

KIIFB NEWSLETTER

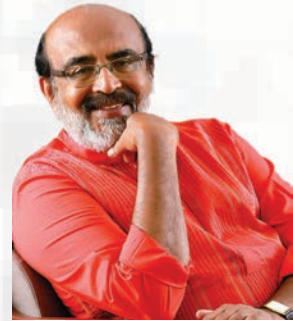
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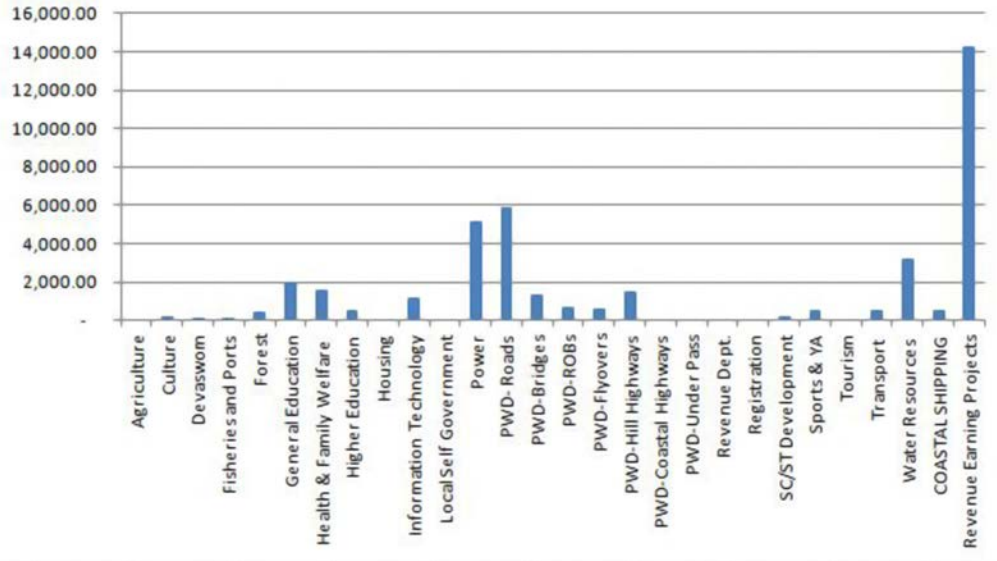
Defining the Future



Our Chairman
Shri. Pinarayi Vijayan
Hon. Chief Minister



Our Vice Chairman
Dr. T M Thomas Isaac
Hon. Minister for Finance



Cathlab at General Hospital, Pathanamthitta

From the CEO's desk.....

The Monetary Policy Committee of Reserve Bank of India, after a marathon discussion that extended over two and a half days i.e., during February 5,6 and 7, 2019 voted by a 4 to 2 majority to reduce the policy repo rate by 25 basis points. In a unanimous decision, the MPC also shifted the monetary policy stance from calibrated tightening to neutral. What seemed to have swung the balance in favour of a rate cut is a host of very critical consideration. Global growth has slowed down across key advanced economies as well as a few major emerging market economies and world trade has lost momentum. International commodity prices, especially of crude, are up from the December lows that were seen, and inflation has edged down in major many advanced economies and emerging markets. The turbulence in global financial markets has abated, equity markets are back to recovering their earlier losses and bond yields have eased on top of some strengthening in emerging market currencies in the backdrop of weaker US currency. In the domestic front, India's real GDP growth is up to 7.2 per cent in 2018-19, and gross fixed capital formation has picked up. Net exports too have improved and there is a moderation in the consumption expenditure. Headline CPI inflation has also declined to 2.2 per cent in December which is the lowest in the last eighteen months. This cut, no doubt, will have its impact on KIIFB's prospects in the markets as will be evident in the weeks to come.

What will also be significant to KIIFB in the future is that RBI has appointed a task force on offshore rupee markets to assess the causes underlying the growth of this market and recommend measures to encourage non-residents to access the domestic market.

