide a push to education and skilling in the state for which it may undertake the following interventions:

- Primary and Secondary Education
 - **Develop talent pool in sync with aspirations for future.** Education department to take a lead in assessing requirements across Services, Agriculture and Manufacturing sectors.
 - **English education curriculum** to be promoted across primary and secondary education
 - Introduce **ESG compliance related course** curriculum

²⁰¹ Key Highlights of Economic Survey 2021-2022, PIB, 2022, Available at: <https://pib.gov.in/PressReleasePage.aspx?PRID=1793829#:~:text=The%20highlights%20of%20the%20Economic,real%20terms%20in%202022%2D23>.

²⁰² States' Startup Ranking 2019, Ministry of Commerce and Industry, Government of India, 2020, Available at: https://www.startupindia.gov.in/content/dam/invest-india/compendium/National_Report_09092020-Final.pdf

Enablers

- Higher Technical Education
 - **Centers of Excellence (CoE):** Fast tracking the setting up of 7 CoEs in universities, notification of which was issued in January 2022.
 - **Augmenting ongoing Initiatives:** Several initiatives taken by the education department including expanding Wi-fi coverage to all government colleges, imparting teacher training through Indian Institute of Teacher Education, Gandhinagar should be further augmented and strengthened.
 - **Courses on Disruptive Technologies through collaboration:** Skill-based courses on AI & ML, Robotics, IoT, 3-D printing should be developed and delivered through collaboration among government, education institutes and industries in order to build capacity of the manpower with requisite skills.
- Human Capital Development for Health and Healthcare sector
 - **Encourage Private investment in medical education:** To enhance the number of physicians, nurses and midwives per 10,000 population from the current 41 to the target of 45.
 - **Health Recruitment Board:** For recruitment of doctors, nurses, etc., Government may consider setting up of a health recruitment board on the lines of police recruitment board .
- Skill development
 - **Mainstreaming skill development in Education** and making skill development aspirational Labour, Skill Development and Employment Department, GoG / Skill development mission
 - Identifying **Re-skilling and Up-skilling requirements** and providing adequate platform for the same
 - Development capacity in the skill development ecosystem to **make available training providers** (including institutions and infrastructure)
 - **Converge the skill development efforts** into programs that are aligned with NSQF
 - Development of certification and accreditation mechanism for skills across the sector
 - Identify skill gaps and take up skill programs that are demand based and as per futuristic needs
 - Organize Short-, Medium- and Long-term programs that focus on the skill gaps of the future needs – mainly technology, manufacturing and services
 - Encourage collaboration with industry / potential investor group and educational institutes
 - Making skills inclusive and encourage balanced development

The State may also take initiatives to develop further the Start-up ecosystem and the use of Disruptive technology:

- Promote Startups and encourage disruptive Technology:
 - **Promote Startups:** Implementation of Student Startup policy and encouraging Student Startups
 - **Special Incentives shall be designed for promoting disruptive technology** led startups and the auxiliary ecosystem associated with them.
 - **Dedicated Institutional mechanism shall be developed for deep technology-based startups** so that they can be adequately supported throughout their journey of Mind to Market.
 - **Public procurement policies** shall be put in place to facilitate market access for disruptive technology startups.

Enablers

- Public policy makers shall be roped in to **design long term roadmap** for the state and encompass the strategy of economic value creation through disruptive innovations as a key component.
- **Leveraging disruptive technologies** like automation and advanced robotic, IOT, artificial intelligence, vision technology, etc. to **improve productivity and quality at reduced cost**.
- **Encourage, support and promote startups** in the domain of healthcare, agriculture, education, natural language processing, retail, transport and logistics, manufacturing and fintech in the state **to support the sectoral growth targets for the next 5 years**.
- **Exploration of Public Private Partnership model (PPP) for setting up centre of excellence** to provide hands on training to students and bridge the industry academia gap. This shall generate more employable youth that can meet the fast-changing industry demand and eventually contribute to the economy.
- **Encourage private sector to invest in R&D activities** as well as channelize efforts to commercialize STEM research.
- **Intellectual Property Management:** Many Incubation centers are already doing excellent work. These centers should also work out a meaningful and result oriented Intellectual Property Management (IP management) system for:
 - IP Generation/ Creation – through Innovations
 - IP Protection (Patents, Designs, Copyrights, etc.)



7.

Implementation roadmap

7. Implementation roadmap

7.1. Agriculture and allied activities

Table 23: Proposed action plan and responsibility matrix for agriculture and allied activities

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---|--|--|-------|-------|-------|-------|-------|
| Incremental growth to efficient growth | A. Timely use of high-quality seeds planting material and improving the seed replacement ratio | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture Gujarat State Seeds Corporation | | | | | |
| | B. Increasing net irrigated area | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture Gujarat Green Revolution Company Ltd. | | | | | |
| | C. Focus on improving level of farm mechanization for improving efficiency in crop production, crop harvesting and post-harvest handling practices | <ul style="list-style-type: none"> Directorate of Agriculture Gujarat Agro Industries Corporation | | | | | |
| | D. Increased push on extension programmes such as Krushi Mahotsav etc. | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------------|---|--|-------|-------|-------|-------|-------|
| | E. Improving cropping intensity | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture Gujarat State Seeds Corporation Gujarat Green Revolution Company Ltd. | | | | | |
| Innovation and creative disruptions | i. Crop specific precision agriculture practices like scientific & timely use of high-quality seeds / planting material, crop nutrients, fertigation and other plant protection methods | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture Gujarat Green Revolution Company Ltd. State Agricultural Universities | | | | | |
| | ii. Crop specific Integrated Nutrient Management (INM) and Integrated Pest Management techniques (IPM) | <ul style="list-style-type: none"> Directorate of Agriculture Directorate of Horticulture Gujarat Agro Industries Corporation Gujarat State Fertilizers & Chemicals Ltd. | | | | | |
| Market orientation and processing | A. Promote weekly markets during the harvest season, at locations distant from regulated agriculture markets and e-NAM to increase farmers' access to markets | <ul style="list-style-type: none"> Directorate of Agriculture | | | | | |
| | B. Formation of Farmer Produce Organization (FPOs) to help farmers improve their bargaining power | <ul style="list-style-type: none"> Directorate of Agriculture Gujarat Agro Industries Corporation | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------|---|--|-------|-------|-------|-------|-------|
| | C. Develop integrated storage (dry and cold) network across the state with a common ICT based information platform to access updated information about space availability | • Gujarat Agro Industries Corporation | | | | | |
| | D. Develop Integrated Cold Chain Network | • Gujarat Agro Industries Corporation | | | | | |
| | E. Develop agro & food processing clusters and establish integrated food processing parks catering to entire value chain to reduce wastage and increase level of food processing in the state | • Gujarat Agro Industries Corporation. | | | | | |
| Shift towards diversification | Horticulture <ul style="list-style-type: none"> Crop diversification from field crops to Potato, Onion, Mango, Dragon fruit, Strawberry Increase in share of Export of horticultural produce from Gujarat Reduction in post-harvest losses of horticulture produce by building on-farm storage structure Promote low-cost nursery models for horticultural crops in villages | • Directorate of Horticulture | | | | | |
| Shift towards diversification | Fisheries <ul style="list-style-type: none"> Promoting the utilization of zero earning saline affected water-logged land for fish or shrimp farming Promotion of cage fishing and shrimp production to increase inland fish production Creation and modernization of infrastructure for capture & culture fisheries Extensive policy for regular supply of quality seeds | • Commissioner of Fisheries | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------|---|--|-------|-------|-------|-------|-------|
| | Dairying <ul style="list-style-type: none"> Improving the Genetic Merit of heifers Setting up of a network of Satellite Dairy Farms Strengthening the infrastructure facilities at the veterinary and epidemiology units Improving the availability of good quality feed and fodder in the state Increase in share of export of dairy products | <ul style="list-style-type: none"> Directorate of Animal Husbandry APEDA | | | | | |
| | Poultry <ul style="list-style-type: none"> Promotion of backyard and commercial poultry cooperative Strengthening the infrastructure facilities at the veterinary and epidemiology units Improving the availability of quality concentrated poultry feed free of toxins at affordable prices Promote value chain management approach through formation of farmer groups and linking farmers to market & commercial buyers through systems like contract farming. | <ul style="list-style-type: none"> Directorate of Animal Husbandry | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|---|---|-------|-------|-------|-------|-------|
| Industrial Extension Bureau- Agribusiness (iNDEXTa) | <ul style="list-style-type: none"> Developing an online platform, acting as a single point of contact for investors in agro processing/food processing. Developing model Detailed Project Reports (DPRs) for potential agro processing units in the state Handling investors' queries /grievances and hand-holding support Conducting market analysis and sharing information to prospective investors regarding supportive parameters Coordination and convergence with other departments, institutions, stakeholders, etc. | <ul style="list-style-type: none"> Gujarat Agro Industries Corporation Technical Support Agency (TSA) can be hired. | | | | | |

Legend

Completed

Ongoing

7.2. Manufacturing

Table 24: Proposed action plan and responsibility matrix for manufacturing sector

