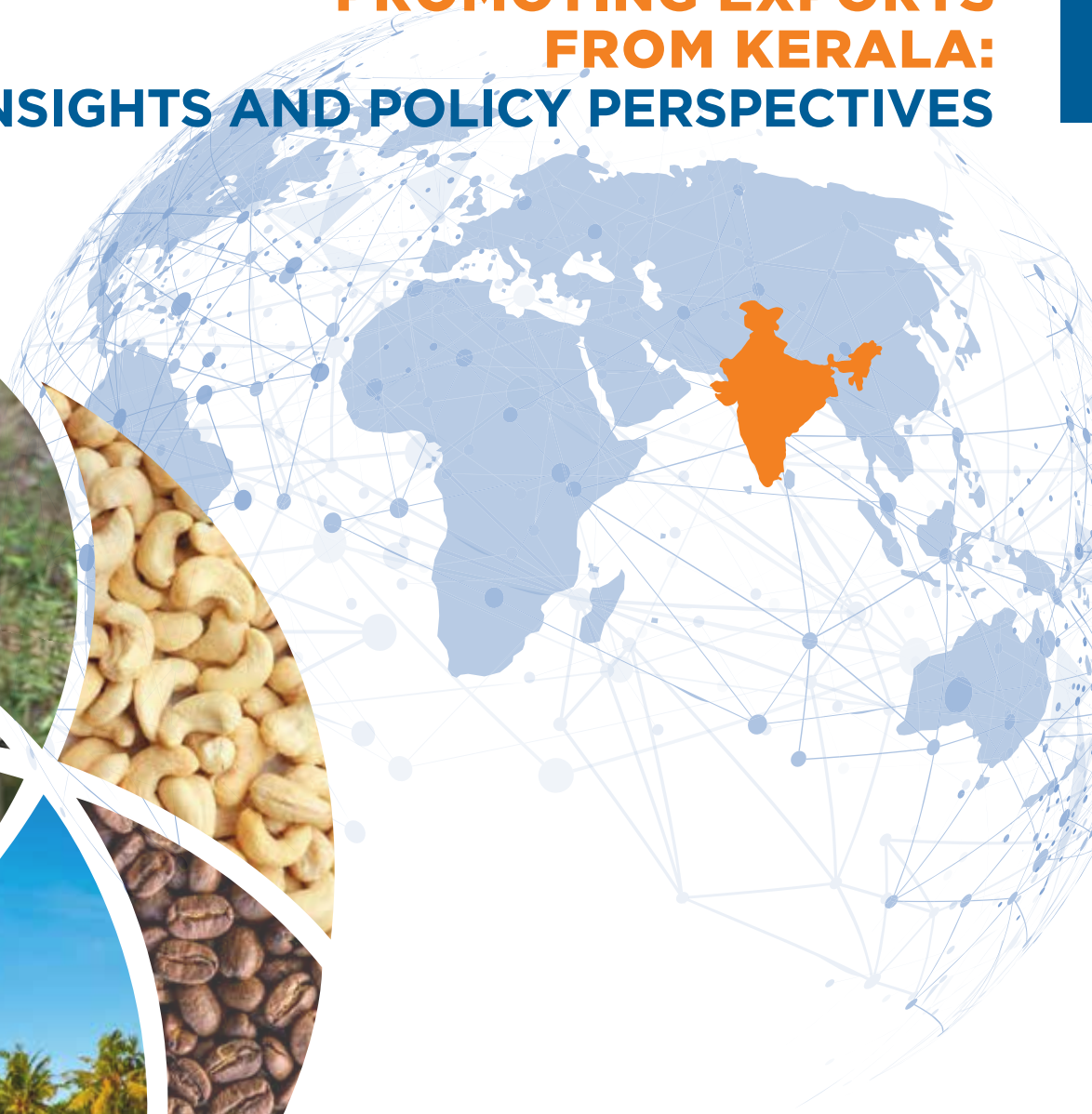
PROMOTING EXPORTS FROM KERALA: INSIGHTS AND POLICY PERSPECTIVES



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PROMOTING EXPORTS FROM KERALA: INSIGHTS AND POLICY PERSPECTIVE

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Executive Summary

Located in the southwestern region of India, Kerala is a coastal state, strategically located on the transnational trade corridor. In terms of geographical area, the size of the state is relatively small, but its contribution to India's economic output is substantial. With favourable investment climate, aesthetic landscapes and rich human resources, Kerala has the potential to emerge as one of the key contributors to growth in India's exports.

Merchandise exports from Kerala currently account for nearly 12 percent of Kerala's GSDP, which is below the share of merchandise exports in GSDP of other coastal states of comparable economic size, such as Tamil Nadu (share of 17.7 percent), Maharashtra (17.0 percent) and Andhra Pradesh (15.8 percent). Alongside, while services has been traditionally a strong avenue for foreign exchange earnings of the state, the growth in services exports from the state seems to be tapering.

Against this backdrop, this study examines the economic profile and export performance of Kerala in an attempt to map the supply side capabilities of the state with the demand emanating from the international market. Based on the assessment, the study sets forth suitable reforms and strategies for the development of trade competitiveness at the state-level, and creation of an enabling environment for exports.

MACROECONOMIC PROFILE

Kerala's economic growth is fuelled by sectors such as tourism, IT, food processing, spices, rubber, ayurveda, electronics, handlooms, apparels and garments, coir and traditional products such as wood carvings, designer jewellery, among others. The GSDP growth of Kerala has remained stable from 2015-16 onwards, with the state being able to maintain an average annual growth rate of 7.4 percent between 2015-16 and 2018-19, and outperforming India's overall GDP growth during 2017-18 and 2018-19. There has been a notable structural change in the state economy as evident from the dwindling share of the agriculture and allied sectors in the GSVA over the recent years, and the concomitant increase in the share of services in the GSVA of the state.

Kerala is one of the leading producers of natural rubber, coir, coconut, cashew, coffee and spices in the country. In the agriculture and allied sector, livestock is one the fastest growing sectors in the state. The agriculture sector in Kerala faces several structural issues, coupled with uncertainties caused by price volatility as well as the vagaries of nature.

The industrial sector in Kerala is currently at a nascent stage, but the value added in the industrial sector of Kerala has witnessed a steady growth over the recent years, primarily driven by growth in the manufacturing segment. Manufacturing segment in Kerala largely consists of traditional industries such as coir, handloom and cashew processing.

Services is the fastest growing sector in Kerala, with IT and tourism being the key drivers of the state's services sector. The services sector in the state shall remain the cornerstone of the state economy,

but long-term, sustainable growth in the sector will require a dynamic, demand responsive strategy.

EXPORT SCENARIO AND PROSPECTS FOR KERALA

Kerala accounted for 2.9 percent of India's total merchandise exports in 2018-19, which is far below its share of 4.0 percent in India's total GDP. However, there has been a steady growth in exports from the state. The state's merchandise exports stood at US$ 9.8 billion in 2018-19, registering a CAGR of 17.86 percent during 2013-14 to 2018-19, which is higher than the CAGR of 0.97 percent in India's merchandise exports during the same period.

While merchandise exports from the state witnessed an upsurge during the recent period, it remains concentrated in a few low value-added products. Analysis of Kerala's merchandise exports indicates that the top 10 export items and top 10 destinations accounted for shares of nearly 86 percent and 84 percent, respectively, in the total merchandise exports from Kerala during 2018-19. Further, product and market concentration analysis indicate that Kerala has the third highest product concentration index and the seventh highest market concentration index in India. There is need to diversify exports to higher value-added segments and to lesser explored geographies.

Tourism, IT and ITeS and healthcare services are among the major services exports from the state. While services sector's contribution has significantly increased in the state's GSVA, there has not been a commensurate increase in the value of services exports. In fact, exports in services such as tourism has witnessed a moderation in growth. Clearly, there is a need to identify new growth shoots in the services sector.

EXPORT TARGET

According to estimates, Kerala has an untapped merchandise export potential of nearly US$ 6.7 billion. Realizing this potential could increase merchandise exports from the state to nearly US$ 16.5 billion. Through an appropriate medium to long term export strategy, there is potential for propelling the state on an even higher export growth trajectory.

The vision of the exports strategy of Kerala should be to bolster growth in exports in order to meet the national target of US$ 1 trillion of exports by 2024-25. The motive of the state's export strategy should be to increase the share of exports (both merchandise and services combined) in the GSDP from the current level of nearly 14.5 percent, to at least match the current national average of 19 percent, and further strive towards reaching a higher level of 25 percent, in line with the national target for 2024-25. Further, the export strategy should also attempt to achieve a greater share of services in the exports from the state, because of the substantial potential for growth across several services categories. Based on this consideration, the target for exports from the state should be set at US$ 54.7 billion, with target for merchandise and services exports at nearly US$ 40.98 billion and US$ 13.7 billion, respectively, by 2024-25.

KEY PRODUCTS FOR MERCHANDISE EXPORTS

While exports from Kerala have registered a robust growth, it is essential to recognize key products

and markets which provide opportunities for firms in the state to grow and achieve economies of scale, as also increase their efficiency levels. The study undertakes a granular analysis of the products where Kerala's exports have demonstrated comparative advantage, and matches this with the global import demand for these products.

Based on this analysis, the study identifies products where domestic capacities can be strengthened and the markets that can be targeted for these products. A total of 49 products have been identified as 'Product Champions' (having maximum potential), 2 products as 'Underachievers' (need to cover lost ground from competing suppliers), 14 products as 'Achievers in Adversity' (need to diversify and put resources to better use) and 1 product as 'Declining sector' (need to be diversify).

In the short to medium term, Kerala can focus on leveraging the opportunities arising in the Product Champions segment, as these are low hanging fruits. Marine products, tea and spices, electric machinery and equipment, chemical products, precious stones and metals are some of the top sectors categorized under the Product Champions segment of Kerala. In the medium term to long term, the state needs to encourage development of capacities in the Underachievers segment of medical appliances and instruments and turbo jets. Focusing on these segments will bring much-needed resilience to exports from Kerala in the face of declining global demand and price fluctuations.

In some of the identified product categories, the top global importers for the products do not feature among the top export destinations for Kerala, thereby implying a significant untapped market for its exports of these products in the key import markets. There is need for designing a market entry strategy for enhancing the reach in these key markets.

STRATEGIES FOR EXPORT GROWTH

Analysis in the study highlights some of the important issues faced by exports from Kerala, including low agricultural productivity, concentration in export basket as well as export markets, a nascent industrial sector, and stagnating growth in foreign exchange earnings of key services verticals. Clearly, there is a need for across-the-board handholding across all sectors of the economy for imparting a renewed energy and momentum to exports from the state. A survey conducted by Exim Bank of exporters from Kerala further corroborates the challenges faced by exporters in accessing the international market.

In order to take a holistic view, strategy for promotion of exports from Kerala should entail strategizing across various levels with focus on alleviating the specific challenges faced by exporters in the state, as also improving the preparedness of the state in tapping new export opportunities. Broadly, these strategies have been built upon six essential dimensions viz. diversification to focus products and markets; infrastructure leverage and strengthening; capacity building; fiscal incentives; export promotion campaigns; and institutional streamlining.

Focus Product and Market

One of the efficient ways to expand the exports basket is to look at product diversification based on value addition. The study identifies a set of prospective high value-added products to help diversify

the exports basket of Kerala. These include products in the sectors of agricultural and allied sector, textiles, pharmaceuticals, chemical and chemical products, electronics, electrical machinery and equipment, and tourism.

Agriculture is a major sector of exports from the state, but the state's exports of processed agricultural products is currently limited. The state could focus on greater processing of rice, coconut, spices, marine products and rubber in the agriculture and allied sector.

Within manufacturing, the textile sector presents significant opportunities for exports. Textiles exports from Kerala mainly comprise coir processing and handloom products. Technical textiles which are used for non-aesthetic purposes in sectors of automobiles, pharmaceuticals, infrastructure, sports, construction, packaging, agriculture, etc. would be an important avenue for diversification in the sector.

Kerala's export of pharmaceutical products consists of a wide range of bulk drugs, formulations, medical equipment, and vaccines. However, the export of these products from Kerala is low and the state accounts for only 0.20 percent in India's total pharmaceutical exports. The recent Covid-19 crisis has opened opportunities for Indian pharmaceutical sector to the tune of US$ 7.3 billion. Kerala could use this opportunity to fulfil the global demand for bulk drugs and formulations. In this context, the state could encourage production of bulk drugs and formulations by leveraging incentives provided by the Central Government such as the 'Production Linked Incentive Scheme'.

The state also needs to focus on enhancing production and export capacities in high-technology intensive sectors such as electronics, computer and optical products, and electrical equipment and machinery. Trade in these products are less volatile compared to agricultural products and resource-intensive manufactures which are prone to fluctuating commodity prices.

In the services sector, tourism has been a major source of revenue for the state. To further enhance growth in the medical tourism sector, hospitals in Kerala could collaborate with foreign medical institutions for referrals and knowledge and personnel exchange. Hospitals could also collaborate with global insurance agencies for inclusion of their medical tourism services in the health insurance packages of the agencies. There is also a need to adopt innovative mechanism for providing travel insurance to tourists. In Thailand, for example, the state-owned Krungthai Bank, offers tourists a debit card called the Miracle Thailand Card, which offers some medical and life insurance coverage in case of an accident. Similar initiative could be undertaken for tourists coming to Kerala.

Infrastructure Leverage and Strengthening

According to Exim Bank's survey, nearly 14 percent respondents in Kerala consider infrastructure as a challenge for exports, especially the lack of connectivity between ports and inland modes of transport. In order to achieve the targeted growth, strengthening the inland waterways' connectivity to major ports in the state would be essential. The state could establish a public-private partnership model for strengthening the existing network of waterways. A separate fund for development and maintenance of export infrastructure in the non-major ports could provide a major thrust to integrated connectivity in the state. Amongst others, the fund could focus on managing and upgrading gantry cranes, berths,

waterways, roads, storage facilities, communication equipment, and computer systems.

Kerala is among the top producers of agro-based products such as spices, coconut, tea, as well as marine products in the country. With huge untapped export potential in these segments, there is need for well-developed cold storage and warehousing facilities in the state. Analysis in the study indicates that while warehousing capacity is adequate in most districts of the state, there is a need for development of more capacities in Alappuzha and Palakkad. Further analysis indicates that the capacity utilization of the existing seafood processing units in the state is also fairly low. The state should leverage these processing units for realizing greater value from exports of marine products. The state could also consider developing a multi-modal cold-chain network involving two or more modes of transport for facilitating transportation and storage of perishable products. Apart from this, Kerala could also leverage IT-enabled services to manage harvesting and logistics infrastructure.

The state has a total of 12 CFSs and 2 ICDs, which is low when compared to other coastal states of comparable economic sizes such as Tamil Nadu (73) and Andhra Pradesh (20). There is a need for developing CFSs/ICDs especially in the districts of Thrissur and Palakkad, which have significant contribution to the gross value addition for agriculture, mining and manufacturing sectors of the state, indicative of substantial production happening in these districts, but are underserviced in terms of ICD/CFS or any minor/intermediate port. The existing CFSs and ICDs in Kerala also suffer from underutilization of capacity. The state needs to enhance its capital investments in essential equipment such as cranes and reach stackers to ensure greater capacity utilization of the existing facilities.

The state can utilise the support under the central government's TIES scheme for developing and strengthening the ICDs, CFSs, warehousing and cold storage facilities, and other essential export infrastructure in Kerala.

Improving infrastructure in sectors such as Animation, Visual Effects, Gaming and Comics (AVGC) and tourism will be critical for growth in services exports. Kerala could consider developing a Centre of Excellence (CoE) for AVGC with state-of-the-art facilities in one of the IT parks in collaboration with the Society of AVGC Industries in Kerala.

In the tourism sector, investments towards creating hygiene and security related infrastructure such as public washrooms, CCTV cameras, hand sanitizer dispensers, contactless security infrastructure, etc. would be essential for boosting Kerala's tourism after the upliftment of restrictions due to the coronavirus pandemic.

Capacity Building

Kerala has a total of 32 Geographical Identifications (GI) across agriculture and handicraft sector. To reap the benefits of the GI Status, it is important for the GI brand to be recognized as a reliable and preferred brand in the market, with distinguishable positioning. The logo and the GI brand name need to be developed and marketed, and mechanism needs to be devised for ensuring that all products marketed under the GI brand adhere to minimum specific standards.

Initiatives are also needed for identifying more products from the state which can be accorded GI

status. This could include culinary delicacies such as 'Malabar Mackerel Curry', 'Kerala Prawn Masala', 'Malabar Prawn Curry', 'Malabar Paratha', 'Malabar Black Halwa', 'Chemmeen-Manga Curry' and 'Mambazha Pradhaman', which could further boost exports of these processed food items from the state, as also promote culinary tourism.

Interventions are also needed to meet standards, regulations and quality requirements in import markets. Apart from conducting training and awareness drives in major production hubs for dissemination of information pertaining to the export certifications, the state government could also consider refund of expenses incurred for obtaining statutory certifications like Conformite Europeene (CE), China Compulsory Certificate (CCC), GMP, etc. To encourage medical tourism and provide foreign visitors with world class services, the state could provide incentives to medical service providers to get Joint Commission International (JCI) accreditation.

Further, the state government can provide support in submission of applications under the Technology Acquisition Fund Programme of the central government, in order to enable exporters to leverage the schemes to boost high-technology exports. As these programs meet only a fixed percentage of the cost of technology acquisition, the state government can also provide additional financial support on a case-to-case basis.

There is also a need to create awareness amongst exporters and stakeholders in Kerala about various financial and risk mitigation products through seminars and workshops. Kerala government could also encourage exporters to access trade finance related information from various portals, including 'Exim Mitra' portal developed by Exim Bank.

Fiscal Incentives

Fiscal incentives in the form of capital subsidy or grants in priority sectors could be considered by the state government for enhancing the competitiveness of exports from Kerala. The state can also consider providing reimbursement of electricity duty in key export-oriented sectors, especially in the product champion sectors.

Export Promotion Campaign

To encourage and acknowledge traditional exporters in Kerala, the state already has a reward programme for best performers in the handloom sector. The state government could also consider instituting export awards in other key sectors, such as agricultural and allied products, marine products, textile and garments, electronics, information technology, food processing, and tourism.

Export promotion efforts of the state government should also focus on various industrial clusters in the state. As an essential first step, the state government could develop a mechanism for assessment of the existing clusters in the state. Upon assessment of the clusters, relevant capacity building activities can be undertaken.

A brand equity fund could also be set up by the Government of Kerala for building globally competitive brands for products originating from the state. The state government could also create awareness

about the various central and state government schemes for marketing assistance. In addition to awareness programmes, the state government could also put in place Market Development Assistance schemes for exporters in the high value added and technology intensive sectors. The state government could also collaborate with the Union Ministries of Tourism, and Ayush for providing marketing assistance to entities engaged in niche tourism / wellness tourism verticals.

Institutional Streamlining

The overall institutional ecosystem in Kerala needs to be framed in a manner that facilitates the various schemes proposed for exports, allows regular monitoring of the proposed targets, and thereby propels the state to a higher export trajectory. The study recommends setting up of a Kerala Export Promotion Council (KEPC) under the Department of Industries, Government of Kerala, with the objective of ensuring strong export performance for the state. The KEPC could be set up with the participation of the state government, exporters and industry associations and provide a forum for exchange of views, sharing of information, identifying obstacles faced by the exporters and implementing mechanism to overcome them.

CONCLUSION

Kerala has the potential to achieve an exports target of ₹ 3.67 trillion by 2024-25. While sectors in which the state is traditionally strong shall continue to be important from the exports perspective, there is a need to diversify the exports basket to impart much needed resilience to exports from the state. The six-pronged strategy outlined in the study shall help enhance trade competitiveness, promote innovation, bolster availability of export finance, enhance value addition in the production cycles, create awareness about exports, increase visibility of Kerala's exports, and create an institutional mechanism for nudging exports to a higher growth trajectory.

CHAPTER

Introduction

Located in the southwestern region of India, Kerala is a coastal state, strategically located on the transnational trade corridor. In terms of geographical area, the size of the state is relatively small, but its contribution to economic output is substantial. The state has a wide array of topographical features which is conducive for a range of economic activities. The highlands of Kerala slope downwards from the Western Ghats, while the midlands are characterized by hills and valleys, making the agro-climatic conditions suitable for cultivation of agricultural products such as coconut, food grains and spices, as also plantation crops such as coffee, tea, rubber, among others. The lowlands of Kerala, also known as the coastal area, is made up of shallow lagoons, river deltas, backwaters and shores of the Arabian Sea. The lowlands are home to a wide range of marine species and forms the fulcrum of the fisheries sector in the state. Kerala's rich flora and fauna also makes it one of the preferred destinations for tourism in the country.

The policy environment in the state is also favourable, which has engendered considerable investment interest from domestic and foreign businesses. The state ranks 4th in terms of investment climate as per the Innovation Index Report 2019 by Niti Aayog, after the states of Karnataka, Maharashtra and Haryana. Kerala is also the highest recipient of NRI remittances in India.

The state also has a rich pool of human resources. With a population of nearly 33.4 million[1], Kerala is the 12th most populous state of India[2] and has the highest literacy rate amongst all states/UTs. The state has a sex ratio of 1084 females per 1000 males, which is the highest amongst all states/UTs. Clearly, the state has taken substantial strides towards holistic development. In fact, according to Niti Aayog's Sustainable Development Goals (SDG) India Index 2019, Kerala is also among the frontrunners in achieving the UN SDGs, and ranks first among Indian states in SDGs concerning 'health' and 'industry innovation and infrastructure', and second in the indicators of 'education' and 'gender equality'[3].

ECONOMIC BACKDROP

Kerala's gross state domestic product (GSDP) at constant (2011-12) prices is estimated to be ₹ 5.6 lakh crore in 2018-19, accounting for a share of nearly 4 percent in India's GDP during the year. During the year, Kerala's GSDP is estimated to have registered a y-o-y growth of 7.5 percent,

[1] Economic Review of Kerala 2019
[2] As per Census 2011
[3] "SDG India Index 2019-20", Niti Aayog

primarily due to robust growth in the industrial and services sectors. This is despite the fact that the state witnessed disruption in economic activity due to natural calamities over the past two years, first with the onset of Cyclone Ockhi in 2017, and followed by severe floods due to unprecedented rainfall in 2018. In terms of per capital GSDP (at constant prices), Kerala is relatively well-positioned at an estimated ₹ 1,61,374 in 2018-19, as compared to the national average of ₹ 1,05,688 during the same year.

However, the state's performance is fairly below its peers in the Business Reform Action Plan (BRAP) 2017-18, which was released by the Department for Promotion of Industry and Internal Trade. It includes 405 recommendations for reforms in regulatory processes, policies, practices and procedures, spread across 12 reform areas including labour regulation enablers; contract enforcements; registering property; inspection reform enablers; single window system; land availability and allotment; construction permit enablers; environmental registration enablers; obtaining utility permits; paying taxes; access to information and transparency enablers; and sector specific reforms spanning the lifecycle of a typical business. In the ranking, Kerala has been put in the 'Aspirer' category, with an implementation score of 44.82 percent, which is much lower when compared to other coastal states of a comparable economic size such as Andhra Pradesh, Karnataka, and Maharashtra, among others (Table 1). Therefore, there remains substantial scope for improvement in business environment in the state.