The Finance & Administration wing in their column, in this edition has brought out the prominent place that the Hon. Minister for Finance has attached to KIIFB Projects in the budget that he presented to the Legislative Assembly on January. A summary of the major references to KIIFB is included here for the benefit of the reader:

- Industrial Parks and Corporate Investments with an outlay of Rs.15,600 crore to acquire 6,700 acres of land for Industrial Parks utilizing the potential of Kannur Airport; 600 acres of land belonging to FACT for Petro Chemical Park; New facility in Techno City, Thiruvananthapuram.
- Malabar Coffee and Carbon Neutral Wayanad linked to KINFRA mega Food Park amounting to Rs.150 crore

- New Kuttanad Package with KIIFB investment of Rs 250 crore and a multi storied hospital in Pulinkunnu at an estimated cost of Rs. 150 cr.
- Package for Rehabilitation and Restoration of Coasts for a total KIIFB investment of Rs.900 cr.; Parappanangadi, Chethi and Pozhiyoor harbours; renovation of 70 fish markets, coastal roads for Rs.200 cr., renovation of all taluk hospitals in the coastal area; renovation of all schools in the coastal area.
- Energy Mission to install solar panels on the roof top of government institutions like schools and hospitals; the KIIFB funded Trans Grid 2.0 with outlay of Rs. 6,375 cr.
- Designer Roads with modern technology and higher standards and the Rs.11000 crore worth of road projects already approved in KIIFB
- West Coast Canal stretches, Kovalam – Kollam – Kodungallur – Bekal. Rs.600 cr. allocated by KIIFB for land acquisition on the Mahi-Valapattanam stretch.
- Spices Route and Heritage Projects with the Thalassery and Alappuzha projects and Ponnani and Thankasserry to be included this year.
- Coastal Highway with cycle track with the financial assistance of Rs.6,000 crore from KIIFB to further help the Spices Route.
- Towards Educational Excellence - 45,000 class rooms of 8th to 12th standard of 4,775 schools have been transformed to high-tech. 9941 number of primary/upper primary schools to high-tech to be taken up.

The focus project selected for this edition by the Project Appraisal Division, is the Alappuzha Mobility Hub. This no doubt will be a project that will change the face of that historic town– once known as the Venice of the East, in the years to come.

The Administrative Inspection Wing has penned in a brief note on the key inspections that they have conducted meticulously in the last fortnight.

The Technical Inspection Wing has included a very informative assessment about the 3D surveying techniques for infrastructure projects.

More in our next edition. Happy Reading

Chief Executive Officer, KIIFB

Projects Approved by KIIFB

Department	Nos.	Amount (Rs. in cr.)
Agriculture	1	14.28
Culture	8	194.34
Devaswom	1	141.75
Fisheries & Ports	2	159.16
Forest	4	441.67
General Education	76	2037.91
Health & Family Welfare	15	1614.41
Higher Education	6	562.02
Housing	1	45.00
Information Technology	3	1174.13
Local Self Government	3	31.69
Power	13	5200.00
Revenue Dept.	1	10.09
Registration	6	89.88
SC / ST Development	9	186.60
Sports & Youth Affairs	27	528.90

Department	Nos.	Amount (Rs. in cr.)
PWD - Roads	140	5904.18
PWD - Bridges	50	1360.64
PWD - ROBs	22	730.26
PWD - Flyovers	9	635.51
PWD - Hill Highways	17	1506.25
PWD - Coastal Highways	1	52.78
PWD - Underpass	1	27.59
Tourism	3	72.47
Transport	3	542.05
Water Resources	66	3252.54
Coastal Shipping & inland Navigation	1	566.51
REVENUE EARNING PROJECTS - INDUSTRIES		
Industrial Infrastructural - Land acquisition	1	12710.00
Life Sciences Park Phase II- Trivandrum	1	301.17
Petrochemical & Pharma Park	1	1264.00
Total	512	41357.78

Sector Wise Project Status of Alappuzha District

Department	Approved		Work tendered (including work started)		Work Started / Work Awarded		Under Appraisal	
	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.
Culture	1	15.03						
Fisheries & Ports	1	46.94					1	99.05
General Education	6	86.00	3	40.00	3	40.00		
Health	3	191.44					1	127.57
Higher Education							1	20.98
Labour & Skill							1	21.23
LSGD							1	11.44
Power	1	96.39	1	46.33				
PWD - Roads	12	303.21	12	264.70	12	246.90	6	266.82
PWD - Bridges	13	508.87	2	86.32			2	59.70
PWD - ROBs	1	31.21					2	70.76
PWD - Coastal Highways							2	69.90
Registration`	1	18.68	1	8.88	1	8.00		
Sports & Youth Affairs	4	76.79	2	12.82				
Tourism	2	33.05					1	42.06
Transport	2	218.05						
Water Resources Department	5	184.05	1	38.98			4	525.10
Total	52	1809.71	22	498.03	16	294.90	22	1314.61

