

**CONCURRENT EVALUATION AND
MONITORING OF SCHEMES
2016-2017**

FINANCE DEPARTMENT

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PREFACE

The overall development of the state mainly depends upon the implementation of the plan schemes. Lion share of the state budget is set apart for implementing various plan schemes in different departments. The performance of effectiveness of each scheme reflects in our economy and social set up. **‘A stitch in time saves nine’** is a proverb. Timely intervention and correction and action accordingly will help for the effective and efficient implementation of various schemes without much delay and wastage of resources. Concurrent Evaluation and Monitoring of Schemes has been mooted to achieve this goal. In the above circumstance, government have decided to introduce Concurrent Evaluation and Monitoring of Schemes in selected plan schemes in six departments, viz; Forest and Wildlife, Agriculture, Water Resources, Public Works, Health and Higher Education. It is a corrective action than a punitive action. The pros and cons under various stages of implementation are ascertained directly from the implementing officers as well as various stake holders and beneficiaries of the scheme. The corrective action can be taken based on these feedback. Finance team conducted field visits to evaluate the performance of the various schemes during 2016 -17 in the above six departments. The status report of each scheme under the above six departments are consolidated and placed as Concurrent Evaluation and Monitoring of Schemes 2016-17 as a novel step in the history of Kerala.

EXECUTIVE SUMMARY

A major portion of the state share is utilized for the implementation of various plan schemes in different departments. But the desired goals could not be achieved due to lack of effective evaluation in the implementation of schemes. This leads delay in implementing schemes, non-payment, and procedural lapse, incorrect reporting of expenditure/ progress report, diversion of fund, non-execution of all the envisaged components, deviation from project guidelines etc. In this context, Government have decided to introduce Concurrent Evaluation and Monitoring of Schemes (CEMS) for selected five plan schemes in six departments such as Agriculture, Forest and Wildlife, Water Resources, Public Works, Health and Higher Education Departments in the initial stage. The main objective of introducing Concurrent Evaluation and Monitoring of Schemes is to ensure the allocation and release of funds in time and utilize it economically and effectively in accordance with the scheme provision. It mainly focused on physical performance of schemes in terms of planned and targeted manner and timely completion of work.

Concurrent Evaluation and Monitoring of Schemes acts as a corrective force and offer real time analysis of the programmes/schemes. Since it is a simultaneous examination of schemes in terms of physical outcomes, timely detection of irregularities and difficulties and problems will be possible. This will ensure that “money is well spent”. Besides this, it can serve as a liaison between the Government and the implementing Department/Agency. Concurrent Evaluation and Monitoring of Schemes is proposed to be undertaken every year during the implementation of the scheme. This will pave the way to ascertain the effectiveness of targeted activities to identify the strength, weakness, opportunities and threats of the programme and the

factors responsible for the same. If the various stages of implementation of the schemes are evaluated concurrently, the inputs given and outcome delivered can be analysed and evaluated periodically and can suggest corrective and remedial measures than punitive actions to achieve the desired goals. In the above context, the Concurrent Evaluation and Monitoring of Schemes have greater significance and wider acceptability.

Thiruvananthapuram,

March 2017.

AGRICULTURE DEPARTMENT

A. INTRODUCTION

The Department of Agriculture in its present form, has been started functioning in the state since 1987 onwards. As it has been entrusted with many responsibilities and duties, the department has been working against time for delivering the farmer society its manifold services.

Extension Service is the primary responsibility of the department. They are to impart the farmers necessary information with regard to selection of planting materials, quantity and quality of the fertilizers and pesticides, tips of information regarding market, prospects of value addition etc.

At present, the younger generation shows a reluctance towards the sector as they fear that there is no ghost of a chance to get a safe livelihood out of the sector. Like any other enterprises, agriculture should also be treated as a profitable one. For that, some strenuous measures, from the part of the department, are to be taken.

There are many problems still prevalent in the sector, urgent redressal of them is needed for turning agriculture sector into prosperous and progressive one. It seems that many of the problems prevailing in the sector are interconnected. Therefore, a comprehensive and multi-pronged strategy is to be applied for solving the same. Even though mechanisation of the sector is necessary for addressing the problem of shortage of labourers, the endeavour for the mechanization could not be accomplished due to some reasons such as the lack of infrastructural facilities which includes farm roads, rams, culverts and canals, preservation of traditional water sources, sufficient number of warehouses, drying yards, market infrastructural facilities etc. The mechanisation drive is badly affected by the fact that our agricultural holdings

are mostly fragmented into. It is a fact that, without mechanisation of the sector, the problem of shortage of farm-hands and the the escalation in the cost of production cannot be addressed in a satisfactory way. Mechanisation of the sector can only be made by taking into account the local area needs and specifications.

A proper price support system covering all major crops has not been evolved so far. An uncertainty often looms over the heads of the farmers regarding the prices of the produces of the farmers.

Our state does not produce the required quantity of vegetables that we need. As a result of this, we are forced to depend heavily on our neighbouring states for vegetables which is marked with heavy content of pesticide residue which is injurious to health. This poses serious health hazards. In this context, through the scheme 'Organic Farming', the agriculture department tries to bring more potential areas under the organic cultivation in all districts of the state.

Even at present, major portion of our cultivation is based on rains. This often limits the scope of area of cultivation, number of times of cultivation and the rate of yield. Ernest measures shall be taken for the preservation of traditional water bodies.

Availability of quality planting materials is one of the prerequisites for the successful cultivation. For ensuring the availability of hybrid varieties, more intense research works are to be ensued. More number of nurseries at appropriate level may be started for the distribution of planting materials in time. Agricultural Department comes to the help of the farmers. The department is headed by the Director of Agriculture who is assisted by the Additional Directors and Joint Directors at the headquarters. There are 14 Principal Agricultural Officers in the rank of Joint directors at the district level. Assistant director heads the office at the block level. There are Krishi

Bhavans at the grama panchayat/ village level which is under the control of Agricultural officers and this Krishi Bhavans directly interact with the farmers.

B. SCHEME WISE DETAILS

As part of concurrent evaluation and monitoring of schemes 2016-17, the following 5 schemes have been selected in the Agriculture Department:-

- I. Rice Development.
- II. Coconut Development.
- III. Vegetable Development.
- IV. Organic Farming and 'Safe to Eat' Food Production
- V. Hi-tech Agriculture.

I. Rice Development

Since 'Rice' is the staple food of Kerala, and forms an inevitable part of diet of average Keralites, the scheme 'Rice Development' has much significance. With the advent of cash crops, the area under rice has diminished to a great extent. Besides this, the yield rate per ha in Kerala is also not desirable. One of the goals of the scheme is to attain the yield rate of 3 tonnes per ha by the end of the plan period. However, the rate worked out during 2015-16 is only around 2.8 tonnes per ha. The production of the crop is very low. The reason for the decline in area under paddy is attributed to the conversion of land for non-agricultural purposes and for other crops including cash crops. Low profitability, huge escalation in the cost of production, shortage of labourers, capriciousness often experienced in the price of the produces, poor profile visible in the value addition drive, high wages of the labour, lack of a well knit net work of market are some of serious problems faced by the sector. An amount of Rs. 3500 Lakh is provided in the current year's budget for the scheme.

Considering the present yield rate, and the extent of land under cultivation, it seems, the scheme has not succeeded in producing the desired results so far.

II. Coconut Development

Even though, 'coconut' is one of the principal crops of Kerala, its area of cultivation and production of the crop have been declining over the years. The main cause for falling productivity is attributed to the prevalence of root wilt disease, poor management of palms and the increasing number of unproductive senile palms. Replanting of root wilt palms by elite palms, removal of senile palms is a solution for the problem. It is the need of the hour that number of nurseries are to be started for the production of quality seedlings. An even distribution of the same is to be ensured. The scheme is based on cluster. There is shortage of climbers, for which production of more dwarf coconut seedlings and hybrids is to be scaled up with the help of Research and Development institutions. 'Value addition' shall be given more importance. The total outlay set apart in the current year's budget for the scheme is Rs. 4500 lakh.

III. Vegetable Development

While considering the heavy dependence on neighbouring states for our domestic consumption of vegetables, which is marked with the presence of pesticide residue in an alarming rate, the Government initiated the scheme 'Vegetable Development' with a view of augment the indigenous production of vegetables in order to meet the domestic needs. It is envisaged that the scheme is to be implemented by ensuring the participation of other departments, agencies, NGOs and the general public. The scheme consists of various components ranges from seed production to marketing and value addition. Some of the major components of the scheme are promotion

through homesteads, promotion of urban clusters, vegetable cultivation through institutions, establishment of nurseries, trial on hybrids, development support to graded clusters and micro-irrigation etc. An amount of Rs. 7430 lakh set apart in the budget for the scheme.

IV. Organic Farming and 'safe to Eat' food Production

The scheme 'Organic Farming and Safe to eat food production' has been introduced in the state in order to alleviate the harmful effects on the public health caused by the rash usage of chemical pesticides and fertilizers in the conventional method of cultivation. It aims to retrieve the lost structure and fertility of the soil. The main components of the scheme are assistance to the certification, empowerment of clusters, promotional assistance for clusters, green manuring, model units for organic manuring, compost units and safe to eat food production. By this scheme, the potential areas in all districts are to be brought under organic cultivation. It is noticed that there is a general trend of declining in the use of chemical pesticides and fertilizers which reflects the real interest of the people towards the scheme. Department will ensure the participation of all sections of the society in the mission. An amount of Rs.1000 lakh is provided in the budget for the implementation of the scheme.

V. Hi-tech Agriculture

Hi-tech farming aims at ensuring a constant, year round production of high quality vegetables. It is based on the protective measures. Poly houses with low cost technology are widely used. In the system, the usage of chemicals is minimised. The State Horticulture Mission is entrusted with the implementation of the scheme. In conventional mode production, both biotic and abiotic stress limit the productivity and quality of the produce. Cultivation in poly houses is bound to supply high quality produces in large quantity. It is a positive thing that the younger generation now shows greater zest towards

hi-tech agriculture as it turns to be economically viable like any other enterprises. A provision of Rs. 290 lakh is set apart in the current year's budget for the scheme.

C. STATUS REPORT

Rice Development

1	Name of the Scheme	:	Rice Development
2	Plan Outlay	:	Rs. 3500 Lakh
3	Head of Account	:	2401-00-102-90
4	Duration of implementation	:	Financial year 2016-17
5	Name of Offices and Date of Visit	:	Krishi Bhavan, Thazhava, Kollam -20-07-2016 Krishi Bhavan, Omallur, Pathanamthitta - 05-11-2016 Krishi Bhavan, Koduman, Pathanamthitta --03-12-2016
6	Components Examined	:	<ul style="list-style-type: none"> • Sustainable Rice Development (input assistance @ Rs. 1500/ha) • Paddy development agencies • Promotion of speciality rice • Operational support to Padasekhara Samithies for group farming • Operationalisation of Paddy and

			wetland Act, 2008
7	Verification of documents/files	:	<ul style="list-style-type: none"> • Verified files, documents and beneficiary list relating to the scheme
8	Feedback	:	<ul style="list-style-type: none"> • Collected information and data from the Offices visited and the team also held meetings with stakeholders and beneficiaries of the scheme
9	Present status	:	<ul style="list-style-type: none"> • Components are under implementation
10	Observation	:	<p>Rice is the staple food of the people of Kerala. However, at present, rice occupies only the third position among the Kerala's Agricultural crops with respect to area under cultivation and the yield rate (2.8 tonne/ha, 2014-15). The yield rate is not found to be desirable, compared to that of other states. The domestic production of state with regard to food grains accounts around 15%. For our consumptional requirements, we depend upon imported food grains from other states. Rice cultivation has both environmental and ecological significance. They provide natural</p>

		<p>drainage paths for flood waters. It helps to conserve to ground water and there by maintain the water level of a particular area. It is against this background department of agriculture initiated the scheme “ Rice Development” with a goal of attaining an yield rate of 3 tonne/ha by the end of the plan period. The yield rate worked out during 2014-15 is around 2.8 tonne/ha.</p>
11	Constraints/ Risk Factors	<ul style="list-style-type: none"> Seasonal shortage of agricultural labourers is a major challenge facing rice cultivation in the state. Shift of agricultural work force to non agricultural occupations is one of the reasons for the problem. Workers are not available at the time of transplanting and harvesting. Since these activities are to be carried out in a time bound manner, the availability of work force in time for the purpose is crucial. Besides this, the wage rates are relatively high so that the farmers are forced to pay a higher wages. This

		<p>ultimately enhance the cost of production.</p> <ul style="list-style-type: none">• At present, heavy machines, especially for planting and harvesting activities of the rice cultivation, are kept at Krishibhavan level, under the control of Agriculture Officer. Since there is no post of a Mechanical Engineer at Krishibhavan level, the regular servicing of the machines are not carried out in a proper way.• Some combined harvesters (Kukje- a Korean Company) purchased in 2002, have been lying idle due to the non availability of spare parts. Spare parts are to be brought from Korea or from such far destinations. An advance payment to the tune of Rs. 2-4 lakh is said to be required. Payment of such an amount in advance at the level of an Agriculture Officer is not practical. Such purchases
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		<p>without ensuring the availability of spare parts and service provision or AMC might have caused huge loss to the exchequer of the state.</p> <ul style="list-style-type: none">• In many parts mechanization of the sector could not be carried out in an effective way due to the lack of infrastructure facilities such as farm roads, rams, culverts, engine tract, warehouses, drying yard etc.• The existing irrigation facilities in most of the holdings are very poor. In most parts, the existing canal systems are found in a dilapidated state. Our traditional water bodies are very poorly maintained. Most of the water sources have been converted for other purposes. As a result of this, the extent of the properly irrigated land in the state is fast dwindling.• There is general complaint on the part of the farmers that paddy cultivation is seriously
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		<p>constrained by relatively low levels of profitability.</p> <ul style="list-style-type: none"> • For the comprehensive development of the sector, more enthusiastic approach should be taken by the department for enhancing the prospects of value addition. At present, departmental attempts on many fronts in this regard does not seem derive the desired results. • Disturbance of wildlife in the arable lands adjoining the forest areas often results in large scale crop destruction. There is general complaint among the farmers that they do not get sufficient compensation for the loss occurred.
12	Suggestion	<ul style="list-style-type: none"> • For ensuring the availability of labour force at seasons, department shall take steps to promote labour banks at appropriate level. Since mechanization of sector is necessary for alleviating the problem of labour shortage,

		<p>department will take measures for drastic mechanization of the sector. Sufficient training with regard to the maintenance and operation of the machines should be imparted to the members of the labour bank. It would be better if the genuine farm labourers are included in the labour bank. While procuring the agricultural machineries, department shall take special care in meeting local area requirements and specifications.</p> <ul style="list-style-type: none">• For rendering necessary services to the machines, the service of a mobile mechanical engineering unit at the district level may be considered to be set up for undertaking repairs and maintenance of machines and equipments at the door steps of farmers.• Agricultural department should take special care in the procurement of heavy machines
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		<p>to ensure the availability of spare parts and service provisions including AMC. Local area requirements and specifications should also be taken into account while effecting purchases. For smaller holdings, small or medium range of machines may be more effective and useful.</p> <ul style="list-style-type: none">• Since it is a fact that without mechanization the agriculture sector can no longer go further, the Agriculture Department shall look into the matter and with the participation of Local Governments and various Government departments, arrange sufficient infrastructure facilities at a greater pace.• Rice cultivation in Kerala is largely depended upon rain. Therefore, our traditional water bodies and water sources have tremendous significance for supporting the rice cultivation in the state. There has been
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		<p>regrettable reluctance on the part of the authorities concerned and the farmer community in preserving our perennial water sources. In this context Agriculture department shall take tangible measures to keep our water sources and water bodies such as ponds, canals, streams, channels, check dams etc. intact.</p> <ul style="list-style-type: none">• Cost of cultivation in the state is comparatively high. Yield rate of rice is also not desirable. The problems of cost of cultivation , low yield rate and lower price of the produces are to be addressed for finding a solution to low levels of profitability. Mechanization of the sector is a must for bringing down escalating cost of production. Our farming system has to be incorporated with the latest techniques and know how derived from the research activities carried out at different levels. There is much scope for
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		<p>improvement of yield rate in the state. Department shall come forward with more economical market oriented schemes also. Farmers demand for time bound hike of the supporting price of the produce shall be looked into regularly.</p> <ul style="list-style-type: none">• Since agriculture development is not possible without proper value addition, Agriculture Department shall conceive more economically viable, market oriented schemes / programmes in order to make the sector more attractive and profitable.• The farmers are of the opinion that they are not receiving sufficient compensation for the crop destruction due to wildlife disturbance from the forest department. Therefore, they demand that the responsibility for the assessment of the calamity and distribution of the compensation is to be entrusted with the Agricultural
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			Department. Their demand may be considered to be examined.
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Coconut Development

1	Name of the Scheme	:	Coconut Development
2	Plan Outlay	:	Rs. 4500 Lakh
3	Head of Account	:	2401-00-103-87
4	Duration of implementation	:	Financial year 2016-17
5	Name of Offices and Date of Visit	:	Krishi Bhavan, Vazhapally, Kottayam 26-07-2016 Krishi Bhavan, Thalayolaparambu, Kottayam – 27-07-2016 Krishi Bhavan, Velloor, Kottayam – 01-11-2016 Krishi Bhavan, Omalloor, Pathanamthitta - 05-11-2016 Krishi Bhavan, Koduman, Pathanamthitta - 03-12-2016
6	Components Examined	:	<ul style="list-style-type: none"> •Cultural operations INM and IPM •Application of organic manure •Distribution of climbing device •Establishment of coconut nurseries

			•Irrigation units
7	Verification of documents/files	:	<ul style="list-style-type: none"> • Verified the files, documents and beneficiary list relating to the scheme
8	Feedback	:	<ul style="list-style-type: none"> • Collected information and data from the offices visited and the team also held meetings with stakeholders and beneficiaries of the scheme
9	Present status	:	<ul style="list-style-type: none"> • Components are under implementation
10	Observation	:	<p>Coconut occupies a significant position in the agricultural arena of the state. It is an important source of edible oil and is an integral part of the food habits of the people of Kerala.</p> <p>There is sharp decline in the percentage of contribution of cultivable area and production of coconut by Kerala to the nation. Coconut growers do not get reasonable price for their produce compared to sharp increase in input costs. In order to ensure uniform price for their produces, small and medium scale farmers tend to turn to other crops, especially cash crops.</p> <p>Being a thickly populated state, it is a</p>

		<p>difficult task to bring more land under the cultivation of coconut, as in the case of other crops since the existing holdings are drastically converted into house plots and for commercial constructions. However, by adopting effective measures, yield rate of the palms can be enhanced. A more comprehensive and serious approach on the part of the department with regard to value addition is necessary for the revival of the sector and thereby ensure a fair price to the farmers.</p> <p>Integrated development of holding through cluster based activities is envisaged in the scheme. The reason for the falling productivity is attributed to the prevalence of root wilt disease, existence of senile and unproductive palms. Tangible measures on the part of the department is necessary for the revival of the sector.</p>
11	Constraints/ Risk Factors	: <ul style="list-style-type: none"> ◆ The productivity of coconut palms in the state is very low. Many factors are attributed to falling productivity such as the prevalence of root wilt disease, existence of senile and

		<p>unproductive palms. Due to the non availability of trained climbers, the palm tops are usually left with uncleared. For preserving the health of palms and thereby enhancing the yield rate of the tree, regular cleaning of the tops is inevitable.</p> <ul style="list-style-type: none"> ◆ It has been noted that there has been a slow pace in the implementation of the value added endeavours. The departmental efforts on value addition do not seem to derive desired results. It is a fact that without product diversification and value addition the sector cannot go further. Farmers tend to leave the sector due to the lower profitability derived from the cultivation. ◆ At present there is a limitation of crop items for inter cropping. This puts a barrier across the profit prospects of the farmers. ◆ Eradication of disease is one of the major problems facing the
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		<p>sector. One of the reasons attributed for falling productivity is the prevalence of root wilt disease, attacks of rhinoceros beetle and red palm weevils. In the absence of the availability of effective bio pesticides, farmers often resorted to deadly synthetic pesticides. The usage of such products without taking into account the expertise opinion, it will create serious issues on the health of the general public and on our ecology.</p> <ul style="list-style-type: none"> ◆ In order to tackle the diseases, the best option now taken is the earlier removal of the disease affected palm trees so that the disease will not spread to the palms nearby. It is a general practice that farmers have been waiting for departmental aid to remove such palms. The possibility of spreading the disease like a wild fire is very high. ◆ Existence of senile and
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		<p>unproductive palms in large number is said to be another cause for falling productivity of palm trees.</p>
12	Suggestion	<ul style="list-style-type: none"> ◆ Agriculture department shall take a string of measures in order to address some of the grave problems like removal of disease affected palm trees, replanting of root wilt palms with elite palms. ◆ Farmers shall be imparted sufficient awareness to eliminate the disease affected palm trees on a war footing so that the disease will not be spread to the adjoining healthy palms. ◆ For replacing the senile and disease affected palms, the farmers are to be availed with elite, disease resistant coconut seedlings. ◆ In order to ensure uninterrupted availability of trained climbers, department shall form a labour bank of trained climbers. The service of the group is to be made available at a reasonable