Table 1: State-wise Combined Scorecard of Reform Evidence and Feedback under BRAP (2017-18)

Ranking Category	States/Union Territories	Implementation Score	Rank
Top Achievers (Above 95%)	Andhra Pradesh	98.30	1
	Telangana	98.28	2
	Haryana	98.06	3
	Jharkhand	98.05	4
	Gujarat	97.99	5
	Chhattisgarh	97.31	6
	Madhya Pradesh	97.30	7
	Karnataka	96.42	8
	Rajasthan	95.70	9
Achievers (90-95%)	West Bengal	94.59	10
	Uttarakhand	94.24	11
	Uttar Pradesh	92.89	12
	Maharashtra	92.88	13
	Odisha	92.08	14
	Tamil Nadu	90.68	15
Fast Movers (80-90%)	Himachal Pradesh	87.90	16
	Assam	84.75	17
	Bihar	81.91	18
Aspirers (Below 80%)	Goa	57.34	19
	Punjab	54.36	20
	Kerala	**44.82**	**21**
	Jammu and Kashmir	32.76	22

	Delhi	31.69	23
	Daman & Diu	28.69	24
	Tripura	22.45	25
	Dadra & Nagar Haveli	21.88	26
	Puducherry	15.65	27
	Nagaland	14.16	28
	Chandigarh	11.54	29
	Mizoram	3.66	30
	Andaman and Nicobar Islands	1.25	31
	Manipur	0.27	32
	Sikkim	0.14	33
	Arunachal Pradesh	-	34
	Meghalaya	-	34
	Lakshadweep	-	34

Source: DPIIT

NEED FOR EXPORT STRATEGY

Merchandise exports from Kerala account for nearly 12 percent of Kerala's GSDP. Although this is a substantial improvement over the share of 6.4 percent in 2013-14, it remains below the share of merchandise exports in GSDP of other coastal states of comparable economic size, such as Tamil Nadu (share of 17.7 percent), Maharashtra (17.0 percent) and Andhra Pradesh (15.8 percent). Moreover, while Kerala has clear advantages in terms of its well-established transportation infrastructure with an all-weather seaport at Kochi, port at Vizhinjam and good connectivity through road and rail infrastructure, merchandise exports from the state accounts for only 2.9 percent of India's total exports, which is not commensurate to Kerala's share in India's GDP (4.0 percent).

Further, Kerala's exports have a preponderance of low-value added products such as precious metals and agro-based products, which increasingly subjects its export basket to international price fluctuations as well as agro-climatic uncertainties. Diversification of the exports basket will therefore be essential for imparting resilience to the state's exports.

The services sector is a key driver of economic activity and employment in the state economy, and accounted for nearly 62.6 percent of the total GSVA in 2018-19. The state also earns substantial foreign exchange through services such as tourism. However, in select services, growth in exports from the state seems to be tapering, necessitating a revitalization plan. A robust export strategy will critically hinge on promoting exports from services segments such as tourism and IT.

A well-designed export strategy can also have a positive impact on employment generation in the state (Box 1). A well formulated export strategy has the potential to bring down the labour market gap and persistent informality in the state; but the strategy needs to be complemented by policies that make gains from trade more inclusive.

Box 1: Impact of Exports on Employment and Wages

Exports are engines of economic growth, not only by its virtue of expanding the market for producers in a country, but through its effects on efficiency improvements, technology transfers, and improvement in the skills of workers. Contemporary analytical enquiries have focused on how exports foster inclusive growth, especially on its linkages with employment in an economy. According to Exim Bank Research, export supported employment accounted for nearly 14.5 percent of the total employment in India during 2012-13. A recent study by the World Bank-ILO further corroborates the positive impact of exports on employment, in terms of increasing wages and reduction in informality. According to the Study, an increase of US$ 1,500 in India's exports per worker increases wages per worker by ₹ 8,000, and reduces informality by 12.4 million workers. The Study further highlights that a large part of the increase in exports percolates to the wage earners. For every US$ 100 increase in exports per worker, average wage increase by about ₹ 572, essentially indicating that 12.7 percent of the increase in output is transferred to workers through wage increase. During 1999-2011, nearly 5.5 percent of wage increase in Kerala can be attributed to greater exports, and about 3.3 percent of the reduction in informality is attributable to trade. A robust export-led growth strategy can enhance the gains for the labour market in the state.

A well-formulated export growth strategy has the potential to bring down the labour market gap and persistent informality in the state, for which strategies need to be complemented by policies that make the gains from trade more inclusive. This includes policies which (1) improve skills of workers and prepare the workforce to handle the complexities of globalized production systems; (2) move exports to a more capital-intensive growth path and a concomitant increase in training efforts; and (3) eliminate distortions in capital/labour inputs, increase participation of women in merchandise exports and increase worker mobility, among others.

Against this backdrop, the study examines the economic profile and export performance of Kerala at a granular level, making an attempt to map the supply side capabilities of the state with the demand emanating from the international market. The study analyses the potential for exports from the state, and also identifies dynamic products and leading markets for exporters. The study also recommends apposite reforms and strategies for the government to enhance trade competitiveness at the state-level, and create an enabling environment for exports.

CHAPTER

2

Macroeconomic Profile

Since the formation of the state in 1956, Kerala's economy has experienced significant structural changes, transforming from a traditionally agrarian economy to a modern, service-led economy. Presently, the state's economic growth is fueled by sectors such as tourism, IT, food processing, spices, rubber, ayurveda, electronics, handlooms, apparels and garments, coir and traditional products such as wood carvings, designer jewellery, among others.

GSDP is an important indicator to measure the growth and economic development in a state, as also to gauge the structural changes in a state economy. It is equal to the income generated by the production of goods and services within the geographical boundaries of a state. The estimates for value added without any adjustments for the capital depreciation/ consumption is termed as Gross State Value Added (GSVA)[4].

The GSDP of Kerala has witnessed a steady growth over the recent years, increasing to nearly ₹ 5.6 lakh crore in 2018-19, as compared to ₹ 3.6 lakh crore in 2011-12, registering a CAGR of 6.33 percent. Meanwhile India's GDP registered a CAGR of 6.95 percent during the same period, increasing from ₹ 87.4 lakh crore in 2011-12 to ₹ 139.8 lakh crore in 2018-19. Kerala's GSDP growth has particularly remained stable from 2015-16 onwards, with the state being able to maintain an average annual growth rate of 7.4 percent between 2015-16 and 2018-19, and outperforming India's overall GDP growth during 2017-18 and 2018-19 (Table 2).

Table 2: Comparison of Kerala's GSDP with India's GDP

Year	Kerala		India	
	GSDP (at constant 2011-12 prices) (₹ Lakh Crore)	Growth Rate (%)	GDP (at constant 2011-12 prices) (₹ Lakh Crore)	Growth Rate (%)
2011-12	3.64		87.36	
2012-13	3.88	6.5	92.13	5.5
2013-14	4.03	3.9	98.01	6.4
2014-15	4.20	4.3	105.28	7.4
2015-16	4.51	7.4	113.69	8.0
2016-17	4.85	7.6	123.08	8.3
2017-18	5.21	7.3	131.75	7.0
2018-19	5.59	7.5	139.81	6.1

Source: Directorate of Economics and Statistics, Govt. of Kerala; MOSPI, Govt. of India; Exim Bank Research

[4] Central Statistical Office

Kerala's GSVA has also witnessed an upward trend, registering a CAGR of 5.8 percent between 2011-12 and 2018-19. However, the gross value added in agriculture and allied sectors in Kerala witnessed sluggishness for most of the period between 2011-12 and 2018-19, registering a negative CAGR of (-) 1.4 percent during the period. On the other hand, the industry sector as well as the services sector witnessed an impressive performance with respect to growth in value added, registering a CAGR of 6.1 percent and 7.2 percent respectively, during 2011-12 to 2018-19 (Table 3).

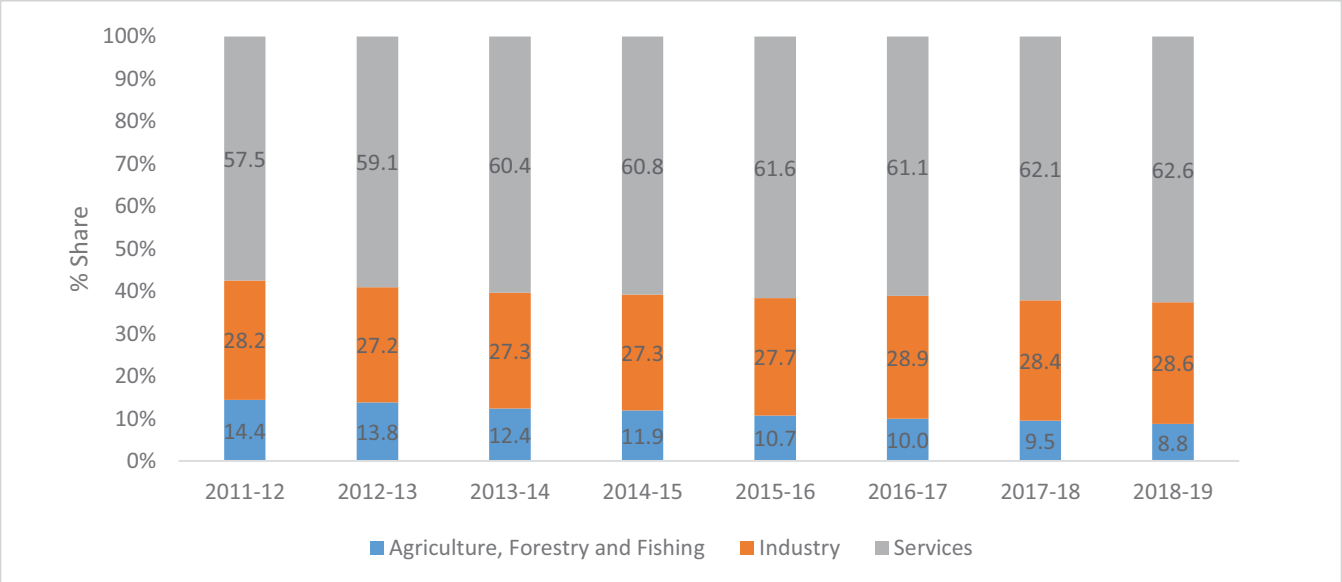
There has been a notable structural change in the state economy as evident from the dwindling share of the agriculture and allied sectors in the GSVA over the recent years, declining from 14.4 percent in 2011-12 to a meagre 8.8 percent in 2018-19. Concomitantly, the share of services in the GSVA has witnessed a significant upsurge from 57.5 percent in 2011-12 to 62.6 percent in 2018-19. The share of industrial sector has only marginally improved from 28.2 percent in 2011-12 to 28.6 percent in 2018-19 (Exhibit 1).

Table 3: Sector-wise Gross State Value Added (GSVA) for Kerala (₹ '000 Crore)

Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% CAGR (FY12-19)
Agriculture, forestry and fishing	48.4	49.1	46.0	46.0	43.6	43.4	44.1	43.9	-1.4
Industry	94.7	96.8	101.3	105.4	112.4	125.9	132.1	143.0	6.1
Services	193.2	210.4	224.4	234.4	250.4	266.1	289.0	313.3	7.2
Total GVA	**336.3**	**356.4**	**371.7**	**385.9**	**406.5**	**435.4**	**465.1**	**500.1**	**5.8**

Source: Directorate of Economics and Statistics, Government of Kerala, Exim Bank Research

Exhibit 1: Sector-wise Share in Gross Value Added for Kerala

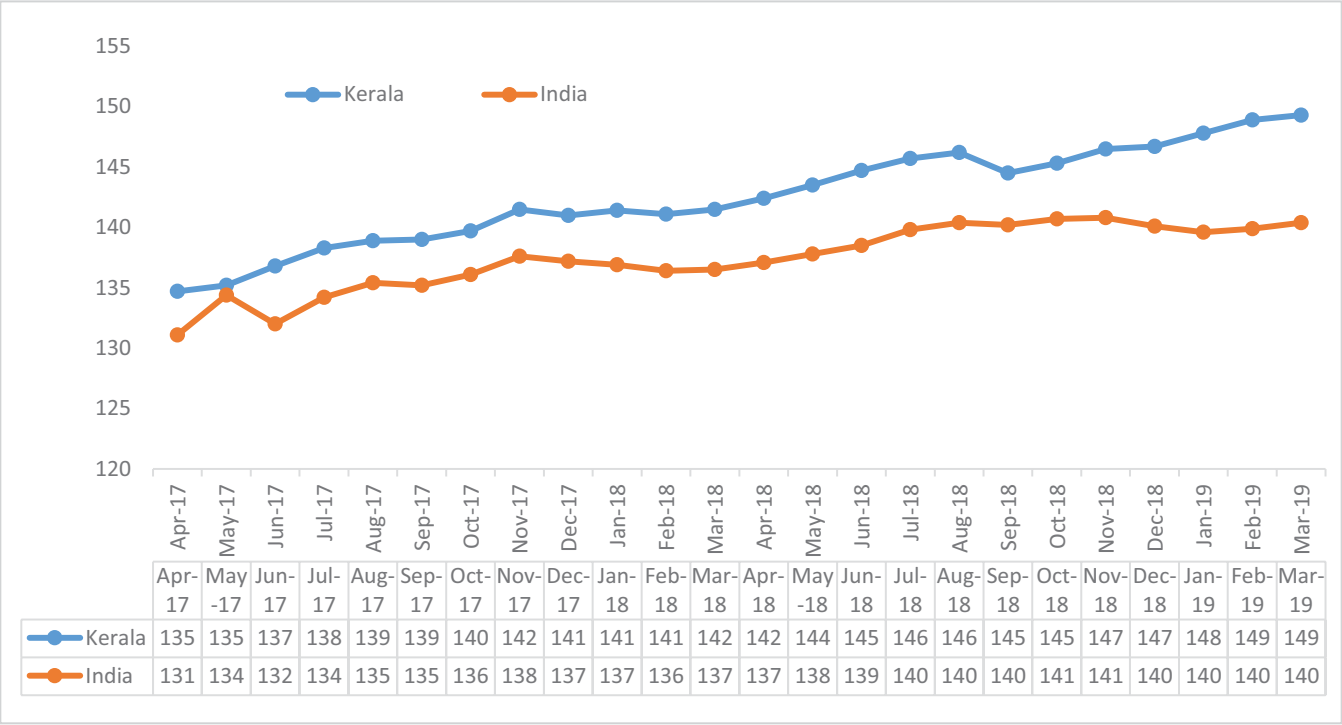


Source: Directorate of Economics and Statistics, Government of Kerala, Exim Bank Research

While the state has registered considerable growth in the recent period, sustained growth and development in the economy would entail price stability. There are several inflation indicators which

measure the rise in general price level. Consumer price index (CPI) measures the changes over time in the level of prices of goods and services that a reference population acquires, uses or pays for consumption. A comparison of CPI (Base: 2012=100) at the state and India level indicates higher level of average prices in Kerala. In March 2019, the CPI of Kerala registered y-o-y increase of 5.51 percent, compared to an increase of 2.85 percent at the all-India level. The CPI in Kerala has also been more volatile as compared to the price levels in India during the period April 2017 to March 2019, with the series displaying a standard deviation of 4.05 for Kerala as against 2.69 in case of India. Lower and stable inflation, in line with India's CPI will be crucial for efficient production processes in Kerala (Exhibit 2).

Exhibit 2: Monthly Movements in Consumer Price Inflation (Base: 2012=100)



	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
Kerala	135	135	137	138	139	139	140	142	141	141	141	142	142	144	145	146	146	145	145	147	147	148	149	149
India	131	134	132	134	135	135	136	138	137	137	136	137	137	138	139	140	140	140	141	141	140	140	140	140

Source: RBI; Exim Bank Research

KEY ECONOMIC ACTIVITIES

I. Agriculture and Allied Sector

Agriculture plays a vital role in Kerala's economy, as a major portion of the rural household in the state are dependent on agriculture as their principal means of livelihood. The salience of the sector is evident from the fact that nearly 66 percent of Kerala's total land area is under cultivation. Apart from agriculture, animal husbandry and fishery are also important sources of gainful employment and economic output in the state.

Contribution to Gross State Value Added

As noted earlier, growth in gross value added from the agriculture sector in Kerala has slowed down

over the recent years, as a result of which, the share of agriculture and allied sector in GSVA has reduced. In 2018-19, the GSVA for agriculture and allied sectors in Kerala witnessed a y-o-y decline of (-) 0.5 percent, as compared to a y-o-y growth of 1.7 percent registered in 2017-18. The downward trend in GSVA from the agriculture and allied sectors is particularly due to fall in value added from crops production, which accounts for more than half of the gross value added from agricultural and allied activities in the state, and registered a negative CAGR of (-) 3.4 percent between 2011-12 and 2018-19 (Table 4).

Table 4: Segment-wise GSVA in Agriculture and Allied Sector (₹ '000 Crore)

Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% CAGR (FY12-19)
Crops	29.0	28.7	26.0	24.7	22.8	23.2	23.3	22.8	-3.4
Livestock	11.3	12.3	12.4	12.8	12.7	11.8	12.0	11.9	0.8
Forestry and logging	4.3	4.3	3.6	4.1	4.2	4.4	4.4	4.4	0.2
Fishing and aquaculture	3.8	3.8	4.0	4.3	4.0	4.1	4.5	4.8	3.5
Agriculture and Allied Sectors	**48.4**	**49.1**	**46.0**	**46.0**	**43.6**	**43.4**	**44.1**	**43.9**	**-1.4**

Source: Directorate of Economics and Statistics, Government of Kerala, Exim Bank Research

Livestock sector accounted for nearly 27.2 percent of the gross value added in agriculture and allied sector during 2018-19, and is a mainstay for the state's rural economy. Cattle, buffalo, goat, pig, poultry and duck are the major livestock population reared in Kerala. The GSVA in the segment witnessed a marginal yet consistent growth since 2011-12, except in 2016-17 when the segment registered a y-o-y decline of (-) 7.6 percent. The livestock segment revived in 2017-18, registering a y-o-y growth of 1.8 percent during the year. Overall growth in the gross value added in this segment has remained relatively muted during 2011-12 to 2018-19, with a CAGR of 0.8 percent during this period.

Forestry and logging is another major economic activity in Kerala, accounting for nearly 10 percent share in agriculture value added in 2018-19. The forests, including plantations, cover nearly 54.4 percent of the total geographical area of the state. Timber, reeds, bamboo, sandal wood, honey and firewood are the major forest produce of the state. The growth in value added in the forestry and logging segment has also remained relatively muted over the recent years, registering a CAGR of 0.2 percent during 2011-12 to 2018-19.

Meanwhile, fishing and aquaculture segment witnessed an upsurge in its value added, registering a CAGR of 3.5 percent during 2011-12 to 2018-19. Growth in value added in the segment has been particularly robust over the past two years, with annual rates of growth of 11.1 percent and 6.6 percent in 2017-18 and 2018-19, respectively. The share of fisheries and aquaculture in the agriculture value added has increased steadily over the recent years, rising from 7.8 percent in 2011-12 to 10.9 percent in 2018-19. Seer fish, prawns, ribbon fish and mackerel are among the major fish varieties produced in Kerala.

Production Scenario

Kerala accounts for only 1.2 percent of India's total land area, but the diverse topographic, climatic and soil varieties in Kerala enables production of both cash crops and food crops in the state. Cropping pattern in the state is dominated by plantation crops, spices, and other cash crops. In fact, Kerala's production of plantation crops is among the largest in the country, accounting for nearly 33.1 percent of India's total production of plantation crops (Table 5).

Table 5: Horticulture Production in Kerala (2018-19)

Crop	Production (in '000 tonnes)	% Share in India's Production
Fruits	1855.97	1.88
Vegetables	3042.86	1.64
Plantation	5421.89	33.13
Flowers	44.96	1.57
Spices	192.86	2.09
Honey	2.20	1.83
Total	**10590.71**	**3.37**

Source: National Horticulture Board of India, Exim Bank Research

In the recent years, the agriculture sector in the state has been affected by several structural issues such as declining productivity, rising cost of labour, and inefficient mechanization, coupled with uncertainties caused by price volatility as well as the vagaries of nature. Particularly in 2018, the performance of the agriculture and allied sector in Kerala was significantly hit by floods and landslides. The total effect of Kerala floods on the sector is estimated to be nearly ₹ 7,154 crore. Crop production was one of the worst-hit segments, accounting for nearly 88 percent of the total losses and damages in the state[5].

The 'Rebuild Kerala' initiative by the state government is expected to aid the revival of the sector. With five agro-ecological zones and a range of different soil types suited for cultivation of a wide array of crops, there is significant potential to enhance agricultural production in the state, as also boost manufacturing of processed food.

Food Grains

Rice is one of the major food grains produced in the state, accounting for nearly 7.7 percent of the total area under cultivation. Area under paddy cultivation stood at 1.98 lakh ha in 2018-19, with an estimated production of 5.78 lakh tonnes. Analysis of paddy production over the past decade indicates a significant decline in both area and production of paddy. Area and production of paddy registered a negative CAGR of 1.8 percent and 0.4 percent, respectively, during 2009-10 to 2018-19. The decline in area under cultivation is attributable to rising urbanization as well as increasing cultivation of commercial/cash crops.

Productivity of rice in Kerala stood at nearly 2920 kg/hectare in 2018-19, which is lower when

[5] Economic Review of Kerala, 2019

compared to other states such as Gujarat, Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka with an average productivity of 3200kg/hectare[6]. Low productivity results in high cost of cultivation of rice, which compounds the existing issues of high labour cost.

In order to address the challenges in the segment, the state is undertaking several interventions to promote paddy cultivation, which includes input assistance at the rate of ₹ 5,500/ha, as well as production incentive at the rate of ₹ 1,000/ha/season. This is being done in collaboration with corporations, municipalities, as well as gram panchayats.

Coconut

Coconut is one of the principal crops cultivated in Kerala, accounting for nearly 29.6 percent of the total cropped area in the state. Among the major coconut producing states in the country, Kerala ranks first with respect to both area as well as production of coconut. However, both area as well as production of coconut in the state have declined over the decade, registering a negative CAGR of (-) 0.3 percent and (-) 0.7 percent respectively, during 2009-10 to 2018-19. Productivity of coconut has also weakened over the past decade, registering a negative CAGR of (-) 0.5 percent between 2009-10 and 2018-19. The growth has marginally recovered in 2018-19, with productivity of coconut increasing from 6878 nuts per hectare in 2017-18 to 6964 nuts per hectare in 2018-19.

Like other agro-activities, coconut farming is also affected by high cost of labour as well as shortage of skilled labour, along with other issues like non-remunerative price, prevalence of root wilt disease, and lack of promotional programmes for marketing coconut products, among others. The government is undertaking several measures for improving coconut production, including integrated management of coconut gardens on cluster basis, replacement of senile/ diseased plants, promoting the production of dwarf coconut seedlings and hybrids with the support of R&D institutions, among others.

Spices

Spices cultivation in Kerala primarily includes cardamom, pepper, turmeric, chilies and clove. Kerala is the largest producer of pepper in the country, accounting for 58 percent of the total pepper production of India in 2018-19. However, the productivity of pepper cultivation in Kerala has been falling on account of high cost of cultivation (labour and resources). This, coupled with, falling pepper prices since 2011– largely on account of increasing imports of pepper– have made the pepper cultivation unviable for the farmers[7]. Apart from pepper, cardamom is also a major spice cultivated in Kerala, with its production contributing to 89.1 percent of the total cardamom production in the country. The production of cardamom in the state witnessed a sharp decline in 2018-19, mainly due to the floods.

In order to revive the production of spices, the government is undertaking initiatives such as integrated pepper development in Idukki district (which is the largest pepper-cultivating district of the state), assistance for area expansion, support for procuring secondary and micro-nutrients to increase productivity of crops, among others.

[6] Study on Investment Potential of Kerala, KSIDC-KPMG, 2017
[7] Ibid.

Cashew

India is the second largest producer of cashew in the world, after Vietnam. Kerala is the fifth largest producer of cashew in India, accounting for 11.17 percent of the total cashew production in the country. Kannur is the largest raw cashew producing district, accounting for more than 50 percent of the total cashew production in the state.