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------------------------|---|---|-------|-------|-------|-------|-------|
| Investment target | A. Investments worth around INR 4.95 lakh crore to be required by the focus sectors by FY 27 | <ul style="list-style-type: none"> Hon'ble Chief Minister, Gujarat Hon'ble Chief Secretary, Gujarat | | | | | |
| | B. Ensure that these projects start commercial production by FY 25 / FY 26 | <ul style="list-style-type: none"> Principal Secy / Additional Chief Secy, Industry & Mines Dept, GoG Industry Commissionerate, GoG Industrial Extension Bureau, GoG | | | | | |
| Policy intervention | A. Formulation of an incentive scheme / Amending existing Industrial Policy 2020 for focus sectors identified under this study: <ul style="list-style-type: none"> Anchor investors Other focus sector investments | <ul style="list-style-type: none"> Industries Commissionerate, GoG | | | | | |
| Industrial Infrastructure development | A. Development of new industrial estates in the following districts on priority under Phase-I: <ul style="list-style-type: none"> Vadodara, Surat, Jamnagar, Mehsana, Valsad, Rajkot B. Development of new industrial estates in remaining districts under Phase II <ul style="list-style-type: none"> Bharuch, Kheda, Banaskantha, Gandhinagar, Panchmahal and Surendranagar C. Development of export infrastructure such as SEZs, Testing & certification facilities necessary | <ul style="list-style-type: none"> GIDC / Dahej SEZ Co. Ltd / Dholera Industrial Development Company Ltd / GIDB / Gujarat Informatics Ltd / Other similar GoG agencies involved in Industrial Infrastructure development | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|----------------------|--|--|-------|-------|-------|-------|-------|
| | to support targeted manufacturing exports from the state. | | | | | | |
| | A. Expedite development of following sectoral parks in the state: - PM MITRA Park (1,142 acre) at Navsari, Bulk Drug Park (1007.71 acre) at Bharuch, Ceramics Park (1,051 acre) at Morbi, Toy Park (241 acre) at Ahmedabad & Rajkot, Bio-tech park (16 acre) at Vadodara, Dholera SIR, Mandal-Becharaji SIR B. Consider / evaluate development of new sectoral industrial parks: - Coastal economic units, Special Economic Zones (Export oriented), Export related CFCs for Testing & Certification, Electronic Manufacturing clusters, Future of mobility parks (Auto, EV, Batteries), High tech engineering park (Machinery, Electrical machinery, Other equipment's), Mega food processing parks, Chemical clusters, Green Hydrogen park / Hydrogen valley, Metal clusters, Power and Renewable energy equipment park and Mega Leather cluster. | | | | | | |
| Export growth target | A. Target 17% CAGR from FY 22 to FY 27 | <ul style="list-style-type: none">Industries Commissionerate / Gujarat Export Promotion Council, GoG | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-----------------------------|---|---|-------|-------|-------|-------|-------|
| Institutional interventions | <p>A. Establishment of Gujarat Export Promotion Council at Gandhinagar (GEPC)</p> <p>B. Capacity building of existing District Export Promotion Committees (DEPC)</p> <p>C. Sensitize members of existing DEPCs on parameters listed for evaluation of states under Export Preparedness Index and work towards monitoring and implementation of the same.</p> <p>D. Presence of local industry representatives as members in proposed GEPC as well as DEPCs</p> | <ul style="list-style-type: none"> Industries Commissionerate, GoG | | | | | |
| | <p>A. Undertake dialogue with Government of India so that they negotiate with foreign embassies for having favorable / competitive tariff structure in target markets i.e., USA, Germany, France, China, UK, Belgium, Mexico, Spain, Canada, Hong Kong, Japan, Singapore, Italy and Switzerland</p> | <ul style="list-style-type: none"> Industries Commissionerate, GoG Government of India (Ministry of Commerce and Industry) for initiating dialogues on trade tariff with identified countries | | | | | |
| | <p>A. A new committee/Task force to enable investments in priority sectors</p> <p>B. Explore new investment promotion avenues – revitalizing Vibrant Gujarat</p> | <ul style="list-style-type: none"> Industry Commissioner / Chairman INDEXTb | | | | | |

Legend

Completed

Ongoing

Summary of key action items

Following are the key suggestion to the Government of Gujarat for propelling manufacturing sector of the Gujarat in the next 5 years:

1. Transition towards an industry mix that is dominated by sectors that are high on value addition, have high employment generation potential.
2. Enable integrations with global value chains through targeting manufacturing and export opportunities that have high demand in global trade.
3. Government of Gujarat needs to aggressively pursue new investments at the highest level (Office of Hon'ble CM, Office of CS, Govt. of Gujarat) into the focus sectors within a time frame of next 1 year and ensure that such investments are grounded / achieve commercial production stage by FY 2026
4. Rolling out a standardized incentive scheme for new large anchor investments and MSME investments into focus sectors
5. Expedite development of infrastructure projects in the pipeline and on a mission mode plan for development of the proposed industrial and other transport and logistics projects
 - Aggressively work towards development and timely completion of key infrastructure projects in the state such as DSIR, Mumbai-Ahmedabad High Speed Rail Corridor, Ahmedabad Metro Rail Project as well as provision of better road connectivity (6/8 lane) to the districts identified for focus sectors.
 - Pursue development of sectoral parks in Gujarat (PM-MITRA, Bulk Drug Park, Ceramics park, Toy park even in case they don't get selected under respective GoI schemes.
 - Aggressively develop industrial areas such as Dholera Special Investment Region and Mandal-Becharaji Special Investment Region.
 - Development of rail freight terminals or MMLPs, Port led industrial clusters, elevated freight corridors.
 - Enable balanced regional growth through diversifying into new districts like Mehsana, Surendranagar, Rajkot, Panchmahal, Navsari, Kheda, Valsad and Sabarkantha.
6. Setting up of a State level Export Promotion Council to boost exports from the state.
7. Pursue Government of India to initiate dialogues with embassies to provide competitive tariff structure in identified import destinations.
8. Address skill gaps for focus sectors identified for Gujarat.
9. Encourage decarbonization and Net-zero in Manufacturing to promote sustainable manufacturing.
10. Promote development of MSME clusters near traditional & emerging clusters.
11. Capacity building and sensitization of DEPCs and its staff on export parameters to make the state competitive in terms of export performance.