		<p>rate. The group can be entrusted with the duties of cleaning the palm tops and the coconut plucking. This group can be in the model of “Changathies” in Cherthala South Krishi Bhavan.</p> <ul style="list-style-type: none"> ◆ Since it is a fact that without product diversification and value addition, the sector can no longer go further, department shall initiate tangible, economically viable and market oriented schemes with regard to value addition and product diversification. It can be possible by ensuring appropriate tie up with credit and marketing agencies. ◆ For tapping the full potentiality of the inter cropping more agricultural crops such as Colocasia, Elephant yam etc. may be considered. The possibility of inclusion of some cash crops can also be sought. ◆ To alleviate the problem of
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		<p>shortage of labours, the possibility of using machines for opening up of coconut basins may be considered.</p> <p>◆ It has been found that bio pesticides like “Nanma and Menma” are effective to prevent the attack of red palm weeviles and rhinoceros beetle. However, the availability of such products in sufficient quantity in the market is very scarce. Moreover, the price of such products is also very high. Agriculture department shall take necessary measures to avail sufficient quantity of such products at an affordable rate. In order to evolve more effective bio pesticides more research activities are to be promoted and regular evaluation of the research activities should be carried out by the department. Department will also ensure that the finished products of the research activities reach the end users.</p>
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		<ul style="list-style-type: none"> ◆ Proper awareness should be imparted among the farmers for the removal of disease affected trees on a war footing manner. Farmers are to be instructed not to wait for government aid for the removal of the disease affected palms. They are to perform the task by themselves in intimating the matter to the Krishi Bhavan of the respective area without wasting the time. The financial aid to them may be given after verifying the merit of the case. ◆ Agriculture Department shall initiate effective measures for replanting of root wilt palms, senile palms by elite, disease resistant coconut seedlings. For the production of quality seedlings sufficient number of nurseries at Krishi Bhavan level are to be started. ◆ In order to alleviate the problem of shortage of trained climbers, Agriculture department shall
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			take initiative to produce and promote dwarf size, disease resistant hybrid varieties of coconut seedlings.
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Vegetable Development

1	Name of the Scheme	:	Vegetable Development
2	Plan Outlay	:	Rs. 7430 Lakh
3	Head of Account	:	2401-00-119-85
4	Duration of implementation	:	Financial year 2016-17
5	Name of Offices and Date of Visit	:	<ul style="list-style-type: none"> • Krishi Bhavan, Shooranad South, Kollam - 21-07-2016 • Krishi Bhavan, Velloor, Kottayam - 01-11-2016 • Krishi Bhavan, Omalloor, Pathanamthitta - 05-11-2016 • Krishi Bhavan, Koduman, Pathanamthitta - 03-12-2016
6	Components Examined	:	<ul style="list-style-type: none"> • Support to VFPCCK • Promotion through homesteads • Promotion of urban clusters • Vegetable cultivation through institutions

			<ul style="list-style-type: none"> • Cluster development in districts • “Safe to eat branding”- project based assistance • Development support to graded clusters • Demonstration of micro nutrients • Block level federated organizations • Establishment of nurseries • Rain shelter • Trial on hybrids. • Micro irrigation with fertigation
7	Verification of documents/files	:	<ul style="list-style-type: none"> • Verified the files, documents and beneficiary list relating to the scheme
8	Feedback	:	<ul style="list-style-type: none"> • Collected information and data from the offices visited and the team held meetings with stakeholders and beneficiaries of the scheme
9	Present status	:	<ul style="list-style-type: none"> • Components are under implementation
10	Observation	:	The scheme “Vegetable Development” has been launched to achieve self sufficiency in vegetable production. An amount of Rs.7430/- lakh is

		<p>earmarked for the implementation of the scheme. The scheme is based on programmes like cluster based commercial cultivation, promotion of vegetable cultivation in schools with an aim to imbibe agricultural spirit and lessons in the minds of school children at an earlier stage, vegetable seed production, vegetable seed kit distribution, marketing etc.</p> <p>The scheme has a special significance as we heavily depend upon neighbouring states for our domestic requirements. The rate of pesticides residue in the imported vegetables from other state is so high that the consumption of them endangers the health of general public.</p> <p>Availability of quality seeds, fertilizers and pesticides in sufficient quantity in time is necessary for the successful implementation of the scheme. It should be ensured that application of manure is on the basis of the results of soil tests.</p>
11	Constraints/ Risk Factors	: <ul style="list-style-type: none"> • Since the availability of adequate quantity of quality seeds in time is one of the prerequisites for the

		<p>effective cultivation of vegetables, Department shall give special attention to ensure the timely availability of seeds.</p> <ul style="list-style-type: none"> • The aid/subsidy for vegetable cultivation is usually given once in a year. In some potential areas under cultivation in the state, farmers cultivate vegetables twice/thrice in a year. They demand that the departmental aid should be provided on the basis of number of times the cultivation is carried out. While cultivation of vegetables is being carried out almost throughout the year, ie, two/three times, the proportionate expenditure incurring in this regard will also be twice/thrice. However, the department aid/subsidy is limited to one cultivation in a year. • Application of manures without taking into account of the results of soil test will affect both the yield and soil health. If the
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		<p>application of manures is done on the basis of soil tests, it may certainly enhance the yield rate and reduce the cost of cultivation to a great extent. However, at present, there is no sufficient infrastructure facilities such as soil test labs and technical hands in the department to handle this matter.</p> <ul style="list-style-type: none">• Vegetable cultivation in the state is largely carried out in the summer seasons. One of the serious problems facing the vegetable cultivators in summer season is the scarcity of water for irrigation. In most parts the traditional water sources like pond, streams, canals, channels etc. are in a damaged stage so that irrigation becomes almost difficult.• The acute shortage of labourers is another problem hindering the progress of implementation of the scheme. In addition to this, the farmers often forced to pay
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		<p>higher wages.</p> <ul style="list-style-type: none">• In seasons, in the potential areas of vegetable cultivation, there is always a surplus yield. During the period, farmers often face difficulty in marketing their produces. In the open market it is difficult to compete with the big dealers/businessmen who bring vegetables in bulk from other states and sell for lower prices. The farmers are forced to sell out their produces at lower price though the cost of production is higher. This usually tends the farmers to forsake this field forever.• The distribution of vegetable seed packets to the school children and the introduction of school garden has evoked mixed response. While some schools and their pupils showed great enthusiasm and interest, others showed reluctance to the scheme. A portion of public money and effort may be wasted
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		<p>by providing aid to the institutions which show reluctance to the scheme.</p> <ul style="list-style-type: none"> • The effort of the department for the conversion of fallow lands into fertile ones has not achieved results.
12	Suggestion	<ul style="list-style-type: none"> • Agriculture Department shall take tangible measures to establish sufficient number of nurseries at appropriate level for providing the farmers sufficient quantity of quality seeds. Establishment of a regular quality assurance mechanism for monitoring the process is needed. If the task of the production and distribution of seeds is entrusted with an agency, departmental verification and monitoring of the process is to be ensured in all phases by the department itself. Quality assurance of inputs provided is inevitable for the success of the scheme implementation. • Department shall examine the

		<p>economic viability and possibility of providing additional support each time to the farmers who usually cultivate vegetables twice/thrice in a year.</p> <ul style="list-style-type: none">• For promoting “soil nutrient based fertilizer application” Agriculture department shall take steps to impart awareness among the farmers of the necessity of soil tests for enhancing yield rate and keeping the structure and health of soil at a desirable level. Department shall provide infrastructure facilities such as soil test labs, availability of sufficient quantity of nutrient manure, technical support etc.• By ensuring active participation of Irrigation department and local governments, Agriculture department shall prepare a comprehensive plan for the revival of traditional water bodies and infrastructural facilities and try to implement
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		<p>the renovation work in phased manner. Besides, by considering the local area requirements, new works with with a view to enhance the existing irrigation facilities may also be taken up.</p> <ul style="list-style-type: none">• Without addressing the problem of seasonal shortage of labourers, we cannot solve the grievances of the farmers. Agriculture department shall take steps to form labour banks at Krishi Bhavan level with the participation of local governments. For providing the service, a reasonable rate of wages should be fixed.• In the absence of a well organized net work of marketing, the farmers are forced to sell their produces at comparatively lower prices. In order to ensure a reasonable price to the cultivators and to provide consumers poison free, fresh vegetables at affordable rate, agriculture department shall
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		<p>take steps to establish a well organized marketing network run by the department itself.</p> <ul style="list-style-type: none">• The aid/support to schools shall be limited to the institutions which show genuine interest and enthusiasm in the implementation of the scheme. Proper awareness should be imparted to the students and teachers of the institutions before implementation of the scheme.• Clusters should be strengthened so that each cluster can be entrusted with a target of converting the fallow land into arable. Department should provide the cluster an additional aid/support for accomplishing the task.
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Organic Farming and Safe to Eat Food Production.

1	Name of the Scheme	:	Organic Farming and Safe to Eat Food Production.
2	Plan Outlay	:	Rs. 1000 Lakh
3	Head of Account	:	2401-00-105-85
4	Duration of implementation	:	Financial year 2016-17
5	Name of Office and Date of Visit	:	<ul style="list-style-type: none"> • Krishi Bhavans under Koovapady Block Panchayat, Ernakulam – 17-12-2016 • Krishi Bhavan, Cherthala south Alappuzha - 11-01-2017
6	Components Examined	:	<ul style="list-style-type: none"> • Assistance for certification • Empowerment of clusters • Promotional Assistance for clusters • Green manuring • Model Units for Organic manure preparation and safe to eat food production
7	Verification of documents/files	:	Verified the files, documents and beneficiary list relating to the scheme
8	Feedback		Collected information and data from the Offices visited and the team also

		held meetings with stakeholders and beneficiaries of the scheme
9	Present status	Components are under implementation
10	Observation	<p>Organic Farming is an alternative Agricultural system which is originated in reaction to rapidly changing farming practices. This form of Agriculture depends on fertilizers of organic origin such as compost, manure, green manure, and bonemeal etc. Crop rotation and companion planting are given more importance in this form of Agriculture. Naturally occurring substances are allowed to use as pesticides and fertilizers. The synthetic fertilizers and pesticides are generally prohibited. By the implementation of organic farming, it is assumed to gain advantage in sustainability, self sufficiency, health, food security, food safety etc. In short, organic farming can be envisaged as an integrated system of farming which strives for sustainability, the enhancement of soil fertility and biological diversity, and prohibits the use of synthetic pesticides, growth</p>

		<p>hormones, synthetic fertilizers, antibiotics and genetically modified organism.</p> <p>In the conventional mode of Agriculture, artificial fertilizers and pesticides are intensively and widely used. Even though the practice is beneficial in the short term, it has serious longer term side effects such as soil compaction and erosion and declines in overall soil fertility, along with health concerns about toxic chemicals entering the food supply. Organic agriculture has been introduced as remedy to alleviate the harmful effects caused by the rash usage of chemical fertilizers and pesticides.</p> <p>In Kerala, our domestic production of fruits and vegetables is not sufficient to meet our daily requirements. Therefore, we largely depend on our neighbouring states for these items which are marked with heavy contents of pesticide residue, which, in turn, creates serious health problems. Besides this, our soil is said to be turned into less fertile, and gone</p>
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		<p>shattered in its very structure. It is in this context, the scheme 'Organic Farming' has been introduced by the Agriculture department in all districts in order to bring more potential area under organic farming in order to address the side effects created by the rash usage of both the chemical pesticides and fertilizers.</p>
11	Constraints/ Risk Factors	<p>:</p> <ul style="list-style-type: none"> • A drastic change, from conventional forms, which is marked by the intensive and wide usage of the chemical fertilizer and chemicals, to organic farming, poses some practical problems. In the initial stages of organic farming, on the production side, farmers have to face low yield, crop loss, post harvest losses etc. The conversion period of soil into fully organic is said to be 6 to 8 years. During this transition period, those who adopt organic farming, especially, small farmers have to face tough competition from the farmers who practice conventional mode

		<p>of cultivation. Farmers of organic farming demand more government assistance to overcome the situation.</p> <ul style="list-style-type: none">• Pest control is a major problem in the organic farming. In the pure form of organic farming, synthetic pesticides are prohibited. Instead of synthetic pesticides, integrated pest management is to be opted. Integrated pest management is a multi faceted strategy that uses various organic methods of pest control. In organic agriculture, natural insect predators are encouraged, crops are rotated to confuse pests, renew soil and natural materials. One of the problems faced by organic farmer is the inadequate supply of organic inputs, especially organic pesticides in the market.• During the conversion period from conventional farming into organic, large quantity of organic fertilizers is needed to compensate the nutritional
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		<p>requirement of the soil. There experiences a shortage of such organic fertilizers.</p> <ul style="list-style-type: none">• For the successful organic farming, indigenous seeds is an essential factor. However, sufficient quantity of indigenous seeds is not available with the farmers. In organic farming, genetically modified hybrid varieties of seeds are prohibited. If they are used in organic cultivation yield rate will be less compared to that of indigenous seeds.• In open market the farmers cannot claim his produces as organic one. A Certification is needed to differentiate the produces of organic farming from the produces of conventional farming. Without the certification the organic farmers cannot claim for a better price in the open market. At present, without certification, they cannot tap the export potentiality of organic produces.
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		<ul style="list-style-type: none"> • In the absence of a well organized network of markets farmers of organic farming do not receive a fair price for their produce. It is a paradox that even though there exists greater demand for organic produces in the urban areas the farmers who practice organic farming are deprived of a fair price. The situation points to the need of a well organized and functioned network of markets.
12	Suggestion	<ul style="list-style-type: none"> • To facilitate smooth transition from intensive chemical farming to organic farming, a gradual change is greatly appreciated by the farmers. The farmer community is not prepared to face heavy flows of yield loss, crop loss, post harvest losses of organic farming. • Organic Farming is fundamentally different from the conventional one because of carbon based fertilizers. Therefore, in the initial stages, it

		<p>is said a safe mode of production is to be aimed at by combing the good features of organic farming. It is envisaged to minimize the use of chemical fertilizers and pesticides and maximize the usage of bio fertilizers and bio pesticides.</p> <ul style="list-style-type: none">• Department shall ensure availability of the desirable quantity of effective bio pesticides at affordable rate. For this, sufficient number of ecoshops at appropriate level should be started. More effective organic farming methods are to be evolved. For that, more studies are to be conducted in the field of agro ecology. Department shall take initiative to combine organic farming methods with scientific knowledge of ecology and modern technology in order to resolve the grave problems like pest management etc.
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		<ul style="list-style-type: none">• In the initial stages of organic farming, it is found that a safe to eat production mode in which the usage of synthetic pesticides and fertilizers is minimized and the usage of organic inputs is maximized. Special care should be taken to ensure that the usage of mild synthetic pesticides is considered as a last resort. In the long run, the usage of such synthetic products has to be abandoned and strictly adhered to the norms of organic farming.• In order to enhance soil fertility and productivity in natural way, the usage of sufficient quantity of organic and green manure has to be ensured. More number of rural compost and vermi compost units are to be farmed so as to compensate the nutrimental requirements of the soil. Cattle rearing
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		<p>should be promoted by ensuring the active participation of local governments and Animal Husbandry Department. Besides this, department shall ensure the quality of organic manure available at the market.</p> <ul style="list-style-type: none">• Organic principles generally enable large scale application of indigenous resources of local seed varieties, manure etc. Besides ensuring quality and yield of produces, it helps to make the farming cost effective. Hence, Agricultural Department shall give special care in the formation of seed villages and seed banks and thereby ensure the uninterrupted supply of quality ensured indigenous seeds.• Agricultural department has already opted the Participatory Guarantee System (PGS) for the certification. Since the
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		<p>system is comparatively cost effective and ensure the active participation of Agriculture Department and farmers in the process to a larger extent, department shall take steps to bring all potential areas under the certification. Before certification, the quality of inputs, and the produces has to be ensured by conducting various periodical tests such as residue analysis of soil and farm produces etc.</p> <ul style="list-style-type: none">• In order to ensure a fair price for the produces of organic farmers, department shall take initiative to embark a well organized network of markets. By doing so, department can ensure a fair price to the farmers and consumers can be served with fresh, poison free vegetables, fruits and other produces. There shall also be an organized mechanism to collect the entire produce supplied by the farmers.
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Hi-tech Agriculture

1	Name of the Scheme	:	Hi-tech Agriculture
2	Plan Outlay	:	Rs. 290 Lakh
3	Head of Account	:	2401-00-113-82
4	Duration of implementation	:	Financial year 2016-17
5	Name of Offices and Date of Visit	:	<ul style="list-style-type: none"> • Horticulture, Kollam - 24-10-2016 • Krishibhavans under Ranni Block Panchayat, Pathanamthitta 27-12-2016
6	Components Examined	:	<ul style="list-style-type: none"> • Human resource group for technology support and capacity building through SAMETI • Micro Irrigation for Coconut, vegetables, banana, arecanut (special assistance for Micro irrigation -15%) • Low cost structural designs of poly houses to Kerala Agricultural University • Special assistance to Poly houses. <p>The scheme is being implemented</p>

			during the current financial year, ie., 2016-17
7	Verification of documents/files		Verified the files, documents and beneficiary list relating to the scheme
8	Feed back		Collected information and data from the Offices visited and the team also held meetings with stakeholders and beneficiaries of the scheme
9	Present status	:	Components are under implementation
10	Observation		The main components of the scheme is the construction of poly houses with low cost technology. It is one of the most protected and controlled forms of agriculture. The scheme consists of various programmes such as expansion of seedlings production in plastic perforated trays under favourable micro climatic condition, standardization of new growing media for optimum plant growth, refined technologies for hardening of seedling, green house design, structure and technology suited to agro climatic conditions. Poly house cultivation is envisaged to produce vegetables and fruits throughout the year. Since the quality of the produces can be maintained properly, the

			produces can have export potentiality also.
11	Constraints/ Risk Factors	:	<ul style="list-style-type: none"> • In most cases, it is said that there is compromise in the case of space for the construction of poly houses. For getting better results, poly houses are to be constructed in open space so that the plants inside the poly houses might get the required quantity of light and heat. However, many of the poly houses in the state have been built by compromising on the space. Most of them have been accommodated at the available space. As a result of it, the poly houses might have been cast by the shades of trees and plants flourishing nearby them. Shady and moist areas may stimulate the algae growth on cladding materials which in turn, reduces the light intensity from the top. This may also results in growth of algae on the side nets so that it might obstruct the free movement of air in the poly

		<p>houses.</p> <ul style="list-style-type: none">• Adequate space should be ensured while selecting the site for poly houses. Availability of required quantity of sunlight and sufficient space for free air movement should be considered as the primary criteria for the site approval. Officers who are trained in the poly house cultivation shall be entrusted with the duty of prior approval of the site. The prior approval shall be made mandatory for the construction of the poly houses.• In most cases, the scientific principles for facilitating controlled environment for the growth of plants are not observed. Wrong designs have often resulted in dripping of rain water in to the poly houses from the air vents and the roofs. The design should be made by considering the wind direction and sunlight harvesting. Otherwise, the practice may
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		<p>result in the development of excessive heat within the unit. The situation will demand the use of foggers in order to bring down heat in the structure. As a result of it, humidity in the poly houses becomes high and triggers the pest and disease incidence in an unprecedented way.</p> <ul style="list-style-type: none">• Majority of the farmers are not found not to be aware of the importance of ante room, attached to the poly houses. It is designed as additional layer of safety to the main poly house.• Poly house cultivation is conceived as a form of protective, controlled form of cultivation. Nevertheless, flaws in the construction often cause various pest and disease attacks. Generally farmers are devoid of advice from experts. The farmers depend on recommendations provided by the local experts and follow the rash usage of chemical
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		<p>pesticides.</p> <ul style="list-style-type: none"> • The major portion of the soil in the poly houses are not necessarily be fertile and found to be poor in organic content. • The farmers are of the opinion that they are not receiving a fair price for their products. In the absence of a well organized market network, the farmers are to compete with the big guns in the open market. It is a usual practice that the price of the commodities is fixed by the big business men and dealers. The farmers are forced to sell out their products at lower price.
12	Suggestion/comments	<ul style="list-style-type: none"> • After imparting sufficient awareness to the poly house farmers, they are to be insisted on to follow a generally accepted, scientific design of National Horticultural Mission . There is general tendency among the farmers to use low quality materials for the construction of the poly houses. In the long run, the practice will

		<p>endanger the very concept of controlled, protective mode of cultivation. Therefore, by all means the quality of materials used shall be ensured. The farmers can be made aware of the quality of materials by serving them a list of materials identified with their hallmark or brand names. Besides this, the farmers may be introduced with a list of accredited constructors of the poly houses. The farmers will have a free hand in choosing the materials and the constructors from the list they are served with. Instead of poor quality pipes, galvanized pipes can be used. Even though aluminium shade nets are costlier than virus nets, they are found to be more effective in regulating the temperature inside the structure by effective absorption of heat and pose a lesser cleaning problem. By considering the long run durability and utility of aluminium</p>
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		<p>shade nets, farmers may be instructed to use them instead of poor quality plastic nets. The usage of poor quality iron pipes having multiple joints within a single frame results in rupture or slits in cladding materials which, in turn, let rainwater penetrating into the poly houses. All of these strongly recommend the need of the usage of quality materials for the construction of poly houses. Hence, it is recommended that the Agriculture department shall instruct the farmers to use quality materials for the construction of poly houses.</p> <ul style="list-style-type: none">• The temperature inside the poly houses should be maintained in an ideally uniform temperature, ie, around 30 degree Celsius. This is usually achieved by the complementary effect of a well oriented poly houses with clean (dust and algae free) cladding materials laid over the vent and sides. The extent of deterrence
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		<p>of the ultra violet rays inside the poly house is very much depended on the quality of the cladding materials. If the angle of the structure is not properly designed and erected, it may obstruct the free flow of sunlight and may permit more dust and moisture and algae growth on the cladding materials. In order to control the temperature inside the structure, fogging is opted by the farmers. In Kerala it is estimated that only around 15% of poly houses have been endowed with the facilities of thermometers and sensors for monitoring the accumulated temperature and humidity in the structure. The situation often leads to overdo/ underdo of watering. The very practice will jeopardize the prospects of good yield.</p> <ul style="list-style-type: none">• In order to tackle excessive heat accumulated in the structure measures to include the provisions for the installation of
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		<p>sensors and thermometers inside the structure may be included in the scheme as new component. Then farmers will be able to ascertain the quantity of water to be used for tackling the unusual temperature escalation in the system.</p> <ul style="list-style-type: none">• Due to climatic variants and defects in the construction of structures, dust accumulation and algae growth are found to be a common phenomenon on all cladding materials. In the absence of proper cleaning gadgets and lack of expertise in the field, farmers often left with no option but depend on strong detergents which ultimately badly affect the quality of poly sheets in the long run. This also reduces the ultraviolet capacity of the sheet and it will have a bad effect on production side.• The situation points towards the need of the identification of soft cleaning materials. Department shall draw the attention of the
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		<p>research wing in that direction.</p> <ul style="list-style-type: none">• Sufficient awareness will be given to the farmers as to follow the specifications of the ante room in the construction of the poly houses.• Integrated pest management in poly houses is to be followed. Use of bio-fungicides and bio-pesticides are to be encouraged. Regular technical interventions from the experts of the Kerala Agricultural University should be made available. Farmers should be made well aware of the diseases, pest attacks and the possible remedies that they can take as preventive measures.• For a better yield, the results of soil tests should be based for the application of the nutrients to the soil. The practice will enhance the fertility of the soil and help to regain the lost structure and health of the soil. It will reduce the cost of cultivation to a great extent.• For ensuring a fair price for the
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		<p>produces of the poly houses, organic mode of production may be encouraged. If certification as to the produces are made by following good agricultural practices and safe to eat, a good price can be fetched in the market. Certification will also help to get the produces an export potentiality.</p> <p>In order to alleviate the grievance of the farmers with regard to the price of the produces, a well organized market network with sufficient number of outlets at appropriate level can be started by the department. By doing this, department can supply the general public poison free vegetables and other agricultural produces at reasonable price on the one hand and a fair price can also be ensured to the farmers on the other.</p>
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FOREST AND WILDLIFE DEPARTMENT

A. INTRODUCTION

Forest and biodiversity is key to all life forms. Forest plays an important role in the country's ecological stability and economic development. In Kerala, forest area lies in two bio-geographic provinces, viz. Western Ghats and Western Coast, which are rich in biodiversity and vital for environmental protection and considered to be repository of rare and endangered flora and fauna. The National Forest Policy envisages achieving the goal of 33% of the land under forest and tree cover in the country. The Remote Sensing Data showed progress in the percentage of forest growth in Kerala during the last 10 years.