Over the past decade, there has been a significant decline in both area and production of cashew in the state. Cashew production in the state declined from 35.8 thousand metric tonnes in 2009-10 to 15.64 thousand million tonnes in 2018-19, and area under cultivation also declined from 48.9 thousand hectares in 2009-10 to 38.8 thousand hectares in 2018-19. Over the decade, cashew productivity has also nearly halved from 731 kg/ha in 2009-10 to 403 kg/ha in 2018-19.

Labour availability is one of the major factors affecting the production of cashews in the state. Cashew production is also highly export oriented, which makes it vulnerable to international market volatility[8].

Rubber

India is the third largest rubber producer in the world, accounting for 4.8 percent of the global rubber production, after Vietnam and Thailand. Kerala accounts for more than 90.0 percent of the total natural rubber production in India. Natural rubber holds the second largest share of 21.0 percent in gross cropped area in the state, after coconut. Kottayam is the major rubber producing district in the state. Production of rubber in the state remained unchanged at 4.9 lakh tonnes in 2018-19, as compared to the previous year.

One of the major constraints faced by the sector is the increasing substitution of natural rubber with synthetic rubber for manufacturing purposes, which has become cheaper in the international markets due to lower crude oil prices. Other major constraints to rubber production in the state include lack of skilled labour, adverse impact of weather changes (particularly heavy rainfall) and the consequent increase in abnormal leaf fall disease in rubber trees.

Coffee and Tea

Kerala is the second largest producer of coffee in the country after Karnataka. However, the production of coffee registered a y-o-y decline of 2.7 percent in 2018-19, reducing from 66,465 metric tonnes in 2017-18 to 64,676 metric tonnes in 2018-19, while the area under cultivation remained unchanged, indicative of a decrease in productivity.

Kerala also accounts for 4.5 percent of the total domestic production of tea. Productivity is also a concern in the tea sector as evident from the fact that even though the area under tea cultivation increased by 20.7 percent in 2018-19 on a y-o-y basis, the production of tea in the state declined by 2.4 percent during the year.

[8] Ibid.

Animal Husbandry

Livestock is one of the fastest growing sectors of the rural economy of Kerala. The share of livestock in the GSVA of agriculture and allied sector of Kerala is slightly higher than the national average. The total livestock population of Kerala stood at 38.36 lakh, and the total poultry population stood at 298.18 lakh, as per the 20th Livestock Census.

Kerala ranks ninth in India in terms of poultry population, accounting for a share of 3.5 percent in the total poultry population of the country. The poultry population in Kerala registered growth of more than 25 percent in 2019, which is significantly higher than the average growth of 16.0 percent at the all-India level.

Milk, meat and egg are the major livestock products in the state. Kerala ranks tenth in egg production and eighth in meat production in the country. Kerala is also one of the top states in terms of price for milk accruing to the milk producers. In 2018-19, production of milk, eggs and meat in the state witnessed a decline, mainly due to the floods.

In addition to its livestock wealth, the state is endowed with several rivers, freshwater lakes and calm backwaters, providing potential for marine and inland fishing. Kerala is the tenth largest fish producing state and the fifth largest marine fish producing state in the country. The state has a total of 24 fishing harbours.

Marine fish, including sardines, shrimps, lobsters, cuttlefish, squid and tuna, account for a share of 76 percent in the total fish production of the state. The total fish production in Kerala in 2018-19 was 8.01 lakh tonnes (Table 6), of which marine fish production was 6.09 lakh tonnes and inland fish production was 1.92 lakh tonnes. Kollam is the leading marine fish producing district, while Alappuzha and Kottayam are the leading inland fish producing districts in the state.

Table 6: Comparison of Livestock and Fisheries Production of Kerala with India (2018-19)

Item	Unit	Kerala	India	% Share in India
Milk	Lakh Tonnes	25.48	1877.49	1.36
Eggs	Lakh Numbers	22905.99	1033176.31	2.22
Meat	Lakh Tonnes	4.57	81.15	5.65
Fish	Lakh Tonnes	8.01	-	-

Source: Department of Animal Husbandry and Dairy- GoI, Economic Review of Kerala 2018-19

II. Industrial Sector

Industrial sector in Kerala is currently at a nascent stage. The industrial sector of Kerala is dominated by rubber products, coir and coir products, and food-based industries. As per data from the Annual Survey of Industries (ASI) by the Govt. of India, there were 6,890 operating factories in Kerala in 2015-16 in the organized manufacturing sector. These units provided employment to nearly 3.4 lakh persons and contributed to nearly ₹ 15,970 crore of net value added in the manufacturing sector in 2015-16. Fixed capital invested in these factories in Kerala was estimated at ₹ 38,442.9 crore in 2015-16.

The value added in the industrial sector of Kerala has witnessed a steady growth over the recent years, registering a CAGR of 6.1 percent during 2011-12 to 2018-19. This surge in industrial value added is primarily driven by growth in the manufacturing segment, which recorded a CAGR of 9.8 percent during the same period (Table 7). The manufacturing segment in the state is relatively small as compared to other coastal states of comparable economic size. Manufacturing segment in Kerala mainly comprises traditional industries such as coir, handloom and cashew processing. Other emerging industries include electronic systems and machinery, light engineering, rubber products, food processing, spices, textile, ayurveda, cosmetics, etc. The share of manufacturing in GSVA has increased from 10.6 percent in 2011-12 to 13.2 percent in 2018-19. Within the industry sector, the share of manufacturing has risen from 36.1 percent in 2011-12 to 46.2 percent in 2018-19.

Table 7: Segment-wise GSVA in the Industry Sector (₹ '000 Crore)

Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% CAGR (FY12-19)
Mining and quarrying	2.7	2.3	3.4	5.5	1.8	2.6	3.1	2.6	-0.5
Manufacturing	34.2	38.5	36.7	37.7	48.5	57.3	59.4	66	9.8
Electricity, gas, water supply & other	4.7	4.6	5	4.7	4.7	4.1	5.2	5.9	3.3
Construction	53.1	51.4	56.2	57.4	57.4	61.9	64.4	68.5	3.7
Industry	**94.7**	**96.8**	**101.3**	**105.4**	**112.4**	**125.9**	**132.1**	**143**	**6.1**

Source: Directorate of Economics and Statistics, Government of Kerala, Exim Bank Research

Mining and quarrying activities registered a negative CAGR of (-)0.5 percent, during the period 2011-12 to 2018-19 (Table 7). Meanwhile construction segment, which accounts for a share of 47.9 percent in the gross value added from the industrial sector, registered a CAGR of 3.7 percent during the same period.

Going forward, given the emerging opportunities in the areas of medical devices, electronic hardware, food processing, textiles, among others, the industrial sector of the state has the potential to contribute a larger share in the overall GSVA of the state.

Industrial Clusters in Kerala

Majority of the industries in Kerala are Micro, Small and Medium Enterprises (MSMEs). Industrial clusters have an important role in the promotion of MSMEs due to advantages such as inclusiveness, greater technology absorption capacity, increased efficiency and availability of common resources. In order to foster industrial development, the state has adopted a cluster development approach for MSMEs, through establishment of common facility centres, which are currently in various stages of development in the state. These clusters have been identified at district levels, in areas such as wood, plywood, furniture, rubber, textiles, rice mill, plastic printers, food processing, agriculture implements and general engineering, among others (Table 8).

Table 8: District-wise Industrial Clusters in Kerala

District Name	Industrial Clusters	Existing Industrial Infrastructure
Kasargod	• General Engineering • Food Processing • Rubber Industries	• KINFRA Small Industries Park at Seethangoli
Kannur	• General Engineering • Wood • Offset Printers	• KSIDC Industrial Growth Center • KINFRA Small Industries Park • KINFRA Textile Park, Cyber Park
Kozhikode	• General Engineering • Food Processing Rubber • Footwear	• Cyber Park (Nellikode) • Industrial Growth Centers (KSIDC)
Thrissur	• Canning • Handlooms • Power looms • Terra Tiles • Coconut	• KINFRA Small Industries Park • KINFRA Industrial Park
Ernakulam	• IT, Offset printers • General Engineering • Furniture • Rubber • Garments • Plastic • Plywood • Electronics	• Infopark • Cochin SEZ • KINFRA Export Promotion Industrial Park • KINFRA Food Park • KINFRA Small Industries Park • KINFRA Rubber Park • Inkel Business Towers (WE space)
Alappuzha	• Garments • Coir • Food Processing	• KINFRA Seafood Park • Industrial Growth Centre of KSIDC • Mega Food Park for marine processing
Kottayam	• Rubber • Food • Soft Toys • Engineering	• Nil
Wayanad	• Agro-based • Minerals & Mining	• KINFRA Small Industries Park
Malappuram	• General Engineering • Wood • Rubber • Garments	• KINFRA Neospace • KINFRA Techno Industrial Park
Palakkad	• Agricultural Implements • Sericulture	• WISE KINFRA park • KINFRA Integrated Industrial & Textile Park • Light Engineering Industrial Park • KINFRA Mega Food Park
Idukki	• Rubber • Wood • Engineering • Agriculture	• KINFRA Standard design factories at Rajakumari

Pathanamthitta	• General Engineering • Food Processing	• KINFRA Industrial Park • KINFRA Food processing Park
Kollam	• Wood • Food Processing • Garments	• Industrial Estates promoted by SIDCO • DIC • IP Promoted by KINFRA
Thiruvananthapuram	• Handloom • Coir & Handicrafts	• Technopark, KINFRA • International Apparel Park • Film & Video Park

Source: Study on Investment Potential of Kerala, KSIDC-KPMG, 2017; Exim Bank Research

Key Industrial Segments

Food Based Industries

Agro and food processing is uniquely positioned at the intersection of agriculture, manufacturing and services sector of Kerala's economy, with the potential to develop into a sizable growth engine for the state.

In 2018-19, Kerala accounted for 5.4 percent of the country's total exports of processed food[9]. Kerala currently accounts for nearly 75 percent of India's EU-Certified Seafood Units, and has 5 state-of-the-art food processing parks including 2 mega food parks. A spices park is also in the pipeline in the Idukki district of the state.

Traditional Industries

An important reason for the small share of the manufacturing sector in Kerala's GSVA (13.2 percent) is the large presence of traditional industries in the state. Sectors such as handlooms and handicrafts are a major source of employment in the state. These industries employ a substantial part of the state's total workforce. A wide range of handicrafts made of ivory, bamboo, palm leaves, seashells, wood, coconut shells, clay, cloth, coir, metals, stone, lacquer ware, etc. are produced by artisans in the state. Over the recent years, traditional industries such as handicrafts and handlooms have been witnessing a decline in production, while powerloom sector has witnessed a growth in production, engendered by the modernisation efforts by the state government in the textile sector.

Coir industry is among the most revenue generating traditional industry in Kerala. The coir industry of Kerala has a high export orientation, as more than 50 percent of the revenue in the industry is earned from the exports market.

Rubber Products

Although Kerala contributes to more than 90 percent of the total production of natural rubber in the country, the state lags behind in terms of production of rubber products. Kerala has the highest

[9] Includes Animal or Vegetable Fats & Oils & Their Cleavage Products; Preparations of Meat of Fish or of Crustaceans, Molluses; Cocoa and Cocoa Preparations; Preparations of Cereals, Flour, Starch or Milk; Preparations of Vegetables, Fruits, Nuts; and Miscellaneous Edible Preparations

number of rubber products manufacturing units (around 900 units as of 2017), majority of which are MSMEs. Rubber products units in the state are largely involved in the manufacturing of moulded goods, tread rubber products, dipped goods and adhesives, among others.

III. Service Sector

Services sector of Kerala is a key growth driver for the state, and Kerala's economic growth over the recent years can be attributed to the steady growth in its services sector. The services sector in Kerala registered a CAGR of 7.1 percent– the fastest growth amongst the three sectors– during 2011-12 to 2018-19. Over the past two years, the gross value added in the sector has witnessed a positive y-o-y growth of 13.3 percent and 7.0 percent in 2017-18 and 2018-19, respectively.

Within the services sector, trade, repair, hotels and restaurant services contributed significantly to the overall GSVA of the services sector, with a share of 27.8 percent in 2018-19. The value added in the trade and repair services segment has been growing steadily, witnessing a CAGR of 7.8 percent during 2011-12 to 2018-19. Meanwhile, real estate, ownership of dwelling and professional services segment, which accounted for a share of 26.5 percent in the GSVA of the services sector, also witnessed a healthy growth during this period, registering a CAGR of 10.1 percent. Within the transport services segment, air transport as well as railways witnessed a rapid growth during the period, recording a CAGR of 21.0 percent and 11.1 percent respectively, during 2011-12 to 2018-19 (Table 9).

Table 9: Segment-Wise GSVA in the Services Sector (₹ '000 Crore)

Sectors	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% CAGR (FY12-19)
Trade, repair, hotels and restaurants	53.2	60.6	61.9	65.7	70.7	71.9	81.4	87.1	7.3
Trade & repair services	47.3	54.5	55.9	59.9	64.6	65.4	74.5	79.8	7.8
Hotels & restaurants	5.9	6.1	6	5.8	6.1	6.5	6.9	7.3	3.1
Transport, storage, communication & services related to broadcasting	28	29.4	32.6	34	35.2	36.7	35.9	35.5	3.5
Railways	1	1.2	1.2	1.3	1.4	1.4	1.7	2.1	11.1
Road transport	20	21.3	23.4	23.8	23.6	24.4	23.3	22.4	1.6
Water transport	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	1.5
Air transport	0.3	0.5	0.4	0.6	1	1.1	1.1	1	21
Services incidental to transport	0.6	0.6	0.6	0.6	0.7	1.1	1.3	1.5	13.7
Storage	0	0	0	0	0	0	0	0.1	7.3
Communication & services related to broadcasting	5.8	5.5	6.8	7.4	8.3	8.4	8.2	8.2	5
Financial services	14.3	15.3	17	18.4	20.8	21.8	21.9	22.1	6.4

Real estate, ownership of dwelling & professional services	42.2	47.9	54.8	59.9	63.9	68.9	76.2	82.9	10.1
Public administration	15.9	15.8	15.7	13.6	13.9	15.1	16.8	19.3	2.8
Other services	39.7	41.5	42.5	42.9	46	51.8	56.7	66.4	7.6
Services	**193.2**	**210.4**	**224.4**	**234.4**	**250.4**	**266.1**	**289**	**313.3**	**7.1**

Source: Directorate of Economics and Statistics, Government of Kerala, Exim Bank Research

Key Services Segments

Information Technology

Realizing the potential and importance of information technology, Kerala has made earnest efforts in developing its IT infrastructure. In 2016, the Government of India declared Kerala as the first 'Digital State' of the country, with the highest internet coverage (nearly 60 percent of Kerala's population) amongst 29 states and with over 600 e-governance applications covering almost all government departments. The success of this accredits mainly to the 'Kerala State Information Technology Mission' (KSITM), formed with an objective to deliver best digital services to the citizens of Kerala and provide managerial and technical support to various initiatives of the Department of Information Technology, Government of Kerala. KSITM performs diverse roles including, enactment of ICT related policies, development of guidelines and standards for e-governance, ICT facilitation for the government entities, end to end support and guidance to various departments of the state government for their digitization efforts, act as a bridge between the government and industry, undertake capacity building initiatives and bridge the digital divide, establish and sustain common IT Infrastructure and take up various e-governance initiatives. Connecting 100 percent of the Gram Panchayats through optical fibre network, is another major accomplishment by the state under this initiative. The Government of Kerala has also envisaged expansion of IT industry through the development of IT hubs in Kochi and Kozhikode.

The expansion of the IT industry in the state has been planned based on a hub and spoke model, in order to ensure that the benefits of the IT sector growth trickles down to every district of the state. For this purpose, the state has created a Technopark at Thiruvananthapuram, an Infopark at Kochi and a Cyberpark at Kozhikode, which will act as hubs in the sector, while other IT parks in the remaining districts will act as spokes. These parks are autonomous bodies set up under the auspices of the state government, to create global standard infrastructure and engender development of high technology industries in the state.

The Technopark in Kerala has 5 campuses, spread across an area of 770 acres, which are under various phases of development. The Technopark in Thiruvananthapuram is the hub of technoparks in the state, and has been instrumental in attracting global electronics manufacturers. As of 2018-19, companies in the Technoparks in Kerala, provide direct employment to nearly 60,000 IT employees, while also providing indirect employment for another 1,50,000 people. Technopark has charted out an ambitious target of creating additional 50,000 jobs by 2021.

The Infopark in Kerala also has 5 campuses, spread across an area of 323 acres, which are under various stages of development, and are providing employment to nearly 40,000 IT professionals through 392 IT companies, as of 2018-19. The Infopark at Kochi is the second largest IT hub in Kerala, with spokes at Cherthala and Thrissur.

The Cyberpark in Kozhikode has been established based on the same model as the Technopark and Infopark, and was set up primarily with the objective of bridging the IT infrastructure gap along the western coast of the state, spanning from Kochi to Kasargod, and for promoting and boosting IT sector exports and creating employment in the region. The Cyberpark in Kozhikode is entirely owned by Kerala State IT Infrastructure Limited (KSITIL).

In addition to the existing facilities, an electronics hub has also been proposed to be built at Kochi, by the Government of Kerala, in order to promote electronic hardware manufacturing and assembling units and R&D centres, and to provide support infrastructure for the same.

Tourism

The influence of the tourism sector on Kerala's economy and its potential as a tool for sustainable development cannot be overemphasized. Kerala's ecological endowments including its serene rivers, lakes, calm backwaters and huge forest area have placed the state among the most popular tourist destinations in the country. Popular tourist destinations in Kerala include beaches of Kovalam, Varkala, Marari, Bekal and Kannur; backwaters of Kumarakom, Alappuzha, Kollam, Kochi and Kozhikode; and hill stations of Ponmudi, Munnar, Wayanad and Vagamon. Kerala has several well-known wildlife reserves, including the Periyar Wildlife Sanctuary, the Eravikulam National Park, the Thattekad Bird Sanctuary and the Parambikulam Wildlife Sanctuary.

Kerala ranked eighth in terms of foreign tourist visits (FTVs) during 2018, after Tamil Nadu (share of 21.03 percent in total FTVs in 2018), Maharashtra (17.59 percent), Uttar Pradesh (13.09 percent), Delhi (9.49 percent), Rajasthan (6.08 percent), West Bengal (5.60 percent) and Punjab (4.16 percent). The FTVs in the state stood at 1.10 million in 2018, accounting for 3.8 percent of the total FTVs in India during the year (Table 10).

Table 10: Top 10 States/UTs for Foreign Tourist Visits in India during 2018

State	FTVs (In Millions)	% Share in India
Tamil Nadu	6.07	21.04
Maharashtra	5.08	17.59
Uttar Pradesh	3.78	13.09
Delhi	2.74	9.49
Rajasthan	1.75	6.08
West Bengal	1.62	5.60
Punjab	1.20	4.16
Kerala	**1.10**	**3.80**

Bihar	1.09	3.77
Goa	0.93	3.23
Total of Top 10	25.36	87.85
Others	3.51	12.15
India	**28.87**	**100.00**

Source: Ministry of Tourism, GOI, Exim Bank Research

Given the rich cultural heritage of the state, there is immense potential in the areas of heritage tourism and rural tourism. Recognizing the potential, the State Tourism Department is developing eco-friendly, rural tourism packages in Kumarakom, Wayanad, Kovalam and is also developing the Muziris heritage circuit.

RESOURCE PROFILING

An analysis of the resource profile of the state can shed light on the areas in which the state has competitive advantage. This can help in identification of the latent export potential in the state and in devising strategies for achievement of sustainable development.

Agriculture

For holistic understanding of agricultural potential, identification of various agro-ecological zones within the state would be an essential first step. The concept of agro-ecological zones helps to identify agriculturally potent areas suitable for a particular genotype, so that the optimum production potential of a crop and cropping sequence could be attained. India has a total of 20 agro-ecological zones which have been identified on the basis of physiography, bio-climate and soils. These agro-ecological zones have been further classified into 60 agro-sub regions on the basis of the length of growing period, soil texture and water holding capacity, among others.

There are five agro-ecological zones[10] in Kerala– coastal plains, midland laterites, foothills, high hills and Palakkad plain (Table 11).

Table 11: Agro-ecological Delineations of Kerala

Agro-ecological Zone	Districts	Crops
Coastal Plain	Coastal regions in the district of Kasaragod, Kannur, Kozhikode, Idukki, Malappuram, Thrissur, Ernakulam, Kottayam, Alappuzha, Kollam and Thiruvananthapuram.	Rice, coconut, spices, ginger, pepper, cardamom, pulses
Midland Laterites	Midlands of Kasaragod, Kannur, Kozhikode, Idukki, Pathanamthitta, Malappuram, Thrissur, Ernakulam, Kottayam, Alappuzha, Kollam, Thiruvananthapuram and parts of Palakkad	Vegetables, nutmeg, cashew, fodder grass, pineapple, paddy, coconut, rubber, cashew, pepper, arecanut, tapioca, ginger and mango

[10] The agro-ecological delineations of Kerala have been undertaken by the National Bureau of Soil Survey and Land Use Planning, Bengaluru under a project co-ordinated by the Kerala State Planning Board in 2012.

Foothills	Parts of Kasaragod, Kannur, Malappuram, Palakkad, Pathanamthitta, Ernakulam, Kottayam, Alappuzha, Kollam and Thiruvananthapuram	Coconut intercropped with rice, rubber, pepper and coffee, vegetables
High Hills	Eastern parts of Thrissur, Ernakulam, Kottayam, Alappuzha, Kollam and Thiruvananthapuram, Pathanamthitta, Kasaragod, Kannur, Malappuram, northeastern parts of Palakkad and whole of Wayanad district	Rubber, coconut, pepper, tea, coffee, cardamom, fruits, potatoes, sugarcane, cashew, tapioca, maize, arecanut, banana, ragi and millet
Palakkad plain	Palakkad district	Coconut, rice, arecanut, mango, groundnut, cotton, banana, maize, jowar and sugarcane

Source: Kerala Soil Health Information System; Exim Bank Research

Mineral

Mineral resources are of paramount importance in industrial activities. They enter into production cycle of several industries in the form of raw materials and help build up prosperity in an economy. Kerala is endowed with a number of deposits/occurrences of minerals such as heavy mineral sands, which includes ilmenite, rutile, zircon, monazite, sillimanite; metals such as gold, iron ore, bauxite; and graphite, china clay, fire clay, tile and brick clay, silica sand, lignite, limestone, lime shell, granite, gemstones, magnesite, steatite, etc.

Important mineral resources in the state are bauxite in Kannur, Kasaragod, Kollam and Thiruvananthapuram districts; china clay in Alappuzha, Ernakulam, Kannur, Kasaragod, Kollam, Kottayam, Palakkad, Thiruvananthapuram and Thrissur districts; limestone in Alappuzha, Ernakulam, Kannur, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad and Thrissur districts; quartz/silica sand in Alappuzha, Kasaragod, Thiruvananthapuram and Wayanad districts; sillimanite in Kollam and Thiruvananthapuram districts; titanium in Kasaragod, Kollam, Pathanamthitta and Thiruvananthapuram districts; and zircon in Kollam district[11]. Kerala currently has vast tracks of under- tapped and untapped mineral resources as mining activities on large scale are confined mainly to a few minerals which include heavy mineral sands, china clay, and to a lesser extent limestone, silica sand and granite.

In the year 2018-19, Kerala collected ₹ 1712.93 million of revenue from mineral resources, out of which 96.87 percent of revenue was generated from minor minerals and the rest 3.12 percent from major minerals.

Human Capital

Kerala accounts for 2.75 percent of India's total population, as per the Population Census, 2011 and ranks first in the country in terms of literacy, with a literacy rate of 93.9 percent. Kerala clearly has a strong human capital base to leverage the growth potential of the state. The state's large base of skilled labour makes it an ideal destination for knowledge-intensive sectors.