7.3. Services

Table 25: Proposed Action plan and responsibility matrix for service sector

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------|---|--|-------|-------|-------|-------|-------|
| Overall service sector | | | | | | | |
| Institutional | A. Establishment of Commissionerate for Services: The Task Force recommends the establishment of a Commissionerate exclusively for services, housed under an appropriate department, for coordinated efforts across multiple departments for the growth of Services. | <ul style="list-style-type: none"> General Administration Department (GAD) Industry and Mines Department | | | | | |
| It and ITeS sector | | | | | | | |
| Investment target | A. Channels of dialogue: Creation of channels for dialogue between govt and the senior management of top IT companies in India. IT investment summit may be organized. . A dedicated agency/organization may be created to plan and implement such initiatives | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |
| | B. International Delegations: Sending Government and IT/ITeS industry led delegations to attend international events. | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |
| | C. Emerging economies: Organizing summits for IT companies in Gujarat to showcase their capabilities and tap into the emerging economy markets of Africa, southeast Asia and Latin America | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------------|---|---|-------|-------|-------|-------|-------|
| Policy intervention | A. Encourage and incentivize Gujarati HNIs and NRIs: Create a channel of dialogue between the state govt and HNI/NRI Gujarati's to leverage their strong network and set up their offices in the state | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |
| | B. Social infrastructure: Enhance social infrastructure in terms of number of hotel rooms, tourist attractions, malls, etc. to attract and retain young IT workforce | <ul style="list-style-type: none"> Department of Tourism Urban Development and Urban Housing Department | | | | | |
| Human Capital Development | A. Centers of Excellence (CoE): Fast tracking the setting up of 7 CoEs in universities, notified in Jan 2022, in addition to the AI School/ CoE (envisaged in the state IT / ITeS policy) | <ul style="list-style-type: none"> Department of Science and Technology Education Department | | | | | |
| | B. Promotion of English language: Introducing English earlier in non-English medium schools, setting up of more English medium schools, teacher training courses and dual language textbooks | <ul style="list-style-type: none"> Education Department | | | | | |
| | C. Increase number of Science and Technology programs: Create more colleges with information and communications technology (ICT), technical, engineering and scientific programs to augment the supply of skilled workforce. | <ul style="list-style-type: none"> Education Department | | | | | |
| Encourage innovation | A. Establishment of regulatory sandboxes: Setting up sandboxes for IT industry, where live testing of new products or services can take place in a controlled environment as done for Financial services in GIFT city | <ul style="list-style-type: none"> Department of Science and Technology Education Department | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------|--|--|-------|-------|-------|-------|-------|
| | B. Innovation ecosystem: Linkages between R&D institutes, industry and government should be encouraged to boost the innovation and startup ecosystem. | <ul style="list-style-type: none"> Department of Science and Technology Education Department GIFT City Co. Ltd. | | | | | |
| Promote startups | A. Assistance in Quality certifications: Providing assistance in the form of cost reimbursements for quality certifications like CMM level 2 upwards to startups and local IT companies. | <ul style="list-style-type: none"> Department of Science and Technology Education Department | | | | | |
| | B. Promote Startups: The coverage of the IT / ITeS and startup policy may have a deeper focus on encouraging startups in the state, especially in sectors such as healthcare and financial services | <ul style="list-style-type: none"> Department of Science and Technology Education Department Department of Health GIFT City Co. Ltd. | | | | | |
| Inclusive growth | A. Expanding benefits to Tier 2 and 3 cities: Providing infrastructure, financial support and incentives to companies to shift to Tier 2 and Tier 3 cities. | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |
| | B. IT and emerging tech events: In major cities and Tier 2/Tier-3 cities, IT and emerging tech events may be organized to attract investors to these locations. | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-----------------------------------|--|---|-------|-------|-------|-------|-------|
| Financial services | | | | | | | |
| Growth as Global Financial Center | A. Promoting Global In-House Centre (GIC) at GIFT IFSC: The Govt. of Gujarat should promote GIFT City as a hub for GIC activities. This would create large employment in the state. GICs employ > 1 million high skilled people in India. Detailed action plan to be prepared for attracting GICs in GIFT IFSC. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Department of Science and Technology, GoG | | | | | |
| | B. International Arbitration centre and separate court: A state-of-the-art International Arbitration Centre and Separate Courts needs to be established in GIFT IFSC. The Govt. of Gujarat may work closely with Dept. of Legal & Justice, Govt. of India to implement the same | <ul style="list-style-type: none"> Department of Legal & Justice, GoI IFSCA | | | | | |
| | C. Preferential treatment to IFSC for Investment in India: The existing restrictions for investments under FPI and FDI route from GIFT IFSC may be removed to attract Global financial Institutions in GIFT IFSC. Proposal may be submitted to RBI and SEBI for relaxing norms for FPI and FDI investments through GIFT IFSC. | <ul style="list-style-type: none"> RBI SEBI | | | | | |
| | D. Developing new products for trading at GIFT IFSC Exchanges: GIFT IFSC Exchanges may develop new products for commodities on the lines of other International Exchanges to attract foreign investment. | <ul style="list-style-type: none"> IFSC Exchanges | | | | | |
| | E. Foreign currency Clearing and Settlement System: Development of foreign currency clearing and settlement system will enable real time settlement of | <ul style="list-style-type: none"> GIFT City Co. Ltd. | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------|--|---|-------|-------|-------|-------|-------|
| | foreign currency transactions carried out in GIFT IFSC. GIFT City may propose to RBI and IFSCA to develop such mechanism. | | | | | | |
| | F. Single window mechanism: The Government of Gujarat may write to the Ministry of Finance for single window mechanism. Single window clearance to all the entities for licensing and business approvals through a single nodal office will potentially improve the ease of doing business within GIFT – IFSC. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Ministry of Finance, Gol | | | | | |
| | G. KYC norms at par with financial centers: The Government of Gujarat may write to Ministry of Finance for KYC norms at par with leading financial centers. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Ministry of Finance, Gol | | | | | |
| | H. Remove restrictions for LRS: The Government of Gujarat may write to RBI to remove existing restrictions for Liberalized Remittance Scheme (LRS) in IFSC. The Overseas Direct Investment rules may also be revised to provide easy access to domestic investors. | <ul style="list-style-type: none"> IFSCA RBI | | | | | |
| | I. Foreign University Regulations: Ministry of Finance announced setting up of foreign university campus at GIFT City and it would be exempted from domestic regulations. IFSC Authority would provide framework for foreign universities to set up campus in GIFT City. It is proposed that regulations should be light touch and provide freedom for repatriation of fund, designing courses, fees etc. The Government of Gujarat may work closely with GIFT City to attract foreign universities in the GIFT City. | <ul style="list-style-type: none"> GIFT City Co. Ltd. IFSCA Ministry of Finance, Gol | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------|---|---|-------|-------|-------|-------|-------|
| | J. Data Laws: To enable cross-border data flows exceptions in data protection laws should be provided for IFSC jurisdiction, while keeping in place proper safeguards for ring-fencing and transparency. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Ministry of Electronics and Information Technology, GoI | | | | | |
| FinTech Hub | A. Governance: The state should look at establishing Governance Structures (advisory groups, implementation agency, etc.) such that priorities of the FinTech industry are considered in implementation of government policies | <ul style="list-style-type: none"> Industries Commissionerate Department of Science & Technology | | | | | |
| | B. Promotional Events reimbursement: Gujarat may reimburse a part of cost of exhibition / global event participation for FinTechs registered in Gujarat | <ul style="list-style-type: none"> Industries Commissionerate Department of Science & Technology | | | | | |
| | C. FinTech Registry: Gujarat may set-up a FinTech registry. All FinTech start-ups incorporated in the state should be members of this common platform | <ul style="list-style-type: none"> Industries Commissionerate Department of Science & Technology Department of Education | | | | | |
| | D. Partnerships between FinTech & FIs: Establish online marketplace to facilitate partnership between FinTechs & FIs, for FinTech accessibility to clients. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Department of Science & Technology | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---|--|---|-------|-------|-------|-------|-------|
| Human Capital Development | A. Developing International Fintech Institute: GIFT City to develop International Fintech Institute jointly with the Asian Development Bank | <ul style="list-style-type: none"> GIFT City Co. Ltd. Urban Development, GoG | | | | | |
| | B. Financial Service Exchange Programme: GIFT City may establish a financial services exchange programme with leading International universities & education institutions to ensure steady flow of talent. | <ul style="list-style-type: none"> GIFT City Co. Ltd. Department of Education | | | | | |
| | C. Partner with FinTech Industry: Partner with the FinTech Industry to narrow the digital skill gap. Launch a portal, which acts as an open online course provider as well as acts marketplace | <ul style="list-style-type: none"> GIFT City Co. Ltd. Directorate Employment & Training | | | | | |
| | D. Secondments: IFSCA could promote secondments of professionals by identifying opportunities under the new UK-India Migration and Mobility Partnership – Young Professionals Scheme. | <ul style="list-style-type: none"> GIFT City Co. Ltd. | | | | | |