Good forest areas are called 'Bio-Diversity- Hot spots' due to the wide range of life forms and their genetic diversity. A variety of reasons ranging from increase in human population, deforestation caused by indiscriminate developmental activities, mono-agriculture, pollution, urbanization etc. have put severe pressure on forests. One of the main aims of conservation of forests is to try and preserve the inherited bio-diversity. Loss of diversity will lead to ecological imbalance. There is a clear and mutual relation between the health of forest, rainfall concentration, the quantity of water in rivers and conservation of wildlife. Humanity faces exceptional challenge in eroding natural resources and declining ecosystem services due to multitude of threats created by unprecedented growth and consumerism. Judicious consumption and careful conservation can extent natural resources for generations to come.

Forest department in Kerala is one of the oldest and important administrative organs of the state with its headquarters at

Thiruvananthapuram. The department aims:

- To conserve and expand unique and complex natural forests.
- To increase the productivity of forest plantations through appropriate management interventions and use of modern technology to meet the needs of the present and future generations.
- To increase the tree cover both inside and outside forest to meet the timber and non-timber demands of the society.
- To conserve, maintain and enhance the existing 'gene pool' of the state for posterity.
- To reduce pressure on forest through appropriate interventions.
- To meet the livelihood needs of tribes and other forest dependent communities.
- To sustainably conserve and manage bio-diversity rich and sensitive ecosystems such as mangroves, sacred groves, coastal areas, wetlands, homesteads, private plantations etc which are outside the control of forest department.
- To improve the standard of living of the forest dependent tribes and village communities.

Major subjects assigned to the department are Forest Protection, Bio-Diversity Conservation, Wildlife Management and Research, Forest Development, Social Forestry, Forest Vigilance and Evaluation, Eco-development and Tribal Welfare, Planning and Research, Tribal Rehabilitation and Special Afforestation, Infrastructure and Human Resource Development, General Administration including Recruitment and Establishment matters etc. Concurrent Evaluation and Monitoring of Schemes acts as a corrective force and offer real time analysis of the programmes/schemes implemented by the Forest and Wildlife Department.

B. SCHEME WISE DETAILS

Forest and Wildlife Department implemented various schemes in the entire state during 2016-17. It is difficult to evaluate all the schemes implemented throughout Kerala within the limited time frame and man power. Hence it was decided to introduce Concurrent Evaluation and Monitoring of Schemes in five selected schemes. The details of the selected schemes are as follows:

1. Forest Protection (Survey of Forest Boundaries and Forest Protection)

Protection of forest from theft and encroachment are essential for the effective management of forests of the state. Demarcating boundaries by erecting permanent cairns and constructing stone walls in sensitive areas can help in controlling large scale encroachments. Fire protection activities are operated through Vana Samrakshana Samitis/ Eco Development Committees. As forest protection is the most important aspect of managing natural forest, added emphasis should be given on effective protection measures.

The important ongoing activities under the scheme are protection of special ecosystems including sandal forests, shola forests, mountain ecosystems and vayals, maintenance of vehicles, providing facilities to the existing forest stations, maintenance of forest roads and trek paths, modernisation of buildings, employment of forest protection watchers, eradication of weeds, construction of cairns, kayyalas, checkdams, ponds, legal support, intelligence gathering, construction of campsheds inside forest interiors, soil and moisture conservation activities, participatory forest

management and welfare of tribals, installation and extension of wireless network communication, supply of modern equipments to strengthen Rapid Response Team etc.

2. Management of Wildlife sanctuaries - Aralam Wildlife Sanctuary

Aralam Wildlife Sanctuary was established in 1984. It has an area to the extent of 55 Sq.Km. The sanctuary was formed carving out areas from the Odamthodu Malavaram of Thalassery special division and from Kottiyoor reserve forest of Wayanad forest division. Since the area is lying continuous to Brahmagiri Wildlife Sanctuary of Kudak forest zone and forest areas of Wayanad, it has much significance in the case of wildlife protection. The evergreen and shola forests are blessed with rich and immense variety of vegetation. The existence of Cheenkannipuzha which is the tributary of Valapattanam river is mainly depending upon the catchment area of Aralam Wildlife Sanctuary.

The team from Finance Department evaluated the schemes implemented in Aralam wildlife sanctuary during 2016-17. The schemes implemented are forest protection, ecotourism, integrated development of wildlife habitat, buildings, project elephant, conservation of bio-diversity, eco-development programme and measures to reduce man-animal conflict. The details can be seen in the status report.

3. Management of National Parks – Silent Valley National Park

Silent Valley National Park is the second largest national park in Kerala. This park is one of the last undisturbed tracts of south western ghats mountain rain forests and tropical evergreen forest in India. The Kunthipuzha river drains the entire 15 Km length of the park from the north to south into the Bharathapuzha river. The river is characterised by its crystal clear water

and perennial nature. Silent valley wildlife division has two ranges viz., Silent Valley and Bhavani. The details of the schemes implemented in the national park during 2016-17 can be seen in the status report.

4. Eco-Tourism

Eco-tourism in and around forest areas other than sanctuaries and national -parks helps environmental concentration by promoting awareness among various groups. The activities are managing tourism in an eco-friendly way in locations where the high influence of visitors tends to affect the environment detrimentally. Periodic review will be undertaken to ensure that the tourism initiatives do not adversely affect the goal of conservation. Finance team conducted field visits in Kudukkathupara Eco-tourism Project in Anchal Forest Range and Konni Eco-tourism Project and Adavi Eco-tourism Project under Konni Forest Division.

5. Measures to Reduce Man-Animal Conflict

Crop destruction, killing of human beings and cattles by wild animals in forest fringes is a serious problem in many parts of the State. The wild animals particularly wild elephants, wild boars, deers, porcupine, carnivores, snakes etc. frequently cause destruction to life and property. Construction of elephant proof trench, rubble wall and solar fencing are some of the activities undertaken to prevent the entry of wild animals into the agricultural fields. The new components introduced are voluntary relocation and rehabilitation of people living in settlements inside that forest, ready payment of compensation to victims of wildlife attack and for crop damage, habitat improvement especially improvement of water resources, fodder and breeding grounds for wild animals to prevent animals staying away from the forest and Rapid Response Team for effective intervention where man and

animal conflict is frequently experienced, establishment of corridors to connect fragmented habitats of wildlife and construction of elephant ramps in different localities to enable elephants move away from road inside forest. The details of components implemented in different forest ranges during 2016-17 can be seen in the Status Report.

C. STATUS REPORTS

Forest Protection (Survey of Forest Boundaries and Forest Protection)

1	Name of the Scheme	:	Forest Protection (Survey of Forest Boundaries and Forest Protection)
2	Plan Outlay	:	Rs.2122 lakh
3	Head of Account	:	2406-01-101-81
4	Objectives	:	Protection of forests from thefts and encroachments are essential for effective management of forests of the state. Demarcating the boundaries by erecting permanent cairns and constructing stone walls in sensitive areas can help in controlling large scale encroachments. As forest protection is the most important aspect of managing natural forest, more emphasis has to be given on effective protection measures.
5	Name of Offices visited and Date		Forest Range Office, Anchal - 28-10-2016 Periyar Tiger Reserve, Thekkady range - 25-11-16 Parambikulam Tiger Reserve - 30-

			01-17 & 31-01-17
6	Duration of Implementation	:	For the Financial Year 2016-17
7	Components Examined		<ul style="list-style-type: none"> • Maintenance of forest roads and trek paths • Modernization of building • Construction of cairns/ kayyalas/ checkdams/ ponds/ campsheds inside forest interiors • Modernization of building/ vehicles • Providing facilities to existing forest stations • Soil and moisture conservation activities • Participatory forest management and welfare of tribals • Installation and extension of wireless network communication • Supply of modern equipments to strengthen Rapid Response Team etc. • Gully plugging
8	Verification of documents/ files		Finance Team verified all the files and documents related to the civil works and forest protection works carried

		out in ranges. Work sites of the components of scheme have also been examined.
9	Feed Back	Information and data have been collected from Deputy Director, Parambikulam Tiger Reserve and Range officers of Anchal and Periyar Tiger Reserve, Thekkady. Information have also been collected from the members of Vana Samrakshana Samities/ Eco Development Committee and local resident's adjacent to the forest area.
10	Observation/ Present Status	<p>In most of the ranges forest protection works were not started. The works are carried out only after monsoon, ie. from December onwards. Civil works have been carried out in most of the ranges.</p> <p>In Anchal Range, civil works carried out are concreting the approach road to the new range office building, interlocking tiles to the entrance of range office, beautification work, gate and roofing to the old thondy shed and decorating protection wall around trees of new range office compound.</p>

		<p>In Parambikulam Tiger Reserve, civil works have been carried out under the scheme 'Forest Protection' in four ranges namely Sungam, Parambikulam, Orukomban and Karimala. During the visit of Finance Team, Fireline and Vista clearance works were under way in all ranges. Hence it is difficult to reach work sites located at high terrains. The works such as removing exotic weeds near Ottappola area in Vengoli Section, eradication of invasive species like lantana, eupatorium etc in Kariyanchola area under Anappady section and removing exotic weeds around Poovathikayattam under Parambiar sections have been verified by Finance Team. During 2016-17 Gully plugging works were carried out in Madampura, Koodalpallam, Orukomban-para and Manavattippara under Kothala section.</p> <p>Reconstruction of boundary wall at Kokkara and Thamarakandam have been carried out in Periyar Tiger Reserve, Thekkady Range. Out of the total outlay of Rs. 4,69,000/-,</p>
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			Rs. 4,60,382/- has been utilized till October 2016. 98.16% of the target has been achieved.
11	Constraints/ Risk Factors		In some ranges civil works under the scheme 'Forest Protection' are carried out at high terrains. It increases the transporting charge of the materials and labour charge. Hence the timely completion of the works is difficult. Implementation of some works are delay in release of allotment and approval of Annual Plan Operation.
12	Suggestions		<ol style="list-style-type: none"> 1. There should be an Engineering wing to help and oversee various Civil Works in Forest and Wildlife Department. 2. Maintenance of Kayyala/ Cairns should be done periodically to increase its durability. 3. All sections of the ranges should be fully equipped with Network Communication to convey messages in case of emergency. 4. Department should ensure the service of Surveyor in Forest Department to carry out the

			<p>works related to survey and demarcation of forest boundaries.</p> <p>5. There should be prompt system of release of fund.</p> <p>6. Gully plugging is done in some places across small streams which flows through interior part of forest where, it is observed, there is no chance for heavy soil erosion. The investment in such cases is, therefore, found to be unproductive. Hence, this programme requires a review.</p>
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Management of Wild Life Sanctuaries - Aralam Wild Life Sanctuary (50% CSS)

1	Name of the Scheme	:	Management of Wild Life Sanctuaries - Aralam Wild Life Sanctuary (50% CSS)
2	Plan Outlay	:	Rs. 95 lakh
3	Head of Account	:	2406-02-110-39 (08)
4	Duration of implementation	:	Financial year 2016-17

5	Date of Visit	:	28/9/2016 & 29/9/2016.
6	Name of Office	:	Office of Aralam Wildlife Warden, Iritti, Kannur
7	Components Examined	:	Evaluated all the schemes implemented in Aralam Wild Life Sanctuary.
8	Verification of documents/files		Verified all the files and documents related to various schemes in the Wild Life Warden's Office & Range office. The works were verified at the various work sites.
9	Feed back		Collected information from Wild Life Warden, Range officers, Deputy Range Officers of Aralam Wild Life Sanctuary and the local residents adjacent to Aralam Wild Life Sanctuary.
10	Ecological Significance	:	Aralam Wildlife sanctuary is the northernmost protected area of Kerala State situated in South east part of Kannur. It sprawling over 55 sq.km, forms the catchments feeding cheekanni river and Urutty river which meander their way down to join Valapattanam river. The terrain is highly undulating, typical of Western Ghats and elevation varies from 60m to 1.589m. It is a unique preserve

		<p>of natural rain forests, with a rich mosaic of varied habitats nursing a variety of life forms many of which are endemic to the western ghats. Aralam Wild Life sanctuary is blessed with 961 species of flowering plants and many of them are endemic to peninsular India. Different types of amphibian, reptiles, fishes and butterflies are rich in the sanctuary which are endemic to western ghats and endangered. The faunal diversity includes 97 species of terrestrial mammals, 228 species of birds, 140 species of flies and 140 species of spiders which are rare and endangered.</p>						
11	Present status	: As per the proceedings of the PCCF (Wild life) and Chief Wild Life Warden Kerala vide order /no. WL7/18183(4)2016 dated 28/4/2016 funds under the Budget head 2406-02-110-56 - Eco-development was distributed to the following order in Aralam Wild Life Sanctuary.						
		<table border="1"> <thead> <tr> <th>Sl.No</th> <th>Name of Work (Proposed)</th> <th>Allotment (Rs.in lakh)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Conducting Medical Camps for Tribes in fringe areas</td> <td>0.62</td> </tr> </tbody> </table>	Sl.No	Name of Work (Proposed)	Allotment (Rs.in lakh)	1	Conducting Medical Camps for Tribes in fringe areas	0.62
Sl.No	Name of Work (Proposed)	Allotment (Rs.in lakh)						
1	Conducting Medical Camps for Tribes in fringe areas	0.62						

			2	Maintenance for Facilitation Centre/ Tribal Help Desk in Valayamchal	2.88
			3	Supplying Water Filter, Chairs, Baby toys etc to anganwadies in fringe area of Aralam Wildlife Sanctuary	2.00
			4	Providing basic facilities in Aralam Farm HSS	2.00
			5	Providing basic facilities in Badel Schools in fringe area of Aralam Wildlife Sanctuary	1.00
			6	Providing study materials to the students of High School, Higher Secondary School, College and SPCS Aralam Farm Tribal Rehabilitated Area	1.00
			7	Improvement of	2.00

				Facilitation Centre/ Tribal Help Desk in Valayamchal	
		8		Introduction of Vanasree Unit in Valayamchal	2.00
		9		Overhead charges of EDCs	1.50
				Total	15.00
		As per order no.WL7-18183/(6)/2016 dated 28/04/2016 the following amount were allotted to various works under the budget head 2406-02-110-68 conservation of Biodiversity-34OC in Aralam Wild Life Sanctuary.			
			Sl.No	Purpose	Allotment (Rs.in lakh)
		1		Conducting Nature Awareness Camps for stakeholders, school, college students and NGOs	5.00
		2		Purchasing HD television of nature awareness class	1.00
		3		Payment of Relief to victims of Wildlife Attack	1.00

			Total	7.00
12	Observation	:	<p>a. Ecotourism:- The allotment amount for the schemes is Rs.20 lakh. The fund is allotted mainly for the construction of footsteps at Meenmutty Water Fall, road maintenance and for watch tower at Pookundu. All the works are implemented through Aralam Forest Development Agency (FDA)</p> <p>b. Integrated Development of Wildlife Habitat- The total outlay of the scheme is Rs 125.37 lakh out of which Rs. 90 lakh is state share. The objectives of the scheme are effective conservation of western ghat area, better upkeep of wildlife sanctuary, improvement of civil infrastructure and communication, Reduce Man Animal Conflict, conduct welfare activities for tribes in fringe, nature awareness for students and adults and ensure the participation in tourism map. 90% of the works were already started. Balance work such as construction of fireline, riverside protection etc are seasonal works which were started from November onwards. Out of the central</p>	

		<p>share of Rs.35.37 lakh, only Rs.14.01 lakh was utilized at the end of October and Rs.16.95 lakh was utilized out of Rs 95 lakh in case of State share.</p> <p>c. Forest Protection (Capital):- The allotment amount for the scheme is Rs.12 lakh, Out of this Rs. 6 lakh was for the construction of first floor in Type II Quarters at Valayamchal. It is a spill over work. The work is completed. But the final bill amount has not been released. Another Rs. 6 lakh rupees is for the construction of compound wall to staff quarters building at 10th block and Chavachi. It is a tender work. The expenditure has not been incurred till October 2016.</p> <p>d. Forest Protection (Revenue). The allotment amount is Rs 10 lakh. The main activities carried out under the scheme is engaging protection watchers for general protection and scaring wild elephant from settlement area. Rs 8 lakh is set apart for the construction of check dam at Urappukunnu which is a tender work.</p>
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		<p>e. Buildings:- Out of the total allotment of Rs. 5 lakh is for the construction of staff quarters at Chavachi which is completed and Rs 3 lakh for the maintenance of department building. No expenditure has been incurred till October 2016.</p> <p>f. Project Elephant: The allotment amount for the schemes is Rs 5 lakh. The major activities carried out under the schemes are protection of elephants, conservation and development of habitats and corridors, eco development activities and improvement support service including monitoring research and training. Clearing protection path and vista clearing are started and works such as engaging fire mazdoor and clearing firelines are seasonal works which will be commenced from December onwards. A nominal amount of Rs. 81 lakh has been utilized till October 2016.</p> <p>g. Conservation of Biodiversity (CBD)- The total allotment amount is Rs 7 lakh. The main activities are conducting nature awareness camps for stateholders, school, college students and NGOs, purchasing</p>
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		<p>TV for nature awareness class, payment of relief to victims of wild life attack. All the above activities have been started and are going on.</p> <p>i. Measures to reduce the Animal conflict:- The total allotment for the scheme is Rs 15 lakh. The main activities under the schemes are strengthening of elephant proof trench and stone well, formation of elephant driving force and payment of compensation to victims of wildlife attacks.</p>
13	Suggestion	<p>: 1. The height of the elephant proof wall now constructed is 1.8m. It is comparatively low. If it is raised to 2.3 m height the elephant can't view and enter agricultural and settlement areas.</p> <p>2. Elephant proof work is not constructed with rock pieces and cement mortar. Elephant can easily damage those stone wall by noting on it. It can be prevented with a layer of reinforced cement concrete with 1 feet height.</p> <p>3. Vista clearance is now done with a width of 5.3m. If the width is widened to</p>

		<p>10 m, it can clearly help to see wild animals during trucking and perambulation.</p> <p>4. Steel bars with sharp nails are used for preventing the evasion of wild animals to agricultural lands. Even though it is an effective measure to prevent evasion, it may sometimes cause deep injuries to wild animals. The remnants of animal flesh were noticed by the forest officials. This method is seen as a cruelty to animals. Hence, more scientific and improved methods may be explored to be adopted.</p>
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Development of National Park (Biosphere Reserve) - Silent Valley National Park

1	Name of the Scheme	:	Development of National Park (Biosphere Reserve) - Silent Valley National Park
2	Plan Outlay	:	Rs.200 lakh
3	Head of Account	:	2406-02-110-90
4	Ecological Importance	:	Protection of forests from thefts and encroachments are essential for effective management of forests of the state. Demarcating the boundaries by erecting permanent cairns and

			constructing stone walls in sensitive areas can help in controlling large scale encroachments. As forest protection is the most important aspect of managing natural forest, added emphasis should be given on effective protection measures.
5	Name of Offices visited and Date	:	Office of the Wild Life Warden at Mannarcaud and offices of Silentvalley and Bhavani Ranges - 15.11.2016 and 16.11.2016
6	Duration of Implementation	:	For the Financial Year 2016-17
7	Components Examined	:	Evaluate the effectiveness of all the schemes implemented in Silent Valley Division and works carried out in Silent Valley and Bhavani Ranges.
8	Verification of documents/ files	:	Finance Team verified the files and documents related to all the schemes implemented during 2016-17 in the Silent Valley Division and two ranges namely Silent Valley and Bhavani. Work sites of the components of scheme have also been examined.
9	Feedback	:	Collected data from Silent Valley Division Office and Range officers of Silent Valley and Bhavani.

