REPORT OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

on

ECONOMIC SECTOR

for the year ended March 2019

Government of Kerala
Report No. 4 of the year 2021

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APPENDICES

PREFACE

This Report for the year ended March 2019 is prepared for submission to the Governor of Kerala under Article 151 of the Constitution of India.

The Report contains significant results of the performance audit and compliance audits of the Departments of Government of Kerala under the Economic Services including Departments of Agriculture and Public Works.

The instances mentioned in this Report are those which came to notice in the course of test audit of records during the year 2018-19 as well as those which came to notice in earlier years but could not be reported in previous Audit Reports. Instances relating to the period subsequent to 2018-19 are also included wherever necessary.

The Audit is conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Overview

OVERVIEW

ECONOMIC SECTOR

This report contains one Performance Audit Report and four Compliance Audit Paragraphs. The significant audit observations are discussed below:

Performance Audit

Functioning of Kerala Agricultural University

A performance audit was conducted to assess the extent to which the Kerala Agricultural University (the University) had achieved its organisational goals and objectives in the areas of academic, research and extension education activities with reference to the existing Act and Regulations, and also the adequacy of its financial management and internal controls in ensuring economy, efficiency and effectiveness in the functioning of the University.

The governance framework of the University was weakened by non-framing/ updation of its Statutes, Ordinances & Regulations and non-publication of the same in the Gazette as mandated under the Kerala Agricultural University (KAU) Act, 1971. Further, the University did not appoint 'Officers of the University' in the prescribed manner. Teaching staff were nominated to these posts with full additional charge. These arrangements contributed significantly to the University's non-compliance with various University Grants Commission (UGC) regulations governing it and applicable guidelines of the Indian Council of Agricultural Research (ICAR). Also, it contributed to its under-performance in terms of quantity and quality of research papers published in the scientific journals.

The information furnished by the University to the National Agricultural Education Accreditation Board (NAEAB), the accreditation agency for Agricultural Universities during the accreditation process had factual inaccuracies. The University did not comply with the relevant UGC regulations regarding the award of Ph.D. degrees and recruitment of both regular and contract teaching staffs. As a result, the Government norms for granting advance increment were not satisfied and the granting of the same to the faculty members who were awarded such degrees was irregular. It established a new College of Agriculture in Ambalavayal, Wayanad without the minimum requirements prescribed by ICAR. The University's integrated Master's Degree Programme in Climate Change Adaptation instituted in 2010 was being run without any permanent faculty since the inception of the programme as it had not framed statutes for recruiting them.

The research product of the University in terms of number and quality of research papers published in scientific journals by its faculty, were below benchmark. Over a third of its faculty members had not authored or co-authored any research papers during the period 2014 to 2018. The popularisation of new varieties of crop developed by the

University was adversely affected due to non-initiation of measures to get these varieties notified under the Seeds Act, 1966. The University had not taken measures to protect new varieties of crops developed by it under the Protection of Plant Varieties and Farmers' Rights Act, 2001. New technologies developed were transferred without applying for patent. The University did not have a system to determine potential infringements to Geographical Indication owned by it.

The accounting software used by the University was not certified by an external agency for its reliability and controls. This can lead to malpractices and frauds through manipulation of figures. More than fifty *per cent* of the stations under the University were not covered by its internal audit. The University had not initiated action on the recommendations of the Committee on Public Accounts (PAC).

(Chapter 2)

Compliance Audit Paragraphs

- Non-exercise of caution and checks by departmental officials enabled contractors to defraud the Public Works Department of ₹30.65 lakh by submitting multiple copies of the same invoices in support of purchase of bitumen for different works.

  (Paragraph 3.1)

- Revision of estimates by the Public Works Department in favour of the contractors resulted in inadmissible payment of ₹1.99 crore in three bridge works.

  (Paragraph 3.2)

- Failure of the Public Works Department to recover the differential cost of departmental bitumen from contractors consequent on the decrease in the market price of bitumen resulted in undue benefit of ₹4.36 crore to the contractors.

  (Paragraph 3.3)

- The Public Works Department incurred an unfruitful expenditure of ₹18.34 crore during the period 2014-15 to 2018-19 towards the salary of staff attached to 86 road rollers idling in eight PWD divisions

  (Paragraph 3.4)

Chapter I
Introduction

CHAPTER I

INTRODUCTION

1.1 Introduction

Kerala is located at the southern end of India, with a population of 3.63 crore and a geographical areas of 38,863 sq. km. For the purposes of administration, there are 42 departments headed by Additional Chief Secretaries/Principal Secretaries/Secretaries, who are assisted by Directors/Commissioners/Chief Engineers and subordinate officers under them.