| Encouraging Innovation & Start-ups | A. Knowledge exchange for Innovation: International co-operation and MoU with other regulators of IFCs may be signed for linking remittance systems to facilitate cross-border payments and information sharing | <ul style="list-style-type: none"> GIFT City Co. Ltd. | | | | | |
| | B. Startup Seed grant: Gujarat may earmark funds for FinTech startups under the seed support system | <ul style="list-style-type: none"> GIFT City Co. Ltd. Department of Education | | | | | |
| | C. FinTech Accelerator Kit: Gujarat should provide incentive to reduce initial product development costs and help scale FinTech business swiftly | <ul style="list-style-type: none"> GIFT City Co. Ltd. Department of Education | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------------|--|---|-------|-------|-------|-------|-------|
| | D. Innovative financial service in remittance: IFSCA / Gift City may support policies that initiate/augment the innovation and testing of innovative financial service ideas in remittance space through Accelerators, Sandboxes, etc. | <ul style="list-style-type: none"> GIFT City Co. Ltd. | | | | | |
| Collaboration & Promotion | A. Developing tri-city connectivity: Ahmedabad, Gandhinagar and GIFT City may be positioned together to leverage existing infrastructure and ecosystem. For e.g., GIFT City may establish connect with leading educational institutes in Ahmedabad and Gandhinagar. | <ul style="list-style-type: none"> Department of Education Urban Development, GoG GIFT City Co. Ltd. | | | | | |
| | B. Branding and promotion of key projects of Gujarat: The Govt. of Gujarat may develop detailed marketing strategy to promote key projects. Reports and articles may be published regularly highlighting strengths of Gujarat, ease of operations, availability of talent etc. The Govt. of Gujarat may work closely with bodies such as Invest India and embassy offices of India globally. | <ul style="list-style-type: none"> Department of Finance IFSCA GIFT City Co. Ltd. | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------|--|---|-------|-------|-------|-------|-------|
| Healthcare | | | | | | | |
| Enhance Healthcare facilities | <p>A. Increase public expenditure on health: Increase healthcare expenditure as a portion of state budget by 50% (from the current 5% of budget to 7.5% of budget) in Gujarat</p> <p>B. Graded fiscal incentives: Promote a good quality healthcare ecosystem in Tier 2 and 3 cities by providing graded fiscal incentives for setting up healthcare infrastructure as per the facility density</p> <p>C. Health insurance coverage: Increase the health insurance coverage to 90% of the Gujarat population either through government or private insurance schemes</p> | <ul style="list-style-type: none"> Health and Family Welfare Department Finance Department (approval) | | | | | |
| | D. Home Healthcare: Promotion of healthcare services at patient's premises, especially to cater to increasing geriatric population | <ul style="list-style-type: none"> Health and Family Welfare Department | | | | | |
| Human Capital Development | A. Encourage Private investment in medical education: To enhance the number of physicians, nurses and midwives per 10,000 population from the current 41 to the target of 45. Creation of brownfield medical colleges in PPP model may be allowed. | <ul style="list-style-type: none"> Health and Family Welfare Department - proposal Chief minister office onwards to Assembly (approval) | | | | | |
| | B. Health Recruitment Board: For recruitment of doctors, nurses, etc., the Government may consider | | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------------------------|--|--|-------|-------|-------|-------|-------|
| | <p>setting up of a health recruitment board on the lines of police recruitment board</p> <p>C. Skilling of mid-level service providers: Develop mid-level service providers such as nurse practitioners and public health personnel</p> | | | | | | |
| Increase private sector participation | A. PPP Model: To Increase the number of hospital beds from the current 0.9 to 2 per 1000 population and to boost the number of specialty and super specialty hospitals in Tier 2 or 3 cities | | | | | | |
| | B. Promote PE/VC investments: Promote investments from private equity and venture capital investors in the healthcare delivery space in Gujarat | <ul style="list-style-type: none"> Health and Family Welfare Department | | | | | |
| Enhance Medical Value Travel | <p>C. Tourism policy benefits to MVT players: Benefits related to capital subsidy, interest subsidy, power tariff, electricity duty which are provided to hotels as part of state tourism policy should be provided to MVT players as well along with incentives for JCI accredited hospitals</p> <p>D. Improve air connectivity: Specific focus should be on more direct international flights to countries having Gujarati diaspora like Nairobi, Kenya, etc. especially for medical tourists from both developed and emerging economies.</p> <p>E. Wellness centres: Adopt a PPP model for wellness centers at exotic tourist places</p> <p>F. Annual conclaves: These can be organized at foreign locations by insurance companies; embassies abroad</p> | <ul style="list-style-type: none"> Tourism Department | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------|--|-------------------------|-------|-------|-------|-------|-------|
| | should also liaison with them to create more awareness about India's healthcare industry | | | | | | |
| | <p>A. Regulation of unorganized players: Regulate the unorganized players as they make false commitments to overseas patients which leads to reputational damage of the state</p> <p>B. Health treatment packages: Offer attractive health treatment packages in cooperation with private healthcare industry</p> <p>C. Single window clearance: This is required to ease the process and promote satisfaction of medical services offered in Gujarat for all medical tourists as well as medical students from abroad</p> <p>D. Clinical outcome documentation: This is important to ensure overseas patients are aware about efficiency of the services being delivered in India</p> <p>E. Medical & Wellness Tourism Board: Establish a Medical & Wellness Tourism Board / Society to promote Medical Value Travel and Wellness tourism and monitor the progress</p> | | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------|--|---|-------|-------|-------|-------|-------|
| Promote Health Tech | A. Create Healthcare Innovation fund: To boost R&D in healthcare and improve health access and outcomes | <ul style="list-style-type: none">• Department of Science and Technology• Health and Family Welfare Department• Finance Department• Education Department | | | | | |
| | B. Telemedicine: PPP Model with private hospitals to leverage their digital platforms and specialists for expanding telemedicine in the state specially for remote areas | <ul style="list-style-type: none">• Department of Science and Technology• Health and Family Welfare Department | | | | | |
| | C. Support startups: Healthcare startups can be encouraged similar to any other startup receiving benefits under the State’s startup policy/ IT/ITeS policy D. Artificial Intelligence (AI): Encourage hospitals to adopt AI for precision health treatments especially surgeries E. IT platforms and verticals: Ensure effective medical data collection by creating IT platforms for interoperability of data and IT verticals integrated with hospitals. The data collected can be used for Big Data Analytics which will increase accuracy of diagnosis and treatment in personal medicine. | | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------------------------|---|---|-------|-------|-------|-------|-------|
| Tourism | | | | | | | |
| Increasing Tourist Footfall | <p>A. Develop SoU as Iconic Tourist Village</p> <ul style="list-style-type: none"> - Short term activation plan for SoU through marketing & promotion, planning multiple activities and events - Complementing SoU with unique architectural and experiential assets by attracting private players through special incentives (policy and land) <p>Develop Kevadia as an iconic tourism village in a phased & planned manner through master planning and vision planning for 20 years (adopting a phase wise approach for unlocking land) with a private sector participation</p> | <ul style="list-style-type: none"> • Department of Tourism GoG • SVPRET | | | | | |
| | <p>Global recognition of tourism assets:- Liaise with UNESCO for recognition of tangible and intangible assets of Gujarat</p> <p>Tangible Asset - Gujarat can liaise with UNESCO to recognize sites such as Gir National Park/ Marine National Park/ Wild Ass Sanctuary in Little Rann of Kutch as UNESCO “Natural Heritage Sites”</p> <p>Intangible Asset - The Government of Gujarat is already liaising with UNESCO to obtain an Intangible Cultural Heritage Tag, similar to heritage Tag awarded to West Bengal’s Durga Puja.</p> | <ul style="list-style-type: none"> • Department of Tourism GoG | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---|---|---|-------|-------|-------|-------|-------|
| Increasing Tourist Footfall | <p>Promotion of Buddhist circuit including historical caves dating back to 2nd century B.C. will be instrumental in attracting international tourists.</p> <p>Development of multiple attractions, activities on cave themes, airport connectivity, selective marketing (including international), onboarding of tour operators, way side amenities along the route etc. will be crucial for the success of the circuit</p> | <ul style="list-style-type: none"> Department of Tourism GoG R & B Department GoG | | | | | |
| Increase Length of Stay | <p>Activate Key Events and Festivals: - Make Navratri to Diwali as a 3 week to month long festival by conducting pre-Navratri art and cultural activities and tours in different parts of Gujarat</p> | <ul style="list-style-type: none"> Department of Tourism GoG | | | | | |
| | <ul style="list-style-type: none"> Develop Tourism Circuits to extend length of stay <ul style="list-style-type: none"> Statue of Unity Circuit- Ahmedabad- Vadodara- Panchmahal and Statue of Unity. Saurashtra Circuit: - Dwarka-Somnath-Junagadh-Gir <p>Multiple attraction, connectivity, marketing and promotion, onboarding of tour operators, way side amenities along the circuit etc. will play a crucial role in the success of the circuit</p> | <ul style="list-style-type: none"> Department of Tourism GoG R & B Department GoG | | | | | |
| Diversifying Products and Offering | <p>Develop Eco and Rural Tourism Circuit around Ahwa, Dang and Saputara. Collaboration with other departments like the Forest Department to promote eco/ agro-tourism in the region</p> | <ul style="list-style-type: none"> Department of Tourism GoG Forests and Environment Department GoG | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---|---|--|-------|-------|-------|-------|-------|