The Government of Kerala is committed to improve the quality of its human capital base through various initiatives such as vocational courses to enhance individual employability, variety of industrial

[11] Department of Mining and Geology, Kerala

training programmes to upgrade the skills of existing labour force, and launch of 'Skill Registry', which is a mobile application developed by the Kerala Academy for Skill Excellence (KASE) for enabling skilled labourers to register themselves as service providers and be contacted for work directly.

OUTLOOK

The state has the potential to emerge as one of the key contributors to economic growth of India. To realize this potential, the state needs to necessarily strengthen its manufacturing and industrial sectors through proactive policy. The services sector in the state shall remain the cornerstone of the state economy, but long-term, sustainable growth in the sector will require a dynamic, demand responsive strategy. Alongside, the frail agriculture sector in the state also needs a reorientation towards greater value-added activities.

CHAPTER

Export Scenario and Prospects for Kerala

Kerala's abundant resources, skilled workforce, and a favourable policy environment has positioned the state as an important contributor to the exchequer. However, there remains substantial latent export potential, which can be tapped through multi-faceted intervention.

MERCHANDISE EXPORTS FROM KERALA

Kerala ranks tenth among Indian states/UTs in terms of merchandise exports, with a share of 2.9 percent in India's total merchandise exports in 2018-19. Merchandise exports from the state witnessed a sharp dip during 2014-15 amidst weakening economic activity in major trade partners of the state, and supply-side constraints in major export items such as petroleum products, pearls, precious and semi- precious stones, and natural rubber, among others. Thereafter, there has been a consistent increase over the recent years, with merchandise exports registering double-digit y-o-y growths of 33.1 percent and 34.6 percent in 2017-18 and 2018-19, respectively. The state's merchandise exports stood at US$ 9.8 billion in 2018-19, registering a CAGR of 17.86 percent during 2013-14 to 2018-19, which is higher than the CAGR of 0.97 percent recorded by India's merchandise exports during the same period.

The composition of merchandise exports from Kerala has witnessed a gradual shift, with the share of non-oil exports reducing from 97.1 percent in 2013-14 to 94.5 percent in 2018-19, and oil exports registering a significant increase in share during the same period (Table 12).

Table 12: Trends in Merchandise Export from Kerala

Year	Merchandise Exports-US$ Million			Y-o-Y Growth (%)			Share in Total Merchandise Exports from Kerala (%)	
	Total	Oil	Non-Oil	Total	Oil	Non-Oil	Oil	Non-Oil
2013-14	4322.43	125.79	4196.65	-	-	-	2.91	97.09
2014-15	4159.60	196.61	3962.99	-3.77	56.31	-5.57	4.73	95.27
2015-16	4360.91	157.21	4203.70	4.84	-20.04	6.07	3.60	96.40
2016-17	4886.00	244.91	4641.09	12.04	55.79	10.40	5.01	94.99
2017-18	7308.08	493.48	6814.60	33.14	50.37	31.89	6.75	93.25
2018-19	9834.25	542.21	9292.05	34.57	9.87	36.35	5.51	94.49

Source: DGCIS, Exim Bank Research

Key Exported Products

More than half of Kerala's total merchandise exports comprise jewellery made of gold and other precious metals (share of 59.6 percent in 2018-19), most of which, are exported to the Middle-East, particularly the UAE. Other top exported products include marine products (share of 8.77 percent), petroleum products (5.51 percent), spices (4.53 percent) and cashew (3.14 percent), among others (Table 13).

Table 13: Top 10 Merchandise Exports from Kerala (2018-19)

Commodity	Value of Exports (US$ Million)	Share in Merchandise Exports (%)
Gold and Other Precious Metal Jewellery	5860.80	59.60
Marine Products	862.72	8.77
Petroleum Products	542.01	5.51
Spices	445.38	4.53
Cashew	309.17	3.14
Readymade Garments of Cotton Including Accessories	133.40	1.36
Other Rubber Product Except Footwear	108.68	1.11
Tea	108.24	1.10
Handmade Carpet (Excluding Silk)	93.75	0.95
Electric Machinery and Equipment	84.68	0.86
Total Merchandise Exports	**9834.25**	**100.0**

Source: DGCIS, Exim Bank Research

The predominance of cash crops in Kerala's agricultural production is evident in its exports basket as well. In several agro-based products, Kerala has a substantially high share in India's overall exports. Kerala is the largest exporter of natural rubber in India, with a share of 63.6 percent in India's total exports during 2018-19. Kerala is also the largest exporter of cashews in the country, with a share of 47.2 percent in India's total exports. Other exports from Kerala with a high share in India's exports include floor coverings of jute (share of 56.9 percent in India's overall exports), jewellery made of gold or other precious metals (45.3 percent), vegetable oil (15.5 percent), coir and coir products (15.4 percent), spices (13.4 percent), tea (13.0 percent) and marine products (12.7 percent), among others (Table 14).

Table 14: Products with Highest Share in India's Exports

Commodity	Value of Exports from the State (US$ Million)	Share in India's Exports (%)
Natural Rubber	7.01	63.60
Floor Covering of Jute	30.16	56.91
Cashew	309.18	47.24
Gold and other Precious Metal Jewellery	5860.80	45.26
Vegetable Oils	16.59	15.54
Coir and Coir Manufactures	50.51	15.43
Spices	445.39	13.41

Tea	108.24	13.03
Marine Products	862.72	12.68
Essential Oils	16.15	9.40
Milled Products	12.89	8.49
Other Rubber Product Except Footwear	108.69	8.45
Coffee	69.21	8.42
Poultry Products	7.32	7.46
Carpet (Excl. Silk) Handmade	93.76	6.40
Fresh Fruits	47.93	6.03
Other Textile Yarn, Fabric Made up Article	27.41	5.99
Processed Fruits and Juices	35.08	5.48
Fresh Vegetables	42.34	5.21
Surgicals	20.74	5.20
Paint, Varnish and Allied Products	37.92	4.80
Cereal Preparations	24.55	4.45
Alcoholic Beverages	12.16	4.04
Medical and Scientific Instruments	51.84	3.57
Auto Tyres And Tubes	66.95	3.51
Floriculture Products	2.31	2.82
Ceramics and Allied Products	40.55	2.40
Other Precious and Base Metals	3.27	2.40
Fruits / Vegetable Seeds	2.93	2.35
Ayush And Herbal Products	10.26	2.29
Natural Silk Yarn, Fabrics, Made up	1.31	2.26
Plywood and Allied Products	21.53	2.25
Others	74.12	2.24
Electronics Components	45.69	1.91
Cosmetics and Toiletries	31.66	1.89
Inorganic Chemicals	18.79	1.75
Footwear of Rubber/Canvas Etc.	6.70	1.72
Machine Tools	7.76	1.57
Books, Publications and Printing	6.06	1.54
Readymade Garments of Cotton Including Accessories	133.41	1.53
Cocoa Products	2.63	1.37
Tobacco Manufactured	5.61	1.36
Rice (Other Than Basmati)	40.89	1.35
Other Miscellaneous Chemicals	11.64	1.25
Petroleum Products	542.02	1.16
Electronics Instruments	28.70	1.15
Miscellaneous Processed Items	6.82	1.03
Electric Machinery and Equipment	84.68	1.01
Handloom Products	3.43	1.00
Total Merchandise Exports	**9834.25**	**2.9**

Source: DGCIS, Exim Bank Research

Product Concentration in Kerala's Merchandise Exports

A preliminary analysis of Kerala's merchandise export basket indicates that the top 10 export items accounted for a share of nearly 86 percent in the total merchandise exports from Kerala during 2018-19. In order to quantify the extent of concentration risk in Kerala's merchandise exports, product concentration index (PCI) is calculated. Product Concentration Index is used to measure the dispersion of trade value across an exporter's products. This index indicates if a large share of the states' exports is accounted for by a small number of items or, on the contrary, if its exports are well distributed among many products. It is also an indicator of an exporter's vulnerability to trade shocks in the sense that a high degree of product concentration indicates higher volatility in export revenues and constraints for economic growth. Therefore, it can be used as a warning sign of low export diversification, and associated economic vulnerabilities.

Methodology

According to the UNCTAD, the PCI can be defined as a normalized Herfindahl-Hirschmann index of the product concentration of merchandise exports at the country level. In this analysis, it is calculated at the state-level as per the following formula,

$$H_j = \frac{\sqrt{\sum_{i=1}^{N}\left(\frac{X_{i,j}}{X_j}\right)^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

Wherein, H_j is the product concentration index of merchandise exports for state j;
$X_{i,j}$ is the value of exports of product i by state j;
X_j is the total value of merchandise exports of state j;
and N is the number of products exported by the state at the HS code 6-digit level.

This index ranges from zero to one, with a larger value denoting a higher concentration of exported products; a value of Hj equal to one indicates that all exports of state j come from a single item, while a value of zero means that the state's exports are homogeneously distributed among all products.

According to Exim Bank analysis, Kerala's product concentration index stood at 0.407, which is among the highest in India, especially when compared to its neighboring coastal states of comparable economic sizes, such as Tamil Nadu and Karnataka, whose PCI values are among the lowest in the country, at 0.085 and 0.112, respectively. Other coastal states of comparable economic sizes such as Andhra Pradesh, Gujarat and Maharashtra also have much less product concentration in exports, when compared to Kerala (Table 15). A high degree of product concentration in Kerala's exports, therefore, highlights the need for product diversification in exports, in order to avoid volatility in export revenues and the resultant economic vulnerabilities.

Table 15: State-Wise Export Product Concentration Index (2017-18)

State/ UT	Product Concentration Index	Rank
Meghalaya	0.541	1
Assam	0.538	2
Kerala	**0.407**	**3**
Manipur	0.399	4
Bihar	0.396	5
Chhattisgarh	0.342	6
Mizoram	0.327	7
Nagaland	0.325	8
Maharashtra	0.323	9
Uttaranchal	0.302	10
Odisha	0.280	11
Goa	0.268	12
Sikkim	0.249	13
Himachal Pradesh	0.235	14
Tripura	0.231	15
Andhra Pradesh	0.217	16
Gujarat	0.216	17
Haryana	0.197	18
Punjab	0.187	19
Arunachal Pradesh	0.186	20
Jharkhand	0.177	21
Uttar Pradesh	0.163	22
Jammu and Kashmir	0.163	23
Madhya Pradesh	0.124	24
West Bengal	0.122	25
Telangana	0.121	26
Karnataka	0.113	27
Rajasthan	0.110	28
Tamil Nadu	0.086	29

Note: Jammu and Kashmir Includes Ladakh
Source: DGCIS; Exim Bank Research

Key Export Destinations

UAE is the largest export destination for Kerala, accounting for a share of nearly 63 percent in Kerala's merchandise exports during 2018-19, followed by the USA (share of 7.3 percent), China (2.8 percent), Japan (2.6 percent) and Vietnam (2.1 percent) (Table16).

Table 16: Top 10 Destinations for Merchandise Exports from Kerala (2018-19)

Country	Value of Exports (US$ Million)	Share in Total Exports from Kerala (%)
UAE	6188.98	62.93
The USA	720.91	7.33
China	273.21	2.78
Japan	257.72	2.62
Vietnam	205.93	2.09
Saudi Arabia	146.71	1.49
Spain	127.59	1.30
The UK	115.23	1.17
Italy	111.82	1.14
Germany	103.29	1.05
Total Exports	**9834.25**	**100.0**

Source: DGCIS, Exim Bank Research

An analysis of top 5 items exported to the top 10 export destinations for Kerala, highlights predominance of pearls and precious stones in the Kerala's exports to UAE (Table 17). Similar pattern is observed in the other export destinations as well, wherein a sizeable share of products in Kerala's export to these countries is concentrated in the top two items exported to these destinations. This further highlights the need for product diversification in exports.

Table 17 : Percentage Share of Top 5 Items in Exports to Top 10 Export Destinations for Kerala (2018-19)

Country	Commodity	% Share of Products in Kerala's Exports to the Country
UAE	Pearls and Precious Stones	94.5
	Edible Fruit & Nuts	1.34
	Mineral Fuels and Oils	0.91
	Coffee, Tea, Mate & Spices	0.48
	Rubber and its Articles	0.30
The USA	Articles of Apparel and Clothing	12.1
	Carpets and other Textile Floor Coverings	12.0
	Coffee, Tea, Mate & Spices	11.8
	Essential Oils and Cosmetic	10.2
	Fish and Molluscs	9.3
China	Mineral Fuels and Oils	61.7
	Fish and Molluscs	23.9
	Essential Oils and Cosmetic	2.5
	Electrical Machinery & Equipment	2.0
	Miscellaneous Chemical Products	1.8
Japan	Mineral Fuels and Oils	42.6
	Fish and Molluscs	20.6

	Edible Fruit & Nuts	14.3
	Ores, Slag and Ash	7.0
	Essential Oils and Cosmetic	3.5
Vietnam	Fish and Molluscs	83.6
	Edible Fruit & Nuts	6.2
	Beverages, Spirits and Vinegar	2.8
	Electrical Machinery & Equipment	1.6
	Residues and Waste from Food Industries	1.4
Saudi Arabia	Edible Fruit & Nuts	29.0
	Coffee, Tea, Mate & Spices	15.6
	Mineral Fuels and Oils	13.4
	Miscellaneous Chemical Products	5.7
	Rubber and its Articles	4.0
Spain	Fish and Molluscs	67.3
	Edible Fruit & Nuts	16.0
	Carpets and other Textile Floor Coverings	3.4
	Coffee, Tea, Mate & Spices	3.0
	Ceramic Products	2.4
The UK	Coffee, Tea, Mate & Spices	18.0
	Fish and Molluscs	14.9
	Carpets and other Textile Floor Coverings	14.3
	Essential Oils and Cosmetic	12.5
	Rubber and its Articles	8.7
Italy	Fish and Molluscs	47.5
	Coffee, Tea, Mate & Spices	27.5
	Carpets and other Textile Floor Coverings	5.7
	Inorganic Chemicals	3.3
	Articles of Iron & Steel	2.6
Germany	Coffee, Tea, Mate & Spices	18.0
	Essential Oils and Cosmetic	15.4
	Electrical Machinery & Equipment	7.5
	Pharmaceutical Products	7.4
	Articles of Apparel and Clothing	7.3

Source: DGCIS, Exim Bank Research

Market Concentration Index

Analysis indicates that the top 10 export destinations for the state accounted for nearly 84 percent of the total merchandise exports from the state in 2018-19. The Market Concentration Index (MCI) can provide insights about the extent of market concentration risk in Kerala's exports. The MCI basically measures the dispersion of trade value across an exporter's partners. This index measures the degree of export market concentration by indicating if a large share of exports is accounted for by a small number of countries, or on the contrary, exports are well distributed among the export destinations

of the state. It is an indicator of an exporter's dependency on its trading partners, as well as the danger of potential trade barriers in these countries.

Methodology

The MCI can be defined as a normalized Herfindahl-Hirschmann index of the market concentration of exports at the state-level. It is calculated as per the following formula:

$$H_j = \frac{\sqrt{\sum_{i=1}^{N}\left(\frac{X_{i,j}}{X_j}\right)^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

Where, H_j is the market concentration index of merchandise exports from state j;
$X_{i,j}$ is the value of merchandise exports to country i by state j;
X_j is the total value of merchandise exports from state j;
and N is the total number of destinations for merchandise exports from the state

This index ranges from zero to one, with a larger value denoting a higher concentration in the export markets; a value of Hj equal to one indicates a single country is the market for all merchandise exports by state j, while a value of zero means that the state's exports are homogeneously distributed among all countries in the world.

According to Exim Bank analysis, Kerala's market concentration index was valued at 0.41, which is higher when compared to other neighboring coastal states such as Tamil Nadu and Karnataka, whose MCI values are much lower than that of Kerala, at 0.16 and 0.18, respectively. Other coastal states such as Andhra Pradesh, Gujarat and Maharashtra also have much less market concentration in exports, when compared to Kerala (Table 18). Clearly, there is a need to diversify the markets for Kerala's exports, in order to avoid exposure to external shocks to exports emerging from sudden economic downturns in the export markets.

Table 18: State-wise Export Market Concentration Index (2017-18)

State/UT	Market Concentration Index	Rank
Meghalaya	0.90	1
Bihar	0.76	2
Sikkim	0.71	3
Mizoram	0.50	4
Nagaland	0.46	5
Manipur	0.42	6
Kerala	**0.41**	**7**
Goa	0.31	8
Andhra Pradesh	0.27	9

Assam	0.24	10
Telangana	0.23	11
Maharashtra	0.22	12
Jharkhand	0.22	13
Tripura	0.21	14
Uttar Pradesh	0.20	15
Haryana	0.20	16
Rajasthan	0.20	17
West Bengal	0.18	18
Karnataka	0.18	19
Himachal Pradesh	0.18	20
Madhya Pradesh	0.18	21
Odisha	0.18	22
Uttaranchal	0.17	23
Tamil Nadu	0.16	24
Arunachal Pradesh	0.16	25
Chhattisgarh	0.15	26
Gujarat	0.15	27
Punjab	0.15	28
Jammu and Kashmir	0.14	29

Note: Jammu and Kashmir includes Ladakh
Source: DGCIS; Exim Bank Research

Port-wise Exports from Kerala

Kerala has 17 ports including 1 major port (Cochin Port), 3 intermediate ports (Beypore, Alappuzha and Neendkara) and 13 minor ports (Kovalam- Vizhinjam, Valiyathura, Thankasseri, Kayamkulam, Munambam/ Kodungalloor, Ponnani, Vadakara, Thalasseri, Kannur, Azhikal, Neeleswaram, Kasaragod and Manjeswaram).

Table 19: Port-wise Merchandise Exports from Kerala (2018-19)

Port	% Share in Total Merchandise Exports from Kerala
SEZ Cochin	61.73
Cochin Sea	31.30
Cochin Airport	4.09
Tuticorin Sea	0.74
Nhava Sheva Sea	0.27
Cochin Port Trust SEZ Puthuvyp	0.25
Trivandrum Airport	0.18
New Mangalore Sea	0.17
Acc Calicut, Karipur	0.15
ICD Tuticorin	0.13
Others	0.99

Source: DGCIS; Exim Bank Research

Majority of the exports from the state are carried through the ports in Cochin (including SEZ Cochin, Cochin Sea and Cochin Airport), which account for nearly 97 percent of Kerala's total merchandise exports. The UAE, the USA, Spain, the UK and Sri Lanka were the top five destinations for merchandise exports from the SEZ Cochin port. Cashew, ayush and herbal products, rice (other than basmati) and fresh fruits were the major commodities exported from the port.

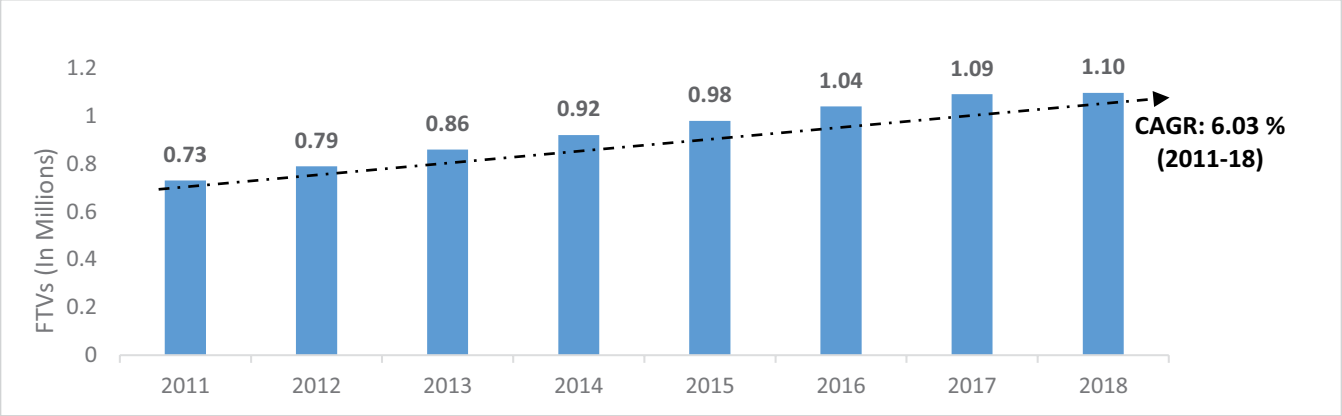
SERVICES EXPORT FROM KERALA

Tourism, IT and ITeS and healthcare services sector are among the major services exports from the state. Both these sectors together generated more than ₹ 15,000 crores (nearly US$ 2.2 billion) in export revenues during 2018-19.

Tourism

Kerala, with its substantial natural heritage in the form of long shoreline, hill ranges with rich biodiversity and wildlife, rivers, back waters, lagoons and equitable climate is a major attraction for foreign tourists. The state's ancient and rich culture which includes various traditional dance forms and alternative systems of medicine further add to its allure.

Exhibit 3: Trends in Foreign Tourist Visits (FTVs) in Kerala



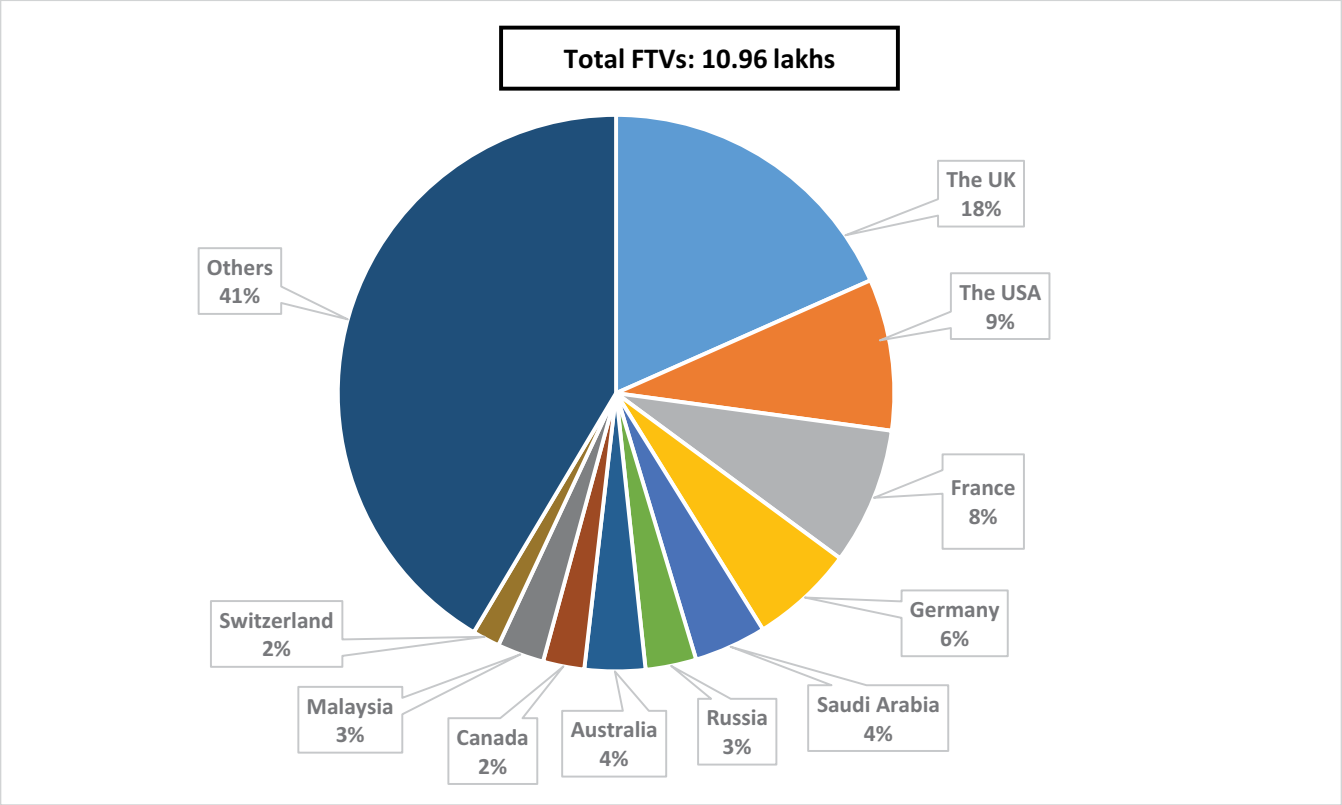
Source: Department of Tourism, Government of Kerala; Exim Bank Research

FTVs in Kerala stood at more than 10.96 lakhs in 2018, registering a CAGR of 6.03 percent during 2011 to 2018 (Exhibit 3). The UK was the largest source of FTVs in the state, accounting for more than 18.36 percent of the total FTVs in the state, followed by the USA (8.80 percent), France (7.95 percent), Germany (6.04 percent) and Saudi Arabia (4.20 percent) (Exhibit 4). The top 5 countries accounted for more than 45 percent of the FTVs in the state.