Government functioning is broadly classified as General Services, Social Services and Economic Services. This Report covers the functioning of eight Departments of Economic Sector listed in **Table 1.1**.

Of the eight Departments, with a total expenditure of ₹12,990.05 crore in 2018-19 covered here, a major portion of the expenditure was incurred by Public Works Department (39.66 *per cent*), followed by Agriculture Development and Farmers' Welfare Department (31.51 *per cent*) and Food, Civil Supplies & Consumer Affairs Department (11.49 *per cent*) during 2018-19.

1.2 Trend of Expenditure

The expenditure incurred by the departments under Economic Sector during the last five years is given in Table 1.1.

Table 1.1 Expenditure Incurred in Economic Sector Departments

(₹ in crore)

Sl No	Name of the department	2014-15	2015-16	2016-17	2017-18	2018-19
1	Agriculture Development & Farmers' Welfare Department	2,762.94	3,272.38	4,060.87	4,061.54	4,092.71
2	Public Works Department	3,786.53	5,588.51	5,331.26	5,855.39	5,151.80
3	Co-operation Department	451.73	349.87	509.31	504.07	813.84
4	Environment & Climate Change *	NA	NA	NA	NA	NA
5	Fisheries & Ports Department	518.24	876.12	857.77	971.44	841.49
6	Food, Civil Supplies & Consumer Affairs	1,157.16	1,262.20	1,672.33	1,557.24	1,492.45
7	Forest & Wildlife	489.76	502.25	637.56	614.06	597.76
8	Science & Technology *	NA	NA	NA	NA	NA
	Total	**9,166.36**	**11,851.33**	**13,069.10**	**13,563.74**	**12,990.05**

Source: Appropriation Accounts for the years 2014-15 to 2018-19

* These are Secretariat level Departments for which there are no separate Grant heads in the Budget. The funds for autonomous bodies/institutions under them are allocated under various other Grant Heads and hence their expenditure also are subsumed in those heads of accounts.

Reasons for increase in expenditure in respect of Co-operation Department was mainly due to assistance to Co-operatives (₹1,445.43 lakh), expenses towards 'Direction and Administration' (₹114.89 lakh) and decrease in recovery of overpayments (₹8,121.43 lakh)

1.2.1 Some major schemes implemented by the Departments of the Economic Sector during 2018-19

(i) The Ports Department incurred an expenditure of ₹100.69 crore on development of Vizhinjam Deep Water International Transhipment Terminal and ₹26.79 crore towards Port Infrastructure Development for Shipping Operation – Development of Beypore and Kozhikode Ports.

(ii) The Agriculture Development & Farmers' Welfare Department incurred an expenditure of ₹81.97 crore towards group farming for augmenting rice production.

(iii) Dairy Development Department incurred an expenditure of ₹43.45 crore towards Commercial Dairy Milk and Milk Shed Development Programme.

(iv) Forest Department incurred an expenditure of ₹25.96 crore for Forest Protection.

1.3 Authority for Audit

The Comptroller and Auditor General of India's (C&AG) authority for audit is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971[C&AG's (DPC) Act)]. C&AG conducts the audit of expenditure of the departments of the Government of Kerala under Section 13[1] of the C&AG's (DPC) Act. Besides, C&AG also conducts audit of 23 Autonomous Bodies in the Economic Sector under Section 14[2] & 15 of C&AG's (DPC) Act, which are substantially funded by the Government. Principles and methodologies for various audits are prescribed in the Auditing Standards and the Regulations on Audit and Accounts, 2007 (as amended up to 2013) issued by the C&AG.

1.4 About this Report

The primary purpose of this Report is to bring to the notice of the State Legislature, the important results of audit. The findings of Audit are expected to enable the Executive to

[1] Audit of (i) all transactions from the Consolidated Fund of the State (ii) all transactions relating to the Contingency Fund and Public Accounts and (iii) all trading, manufacturing, profit & loss accounts, balance sheets and other subsidiary accounts.

[2] Audit of all (i) receipts and expenditure of a body/authority substantially financed by grants or loans from the Consolidated Fund of the State and (ii) all receipts and expenditure of any body or authority where the grants or loans to such body or authority from the Consolidated Fund of the State in a financial year is not less than rupees one crore.

take corrective actions and to frame policies and directives that would lead to improved financial management of the organisations, thus contributing to better governance.

This Report of the C&AG relates to matters arising from Performance Audit and Compliance Audit of selected activities of Departments coming under the Economic Sector. Compliance Audit covers examination of the transactions relating to expenditure of the audited entities to ascertain whether the provisions of the Constitution of India, applicable laws, rules, regulations and various orders and instructions issued by the competent authorities are being complied with. Performance Audit examines whether the objectives of the programme/activity/Department/entity are achieved economically, efficiently and effectively.