			Information have also been collected from the work sites and forest station located within the division.
10	Present Status	:	<p>a) Forest Protection 2406-01-101-81-340 (RS. 25 Lakh).</p> <p>Most of the work in this scheme are seasonal. Fire Protection works, engaging fire gangs start only by the month of December and improvement of infrastructure for forest protection are scheduled and begins only after the north east monsoon period because most of the campsheds are located in the high terrain of the park. Improvement of infrastructure for forest protection and maintenance of department vehicles were carried out till 31-10-2016. Within this period Rs.5.69 lakh have been utilized out of the total outlay of Rs.25 lakh.</p> <p>b) Eco-development Programme 2406-02-110-56-00 (Rs. 25 Lakh)</p> <p>Action have already been taken to conduct medical camps to tribals at various Tribal Colonies and other programmes like assistance to house repair, renewal tribal hostel, study tour</p>

		<p>to tribals, flooring class room to tribal school, football fest to tribals etc. Out of the total outlay of Rs. 25 lakh, only Rs.4.19 lakh has been expended till 31.10.2016</p> <p>c) Conservation of Biodiversity 2406-02-110-68 (Rs.48 Lakh)</p> <p>The Scheme is the key for the conservation and sustainable use of biodiversity and for the fair and equitable sharing of benefits. Species survey like butterfly, identification of strobillanths and thar survey are scheduled to be conducted. Other works inside the park will be starts only after the north east monsoon and completes before February. Hence only Rs. 9.87 lakh has been expended till 31-10-2016.</p> <p>d) Project Elephant 2406-02-110-71-00 (100% CSS) (Rs.18 Lakh)</p> <p>Eleven Nature camps were conducted for Public/ visitors. A sum of Rs.1.34 lakh were utilized for this purpose. Some works are under process of tender and other works are seasonal. The work in the anti-</p>
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		<p>poaching campsheds begins only after North East Monsoon period because these campsheds are located in the high terrain of the Camp.</p> <p>e) Measures to Reduce Man -Animal conflict 2406-01-800-56. (Rs. 5 Lakh)</p> <p>Out of the total outlay of Rs. 5 Lakh Rs.4.64 lakh have been utilized for the payment of Compensation to Victims affected by the attack of wild animals. The Government has just started a new web portal for payment of compensation through online. But, public and officials are not familiar with this system.</p> <p>f) Forest Protection (Survey of Forest Boundarian) 4406-01-101-99 (Rs.40 lakh)</p> <p>The scheme aims at Survey and demarcation of boundaries by constructing cairns and forest protection activities. Lack of department Surveyor in the Division is the reason for the Non-completion of the demarcation of the remaining length of the boundaries. Hence only Rs. 4.94 lakh have been utilized till</p>
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		<p>31-10-2016 out of the total outlay of Rs.40 lakh.</p> <p>g) Building 4406-01-070-97 (Rs.9 Lakh)</p> <p>Renovation of building at Mukkali for Rs.1.64 lakh and renovation of staff Quarters at Mukkali for Rs.7 lakh have been completed till 31.10.2016. Other works are in progress.</p> <p>h) Roads-4406-01-070-99 (Rs.10 Lakh)</p> <p>The works under the Scheme are concreting wheel base road between Mukkali - Sairandri Road (Rs.6.85 Lakh) and Chapaths at Mukkali – Sairandri Road (Rs.3 Lakh) only 1.1 km of concreting wheel base road between Mukkali- Sairandri has been completed till 31.10.2016 at a cost of Rs.1.34 lakh. The remaining works start only after closing the park in the fire season.</p> <p>I) Integrated Development of Wild life habitats- 2406-02-110-38(2) (Rs.263.78 Lakh)</p> <p>It is a Centrally Sponsored Scheme (60:40) launched during 11th</p>
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		<p>Plan period. The activities covered under the Scheme include staff development and capacity building, wildlife research and evaluation, anti-poaching activities, wildlife veterinary care, addressing man-animal conflicts and promoting ecotourism. Rs. 67 Lakh have been utilized till 31.10.2016. Some works like perambulation, field ration, nature education camps, dormitory maintenance, and IB maintenance are going on. Some works like trek path maintenance and fire protection works were scheduled to begin by the month of November and December.</p>
11	Observation	<p>: During verification of site and related files, it is found that for the work “ Renovation of resting area at Sairandri,” the remaining works such as Construction of shelf under the Kitchen Slab and providing and fixing 25 mm thick laminated medium density fibre board have not been completed. Hence, payment may be sanctioned only after completion of the work.</p>

12	Constraints/ Risk Factors	: The implementation of works in the Tribal School and Anganvadies were schedule to begin in the school vacation period without affecting their studies under the Scheme Ecodevelopment Programme. Most of the works under Forest Protection, Conservation of biodiversity, Project Elephant etc. can be started only after the north east monsoon period because most of the campsheds are located in the high terrain of the park. Road maintenance were scheduled, after the closing of the park for fire season.
12	Suggestions	<ol style="list-style-type: none"> 1. Lack of Department Surveyor in the Division is the reason for the non-completion of survey and demarcation of boundaries. Hence Department shall take urgent necessary steps to post Department Surveyor in the Division. 2. Divisional Forest Officer is the sole authority for issuing Technical Sanction up to Rs.20 Lakh. However, as far as DFO is concerned, there is no technical

		<p>background for discharging such duties. Therefore, a technical wing at State level may be considered to be constituted for preparation of the estimates to increase the quality of work.</p> <p>3. There is a practical hazard facing the construction activities in the interior part and high terrains of the forest. The estimate does not reflect the hikes in the transportation cost of the material. It may be brought to the notice of the authorities concerned to avoid unnecessary delay and dropping of works. There is considerable difference in the cost of work done in plain land and forest areas. Lack of good condition road and even footpaths will lead to carry the materials required for construction on the head of workers which increases the cost of work. Hence, the department may consider to fix higher index in the DSR for the work carried out in forest areas especially dense forest.</p>
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Eco Tourism

1	Name of the Scheme	:	Eco Tourism
2	Plan Outlay	:	Rs. 820 lakh
3	Head of Account	:	4406-01-800-91
4	Objectives	:	Eco tourism in and around forest areas other than sanctuaries and National Parks helps environmental conservation by promoting awareness among various groups. The activities proposed are managing tourism in an ecofriendly way in locations where high influence of visitors tends to affect the environment detrimentally. Periodic reviews will be undertaken to ensure that the tourism initiatives do not adversely affect the goal of conservation. There are large number of wildlife related ecotourism sites. It is proposed to open more locations as ecotourism spot with involvement of local people and through Vana Samrakshaka Samithi.
5	Name of Offices visited and Date	:	Divisional Forest Office, Konni- 12-07-2016 Forest Range Office Anchal - 28-10-2016

6	Duration of Implementation	:	During the Financial Year 2016-17
7	Components Examined	:	<ul style="list-style-type: none"> • Managing tourism in areas where large number of visitors come. • Camping equipments • Basic facilities such as toilets, sitting places, viewing structures, drinking water, resting place etc. • Preservation of forest heritage sites. • Improvement of approach roads to ecotourism centres.
8	Verification of documents/ files	:	Finance Team visited Kudukkathupara Ecotourism Project located under Anchal Forest Range and Adavi Ecotourism Project, Konni Ecotourism Projects under Konni Forest Division.
9	Feedback	:	Information and data have been collected from Divisional Forest Officer, Konni and Range Officer, Anchal. Informations have also been collected from the members of Vana Samrakshana Samithi/ Eco Development Committee and tourists/ visitors in ecotourism spots.
10	Observation/ Present	:	Konni has been the home of well

Status	<p>managed teak plantations that sprawl 8000 hectare presently. The natural forest and the plantation areas are blessed with many rivers, viz, Achenkovil river, Kallar river etc. Another dimension of Konni in history pertains to captive wild elephants. Konni has been the oldest station in Kerala where capturing of wild elephant, taming etc. started. Capturing was mainly confined to the bank of Kallar river, where old pits for capturing elephants are still seen. The wooden elephant cage situated in Konni town is more than 100 years old. Hundreds of elephants have been tamed in this cage and those elephants were either sold or used for departmental purpose. Konni Ecotourism has been envisioned as an elephant centered tourism project. The focus of attraction for tourism is elephant watching, feeding, riding etc. In addition to this, there is a neatly maintained beautiful children's Park. There is an audio visual programme to familiarize various sounds of wild animals. It is a charming experience.</p>
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		<p>Finance Team also visited Adavi Ecotourism Project area. Adavi area comes under Konni forest range and is a part of Kumaramperoor reserve forest. The project area extending to about 160 hectare is situated along the banks of the river Kallar, which is near to Konni - Chittar road. At this area the river Kallar is broad for setting out the project. The river Kallar originates from Nanattumedu and joins pampa river at Vadasserikara. The river is live throughout the year and overflows during rainy season. The proposed site is 10 km away from Konni Ecotourism centre at Thannithode route and 18 km away from District Headquarters.</p> <p>The main objectives of this project are to develop the banks of Kallar river into a beautiful ecotourism spot without causing disturbance to natural habitat, with attraction like butterfly park, medicinal park, arboratum, wild flower park etc. It also provide facilities for education research, awareness creation etc on elephant, flora, fauna etc., and provide</p>
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		<p>employment facilities for the local people. In addition to all, there is a fascinating bamboo rafting at Kallar river. The VSS is operating it and provides employment opportunity to more than 30 members.</p> <p>Finance team visited Anchal Forest Range on 28/10/2016. Kudukkathupara Eco-Tourism project is located under Anchal Forest Range. Kudukkathupara Eco Tourism is in the initial stage. The Range Forest Officer and the president of Vanasamrakshaka Samithi opined that during tourism season as well as Onam, Eid and Christmas festivals, a large number of tourists visit the place. There is no visitor facilitation centre nor any basic facilities such as toilets, rain shelter, drinking water facility, notice boards etc. It is not a dense forest. Presence of wild animals are not noticed in the area. Only monkeys, squirrels and small birds are inhabitants of the project area.</p> <p>At the top of the rock the scenery is so marvelous. From here we</p>
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		<p>can view a vast area with a natural enchanting feeling. There is a 'train rack' and 'Elephant palm tree' situated at the entrance of the steps. There are 200 steps to reach the top of the rock. Tourists can't climb on the topmost part of the rock since it is very steep. If a watch tower is built with 50 feet height it may help the tourists to reach at the level of the rock. The tourist can enter into the cave like portion of the rock where they get shelter from rain. The wind here is so fascinating. If basic facilities are provided tourists may take this place as a picnic spot.</p>
11	Suggestions	<p>:</p> <p>The space now available in the ecotourism centre at Konni town is very limited. It has not been extended, since it situated near the urban area of Konni Town. The activities of the elephants are also limited due to space constraint. Hence, it is an urgent need to find an alternate site for elephant care centre.</p> <p>In Adavi Ecotourism Project six numbers of tree hut machan were built with bamboo on the banks of Kallar</p>

		<p>river. The huts include one drawing room, one bathroom attached bedroom and a balcony and are not opened to visitors/tourist for stay/halt. The bamboos are gradually degrading due to lack of proper maintenance. Urgent steps may be taken to open it for tourists.</p> <p>Urgent steps to be taken to provide restroom, toilet and drinking water facility at the spot of bamboo rafting at Kallar river.</p> <p>Suggestions to improve the facilities of Kudukkathupara Eco-tourism are as follows:</p> <ul style="list-style-type: none"> • A tourist facilitation centre may be provided in the entrance of Eco-tourism project. • Sufficient number of toilets may be provided at appropriate places without disturbing the eco system. • Drinking water facility may be provided to the visitors at different from base point to the top of the rock. • Rain shelter may be provided to
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		<p>the visitors</p> <ul style="list-style-type: none">• Notice Boards should be displayed at the appropriate places to know the history of the rock and to provide instructions to visitors.• A watch tower with a height of 50 feet may be built up the top of the rock to get distant view of the surroundings.• Sufficient number of guides/watchers with identify card may be posted at appropriate places.• The systems of registering the name and telephone number of each visitor may be introduced and time of entry and exit may be noted in a special register.• The vehicles of the visitors may not be allowed within the project area. Separate area may be earmarked for parking of vehicles.• A nominal fee may be considered to be charged from the visitors as in the case of similar other eco-tourism centres
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			<p>which may be used for providing basic facilities/amenities to the tourists/visitors.</p> <ul style="list-style-type: none"> • Adequate publicity may be given about the project through websites and in co-operation with tourism department. • The entire project area may be declared as 'Plastic Free Zone'
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Measures to Reduce Man-Animal Conflict

1	Name of the Scheme	:	Measures to Reduce Man-Animal Conflict
2	Plan Outlay	:	Rs.757 lakh
3	Head of Account	:	2406-01-800-56
4	Objectives	:	<p>Crop destruction and killing of human beings and cattles by wild animals in forest fringes is a serious problem in many parts of the state. The wild animals particularly wild elephants, wild boars, deers, porcupines, carnivores, snakes etc frequently cause destruction to life and property. Construction of elephant proof trench,rubble wall and solar fencing are some of the activities undertaken to prevent the entry of wild animals in</p>

			to the agricultural fields and inhabitant area.
5	Name of Offices visited and Date	:	Forest Range Office, Anchal - 28-10-16 Periyar Tiger Reserve, Thekkady range - 25-11-16 Parambikulam Tiger Reserve - 30-01-17 & 31-01-17.
6	Duration of Implementation	:	For the financial year 2016-17
7	Components Examined	:	<ul style="list-style-type: none"> • Construction of elephant proof trench • Construction of Power/ Solar fencing • Constituting Rapid Response Team • Capturing of wildlife and release to the interior forest • Construction of elephant proof wall • construction of Steel bar
8	Verification of documents/ files	:	Verified the files and related documents of the components of scheme in various ranges and visited the work sites.
9	Feedback	:	The Deputy Director of Parambikulam Tiger Reserve and

			<p>Range Officers of Thekkady and Anchal conveyed the issues related to wildlife attacks and the destructions caused by them in various human habitats and agricultural lands. Informations were also collected from the local residents near forest areas.</p>
10	Observation/ Status	Present	<p>: Periyar Tiger Reserve, Thekkady range does not have serious issues related to human wildlife conflict. Crop damage is mainly by Sambar, barking deer, wild boar, porcupine and bonnet macaque. There are few incidents of crop damage by elephants. Major issues were along the 8 km boundary from Thondiya to holiday home and recently power fencing has been repaired and made functional with the active participation of the people there.</p> <p>In Parambikulam Tiger Reserve under the Scheme MRMAC, a sum of Rs. 78,000/- were utilized for purchase of Stainless Steel structures with SRS cloth for various campsheds and extended the power fence at Anappady for Rs. 30,180/-. Finance Team examined the installation of</p>

		<p>Power fence and found it satisfactory and very effective.</p> <p>In Anchal range, a sum of Rs. 97,000/- is allotted for capturing wildlife from areas lying outside forest including human dwelling areas and release them into natural habitat through Rapid Response Team. A sum of Rs. 2,70,000/- is allotted for erecting Solar fencing at Kalamkunnu Section. There is no reserve forest under Anchal Range. Range is located in the urban areas of Anchal town and the remaining areas are teak/eucalyptus plantations. Hence expenditure is not incurred from the allotted amount till 28.10.2016</p>
11	Suggestions	<ul style="list-style-type: none"> • Biofencing with repellent species of plants to be introduced to prevent the invasion of wild animals in to the agricultural areas. • Habitat improvement especially improvement of water resources, maintenance of Vayals and breeding ground for wildlife to interior to the forest areas may be promoted to

		<p>prevent the entry of wild animals into the human occupied areas during summer and unfavorable conditions.</p> <ul style="list-style-type: none">• Steel bars with sharp nails are used instead of elephant proof wall in some ranges to prevent the invasion of wildlife into the agricultural land. Even though it is an effective measure to prevent the invasion, sometimes it cause deep injuries to wild animals. This method is seen a cruelty to animals. Hence, more scientific and improved methods may be explored.• Government have just started a new website portal for timely payment of compensation to victims of wildlife attack. The department may take initiatives to familiarise the system to public and department staff.
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WATER RESOURCES DEPARTMENT

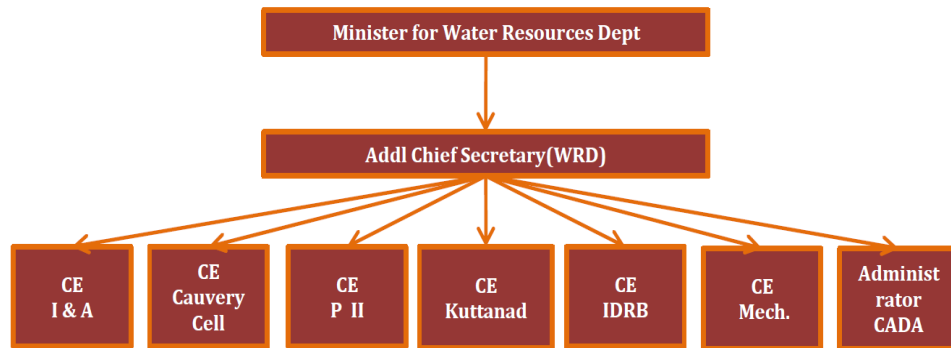
A. INTRODUCTION

Kerala is a state blessed with nature's beauty in abundance. It is endowed with many streams, rivers, lakes and ponds. Our state receives comfortable rainfall. 90% of the annual rainfall is during the monsoon period from June to November. The remaining 6 months from December to May is almost dry without much rainfall. The rainfall received during monsoon flows very easily due to Kerala's topographical peculiarity of steep slope from the east to west. This topography of the state makes it much difficult to preserve water and use it for various purposes like agriculture and drinking water supply. Though there are various methods for providing irrigation and drinking water, the most reliable method in Kerala is the construction of reservoirs for impounding water during the monsoon and utilizing it during off monsoon times. What is stored in the reservoirs is not sufficient to cater to the needs during the year when the rainfall is scanty or there is drought. In such situations, we have to adopt some methods to conserve water received during the rainy days.

Irrigation Department functions under Water Resources Department of the state. It was formed in 1990 by bifurcating Public Works Department. Chief Engineer (Irrigation and Administration) is the Department Head. The Department has five more Chief Engineers looking after different activities under the Department. Regional Offices under the Chief Engineers are controlled by Superintending Engineers and District level offices by Executive Engineers. Sub Divisions and Sections are controlled by Assistant Executive Engineers and Assistant Engineers respectively.

The Department structure is aligned according to the activities under

the Department. Flood management, Minor Irrigation, Inland Navigation, Prevention of salinity intrusion come under the control of Chief Engineer, Irrigation. The projects are controlled by Chief Engineer-Project I, Chief Engineer-Project II and Chief Engineer, Kuttanad Package. Design, investigation and research work of the Irrigation Department are controlled by the Chief Engineer (Investigation & Design), IDRB. Inter State Water Sharing (ISW) will be controlled by one of the Chief Engineers of the Department. CADWM has a Chief Engineer as its Administrator. The Mechanical wing headed by the Chief Engineer Mechanical, looks after work under Public Work Department also. Electrical work related to Irrigation Schemes is controlled by Superintending Engineer of PWD electrical wing. The hierarchy of Water Resource is Department is depicted in the following diagram.



As per 5th years programme of 12th five year plan during 2016-2017, an outlay of Rs.491.47 crore has been provided for irrigation and flood control in Kerala. An outlay of Rs.307.23 crore been set apart for major and medium irrigation and Rs.130 crore for minor irrigation.

B. SCHEME WISE DETAILS.

As per circular No 70/16/Fin date 17/08/2016, Government have decided to introduce concurrent evaluation and monitoring of schemes for 2016-17 in Water Resource Department. The following five schemes have been identified for the concurrent evaluation and monitoring.

- (I) Bhavani Basin (outlay Rs.500 lakh.)
- (ii) Modernization of field channels and drains of CADA canals for major project (Outlay Rs.2000 lakh.)
- (iii) Development of Kerala Engineering Research Institute (KERI), Peechi- Stage II (Outlay Rs.85 lakh.)
- (iv) Minor irrigation Class -I (Outlay- Rs.7000 lakh.)
- (v) Scaling up of Rain Water Harvesting and Ground Water Re-charge Programme through KRWSA (outlay Rs.1000 lakh.)

Bhavani Basin

Under this scheme, construction of check dams in Attappady valley is envisaged. Attappady valley is an underdeveloped tribal area. The development of this region is an important factor. The scheme also intends to explore the possibility of integration with Micro Irrigation. The total amount provided in the current year's budget comes to be Rs.500 lakh.

Modernization of Field Channels and Drains of CADA Canals of Major Projects.