The Government of Kerala devised the State Tourism Policy in 2012, to promote private investment, draw foreign visitors, provide unique tourist infrastructure and safeguard the interest of host communities as well as visitors. An important initiative by the state government to promote startups in the sector is the 'Small and Medium Industries Leveraging Experiential Tourism (SMiLE)' project. The project runs under the aegis of Bekal Resorts Development Corporation (BRDC) to promote and facilitate tourism- based small and medium entrepreneurial ventures. The project successfully

promoted 93 startups, developed 50 units with accommodation for 400 tourists/day resulting in 59 percent increase in foreign tourist arrivals. The state also has a total of 4 tourist circuits under the aegis of Swadesh Darshan Scheme, out of which two are dedicated as spiritual circuits, and the rest two are dedicated as eco circuit and rural circuit.

Exhibit 4: Major Source Countries for Kerala's FTVs in 2018 (Share in Percent)



Source: Department of Tourism, Government of Kerala; Exim Bank Research

District-wise analysis of FTVs indicates that Kasaragod district recorded the highest growth in FTVs of 269.69 percent in 2018. However, in terms of number of FTVs, Ernakulam topped the list with 4,88,175 tourist visits in 2018, accounting for more than 44 percent of the total FTVs in the state, followed by Thiruvananthapuram (31.26 percent) and Alappuzha (8.71 percent) (Table 20). The top three districts accounted for more than 84 percent of the total FTVs in the state.

Table 20: District-wise Foreign Tourist Visits in Kerala

District	FTV 2017	FEE 2017 (₹ Crore)	FTV 2018	FEE 2018 (₹ Crore)	% Growth in FTVs (2018)	% Growth in FEE (2018)
Alappuzha	75037	576.73	95522	763.58	27.3	32.4
Ernakulam	453973	3489.24	488175	3902.37	7.54	11.84
Idukki	42285	325	44833	358.39	6.03	10.27
Kannur	5123	39.38	5763	46.07	12.5	16.99
Kasaragod	1115	8.57	4122	32.95	269.69	284.48
Kollam	6227	47.86	9086	72.63	45.92	51.76

Kottayam	32350	248.64	43287	346.03	33.81	39.17
Kozhikode	13106	100.73	18388	146.99	40.31	45.92
Malappuram	18451	141.81	17610	140.77	-4.56	-0.73
Palakkad	1711	13.15	1967	15.72	14.97	19.54
Pathanamthitta	2003	15.4	1953	15.61	-2.5	1.36
Thiruvananthapuram	420719	3233.65	342761	2739.97	-18.53	-15.27
Thrissur	10775	82.82	11333	90.59	5.18	9.38
Wayanad	8995	69.14	11607	92.79	29.04	34.21
Total	**1091870**	**8392.12**	**1096407**	**8764.46**	**0.42**	**4.44**

Source: Kerala Tourism Statistics 2018, Exim Bank Research

During 2018, the foreign exchange earnings (FEE) from tourism in Kerala registered a y-o-y growth of 4.4 percent, increasing from ₹ 8.4 thousand crore in 2017 to ₹ 8.8 thousand crores in 2018. Comparison of growth trends in FEE and merchandise exports during 2013 to 2018 indicates that the growth in FEE has moderated, while the growth in merchandise exports has been increasing steadily (Table 21). There is clearly a need to identify new growth shoots to propel the growth in foreign exchange earnings from the tourism sector in the state.

Table 21: Comparison of Tourism Foreign Exchange Earnings (FEE) of Kerala with Merchandise Exports of Kerala (2013-2018)

Year	FEE from Tourism (₹'000 Crore)	% Growth Rate	Merchandise Exports (₹'000 Crore)	% Growth Rate
2013	5.56	21.63	33.14	-34.12
2014	6.40	15.07	25.28	-23.72
2015	6.95	8.61	25.28	-0.02
2016	7.75	11.51	35.34	39.82
2017	8.39	8.29	40.16	13.62
2018	8.76	4.44	65.39	62.82

Source: DGCIS, Department of Tourism- Kerala, Exim Bank Research

Healthcare Services

Kerala is among the frontrunners in the country in terms of its healthcare services. The state is a leading performer in Niti Aayog's Health Index for two consecutive years. The Health Index ranks states and UTs based on the 23 health-related indicators which include neonatal mortality rate; under-five mortality rate; proportion of low birth weight among newborns; progress in treating tuberculosis and HIV; full immunization coverage; improvements to administrative capability and public health infrastructure; proportion of districts with functional Cardiac Care Units; and proportion of specialist positions vacant at district hospitals, among others.

The state has a total of 1470 hospitals[12] , including 3 Joint Commission International (JCI)[13] accredited hospitals and 43 National Accreditation Board for Hospitals & Healthcare Providers (NABH) accredited

[12] Economic Review of Kerala, 2019
[13] JCI is the world's leading health care accreditation, and evaluates hospitals on most rigorous international standards in quality and patient safety.

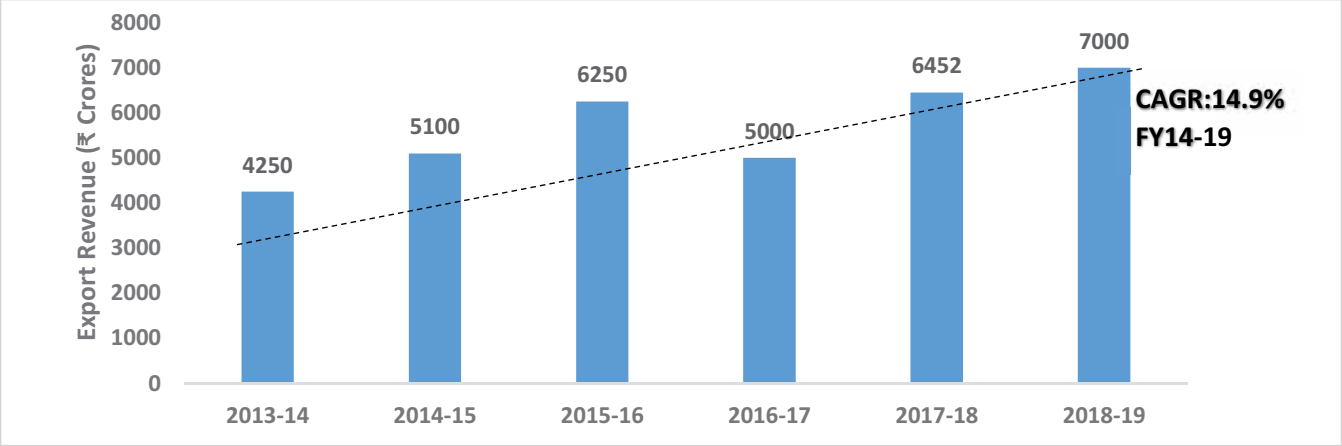
hospitals, 18 general hospitals, 15 medical college hospitals and 18 district hospitals, among others. Traditional systems of medicine like Ayurveda and Siddha are also widely popular in the state. As of 2018-19, Kerala has a total of 130 Ayurveda hospitals and 947 Ayurveda institutions, with nearly 1166 doctors providing these services. Kerala's increasing focus on improving Ayurveda facilities has led to increasing number of health tourists[14] into the state. Kottakkal, in Kozhikode district, is particularly known among tourists for its Ayurvedic treatments.

IT and ITeS

IT and ITeS sector has turned out to be the cornerstone of services exports from India. India is recognized as one of the global leaders in software technologies and Indian companies have won world-wide recognition in terms of their technical competence, domain knowledge, experience and expertise for offering quality IT services across various platforms and systems.

The growth of IT sector in Kerala is primarily driven by the development of Technopark, Infopark and Cyberpark in the state. Export earnings from the IT and ITeS sector of Kerala registered a CAGR of nearly 14.9 percent during the period 2013-14 to 2018-19 (Exhibit 5), increasing from ₹ 4,250 crores in 2013-14 to ₹ 7,000 crores in 2018-19.

Exhibit 5: Trends in IT and ITeS Exports from Kerala



Source: Economic Review of Kerala 2019

EXPORT TARGET

The Indian economy has been on a positive growth trajectory, with a distinct possibility of reaching US$ 5 trillion in GDP by 2024-25, owing to its numerous policy initiatives to propel the growth and restrain the effects of external shocks. It is further expected that exports will reach a level of US$ 1 trillion by 2024-25.

The vision of the exports strategy of Kerala should be to bolster growth in exports in order to meet the national target of US$ 1 trillion of exports by 2024-25. An essential first step towards servicing this vision would be setting an exports target for the state.

[14] Official figures on the number of health tourists in the State are unavailable.

Presently, the share of Kerala's merchandise exports in its GSDP is nearly 12 percent, and that in India's overall merchandise exports is nearly 2.9 percent, which is much below the share recorded by other coastal states in the country. According to Exim Bank research, the state has an untapped merchandise export potential of nearly US$ 6.7 billion. Realizing this potential could increase merchandise exports from the state to nearly US$ 16.5 billion. Through an appropriate medium to long term export strategy, there is potential for propelling the state on an even higher export growth trajectory.

The motive of the state's export strategy should be to increase the share of exports (both merchandise and services combined) in the GSDP up from the current level of nearly 14.5 percent, to at least match the current national average of 19 percent, and further strive towards reaching a higher level of 25 percent, in line with the national target for 2024-25. Further, the export strategy should also attempt to achieve a greater share of services in the exports from the state, because of the substantial potential for growth across several services categories.

Optimistic Scenario

Exim Bank's research indicates that the GDP for India could reach ₹ 325.8 trillion by 2024-25 under an optimistic scenario. Growth under this optimistic scenario would be driven by both exports, as well as domestic demand in the country. As exports will be a critical factor for this high rate of economic growth, exports are expected to account for a higher share in India's GDP, of nearly 25 percent, up from the current levels of nearly 19 percent.

Under this optimistic scenario, Kerala should aim to achieve a GSDP growth that exceeds the current levels, and helps the state secure a higher share of 4.5 percent in India's overall GDP. The GSDP of Kerala in such an optimistic scenario could be around ₹ 14.7 trillion during 2024-25. Assuming that Kerala achieves exports to GSDP ratio at par with the projected level for India (which is at 25.0 percent), through a multi-faceted exports strategy, the exports from the state could reach nearly ₹ 3.67 trillion by 2024-25. Assuming that the share of services in Kerala's overall exports will also witness an increase during this period, merchandise exports is expected to reach a level of ₹ 2.75 trillion and services exports is expected to reach ₹ 0.92 trillion. If Kerala achieves this level of exports, its share in India's exports would see an improvement, from the current level of approximately 2.2 percent to nearly 4.5 percent.

Baseline Scenario

In a baseline scenario, as per Exim Bank's estimates, India's GDP is expected to reach a level of ₹ 280.5 trillion by 2024-25, with the share of exports in GDP remaining constant at 19 percent. Growth in this baseline scenario will largely be driven by the domestic demand. In the recent past, the GSDP growth of Kerala has outpaced the GDP growth for India. In this baseline scenario, it is assumed that the trend is expected to continue, and Kerala is expected to account for a higher share of 4.2 percent in India's GDP, taking the value of GSDP of Kerala to ₹ 11.8 trillion. With a well-crafted export strategy, the share of exports to GSDP in Kerala could be pushed to 19 percent of the GSDP, in line with the prevailing 19 percent share of exports in national GDP. In this baseline scenario, the state's exports would be around ₹ 2.24 trillion by 2024-25, with merchandise exports amounting to ₹ 1.75 trillion.

In the baseline scenario, Kerala's exports are expected to have a share of nearly 4.2 percent in India's overall exports.

Pessimistic Scenario

If the recovery in global trade falters or global trade uncertainties intensify, share of exports in GDP is expected to decline. Under this pessimistic scenario, as per Exim Bank's estimates, India's GDP would reach ₹ 235.2 trillion, and the share of exports in GDP is expected to witness a marginal fall (from the present level) to 18 percent.

In such a pessimistic scenario, Kerala's GSDP is expected to maintain its current share in national GDP of nearly 4 percent, reaching a level of ₹ 9.4 trillion by 2024-25. Exports are expected to grow at a faster than current pace at the back of the export strategy and the exports share in Kerala's GSDP is expected to increase to 18 percent by 2024-25. In such a scenario, total exports would reach ₹ 1.69 trillion by 2024-25, with merchandise exports amounting to nearly ₹ 1.35 trillion.

Table 22: Export Targets for Kerala under Alternative Scenarios (2024-25)

	Pessimistic Scenario	Baseline Scenario	Optimistic Scenario
GDP India (₹ Trillion)	235.2	280.5	325.8
Share of Exports (Merchandise & Services) in GDP (India)	18.0%	19.0%	25.0%
Share of Kerala in India's GSDP	4.0%	4.2%	4.5%
GSDP Kerala (₹ Trillion)	9.4	11.8	14.7
Exports (Merchandise & Services) from Kerala (₹ Trillion)	1.69	2.24	3.67
Merchandise Exports (₹ Trillion)	1.35	1.75	2.75
Services Exports (₹ Trillion)	0.34	0.49	0.92
Share of Kerala in India's Exports	**4.0%**	**4.2%**	**4.5%**

Source: Estimated by Exim bank, using secondary data from CMIE, MOSPI and using for analysis R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org

Therefore, based on Exim Bank estimates, the target for exports from the state should be set to ₹ 3.67 trillion (US$ 54.7 billion) by 2024-25, with the target for merchandise exports at nearly ₹ 2.75 trillion (US$ 40.98 billion) and for services at ₹ 0.92 trillion (US$ 13.7 billion[15]).

KEY PRODUCTS FOR MERCHANDISE EXPORTS

During 2018, Kerala exported 2587 products at HS 6-digit level. Among these products, the export strategy of the state should focus on those items which have the maximum potential for growth, taking into consideration both supply and demand side aspects. The present section undertakes a granular analysis of the products where the state has comparative advantage, and matches it with the global import demand for these products. Quantification of comparative advantage will help in

[15] Average exchange rate for 2018-19 is considered; 1 US$ = 67.1 INR

identification of products where exports from the state have been performing well, as also those where success has been limited, although opportunities are significant.

The first set of products, where the state has competitive advantage and global import demand is increasing, could be targeted for achieving export growth in short to medium term. In products where the state does not have a competitive advantage, but the global import demand has been robust, the state could provide incentives for enabling growth in the medium to long term.

Methodology

For analysing the export competitiveness, the concept of Revealed Comparative Advantage (RCA) is used. RCA Indices are used to identify categories of exports in which an economy has a comparative advantage by way of comparison of the country's trade scenario with the world trade scenario. The basic assumption underlying the concept of revealed comparative advantage is that trade profile reflects the inter-country differences in terms of relative costs as well as non-price aspects. As per Balassa's (1965) measure, index for country i, commodity j is-

$$RCA_{ij} = \frac{(X_{ji}/X_i)}{(X_{wj}/X_w)}$$

Where,
X_{ji}: exports of commodity j from country i
X_i: total exports from country i
X_{wj}: total exports of commodity j from world
X_w: total exports from world

The RCA index ranges from 0 to infinity, with 1 as the break-even point. That is, an RCA value of less than 1 means that the product has no export comparative advantage, while a value above 1 indicates that the product has a comparative advantage.

The normalized revealed comparative advantage (NRCA) index has been demonstrated capable of revealing the extent of comparative advantage more precisely and consistently than other alternative RCA indices in the literature. NRCA can be defined in the following manner-

$$NRCA_{ij} = \frac{RCA_{ij} - 1}{RCA_{ij} + 1}$$

The export competitiveness of Kerala, as reflected in the NRCA, has been mapped with global demand for the products. Based on this mapping, four categories of products have been identified:

- **Product Champions – Competitive Exports (NRCA > 0); Growing Import Demand (Product Import AAGR > 0):** These products have the maximum potential, as the world demand for these products during 2013 to 2018 has shown robust growth, and Kerala's exports of these products are competitive.

- **Underachievers – Exports not competitive (NRCA < 0); Growing Import Demand (Product**

Import AAGR > 0): Kerala does not have comparative advantage in these products, while the import demand for these products has shown positive growth over the period under consideration. The state can strive towards increasing competitiveness in these products.

- **Declining Sectors – Exports not competitive (NRCA < 0); Weak Import Demand (Product Import AAGR < 0):** Kerala does not have comparative advantage in these products, and the sector has also registered negative global import growth during the period under consideration.

- **Achievers in Adversity – Competitive Exports (NRCA > 0); Weak Import Demand (Product Import AAGR < 0):** Kerala has competitiveness in these products, but the world import demand for these products has been negative.

In the short to medium term, the state can focus on leveraging the opportunities arising in the Product Champions segment, as these are low hanging fruits. In the medium to long term, the state needs to encourage development of capacities in the Underachievers segment.

Identified Products

For the purpose of analysis, those products which contribute to at least 0.1 percent of the merchandise exports from Kerala have been considered. This filtration is essential to ensure that the identified products have a certain minimum supply base in the state.

A total of 66 products at HS-6-digit level have a minimum share of 0.1 percent in Kerala's merchandise exports. Of these, a total of 49 products have been classified as Product Champions, as exports of these products from Kerala are competitive and the import demand for these products is growing. The combined exports of Product Champions from Kerala stood at US$ 7.8 billion in 2018, accounting for more than 81.6 percent of the total merchandise exports from the state. World imports of these product champions amounted to US$ 331.4 billion in 2018, implying that there remains substantial scope for tapping the international market for these products (Exhibit 6).

There are only two products in the Underachievers category. Exports of these products from the state amounted to US$ 37.8 million in 2018, accounting for a meagre share of 0.39 percent in the state's exports. These are products that have a growing demand in the international market, but exports from Kerala are currently not competitive. Global import of these two products stood at nearly US$ 116 billion, presenting significant opportunities for exporters. There is a need for capacity creation in these product categories, through an appropriate incentive framework for attracting investments in the state. Focus on these products will provide much needed resilience to exports from the state, in the face of declining global trade and international commodity price volatilities.

Exhibit 6: Product Identification for Exports from Kerala (2018)

Product Champions (49 Products) Kerala's Export= US$ 7840.16 million 81.6 % share in Kerala's Exports World Imports= US$ 331.4 billion 1.6 % of World Imports	**Achievers in Adversity (14 products)** Kerala's Export= US$ 928.77 million 9.68 % share in Kerala's Exports World Imports= US$ 550.2 billion 2.7 % of World Imports
Total Products: 66	
Underachievers (2 products) Kerala's Export= US$ 37.82 million 0.39 % share in Kerala's Exports World Imports= US$ 116 billion 0.59 % of World Imports	**Declining Sectors (1 product)** Kerala's Export= US$ 19.86 million 0.20 % share in Kerala's Exports World Imports= US$ 144.9 billion 0.73 % of World Imports

Source: DGCIS, ITC TradeMap, Exim Bank Research

The state also has a high value of exports in the category of 'Achievers in Adversity', which are products where the state has competitive advantage but the global demand in these products has declined in the recent period, adding vulnerabilities to the export basket of Kerala. The state needs to diversify away from this segment of products, and move towards the Product Champions and the Underachievers segment.

Under the 'Declining Sectors', there is only one product- liquefied natural gas. The export of liquefied natural gas from Kerala stood at US$ 19.86 million in 2018, a share of 0.20 percent in the total merchandise exports from the state. Since the global import demand for the product has been declining in the period under consideration, Kerala could diversify away from exports of the product.

Key Focus Sectors

The identified product champions can be categorized under 21 major product groups viz. precious stones and metals, marine products, edible fruits and nuts, essential oils, tea and spices, carpets and other textile floor coverings, electrical machinery and equipment, chemical products and ores, marine preparations, rubber articles, rice, ceramics, edible food preparations, vegetables, preparations from fruits and nuts, gums and resins, textile fibres, cashew, coconut and coconut products, pharmaceuticals and wood and wooden articles.

Nearly 7 out of the 49 products in the product champions are marine products. However, the maximum value of exports from the state is in the category of precious stones and metals (Table 23).

Table 23: Sector-wise Product Champions for Kerala

Product Champions	Number of Products at 6-digit HS code	Value of Exports in 2018 (US$ Million)
Precious Stones and Metals	1	5584.69
Marine Products	7	768.49
Fruits and nuts	2	331.67
Essential Oils	3	247.36
Tea and Spices	5	197.95
Carpet and other textile floor coverings	3	124.10
Electrical machinery and equipment	4	92.20
Chemical products and Ores	4	78.31
Marine preparations	3	75.49
Rubber Articles	2	69.22
Rice	1	42.52
Ceramics	1	32.92
Edible Food Preparations	2	30.75
Vegetables	1	28.49
Preparations from Fruits and nuts	1	28.40
Gums and Resins	2	22.68
Textile and Fibres	2	19.02
Cashews	1	14.62
Coconut and coconut products	2	29.95
Pharmaceutical products	1	11.06
Wood and wooden articles	1	10.26
Total	**49**	**7840.16**

Source: ITC Trademap, Exim Bank Research

An assessment of the export destinations for Kerala vis-à-vis top importers of the Product Champion sectors indicates that currently Kerala does not export to some of the top global importers in the product champions categories of pearls and precious stones; cereals (rice); ores, slag and ash; gums and resins; vegetable fibres; pharmaceutical products; and animal or vegetable fats or oils. Further, in cases where Kerala does export to some of the top global importers, the value of exports is relatively small and these markets do not feature among the top export destinations for Kerala, thereby implying a significant untapped market for its exports of these products in the international market (Table 24).