1.5 Planning and conduct of Audit

The audit process starts with the assessment of risks faced by various departments of the Government based on the expenditure incurred, criticality/complexity of activities, level of delegated financial powers, assessment of overall internal controls and concerns of stakeholders. Previous audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of audit are decided. During the year 2018-19, the Economic Sector Audit Wing utilised 1,156 party days to carry out audit of 137 units.

After completion of audit of each unit, Inspection Reports (IRs) containing audit findings are issued to the heads of the offices. The departments are requested to furnish replies to the audit findings within four weeks from the date of receipt of the IRs. Whenever replies are received, audit findings are either settled or further action for compliance is advised. The important audit observations arising out of these IRs are processed for inclusion in the Audit Reports, which are submitted to the Governor of the State under Article 151 of the Constitution of India for being presented to the State Legislature.

1.6 Lack of responsiveness of Government to Audit

1.6.1 Outstanding Inspection Reports

The Handbook of Instructions for Speedy Settlement of Audit Objections/Inspection Reports (IRs) issued by the State Government in 2010 provides for prompt response by the Executive to the IRs issued by the Principal Accountant General (PAG) to ensure action for rectification in compliance with the prescribed rules and procedures and accountability for the deficiencies, lapses etc., noticed during the inspection. The Heads of Offices and next higher authorities are required to comply with the observations contained in the IRs, rectify the defects and omissions and promptly report their compliance to the PAG within four weeks of receipt of the IRs. Half-yearly reports of pending IRs are being sent to the Secretaries of the Departments concerned to facilitate monitoring of audit observations.

As on 30 June 2019, 922 IRs containing 4,195 paragraphs were outstanding against the departments under Economic Sector. Year-wise details of IRs and paragraphs outstanding are detailed in **Appendix 1.1.**

A review of the IRs pending due to non-receipt of replies in respect of these departments revealed that the Heads of offices did not furnish even the initial replies in respect of 214 IRs containing 1,452 paragraphs.

1.6.2 Departmental Audit Committee Meetings

No Audit Committee Meetings were held during the year 2018-19.

1.6.3 Response of departments to the draft paragraphs

Four Draft Paragraphs and a Performance Audit paragraph were forwarded demi-officially to the Additional Chief Secretaries/Principal Secretaries/ Secretaries of the departments concerned between March 2020 and August 2020 with a request to furnish their responses within the time limit. The Government replies in respect of Performance Audit and other Compliance Audit paragraphs were received by November 2020. The replies received are suitably incorporated in this Report.

1.6.4 Follow-up action on Audit Reports

The Finance Department issued (January 2001) instructions to all administrative departments of the Government that they should submit Statements of Action Taken Notes on audit paragraphs included in the Audit Reports directly to the Legislature Secretariat with copies thereof to the Audit Office within two months of their being laid on the table of the Legislature.

Four out of the eight departments did not submit Statements of Action Taken Notes for 18 paragraphs for the periods from 2015-16 to 2017-18, even as of November 2020. Action Taken Notes on audit paragraphs were due from the Departments of Public Works (11), Fisheries and Forests & Wildlife (two each), Ports (one) and Co-operation (three).

1.6.5 Paragraphs to be discussed by the Public Accounts Committee

There were 24 paragraphs relating to eight Departments pertaining to the period from 2012-13 to 2017-18 pending discussion by the Public Accounts Committee as of November 2020. Pending audit paragraphs include three from Departments of Co-operation and Forests & Wildlife; four from Fisheries & Ports and 14 from Public Works.

Chapter II
Performance Audit

CHAPTER II

PERFORMANCE AUDIT

AGRICULTURE DEVELOPMENT AND FARMERS' WELFARE DEPARTMENT

2 FUNCTIONING OF THE KERALA AGRICULTURAL UNIVERSITY

2.1 Introduction

Agriculture in Kerala is distinctly different from the rest of India in many ways. Kerala has unique and diverse agro-climatic conditions in various regions, which enable it to cultivate many types of crops. Predominance of non-food plantation sector, multi-cropping systems, homestead farming and abundance of biodiversity are a few among these specific features. Agriculture in Kerala is dominated by small and marginal farmers. The average size of land holding is around 0.27 ha. The population density is very high. More and more agricultural lands are converted due to population pressure. As per the land use data of 2018-19, out of a total geographical area of 38.86 lakh ha, total cultivated area is 25.68 lakh ha (66 *per cent*).