During 2016-17, an outlay of Rs.2000.00 lakh is provided for carrying out Renovation & Modernisation activities of CADA canals of Chitturpuzha, Malampuzha, Mangalam, Walayar and Pothundy projects that are implemented under Command Area Development. A pilot project has been implemented in 2014-15, through CADA. The outlay will be used for the completion of the modernisation works of CADA field

channels and drains of these projects. The work will be implemented through Padasekhara Samithies in association with the Department of Agriculture.

Development of Kerala Engineering Research Institute, Peechi-Stage II

Kerala Engineering Research Institute (KERI), Peechi is the only research institute under Water Resources Department for undertaking research activities on project design and irrigation systems. An amount of Rs.85 lakh is set apart for modernisation of KERI Thrissur. The outlay provided is for the development of the Institute which includes procurement of modern equipments, up gradation of equipments and purchase of software and active utilisation of its available potential.

Minor Irrigation Class-I

Minor works like improvements to tanks and rivulets, construction of check dams, sluices, regulators, bunds, vented cross bars, salt water barriers, layout of channels and drainage structures etc. that serve an area more than 50 ha up to 2000 has come under this category.

A total outlay of Rs.7000 lakh is provided for the scheme. Out of the total, Rs.450.00 lakh is for meeting the expenditure towards completing the ongoing works and for taking up new works, after meeting the spill over commitments and Rs.50 lakh will be used for the completion of irrigation museum at Thodupuzha.

Rs.5000.00 lakh is set apart for MI class I schemes under NABARD RIDF, out of which Rs.2500 lakh is for undertaking RIDF works of Repair, Restoration and Renovation of Water Bodies. An amount of Rs.1500.00 lakh is set apart for the construction of check dams in Meenachil River Basin.

Scaling up of Rain Water Harvesting and Ground Water Recharge Programme through KRWSA

The main objective of the programme is to sustain the Rain Water Harvesting activities in the State through KRWSA. Components included in the programme are construction of ferro cement RWH tanks, construction of rain water harvesting units to Schools, popularising the rain water harvesting programme through workshops, discussions & exhibitions and documentation of activities performed. This is demand driven model to improve the sustainability of the ground water sources. An amount of Rs.1000.00 lakh is provided in the Budget 2016-17.

C.STATUS REPORTS

Bhavani Basin

1	Name of the Scheme	:	Bhavani Basin
1	Plan Outlay	:	7500 Lakh
2	Name of Office	:	M.I. Division, Palakkad
3	Date of Visit	:	The Finance Team not visited the office because there is no progress after obtaining Administrative Sanction as per G.O. (Rt) No. 941/2016/WRD dated 02/12/2016.
4	Duration of Implementation	:	2016-17
5	Components of the Scheme	:	<ul style="list-style-type: none"> Improvements to Panthenthodu Irrigation Scheme at Mukkli in Agali Panchayat in Attappati (Rs. 72

			<p>lakh).</p> <ul style="list-style-type: none"> • Construction of Lift Irrigation Scheme of Cheerakkadadu from Bhavani River in Puthur Panchayat in Attappati (Rs.125 lakh) • Construction of Lift Irrigation Scheme at Parappanthara from Bhavani River in Ayali Panchayat in Attappadi (Rs. 115 lakh)
6	Objectives/Economical Significance	:	<p>The Bhavani basin Comprises the catchment of the Bhavani river which is a major tributary of the Cavery river. Bhavani Basin in Kerala is known as Attappady Valley. The area of the basin within Kerala is 562 Km². Water resources of the basin is assessed as 1019 Mm³.</p> <p>Area that can be cultivated (paddy) is assessed as 12880 hector and cropped area will be 38400 hector. Also about 1200 hector can also be used for cultivating cash crops.</p> <p>There are at present no major irrigation scheme in the basin. Only two Lift Irrigation schemes by minor</p>

		<p>Irrigation are exists there Chelayoor with an ayacut of 49.89 hector and Kukumpalayam with an ayacut of 51.58 hector. The entire water potential of the river and its tributaries can be fully utilized for the benefit of this valley which is backward in every respect due to the high slope of the river and low river banks. It is not practically possible to construct large irrigation schemes such as river regulators. But a series of cheak dam to impound water and arrangement to lift the water to the high lands using suitable lift irrigation schemes are proposed for this basin.</p> <p>It is informed that there is an investigation to study the feasibility of 9 numbers of check dams and lift irrigation schemes was conducted by Minor Irrigation spending Rs.15 Lakh.</p>
7	Present Status	: Administrative Sanction has been issued for improvement to Ponthenthodu Irrigation Scheme of Mukkal for Rs.72 lakh for construction of lift irrigation schemes at Cheerakkadavu from Bhavani

			<p>River for Rs. 125 lakh and construction of lift irrigation schemes at Parappanthara from Bhavani River for Rs.115 lakh as per GO (Rt) No. 941/2016/WRD dated 02/12/2016.</p>
8	Suggestions:-	:	<p>There are many procedures that remain to be observed in connection with the work. A long period is also needed to complete each work. There was considerable delay in according Administrative Sanction to the work. The Executive Engineer, Minor Irrigation Division, Palakkad informally conveyed that the delay for technical Sanction is occurred due to the delay from the part of Administrative Department. However, there is a common tendency to release funds at the fag end of the financial year and this tendency cannot be let to continue in future. This attitude needs to be discouraged. The allocation and release of the fund should be made in appropriate time and the executing authority should take all steps to complete the work within time.</p>

II	Name of the Scheme	:	Modernization of field channels and drains of CADA Canals of Major Projects.
1	Plan Outlay	:	Rs 2000 Lakh
2	Name of Office	:	Shiruvani Project Circle, Palakkad
3	Date of Visit	:	20/01/2016
4	Duration of Implementation		2016- 17
5	Components Examined	:	<ul style="list-style-type: none"> • MP-LBC-CADA- Moderenization of field channels- Urgent rectification works to the left tail and field Channel in Kadungam Padasekhara Samithi, Ch. between 0/00 to 1/00 km of Thenkurissi branch canal Ch.0/400 of Chulannur Canal in Ward number 2 in Thenkurissi Grama Panchayat. • MP-LBC-CADA- Moderenization of field channels- Urgent rectification works to the left tail and field Channel in Kottadi Nellikkalkadu Padasekhara Samithi, Ch.between 0/00 to 1/00 Km of Manjalur No.1 branch canal ch.3/100 of

		<p>chulanur canal in a Ward no.14 in Thenkurissi Grama Panchayat.</p> <ul style="list-style-type: none"> • MP-LBC-CADA- Moderenization of field channels- Urgent rectification works to the left tail and field Channel No.21 in Odannur Padasekhara Samithy between Channel 0/000 to 1/000 km take off from 8/700 km of Odannur branch canal in ward No. 16,17,and 18 in Mathur & Parali Grama Panchayat. • MP-RBC-CADA- Moderenisation of field channels- Urgent works to sluice No. 9 starting from ch:6/750 km of RBC Main Canal at Pappadi in ward No. II at Akathethara Grama Panchayat Padesekharasamithi. • Chitturpuzha Project Panayur Branch Canal –Modernization of field chanel from sluice No. 3 at ch:450/RTS of Panayur branch canal.
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		<ul style="list-style-type: none"> Chitturpuzha Project- Panayur Branch Canal – Modernization of field channel from sluice No.4 at ch:525(RHS) of Panayur Branch canal.
6	Verification of documents /files	Verified the files and documents to the components works of the scheme in Shiruvani Project Circle, Palakkad.
7	Present status	Administrative Sanction has been accorded for the scheme as per GO (Rt) No. 773/2015/WRD dated 17/09/2015 for Rs.2800 lakh during 2015-16 for carrying out the modernization of field channels under Chitturpuzha, Malampuzha, Mangalam and Pothundy Projects. An outlay of Rs 2000 lakh is provided for carrying out Renovation and Modernization activities of CADA Canals that are implemented under Command Area Developments. The 5th meeting of the special working Group in respect of Water Resources Department held on 13/08/2015 has approved the proposal for modernization of field channels under Chitturpuzha Project for Rs. 15 crores. Malampuzha

		Project for Rs. 5 crores, Mangalam project for Rs. 4 Crores and Ponthudy Project for Rs. 4 Crores. All of the works are almost completed.
8	Observations	<p>The network of field channels in Chitturpuzha under Chittur Division constructed during the year 1990-96 needs repair and modernization so as to distribute water to the entire ayacut. The field channels of the Malampuzha Projects and Mangalam Project under Malampuzha Division were constructed in the 1980s and no further maintenance works were executed, Almost all the field channels are in dilapidated condition due to old age and field channels carried very less quantity of water through it and at many places the water leaks into nearby areas. Owing to this condition of the field channels distribution of water in the ayacut was disturbed. The farmers always experience much difficulty to bring the water into their fields. It is very essential to renovate the existing damaged field channels including</p>

		<p>correction of the bed slop and thereby stabilizing the ayacut area. The renovation of the field channels will make considerable improvement in the distribution of water in the ayacut area. Once the field Channels are improved considerable time for the distribution of water can be saved and seepage and wastage of water can be controlled and minimized.</p> <p>The improvements and rectification of damaged field Channels is a major issue being raised by the farmers in all the meetings conducted regarding water distribution. owing to the unavailability of assured water supply at the tail end of some of the ayacut, Paddy cultivation has been abandoned by the farmers.</p> <p>The objectives of the scheme of modernization and improvement of field channels are as follows:</p> <ul style="list-style-type: none">• Arresting the leakage and rectifying the damaged portions of field channels.• Modifying the Channels to ensure sufficient discharge to feed the ayacut.
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		<ul style="list-style-type: none"> • Providing foot slabs and tractor/harvesting machines crosses wherever necessary. • Assurance of water to fields by providing sufficient outlets. • Preventing soil erosion and strengthening of bunds. <p>By the improvement of the field channel, the water distribution to the entire ayacut of these channels can be made even and the major issues such as water logging at nearby damaged field channel and scarcity of water at the tail end paddy fields of the channels can be controlled to a great extent, thereby optimizing the quantity of water being distributed to the fields</p> <p>The Malampuzha Project has 950 field channels of total laying of 700 km out of which 44 Nos only taken up for modernization. Out of the 44 works , 31 works have been completed. Total field Channels of Chitturpuzha Project is 336 and out of which 136 are selected for the renovation.</p>
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9	Constraints/risk factors		<p>There is the practice of putting cross bund in field channel to overflow the canal for speedy feeding of fields, even though sufficient outlets are provided. The lack of proper maintenance and unauthorized diversion of canal, crossing of field channels by cattle and tractor, formation of new walk way for pedestrians along the channels etc. have rendered the field channels unusable and deteriorated, leading to heavy loss of water. Some field channels have collapsed due to soil pressure, erosion of soil from side and bottom of channels and overflowing at the initial reaches are the major risk factors.</p>
10	Feed back	:	<p>The finance team visited the fields and gathered feedbacks and suggestions from officials and beneficiaries. The following proposals has been suggested to achieve the improvement.</p> <ul style="list-style-type: none"> • Restoring the CADA Channels to its original shape • Modifying the portions of CAD Channels where discharge

		<p>through the channels is insufficient and modify the structure to withstand the surcharge load wherever necessary.</p> <ul style="list-style-type: none"> • Providing additional outlets as per requirement. • Providing foot slabs and tractor crossings at necessary locations of crossing. • Owing to the lack of fund the entire length cannot be lined completely. This will cause the seepage of water through the earthen channel.
11	Suggestions/Comments	<p>Adequate and timely irrigation will increase the yield of crops and hereby the earning of farmers increase. By the stage by stage implementation of such proposals, the stabilization and reclamation of total ayacut can be achieved which will boost agricultural income, food security and economical prosperity of the state, especially in Palakkad District in which 80% of the people depend on agriculture and allied activities for their livelihood. The</p>

		<p>increased income from agriculture will attract the younger generations towards agriculture as their profession. Considering the development of the state in general and Palakkad district in particular, the importance of complete stabilization and reclamation of agricultural paddy fields is highly inevitable and deserves a great priority.</p> <p>The beneficiaries are not fully satisfied from the renovation of field channels. The Finance team visited various areas and sought the opinions from beneficiaries. They do not depend completely the irrigated canal water for cultivation. If it is existing in a good canal irrigation system, farmers should be able to raise 3 crops per year. But the assessment of the Finance team, after hearing the opinions from the beneficiaries in many areas is that, mostly they cultivate only one crops per year. In rare areas, farmers can grow two crops per year. For the Second crops, they depends both rainy water and canal water. The</p>
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		<p>complaint of the beneficiaries is that the supply of water through canal, at drought season is not sufficient at relevant times and not helpful for farming. When the team had enquired the reason from officials, they informed that it was due to the lack of water in dams for supply. A huge amount of money is expended from the public exchequer, that should be useful for the public. Natural Water resources are now ruined a lot due to the extreme exploitation of land encroachment to natural habitats. Some decades ago, Kerala had a plenty of water resources like ponds and streams. Rejuvenation of such resources are the sole solution for water abundance in a seasonal rainy state like Kerala. Unused Marshive fields should be converted to ponds and it should be formed as reservoir in remote rural villages of Kerala.</p>
III	Name of the Scheme	Development of Kerala Engineering Research Institute, Peechi- Stage II
1	Plan Outlay	Rs. 85 lakh

2	Date of Visit		17/12/16
3	Objectives	:	<ul style="list-style-type: none"> • The Kerala Engineering Research Institute was established in 1960. In the prime years the Institute was well known for its work both inside and outside of country. The laboratories, library and facility for model studies at the institute were better than those available in Central Engineering Colleges. Men, machinery and the data available with the divisions are the major assets of the institute with the facility available, the institute has tremendous scope in the field of construction, monitoring and carrying out the rehabilitation of aged dams. • The institute is in possession of 'Smart Stations' which is a total station with an integrated GPS. With this, topographical surveys can be carried out. In the case of soil investigation, Government stands to gain by

		<p>way of reduced expenditure and better reliable results.</p> <ul style="list-style-type: none">• The sedimentation division has a sub bottom profiler and an Integrated Bathymetric system for conducting bathymetric surveys and the division is the sole agency engaged in bathymetric survey in the State.• The publication division in the Institute is imparting in service training to the engineers of Irrigation Department. The division has a technical library with around 10000 books and periodicals.• Construction materials and soil mechanical lab are generating revenue by carrying out tests on construction materials and soil.• The Institute can carry out the strength evaluation of old items by geo physical methods and physical methods. It has recently procured equipment for conducting cross face
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			<p>tomographic study of rigid dams. The institute has developed the capability for grouting of old dams.</p> <ul style="list-style-type: none"> • Institute has developed the capacity for carrying out Topographical, Hydrological and Subsoil investigations. It has well equipped with modern laboratories. It has developed capacity for taking up failure analysis, evaluation of residual strength of dams, carrying out for rehabilitation of dams etc. It has a Technical library with reference books in all disciplines of civil engineering and has got the facilities for conducting trainings for engineers.
4	Constraints/Risk factors	:	<ul style="list-style-type: none"> • Under Utilization is the main constraint. It is informed that Government can better make use of the facilities available at the institute to its advantage. • The vacancies of technical staff

			<p>in the Institute might prove to be an obstacle in the event of multiple works being assigned simultaneously.</p> <ul style="list-style-type: none"> • The jurisdiction of KERI is state wide. For departmental execution the officers has to be at the site throughout the duration of the work. The institute has just one road worthy vehicle for the use in seven divisions.
5	Comments/Suggestions for improvement	:	<p>Government can issue orders for entrusting Investigation works (topographical, subsoil and tomographic) to KERI.</p> <p>Instead of out sourcing, Government can entrust the Induction training for fresh engineers to KERI and must make successful completion of their training mandatory for declaration of probation. The vacancies in KERI may be got filled up implementing restructuring of Irrigation Department.</p>

		<ul style="list-style-type: none"> • The present system of payment in treasury through Bill system is causing problems in the execution of works. This is because the works entrusted in KERI are investigation works and these are being carried out as departmental execution. Hence advance payment is essential. The treasury is objecting to advance payment beyond Rs.10,000/- which is grossly insufficient. <p>The officials need to travel state wide for work execution because the jurisdiction of the Institutions is state wide. They suffer a lot for transportation there is only one work for their usage which is not in a good condition. Permission may be allotted to hire vehicle on contract basis. It should be helpful for performing site works .</p> <p>Out of the total allocation for the present financial year Rs. 65,09,896/- has been expended till</p>
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		<p>01/02/2017. The existing advance payment of Rs.10000 as advance is needed to be increased since the amount is insufficient to carry out important works performed by the officials of the Institute. It may be noted that the work carried out in the Institute is not by contractors but through its own officials. The Institute also aims some revenue through service rendered by various divisions. Some of them are detailed below. S M Divisions earned sum of Rs.2,91,687/- through works undertaken in lab soil testing in 2015-16. The contribution of C M Divisions in 2015-16 was Rs. 10,97,655/- for works undertaken for material testing. The revenue for works undertaken by sedimentation division for 2016-17 is Rs. 1,10,552/-till date. Its revenue from bathymetric study of Kattampilly wetland in Kannur District in 2016-17 is Rs. 3,50,000/-. The institute also conduct major investigation work of survey of Chandragiri River of Kansargod District using smart</p>
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		<p>stations phase I to find the suitable positions for Check Dams and regulators. Its revenue from the survey was Rs. 10 Lakhs.</p> <p>Finance Department is of the opinion that the Institute deserves more attention and consideration. The official in the office are well dedicated and they are confident in that the Institute can more contribute in future, if its constraints and limitations should be resolved. It should be given more financial autonomy, powers and equipped with sufficient staff (without recruitment through redeployment from the irrigation Department)</p>
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IV	Name of the Scheme	: Minor Irrigation Class-I
1	Plan Outlay	: Rs.7000 lakh.
2	Name of the Office Visited	: 1. Chief Engineers Office, Irrigation and Administration, Thiruvananthapuram. 2. M.I. Division, Kattappana.
3	Date of visit	: 30/12/2016 07/01/2017

		13/02/2017
4	Duration of Implementation	: 2016-17
5	Components, Objects and Observations	<p>The project in the category includes works like improvement to tanks and rivulet, construction of check dams, sluices, regulators, bunds, vented cross bars, salt water barriers, lay out of channels and drainage structure etc. that serve an area more than 50 ha. up to 2000 ha. An outlay of Rs.7000 lakh is provided under MI class I schemes. Out of which Rs.450 lakh is for meeting the expenditure towards completing the outgoing works and for taking up of new works, after meeting the spill over commitments and Rs.50 lakh will be used for the completion of irrigation Museum at Thodupuzha.</p> <p>NABARD has been providing loan assistance for irrigation works under Rural Infrastructure Development Fund (RIDF) for implementing the ongoing NABARD assisted lift Irrigation Schemes, M.I Class I and II and for taking new schemes under RIDF. Rs.5000 lakh is set apart for MI Class I schemes under NABARD RIDF. Out of which Rs.2500</p>

		<p>lakh is for undertaking RIDF works of repair, restoration and renovation of water bodies. Out of the total outlay of Rs.7000 lakh an amount of Rs.1500 lakh is set apart for the construction of check dams in Meenachil River Basin. Activities/components of the scheme are directly linked with Kerala Perspective Plan 2030.</p>
6	<p>Present Status of the work</p>	<p>: Finance team visited Office of the Chief Engineer (Irrigation and Administration) on 07/01/2017 and 13/02/2017. No further details regarding the scheme is available from that department. They informed that no new projects have been started under the scheme during the current financial year.</p> <p>Detailed project report for 3 works:-</p> <ul style="list-style-type: none"> • Construction of vented cross Bar cum tractor way across Peruvai river at Balloor, Ottappadappu in Paivalike panchayat, Kasargod District. • Construction of vented cross bar cum foot bridge across Pallathadka river at Kudappanku at Kuduppamkuzhi in Badiadka Panchayat, Kasargod District.

		<p>(Estimate amounted to Rs.6 Crores.)</p> <ul style="list-style-type: none"> • Construction of Kuruvilamkode regulator cum bridge across Panamaram river in Kabani Basin have been submitted to the Government. They reached at NABARD and it is informally informed that the project have been approved by NABARD. Administrative Sanction has been issued by the Water Resource Department but Technical Sanction is yet to be issued. It is informed that the chance for incurring expenditure during the Financial 2016-17 for the project under RIDF-XXII is very remote. It is because only a few weeks are left in the current financial year. It is also informed that the outlay provided for the year 2016-17 under NABARD MI Class-I will be utilised to meet the spill over commitments.
7	Comments of Finance :	Finance team visited the Office of the Chief Engineer (Irrigation and Administration). The officials in the

		<p>Department made gross dereliction of duty in furnishing details with regard to the implementation of the scheme. The original provision in the current years budget was Rs.70 crore. But as per plan expenditure up to the month of January 2017, shows an amount of Rs.19.48 crore has been expended for the scheme. An amount of Rs.50 crore has been additionally authorised for expenditure. But the Departmental Officials are totally unaware of this. This has to be examined/enquired in detail. There is no information about the construction of checkdam in Meenachil river basin. No information available regarding the construction of Irrigation Museum at Thodupuzha also.</p>
V	Name of the scheme	: Scaling up of Rainwater Harvesting and Ground Water Recharge Programme through KRWSA
1	Plan Outlay	: Rs.1000 lakh.
2	Duration of Implementation	: 2016-17
3	Components	: <ul style="list-style-type: none"> • Construction of of ferro cement RWH tanks. • Construction of rain water harvesting units to schools.