Sector Wise Project Status of Malappuram District

Department	Approved		Work tendered (including work started)		Work Started / Work Awarded		Under Appraisal	
	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.	No. of Projects	Amount in Rs. cr.
Power	1	138.44	1	131.43	1	131.43		
General Education	11	202.42	5	125.83	5	125.83		
PWD - Roads	6	228.12	3	94.02	3	86.61	3	102.83
PWD - Hill Highways	3	267.98						
PWD - Coastal Highways	1	52.78						
PWD - ROBs	2	61.51						
PWD - Flyovers	1	11.27	1	10.26	1	13.68		
PWD - Bridges	4	113.90	2	33.83	2	34.05	1	35.00
LSGD	1	10.26					1	1.96
Fisheries & Ports	2	159.16						
Sports & Youth Affairs	4	79.54	3	43.67	2	21.54	2	19.51
Registration	2	29.50						
SC / ST	1	2.08						
Higher Education	3	28.86						
Water Resources	8	509.48	3	136.64	3	132.26	5	291.30
Total	50	1895.31	18	575.68	17	545.40	12	450.60

Focus Project : Alappuzha Mobility Hub

Under the Transport Sector projects, Infrastructure projects other than roads have been undertaken by various departments / SPVs with funding from KIIFB. This bouquet comprises projects which are supposed to improve the associated infrastructure facilitating multimodal transport.

One of the major projects approved by KIIFB under Transport Sector in the non-road category is Alappuzha Mobility Hub.

Alappuzha KSRTC Bus stand which currently handles a large number of passengers operates approximately 500 buses per day with 111 buses plying different routes having an average of 3 trips per day for the superfast and 8-10 trips for the ordinary buses per day. Unplanned infrastructure and improper maintenance has lowered the functionality of the bus terminal, necessitating construction of a new one.

The proposed bus terminal complex, is planned to be constructed in six floors and have two mezzanine floors, which is a part of the main project comprising four major components viz. Terminal building, Boat Terminal, Workshop & Dock and Bridge across Vadai Canal. The 4.07 acres of land where the bus stand operates currently is reserved for the new Mobility -hub proposed to be constructed after demolition of the existing KSRTC Bus Stand.

The project envisages enhanced transportation facilities at Alappuzha with improved infrastructure and services to the local people as well as the tourists, besides

providing seamless connectivity between the road and inland water transport domains of Alappuzha District.

The total length of the proposed Terminal building is 180m with separate access areas provided for passengers, vehicles and feeder services. 44 nos of bus bays will be provided in the terminal. The balance area is proposed for the revenue generating components as Hotel and Multi-Level Car Parking (MLCP).



The proposed hotel has 73 suite rooms, 2 banquet halls having capacities of 400 pax and 112 pax. The total area provided for the hotel is 8588.06 sq.m. Multilevel car parking is proposed in the second, third and fourth Floors. Provision of parking has been proposed for 456 cars. The area provided for the same is 17953.92 sq.m. Total built up area of the terminal is 40170.00 sq.m and the ground coverage will be 37.89%. Details are as follows

Floor	Facilities	Area (in sqm)
GF	Hotel Lobby, Bus Terminal, Bus bays - 44 nos	6359.37
GF Mezzanine	Passenger Waiting area, District Transport Office	2429.08
FF	Hotel accommodation & KSRTC Garage	6728.89
FF Mezzanine	Hotel accommodation & Facilities for Garage	3027.57
SF	Hotel accommodation & Car parking-152 no.	6224.09
TF	Hotel accommodation & Car parking-152 no.	6224.09
Fourth Floor	Hotel accommodation & Car parking-152 no.	6224.09
Fifth Floor	Hotel accommodation & Banquet hall with Kitchen	2728.06
Terrace Floor	OHT- Domestic & Fire, Overhead machine room	224.79
	Total	40170.03

M/s INKEL Limited has been entrusted as Special Purpose Vehicle for executing the project. KIIFB has granted approval for the Phase-I component at a total cost of Rs.129.12 crore including land acquisition for its third Phase (Bridge). The project is expected to be completed in 24-30 months.

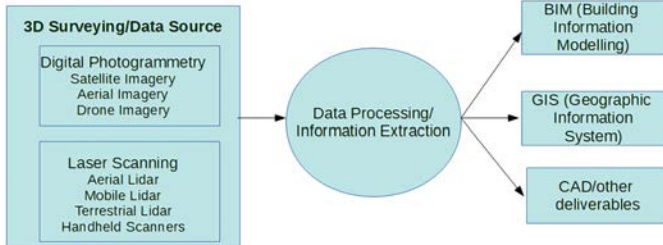
3D Surveying Techniques for Infrastructure Projects

In traditional surveying and mapping practices such as tape measurements, Dumpy level, theodolite and total station, surveyors need to devote enormous time in the field. Such practices were labour intensive, prone to human errors and many times collecting missing or additional features need further field visits. During the last couple of decades, Computer

“picture”, and grammetry - meaning “measurement”. Measurements such as length, height, area, volume etc can be extracted from two overlapping images.