Table 24: Export Destinations from Kerala vis-à-vis Top Importers in the World of Product Champions

Product Champions	Export Destinations for Kerala	% Share of Export Destinations in Kerala's Export of the Product	Top Importer in the World of the Product	% Share of Importing Country in World Imports of the Product
Pearls, Precious or Semi-Precious Stones/ Metals and Article	UAE	94.8	Switzerland	13.6
	The UK	4.2	*Hong Kong*	10.3
	Switzerland	0.7	India	10.3
	Qatar	0.1	***China***	9.8
	France	0.04	The USA	9.6
Fish and Crustaceans, Molluscs And Other Aquatic Invertebra	Vietnam	24.5	The USA	14.9
	Spain	10.7	*Japan*	9.6
	Thailand	9.2	*China*	9.4
	The USA	8.8	Spain	5.9
	Italy	6.7	*France*	4.5
Edible Fruit & Nuts; Peel of Citrus Fruit or Melons	UAE	23.4	The USA	14.1
	Saudi Arabia	10.8	*Germany*	8.9
	Japan	9.3	*China*	6.5
	The USA	8.5	*The Netherlands*	5.4
	Spain	5.6	*The UK*	4.8
Coffee, Tea, Mate & Spices	The USA	20.7	The USA	16.1
	UAE	7.4	*Germany*	9
	Saudi Arabia	7.3	*France*	7
	Italy	6.5	Italy	3.9
	The UK	5.3	The UK	3.6
Essential Oils Resinoids; Cosmetic and Other Similar Preparations	The USA	28.7	The USA	10.4
	France	6.4	*China*	8.6
	Germany	6.2	Germany	6
	The UK	5.6	The UK	4.7
	The Netherlands	3.7	*Hong Kong*	4.7
Carpets and other Textile Floor Coverings	The USA	50.7	The USA	21.6
	The UK	9.7	Germany	8.4
	Australia	4.4	The UK	7.8
	Germany	4.3	*Canada*	5.1
	Italy	3.5	*Japan*	4.2
Electrical Machinery & Equipment & Parts	The USA	33.0	*China*	17.5
	Hong Kong	12.5	The USA	12.3
	The Netherlands	10.1	Hong Kong	11
	Germany	4.5	Germany	5.4
	The UK	4.2	*Singapore*	3.4
Preparations of Meat of Fish or of Crustaceans, Molluscs	The USA	70.6	*Japan*	13.4

	Canada	6.5	The USA	12.2
	France	5.1	The UK	9.6
	Netherland	3.7	*Germany*	7.2
	Belgium	3.3	France	4.9
Rubber and Articles Thereof	The USA	11.6	The USA	14.9
	UAE	10.1	*Germany*	8.4
	The Netherlands	6.0	*China*	8.4
	The UK	5.5	*France*	3.8
	Iran	3.8	*Mexico*	3.5
Edible Vegetables and Certain Roots and Tubers	UAE	25.7	*The USA*	15.3
	Maldives	17.8	*Germany*	10.1
	Qatar	12.5	*The UK*	6.1
	Kuwait	10.2	*France*	4.9
	Saudi Arabia	7.9	*Canada*	4.4
Cereals	UAE	35.4	***Japan***	5.1
	Qatar	11.2	*China*	4.9
	Saudi Arabia	10.8	***Mexico***	4.2
	Oman	10.6	***Egypt***	3.8
	Kuwait	9.4	***Iran***	3.7
Preparations of Vegetables, Fruits, Nuts	The USA	53.5	The USA	14.6
	UAE	15.0	Germany	9.2
	Saudi Arabia	5.0	France	7.2
	Malaysia	4.9	The UK	6.1
	The UK	4.2	*Japan*	5.6
Miscellaneous Edible Preparations	The USA	48.7	*The USA*	10.2
	UAE	10.7	*The UK*	5.3
	The UK	4.3	*Germany*	5.2
	Italy	3.7	*China*	4.2
	Saudi Arabia	2.7	*France*	3.7
Ores, Slag and Ash	Japan	68.7	China	54.6
	Malaysia	19.8	Japan	9
	China	6.8	***South Korea***	6
	Belgium	4.1	***Germany***	3.7
	Ukraine	0.2	***Spain***	2.5
Miscellaneous Chemical Products	Saudi Arabia	16.2	China	8.2
	Germany	12.2	Germany	7.6
	Iran	10.9	*The USA*	7
	China	7.2	*France*	4.3
	Russia	5.8	*The Netherlands*	4.1
Inorganic Chemicals	The USA	17.6	The USA	9.5
	South Korea	16.4	*China*	7.7
	Italy	10.8	South Korea	6.6
	Poland	7.8	*Japan*	6.1
	Spain	4.7	Germany	5.8

Lac; Gums, Resins & Other Vegetables Saps & Extracts	The USA	60.3	The USA	20.8
	Australia	8.4	Germany	8.4
	Germany	5.1	France	5.2
	France	4.3	Japan	4.9
	The Netherlands	2.8	***China***	3.9
Other Vegetable Textile Fibers; Paper Yarn and Fabrics	Sri Lanka	22.3	*China*	18.4
	The USA	16.6	***Afghanistan***	13.5
	Bangladesh	10.6	India	6.6
	Russia	5.7	*Turkey*	5.3
	Australia	4.7	The USA	4.9
Other Made Up Textile Articles; Sets; Worn Textile Articles	The USA	35.4	The USA	26.8
	Japan	20.2	Germany	7.7
	UAE	13.0	Japan	6.1
	China	5.8	*France*	4.5
	Germany	3.6	The UK	4.1
Ceramic Products	The USA	10.7	The USA	14.4
	Turkey	9.0	Germany	6.8
	The UK	8.7	France	4.4
	Germany	8.5	The UK	3.6
	France	8.3	*South Korea*	3.4
Pharmaceutical Products	Germany	24.8	The USA	18.6
	The USA	15.5	Germany	9.3
	UAE	7.7	***Belgium***	6.5
	Rwanda	7.4	*The UK*	4.9
	Tanzania	5.7	*Switzerland*	4.8
Wood & Articles of Woods	Saudi Arabia	13.3	China	16
	The USA	12.7	The USA	14.5
	China	12.4	*Japan*	7.2
	Turkey	12.3	*Germany*	6.2
	UAE	9.5	*The UK*	4.9
Animal or Vegetable Fats & Oils	UAE	34.6	India	10.4
	Saudi Arabia	13.1	*China*	8.8
	Vietnam	10.0	*The USA*	7.2
	Qatar	9.8	***The Netherlands***	5.8
	Oman	6.4	*Germany*	4.4

Note: In a particular export category, markets in bold are the ones where Kerala currently does not export; Markets in italics are those which do not feature among the top export destinations for Kerala; Data for exports from Kerala and global import is for 2018; Data for export destinations and top importing markets is taken at 2-digit HS Code of the Product Champion category; Miscellaneous chemical products, inorganic chemicals and ores, slags and ash are grouped as 'Chemicals and Ores', Animal or Vegetable Fats & Oils & Their Cleavage Products are grouped under 'Coconut and Coconut Products'

Source: DGCIS, ITC Trademap, Exim Bank Research

The analysis identifies medical appliances and instruments (HS Code: 901890) and turbo jets (HS Code: 841112) as Underachiever categories (Table 25). The USA was the largest export destination for exports of medical instruments and appliances from the state accounting for more than 14 percent of exports in the product category, followed by Belgium (6.5 percent), Malaysia (6.2 percent), Thailand and Peru (4.7 percent each). There is a scope for diversification to Germany, the Netherlands, China and Japan, which are top importers in the world for this category. The USA was the only export destination for turbo jets from Kerala. There is potential for diversification to the UK, Germany, Hong Kong and France as they are the top importers for turbo jets in the world.

Table 25: Sector-wise Underachievers in Kerala

Underachievers	Number of Products at 6- digit HS Code	Value of Exports in 2018 (US$ Million)
Instruments and medical appliances	1	26.80
Machinery, Mechanical appliances	1	11.01
Total	**2**	**37.82**

Source: ITC Trademap, Exim Bank Research

CONCLUSION

Merchandise exports from Kerala have witnessed an upsurge over the recent period, but remain concentrated in a few low value-added products. There is need to diversify exports to higher value-added segments, especially in the product champion and underachievers categories identified in the analysis. Analysis in this section further indicates that while services sector's contribution has significantly increased in the state's GSVA, there has not been a commensurate increase in the value of services exports. In fact, exports in services such as tourism has witnessed a moderation in growth. Clearly, there is a need to identify new growth shoots in the services sector. The destinations for exports from the state also remains fairly concentrated, necessitating a strategy for market diversification. The product and market diversification strategies, coupled with promotional measures, infrastructure strengthening, and institutional streamlining, can help the state achieve the exports target of US$ 54.7 billion by 2024-25.

CHAPTER

Strategies for Exports Promotion

Kerala has the potential and the resources to be a key contributor to India's exports sector. Developing a comprehensive export strategy for the state will be an important first step for unleashing the untapped potential of the state. This chapter analyzes some of the key challenges faced by exporters in Kerala and recommends actionable strategies to address these challenges.

CHALLENGES TO EXPORTS FROM KERALA

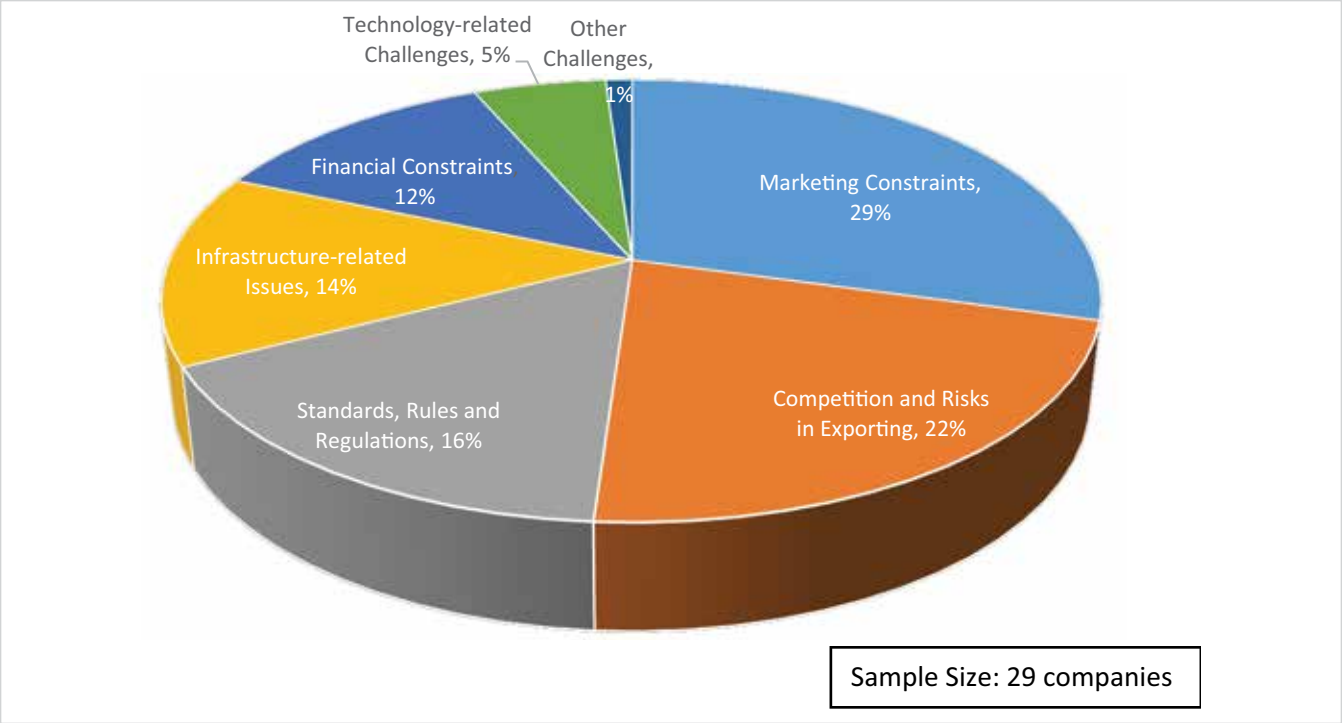
Analysis in the preceding chapters highlighted some of the important issues faced by exports from Kerala, including low agricultural productivity, concentration in export basket as well as export markets, a nascent industrial sector, and stagnating growth in foreign exchange earnings by key services verticals. Clearly, there is a need for across-the-board handholding across all sectors of the economy for imparting a renewed energy and momentum to exports from the state.

To supplement the analysis based on secondary sources, Exim Bank conducted a survey of major exporters in Kerala, comprising entrepreneurs and industrial units across sectors such as food and agro-based products, textiles and garments, pharmaceuticals, plastic and plastic products, rubber and rubber products, leather products, metals and metal products, machinery, automobile and ancillaries, shipbuilding, scientific and lab equipment, IT and ITeS, construction and related services, environmental services, health services and education services[16]. According to the survey responses, high competition, constraints in marketing, infrastructure-related challenges, complexities in standards, rules and regulations, technology gap, and financial constraints, emerged as the major challenges faced by the exporters in the state.

Nearly 29 percent of the respondents believe that marketing constraints (Exhibit 7) is a challenge, largely on account of lack of credible information about buyers, difficulty in finding buyers, cost of marketing and packaging for exports. The second major issue faced by the exporters in Kerala is competition and risk associated with exports to the overseas markets (reported by 22 percent of respondents). Another key issue is constraints pertaining to standards, rules and regulations, as respondents reported difficulties in adhering to quality standards, getting certifications for international market access. Companies also reported difficulties in adhering to domestic regulations for exports. Several other challenges such as infrastructure constraints, financial constraints and technology-related constraints have also been identified. Export strategy of the state should focus on alleviating these challenges reported by the companies in Kerala.

[16] A total of 29 responses were received, of which 86.2 percent were exporters.

Exhibit 7: Challenges faced by Companies in Exporting from Kerala



Source: Exim Bank Survey

STRATEGY FOR EXPORTS

In order to take a holistic view, strategy for promotion of exports from Kerala should entail strategizing across various levels with focus on alleviating the specific challenges faced by exporters in the state, as also improving the preparedness of the state in tapping new export opportunities. Broadly, these strategies could be built upon six essential dimensions viz. diversification to focus products and markets; infrastructure leverage and strengthening; capacity building; fiscal incentives; export promotion campaigns; and institutional streamlining (Exhibit 8).

Exhibit 8: Key Pillars of Export Strategy

Focus Products and Markets

While exports from Kerala have registered a robust growth, it is essential to identify key products and markets which can provide opportunities for further growth and achievement of economies of scale. Expanding capacities in the identified products and enhancing the penetration in the identified markets would be crucial for imparting resilience to the state's exports.

One of the efficient ways to expand the exports basket is to look at product diversification based on value addition. There are two methods for export diversification- horizontal and vertical diversification. While horizontal diversification takes place in the same sector by adding new products to the existing export basket within the same sector, vertical diversification entails a shift from primary to secondary to tertiary sector. Vertical diversification would entail contriving further uses for existing products by means of increased value-added services, processing, marketing or other services. Table 26 provides a list of prospective high value-added products which can help diversify the exports basket of Kerala.

Table 26: Opportunities for Diversifications in Kerala's Export

Sector	Existing Product	Prospective High Value-Added Exports	Comments
Agriculture and Allied sector	Rice (Semi/wholly milled), Brown Rice	Processing of rice to high-value products like snacks, ready to cook/ ready to eat products such as rice-based noodles, fermented rice flour, puffed/flaked rice	Largest markets for rice pasta and noodles are in Asia and Europe, with revenues in the APAC region expected to register a CAGR of 6 percent during 2019-2025, to reach US$ 855.2 million by 2025[17].
	Coconut, coconut oil	Processed coconut items like desiccated coconut, beverages such as packaged flavored coconut water, coconut cream, coconut cakes, copra, ready to eat coconut chutney; shell-based products etc.	Global market for packaged coconut water is expected to reach US$ 3.9 billion by 2025, registering a CAGR of nearly 16 percent during 2020-25[18]
	Spices – Pepper, Cardamom, Turmeric, chilli, nutmeg	Spice oleoresins	Globally, oleoresins market size stood at an estimated US$ 1.4 billion in 2018, and is expected to register a CAGR of 4.7 percent during 2019-2025[19].
	Cashew Kernels	Cashew butter; processed snacks made of cashews	Global nut butter market is expected to garner revenues of nearly US$ 4 billion by 2024, registering a CAGR of 4 percent during 2019-2024, presenting significant opportunity[20].
	Marine products- frozen fishes, frozen shrimps, and live fishes such as shrimps, prawns, cuttle fish, squid, crabs, lobsters, tuna, mackerel, pomfret etc.	Seabass, mud crab, tilapia, cobia, freshwater prawn and vannamei shrimp; organic aquaculture products; prepared fish/ shrimp products such as ready to cook fish curries/ prawn curries; and fish oils (HS-1504)	Organic aquaculture could fetch higher margins and garner greater revenues.

[17] Technavio Research
[18] Technavio Research
[19] Grand View Research
[20] Nut Butters Market Research Report - Global Forecast till 2024, Market Research Future

	Rubber products such as floor coverings, gloves and mittens, tyres, sheath contraceptives, non-cellular rubber, technically specified natural rubber etc.	High value-added rubber products such as beltings, sports goods, cables, tubes, pipes, hoses, surgical pharma products, rubberized fabrics, rubber covered rollers, cellular rubber, auto cycle parts, sheeting, rubberized coir, moulded products, extruded products, foam products etc.	There exists an estimated US$ 0.18 billion of untapped potential for exports of rubber and plastic products from Kerala. Kerala could tap markets such as ASEAN, China, Australia.
Textiles	Flax woven fabrics, coir yarn, jute yarn	Technical textiles - automotive applications, medical textiles, geo textiles, industrial textiles, hometech and protective clothing	The Indian technical textile market size is expected to increase from US$ 16 billion in 2018-19 to US$ 40 billion in 2023-24[21], while the global technical textile market is expected to reach US$ 220 billion by 2022[22].
Pharmaceutical	Wide range of drug formulations, bulk drugs, medical devices, vaccines	Focus on bulk drugs	Covid-19 crisis has opened opportunities for Indian pharma. Kerala can use this opportunity to tap the untapped export potential of more than US$ 15.08 million in the pharmaceutical sector of the state. State could leverage the incentives for bulk drugs being offered by the central government.
Chemical and Chemical products	Wide range of organic and inorganic chemicals	Menthol, unsaturated acyclic terpene alcohol, caffeine and salts, formic, citric and acetic acid, etc.	There is a need for substantial capacity building.
Electronics, electrical machinery and equipment	Electronic and electrical equipment, telecommunication equipment	Parts of aeroplanes; electronics components; medical appliances and instruments	Kerala can play an important role in increasing the share of exports of network products from India in the world to about 3.6 percent by 2025 and 6.1 percent by 2030, by providing impetus to assembling electronics and machinery under the 'Make in Kerala' initiative

[21] Outcome of National Textile Mission
[22] Technical textile- A Sunrising Sector for Indian Textile Industry,Niti Aayog

Tourism	Eco- tourism, rural tourism, medical tourism	Festival tourism; culinary tourism, western medical services, insurance services	Foreign collaboration in medical services and insurance can be encouraged.

Source: ITC Trade Map, Economic Survey of India, Economic Review of Kerala 2019, Exim Bank Research

Agriculture is a major sector of exports from the state, but the state's exports of processed agricultural products is currently limited. Currently, cereals such as rice are important export items for the state, but exports of high value-added cereal preparations are low. Existing export of cereal products largely comprise semi/wholly milled rice, and to a lesser extent include millets, barley, sorghum etc. Diversification of exports towards high value-added cereal preparations like snacks, ready to cook/ ready to eat products including rice pasta and noodles, fermented rice flour, puffed or flaked rice items can garner greater exports from the state. Owing to the increasing awareness about gluten susceptibility and rising fitness consciousness across the world, rice-based food products are gaining worldwide recognition on account of their gluten-free characteristic, low caloric content and health benefits. Currently, Kerala's exports of such cereal preparations account for a meagre share in its overall exports, and are directed mainly to the Middle-Eastern countries such as UAE, Saudi Arabia, Kuwait, and Qatar, in addition to the USA and the UK. Globally, top importers of cereal preparations such as pasta, noodles etc. include European markets such as Germany, the UK, France, the Netherlands, and Belgium, the USA, as well as key Asian markets such as Japan, China, Hong Kong, and Australia, among others. These newer markets could be considered for diversification of exports of cereal preparations.

Apart from rice, plantation crops such as rubber, tea, cashew kernels, spices such as pepper, cardamom, and coconut and coconut oil are among the major agricultural exports from the state. However, value-addition in these products are also limited. Moreover, the exports of these products have witnessed a steady decline over the past five years. Focusing on value addition in these segments could boost exports of these products from the state. For instance, the state currently exports cashews in the form of kernels. In addition to cashew kernels, focus could also be on exporting cashew butter, which is increasingly gaining popularity as a substitute for peanut butter and is being used in confectioneries, snack and bakery products. Globally, the demand for nut butters has been growing, with market revenues expected to grow to US$ 4 billion by 2024, registering a CAGR of 4 percent during 2019-2024[23]. Further, processed cashew snacks could also be considered for export diversification.

Rubber is another major produce of the state. High value-added rubber products such as beltings, sports goods, cables, tubes, pipes, hoses, surgical pharma products, rubberized fabrics, rubber covered rollers, cellular rubber, auto cycle parts, sheeting, rubberized coir, moulded products, extruded products, foam products etc. could be targeted for diversification. According to estimates from ITC Export Potential Map, India's untapped export potential in plastic and rubber products is nearly US$ 10.3 billion. With Kerala being amongst the top producers of natural rubber in the country, there is tremendous opportunity to tap this untapped potential, particularly in key Asian markets such as Malaysia, Vietnam, Indonesia, Thailand, Philippines, Singapore, China and Australia, among others.

[23] Nut Butters Market Research Report- Global forecast till 2024

Exporting processed spices, in the form of spice oleoresins is another emerging opportunity for the state. Oleoresins have high potency of active components that enable their usage in small dosages, while also leading to standardization in taste and consistency in flavor. These oleoresins find application in industries such as beverages, confectionery, meat canning, sauces, pharmaceuticals, seasonings etc. For instance, chilli oleoresins are increasingly being used in pharmaceutical applications due to their analgesic, antioxidant, anti-cancer and anti-inflammation properties, while black pepper oleoresins are also witnessing growing demand due to their antioxidant and antimicrobial characteristics. Similarly, turmeric oleoresins are gaining popularity in the skin care industry. The USA and European countries such as the UK, Germany, Belgium, Spain and Austria are among the top importers of spice oleoresins in the world[24].

A cross-cutting challenge across the agriculture sector in the state is the low productivity and lack of availability of land. To optimally utilize the available land, the government may consider encouraging vertical farming in the state. A vertical farm grows plants and produce by stacking the plants. This is accomplished by using suspended shelves for growing the plants, which use relatively less space than growing the plants on the ground. Every square meter of floor space of vertical farming produces approximately the same amount of vegetable crops as 50 square meters of conventionally worked farmland[25], thereby maximizing the available space and improving productivity. A vertical farm drastically reduces the agricultural land use, saves up to 95 percent water, makes cultivation possible independent of weather conditions and season, and delivers each harvest with consistent quality. This technique of production could especially be beneficial for horticulture products. While there are various technologies used for vertical farming around the globe, vertical farming entrepreneurs in India widely use controlled-environment technology or aeroponics[26] and hydroponics[27] to produce crops. Urban farming using hydroponics and polyhouses is slowly emerging in Kerala as well. For instance, Kochi-based 'Ela Sustainable Solutions' is a recognized start-up in the state, and is providing hydroponics and polytunnel solutions for organic farming. However, these cases of vertical farm produce have only operated at small scale for meeting the local requirements. To generate export surplus through vertical farming, there is a need to scale-up these vertical farms in the state. More such initiatives could be promoted by incentivizing these new methods of production through an appropriate policy framework.

Marine products such as frozen fishes, frozen shrimps, and live fishes such as shrimps, prawns, cuttle fish, squid, crabs, lobsters, tuna, mackerel, pomfret etc. are important exports from Kerala, and account for a share of 12.68 percent in India's total exports of marine products during 2018-19. Top markets for exports of marine products from Kerala primarily include Asian markets such as Vietnam, Thailand, and China, as also markets such as Spain, the USA, and Italy, among others. There exist opportunities for enhancing exports to other markets such as Japan, South Korea, and Russia for exports of frozen fish, and to countries like France, the Netherlands, Malaysia, Portugal for exports of cuttle fish and squid, as these are among the top importers of these products globally.

[24] ISI Emerging Markers- Grand View Research
[25] FAO
[26] The technique involves use of specialized UV lights and a misting system to grow plants. The plants also gain nutrients from the air around them, so their roots are usually exposed as they hang from a specially- built frame.
[27] The collective term for all plant-growing methods that do not use soil and require a nutrient rich liquid to feed the plants. The plants can be grown in anything from simple containers to sand to just hanging in the air.