		<ul style="list-style-type: none"> • Popularising the rain water harvesting units through workshops, observations, exhibitions and documentation of activities performed.
4	Objectives of the scheme	<ul style="list-style-type: none"> • Rain Centre was constituted in 2004 to promote Rain Water Harvesting in the State. The initiation to constitute Rain Centre was the severe drought that hit the state during that time. Scaling up of roof top rain water harvesting programme with the component of ground water recharge is found suitable for the individual households as alternative method for providing drinking water and gradually improving the water table. • The broad aim of the programme is to improve the drinking water facility of the individual households and schools that are facing acute shortage of water. Rain water harvesting has adopted as alternative source for drinking water as the existing water source of most of the households and

		<p>schools in remote and hilly areas dry up from the month of January onwards.</p> <ul style="list-style-type: none"> • The project area for the implementation of Rain Water Harvesting and Ground Water Research Programme under State Plan Scheme is identified as the schools where there is acute shortage of drinking water problem. • The construction of Rain Water Harvest tanks along with the recharge pit will be entrusted with experienced and competent NGOs with proven track record.
5	Present stage / Progress status	: <ul style="list-style-type: none"> • An amount of Rs.10 crores was allocated for the programme in the State budget 2016-17. A detailed proposal with the activities and cost sharing pattern was prepared and submitted to Water Resource Department (total cost Rs.1096.80 lakh) on 29/09/2016 to be placed in the special working group meeting for approval. The funds shall be utilized for

		<p>construction of RWH tanks of 10,000 litre capacity in selected 840 government schools.</p> <p>The proposal was presented in the special working group meeting on 01/11/2016 and the same approved. The administrative sanction has been issued vide G.O (Rt) No.982/2016/WRD dated 17/12/2016.</p> <p>Based on the Administrative Sanction issued, the following actions are initiated towards implementation of the programme.</p> <ul style="list-style-type: none">• The request for fund release is being submitted to Government• The steps for selecting the schools for the execution of the programme are under process for finalization.• The process for the selection of implementing agencies by inviting e-Tender/Expression of interest is under progress.• As per letter dated 13/01/2017
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		<p>the Director (Finance & Administration) of Jalanidhi informs that the construction of Rain Water Harvesting units in schools is now going on for the financial year 2015-16 and the same will be continued during 2016-17 also. It is also informed that the field level execution of the programme shall be started from the second week of February 2017 subject to release of fund by Government.</p>
6	Suggestions/Comments :	<p>The Administrative Department should take necessary steps to release fund in time and to ensure that the projects/schemes are implemented within the financial year itself. The practice of transfer crediting the amount from the consolidated fund to treasury accounts/bank accounts shall be discouraged.</p>

PUBLIC WORKS DEPARTMENT

A. INTRODUCTION

Public Works Department is a major department in the state. After the reorganisation of states in 1956 the Maramath Department in the State of Travancore was redesignated as Public Works Department. It manages the construction and maintenance of civil structures owned by the State Government viz; government buildings, roads, bridges etc. The department has four major wings, each headed by a Chief Engineer, as follows:

- ***National Highways Wing*** - This wing manages all National Highways located within the territorial limits of the state. The Wing is responsible for carrying out construction and managing of all activities as directed by the Ministry of Surface Transport, Government of India and liaisons with activities of NHAI.
- ***Roads and Bridges Wing*** - It manages all State Highways, Major District roads, local and city roads as well as bridges. The wing is responsible for the construction of new roads and bridges and maintenance of existing ones.
- ***Public Structures and Buildings Wing*** - This wing of the PWD manages all buildings owned by government except those owned by other Government agencies. It has absolute right to construct all government buildings and structures.
- ***Operations & Projects Wing*** - It supervises general operations of the department, especially new projects announced or under construction stage. The PWD Vigilance comes under this wing.

The Roads & Bridges wing and the Building & Local Works wing of the department have three circles each to supervise the execution of works at divisional level. Both the wings have one division at district level. The Buildings wing has also a Judicial circle exclusively for the supervision of construction works in Judicial sector. There is a Superintending Engineer for Electrical and an Executive Engineer for Electronics for advising the related matters to the Chief Engineer (Buildings Wing). The National Highway wing has three circles and eight divisions. The execution of works is supervised and completed through the Executive Engineer of this wing. The construction works of roads, bridges, buildings, repairs, renovation and maintenance work thereof is looked after by each division under its territorial jurisdiction. Under each division there are subdivisions under Assistant Executive Engineer and sections under Assistant Engineer to undertake actual execution of works.

B. SCHEME WISE DETAILS

As part of concurrent evaluation and monitoring of schemes 2016-17, the following 5 schemes were selected.

The finance (PB) team visited selected works to evaluate the schemes.

I. *NABARD Works- Construction and Improvement of Roads*

Head of Account : 5054-04-337-94

Outlay : `15760 lakh

The outlay is intended to complete the ongoing works supported by NABARD and for making payment to investigation works under this scheme. Activities/Components of this scheme are directly linked with Kerala Perspective Plan 2030.

II. *NABARD Works- Construction and Improvement of Bridges*

Head of Account : 5054-04-101-96

Outlay : `13860 lakh

The scheme is to complete existing projects of bridge works under RIDF scheme XIV to XX. New works are also proposed to be taken up in RIDF XXI. The provision is also intended for making payment on investigation works under the scheme. Activities/Components of this scheme are directly linked with Kerala Perspective Plan 2030.

III. *Hill Roads (Hill highways)*

Head of Account : 5054-04-337-92

Outlay : `1100 lakh

The project intends to develop the Hill roads in the identified routes to that of High way standard. The proposed Hill Highway is to be developed based on the scientific study by qualified institution like NATPAC and DPRs with suitable warranty clauses.

IV. *Development and Improvement of Major District Roads*

Head of Account : 5054-04-337-92

Outlay : 7500 lakh

The scheme is to carry out heavy maintenance (BM & BC/Concrete road works) on Major District Roads to minimize the over straining of the existing infrastructure due to the increased transport demand. Under the scheme, it is proposed to undertake tarring of roads using plastic in order to ensure environmental cleanliness and make the state plastic menace free on MDR standard/warranty. Activities/Components of this scheme are directly linked with Kerala Perspective Plan 2030.

V. *Public Office Building Construction Programme*

Head of Account : 4059-01-051-72

Outlay : `5731 lakh

This scheme is to complete the construction of public office building in a common pool, which includes staff quarters, rest houses, office complex etc.

C.STATUS REPORT

I. Name of the Scheme : NABARD Works- Construction and Improvement of Roads

1	Name of Offices and Date of Visit	PWD Roads Sub Division, Alappuzha. 17/10/2016 PWD Roads Division, Kollam. 07/12/2016 PWD Roads Sub Division, Thalassery. 21/12/2016
2	Components Examined and Duration of Implementation	<ul style="list-style-type: none"> • RIDF XX - Improvements to Haripad deviation road from Madhava junction to Hospital junction and Construction of drain and footpath between Town hall junction and Pilla thodu in Alappuzha District. • NABARD RIDF XX. Improvements to Keralapuram Ayoor road ch 0/000 to 8/900 in Kundara Constituency in Kollam District. Duration : 12 months • NABARD RIDF XX. Reconstruction, concreting and widening of Peroor-

		<p>Vanchimukku Decent Junction Road ch km 0/000 to 1/500. Duration : 6 months</p> <ul style="list-style-type: none"> • RIDF XIX - Widening and tarring Chokli Peringadi School-Panniyannor- Arayakkol-Mokerivayal 3rd reach Km.2/110 to 3/905 & 3/985 to 5/000 in Kannur District. Duration : 8 months • RIDF XX - Improvements to Kadirur – Nadapuram Road BM & BC Km. 7/000 to 15/240 in Kuthuparamba LA in Kannur District. Duration : 9 months
3	Verification of Documents/Files	Verified the files and documents related to the component works of the schemes in the PWD Roads Sub Division Alappuzha, Thalassery and PWD Roads Division, Kollam.
4	Gathering Feedbacks	<ul style="list-style-type: none"> • Collected information and data from the Assistant Executive Engineer PWD Roads Sub Division, Alappuzha. • Collected information and data from the Executive Engineer PWD Roads

		<p>Division, Kollam</p> <ul style="list-style-type: none"> Collected information and data from the Assistant Engineer PWD Roads Section, Thalassery.
5	Present Status & Observation	<ul style="list-style-type: none"> Improvements to Haripad deviation road from Madhava junction to Hospital junction has obtained Administrative sanction on 14-01-2015. At the time of nearing completion of improvement works, the concerned MLA of Haripad constituency directed to construct drain and footpath between Town hall and Pillathodu by using unutilized fund of the same work. Proposed date of completion of work has been extended to 21-09-2016 and the work has been completed within the extended time. Improvement to Keralapuram Ayoor road was started on 13-08-2015 and completed the work before the proposed date of completion. Reconstruction, concreting and widening of Peroor-Vanchimukku Decent Junction Road was started in

		<p>26-06-2015 and proposed to complete within six months of time. But it took five more months to complete the work, ie, on 26th may 2016</p> <ul style="list-style-type: none"> • At the time of site verification in Chokli Peringadi School-Panniyannor- Arayakkol-Mokerivayal, 70% of work has been completed. Proposed Date of completion of work was 30/09/2015, 1st extension was granted up to 31/05/2016 and 2nd extension sought up to 31/03/2017 and granted up to 31/12/2016. • Finance team have visited the Kadirur – Nadapuram Road for site verification. The work was started in 23/02/2016 and 75 % of work has been completed at the time of site verification. Reconstruction of old culverts and drainage has been completed. Proposed date of completion of work was 22/11/2016 but BC works is still pending and applied for extension up to 28/02/2017. The PWD staff
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		<p>has submitted that due to heavy rain and discontinuation of BC work lot of damage were occurred on the road.</p>
6	Constraints/Risk Factors	<ul style="list-style-type: none"> • Drivers union, kutchery junction, Haripad filed a PLP Before the Hon'ble Legal Service Society for sanctioning taxi stand in the new road, Madhava junction to Hospital junction Haripad. • Getting land for execution of work from panchayath, who had earliar agreed to set land from owner for Widening and tarring Chokli Peringadi School- Panniyannor- Arayakkol- Mokerivayal. • Heavy rain and Quarry strike cause delay in executing concrete work in Kadirur – Nadapuram Road.
7	Comments/ Suggestions	<ul style="list-style-type: none"> • Developed roads are essential to accelerate the pace of economic development of an area. Joint effort of the departments and public is needed to achieve the social significance of a scheme. The Departments implementing the scheme may conduct awareness

		<p>programmes for public regarding the social and economic aspect of the scheme and how it benefits to them, during the implementation of a scheme. It will help the department to implement a scheme without any obstruction from the public.</p> <ul style="list-style-type: none"> • BC is the top coat protecting the road from damage. If any dealy occurred in BC work, the road may be damaged. Hence PWD may issue necessary instruction to speed up the works so as to avoid time overrun and cost overrun.
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II. Name of the Scheme : NABARD Works- Construction and Improvement of Bridges

1	Name of Offices and Date of Visit	<p>PWD Bridges Sub Division, Alappuzha. 17/10/2016</p> <p>PWD Bridges Sub Division, Kollam. 07/12/2016</p> <p>PWD Bridges Sub Division, Thalassery. 21/12/2016</p> <p>PWD Bridges Sub Division, Idukki. 30/12/2016</p>
2	Components Examined and Duration of Implementation	<ul style="list-style-type: none"> • RIDF XVIII - Construction of Bridge at Cheruthanakkadavu in

		<p>Haripad across Achenkovil river in Alappuzha district. Duration : 24 months</p> <ul style="list-style-type: none"> • RIDF XVIII – Construction of Eramallikkara bridge across Manimala river at Madanasseikkadavu in Alappuzha district. • Re-Construction of Pallimon Bridge across Ithikkara River in Kundara Constituency. Duration : 12 Months • NABARD RIDF XX. Construction of Perappayam Bridge across Ithikkara River in Kollam District. • RIDF- XX – Construction Bridge at Km.2/050 of Thettuvazhi- Manathana road across Kanhirapuzha at Thondiyil in Kannur District. Duration : 7 months • NABARD RIDF XX Reconstruction of Kallar Bridge at Km 64/150 of
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		Munnar-Kumily road. Duration : 15 months
3	Verification of Documents/Files	Verified the files and documents related to the component works of the schemes in the PWD Bridges Sub Division Alappuzha, Thalassery and Idukki.
4	Gathering Feedbacks	<ul style="list-style-type: none"> • Collected information and data from the Assistant Executive Engineer PWD Bridges Sub Division, Alappuzha. • Collected information and data from the Assistant Executive Engineer PWD Bridges Sub Division, Kollam • Collected information and data from the Assistant Engineer PWD Bridges Section, Thalassery. • Collected information and data from the Assistant Executive Engineer PWD Bridges Section, Idukki. • Interacted with beneficiaries and collected information

		<p>informally. Interactions were held with the following persons</p> <ul style="list-style-type: none"> • Shri.Thrideep , Auto Driver, Kallar • Shri.Praveen, Auto Driver, Kallar • Shri.Santhosh, Sakthi Tyres, Kallar.
5	Present Status & Observation	<ul style="list-style-type: none"> • Construction of Bridge at Cheruthanakkadavu was completed on 02-02-2015 and the construction of approach road is reported to be completed on February 2017. • Construction of Eramallikkara bridge was started on 09-04-2013 and construction of bridge was completed at the time of site verification. The proposed date of completion of approach road and culvert was seen extended up to 31-12-2016. • Re-Construction of Pallimon

	<p>Bridge was started on 03-03-2016 and completed before the proposed date of completion.</p> <ul style="list-style-type: none">• Construction of Perappayam Bridge across Ithikkara River was started on 21-01-2016 and 70% of the work has already been completed. At the time of site verification the 4th span of bridge was being constructed.• Construction of Bridge at Km.2/050 of Thettuvazhi-Manathana road across Kanhirapuzha was started on 22-09-2015 and only 10% of the work has been completed at the time of site verification. The proposed date of completion is seen extended up to 22-03-2017 and it is not easy to complete the remaining 90% of the work within the extended time.• Reconstruction of Kallar Bridge at Km 64/150 of
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		<p>Munnar-Kumily road was started on 07/12/2015 and 70% of the work has already been completed. The proposed date of completion of work is 06/03/2017. The team from the Finance Department has discussed the progress of work with the beneficiaries, who opined that the progress of the work is satisfactory.</p>
6	Constraints/Risk Factors	<ul style="list-style-type: none"> • Delay in identifying land for approach road and service road in Cheruthanakkadavu and Eramallikkara • Delay occurred due to shifting of BSNL cables in the old bridge in Thondiyl • Delay occurred due to shifting of KWA water pipelines in the old bridge in Thondiyl
7	Comments/ Suggestions	<p>In most cases, it has been found that proper planning has not been made with regard to implementation of the projects.</p>

		<p>Rough cost estimate is prepared in the first instance and the other processes are made based on this estimate. Detailed project report is prepared after some time. This may lead to alterations in the sketches of the plan, approach road, sub way to some public places/ private properties etc. No proper study is done as to the availability of land for the proposed project. The possibility to get smooth supply of raw materials required for the civil work of the project is also not properly taken into account of. The fact that monsoon season starts at the beginning of June and ends at the middle of November is also not duly considered while planning the project. Hence, it is better to examine all the above factors at the appropriate time so as to complete the project within the stipulated time and to avoid cost escalation. There should also be a liaison with other governmental agencies like KSEB, KWA, BSNL, for the timely</p>
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	removal of obstructions in the implementation of projects.
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III. Name of the Scheme : HILL ROADS (HILL HIGHWAYS)

1	Name of Offices and Date of Visit	PWD Roads Sub Division, Kothamangalam. 12/12/2016 PWD Roads Sub Division, Thaliparamba. 21/01/2017
2	Components Examined and Duration of Implementation	Improvements to Hill Highway – Elamlassery to Avarukutty portion from Mamalakandom to Avarukutty. Duration :12 months Improvements and providing BM and BC to Hill Highway Cherupuzha- Payyavoor- Ulikkal- Vallithode road KM 59.415. Duration : 30 months
3	Verification of Documents/Files	Verified the files and documents related to the component works of the schemes in the PWD Roads Sub Divisions, Kothamangalam and Thaliparamba.
4	Gathering Feedbacks	<ul style="list-style-type: none"> Collected information and data from the Assistant Executive Engineer PWD Roads Sub Division,

		<p>Kothamangalam</p> <ul style="list-style-type: none"> • Collected information and data from the Assistant Executive Engineer PWD Roads Sub Divisions, Thaliparamba.
5	Present Status & Observation	<ul style="list-style-type: none"> • In Hill Highway – Elamlassery to Avarukutty portion from Mamalakandom to Avarukutty, work was stopped by the Forest department and charged 2 cases against Assistant Executive Engineer Roads Sub Division, Kothamangalam and Assistant Engineer, Kothamangalam for constructing culverts of 8m length in forest area. This road is one and only one way for the 500 tribal families residing in the forest area to reach the outer world for educational,

		<p>medical purposes and even for earning their livelihood. A meeting conducted in minister level and decided to carry out the work for 3 m width for road portion and 6 m width for culvert.</p> <ul style="list-style-type: none"> • In Hill Highway Cherupuzha- Payyavoor-Ulikkal- Vallithode road, work was started on 04-03-2016 and 10% has been completed at the time of site verification. Shifting of electric posts from the construction site is pending on the date. This affected further progress of the work.
6	Constraints/ Risk Factors	<ul style="list-style-type: none"> • In the case of Mamalakandom – Avarukutty road work was stopped by the Forest department. For resuming the work, Government sanction is required for getting no objection certificate from the Forest

		<p>depaetment.</p> <ul style="list-style-type: none"> • In the case of Cherupuzha-Payyavoor- Ulikkal-Vallithode road, delay was occurred in shifting of electric posts
7	Comments/ Suggestions	<ul style="list-style-type: none"> • Mamalakandom- Avarukutty road is an essential road for tribals residing in forest areas, If there is any medical emergency occurred in the tribal colony it is very difficult to reach the nearest hospital through the existing path. This road is also used by Bamboo corporation and HPC for collecting bamboo. Government may ensure the co-orperation of forest deparment for completing this road. • For completing Cherupuzha-Payyavoor- Ulikkal-Vallithode road in proposed time, necessary instructions have to be given to KSEB to expedite the process of

	shifting of electric posts. There should be proper co-ordination between the PWD and various agencies/institutions like KSEB.
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IV. Name of the Scheme : Development and Improvement of Major District Roads.

1	Name of Offices and Date of Visit	<ul style="list-style-type: none"> • PWD Roads Sub Division, Idukki. 30/12/2016 • PWD Roads Sub Division, Pala. 16/01/2017 • PWD Roads Sub Division, Thalassery. 20/01/2017
2	Components Examined and Duration of Implementation	<ul style="list-style-type: none"> ◆ Improvements to Vellayamkudy – KSRTC Junction – Pezhumkavala – SN Junction road. 0/000 to 1/100. ◆ Improvements to Mar Bishop Vallopally road Ch 0/000 to 3/500 for providing BM & BC. Duration : 6 Months ◆ Improvement to Vilakkumadom -

		<p>Chathankulam -Vattappara - Kanjiramattom - Madamala - Edamattom Road ch.0/000 to 6/900. Duration : 11 Months</p> <p>◆ Improvements to Mutholi- Poovarani road Ch 0/000 to 5/300. Duration :11 Months</p> <p>◆ Improvements to vilakkumadam - Vazhamattom - pinnakkanadu road ch 0/000 to 7/000 km. Duration :17 Months</p> <p>◆ Improvements to Kurumannu-Kayyoor- Plassanal road. Duration :12 Months</p> <p>◆ Construction of duct in pala parallel road from Mini civil station to Pala Kozha road. Duration :13 Months</p> <p>◆ Improvements to Ramapuram Pizhaku Valliyath Kadanadu road 0/000 to 6/400 provoding BM&BC construction of CD</p>
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		<p>work and protective works.</p> <p>Duration :12 Months</p> <ul style="list-style-type: none"> ◆ Improvements to Mahe Bypass road from Km 2/460 to 3/710 in New Mahe Panchayat. Duration : 6 Months ◆ Improvements to Uruvachal-Kakkayangad road Km 6/500-12/400. Duration : 11 Months
3	Verification of Documents/Files	<p>Verified the files and documents related to the component works of the schemes in the PWD Roads Sub Divisions, Idukki, Pala and Thalassery.</p>
4	Gathering Feedbacks	<ul style="list-style-type: none"> • Collected information and data from the Assistant Executive Engineer, PWD Roads Sub Division, Idukki and Assistant Engineer, PWD Roads Section, Kattappana • Collected information and data from the Assistant Executive Engineer, PWD Roads Sub Division, Pala

		<ul style="list-style-type: none"> • Collected information and data from the Assistant Executive Engineer, PWD Roads Sub Divisions, Thalassery. • Also collected information from local people who are the beneficiaries of the project.
5	Present Status & Observation	<ul style="list-style-type: none"> • Main objective of the scheme was to carryout heavy maintenance on Major District Roads to minimize the over straining of the existing infrastructure due to the increased transport demand. 90 % of the works are nearing completion at the time of visit. But in the case of Kurumannu-Kayyoor-Plassanal road work was just started and only 2% of the work was seen completed. • In the case of Vellayamkudy – KSRTC Junction –