| Diversifying Products and Offering | Promote Adventure Sports along the coast of Gujarat through planning and organizing short term activation through focused marketing and events. In medium to long term, capacity building for trained resources, development of adventure institute and comprehensive infrastructure development at key beaches can be undertaken Standard guidelines may be developed for regulation and authorization of equipment used in adventure tourism, sports tourism, etc. | <ul style="list-style-type: none"> Department of Tourism GoG GMB Sports, Youth and Cultural Activities Department | | | | | |
| | Sea cruise service from Surat/Dwarka/ Porbandar to Mumbai/Goa to cater to the growing demand for leisure activities. Development of a dedicated cruise terminal, easy regulations process for cruise ships and passengers etc. will play a vital role in success of the cruise tourism. | <ul style="list-style-type: none"> Department of Tourism GoG GMB | | | | | |
| | Promotion of Geo Tourism in Gujarat <ul style="list-style-type: none"> Kutch has spectacular geological features and sites which can be developed as a National Geopark to promote geo-tourism in the state. Government of Gujarat may identify sites in Gujarat with potential for geo tourism and liaise with the Geological Survey of India (GSI) to get the tag of geological sites for these sites. | <ul style="list-style-type: none"> Department of Tourism GoG Geological Survey of India | | | | | |
| | Leverage revamped Swadesh Darshan Scheme of Central Government: - Government of Gujarat may identify, propose and pursue different circuits in emerging themes such as rural, eco-tourism, coastal tourism etc. under the | <ul style="list-style-type: none"> Department of Tourism GoG Ministry of Tourism, Gol | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------------|--|---|-------|-------|-------|-------|-------|
| | Revamped Swadesh Darshan Scheme for central government financial assistance. | | | | | | |
| Enhancing Supporting Infrastructure | <p>Improve international connectivity of Ahmedabad airport with countries like USA, UK, Australia, Canada. Intervention for expansion and broadening of the existing runways to land larger international & domestic aircrafts.</p> <p>Improving domestic connectivity:- Improving airport connectivity and developing international standard facilities in Saurashtra region airports at Dwarka, Porbandar and Keshod Airport. Government of Gujarat is envisaging development of Chotila Airport for improving connectivity of other regions of the state with important cities of India.</p> <p>The state can prioritize developing/ improving connectivity (road, rail and airport) to at least five key tourism destinations in Gujarat. In case the airports are not in proximity and development of new airports is not feasible, the government may evaluate developing airstrips within 60 kms of these key destinations.</p> | <ul style="list-style-type: none"> AAI/ Private Operator GUJSAIL | | | | | |
| | Enhance quality and quantity of hospitality infrastructure by Rationalization of the license requirement, single window clearance with defined timeline for hospitality sector and industry status to hospitality sector | <ul style="list-style-type: none"> Department of Tourism GoG | | | | | |
| | <p>Easing regulations and setting guidelines for creating tourism assets in regulated areas of Gujarat:-</p> <ul style="list-style-type: none"> Formation of clear tourism asset development guidelines in regulated areas like forest areas, Coastal Regulatory Zones (CRZs) etc. | <ul style="list-style-type: none"> Department of Tourism GoG Forests and Environment Department GoG | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------|---|---|-------|-------|-------|-------|-------|
| | To prepare guidelines for private sector to develop tourism assets on water bodies owned by the government. The Government of Gujarat can also look at developing model tender documents and concession agreements for promoting private participation | <ul style="list-style-type: none"> GMB Narmada and Water Resources, Water Supply and Kalpsar Department | | | | | |
| | Budget allocation for the sector:- Currently, the Financial Outlay of Tourism Department is less than INR 500 crore. The Tourism Department will require enhanced financial outlay to undertake the necessary interventions through large infrastructure development projects, encouraging private investment, and marketing destination in Gujarat. | <ul style="list-style-type: none"> Department of Tourism GoG Finance Department GoG | | | | | |
| Other Interventions | Maximizing the utilization of existing tourism assets of the state by exploring options like transferring the existing assets to private sector | <ul style="list-style-type: none"> Department of Tourism GoG Tourism Corporation of Gujarat Limited | | | | | |
| | Exploring possibility of unlocking the potential of unutilized and underutilized government land parcels for tourism purpose | | | | | | |
| | Gujarat is already exploring & developing other products like border tourism in Nada bet and marine museum in Lothal etc. to promote tourism in state. Availability of support infrastructure, last mile connectivity, marketing etc. will play a key role for the success of the destination | <ul style="list-style-type: none"> Department of Tourism GoG R & B Department GoG NHAI | | | | | |
| | Exploring Wellness Tourism in Gujarat. Proximity and good connectivity of the airport to the location would be a crucial factor for attracting tourists for traveling for wellness purposes. Location within 1-2 hrs. drive from Ahmedabad, Vadodara and Surat can be explored for wellness tourism | <ul style="list-style-type: none"> Department of Tourism GoG | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------------------------|--|---|-------|-------|-------|-------|-------|
| Real estate | | | | | | | |
| Policy interventions | Revised masterplan for Ahmedabad to be initiated – encourage public participation & cover aspects of: <ul style="list-style-type: none"> Identify clear clusters of growth & green conversation zones, riverfront development areas FSI relaxation and zone coverage for commercial/ residential usages in only growth clusters Increase mandatory parking provisions under revised GDCR 1 km along the ORR be demarcated as special development zone – lesser conversion charges, shorter approval, stamp duty/ registration charges rebate, & FSI relaxation for commercial utilization | <ul style="list-style-type: none"> Urban Development and Urban Housing Department Gujarat Urban Development Mission AUDA | | | | | |
| | <ul style="list-style-type: none"> Land monetization for underutilized government land parcels & transit-oriented land parcels – to be evaluated via. PPP: allow private participation to increase non box revenue and allow higher FSI utilization as part of adjoining land banks (Potential in cities of Surat, Rajkot & Ahmedabad) | <ul style="list-style-type: none"> AUDA, SUDA, RUDA AMC, SMC, RMC Riverfront development corporations – Sabarmati, Tapi | | | | | |
| | <ul style="list-style-type: none"> Incentives for ESG compliance – to reduce carbon footprint & promote sustainability, State can gain a first mover advantage via. incentivizing developers to adopt ESG compliant building practices. Pilot project – Dholera SIR, GIFT City | <ul style="list-style-type: none"> Urban Development and Urban Housing Department | | | | | |
| Institutional interventions | <ul style="list-style-type: none"> Single window clearance – Currently, while several interventions have been taken by the Government such | <ul style="list-style-type: none"> Government of Gujarat | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------------|---|--|-------|-------|-------|-------|-------|
| | as moving and providing building approvals online, timebound reply within 48 hours is also provided, it is imperative to ensure that the same is implemented effectively with consistent recourse if required. Mechanisms for continuous monitoring of such approvals from time to time will be good to ensure that any delay is averted. | <ul style="list-style-type: none"> Municipal Corporations Revenue Dept | | | | | |
| Infrastructure interventions | <ul style="list-style-type: none"> Land monetization strategy for riverfront projects. Currently asset classes in Sabarmati and Tapi Riverfront are long gestation, lower return, under FSI utilized products Potential for product mix revalidation to increase footfalls and revenue generation: <ul style="list-style-type: none"> PPP with international developers Potential Asset classes - High end commercial (IT & BFSI parks), Food & Beverage hub, river facing premium residential, hospitality, etc. - potential to convert as organized CBD of the cities 99-year leasehold rights granted for development Investment promotion to attract anchor investor – developers, tenants, hospitality operators, entertainment operators viz. boating jetting, water sports, etc. | <ul style="list-style-type: none"> Riverfront corporations Urban Development and Urban Housing Department Gujarat Urban Development Mission Ahmedabad Municipal Corporation Surat Municipal Corporation | | | | | |
| | <ul style="list-style-type: none"> Special tourism/ development zone for Narmada riverfront at Statue of Unity: <ul style="list-style-type: none"> Vision plan for 20 years (adopting a phase wise approach for unlocking land) Provision of way side amenities | <ul style="list-style-type: none"> Urban Development and Urban Housing Department Tourism Department & SPV Public Works Department | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsible Govt agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|---------------------------------|--|---|-------|-------|-------|-------|-------|
| | <ul style="list-style-type: none"> - Development of iconic tourism village with a private sector participation (premium restaurants, cultural tour, reading zone, viewing zone, alfresco dining) - MICE destination - Trade exhibitions, cultural fares, shopping festivals, host world and national conventions (alternate to Mumbai and Ahmedabad to be utilized as selling point with State of Unity as USP) | | | | | | |
| Other soft interventions | <ul style="list-style-type: none"> • Promote ESG compliant real estate – potential USP for the State in India due to first mover advantage – strong material for branding the RE in the State • Brand the region as an International MICE destination – put the State on Global map, potential to tie up with International operators. • Opportunities to explore – Technology summits in textile, metal, petrochemicals, cultural festivals, shopping festivals, etc. • Branding & promotion to be key – social & digital media campaigns, informercials to be aired, hosting flagship events | <ul style="list-style-type: none"> • Urban Development and Urban Housing Department • Tourism Department • Riverfront corporations | | | | | |