Opportunities can also be explored in the areas of organic fish farming, also known as organic aquaculture, so as to obtain a premium pricing for fishery products in the overseas markets. Organic aquaculture is a developing sector wherein farmers produce a wide range of aquatic species– including fish, seaweeds and molluscs–in line with organic principles, thereby ensuring sustained animal welfare, good water quality and human health. Correspondingly, consumers around the world are increasingly willing to pay a higher price for organic fishery products.

The diversification of aquaculture activities could also help augment exports from the state. MPEDA has already identified 6 major candidate species suitable for expanding aquaculture production in the state viz. seabass, mud crab, tilapia, cobia, freshwater prawn and 'vannamei' shrimp[28]. According to a MPEDA report[29], if the state utilizes 0.1 percent of its 42,000 hectares reservoir area (i.e., 42 Ha) for cage culture[30] of the commercially important species of fish such as seabass, the resultant production is expected to garner revenues worth ₹ 3-6 crore, depending on the species farmed. Similarly, the state also has nearly 65,000 hectare of brackish water area which can be developed for organic farming of 'vannamei' or crab or seabass. Of this, even if 2,500 hectares of area is used for the development of scientific vannamei farming, the resultant yield could garner an estimated revenue of nearly ₹ 750 crore[31]. The state may also consider earmarking traditional farming systems such as 'Pokkali' or 'Kol' lands exclusively for native species of shrimp such as black tiger shrimp and white shrimps, as they have huge niche market globally.

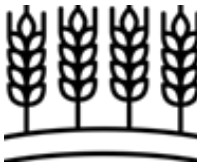
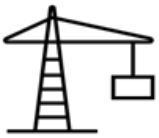
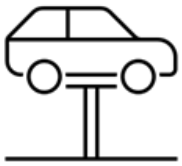
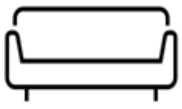
Within manufacturing, the textile sector presents significant opportunities for exports. Textiles exports from Kerala mainly comprise coir processing and handloom products. Although the state government has already taken steps towards modernizing these traditional industries, there is a need for diversification into new products and markets by supporting the establishment of new production units and using effective marketing and distribution strategies for tapping untapped export potential in lesser explored geographies. Technical textiles which are used for non-aesthetic purposes (Box 2) in sectors of automobiles, pharmaceuticals, infrastructure, sports, construction, packaging, agriculture, etc. would be an important avenue for diversification in the sector.

The global market for technical textiles is expected to grow from US$ 177 billion in 2018 to US$ 220 billion by 2022. The USA is the world's largest producer and consumer of technical textiles, accounting for 23 percent of the world technical textile market, followed by Western Europe (22 percent), China (13 percent) and Japan (7 percent)[32].

[28] 'Opportunities in Marine Products Export Sector' MPEDA, 2019
[29] Ibid
[30] Cage culture is an aquaculture production system wherein fishes are held in floating net pens. Cage culture encloses fishes in a cage or basket which allows water to pass freely between the fishes and a water body (such as pond) thereby permitting water exchange and waste removal into the surrounding water. Cages are used to culture several types of shell- fish and finfish species in fresh, brackish and marine waters.
[31] MPEDA
[32] Niti Aayog

Box 2: Application of Technical Textiles

Technical Textiles facilitate many new age applications covering almost all walks of life and have huge potential for exports. These textiles are used for commercial purposes in engineering and innovations. Use of technical textiles have benefits of increased productivity in agriculture, horticulture and aquaculture fields; better protective gear for military, para-military, police and security forces, stronger and sturdier transportation infrastructure for highways, railways, ports and airports and in improving hygiene and healthcare of general public.

	**Agrotech** Horticulture+ Landscape, Gardening, agriculture+ forestry, animal keeping		**Buildtech** Membrane, lightweight+ massive construction, engineering+ industrial building
	**Meditech** Hygiene, Medicine		**Clothtech** Garments, shoes
	**Mobiletech** Cars, ships, aircrafts, trains, space travel		**Oekotech** Environmental protection, recycling, waste disposal
	**Geotech** Road infrastructure, railways, irrigation and hydraulic structures, waste landfills, dams, etc		**Packtech** Packaging, protective-cover systems, sacks, big bags, container systems
	**Hometech** Furniture, upholstery+ interior furnishing, rugs, floor coverings		**Protech** Person and property protection
	**Indutech** Filtration, cleaning, mechanical engineering, chemical industry		**Sportech** Sport and leisure, active wear, outdoor, sport articles

Kerala is already a major exporter of coir and coir products, which is a key input across several verticals of the technical textile industry. Utilizing its rich raw material base, Kerala is steadily emerging as an exporter of technical textiles. In fact, Kerala's technical textile exports account for 7.76 percent of the total textile and clothing exports from Kerala. Of the total technical textile segment, meditech accounts for more than 47.57 percent of the total technical textile exports from the state, followed by geotech (26.31 percent), hometech (9.86 percent) and indutech (7.45 percent) (Table 27). There is substantial scope for further enhancing the exports of technical textiles, especially in areas such as indutech, hometech, meditech and geo-tech.

The large resource of coir provides an advantage for the state in geo-tech. Geotextiles made from coir are durable, absorb water, resist sunlight, facilitate seed germination, and are fully biodegradable. The major applications of geotextiles include road construction activities, prevention of soil erosion, and drainage systems. Kerala is one of the top exporters of geo-tech in India, accounting for more than 98 percent of the total exports of geo-tech from the country. There remains substantial potential for further enhancing exports in this product category, as the global geotextile market size is estimated at US$ 4.6 billion in 2019, and is expected to register a CAGR of 11.9 percent during 2020-27.

Table 27: Exports of Technical Textiles from Kerala during 2018-19

Technical Textile Segment	Exports from Kerala (US$ Million)	Share in Kerala's Exports of Technical Textile	% Share of Kerala in Technical Textile Exports from India
Meditech	15.49	47.57	10.13
Geotech	8.56	26.31	98.17
Hometech	3.20	9.86	3.08
Indutech	2.42	7.45	0.30
Packtech	1.89	5.82	0.26
Clothtech	0.85	2.64	2.53
Protech	0.06	0.19	0.12
Agrotech	0.03	0.11	0.05
Sportech	0.01	0.06	0.03
Total	**32.56**	**100.00**	**1.63**

Source: DGCIS, Exim Bank Research

Kerala's export of pharmaceutical products consists wide range of bulk drugs, formulations, medical equipment, and vaccines. However, the export of these products from Kerala is low as the state accounts for only 0.20 percent of India's total pharmaceutical exports. The recent Covid-19 crisis has opened opportunities for Indian pharmaceutical sector to the tune of US$ 7.3 billion. Kerala could use this opportunity to fulfill the global demand for bulk drugs and formulations. In this context, the state could encourage production of bulk drugs and formulations by leveraging incentives provided by the Central Government such as the 'Production Linked Incentive Scheme'. The scheme encourages production of 53 critical drug formulations by providing financial incentives to eligible manufacturers on their incremental sales for a period of 6 years (FY20-26). Bulk drugs should especially be a focus sector for the state as these are key inputs, and the import dependence on China for these products has increased in the recent period. Disruptions to supply chains could have an untoward consequence

on the pharmaceutical companies, as noted during the Covid-19 pandemic. Therefore, the state should encourage setting up more bulk drugs unit, and could also set up bulk drug parks in the state in collaboration with the central government.

Electronics, computer and optical products, and electrical equipment and machinery sectors are among the emerging high-tech sectors in Kerala. Currently, exports from these segments account for a meagre share in the state's total exports. The state needs to focus on enhancing production and export capacities in these high-technology intensive sectors, as these are less volatile compared to agricultural products and resource-intensive manufactures which are prone to fluctuating commodity prices. These sectors would also create high-skill employment for the skilled workforce in the state.

The state could encourage production and exports of lithium ion, static converters, optical fibre cables, electric conductors, and medical appliances and instruments. These are products with large and growing global imports and Kerala already has some supply capabilities in these products. For production and exports in some of these high-technology sectors, the state needs to incentivize export-oriented foreign investments, as domestic capabilities are limited. Greater impetus could be given to these sectors under the 'Make in Kerala' Program.

The 'Make in Kerala' program could be further transformed to encompass strategy of 'Assemble in Kerala'. This will be in line with the perspective highlighted in the Economic Survey of India, 2019-20 of amalgamating 'Assembling in India for the world' into the 'Make in India' initiative of the Government of India. According to the Economic Survey, integrating 'Assemble in India for the world' into the 'Make in India' initiative, can help India raise its share in exports of network products in the world to about 3.5 percent by 2025, and to 6 percent by 2030.

The Government of Kerala could also transform its existing 'Make in Kerala' initiative, which was announced in 2015, by enhancing focus on assembling activities. Fiscal incentives and infrastructure facilities can be provided for setting up assembling units in high-technology sectors, which would engender integration of the state's electronics sector in GVCs. Further, a detailed pre-feasibility study could be undertaken by the state, in order to identify the most suitable stage in the electronics value chain that the state can cater to, as also to identify the most suitable district(s) for setting up new high-tech manufacturing units in the state.

In the services sector, tourism has been a major source of revenue for the state. The state provides a spectrum of tourism services ranging from eco- tourism to medical tourism. To further enhance growth in the sector, hospitals in Kerala could collaborate with foreign medical institutions for referrals and knowledge and personnel exchange. Hospitals could also collaborate with global insurance agencies for inclusion of their medical tourism services in the health insurance packages of the agencies. There is also a need to adopt innovative mechanism for providing travel insurance to tourists. In Thailand, for example, the state-owned Krungthai Bank, offers tourists a debit card called the Miracle Thailand Card, which offers some medical and life insurance coverage in case of an accident. Similar initiative could be undertaken for tourists coming to Kerala.

Infrastructure Leverage and Strengthening

Transportation

Transport infrastructure plays a vital role in trade logistics, as inefficiency in connectivity can increase logistics cost and narrow the margins from exports. According to Exim Bank's survey, nearly 14 percent respondents in Kerala believe that infrastructure is a challenge for exports, especially the lack of connectivity between ports and inland modes of transport. This is evident in the Logistics Ease Across Different States (LEADS) index as well, wherein Kerala ranks 11th among 22 Indian states with an overall index of 3.161[33].

While the state has a large base of transport infrastructure, which includes 2.73 lakh km of roads, 1588 km of railways, 1687 km of inland waterways, 585 km of coastal route, 17 ports (excluding major port at Vizhinjam which is under construction) and 2 cargo handling airports, the quality and condition of the existing infrastructure hinder the cost-effectiveness and timely movement of goods. For instance, only one-fourth of the roads in Kerala have either two or four lanes capacity, while most of the other roads have single lane or intermediate lane capacity[34]. Further, in the case of National Highways (NH), only about 2.3 percent of the roads have four lanes capacities, while other roads have only two lanes or intermediate lane capacity. Narrow road-width and poor conditions of roads hinder the movement of containers to the port, compelling exporters to take longer route or carry out multiple rounds, which increases the time and cost of exports[35]. There is an urgent need to upgrade existing road networks, particularly focusing on improvements in quality of access roads to the ports. An essential first step towards improving trade-related transport infrastructure would be infusing more capital expenditure towards expansion/widening of roads. The Industrial Policy of Kerala, 2018, has laid emphasis on establishment of connectivity from industrial parks to NH/State roads, railway stations, airport etc. However, only 3.6 percent of the total budgeted expenditure for the state in 2020-21 is allotted for the construction and development of roads and bridges, which is lower than the average expenditure of 4.2 percent by the other 28 states. Further, there is a need to strengthen access roads to the ports.

The central and state government have taken initiatives towards port connectivity under the Bharatmala and Sagarmala programmes. However, cost of land acquisition has posed a challenge for infrastructure development and requires intervention of the state government. High land acquisition costs can also be an impediment for achievement of greater private-public cooperation in infrastructure projects in the state.

Besides roadways, inland waterways are also an active mode of transportation in Kerala. While the state's major ports and intermediate ports facilitate international trade, minor ports in the state only cater to domestic freight. Kerala is connected through national waterways-3 (NW-3) at West Coast Canal (Kottapuram- Kollam), Udyogmandal Canal (Kochi- Pathalam Bridge) and Champakara Canal (Kochi- Ambalamugal). Azhikkal, Beypore (Kozhikode), Kollam, Ponnani and Vizhinjam are inland ports

[32] Parameters include availability of logistic infrastructure, quality of logistics infrastructure, quality of logistics services provided by service providers, ease of arranging logistics at competitive rates, timeliness of cargo delivery and ease of track and trace, safety/ security of cargo movement, state facilitation and co-ordination and efficiency of regulatory processes

[34] Economic Review of Kerala, 2018-19

[35] District Industrial Potential Survey of Kerala 2017

that facilitate cargo movement and storage in the state. Despite government's efforts, expansion of inland waterways has been constrained due to lack of navigation system, lack of modern inland craft terminals and cargo handling system[36]. In addition, huge costs for dredging, inadequate marine infrastructure, inadequate skill-upgradation of port staff, inadequate availability of ships for operation, high labour and overtime charges[37] also hinder free flow of goods through inland waterways in the state. The government could focus on strengthening the inland waterways' connectivity to major ports in the state, by enhancing inland navigation connectivity. This would involve managing the movement of cargo containers between cargo ships, trucks and freight trains and optimizing the flow of goods through customs to minimize the amount of time a ship spends in port.

As per the state government's budget outlay for port development in 2020-21, a major share of expenditure is commissioned towards capital dredging for development of intermediate ports. In addition to developing intermediate ports, the state could focus on strengthening the performance and operation of minor ports to optimize trade and bring the point of exports closer to the production centres. According to the Indian Container Report 2019, the market share of major ports in India declined from 92 percent in 2005 to 58 percent in 2018 and the share of non-major ports collectively rose to 42 percent in 2018 from 8 percent in 2005. The rapid expansion of private terminal operators in the non-major ports diverted a major chunk of cargo from major to minor ports. The traffic handled at non- major ports in Kerala has, however, declined by more than 2 percent in terms of traffic[38] during 2018-19.

The state could establish a public-private partnership model for strengthening the existing network of waterways. A separate fund for development and maintenance of export infrastructure in the non-major ports could provide a major thrust to integrated connectivity in the state. Amongst others, the fund could focus on managing and upgrading gantry cranes, berths, waterways, roads, storage facilities, communication equipment, and computer systems.

Storage

Warehousing and Cold Storage Infrastructure

Storage is an important link in the overall logistic chain. As discussed in the preceding chapters, Kerala is among the top producers of agro-based products such as spices, coconut, tea, as well as marine products in the country. With huge untapped export potential in these segments, the need for well-developed cold storage and warehousing facilities in the state cannot be overemphasized.

As per the latest district-level data, the total capacity of warehouses in Kerala stood at 9.12 lakh MT, of which 56 warehouses with a capacity of 2.62 lakh MT are managed by the Kerala State Warehousing Corporation across various districts. The Central Warehousing Corporation (CWC) has capacity of 1.24 lakh MT across the state. Kerala also has 5.26 lakh MT of storage capacity owned by Food Corporation of India (FCI). As per industry norms, the storage facility should typically be 60 percent of

[36] ENVIS Kerala
[37] Economic Review of Kerala 2018
[38] Economic Review of Kerala 2019

the production volume. Consistent with this benchmark, the state should have at least 3.48 lakh MT of storage space just for the existing foodgrains produce in the state. Preliminary analysis of district-wise warehousing capacity and food grain production in the districts suggest that Kerala's overall warehousing capacity owned by SWC, CWC and FCI is adequate for the total foodgrain production in the state. Prima facie while most districts in Kerala have adequate warehousing capacity, the capacity needs to be substantially increased in the districts of Alappuzha and Palakkad. Other than warehousing, the state also needs robust cold storage infrastructure given that there is strong dependence on exports from agriculture and allied activities. Currently, as per APEDA, more than 95 percent of cold storage facilities in the state are utilized for marine products. The total storage capacity for marine products in Kerala (including cold storage, chilled storage, dry storage and other storage) stood at 76,874 MT in 2018-19, which is significantly low considering that fish production in the state stood at 8.01 lakh tonnes in 2018-19, of which an estimated 1.87 lakh tonnes was intended for the exports market necessitating state-of-the-art cold storage facilities.

Analysis further indicates that the capacity utilization of the existing seafood processing units in the state is also fairly low (Table 28). This is evident from the fact that seafood processing units in the state have a capacity to process nearly 4,352 tonnes of seafood. However, the average annual capacity utilization is around 25-30 percent[39]. The state should leverage these processing units for realizing greater value from exports of marine products.

Table 28: Existing Storage and Processing Infrastructure for Marine Products in Kerala

Sr. no	Existing Facilities	Number	Capacity (MT)
1	Cold Storage	139	73,377.4
2	Chilled Storage	1	861.0
3	Dry Fish Storage	3	22.7
4	Other Storage Capacity	8	2,612.9
5	EU-Approved Marine Processing Plants	76	3,039.9
6	Marine Processing Plants not holding EU approval	31	893.3
7	Ice Plants	19	419.3
8	Pre-Processing Plants	252	1,759.9

Note: Processing plants capacity is with reference to per day capacity
Source: MPEDA, Ministry of Commerce and Industries, GoI; Exim Bank Research

The number of cold storage projects implemented (or under implementation) in Kerala under the central government sponsored scheme viz. the Pradhan Mantri Kisan Sampada Yojana, is also very low, with only 9 cold-storage projects in the state, as compared to 41 projects in Andhra Pradesh, 40 projects in Karnataka and 47 projects in Tamil Nadu, during 2014-15 to 2019-20 (upto December 2019)[40]. Assistance for greater number of projects should be sought in such schemes of the central government.

The state could also consider developing a multi-modal cold-chain network involving two or more modes of transport for facilitating transportation and storage of perishable products. Apart from this,

[39] Opportunities in Marine Product Exports 2019, MPEDA
[40] Press Information Bureau, accessed from https://pib.gov.in/newsite/PrintRelease.aspx?relid=195323

Kerala should also leverage IT-enabled services to manage harvesting and logistics infrastructure. Several IT start-ups are engaged in movement of fresh produce in bulk from farmers to mandis. This farm-to-fork culture is supported by location tracking and geo-fencing tech platforms, which regulates the movement of trucks into mandis. The state could encourage such start-ups that deal in farm-to-port services. These services would streamline the timelines of harvesting, storage and marketing, with the global market requirement, for reducing losses and optimising the supply chain. Leveraging IT-enabled services will provide better reach and connectivity to the farmers in the rural sector, erase the middlemen and speed up the transport of farmer's produce. Encouraging IT based platforms will also be useful for ensuring business continuity during uncertain times, such as the country-wide lockdown caused due to the Covid-19 crisis.

Container Freight Stations (CFSs) and Inland Container Depot (ICDs)

The state has a total of 12 CFSs and 2 ICDs (Table 29), which is significantly low when compared to other coastal states of comparable economic sizes such as Tamil Nadu (73) and Andhra Pradesh (20). There is a need for further developing CFSs/ICDs especially in the districts of Thrissur and Palakkad, which have significant contribution to the gross value addition for agriculture, mining and manufacturing sectors of the state, indicative of substantial production happening in these districts, but are underserviced in terms of ICD/CFS or any minor/intermediate port (Table 30).

Table 29: Number of IMC approved Public and Private Container Freight Stations (CFS)/ Inland Container Depot (ICD) in Kerala as on 1.1.2018

Location	Ownership	No. of Container Freight Stations (CFSs)	No. of Inland Container Deports (ICDs)
Cochin	Private	3	-
	Public	3	-
Kottayam	Private	-	1
Alappuzha	Private	1	-
Thrissur	Private	-	1
Ernakulam	Public	5	-
Total		**12**	**2**

Source: Ministry of Commerce and Industry, Exim Bank Research

Table 30: Comparison of District-wise Gross Value Addition (GVA) and Number of ICD/CFS

Districts	Percentage Share in GVA from Agriculture, Mining and Manufacturing Sector	Number of Public and Private ICD/CFS
Ernakulam	12.62	11
Kollam	9.38	-
Thrissur	8.98	-
Alappuzha	8.80	1

Palakkad	8.35	-
Kozhikode	8.04	-
Kannur	7.89	1
Kottayam	7.25	1
Malappuram	7.12	-
Thiruvananthapuram	6.92	-
Idukki	5.09	-
Kasaragod	4.57	-
Pathanamthitta	3.26	-
Wayanad	1.74	-
Total	**100**	**14**

Note: Districts shaded in blue have non- major ports
Source: Directorate of economics and statistics, Kerala, Exim Bank Research

The CFSs and ICDs in Kerala also suffer from underutilization of capacity. Some critical facilities are also missing at these dry ports. This is evident from the fact that the ICD at Kottayam, which has been operational since 2010 was projected to handle 9000 Twenty Foot Equivalent Units (TEUs) per year; however, only 9,159 TEUs were handled at the ICD during the five-year period between 2012 and 2017, of which, only 609 TEUs (6.7 percent of total volume) were related to exports. Also, basic handling equipment like Reach Stacker for lift-off and lift-on operations of containers were not available at the ICD. Further, a Barge and Jetty, constructed at a cost of ₹ 2.51 crore for transportation of cargo between Kottayam and International Container Transshipment Terminal (ICTT) Vallarpadam through inland waterways, has not been put to use due to non-availability of crane for loading and unloading the containers to and from the Barge[41].

The state needs to enhance its capital investments in essential equipment such as cranes and reach stackers to ensure greater capacity utilization of the existing facilities. The state also needs to strengthen its existing ICD/CFS through increased private participation.

Further, Kerala currently does not have any airport freight stations (AFSs). AFS is an off-airport common user facility that offers service for handling and temporary storage of import and export cargo. It is the counterpart of ICD for maritime cargo. The state could also consider setting up of these services through private participations, starting with Cochin and Thiruvananthapuram airports, which are the two cargo handling airports in the state.

The state can utilise the support under the central government's Trade Infrastructure for Export Scheme for developing and strengthening the ICDs, CFSs, warehousing and cold storage facilities, and other essential export infrastructure in Kerala (Box 3).

[41] Performance Audit of working of ICD and CFS 2018- Report of the Comptroller and Audit General of India

Box 3: Exploring Possibility of Funding Export Infrastructure Projects through GOI-TIES

The TIES (Trade Infrastructure for Export Scheme) is a major initiative by the Ministry of Commerce, Government of India aimed at enhancing India's export competitiveness. It was launched in March 2017. This scheme is different from the erstwhile Assistance to States for Development of Export Infrastructure and Allied Activities (ASIDE) scheme, which was a centrally sponsored scheme for development of export infrastructure. While ASIDE scheme focused on setting up of specific projects such as export promotion industrial parks/zones (including SEZs and Agri-business zones), ICD/CFS, infrastructure for export conclaves, power infrastructure for additional power supply to production centers, among others, there are no such specifically identified projects in the TIES scheme, which aims to support a wide range of infrastructure projects with overwhelming export linkages. The major focus of the TIES scheme is to give a fillip to setting up and up-gradation of infrastructure projects across areas like the border haats, land customs stations, quality testing and certification labs, cold chains, trade promotion centres, dry ports, export warehousing and packaging, SEZs and ports/airports cargo terminuses, and last and first mile connectivity projects related to export logistics, among others. Eligible agencies for the funding include both state as well as central agencies including SEZ authorities, apex trade bodies recognized under EXIM policy of the central government, export promotion councils, and commodities boards. The support under the scheme is on participative basis and the focus is not just to create the necessary export infrastructure but ensure that it is professionally run and sustained.

Funding under the TIES scheme is in the form of grant-in-aid, wherein the central government's assistance can be upto 50 percent of the total equity in the project, and for projects in Himalayan regions and North Eastern states, central government can bear up to 80 percent of the equity. The grant-in-aid would normally be subject to a ceiling of ₹ 20 crore for each infrastructure project. A share of 5 percent of the grant approved under the scheme, has been pegged for appraisal, review and monitoring purposes.