	<p>Pezhumkavala – SN Junction road, it is found that the BC work has not started at the time of visit though the BM work has already completed before october. BC is the top coat protecting the road from damage and in this road due to the discontinuation of BC work lot of damages seen occurred on the road.</p> <ul style="list-style-type: none">• In the case of Mahe Bypass road the road ends in a blund end so that it is not much beneficial to general public except for a few families. 40% of the road blends with New Mahe – Panniyannur road which extends to another major road, ie Thalassery-Nadapuram road. But the remaining portion, ie 60% passes through the residences of a few people and make an abrupt end before the railway line.
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		<p>Hence, it does not by passes any other road or densely populated area and the utility of the road actually needs a review.</p> <ul style="list-style-type: none"> • Regarding the Development and improvement of other major district roads the beneficiaries have expressed their satisfaction with the construction and utility.
6	Constraints/ Risk Factors	<p>The PWD pointed out the following constraints/ risk factors with regard to implementation of various road projects:</p> <ul style="list-style-type: none"> • Delay in demarcating of purampoku boundaries in Ramapuram Pizhaku Valliyath Kadanadu road • Delay in shifting of pipe lines & electrical lines in Mutholi-Poovarani road • Work interrupted due to quarry strike and heavy monsoon in Uruvachal-Kakkayangad Road

		<ul style="list-style-type: none"> • Owing to rain, the work could not to be completed within the stipulated time as per the agreement in the case of Mahe Bypass road. • Delay in shifting pipe line of KWA and electric posts.
7	Comments/ Suggestions	<p>Timely completion of projects is considered one of the most important factors referring to the project success, as well as the quality and the safety. For timely completion of projects, PWD may conduct periodical meetings with the project execution staff of the department and should maintain constant liaison with the various agencies/ departments like KSEB, KWA, Revenue so as to avoid obstacles/ barriers that may arise during the period of execution of work. PWD can suggest digitalisation of survey works for speedy completion of demarcating of puramboku area and the boundaries. The rain during the monsoon period 2016 was very</p>

		<p>scanty. It means that rain didn't come as an obstacle to the execution of road work. But the PWD pointed out that rain was one of the reasons for the delay in execution of work. This has no relevance with the truth. Hence, the attitude of the personal of the PWD vis-a-vis execution of work should also be changed. Proper analysis of cost- benefit (Socio-economic) be made with regard to construction of roads before its commencement. An appraisal of the Mahe Bypass road may be made with regard to traffic and mobility of goods and passengers.</p>
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V. Name of the Scheme: Public Office Building Construction Programme

1	Name of Offices and Date of Visit	<p>PWD Buildings Division, Ernakulam. 08/11/201</p> <p>PWD Buildings Division, Thiruvananthapuram. 03/12/2016</p> <p>PWD Buildings Sub Division, Irinjalakkuda. 17/12/2016</p>
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2	<p>Components Examined and Duration of Implementation</p>	<ul style="list-style-type: none"> ◆ Improvements and landscaping works to PWD Rest House and office complex at pathadipalam, Kalamassery ◆ Construction of Fire and Rescue Station at Eloor, Ernakulam. Duration : 15 Months. ◆ Construction of First Floor at Public Office Complex, Njarackal, Ernakulam. Duration : 08 Months. ◆ Construction of additional floor for providing office facilities to NIC at the 3rd floor of Revenue complex building in Public Office complex, Thiruvananthapuram. Duration : 04 Months ◆ Construction of conference hall and office cum rest room in PWD Rest House, Kodungallur. Duration: 09 Months ◆ Construction of Second Floor to Addl. Block at PWD
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		<p>Rest House, Chalakudy-Phase II. Duration : 15 Months</p> <p>◆ Construction of Type II Staff quarters for Aloor Village office. Duration : 12 Months</p>
3	Verification of Documents/Files	<p>Verified the files and documents relating to the component works of the schemes in the PWD Buildings Divisions, Ernakulam, Thiruvananthapuram and PWD Buildings Sub Division, Iranjalakkuda.</p>
4	Gathering Feedbacks	<ul style="list-style-type: none"> • Collected information and data from the Executive Engineers PWD Buildings Divisions, Ernakulam and Thiruvananthapuram. • Collected information and data from the Assistant Executive Engineer PWD Buildings Sub Divisions, Iranjalakkuda.
5	Present Status & Observations	<ul style="list-style-type: none"> • At the time of site verification 90% of the work

		<p>has been completed in PWD Rest House and office complex at pathadipalam, Kalamassery. The work of providing entrance arch, name boards, access to terrace etc are still pending. The newly built auditorium in the Kalamassery Rest House is found dilapidated in portions even before the payment is made. It is also noticed that the paving of floor tiles are not in a uniform manner. The seating of the tiles are not seen in a proper manner. That means the beautification work was done without proper study and the quality of work need be evaluated. The Finance (PB) team also obtained some drawbacks in the gardening work done as a part of beautification.</p> <ul style="list-style-type: none">• Construction of Fire Station at Eloor is at plastering stage
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		<p>on the date of site visit. Slight alteration were done in the composition of the building with out altering the original building plans.</p> <ul style="list-style-type: none">• Construction of First Floor at Public Office Complex, Njarackal has been started on 19-08-2016 and about 60% of the construction has already been completed at the time of site verification.• Construction of additional floor for providing office facilities to NIC was started on 04-03-2016 and completed on 18-08-2016, ie, one month delayed from the proposed date of completion.• Construction of conference hall and office- cum- rest room in PWD rest house, Kodungallur was started on 18/11/2015 and completed the civil works within the proposed time, i.e., 17-08-2016 but electrification
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		<p>works were not started at the time of site verification. The newly constructed conference hall and office-cum-rest room remains idle due to non-completion of electric works. This is just like blocking up of government money.</p> <ul style="list-style-type: none">• Construction of Second Floor to Addl. Block at PWD Rest House, Chalakudy was started on 10-03-2016 and 50 % of the work has already been completed at the time of site verification. The roof concreting of the second floor has been completed and the concrete pilers for kitchen has also been out in place.• Construction of Type II Staff quarters for Aloor Village office was tendered twice but there was no response from the contractor's side. Then quotations were invited. Out of the
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		<p>quotations received the quotation with 20.04 % above the estimate rate has been approved. After obtaining the tender sanction, selection notice was issued to the contractor on 01/04/2015 and agreement was executed on 22/04/2015. The revenue department handed over proposed site to PWD on 23/12/2015 and the concerned Assistant Engineer, PWD (Buildings) handed over proposed site to the contractor on 01/01/2016. When the contractor reached the site to start the work, the authorities of Grama panchayat raised objections to start the work. Now the dispute is under the consideration of District Collector. The fate of the work depends upon the decision of the District</p>
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		Collector in this regard.
6	Constraints/ Risk Factors	<ul style="list-style-type: none"> • Delay occurred in getting sanction from social forest department for cutting trees in the construction site at Chalakkudy Rest House. • Electrification in the Conference hall, Kodungallur Rest house is still pending, The work has to be re-tendered as the first tender received is single. • The proposed site for Type II Staff quarters for Aloor Village office is situated near to the community hall maintained by Aloor Grama Panchayath. It is said that, the Panchayat have been using this revenue land as unauthorised parking place for community hall. The Tahasildar has already handed over the land for construction and at the time of starting the project the

		<p>Grama Panchayat raised objections and hence the delay. Now the dispute is before the District Collector.</p>
7	<p>Comments/ Suggestions</p>	<p>For effective and efficient implementation of a scheme co-ordination among various government departments is essential. For ensuring co-ordination among the departments the administrative department may appoint liaison officers to coordinate the work.</p> <p>In many cases it is found that the projects were abolishing due to the lack of space. Administrative departments must suggest a clear site for construction before the AS is issued. The electric and related works have to be done immediately after the civil work is over. Proper planning in this regard should be done in appropriate time. Government money should not let to be idle in partly completed works.</p>

HEALTH DEPARTMENT

A. INTRODUCTION

Historically the rules of the princely state, made a small beginning to provide infrastructural facilities for a primary health care system. After the reorganisation of the state, it has reached a fairly high level of standard and soundness. The availability of facilities for primary health care, their accessibility, the very high degree of awareness and acceptability among the people have made Kerala model an almost perfect one. With the effective involvement of the private sector which plays a major role in the health sector and with the help of voluntary organisations this task, though throws a challenge, is attainable.

The level of achievements attained in the implementation of the various national programmes for control/eradication of diseases and also of family welfare programmes including universal immunization programme and maternal and child health activities has helped the state to reduce the mortality rates and improve the health status of the people. The life expectancy rate of female has been enhanced to over 73 years. Today the infant mortality rate is as low as 16 and the rate of maternal mortality is below one, which are comparable to that of some of the developed countries.

The Department of Health which is a major Department in the state is headed by the Director of Health Services, who is assisted by the Additional Director and Deputy Directors. At the district level there are District Medical Officers. There are 18 General Hospitals, 16 District Hospitals, 8 Women and Children Hospitals, 79 Taluk Hospitals, 231 Community Health Centres, 682 Primary Health Centres in the State. Almost all Grama Panchayat have at least one Primary Health Centres. The case is not

different in the case of Municipalities and Municipal Corporations also. The Controller of Drugs is the head of the Drugs Control Department.

Scheme wise details

As per Circular No.70/16/Fin. dated 17/08/2016, Government have decided to introduce Concurrent Evaluation and Monitoring of Schemes for 2016-17 in Health Department. The following five schemes have been identified for the Concurrent Evaluation and Monitoring of Schemes:

- (i) Blood Banks (outlay Rs.299 lakh)
- (ii) Anti Rabies Campaign (outlay Rs.500 lakh)
- (iii) Strengthening of Drugs Control Department (outlay Rs.348 lakh)
- (iv) Kerala Emergency Medical Services [108 Ambulance (outlay Rs.1254 lakh)]
- (v) Women and Children Hospitals (outlay Rs.1830 lakh)

(i) Blood banks.

Blood safety encompasses actions aimed at ensuring availability of blood and blood products to everyone, as safe as possible, adequate to meet the needs of patients and provided as part of a sustainable blood programme within the existing health care system. Blood transfusion is a multi-step process with risk of error in each process from selecting donors, collecting and processing blood, testing of donor and patient samples, issue of blood transfusing the patient samples to issue of blood transfusing the patient. The risk associated with blood transfusion can be significantly reduced by the introduction of quality systems, external quality assessment, collecting blood units in hygienic conditions, using modern equipments for the testing and storage, using blood products and training for staff.

This scheme is implemented through KSACS (Kerala State Aids Control Society). There are 34 blood banks. 34 blood storage centres and 21 blood components separation units under the Directorate of Health

Services. During 2016-2017, an amount of Rs.299 lakh is provided in the budget. This is for blood component separation units, training of blood storage centre staff, procurement of equipments, consumables, kits, reagents, blood bags, annual maintenance contract of blood bank equipment, promotion of voluntary blood donation and IEC (Information Education Communication) activities.

(ii) Anti-Rabies Campaign

This Scheme is implemented by the Kerala Medical Service Corporation Limited with the support of Animal Welfare Board and NGO's. Control of stray dogs, Animal Birth Control, Anti-Rabies Vaccination and Immunoglobuline's are the main objectives of the scheme. It is an integrated programme of the Departments, viz; Health, Animal Husbandry, Tourism and Urban affairs. Control over growing population at stray dogs is particularly necessary. An amount of Rs.500 lakh is provided in the current year's budget for the programme as matching grant to central fund.

(iii) Strengthening of Drugs Control Department

Strengthening of the Drugs Control Department is primarily aimed at the smooth functioning of the analytical and enforcement activities of the department. The drugs control department ensures the quality of the drugs available in the state. The regulatory work performed by the Drugs Control Department includes licensing for the manufactures, sales and distribution of drugs in the state, inspection of sales premises/hospitals/institutions, sampling of drugs and analysis of samples and prosecution against offenders of law. The components include mainly the purchase of chemicals, machineries, equipments, glass wares, various instruments/equipments, Annual Maintenance Contract and Repairs of instruments/equipments etc in the drugs testing laboratories. The scheme also includes ongoing construction of building for the drug testing lab at Pathanamthitta and

Kozhikode its completion. An amount of Rs.348 lakh is provided in the budget.

(iv) Kerala Emergency Medical Services (108 Ambulance)

The project titled KEMP has been initiated in the state on 19th May 2010. The project is envisaged to provide private medical care to the patients during 'Golden Hour' i.e. within one hour of the occurrence of accident or illness. Management of emergencies is of serious concern to the state of Kerala specially in the light of increasing road accidents, health related problems, outbreak of diseases and unexpected natural disasters etc. While 45% of emergencies are owing to road accidents, 55% in health related emergencies. In this model, state used to sign an MOU with the private partner, who will operate the Emergency Ambulance Service in the State for the Government and the operating expense will be reimbursed to the operator by the state. The scheme is implemented by KMSCL in Thiruvananthapuram and Alappuzha districts. It is proposed to extend this programme to all districts. A total amount of Rs.1254 lakh has been provided in the budget for the purpose.

(v) Women and Children Hospital

The Women and Children Hospitals provide special care to women and children particularly to pregnant women and also give immunisation to children. At present W & C Hospitals are functioning in Thiruvananthapuram, Kollam, Alappuzha, Ernakulam, Palakkad, Kozhikode and Kannur Districts. The establishment of the Hospitals at Kottayam, Malappuram, Wayanad, Thrissur, Pathanamthitta, Idukki and Kasaragode are in progress. Amount is provided for the strengthening of civil works of the already allotted hospitals and strengthening of existing W & C Hospitals including strengthening of infertility clinics. An amount of Rs.1830 lakh is

provided for the above during the financial year 2016-17.

C. STATUS REPORT

BLOOD BANKS.

1	Name of the Scheme	:	Blood banks.
2	Plan outlay	:	Rs.299.00 lakh
3	Duration of implementation	:	2016-2017
4	Components of the Scheme	:	<ul style="list-style-type: none"> • Blood components separation unit. • Training of Blood storage center staff. • Procurement of equipments, consumables, kits, reagents and blood bags. • Annual maintenance contract of blood bank equipments • Promotion of voluntary blood donation. <p>IEC activities are the components of the scheme.</p>
5	Present Status and Observations.	:	An amount of Rs. 2,39,75,000 has been transfer credited to Kerala State Aids Control Society which is the implementing authority for the implementation of the scheme 'Blood Bank'. Owing to delay in according Administrative Sanction, the work order could be issued only recently. So there is no purchase of any equipments

		or items regarding the scheme. Finance Performance Budget team contacted Directorate of Health Services as well as KSACS during December and January, and collected informations related to the scheme.
6	Suggestions	: The Director of Health Service and Administrative Department concerned should take timely action for the releasing of funds in future. Otherwise it will be adversely effect the effectiveness of the scheme. The implementing agency shall take appropriate and timely steps to get the fund allotted in time.
II	Name of the Scheme	: Anti-Rabies Campaign
2	Plan Outlay	: Rs.500.00 Lakhs.
3	Duration of Implementation	: 2016-2017
4	Components of the Scheme	: <ul style="list-style-type: none"> • Control of Stray dogs. • Animal birth control. • Purchase of Anti-Rabies vaccination • Purchase of Immunoglobuline's.
5	Present Status and Observations	: An amount of Rs.500 lakh is provided for 2016-2017 as matching grand to central fund for the control of stray dogs, Animal

		<p>birth control, anti-rabies vaccination and the purchase of immunoglobuline. But the department utilises the same only for the purchase of anti-rabies vaccine and immunoglobulin. It is an integrated programme of the departments viz. Health, Animal Husbandary, Tourism and Urban Affairs for the anti-rabies campaigning and control over growing population of stray dogs. But they couldn't perform as it Kerala Medical Service Corporation Limited officials informally reported that the amount (ie, Rs.5 crores) is completely expended for the current financial year and purchase the medicines by the KMSCL authorities and distributed the same to various district hospitals.</p>
6	Suggestions	<p>The growth rate of stray dogs is increasing in recent years. Therefore the Health Department should take effective steps to control the birth rate of stray dogs in association with other departments like Animal Husbandary, Tourism and Urban Affairs.</p>
III	Name of the Scheme	: Strengthening of Drugs control department
2	Plan Outlay	: Rs.348.00 lakh.

3	Duration of Implementation	: 2016-2017
4	Components of the Scheme	<ul style="list-style-type: none"> • Purchase of Chemicals, Machineries, medicines, equipments, chemicals, glass wares and various instruments/equipments. • AMC of instruments and equipments. • Repairs of equipments/instruments. <p>Ongoing construction of building for drug testing lab at Pathanamthitta and Kozhikode and its completion</p>
5	Present status and observations	<p>The Administrative Sanction was issued only on 25/08/2016. Even though the budget allocation was Rs.348 lakh. An amount of Rs.337.00 lakh only has been released to the department. Owing to the delay in according Administrative sanction, Drugs Control Department couldn't perform as much. All the purchase are at initial stage only. ie, at the tendering stages. Construction works have not yet been started. An amount of Rs.248.00 lakh is transferred to PWD for the ongoing construction of building for the drug testing labs at Pathanamthitta and Kozhikode (Rs.30 lakh and Rs.218 lakh respectively). We collected the information over</p>

			telephones and through email.
6	Suggestions	:	<p>Though the Administrative Sanction was issued on 25/08/16, the work couldn't be started immediately. It seems a serious lapse occurred on the part of the authority concerned and the same should not let to be repeated in future.</p> <p>The authority concerned should ensure that fund is released in time so as to implement the scheme effectively.</p>
IV	Name of the Scheme	:	Kerala Emergency Medical Service. (108 Ambulance)
2	Plan Outlay	:	Rs.1254 lakh
3	Name of Office and Date of Visit	:	<ul style="list-style-type: none"> • National Health Mission, Kottaram Building, General Hospital compound, Alappuzha – 23/09/2016 • Keral Medical Services Corporation Ltd. W & C Hospital Compound, Thycaud, Thiruvananthapuram 15/10/2016
4	Duration of Implementation	:	2016-2017
5	Components	:	To extend the service of 108 Ambulance to all districts so as to provide help to road accident victims and other trauma victims.

6	Verification of Documents / Files	: Verified the the files and documents related to the scheme in the National Health Mission, Alappuzha and Kerala Medical Services Corporation Ltd, Thiruvananthapuram.
7	Gathering feed backs	: Collected necessary details from the District Programme Manager, NHM, Alappuzha and the CEO of the KMSCL, Thiruvananthapuram regarding the scheme.
8	Present Status and Observation	: Out of 25 ALS ambulance running in Thiruvananthapuram district 13 vehicles have completed the CFT test and CFT related works are going on for the rest of the 12 vehicles at different workshops. At Alappuzha district, out of available 18 ALS ambulance 16 ambulance have completed the CFT test and rest of two vehicles will be back soon for service. For the Financial Year 2016-17, up to 18/09/2016 it is reported that service rendered for carrying a total of 5477 patients for medical purposes at various hospitals in Thiruvananthapuram and Alappuzha. It is also reported that there is no purchase of ambulance effected so far in the current financial year.
9	Constraints /Risk	: The age and Kilometres run by the vehicles

	factors	<p>are of serious concern which is heavily affecting the quality of service rendered by the project. The vehicles in Thiruvananthapuram district have covered about 3 lakh kilometres and the vehicles at Alappuzha district have covered about 2 lakh kilometres. It is very difficult to run this vehicle which are getting off road very frequently which is interrupting the quality of service.</p>
10	Comments/Suggestions	<p>The District committee of the KEMP may be re- modelled with the following members.</p> <ul style="list-style-type: none"> • District Collector -Chairman • DMO- Vice Chairman • DPM - Convenor • Regional Transport officer-Member • Representative from Police Department- Member • Representative from KMSCL - Member • District Labour Officer - Member • Zonal Officers – Members <p>Suitable number of vehicles has to be purchased as per the direction of committee of secretaries made for the expansion of KEMP.</p>

		<ul style="list-style-type: none"> • A service level agreement has to be signed with the manufacture of the vehicle for the repair and maintenance of vehicle on priority basis for a period of 5 years. • The specification of the vehicles may be as per the tender floated by KMSCL for the expansion. • The KEMP has to expand to the entire districts of Kerala. • The present 43 vehicles running in Thiruvananthapuram and Alappuzha district has to be re-distributed among all 14 districts. • The control room expansion has to be done for the expansion of the project to the remaining 12 districts. These 12 districts where the project is not operating has to be divided in to 4 zone, each zone comprising of 3 districts. • Control room employees at KMSCL and field staffs at the respective District Programme officers has to be recruited for each zone and may be given training.
V	Name of the Scheme	: Women and Children Hospital

2	Plan Outlay	:	Rs.1830 lakh
3	Duration of Implementation	:	2016-17
4	Components	:	Strengthening of civil works of the Women and Children Hospital already allotted in 7 districts of Kottayam, Malappuram, Wayanad, Thrissur, Pathanamthitta, Idukki and Kasargod and strengthening existing hospitals in other districts including strengthening of infertility clinics.
5	Verification of documents/files	:	Verified the files and documents related to the scheme in the Government Victoria Hospital, Kollam and W &C Hospital Vaikom, Kottayam.
6	Gathering Feed backs	:	Collected necessary details from the Government Victoria Hospital Kollam and W&C Hospital Vaikom regarding the scheme.
7	Present Status and Observation	:	<ul style="list-style-type: none"> The officials of Government Victoria hospital, Kollam said that, they did not receive any fund during the year 2016-17 and hence could not start any civil works during the financial year.