Legend:

Completed

Ongoing

7.4. Transport & Logistics

Table 26: Strategic interventions in Logistics sector and action plan

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|--|--------------------------------------|--|-------|-------|-------|-------|-------|
| Logistics infrastructure and Services | | | | | | | | |
| Augment logistics infrastructure capacity | Formulate State Logistics Master Plan for Gujarat | - | State Logistics Cell under GIDB | | | | | |
| | Development of Grade A warehousing to support the growth in domestic consumption and production led economy of Gujarat | Ahmedabad, Surat, Vadodara | Gujarat Port and Logistics Company Limited | | | | | |
| | Development of Gati Shakti rail cargo terminals to complement the SIRs in the state | Dahej | | | | | | |
| | | Ahmedabad & Vadodara district | | | | | | |
| | Development of Gati Shakti rail cargo terminals to support growth in EXIM and domestic freight movement across Gujarat | Bedi port | | | | | | |
| | | Ahmedabad, Rajkot and Morbi district | | | | | | |
| | Development of liquid tank farms to reduce logistics cost of chemical traders based out of South and Central Gujarat | Dahej | | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------|--|-----------------|---------------------------------|-------|-------|-------|-------|-------|
| | Development of Port led industrial clusters to enable EXIM trade ecosystem and increase port throughput | Pipavav, Mundra | GMB and GIDC | | | | | |
| Enhance digitalization | Development of Digital Centre of Excellence (COE) for transport and logistics sector in Gujarat Design and develop digital initiatives across logistics and port sector of Gujarat. For instance, <ul style="list-style-type: none"> Implementation/ upgradation of ERPs across port ecosystem; Freight logistics data centre to monitor freight traffic flows and logistics cost | - | State Logistics Cell under GIDB | | | | | |
| | Effective implementation of single window for approval of logistics infrastructure projects | | | | | | | |
| | Formulation of Model Concession Agreements (MCAs) for logistics sector in Gujarat | | | | | | | |
| Upskilling | Integrating existing initiatives in skilling, cross-sectoral capabilities and professional development | | Gujarat Maritime University | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------------------------|---|----------------------------|--|-------|-------|-------|-------|-------|
| Ports | | | | | | | | |
| Port Expansion | Conduct port master planning activity to identify locations for green-field port or brownfield port to align with growth in traffic by FY27 (~ 700 - 800 mn MTPA) | Multiple locations | Gujarat Maritime Board | | | | | |
| | Development of greenfield / brownfield ports and multipurpose ports to support Gujarat's economic growth | | | | | | | |
| | Development of greenfield liquid chemical terminals / berth to reduce logistics cost of traders based out of South Gujarat | Dahej PCPIR | | | | | | |
| | Development of greenfield terminals for LPG imports along with blending facilities | Dahej, Charra | | | | | | |
| Coastal shipping enhancement | Development of existing smaller ports as satellite ports for coastal hub and spoke movement especially for containers | Navlalkhi, Bedi, Porbandar | Gujarat Maritime Board / Gujarat Ports and Logistics Company Limited | | | | | |
| | Collaborate with other State government such as Maharashtra, Karnataka, Tamil Nadu and Kerala to develop coastal jetties and allied infrastructure such as storages silos to reduce total logistics costs Incentives to coastal vessel operators voyaging between Gujarat and partnered States | - | Gujarat Maritime Board | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|---|---|--|-------|-------|-------|-------|-------|
| | Freight subsidy to promote coastal shipping, similar to incentives offered by the Kerala government | - | Gujarat Maritime Board | | | | | |
| Focus on Blue economy development | Dedicated Port in logistics support of 20 GW wind power project in gulf of Khambhat | Mithi Virdi | Gujarat Maritime Board / Gujarat Ports and Logistics Company Limited | | | | | |
| Road | | | | | | | | |
| Ease road congestion and enhance connectivity | Expand capacity of existing road infrastructure for non-major ports with two or less lanes serving for movement | Navlakhi port, Bhavnagar port Bedi port | GMB in co-ordination with NHAI and Roads and building department, Gujarat | | | | | |
| | Development of elevated freight corridors to support industrial/business hubs <ul style="list-style-type: none"> Identify the optimal routes for corridor to decongest present heavy density traffic areas, while connecting upcoming infrastructure in the cities The corridors to be set up alongside industrial estates, special economic zones and industrial parks in Ahmedabad and Surat | Ahmedabad Surat | Ahmedabad and Surat Urban Development Authority in coordination with Roads & Buildings Department, Gujarat | | | | | |
| | Enhance road capacity to connect key commercial and industrial centers across Gujarat: 6 lane Rajkot-Ahmedabad highway | Rajkot-Ahmedabad | Roads and Buildings department | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|---|--|--|-------|-------|-------|-------|-------|
| | ~100 railway over bridge projects | Multiple locations | | | | | | |
| | Upgradation and development of missing link along coastal road between Umergam in South Gujarat to Narayan Sarovar (Kutch) | | | | | | | |
| Rail | | | | | | | | |
| Augment capacity and rail connectivity | Expedite project implementation mentioned as part of Railway master plan | Kotasan-Becharaji gauge conversion | G-RIDE | | | | | |
| | | Hazira- New Gothangam DFC connectivity | | | | | | |
| | | Bhimnath-Dholera rail line | | | | | | |
| Ease road congestion | Development of high-speed rail between Ahmedabad and Rajkot | Rajkot-Ahmedabad | | | | | | |
| Enhance DFC connectivity | <ul style="list-style-type: none">Co-ordinate with DFCCIL for development of feeder-lines from South Sabarmati to Moraiya <p>It will connect the key industrial areas with DFC line and reduce overall logistics cost</p> | South Sabarmati DFC to Moraiya | State nodal agency to inform / co-ordinate with Western Railways | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-----------------------------------|--|---|--------------------|-------|-------|-------|-------|-------|
| Augment track capacity | Co-ordinate with Western Railways to increase track capacity by doubling existing rail line, as many of the rail line is already operating at optimum capacity | Rajkot - Junagadh-Veraval Okha – Kalanus | | | | | | |
| Airports | | | | | | | | |
| Modernize cargo facilities | <p>Development of air cargo handling facilities from agri exports standpoint: Cold storages, packaging facilities, truck docking stations, PGA facilities</p> <ul style="list-style-type: none"> With Krishi Udaan scheme, Rajkot, Bhavnagar and Surat airport to have enhanced connectivity for exports of agri produce <p>Co-ordinate with AAI in case the airports are operated and owned by AAI</p> | Rajkot, Bhavnagar, Surat | GUJSAIL | | | | | |
| Enhance Air cargo movement | <ul style="list-style-type: none"> Development of air freight hub at Surat which includes airport infrastructure such as specialized parking bays and hangars to accommodate large air freighters Development of cargo storage, specialized packing facilities and Air Freight Stations near proximity to the airport | Surat | GUJSAIL | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Locations | Responsible agency | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|------------------------------------|--|---|--------------------|-------|-------|-------|-------|-------|
| | Partner with AAI to upgrade cargo handling infrastructure of Surat Airport | | | | | | | |
| Focus on MRO facilities | Establish maintenance-repair and overhaul (MRO) hub for the aviation industry | Dholera | GUJSAIL | | | | | |
| Upgrade passenger terminals | <ul style="list-style-type: none"> Refurbishment of existing infrastructure from standpoint of both passenger experience and airline operations to aid tourism Partner with AAI to upgrade passenger infrastructure of regional airport | Rajkot, Porbandar, Jamnagar. Bhuj. Kandla | GUJSAIL | | | | | |
| Enhance air connectivity | Co-ordinate with Directorate General of Civil Aviation (DGCA) to increase international connectivity between Ahmedabad and USA and Europe | - | GUJSAIL | | | | | |

Legend:

Completed

Ongoing

7.5. Energy

Table 27: Year wise action plan and responsibility matrix for energy sector

| Strategic focus | Strategic actions | Responsible agency | FY23 | FY24 | FY25 | FY26 | FY27 |
|--|---|--|------|------|------|------|------|
| Policy and regulatory interventions | <p>A. Pursue with GERC for (i) uplifting RPO trajectory and its reclassification (ii) easing thresholds for rooftop solar and definition of captive (iii) gradual virtual net metering for self-invested residential rooftop PV (iv) Recognize wind rooftop systems similar to solar rooftops in standalone as well as hybrid mode</p> <p>B. New policy for Green Hydrogen, offshore wind and Waste to Energy projects</p> <p>C. Pursue with ULBs for integrating solar rooftop, solar water pumping and EV charging with buildings, mandating energy efficiency disclosures for property transactions</p> <p>D. Additional facilitation for upscaling rooftop solar for semiurban/rural residential</p> <p>E. Cover pumps beyond 7.5hp in three discoms under PM-KUSUM</p> <p>F. Review tariff linkage of small scale distributed solar with utility scale RE park tariffs</p> | <ul style="list-style-type: none"> EPD, CCD | | | | | |
| Institutional interventions | <p>A. Setup a cell at EPD, CCD to implement energy sector strategy to achieve USD 500 billion economy over the next 5 years</p> <p>B. Shift agriculture demand during daytime through PM KUSUM</p> | <ul style="list-style-type: none"> EPD, GUVNL | | | | | |

Implementation roadmap

| Strategic focus | Strategic actions | Responsible agency | FY23 | FY24 | FY25 | FY26 | FY27 |
|---------------------------|--|--|------|------|------|------|------|
| | C. Converge programs of solarization and water efficient irrigation D. Designate state agencies for <ul style="list-style-type: none"> - Creating database of land parcels for RE projects in districts in proximity with Green Energy Corridor - Undertaking O&M of distributed RE as a commercial venture - Demand aggregation for GoG's leased vehicles for EV transition | | | | | | |
| Enabling ecosystem | A. Assess 'energy-water-agriculture' correlation at district level to identify implementation model(s) for KUSUM, and onboard financial institutions B. Bilateral energy banking with other states for a seasonal peak demand C. Prefer RE-hybrid against pure solar/ wind power projects, define preferred mix% of wind and solar power in that D. Assess suitability of water reservoirs for hosting floating solar projects E. Create pilot supply chain for biomass in 2-3 districts F. Develop framework for Green Tariff, pricing of Energy Banking of RE | <ul style="list-style-type: none"> • EPD, GUVNL, GPCL, GEDA, GERC | | | | | |

Implementation roadmap

| Strategic focus | Strategic actions | Responsible agency | FY23 | FY24 | FY25 | FY26 | FY27 |
|----------------------------------|--|--|------|------|------|------|------|
| Supporting Infrastructure | <p>A. Fast-track 2 pumped hydro storage projects, identify potential sites for off-river PHP, national ISTS bid for it. Explore public finance through green bonds/ hybrid annuity.</p> <p>B. Establish centralized monitoring for decentralized RE</p> <p>C. Upgrade over-aged conventional power plants for better ramp rates</p> <p>D. Conduct phase-wise techno-commercial pilots for offshore wind projects, solar thermal storage power projects, and battery energy storage</p> | <ul style="list-style-type: none"> EPD, GUVNL, GPCL, GEDA, GERC | | | | | |
| Leadership / innovation | <p>A. Develop Green H2 parks closer to demand centres with RE procurement from CTU connected hybrid RE parks in desert areas</p> <p>B. Pilot on fast charging vs battery swapping for public transport</p> <p>C. Gradual transition of GSRTC buses to EV</p> | <ul style="list-style-type: none"> EPD, GPCL, GEDA | | | | | |
| Investment target | <p>A. Investment of INR 1.2 lakh crore in generation and storage segments and INR 0.5 lakh crore in T&D segments for new RE capacity procurement of 21 GW by power utilities</p> | <ul style="list-style-type: none"> GUVNL, GPCL, Private Sector | | | | | |