Study area will be surveyed using overlapping images and are imported into state-of-the-art drone processing software. Images will go through a series of processing steps such as image feature matching, Triangulation and Bundle Adjustment and finally leading to a set of deliverables such as Dense Point Cloud, Digital Surface Model and Orthophoto.

Point Cloud is the collection of points or coordinates on an object’s surface. Dense Point Cloud generated from drone images contains

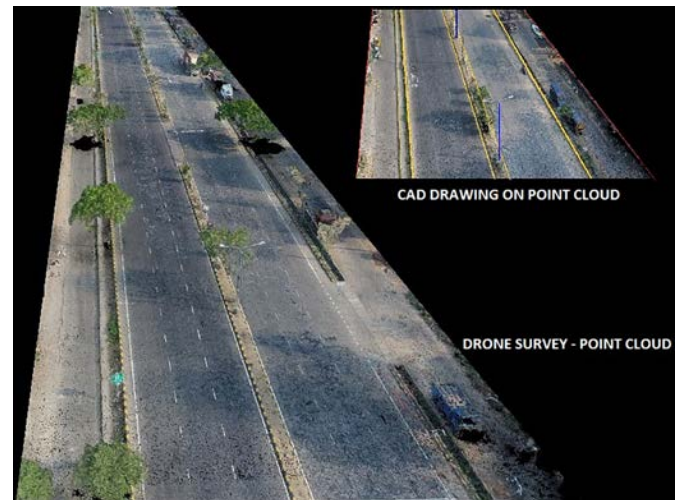


Science and Information Technology has grown tremendously and started influencing all sectors of Science and Technology. Surveying and Mapping industry, now a days called as geospatial industry, also got influenced by these advancements and developments and is slowly transforming from a field intensive process to more of office (computer) based enterprise. Latest surveying techniques need minimal technical skill to conduct the field survey and can be conducted much faster than the traditional methods. However, to generate meaningful and insightful results, you need expertise in using computer and the necessary software to do the processing of the data generated by these new breed of surveying devices. This article introduces you to some of the advanced 3D surveying techniques such as drone mapping and mobile laser scanning which are transforming the traditional surveying practices.

Drone Mapping

The concept of working on drone-based surveying has recently made waves in the geospatial sector. Professionals have realized the reliability and cost-effectiveness of data collected using a drone platform. A major factor for real usage of drone is its ease of use and the processing efficiency. Gathering data using drone might be an easier task compared to processing it and making it actionable is yet another story.

Drone data is processed using the technique called Digital Photogrammetry. The word photogrammetry is derived from: photo - meaning



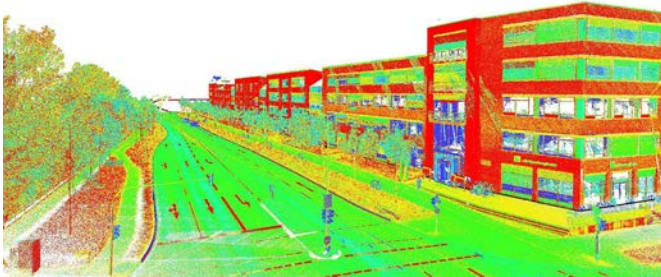
hundreds of points per square meter and user can extract colour information of every point in the point cloud. This is well suited for identifying and extracting all key ground features in 3Dimension (x, y, z). This collection of points can be used to create a 3D model of an area. Above image is nothing but point cloud generated from drone survey and you will be able to appreciate the level of details available along the highway.

Digital Surface Model is an image with each pixel having elevation values derived from images and is suitable for many raster-based analyses in GIS or image processing software.

Orthophoto is an image corrected for topographic relief, camera tilt, and distortions in camera optic so that the scale of the image is uniform throughout which are good for planimetric feature extraction (2D drawings).