The Kerala Agricultural University (the University) was established in February 1971 under an Act[1] of the State with the objective of imparting education and undertaking research and extension activities in the field of agriculture and allied sciences. A model Act proposed by the Indian Council of Agricultural Research (ICAR) in 2009 for replacing the existing Kerala Agricultural University Act, 1971 is under consideration of the Government. The stated mission of the University is Excellence in Agricultural Education, Research and Extension for Sustainable Agricultural Development and Livelihood security of farming community. The University fulfills its mission through a network of institutions spread over the State consisting of seven constituent colleges, six Regional Agricultural Research Stations (RARS), sixteen research stations, one Central Training Institute, one Communication Centre and seven Krishi Vigyan Kendras (KVK). There is a network of libraries, including a Central Library in the main campus, constituent colleges, RARS, research stations and KVKs. Besides, there is an Academy of Climate Change Education and Research (ACCER) offering M.Sc. (Integrated) in Climate Change Adaptation. The Act mandates that all institutions under its jurisdiction shall form constituent units and prohibits the University from granting affiliation to any institution. The University offers diploma, graduate, post-graduate and doctoral programmes in almost all disciplines related to Agriculture, Agricultural Engineering, Forestry, Horticulture and allied sciences.

The University is the principal instrument in the State in providing the skills and technology required for the sustainable development of its agriculture, agricultural engineering, horticulture and forestry by integrating education, research and

[1] The Kerala Agricultural University Act, 1971.

extension. The University focuses its strategy on synergising multi-disciplinary education and strengthening problem-specific research relevant to the State and help building innovative extension systems for sustainable management of natural resources, sustainable agricultural production and overall improvement of rural livelihood.

2.1.1 Organisational setup

The Vice-Chancellor (VC) is the principal executive and academic officer of the University. General Council, Executive Committee, Academic Council, Faculties and Board of Studies are the **'Authorities of the University'**. The VC is assisted by Registrar, Comptroller, Deans of the Faculties, Directors of (i) Research, (ii) Extension, (iii) Physical Plant[2], (iv) Students' Welfare and Librarian who are designated as **'Officers of the University'** and they hold their posts for specific tenure.

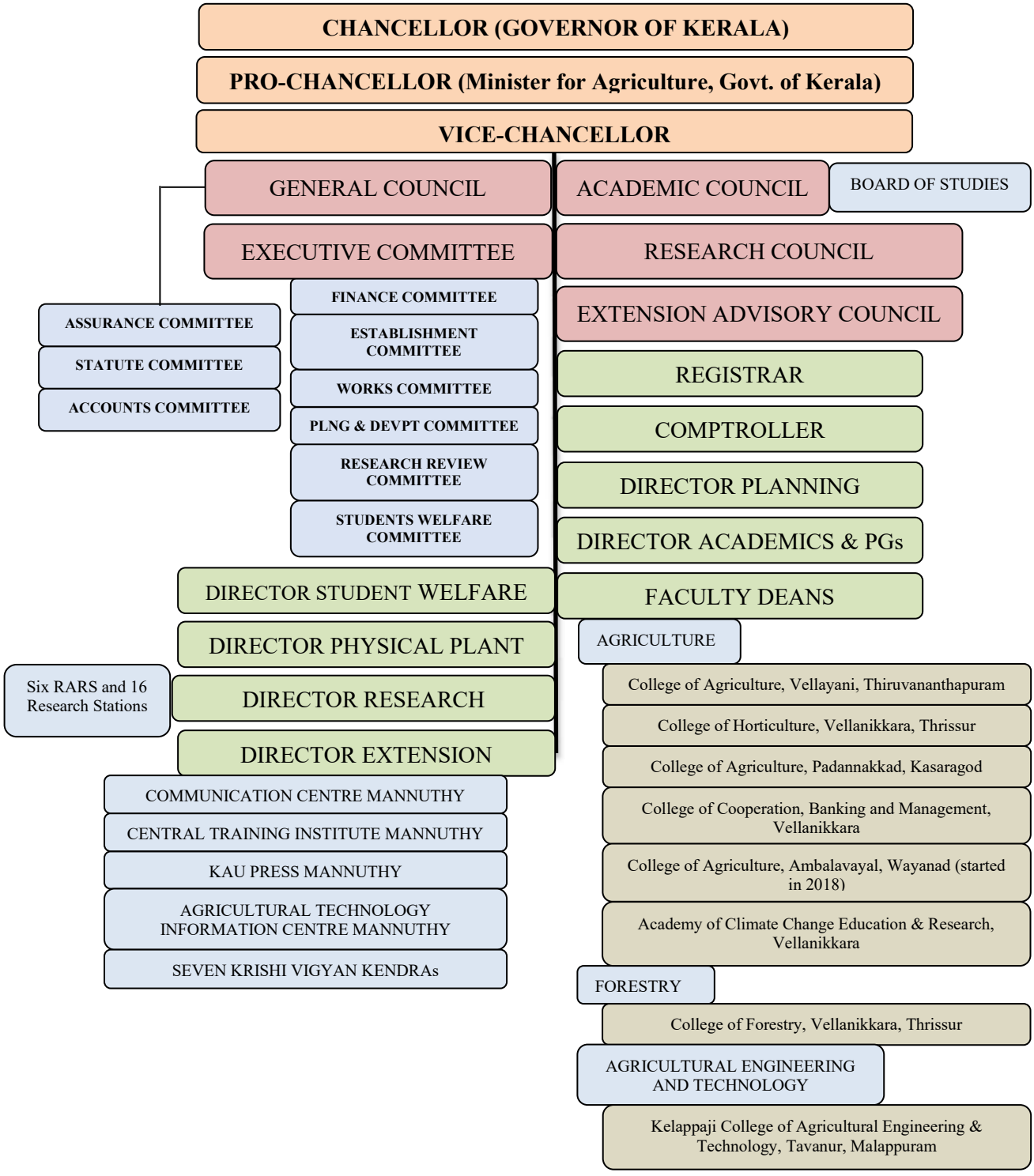
The General Council is the supreme authority of the University and its constitution is as per **Appendix 2.1**. Ordinarily, the Council meets once in four months. It has the powers to review the actions of the Executive Committee and Academic Council. It is the authority vested with powers to make, amend or repeal Statutes.