7.6. Education, Skilling, and Startup eco-system development

Table 28: Strategic interventions for Education, Skilling, and Startup ecosystem development

| Strategic intent | Strategic intervention | Responsibility | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|---|---|-------|-------|-------|-------|-------|
| Primary and Secondary Education | A. Develop talent pool in sync with aspirations for future. Education department to take a lead in assessing requirements across Services, Agriculture and Manufacturing sectors. | • Education department | | | | | |
| | B. English education curriculum to be promoted across primary and secondary education | | | | | | |
| | C. Introduce ESG compliance related course curriculum | | | | | | |
| Higher Technical Education | A. Centers of Excellence (CoE): Fast tracking the setting up of 7 CoEs in universities, notification of which was issued in January 2022 | • Education department | | | | | |
| | B. Augmenting ongoing Initiatives: Several initiatives taken by the education department including expanding WIFI coverage to all government colleges, imparting teacher training through Indian Institute of Teacher Education, Gandhinagar should be further augmented and strengthened. | • Education department | | | | | |
| | C. Courses on Disruptive Technologies through collaboration: Skill-based courses such as courses on AI & ML, Robotics, IoT, 3-D printing should be developed & delivered through collaboration among government, education institutes and industries in order to build capacity of the manpower with requisite skills | • Department of Education • Department of Science and Technology | | | | | |
| Human Capital Development | A. Encourage Private investment in medical education: To enhance the number of physicians, nurses and | • Health and Family Welfare Department - proposal | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsibility | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--|---|---|-------|-------|-------|-------|-------|
| for Health and Healthcare sector | midwives per 10,000 population from the current 41 to the target of 45 B. Health Recruitment Board: For recruitment of doctors, nurses, etc., Government may consider setting up of a health recruitment board on the lines of police recruitment board | <ul style="list-style-type: none"> General Administration Department | | | | | |
| Promote Startups & Disruptive Technology | A. Promote Startups: Implementation of Student Startup policy and encouraging Student Startups | <ul style="list-style-type: none"> Education department | | | | | |
| | B. Special Incentives shall be designed for promoting disruptive technology led startups and the auxiliary ecosystem associated with them. | <ul style="list-style-type: none"> Education Department Department of Science and Technology | | | | | |
| | C. Dedicated Institutional mechanism shall be developed for deep technology-based startups so that they can be adequately supported throughout their journey of Mind to Market. | | | | | | |
| | D. Public procurement policies shall be put in place to facilitate market access for disruptive technology startups. | <ul style="list-style-type: none"> Industries and Mines Department | | | | | |
| | E. Public policy makers shall be roped in to design long term roadmap for the state and encompass the strategy of economic value creation through disruptive innovations as a key component. | <ul style="list-style-type: none"> Education Department Department of Science and Technology Industries and Mines Department | | | | | |
| | F. Leveraging disruptive technologies like automation and advanced robotic, IOT, artificial intelligence, vision technology, etc. to improve productivity and quality at reduce cost. | <ul style="list-style-type: none"> Department of Science and Technology | | | | | |

Implementation roadmap

| Strategic intent | Strategic intervention | Responsibility | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|--------------------------------------|---|---|-------|-------|-------|-------|-------|
| | G. Encourage, support and promote startups in the domain of healthcare, agriculture, education, natural language processing, retail, transport and logistics, manufacturing and fintech in the state to support the sectoral growth targets for the next 5 years. | <ul style="list-style-type: none"> Industries and Mines Department | | | | | |
| | H. Exploration of Public Private Partnership model (PPP) model for setting up centre of excellence to provide hands on training to students and bridge the industry academia gap. This shall generate more employable youth that can meet the fast-changing industry demand and eventually contribute to the economy. | <ul style="list-style-type: none"> Industries and Mines Department | | | | | |
| | I. Encourage private sector to invest in R&D activities as well as channelize efforts to commercialize STEM research. | <ul style="list-style-type: none"> Education Department Department of Science and Technology | | | | | |
| | J. Intellectual Property Management: Many Incubation centers are already doing excellent work. These centers should also work out a meaningful and result oriented Intellectual Property Management (IP management) system for: <ul style="list-style-type: none"> IP Generation/ Creation – through Innovations IP Protection (Patents, Designs, Copyrights, etc | <ul style="list-style-type: none"> Education Department | | | | | |
| Skilling in Healthcare Sector | A. Skilling of mid-level service providers: Develop mid-level service providers such as nurse practitioners and public health personnel | <ul style="list-style-type: none"> Health and Family Welfare Department - proposal Chief minister office onwards to Assembly (approval) | | | | | |

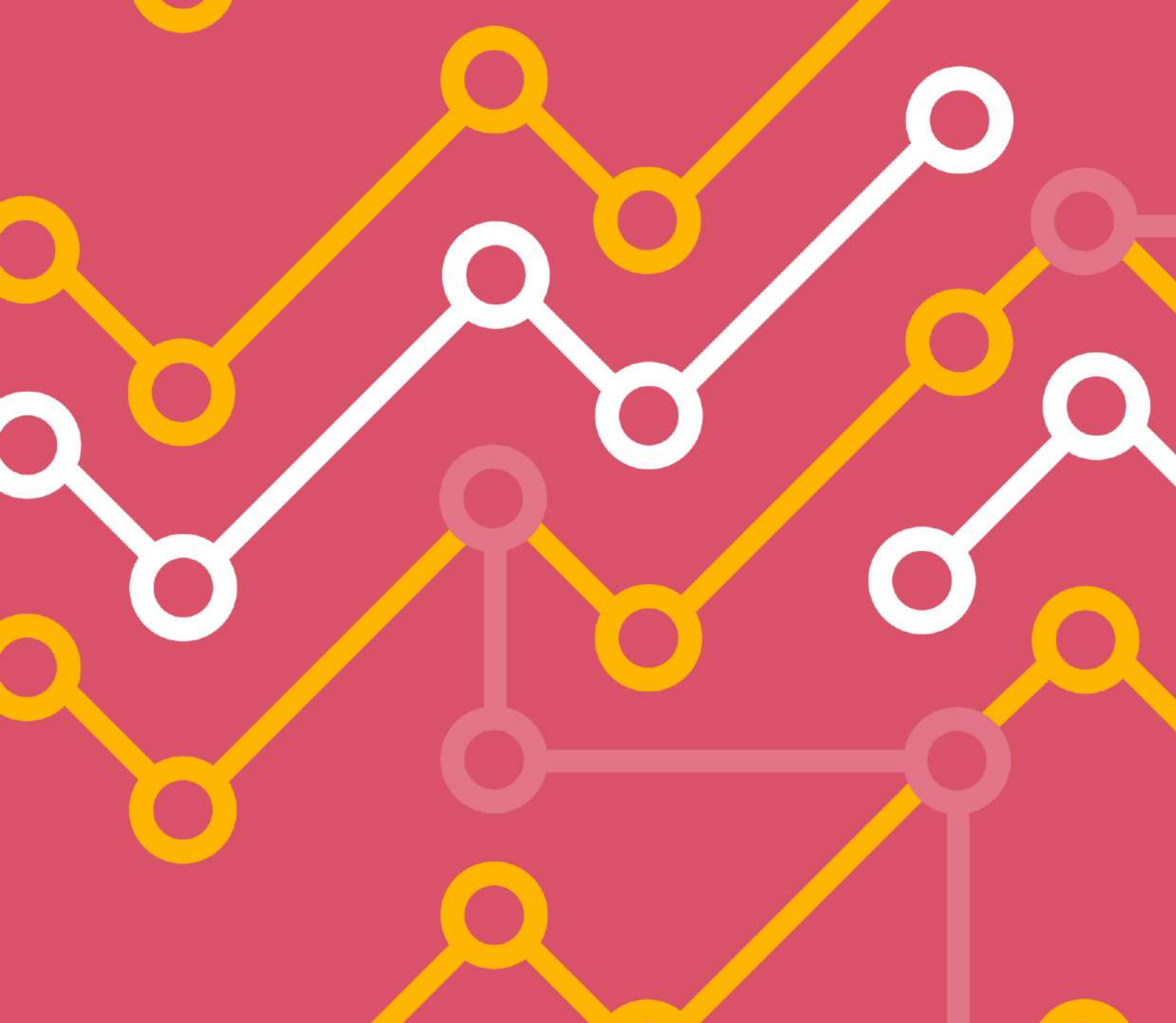
Implementation roadmap

| Strategic intent | Strategic intervention | Responsibility | FY 23 | FY 24 | FY 25 | FY 26 | FY 27 |
|-------------------|---|--|-------|-------|-------|-------|-------|
| Skill development | A. Mainstreaming skill development in Education and making skill development aspirational | <ul style="list-style-type: none"> Labour, Skill Development and Employment Department, GoG / Skill development mission | | | | | |
| | B. Identifying Re-skilling and Up-skilling requirements and providing adequate platform for the same | | | | | | |
| | C. Development capacity in the skill development ecosystem to make available training providers (including institutions and infrastructure) | | | | | | |
| | D. Converge the skill development efforts into programs that are aligned with NSQF | | | | | | |
| | E. Development of certification and accreditation mechanism for skills across the sectors | | | | | | |
| | F. Identify skill gaps and take up skill programs that are demand based and as per futuristic needs | | | | | | |
| | G. Organize Short-, Medium- and Long-term programs that focus on the skill gaps of the future needs – mainly technology, manufacturing and services | | | | | | |
| | H. Encourage collaboration with industry / potential investor group and educational institutes | | | | | | |
| | I. Making skills inclusive and encourage balanced development | | | | | | |

Legend

Completed

Ongoing



8.