Mobile Lidar

Mobile terrestrial laser scanning/Mobile Lidar is an emerging technology that combines the use of a laser scanner, a global navigation satellite system, and an inertial measurement unit (adjusts input



data for vehicle movements and motion) on a mobile platform to produce accurate and precise geospatial data. Because mobile laser scanning eliminated the need for lane closures and the need for field crews to collect the site terrestrial topography on the ground, the risk to the field crew, as well as the travelling public, will be reduced. Mobile laser scanning collects thousands to millions of field scan points per second while travelling at traffic speeds. Once these laser scans combined with GPS and INS data through pre and post processing, dense point cloud is generated. These point cloud outputs are similar to drone mapping point cloud. Mobile lidar has an advantage over drone mapping outputs where vegetation cover prevents 3D reconstruction of ground surface from images. Mobile lidar is an ideal choice for surveying various types of infrastructure corridors including road, rail, pipelines and power lines. Above is an image from a mobile lidar data for a highway corridor.

Derived outputs

Using the point clouds, Orthophoto generated from the above two (drone mapping, mobile lidar) techniques, based on the application, variety of outputs can be generated. Some of the most common derivable outputs are:

- Contour Maps
- Planimetric feature extraction (road edges, heights, signs, building footprints, etc)
- Volumetric computation
- Profiles and Cross section drawings
- As-Built Drawings
- Earth work estimation

As the processed point cloud, orthophoto is available in the digital format, additional outputs or missing features can be generated or identified in the future. These digital data can be used at various stages of construction for progress monitoring too.

Applications of latest surveying techniques

As the deliverables obtained from latest surveying techniques has got a detailed insight into the surveyed area, this can be used for generating plenty of actionable reports for variety of applications. Some of the applications are listed below:

- Flood Mapping & Monitoring
- Smart City Planning
- Infrastructure Corridor Mapping
- Technical Inspection of Structures
- Quarrying and Mining - Surveying & Monitoring
- Forest Planning & Management
- Coastline Management
- Archaeological Studies
- Accident Reconstruction
- Cellular Tower Location Identification
- Automated Vehicle Navigation

To leapfrog our infrastructure development, we need to embrace these new emerging technologies. Our dedicated Technical Resource team can assist the state Government departments, SPVs and the stakeholders to get an insight into these technologies and execute our infrastructure projects using the latest state of the art technologies.



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Countries**

Administrative Inspection Wing notes...

Last fortnight, the Administrative Inspection Wing (AIW) inspected the administrative procedures and progress of implementation of the Project by KWA viz. "Strengthening of Distribution System in Varappuzha Panchayat, Ernakulam" and also enquired in to the allegations of delay in processing contractor's bills by Kerala Medical Service Corporation Ltd. (KMSCL). The details of inspections are briefed below:

1. "Strengthening of Distribution System in Varappuzha Panchayat, Ernakulam"(WRD003-08).

The tender and work awarding process of the project were inspected with the files and documents in the o/o the Superintending Engineer, KWA Circle, Ernakulam, who is the tendering authority. The Administrative Sanction, Technical Sanction and KIIFB approval for the project were for Rs. 16.50 Cr.

The components and estimate of the works are given below:

	Components	Estimate (in Rs)
Part I	Renovation of the existing old Water Treatment Plant at Muppathadam	28450683.00
Part II	Strengthening of Distribution System in Varappuzha (laying of various types of pipes)	
	Zone 1	42148702.00
	Zone 2	57650830.00
	Zone 3	35992153.00
	Unforeseen Items if any	757632.00
	TOTAL	165000000.00

The tender notice was issued for the project at an Estimated PAC of Rs. 14,10,40,177/- excluding road restoration charge and published through advertisement in national and local dailies. The

tender opened on 08.08.2017 but was cancelled as the 3 bidders out of 4 had not qualified in the technical evaluation. Therefore, the work was retendered on 22.09.2017. The Technical Committee met on 7.11.17 has decided to pre-qualify 2 bidders viz. M/s. Naveen Constructions and M/s. TBML Tomco Engineers. The L1 bidder M/s TBML Tomco Engineers which had quoted Rs. 14,94,00,000/- (above 5.93% of TPAC) was selected. The Managing Director in his letter dated 22.12.2017 to the Superintending Engineer pointed out that some of the items which are estimated and part of tendered PAC are either not mentioned or not qualified in the schedule/detailed scope of work of NIT. Subsequently an undertaking from the contractor was obtained agreeing to execute all components of works specified as per the estimate. The KWA Board resolved to award the work to L1 bidder and issued sanction order on 06.03.2018. The Superintending Engineer granted extension for agreement up to 18.05.2018 after ordered to impose a fine of Rs. 15,000/- and the agreement signed on 18.05.18. The Performance guarantee was collected in the prescribed form. As per the progress report, laying of various type of pipes is going on and 13% of work completed as on 31.12.18.