		<ul style="list-style-type: none"> • W &C Hospital in Kottayam District provide Health care to women and children in the area especially from Vaikom Municipality and adjoining 12 panchayats. • In Kottayam, this project is implementing in the premises of Taluk Head Quarters Hospital, Vaikom. The work is carried out through PWD. The proposed duration of completion of the 1st phase was 24 months. But only the work of foundation, plinth beam, slab concreting has been completed and column work for ground floor is progressing at the time of site visit. The proposal for the 2nd phase is already prepared and submitted to higher authorities. At the time of site visit Finance (Performance Budget)team has found 4 idle buildings in the premises of Taluk Head Quarters Hospital, which was build many years back.
8	Constraints and risk	: In the case of Government Victoria

	factors	<p>Hospital, Kollam lack of sufficient space is the major problem for implementing the scheme.</p> <p>In the case of W&C Hospital, Vaikom, delay occurred in the auction of tree and old building. Another risk factor is that the proposed site for hospital is situated in the banks of a lake and the variation in the water level in the lake affects the work.</p>
9	Comments/Suggestions. :	<p>AD must study in detail about the project before issuing Administrative Sanction and Technical Sanction. The Department must suggest proper location for implementing the scheme. As far as possible, areas close to water bodies shall be avoided while selecting the site. A new work shall be sanctioned only after completion of the similar type of work executed in the same location in all respects and the same is put into use.</p> <p>An explanation may be sought from the officials concerned for the buildings remain idle. Among these, two of them are completed and the remaining two are in the semi finished stage. No additional work for the construction of building shall</p>

		<p>be sanctioned to the hospital after the completion of the present work. In addition to this, the officials of the hospitals and Health Department should ensure that the completed buildings in the hospital premises to be utilised for the purposes for which they have been constructed.</p>
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HIGHER EDUCATION DEPARTMENT

A. INTRODUCTION

Education is a tool for social change and progress. Society has to change positively as the world changes and adapts itself. Higher education must aim at the comprehensive developments of the new Generation. It must help nation building at all layers. Education bill presented by the first elected Governments of the unified states of Kerala, total literacy campaign of 1980 and the child friendly and activity oriented curriculum of 1990's were all historical sign posts of this perception about education in Kerala. The process of education moulds the leaders for the future. The children in present years may be the nation building captains of the coming year. What is spent in education is not a mere expenditure from the state exchequer, but it is investment for the future. Hence there should be due diligence and care while investing this amount. We should ensure that the amount is spent for the purpose for which it is intended and in an efficient manner. That is whole the importance of CEMS lies in. As part of CEMS five schemes in the Collegiate Education and Technical Education Departments have been selected.

Collegiate Education

The main objective of the Collegiate Education Department is to impart best quality higher education to the eligible students of the state who complete their higher secondary level education. In order to achieve this objective, the department conducts various UG, PG, teachers training courses in the institutions under the departments and provide modern structural facilities to the students community. The Director of Collegiate

Education is the head of the Department, who is assisted by Additional Directors of the Head Quarters and Zonal Deputy Directors at Kollam, Kottayam, Ernakulam, Thrissur and Kozhikode.

Technical Education

Technical Education Department deals with all the technical education activities in the state. The Department co-ordinates activities of various institutions like Engineering Colleges, Polytechnics, Fine arts colleges, Technical high schools etc. The activities include maintaining the standards of curricular and co-curricular activities. Various quality assurance measures are being taken up to maintain the quality of technical education. So that the students passing out of these institutions are widely accepted all over the world. The Department is headed by Director of Technical Education who is usually drawn from the Engineering/Technological field. There are also separate Senior Joint Directors of Engineering and Polytechnic wings at the Directorate. There are two Regional Joint Directors at Kothamangalam and Kozhikode.

B. SCHEME WISE DETAILS

For Concurrent Evaluation and Monitoring five schemes have been chosen. A brief description of the scheme selected are shown below.

(i). Collegiate Infrastructure and Upgradation Programme (CIUP)

This scheme envisages to qualitative infrastructural upgradation of Government colleges like Arts and Science , Teacher Education, Music colleges, Physical Education etc. A special Cell was formed in the Collegiate Education Department to identify infrastructure projects and to upgrade the quality of facilities available in these colleges. The cell after

conducting site visits of the colleges has identified projects approximately worth Rs.100.00 crore which have to be taken up in the first phase.

(ii). Development of Laboratories and Libraries in Government Colleges.

The scheme is designed for the up-gradation of the Laboratories and Libraries in Government colleges. The Government colleges in the state require well equipped and advanced facilities in the Laboratories and library. The Laboratories are to be upgraded every year with most modern equipments and the libraries are to be digitalized with internet access to the students. The conventional courses conducted in colleges give way to new job oriented courses which require procurement of most modern equipments, digitalized library systems, furniture for lab/library, purchase of library books etc. Out of the total amount provided 15% have to be earmarked for science course.

(iii)Walk with A Scholar

It has been observed that the students in arts, science and commerce colleges do not get orientation to prepare them for employment or guidance necessary to select areas for higher study. Walk with a scholar scheme proposes to arrange specialised monitoring programmes for students in under graduate programmes in Arts, Science and Commerce streams to provide guidance for their future. The scheme put forward the ideas of mentoring and builds on the concept of mentor as a guide and friend.

The mentoring scheme for students will be purely voluntary in nature. It will be open for 30 students of the first year under graduate courses.

(iv)Technical Education Quality Improvement Programme(TEQIP) Phase-II

TEQIP is a project of Government of India to improve academic standard and infrastructure facilities of Engineering Colleges. TEQIP Phase - II is a world bank assisted project in which about 200 technical institutions from the country are competitively selected to improve quality of technical

education through institutional and systemic norms. In TEQIP Phase -II, 19 Engineering colleges in the state are selected for the sub components of strengthening institutions to improve learning outcomes and employability of graduates.

(v)Information and Communication Technology (ICT)

ICT has the potential to contribute greatly to the practice of engineering education. All class rooms in Government Engineering Colleges and Government Polytechnic Colleges have already been converted into smart class rooms. The amount provided is for digital class rooms, digital faculty rooms, digital library, campus wide networking and online course management system for the development of all the technical institutions in the state including technical high schools and fine arts colleges.

C. STATUS REPORTS

1	Name of the scheme	:	Colleges Infrastructure Upgradation Programme(CIUP)
2	Plan Outlay	:	Rs.2500.00 lakh
3	Name of offices and date of visit	:	1. Government College Kattappana, Idukki (25/11/16) 2. BJM College. Chavara, Kollam (7/12/16) 3. C. Achuthamenon Government College, Kuttanellur, Thrissur (17/1/17)
4	Duration of implementation	:	2016-2017 (current financial year.)
5	Components Examined	:	<ul style="list-style-type: none"> • Construction of building for colleges and hostels

			<ul style="list-style-type: none"> • Minor construction works for general improvements of sports facilities • Conservation of heritage value of colleges and hostels. • Purchase of sports goods • Students amenities.
6	Verification of documents/files	:	Verified the files and documents related to the scheme including Administrative Sanction and proceedings of the colleges concerned.
7	Gathering feedbacks	:	Conducted discussions with the Co-ordinators and the students of the colleges.
8	Present status and Observations		<p>Finance Performance Budget team visited the colleges on the dates mentioned above and physically verified the construction works and other matters related to the scheme. The team also verified the files and documents related to components of the scheme.</p> <p>In Government College, Kattappana the fund has been allotted for minor works and student amenities. The total amount allotted under CIUP head is Rs.7 lakh. The college authorities decided to install CCTV cameras in examination halls, hostels and all other strategic places according to the strict directions of M.G University in connection with examination, ragging etc. Keltron estimated an amount of Rs.20 lakh for the same,</p>

		<p>but the fund available under this head is only Rs.5 lakh. The allocated fund has been fully utilised for that purpose. The work is at quotation level at the time of visit.</p> <p>An amount of Rs.2 lakh is released for student amenities which include purchase of submersible electric motor pump, water purifier and one incinerator and for the purchase of Napkin vending machine. The purchases of items mentioned above are only at quotation stage at the time of visit of the team.</p> <p>In Baby John Memorial College Chavara, Kollam the amount allotted under CIUP scheme is Rs.10 lakh. Out of this amount Rs.5 lakh is set apart for the purchase of sports equipments/maintenance of play ground and Rs.5 lakhs for grill work to Commerce Block of the college. Both the above mentioned works were at the earlier stages only. Some components are in the stage of preparation of estimates and some others in the stage of tendering by PWD.</p> <p>The amount allotted under CIUP scheme for C. Achuthamenon Government College Thrissur is Rs.8.5 lakh. The components of the schemes are purchase of 5 steel shelves for Economics Department, construction of Kabadi court, Commerce room partition, purchase of sports goods and renovation of toilets of Economics</p>
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		<p>Department.</p> <p>Shelves have already been purchased. The construction of Kabadi court is not yet started because of the delay in getting estimate prepared by PWD. Supply order for the purchase of sports goods and uniforms has been issued. Supply order was sent for the room partition of Commerce Department. The renovation of toilets in Economics Department has not yet been started due to the delay of the estimate prepared by PWD.</p>
9	Constraints and suggestions :	<p>Construction work is the major part of the CIUP scheme. Since the work is executed through that Department, owing to the pressure of work and procedure in the PWD it is difficult to get estimate prepared and the work executed in time. Hence the department concerned may take up the matter with PWD authorities for timely completion of the work.</p> <p>There was delay on the part of the Administrative Department. The Administrative Sanction has accorded only on 02/09/16 . It is found that the gap occurred between date of Administrative Sanction and the date of actual commencement of work. In C. Achuthamenon Government College, the proceedings issued on 28/10/16 and Government College Kattappana on 8/11/16 only. It is a lapse on the part of the</p>

			college authorities concerned. Hence the Director of Collegiate Education should ensure that the work is completed within the time frame prescribed.
II	Name of the Scheme	:	Development of Laboratories and Libraries in Govt. Colleges
1	Plan Outlay	:	Rs.600 lakh.
2	Name of office and Date of visit	:	1.Govt. College Kattappana, Idukki (25/11/16) 2. BJM College, Chavara, Kollam (7/12/16) 3. C. Achuthamenon Govt. College, Thrissur (17/1/2017)
3	Duration of Implementation	:	2016-2017
4	Components examined	:	<ul style="list-style-type: none"> • Procurement of most modern equipments • Digitalized library systems • Furniture for Laboratories/Library • Purchase of library books. • Purchase of Chemicals for Science Laboratories.
5	Verification of documents/files	:	Verified the files and documents related to the scheme.
6	Gathering feedback	:	Conducted discussions with the co-ordinators and the students of the respective colleges.
7	Present status and	:	Finance (Performance Budget) team visited the colleges on the dates mentioned above and

	Observations	<p>physically verified both the files and the works related to the scheme.</p> <p>In Govt. College, Kattappana, there is no works seen performed as part of the scheme. The Administrative Sanction issued only on 18/11/16.</p> <p>No activities are seen performed as part of the scheme at BJM College Chavara in the financial year 2016-17.</p> <p>In C. Achuthamenon Govt.College, Thrissur supply order issued for the purchase of books for Rs.6,02,000/- and books regarding History, English and Politics have already been supplied. The process of purchase of the psychological tests and equipments is at the quotation level. The list for the purchase of Library furniture and shelves is prepared. Purchase order has not been issued till 17/01/17.</p>
8	Constrains and suggestions	<p>It is noted that for the timely implementation of related schemes the Administrative Sanction should be issued within the beginning of the Financial year. Other wise the project could not be completed in time, resulting in lapsing of fund. The department concerned may examine the matter in detail and should take appropriate measures for the timely issuance of Administrative Sanction. The college authorities requests</p>

		<p>allocation of funds at the beginning of financial year.</p> <p>The college authorities reported that the delay in issuing Administrative Sanction is due to delay from the part of Administrative department. There is a common tendency of releasing funds at the fag end of the financial year, this tendency should be avoided. The allocation and release of funds should be made in adequate and timely manner for the smooth implementation of the schemes.</p> <p>It is found that reliable dealers are not available for the timely distribution of sports goods and laboratory equipments of psychology department in C. Achuthamenon College, Thrissur. The Administrative Department should take necessary steps to tide over the situations.</p> <p>Hence the administrative department should ensure that the timely releasing of fund to find out the reliable dealers for the supply of the same.</p>
III	Name of the Scheme	: Walk with a Scholar
1	Plan outlay	: Rs.700.00 Lakh.
2	Name of office and date of Visit	: Govt. College, Kattappana , Idukki (25/11/16) BJM College, Chavara, Kollam (7/12/16) C. Achuthamenon Govt. College, Thrissur (17/1/17)

3	Duration of implementation	:	2016-17
4	Components examined	:	<ul style="list-style-type: none"> • Internal mentoring • External mentoring • Conducting mock tests/ interviews for final year students • Motivational visits.
5	Verification of documents/files	:	Verified documents/ files related to the scheme.
6	Gathering feedbacks	:	Discussions conducted with the co-ordinators and the students of the respective colleges.
7	Present status and observations	:	<p>Administrative sanction was issued only on 16/11/2016. The Finance Performance Budget team visited Government College Kattappana on 25/11/16. And it is found that no activities are taken place till the date of visit.</p> <p>In BJM college, Chavara, the sanctioned amount was transfer credited to PD A/c. Internal mentoring classes for 2nd year students and selection process of the 1st year students were going on.</p> <p>Owing to the delay in issuing Administrative Sanction, there was some difficulties in transferring to the fund to P.D A/c in C. Achuthamenon Govt. College, Thrissur. Therefore only internal mentoring classes were conducted during the</p>

			holidays as part of the scheme.
8	Constrains and Suggestions	:	<p>The major constraint in the scheme is the delay in the allocation of fund. Time bound allotment of fund will help to develop planning and execution of the programme in good manner. The department may ensure timely allocation of fund for the smooth implementation of the scheme.</p> <p>As per guidelines, the students should have secured 60% marks in the qualifying exams for inclusion in the programme. As such, there is no opportunity for those students who came out with average marks in the qualifying exams and perform well in the subsequent exams. Hence, for the selection of the mentees, a common entrance test may be introduced giving opportunity to all students who got admission to degree courses. This will increase the number of intake in proportion to the total number of students in the college. The scope of extending the coverage of the programme by including students of outstanding potential talents in areas like arts, sports, culture, science, literature etc. may also be examined.</p> <p>Delay in getting Administrative Sanction and in releasing of fund affected the scheme badly. Hence the department should take necessary measures to release fund in the month of June</p>

		<p>itself in order to make external mentoring effective. In the present situation no college can effectively arrange external mentoring by assuring participation of all students because of the university examination, project work, internal assessment and such other programme in the semester system.</p> <p>For the successful implementation of the programmes more career oriented activities such as work shops, motivational camps and job fairs may be included in the programme. The progress of each students in his/her studies must be evaluated at regular intervals and corrective measures be taken to obtain the desired results. There should be a system to collect feed back from selected mentees from the colleges through e-mail to know the functioning of mentoring process.</p>
IV	Name of the Scheme	: Technical Education Quality Improvement Programme (TEQIP) Phase -II
1	Plan Out lay	: Rs.1077.00 lakhs.
2	Name of office and Date of Visit	: <ol style="list-style-type: none"> 1. TKM College of Engineering , Kollam (7/12/16) 2. Rajeev Gandhi Institute of Technology, Kottayam (9/12/16) 3. College of Engineering, Karunagappally (14/12/16) 4. Government Engineering College,

			Sreekrishnapuram (20/12/16)
3	Duration of implementation		2016-17
4	Components examined		<ul style="list-style-type: none"> • Improvement in teaching and learning facilities for Govt. funded and Govt. aided institutions. • Providing teaching and research assistantships to increase enrolment in existing and new P.G programmes in Engineering and applied science. • Enhancement of Research and Development and institutional consultancy activities • Enhanced interaction with industry • Institutional management capacity enhancement. • Implementation of institutional reforms.
5	Verification of document/files	:	Verified relevant files/documents related to the scheme.
6	Gathering feedback	:	Interaction with the co-ordinators and the students of the respective colleges.
7	Present Status observations	:	The Scheme envisages to modernise the academic infrastructure, enhance research, outcomes among faculty and students, ensure an even academic performance in all students hailing from different socio economic and cultural backgrounds, provide adequate training for faculty and staff, evolve

robust industry linkage etc. The funding in research and development primarily enhances the research and components in teaching, learning process. But it has got explicit relevance in bringing more projects and funding to respective engineering department. This shall also reflect on the consultancy from outside and also make a consistent truthful relation between industry and academics.

Finance (Performance Budget) Team visited TEQIP Phase II implemented Engineering Colleges on the dates mentioned above and physically verified the construction works related to the scheme. The team also verified the renovation works at various labs and libraries of various departments at various institutions as part of the scheme. Interactive sessions were also made with some of the students.

For the infrastructural improvements of teaching , training and learning, the laboratories are modernized by procuring modern equipments, making all the classes smart by installing LCD projectors and established well furnished computing facility labs. It improved faculties pedagogical skills. The main goal of these components is to utilize high quality pedagogical resources to enhance learning in a wider student community. All the visited institutions utilized the

		<p>allotted amount very effectively.</p> <p>The Scheme providing assistantship to PG students of various colleges help them in their research activities. They can improve their research skills.</p> <p>As part of the faculty and staff development programme in-house training and external training were conducted. Technical staff have also been benefited by improving their skills through various programmes conducted externally. Some of the faculties obtained higher qualification by utilizing the research programmes under this scheme. This will improve the quality of teaching and the students will be benefited eventually. Students as well as faculties had got chance to present their papers in the international conferences.</p> <p>One of the important component of the scheme is industry interaction. Institutions provided the faculties and students opportunities for interactions with industrial experts, conducted workshops on latest industrial products, and arranged industrial visits and conferences.</p> <p>For improving the managerial capacity of senior faculties in the institutions like Principals and Heads of the Department, they were sent to various Indian Institute of Managements like IIM at Culcutta, IIM Lucknow and IIM at Kozhikode for learning Modern Management techniques. This</p>
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		<p>will help to improve the overall efficiency of the institute.</p> <p>The highlighting component of the scheme TEQIP is academic support for weak students. For implementation of this component, remedial classes and bridge courses were conducted in all the colleges were the team from the Finance Department visited. A career guidance and placement cell is functioning in most of the colleges. This cell aims to equipping the students to develop qualities that are essential for them to become the best decision makers and globally competent professionals.</p> <p>The amount allocated for this component is well utilized and seen effectively. This is reflected in the improvement to the pass percentage and placement rate in the colleges.</p>
8	Constrains and suggestions	<p>In Government Engineering College, Sreekrishnapuram, they have few PG courses. It affects their accreditation i.e; autonomous status of the institution. This institute is well placed and well equipped to start PG courses with very minimum set up cost. They already gave proposal to Govt. for starting new PG courses.</p> <p>Hence Technical Education Department may take appropriate measures to overcome this</p>

		<p>problem.</p> <p>Owing to the shortage of regular faculties in Govt. Engineering College, Sreekrishnapuram and the College of Engineering Karunagappally, they find it difficult to meet the demands of academic work and training simultaneously. Frequent transfer of the staff without substitute also creates difficulties in the implementation of the scheme.</p> <p>Because of the very little access through the public transport system and unavailability of hostel facility it is difficult to ensure active participation of students in various seminars, discussions, debates etc. conducted by Government Engineering College, Sreekrishnapuram.</p> <p>Authority concerned may examine the matter in detail and may suggest appropriate measure for the improvement of public transport and hostel facilities in Government Engineering College Sreekrishnapuram. Improvement of public transport will benefit the public also.</p> <p>In Government College Sreekrishnapuram and College of Engineering Karunagappally, most of the senior positions of faculties like Professor and Associate Professor were not filled by permanent positions, but by adhoc postings only. Those people are not allowed to proceed for the management programs. Therefore the amount spent for this purpose is underutilized.</p>
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		<p>Department may examine the matter and take appropriate steps for the posting of regular senior faculties in Government Engineering College, Sreekrishnapuram and College of Engineering Karunagappally.</p> <p>Autonomy is the precondition for TEQIP. Rajeev Gandhi Institute of Technology, Kottayam applied for autonomous status. Delay in procedure to get the status affected the scheme badly.</p> <p>Government Engineering College, Sreekrishnapuram is situated in a rural village with very little access through the public transport system. Hence students are not willing to stay back for extra hours or not willing to come on holidays to attend the programmes like remedial classes and bridge courses. Lack of hostel facility is also comes as a barrier to ensure good participation of students in various programmes. Delay in PWD construction procedure for hostels has created difficulties at all stages.</p> <p>Hence Higher Education Department may take up the matter with authorities of PWD and public transport for resolving the above mentioned problems. Faculty development programmes are conducted by various institutions without considering the academic schedule. This results in too many programmes being organised without proper planning. There should be a centralized</p>
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			<p>process to identified the time slots for each institutions for proper implementation of FSD (Faculty and Staff Development).</p> <p>There shall be a collective decision among all TEQIP institutions in the state in conducting faculty development programmes. This will avoid the repetition of programmes in neighbouring institutions.</p>
V	Name of Scheme	:	Information and Communication Technology (ICT)
1	Plan outlay	:	Rs.220.00 lakh.
2	Components of the Scheme	:	<ul style="list-style-type: none"> • Digital class room. • Digital faculty rooms. • Digital library. • Campus wide net working. • Online course management system.
3	Present Status and Observation	:	<p>It is reported that the administrative sanction was issued in between 01.09.2016 and 21.12.2016. The Director of Technical Education informally reported that the colleges concerned have not purchased any single item till 31.12.16. Finance (Performance Budget) team contacted the authorities of colleges and Polytechnics concerned between 20.12.2016 and 31.12.2016 and collected information regarding the scheme. They informed that the supply order could be issued only</p>

			recently because of the delay occurred in according Administrative sanction. Therefore Finance (Performance Budget) team did not perform even a single field visit as part of the scheme.
4	Suggestions	:	The Director of Technical Education should ensure that the administrative sanction is issued on time. The Director of Technical Education should also ensure that the process of purchasing of various items envisaged in the scheme has been completed within the current financial year.