The Executive Committee is the chief executive authority of the University and its constitution is as per **Appendix 2.2**. The Executive Committee shall meet, as and when required. It has the powers including general superintendence and control over the institutions of the University. It is vested with the powers to make ordinances and to amend or repeal the same.

The Academic Council is the body responsible for the maintenance of standards in educational programmes and examinations and its constitution is as per **Appendix 2.3**. The Academic Council shall meet ordinarily once in a trimester. It has the powers to make regulations and to amend or repeal the same.

[2] 'Director of Physical Plant' who is the general custodian of all University properties and responsible for construction and maintenance.

The administrative structure of the University is given below:



2.2 Audit objectives

The objectives of the Performance Audit were to assess:

- the extent to which the Kerala Agricultural University had achieved its organisational goals and objectives in the areas of academic, research and extension education activities with reference to the existing Act and Regulations;
- the adequacy of its financial management and internal controls in ensuring economy, efficiency and effectiveness in the functioning of the University.

2.3 Audit criteria

Audit criteria were derived from:

- The Kerala Agricultural University Act, 1971, Statutes, Ordinances and Regulations framed thereunder;
- Kerala State Agricultural Development Policy, 2015;
- University Grants Commission (UGC) Regulations and ICAR Guidelines;
- Kerala Financial Code and Kerala Account Code;
- Project/scheme guidelines of various funding agencies.

2.4 Audit scope and methodology

The Performance Audit was conducted from July to December 2019 covering the period from 2014-15 to 2018-19. Audit examined the records at the Government Secretariat, the University headquarters and at selected units of the University.

Audit selected all eight academic institutions, three[3] RARSs out of six and three[4] KVKs out of seven through random sampling for detailed scrutiny. Similarly, 54 out of 265 research projects and 29 out of 127 extension projects were selected based on stratified random sampling method. An entry conference was held in July 2019 attended by officials from the Government and the University, in which the audit objectives, audit criteria, audit scope and methodology were discussed. Similarly, an exit conference was conducted in October 2020 to discuss the audit findings.

2.5 Audit findings

The audit findings as against the audit objectives are grouped under six categories namely; Governance, Academic activities, Research, Extension education, Financial Management and Internal Controls as given below.

[3] RARS at Vellayani, Kumarakom and Ambalavayal.
[4] KVK Kollam, Kottayam and Kannur.

2.5.1 Governance

'Governance' in the University denotes the framework within and by which the University exercises powers and discharges its functions. Governance plays an important role in the overall performance of the University as deficiencies in Governance have a cascading effect on the other functions of the University. The Kerala Agricultural University Act, 1971 (the Act), the Statutes and the Ordinances and Regulations framed under the Act provide a self-contained framework for the internal governance of the University. Further, the Act has designated various 'authorities' and 'officers' of the University to exercise powers.