Financing the high growth
trajectory

8. Financing the high growth trajectory

The recommendations given in this report will necessitate public spending out of Government budget. It is our attempt to indicate in this chapter, how such resources can be made available in the next five years. Also, an attempt is made in this chapter to make out a case for re-allocating the weightage of budgeted expenditure planned for various sectors.

1. Resource mobilization

Gujarat has sufficient fiscal space to step-up government spending in sunrise sectors. Fiscal Deficit was 1.51 percent in 2019-20. In 2020-21, fiscal deficit did increase to 2.44 percent but in 2021-22, with the State recovering from COVID-19, the fiscal deficit declined to nearly 1.51 percent of GSDP. The State has budgeted for fiscal deficit at 1.64 percent of GSDP in 2022-23. The target for subsequent two years, i.e., 2023-24 and 2024-25 is set at 2.25 percent each. This does reflect State's intention to use available resource envelope. It is also important that additional spending for the coming years takes into consideration the potential in services sectors and appropriate allocations are made in priority sectors.

As per the FRBM limits, the State is permitted to borrow (on net basis) up to 3 percent of GSDP. As per FRBM Statement submitted as part of the Budget 2022-23, Gujarat's GSDP is projected to be INR 22.03 lakh crore in nominal terms. This implies the State has additional resource envelope of nearly INR 29,961 crore in 2022-23 only. There is no harm to go up to 3% of fiscal deficit, provided extra borrowing is spent purely on capital projects.

Public Debt of the State is also within limits. As per 2021-22 RE, public debt as percentage of GDP was 16.5 percent as against the FRBM target of 27.1 percent of GSDP. In 2022-23 BE, it is budgeted to go down to 15.88 percent. Therefore, the State has enough resource envelope and efforts need to be made to develop quality project proposals focused towards development of the services sector.

Apart from direct borrowings by the State, Government of Gujarat can also provide guarantees to the public sector enterprises so that these public sector enterprises can raise funds from the market. In 2021-22 RE, outstanding guarantees were to the tune of INR 3,089 crore as against the permissible limit of INR 20,000 crore. This provides additional fiscal space to the State Government.

Table 29 shows comparative perspective on key fiscal indicators. Gujarat has followed a highly conservative path. As against the limit of 3 percent of GSDP, the fiscal deficit has remained less than 2 percent. On the other hand, states such as Haryana, Karnataka and Tamil Nadu have resorted to additional available resource envelope to direct resources for key sectors.

Table 29: Key fiscal indicators as percent of GSDP

| Indicator | Year | Haryana | Gujarat | Karnataka | Tamil Nadu* |
|-----------------------|------------|---------|---------|-----------|-------------|
| Fiscal Deficit | 2016-17 | 4.7 | 1.4 | 4.3 | -0.4 |
| | 2017-18 | 2.9 | 1.6 | 2.3 | 2.7 |
| | 2018-19 | 3 | 1.8 | 2.5 | 2.9 |
| | 2019-20 | 3.9 | 1.5 | 2.3 | 3.3 |
| | 2020-21 | 3.3 | 2.4 | 3.7 | 5.5 |
| | 2021-22 RE | 2.99 | 1.51 | 2.8 | 3.8 |

Financing the high growth trajectory

| Indicator | Year | Haryana | Gujarat | Karnataka | Tamil Nadu* |
|--------------------|------------|---------|---------|-----------|-------------|
| | 2022-23 BE | 2.98 | 1.64 | 3.26 | - |
| Public Debt | 2022-23 | 24.52 | 15.88 | 22.18 | - |

Source: Budget documents of various states

Due to surplus liquidity in the financial market, the interest rate is low. Weighted average yield on state government dated securities in 2020-21 was 6.55 percent which is lowest in the last fifteen years. State Government can leverage the low funding cost environment and raise long-term funds to direct required resources in priority sectors. Additional spending by the State Government in high-growth potential sectors can create virtuous cycle. Higher spending in identified sectors would unravel the economic opportunities in those sectors and boost economic activities thereby increasing economic growth. As mentioned in the previous chapters, the State Government can aim to achieve 14.5 percent annual growth in GSDP in nominal terms over the medium-term up to 2026-27. The State has achieved annual average growth of 12.3 percent in the last ten years (2012-13 to 2021-22). Accelerated growth would create additional resource envelope for the State to spend which would further boost economic activity and available resource envelope and the virtuous cycle would continue.

2. Need for re-orienting the State budget

The total expenditure of Government of Gujarat for the year 2019-20 was INR 1, 67, 681 crores, which is 10% of GSDP (at current price). Out of this 15% is spent on Education, 4.6% on Medical and Public health, 10.2% in Agriculture, Irrigation & allied sectors, 10.5% in Energy, Industry and Minerals, 7.1% in Urban development and 5.4% on Transport & Communication. The expenditure in Tourism is only 0.4% of the total expenditure. Please see the table given below:

Table 30: Government Spending in 2019-20, in INR Crore

| Key Expenditure Head | Total Spending in 2019-20 (INR Crore) | Share in Total Expenditure |
|------------------------------------|---------------------------------------|----------------------------|
| Agriculture | | |
| Agriculture and Allied Activities | 7,349 | 4.4% |
| Irrigation and Flood Control | 9,804 | 5.8% |
| Industry | | |
| Energy | 12,411 | 7.4% |
| Urban Development | 11,902 | 7.1% |
| Industry and Minerals | 5,269 | 3.1% |
| Services | | |
| Education, Sports, Art and Culture | 25,202 | 15.0% |
| Transport and Communications | 8,985 | 5.4% |

Financing the high growth trajectory

| Key Expenditure Head | Total Spending in 2019-20 (INR Crore) | Share in Total Expenditure |
|---|--|----------------------------|
| Medical and Public Health | 7,755 | 4.6% |
| Tourism | 592 | 0.4% |
| Other expenditure items | | |
| Interest Payments and Servicing of Debt | 22,449 | 13.4% |
| Pensions | 17,663 | 10.5% |
| Administrative Services | 6,884 | 4.1% |
| Other sectors | 31,597 | 18.8% |
| Total Expenditure | 167,861 | |

Source: A Study of State Budgets, 2021-22, Reserve Bank of India *Total Expenditure is defined as sum of Revenue Expenditure, Capital Outlay and Loans and Advances given by the State Government.

It is important to note that public spending on various other heads such as construction of road, providing safe water supply and sanitation, electricity etc. also contribute towards tourism sector development, but it is not specifically directed towards tourism. Therefore, true magnitude of tourism spending would be higher than 0.4 percent of total expenditure. However, the potential of tourism to spur economic growth in the coming years in Gujarat is immense and merits additional government spending. National Council for Applied Economic Research in 2015-16 has estimated Tourism Satellite Accounts for Gujarat. It estimated the forward linkages of tourism sector. Tourism sector generates revenue for firms operating across sectors such as transport, hotels, agriculture, industry, financial services, health, garments, gems and jewelry, communication, trade and others. The Study estimates that for every 100 INR spent in the tourism sector, it leads to economy-wide impact of INR 221. Similarly, IT / ITeS sector and Financial services sector are two other major sectors where State can boost up funding.

Gujarat is the highest spender on industry and minerals on per-capita basis among the select states in the Table 2. Government of Gujarat in 2019-20 spent nearly INR 779 on per-capita basis on industry and minerals as compared with INR 181 in Telangana, INR 160 in Andhra Pradesh, INR 157 in Haryana. Given that next source of growth would be services, more efforts would be needed to enhance spending on services. Gujarat needs to enhance spending on education, sports, art and culture as shown by low per-capita spending relative to other states. As indicated in previous chapters, service sector development would not only need enabling policy environment and appropriate infrastructure but also skilled workforce. Skilling is a public good and government intervention is essential for efficient provisioning of public good, i.e., skilled workforce as to attract investors in various services' sub-sectors.

Thank you