Infrastructure for Services Sector

As discussed in the previous chapters, the share of services sector in the total export earnings of the state is comparatively less as compared to its share in the GVA of the state. Hence, enhancing the export orientation of these sectors would be essential in boosting exports. Improving infrastructure in sectors such as Animation, Visual Effects, Gaming and Comics (AVGC) and tourism sectors will drive growth of services exports.

AVGC sector has emerged as one of the fastest growing services sectors in the world over the past decade. IT sector in Kerala has witnessed unprecedented growth with the development of Technopark, Infopark and Cyberpark. These IT parks could be leveraged to transform the capacity and capability of AVGC industry in the state. Kerala could consider developing a Centre of Excellence (CoE) for AVGC with state-of-the-art facilities in one of the IT parks. As per Ministry of Skill Development and Entrepreneurship, a CoE is a body that provides leadership, best practices, research, support, training of trainers and skill training for specific sector(s). States such as Karnataka and Telangana have successfully set up CoEs for the AVGC sector.

In October 2019, Society of AVGC Industries in Kerala (SAIK), a not-for-profit organization was launched with the objective of creating a business collective of small, medium, and big sized studios engaged in the AVGC sector in the state. The government could collaborate with SAIK for setting up the CoE for AVGC sector.

Besides strengthening the AVGC sector, the Government of Kerala should also focus on building quality infrastructure in the tourism sector. Hotel, hygiene, and security are some of the important factors for driving growth in any tourist destination. Analysis of district wise accommodation units in Kerala reveals that the top 5 districts which account for more than 92 percent of the FTVs in the state, account for only 64 percent of the total accommodation units in the state (Table 31). Kerala therefore needs to encourage development of hotel units in the districts with highest international tourists.

Table 31: District-wise Share of Accommodation Units and FTV in Kerala

Districts	% Share in Total Accommodation Units	% Share in FTV
Ernakulam	16.02	44.52
Thiruvananthapuram	13.07	31.26
Alappuzha	16.70	8.71
Idukki	13.59	4.09
Kottayam	5.41	3.95
Kozhikode	3.47	1.68
Malappuram	3.15	1.61
Wayanad	8.16	1.06
Thrissur	5.64	1.03
Kollam	3.56	0.83
Kannur	4.43	0.53
Kasaragod	1.21	0.38
Palakkad	3.79	0.18
Pathanamthitta	1.79	0.18
Total	**100**	**100**

Source: Economic Review of Kerala; Department of Tourism, Kerala; Exim Bank Research

Some of the major source destinations for tourism in Kerala have an aging population, which require elderly and disabled-friendly infrastructure. Kerala has taken significant stride towards this and currently has 80 disabled-friendly destinations (out of the targeted 120 destinations in Kerala) as per the UNWTO[42] guidelines[43]. There is a need to expedite the transformation of other destinations as well.

Further, amidst various calamities that have hit Kerala such as floods, cyclone, NEPA virus in the past few years and the ongoing coronavirus epidemic, the state's tourism is adversely hit. Going forward, it is important for Kerala to reassure hygiene and security to attract domestic and international

[41] United Nations World Tourism Organisation
[43] As on April 2020

tourists in the state. Investments towards creating hygiene and security related infrastructure such as public washrooms, CCTV cameras, hand sanitizer dispensers, contactless security infrastructure, etc. would be essential for boosting Kerala's tourism after the upliftment of restrictions due to the coronavirus pandemic.

Capacity Building

Export-led enterprise development will be crucial for the state. While exporters in the state produce a wide array of products, there is need for improving the design, quality and quantum of production in order to effectively tap the international market.

Branding of Geographical Indications

Geographical Indications (GI) status for agricultural, handloom and handicraft products of Kerala can function as product differentiators and serve as important tools for marketing. The reference to geographical origin, along with the use of traditional practices and processing methods, provides substantial marketing potential. Kerala has a total of 32 GIs out of which 17 GIs belong to the agriculture sector, and the rest to the handicraft sector (Table 32).

Table 32: List of Geographical Indications in Kerala as on March 2020

Sr no.	Geographical Indications	Industry
1	Aranmula Kannadi	Handicraft
2	Alleppey Coir	Handicraft
3	Navara Rice	Agriculture
4	Palakkadan Matta Rice	Agriculture
5	Malabar Pepper	Agriculture
6	Monsooned Malabar Arabica Coffee	Agriculture
7	Monsooned Malabar Robusta Coffee	Agriculture
8	Alleppy Green Cardamom	Agriculture
9	Maddalam of Palakkad	Handicraft
10	Screw Pine Craft of Kerala	Handicraft
11	Brass Broidered Coconut Shell Crafts of Kerala	Handicraft
12	Pokkali Rice	Agriculture
13	Vazhakulam Pineapple	Agriculture
14	Cannanore Home Furnishings	Handicraft
15	Balaramapuram Sarees and Fine Cotton Fabrics	Handicraft
16	Kasaragod Sarees	Handicraft
17	Kuthampully Sarees	Handicraft
18	Central Travancore Jaggery	Agriculture
19	Wayanad Jeerakasala Rice	Agriculture
20	Wayanad Gandhakasala Rice	Agriculture
21	Payyannur Pavithra Ring	Handicraft
22	Chendamangalam Dhoties & Set Mundu	Handicraft

23	Kaipad Rice	Agriculture
24	Chengalikodan Nendran Banana	Agriculture
25	Kuthampally Dhoties & Set Mundu	Handicraft
26	Maddalam of Palakkad (Logo)	Handicraft
27	Brass Broidered Coconut Shell Craft of Kerala (Logo)	Handicrafts
28	Screw Pine Craft of Kerala (Logo)	Handicrafts
29	Nilambur Teak	Agriculture
30	Wayanaad Robusta Coffee	Agriculture
31	Marayoor Jaggery (Marayoor Sharkara)	Agriculture
32	Tirur Betel Leaf	Agriculture

Source: Intellectual Property India

To reap the benefits of the GI Status, it is important for the GI brand to be recognized as a reliable and preferred brand in the market, with distinguishable positioning. Products such as Darjeeling Tea, for example, have been able to gain substantial market share on account of this brand building. In order to attain similar levels of success, key value proposition needs to be defined for the products having GI status. The logo and the GI brand name need to be developed and marketed, and mechanism needs to be devised for ensuring that all products marketed under the GI brand adhere to minimum specific standards. To ensure the quality and uniqueness of the products, the state government could set up a certification body, that will provide certificate of authenticity to select high-potential export items in agriculture and handicraft categories. A repository of information about the artisans involved in production and exports of the GI products could be maintained by the certifying body.

Initiatives are also needed for identifying more products from the state which can be accorded GI status. This could include culinary delicacies such as 'Malabar Mackerel Curry', 'Kerala Prawn Masala', 'Malabar Prawn Curry', 'Malabar Paratha', 'Malabar Black Halwa', 'Chemmeen-Manga Curry' and 'Mambazha Pradhaman', which could further boost exports of these processed food items from the state, as also promote culinary tourism. Snacks such as banana chips, tapioca chips, and jackfruit chips, which are among the best-known snacks from the state, could also be considered for GI status.

Standards, Rules and Regulations

Various quality requirements and standards need to be adhered by the exporters for exporting to the target markets identified in this study. It may also be noted that in the survey conducted by Exim Bank, nearly 14 percent of the respondents reported that they face challenges related to regulations, licenses and clearances, certification, and in understanding the policies and procedures for exporting to the overseas markets. It is therefore imperative to create an eco-system which supports exporters in adhering to the requirements in the export markets.

There is a need to create awareness among exporters about export regulations and standards for various products in the regulated markets, as well as clearances and certifications that may be required. Training and awareness drives could also be conducted in major production hubs for dissemination of information pertaining to these certifications, including process of application and support provided by the Government of Kerala. Refund of expenses incurred for obtaining statutory certifications like Conformite Europeene (CE), China Compulsory Certificate (CCC), GMP, etc., could also be considered

by the state government, to the extent of 50-100 percent, subject to a ceiling per exporting unit.

To encourage medical tourism and provide foreign visitors with world class services, the state could encourage medical service providers to get Joint Commission International (JCI) accreditation. The JCI is a US-based organization that evaluates hospitals on most rigorous international standards in quality and patient safety and provides healthcare accreditation. Kerala has a total of three JCI accredited hospital, one each in the districts of Palakkad, Cochin and Ernakulam. To encourage more hospitals to get the JCI accreditation, the government could consider providing reimbursements of nearly 15-20 percent of the total expense incurred by the hospitals for getting the accreditation.

Technology Acquisition and Upgradation

The District Industrial Potential Survey of Kerala highlights usage of outdated technology as a weakness for industries in Kerala. Use of outdated technology and machinery leads to inefficiencies in production processes and hinders achievement of economies of scale. Lack of modern technology also leads to quality issues, thereby rendering the products unsuitable for exports. Small size, technology backwardness and inward-looking production in the state needs to be steadily replaced by greater investments, technology upgradation and outward orientation in production.

As highlighted in the earlier sections, the state government currently provides technology related support under the Entrepreneur Support Scheme (ESS). The state government should also encourage firms to participate for funding in central government schemes.

In order to assist Indian manufacturers to acquire and evolve cutting-edge technologies, catalyze growth and compete in global market, the Government of India initiated the Technology Acquisition Fund Program (TAFP). The TAFP scheme provides financial assistance to Indian capital goods sector to facilitate the acquisition of strategic and relevant technologies, and also development of technologies through contract route, in-house route, or through joint route of contract and in-house. Exporters from Kerala can leverage TAFP scheme to boost production and exports in high-technology sectors. The state government in this context can provide support to the exporters in submission of applications under the schemes. For example, under TAFP, applicants need to carry out a mandatory detailed assessment study by a third party for the proposed technology. The assessment is carried out to evaluate technical uniqueness of the proposed technology, commercial viability, and justification for financial valuation of the proposed technology, etc.

The state government can invite and review applications from export-oriented units/clusters/ consortium in the state and provide necessary advisory and financial support in preparation of the applications prior to the opening of the Request for Proposal (RFP) cycle of the TAFP. Kerala government could provide additional financial support on a case-to-case basis for technologies approved under TAFP, as these programs meet only a fixed percentage of the cost of technology acquisition (25 percent in case of TAFP subject to ceiling of ₹ 10 Crore).

Encouraging Tie-ups with Foreign Health Institutions

Kerala is one of the top destinations for medical tourism in the world, providing quality services at

affordable prices. To counter the increasing competition and to become a hub in the medical tourism sector, the state government should encourage hospitals in Kerala to tie-up with foreign health institutions/hospitals, by entering into mutual referral agreements.

Access to Trade Finance

As per the survey conducted by Exim Bank, 12 percent of the respondents considered availability of finance to be a major challenge for export businesses in Kerala. Challenges include delays in export proceeds realization, high rate of interest on export credit and access to trade finance facilities. There is a need to create awareness amongst exporters and stakeholders in Kerala about various financial and risk mitigation products through seminars and workshops. Apart from conducting knowledge sharing seminars, Kerala government could also encourage exporters to access trade finance related information from various portals, including 'Exim Mitra' portal developed by Exim Bank. Exim Mitra offers diverse range of information, advisory and support services. The portal has a trade finance section wherein product details and location of select banks have been provided along with broad terms and conditions for availing the facilities from these banks. Exporters can also submit preliminary information for availing trade finance on the website, which is shared with partner banks and financial institutions.

Fiscal Incentives

One of the major reasons for producers to refrain from exporting is the high cost of export operations. Costs are high due to large capital investment required for generating adequate volumes for exports, compliance cost of certifications and standards, tariffs, etc. These costs affect the competitiveness of exporters. Fiscal incentives in the form of refunds/reimbursements and concessions by the Government of Kerala could be a major step for mitigating the cost burden and enhancing the competitiveness of exporters in Kerala.

Several states in India such as Maharashtra, Tamil Nadu, West Bengal, Chhattisgarh, and Andhra Pradesh provide exporters with incentives in the form of interest subsidy on capital investment, capital subsidy, reimbursement, or grants. For instance, the Government of Andhra Pradesh provides capital subsidy for setting up of cold storages/chain for marine products producers/processors, to the extent of 35 percent, subject to a ceiling of ₹ 5 crore. It also provides an interest support on terms loans for fixed capital investments in transportation of products. A similar support mechanism can be instituted by the Government of Kerala to ease the financial burden on exporters. The state can also consider providing a fixed capital subsidy for new and existing units undertaking capital expenditure in the product champion sectors. A similar scheme of Fixed Capital Investment Subsidy is provided by Chhattisgarh to MSMEs and large units on fixed industrial investments for expansion and upgradation of capacities in the state. The subsidy is higher for priority sectors (up to 45 percent) as compared to manufacturing units in the general category (up to 40 percent).

Further, the state government can also consider reimbursement of electricity duty up to ₹ 1-1.5 per unit in key export-oriented sectors, especially in the product champion sectors identified earlier. States like Andhra Pradesh provide ₹ 1.5 per unit reimbursement towards electricity used by the marine sector to reduce operating costs and improve competitiveness of the sector.

Export Promotion Campaign

Export Awards

Rewards can be an indirect mechanism to encourage existing and potential exporters to enhance their outward orientation. To encourage and acknowledge traditional exporters in Kerala, the state already has a reward programme for best performers in the handloom sector under its Marketing and Export Promotion Scheme. The state government could also consider awarding exporters in other key sectors, such as agricultural and allied products, marine products, textile and garments, electronics, information technology, food processing, and tourism. A selection committee comprising officials from key government agencies and eminent industrialists can evaluate the applications, taking into consideration the value of exports, ratio of exports to sales, level of value addition, market orientation, adoption of best practices, product and process innovation, R&D activity, etc.

Capacity Building of Industrial Clusters

Industrial clusters are proven to have several advantages in promoting the growth of a particular sector or industry. Enterprises can achieve high level of competitiveness if they work in a cluster environment as this ensures complementarities, common facilities, and collective activities, including collective sourcing and marketing. Clusters can also engender adequate exportable surplus from entities which are otherwise unable to export on a standalone basis.

Kerala already has a number of industrial clusters spread across an array of sectors, which are at various stages of development. In order to ensure continued progress across these industrial clusters, an essential initiative would be to develop a mechanism for assessing the performance of these clusters, covering aspects pertaining to infrastructure bottlenecks, technological upgradation, access to skilled human resources, environmental sustainability, etc. Relevant capacity building activities can be undertaken by the state government, based on assessment of the clusters. The key elements of capacity building would include construction of physical infrastructure, building institutions, and development of human resources.

Setting up a Brand Equity Fund

A brand equity fund could be set up by the Government of Kerala. This will be aimed at building globally competitive brands for products originating from the state. The set up could be in line with the 'Vocal for Local with Global Outreach' initiative of the Government of India. The scheme envisages use of local products for consumption and production of goods and also promote them globally. The initial and current focus of the scheme is directed towards Micro Food Enterprises (MFEs) in the food processing sector. An amount worth ₹ 10,000 crore is allotted to help 2 lakh MFEs improve their health and safety standards, integrate with retail markets and improve income. To begin with, Kerala can leverage this fiscal support provided under the scheme for micro units in the food processing sector. Further, the fund can also assist in marketing these branded products in the international arena. Export related brochures, interactive CDs, etc. can be created for popularizing the products from the state in the international market.

Market Development Assistance

According to Exim Bank Survey, nearly 29 percent of companies consider lack of marketing support a challenge. Recognizing the importance of marketing support for exports, the state government already has marketing support programme for agricultural and allied sector (for fruits, flowers, vegetables, organic farm products, meat, milk) in select districts. Apart from this, a marketing and export promotion scheme is also in place to promote and develop market for handloom products. An incentive of 20 percent of the export turnover is provided for participating in handloom exhibitions/ fairs, business to business meets, conducting regional handloom expos during festival periods at district level, etc. Creating awareness about marketing schemes of the central and state government could help address marketing-related challenges faced by the exporters in Kerala.

In addition to awareness programmes, the state government could also put in place Market Development Assistance schemes for exporters in the high value added and technology intensive sectors. The state government could also collaborate with the Union Ministries of Tourism, and Ayush for providing marketing assistance to entities engaged in niche tourism/wellness tourism verticals.

Institutional Streamlining

To streamline the activities pertaining to export promotion in the state, a single platform would be essential for exporters and stakeholders in the state. The overall institutional ecosystem in Kerala needs to be framed in a manner that facilitates the various schemes proposed for exports, allows regular monitoring of the proposed targets, and thereby propels the state to a higher export trajectory. In this context, a Kerala Export Promotion Council (KEPC) could be set up under the Department of Industries, Government of Kerala, with the objective of ensuring strong export performance for the state. The KEPC could be set up with the participation of the state government, exporters and industry associations. It would provide a forum for exchange of views, sharing of information, identifying obstacles faced by the exporters and implementing mechanism to overcome them.

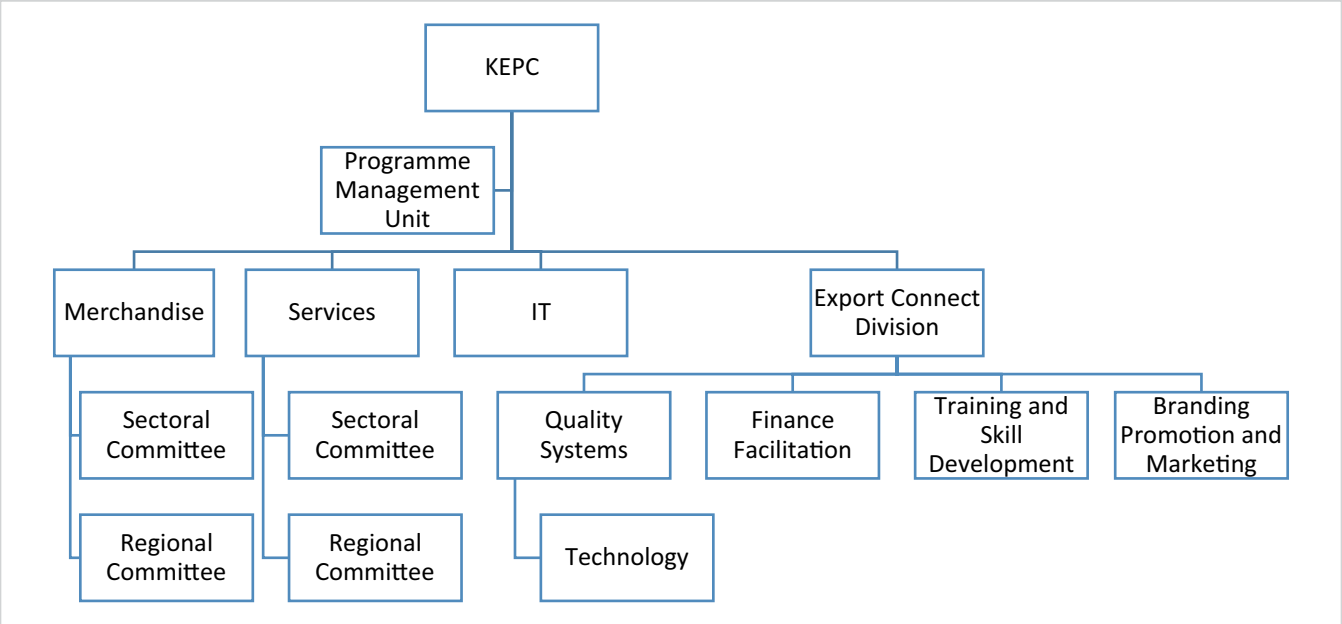
The proposed structure of the KEPC has four key operational areas– merchandise exports division; services exports division; export connect division; and information technology (IT) division (Exhibit 9). Apart from this, a Programme Management Unit (PMU) could also be set up for integrating the various functions of the KEPC. The functions of the various divisions would be:

1. Merchandise and Services Divisions: The merchandise wing of KEPC could focus on merchandise export segments by coordinating with state bodies, exporters, etc., while the services wing could focus on services segment such as IT and tourism. These wings would largely be composed of government officials, who would outline strategies for ensuring that the targets are met in their respective areas. These shall also provide advisory services to exporters.

The Merchandise and Services wings could in turn be composed of sectoral committee and regional committee. The sectoral committee could manage the delivery of export promotion products and services to the exporting sectors, while the regional committee could work with the trade and commerce related offices located in India and abroad through the Embassies/High Commissions, Export Promotion Councils, Exim Bank and other chambers of commerce and industry. The sectoral

committee could inter alia, focus on application for GIs, assessing applications under the proposed brand equity fund, and providing support to exporters for availing benefits under the Government of India's technology acquisition programmes. The regional committee could inter alia, focus on the proposed market development assistance program, and reimbursement of costs for certifications required for exports to various markets.

Exhibit 9: Structure of the Kerala Export Promotion Council



2. ***Export Connect Division:*** This could offer critical export-related support services and could comprise separate divisions for each of the support services– quality systems, finance facilitation, training and skill development, and branding, promotion and marketing. The Division would comprise subject experts. The functions of the various segments within the Export Connect Division could be:

- Quality Division:
  - o Enhancing focus on quality control and inspection protocols
  - o Disseminate the key inputs to export stakeholders
  - o Provide input to the regional committee on standards and certification
- Technology Division:
  - o This shall have linkages with the quality division, and will include subject matter experts who will work with export stakeholders for boosting the technology and innovation quotient
  - o Disseminate information on value addition, and use of technology for enhancing competitiveness of local products/ services
  - o Provide inputs to the sectoral committee for its support to companies applying for technology acquisition funding
- Capacity Building Division:
  - o Work with the National Skill Development Council, Kerala Academy for Skills

Excellence, Sector Skill Council, and State-level institutes to build export relevant skills in the state

- Finance Wing:
  - o Disseminate information on procedures to avail export finance and guarantee
- Branding, Promotion and Marketing:
  - o Work towards improving the branding and marketing of local products
  - o Provide inputs to the sectoral committee for financing under the proposed brand equity fund
  - o Advise the sectoral committee on application of GIs
  - o Advise the regional committee on financing under the MDA scheme

3. ***IT Division:*** The IT division could manage systems for providing information to stakeholders including websites, skills and training modules.

4. ***Program Management Unit:*** The PMU could be set up to integrate all the functions of the various divisions of KEPC. The PMU could undertake continuous monitoring of the export targets, their achievements and key constraints for the same on a periodical basis, so that prompt corrective actions can be taken should there be a deviation from the projected targets. The PMU could also liaison with national export bodies on issues of importance.

To supplement the institutional strengthening, a one stop information portal for exports could be established. This portal could enable exporters to improve their know-how and access information pertaining to markets, finance, export promotion programs, event details, etc. Advisory services can also be provided through the portal. This portal can be directly administered and managed by the IT Division of KEPC.

CONCLUSION

Kerala has the potential to achieve an exports target of ₹ 3.67 trillion by 2024-25. While sectors in which the state is traditionally strong shall continue to be important from the exports perspective, there is a need to diversify the exports basket to impart much needed resilience to exports from the state. In the short to medium term, the focus of the exports strategy should be on the product champions sectors where the state possesses comparative advantage. Alongside, the state needs to provide incentives for encouraging capacity building in the underachiever's products where the global market demand is growing but the state's exports are currently not competitive.

The six-pronged strategy outlined in the study shall help enhance trade competitiveness, promote innovation, bolster availability of export finance, enhance value addition in the production cycles, create awareness about exports, increase visibility of Kerala's exports, and create an institutional mechanism for nudging exports to a higher growth trajectory.

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As part of its endeavour in enriching the knowledge of Indian exporters and thereby to enhance their competitiveness,Exim Bank periodically conducts research studies. These research studies are broadly categorized into three segments, viz. sector studies, country studies and macro-economic related analysis.These studies are published in the form of Occasional Papers, Working Papers and Books. The research papers that are brought out in the form of Working Papers are done with swift analysis and data collation from various sources. The research papers under the series provide an analytical overview on various trade and investment related issues.

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