The meetings of the General Council and the Executive Committee were held as stipulated. The Registrar being the ex-officio secretary to the General Council, the Executive Committee and the Academic Council is bound to place before each such authority all such information (UGC Regulations, ICAR Guidelines, applicable Government Orders etc.) as may be necessary for the transaction of its business and decision making. The officers of the University, including the Registrar are not appointed as per the statutory provisions as detailed in para 2.5.1.2. Due to such temporary arrangements, the Authorities of the University could not properly exercise the powers vested in them to make/amend Statutes, Ordinances and Regulations as prescribed in the Act. This resulted in taking decisions which were not in compliance with the regulatory frameworks including the UGC Regulations and ICAR guidelines etc. as discussed in this report.

Audit examined the governance framework of the University consisting of the Act, Statutes, Ordinances and Regulations and the compliance thereof by the authorities and officers of the University. The audit findings in respect of Governance are discussed below.

2.5.1.1 Deficiencies in Governance Framework

Lapses in the following areas indicated that the system of governance in the University was not effective.

- **Non-framing of Statutes - S**ection 7(11) of the Act empowers the University to create posts for teaching, research and extension education and to appoint persons to such posts. Section 42(3) of the Act stipulates that the procedure for selection of officers, teachers and other employees of the University shall unless otherwise provided for in this Act, be such as may be prescribed in the Statutes. Audit observed that the General Council of the University created several posts including senior level posts such as Dean of Forestry (head of the College of Forestry), Controller of Examinations, Associate Deans (head of various colleges), Associate Directors (heads of various research stations) but did not frame and pass Statutes specifying the procedure of selection to these posts (**Appendix 2.4**). This was the case even in respect of the post of the Director of Students Welfare, a post specified in the Act since the inception of the University. Consequently, the

University could not carry out regular recruitment to these posts and these posts were operated by giving additional charge to senior faculty members, which affected their academic and administrative performance. The University attributed the under-performance in respect of its research papers published in scientific journals to multiple responsibilities and excess work pressure, as discussed in paragraph 2.5.3.1. The Government in its reply (October 2020) stated that Statutes for these posts were being framed and the process would be expedited.

- **Non-amendment of Ordinances -** Section 7(14) of the Act empowers the University to fix, demand and receive such fees and other charges as may be prescribed. Section 50(a) of the Act stipulates that the Executive Committee shall have power to make Ordinances regarding levy of fees in colleges and other institutions by the University. Audit observed that the University last amended the relevant Ordinance in September 2002, but revised the fees periodically without amending the Ordinance. As a result, the fees levied now is much higher than what is prescribed in the Ordinance, as shown in the following table:

Table-2.1: Fee Details

Name of programme	Fees fixed as per amended ordinance, 2002 (in ₹)		Fees collected in 2019 (in ₹)	
	First semester	Second semester onwards	First semester	Second semester onwards
B.Sc. (C&B)	1,800	1,285	11,980	9,580
All other UG programmes	2,200	1,685	11,980	9,580
B.Tech (Food Engg.)*	-	-	36,250	30,000
Master's Degree programme	4,250	3,025	16,710	13,510
MBA (Agribusiness Management)*	-	-	36,500	29,000
B.Sc-M.Sc. (Integrated)*	-	-	44,000	40,000
Doctorate Degree Programme	5,525	3,925	17,500	13,510

** Programme instituted after 2002*

Levy of fees at rates higher than those notified through Ordinances was irregular and its legality is questionable. The Government in its reply (October 2020) stated that, henceforth the University shall ensure that the Ordinances are amended promptly by the Executive Committee for levy of fees in colleges/other institutions.

- **Non-publishing of Regulations in the Gazette -** Academic Council is the Body which frames, amends and repeals Regulations regarding academic matters subject to the provisions of the Act, Statutes and Ordinances. Section 55 of the Act stipulates that all Statutes, Ordinances and Regulations made under the Act shall be published in the Gazette. The Statute No.839/74 require that a copy of the Ordinances and Regulations be forwarded to the Chancellor besides placing them before the General Council as soon as they are made. Audit observed that the University has framed five Academic Regulations and published it in its handbook (which is an internal document of the University, unlike the Gazette), but none of

these were published in the Gazette as mandated in the Act. No copies of these Regulations were submitted to the Chancellor. Non-submission of the Regulations to the Chancellor who is the Head of the University and the non-publication of Regulations in the Gazette as mandated by the Act made the validity of the Regulations questionable. The Government in its reply (October 2020) stated that the University will henceforth ensure that all Ordinances and Academic Regulations are placed before the General Council for its approval and it will be published in the Gazette and it will be submitted to the Chancellor.

2.5.1.2 Officers of the University

The Vice-Chancellor is appointed by the Chancellor and the Comptroller by the Government. Appointment to the posts of other officers of the University is done by Executive Committee. Audit examined the procedure followed by the University in appointing the 'Officers of the University'. The Statutes governing appointments of 'Officers of the University' (except VC and Comptroller) stipulate that their appointment shall be done by inviting applications through advertisement except for the Registrar and Director of Physical Plant who can also be appointed on deputation. Appointments to these posts are for a fixed tenure[5]. Audit noticed that the University did not appoint these Officers in the prescribed manner during the past several years as shown in the table below. Instead, it nominated teaching staff to these posts (except librarian) with full additional charge.