On inspection the following lapses are observed:

- The remittance details of fine imposed for the delayed agreement is not produced.
- The Design of plant and other components submitted by the contractor has been forwarded to WASCOM on 20.06.2018 for approval, but the same is not seen returned after approval. The contractor in his letter dated 27.08.2018 reported that they have lost 25% of the completion time because of the delay in communicating the approval of design by KWA.
- The selection notice/work order to the contractor issued on 30.04.2018 with completion period as 12 months and agreement signed on 18.05.2018. Though 8 months have elapsed after selection notice, 13% of work alone completed.
- The WBS is not seen revised according to the revision/delay in execution.

The KWA was asked to report/explain the reasons for the above discrepancies.

2. Inspection on the allegation of delay in bill processing for the Project “Setting up of Dialysis Centres”.

A complaint petition has been received in KIIFB from a contractor alleging delay, in processing the work bills, on the part of KMSCL and KHRWS. The allegation has been enquired into. It was found that there is substance in the allegation as delay has occurred on the part of KMSCL as well as KHRWS in processing the work bills and delayed submission of bills to KIIFB has affected the timely release of payments to contractors. Lack of adequate manpower is the reason cited by the SPV for the same.

During inspection in KMSCL the following discrepancies were also noted:

- After the finalisation of Site Plan for the Dialysis Units, modifications suggested by hospital officials once the work started causes considerable delay in completion of works in some locations.
- Agreement Register is not maintained, and serial number is not assigned to the Agreement document.
- Agreement executed between KHRWS and Contractor does not mention the amount of contract, tenure of contract etc.
- The KHRWS is outsourcing supervisors as the agency has no sufficient human resources for overseeing the works.

The above pointed out discrepancies and lapses were brought to the notice of the Administrative Department for rectification.

KIIFB GETS CONSIDERABLE MENTION IN STATE BUDGET 2019-20

The Hon'ble Finance Minister, Dr.Thomas Isaac presented the State Budget for 2019-20 on 31st January 2019. The total outlay of this Budget is Rs. 1.42 lakh crore. Even in the background the financial crisis resulting from the ravaging floods and low returns from GST, the expected plan outlay for 2019-20 is raised to Rs.39,807 crore from Rs.32,564 crore in the previous year. There are altogether 1,200 Schemes in the Plan itself. The budget marks a return to the fiscal consolidation path, with an expected GST revenue of 30% and fiscal deficit of 3% of GSDP which is within the limit prescribed under the fiscal responsibility rules. The fiscal consolidation is envisaged despite stepped up government expenditure for the rebuilding of the state ravaged by massive floods in August 2018. The total expenditure of the government is increased to 13.88% in relation to 2018-19 revised estimate. The vision behind the decision to up the ante is that the government expenditure needs to be increased to prevent the economy from falling into recession in the background of the diminishing inflow from the Gulf Countries. Not only for averting the financial crisis but also for the success of loans through KIIFB and others, the budget should be better balanced. Revenue deficit should be brought down from the last five years average of 2.21% to below 1% and fiscal deficit should be brought down from the last five years average of 3.61% to 3%. To achieve this, GST revenue should grow by 30% in 2019-2020. Prima-facie this quantum jump of 30% from the current 10% would be thought as impractical but the

backlog receipts of previous years since the onset of the GST regime expected to be realised during 2019-20 justifies the expectation.

In the Budget Speech, the Hon'ble Minister presented a masterplan of 25 ambitious programmes meant to spur the overall development of the state and the economy. This will ensure not only the development of infrastructure facilities but also supplement the social security in the state.

Since its restructuring in 2016, KIIFB has been receiving increasing mention in the successive State Budget Speeches. In the 2019-20 Budget Speech KIIFB has received mention in a total of 50 places. Of the 25 ambitious programmes that are purported to have the potential to deeply influence the State's future, KIIFB has considerable role in 10 of them, besides implementing various projects announced for 9 other sectors. The projects involving KIIFB mentioned in the Budget Speech as part of the 25 programmes are:-

1. Industrial Parks and Corporate Investments

Rs.15,600 crore has already been sanctioned from KIIFB for acquiring 6,700 acres of land for Industrial Parks utilizing the potential of Kannur Airport, a massive chain of Industrial Complex will be created at the outskirts of Kannur Airport. In connection with Cochin Refineries, 600 acres of land belonging to FACT for Petro Chemical Park

will be acquired in 2019-20. An attractive land acquisition package will be formulated, avoiding eviction, giving emphasis to fallow land and decadent plantations, based on the willingness of the land owners. In addition to KIIFB funding, innovative devices like land bonds, land pooling etc. will be utilized. Mention was also made about the office space being constructed with KIIFB assistance in Techno City, Thiruvananthapuram.