Table-2.2: Procedure prescribed for appointment of Officers of the University

Sl. No.	Designation	Date of last regular appointment	Procedure prescribed for appointment
1	Registrar	22/05/2003	Direct recruitment or deputation
2	Director of Physical Plant	22/06/2004	Direct recruitment or deputation
3	Librarian	16/05/1995	Direct recruitment
4	Dean (Faculty of Agriculture)	03/07/2010	Direct recruitment
5	Dean (Faculty of Agriculture Engineering)	04/07/2010	Direct recruitment
6	Dean (Faculty of Forestry)	Statute not made	Not prescribed
7	Director of Research	03/07/2010	Direct recruitment
8	Director of Extension	03/07/2010	Direct recruitment
9	Director of Students' Welfare	Statute not made	Not prescribed

No appointment as stipulated under the Statutes has been made by direct recruitment/deputation as required for the posts, after the last regular appointment as shown in the table. Audit noticed that these in-charge postings of short duration compromising the efficiency of internal governance had become a regular practice in

[5] The period of appointment of these officials shall be five years in the first instance, except Registrar who shall be appointed in the first instance on probation for a period of one year within a period of two years and on satisfactory completion of probation shall be confirmed. In the case of persons above 50 years of age, the period of appointment shall be so fixed as to terminate on the date of superannuation which is currently 56 years for Registrar and 60 for others.

the University. Statute No. 266/72 empowers the Vice-Chancellor to make provisional appointments only under emergent situations.

The Act and the relevant Statute stipulate that the Registrar shall be a whole-time officer of the University and also the ex-officio Secretary to the General Council, Executive Committee and Academic Council. Audit noticed that the University did not comply with the statutory provisions while appointing Registrars. During the period from 25 January 2007 to 30 March 2019 (12 years and two months) 12 officials (excluding the present incumbent) held charge of the post of Registrar with periods of incumbency ranging from one month to three years. These stopgap arrangements did not provide many of the incumbents the time required to familiarise themselves with the rules and regulations governing the administrative system of the University before they retired; thus affecting their capacity to discharge duties efficiently.

The Government stated (October 2020) that the University will take necessary steps to appoint a Registrar as per the statutory provisions by direct recruitment or by deputation. It was also stated that Statutes were being framed wherever required and that action would be taken for regular appointment against posts of all Officers.

The failure of the University to carry out regular appointment to these posts, especially that of the Registrar contributed to the non-compliances to the regulatory norms as discussed in the succeeding paragraphs.

2.5.2 Academic Activities

2.5.2.1 Enrolment of Students

The University offers five Under Graduate programmes[6] of four years' duration in as many disciplines. The syllabus followed by the University is based on the curriculum proposed by ICAR. As against the intake capacity, the actual enrolment to these programmes during the five year period from 2014 to 2018 were as follows:

Table-2.3: Intake Capacity and the number of students admitted to programmes

	B.Sc (Hons.) Agriculture		B.Sc (Hons.) Forestry		B.Sc (Hons.) C&B		B.Tech Ag. Engineering		B.Tech Food Engineering	
Year	Intake Capacity	Admitted	Intake Capacity	Admitted	Intake Capacity	Admitted	Intake Capacity	Admitted	Intake Capacity	Admitted
2014	209	210	30	30	40	35	49	41	30	17
2015	209	232	30	30	40	38	49	43	30	20
2016	209	216	30	30	40	37	49	49	30	29
2017	208	209	31	31	40	40	50	42	30	22
2018	420	418	31	30	40	39	50	47	30	29

[6] B.Sc (Hons.) Agriculture, B.Sc. (Hons.) Co-operation & Banking, B.Sc. (Hons.) Forestry, B.Tech (Agri. Engineering) and B.Tech (Food Engineering).

The number of students admitted was above the intake capacity in some programmes as additional seats were allotted to various categories such as diploma holders in Agricultural Sciences, Children of personnel retired from paramilitary services in the State and holders of Vocational Higher Secondary Education (Agriculture).

The University increased the intake capacity of its B.Sc. (Hons.) Agriculture programme due to its increased demand, from 208 to 420 in the year 2018 by increasing the capacity of the existing Colleges and opening a new College. Besides, it offers seven[7] Masters programme in 32 disciplines with a total intake capacity of 320 and two[8] B.Sc. – M.Sc. Integrated programmes with intake capacity of 20 each. The University also offers six doctoral programmes in 26 disciplines with total intake capacity of 113 as of 2019. The total student strength as of March 2019 is 2,412[9].