2. Malabar Coffee and Carbon Neutral Wayanad

KINFRA mega Food Park amounting to Rs.150 crore with KIIFB funding announced in the first budget will be established in 2019-20. Common processing facilities for coffee will be established here.

3. New Kuttanad Package

Kuttanadu Drinking Water Scheme with KIIFB aid of Rs 250 crore will become a reality in 2019-20. The multi storied hospital being constructed in Pulinkunnu with KIIFB assistance will have facility for landing of helicopters. The estimated cost of this is Rs. 150 crore.

4. Rehabilitation and Restoration of Coasts

Sanction has already been given for works amounting to Rs. 227 crore for the prevention of sea erosion by traditional means like sea wall, pulimuts etc. Experiment for constructing Off Shore Break Water on the sea bed at a distance of 400-500 feet from the shore is going on in Poonthura. If found successful, this scheme will be further expanded. Fund for this will be made available from KIIFB. Sanction has been given for Parappanangadi harbour from KIIFB. Chethiharbor which has been given administrative sanction will also be undertaken by KIIFB. A new harbour will be constructed at Pozhiyoor. Steps are being taken with the support of KIIFB to renovate 70 fish markets and to set up cold chain network. An amount of Rs. 200 crore is earmarked for coastal roads. All the schools in coastal area having the strength of more than 500 students have already been taken up by KIIFB. The renovation of the remaining 71 schools will start this year. The renovation of all the Taluk hospitals in the coastal area will begin this year. Total investment in the coastal area through KIIFB is Rs. 900 crore.

5. Energy Mission

Funds will be provided from KIIFB to install solar panels on the roof top of government institutions like schools and hospitals. The amount saved from electricity charges is sufficient to complete the repayment in five years. The power generated from the alternate sources will be insufficient for our increasing requirement. Kerala's dependence on outside electricity will increase. It is profitable to purchase electricity

from centres producing at lowest cost. The transmission grids for the smooth transmission of electricity are becoming important. This is the importance of the KIIFB funded Trans Grid 2.0 amounting to Rs. 6,375 crore. Along with this it is decided to actively intervene in demand-management sector. 50 crore unit of electricity can be saved, if whole of the CFL lamps and filament bulbs in the state are replaced by LED bulbs. The mercury pollution can also be avoided. KIIFB funding will be ensured to Electricity Board for the bulk purchase of LED bulbs.

6. Designer Roads

It is intended to use modern technology for construction of roads with the requirements such as transportation, safety, amenities for pedestrians, drainage and long-term maintenance, strictly adhering to the standards of Indian Road Congress. The speciality of these designer roads will be modern technologies like full depth reclamation and cold recycling. Use of geo textiles and geo cells will be increased. Technologies such as micro surfacing will be widely utilised. Even though, the initial cost of these roads will be substantially higher, in long term, the maintenance cost will be lower and it will have longer life as well. The roads, bridges and buildings which were given administrative sanction based on the previous years' budgets, worth Rs. 10,000 crore, are in different stages of construction. Apart from this, the public works worth Rs. 11,000 crore approved and funded by KIIFB are in various stages of tendering and construction.

7. West Coast Canal

2020 will be the year of completion of 585 kilometer of Bekal – Kovalam waterway. The construction of Kovalam – Kollam, Kodungallur – Bekal stretch has been rejuvenated when it has been undertaken by Kerala Waterways and Infrastructure in collaboration with CIAL. An amount of Rs.600 crore has been allocated by KIIFB for land acquisition in connection with the 26 kilometer long canal from Mahi to Valapattanam. The completion of West Coast Canal will largely rewrite the state transportation structure. Water transport was the most important mode of freight movement before independence. Today, the role of water transport is marginal. A change in the scenario is essential considering the environment, cost effectiveness of freight movement. It will be a great boost to backwater tourism and Malabar River Cruise Project being formulated.

8. Spices Route and Heritage Projects

The latest and most extensive project in tourism sector is 'Spices Route'. The intention of this travel project is to connect the ports of Kerala, emerged from very ancient times as part of international spice trade but declined later, are to be connected with the ports of West Asia and Europe. It is similar to the Spices Route in China. This concept has originated from Muziris Heritage Project. Now

activities have been started by including Thalassery and Alappuzha in the project. The detailed plan of Thalassery Heritage Project has already been prepared. Ponnani and Thankassery will be included in the project in 2019-20. The construction of Coastal Highway, having cycle track, connecting all the port cities in Kerala with the financial assistance of Rs.6,000 crore from KIIFB will be a big boost for Spices Route. Alappuzha will be a model to know how the spices route project will transform our old port cities. The first phase consisting of a dozen heritage museums, canal renovation and restoration, modernisation of factory and port buildings will be completed in 2019-20. It will take one more year for the renovation of roads and bridges, construction of transport hub and completion of remaining museums. The Alappuzha canal region will be transformed into a showcasing zone of not only ancient buildings but also the distinct cultural heritage. It is expected that at least half of five lakh travellers visiting Kuttanad back waters could be enticed to Alappuzha. It will help the rejuvenation of the city and also create employment on a large scale.

9. Non-Resident Keralite Investment and Protection

NORKA Welfare Board has formulated a Deposit Dividend Scheme in the face of the criticism that the monthly pension of Rs. 2,000/- given to Non-Resident Keralite is inadequate. As per this Scheme, if Rs. 5 lakh or its multiples are invested, after five years, non-residents or their heirs will get a fixed amount as monthly income based on the investment. Interest obtained by investing the deposit amount in institutions like KIIFB will be given as dividend. Providing financial assistance, by merging Welfare Pension with this scheme is also considered. Akin to Deposit Dividend Scheme, KSFE has started Pravasi Chitty to utilise the savings of the Non-residents for the development of the State. The amount being obtained from Pravasi Chitty by way of security, floating money and deposit of bidders is being deposited in KIIFB bonds. Chittals will have the right to suggest, for which KIIFB Construction Projects, their investments have to be utilised. Pravasi Chitties will have a decisive role towards the fund mobilization of KIIFB in 2019-20. Presently the chitty has been started only in the U.A.E. The activities will be extended to other Gulf countries by the month of February. After a few months, it will be possible to join the chit from any country in the world.

10. Towards Educational Excellence

In the last two years 2.5 lakh students got additionally enrolled in general educational institutions. Of these, 94 % were students who had obtained T.C from other schools. One important aspect that heightened the expectation

of the general public was the expansion of amenities in general education sector. An amount of Rs. 2,037.91 crore has been sanctioned for this from KIIFB. 45,000 class rooms of 8th to 12th standard of 4,775 schools have been transformed to high-tech. An amount of Rs. 292 crore has already been sanctioned by KIIFB for converting 9941 number of primary/upper primary schools to high-tech.

Besides the above mentions, paras 113-116 of the Budget Speech have been exclusively dedicated to illustrate the achievements of KIIFB. KIIFB has also received mention regarding other sectors. The Tourism projects at Muzhuppilangad and Akkulam, implementing projects worth Rs.141.75 crore for providing modern facilities at Sabarimala, base camps at Nilakkal, Pamba and important interim shelters as part of the Sabarimala Master Plan. In the Health sector the hospitals that have commenced construction are said to require at least Rs.1,000 crore from KIIFB. In the backdrop of the recent floods, it is found that the land allotted for Medical College at Wayanad is unsuitable. To purchase suitable land and to commence the initial work of the building, money will be made available from KIIFB. The total outlay for education sector including Central share comes to Rs.3,154 crore. In addition to this, an expenditure of at least Rs.1,000 crore is expected from KIIFB the Education sector. Thus, as in the Health sector, the Education sector is also expected to put an all-time record to the tune of Rs.4,000 crore during the next year. In the Higher Education sector Rs.300.74 crore renovation project for college buildings with the financial assistance of KIIFB will be started during 2019-20. In the Culture sector many of the District Cultural Centres which were to be established through KIIFB, as proposed in the previous budget, will move towards construction stage in 2019-20. Kerala is a prominent state in the sports field. KIIFB has already given approval for 27 projects worth Rs.528.90 crore so far for the sports sector. The KIIFB projects that will bring about major improvements to our sports infrastructure facilities, will move towards construction in 2019-20. In the Forest sector besides funding ambitious projects for prevention of man-animal conflict, KIIFB has sanctioned an amount of Rs.269.75 crore for Puthoor Zoological Park Project through which a dream that has been on wait for two decades is going to be realised. The modernization of buildings of the Registration Department will be continued with the financial assistance of KIIFB.

On a closing note on the Fiscal Analysis, the Hon'ble Minister has observed that if the investments through KIIFB alone are analysed, one can get a glimpse of the big transformation envisaged in the economy for the coming years. This is a testimony to the decisive role played by KIIFB in spearheading the state's development and economic prosperity.