University Grants Commission (UGC) was established under the UGC Act, 1956 for determining the standard of Universities, promotion and co-ordination of University education. The Act empowers UGC to frame regulations for the purpose of performing its functions like defining the qualifications and standard that should ordinarily be required of any person to be appointed in the Universities. Universities are governed by these regulations which are subordinate legislation and have binding effect.

The Indian Council of Agricultural Research (ICAR), an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India is the apex body for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country. ICAR has recommended the minimum standards in respect of infrastructure, equipment, staff strength, curricula etc. to be maintained by the Agricultural Universities. The audit findings on the University's academic activities are discussed below:

2.5.2.2 Accreditation

Accreditation is a process of quality control in higher education, carried out by an authorised agency through scientific evaluation or assessment, whereby an institution of higher education or a programme conducted by that institution is recognised as conforming to the parameters of academic quality. Quality assurance, including accreditation processes, is one of the universal techniques to enhance global competitiveness.

According to the UGC (Mandatory Assessment and Accreditation of Higher Educational Institutions), Regulations, 2012 (The UGC Accreditation Regulation, 2012) accreditation is compulsory for all universities. Each accredited higher

[7] M.Sc. Agriculture/Horticulture, M.Sc. Community Science, M.Sc. Agricultural Statistics, M.Sc. Forestry, M.Sc Cooperation and Banking, MBA Agri. Business Management and M.Tech (Ag. Engg.).
[8] B.Sc. - M.Sc. (Integrated) Biotechnology and B.Sc - M.Sc. (Integrated) Climate Change Adaptation.
[9] UG – 1,633, PG - 594 and Ph.D. - 185.

educational institution is to apply for re-accreditation six months before the expiry of the existing accreditation in accordance with the norms and procedures prescribed by the relevant Accreditation Agency. The validity of accreditation is for five years.

Audit observed the following lapses/irregularities relating to the accreditation of the University:

- **Delay in applying for renewal of Accreditation:** The National Agricultural Education Accreditation Board (NAEAB) of ICAR gave accreditation (2014) to the University and its constituent colleges which were valid up to 10 March 2019. ICAR in its letter dated 09 October 2018 reminded the University to apply for renewal of accreditation without delay and also intimated that accreditation was mandatory for the release of development grant from it. Despite this, the University did not apply for renewal of accreditation within the timelines prescribed in the UGC accreditation Regulation, 2012, but applied (19 February 2019) for renewal of accreditation just 19 days prior to the expiry of existing accreditation. The NAEAB renewed the accreditation only in September 2020. As a result, ICAR did not release development grant to the University for the year 2019-20 even though the University had requested ₹91.47 crore.

  In its reply (October 2020), the Government contended that the NAEAB had not stipulated any timeline for renewal of accreditation and that the delay in getting accreditation was due to non-compliance of timelines by the NAEAB. Regarding non-release of development grants, it was stated that normally the ICAR development grants were limited to ₹ 4 crore to 5 crore only and that the University had requested for additional grant in the ensuing allocation.

  The reply of the Government is not tenable as the UGC Accreditation Regulations 2012 is applicable to all Universities including Kerala Agricultural University and it should have followed the timeline prescribed.

- **Inaccuracies in the application for renewal of accreditation:** The process of accreditation starts with the submission of a Letter of Intent (LOI) by the University along with the proforma for the Institutional Eligibility for Accreditation (IEA) to the NAEAB Secretariat. The proforma for IEA includes an action taken report on the last recommendation/observation of NAEAB, the status of implementation of ICAR guidelines including the Fifth Deans' Committee recommendations, conduct of academic audit, publishing of Annual Academic Calendar, etc. In addition to these, a statement on the compliance of the University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and other Measures for the Maintenance of Standards in Higher Education) Regulations, 2010 (UGC Regulations, 2010) and the University Grants Commission (Minimum Standards and Procedure for the award of M.Phil./Ph.D. degree) Regulations, 2009 (UGC Ph.D. Regulations, 2009) should also be submitted. If the IEA is found satisfactory, the NAEAB Secretariat shall send a letter in this regard to the

University/ institution following which the University is required to submit the accreditation fees along with Self Study Reports (SSR). A Peer Review Team (PRT) is formed by NAEAB after scrutiny of the SSR. The peer review team visits the University and submits its report to the NAEAB. The NAEAB takes a decision on accreditation based on the report. If the IEA is not satisfactory, it shall be rejected along with the action taken report and the university/ institution shall re-submit the document after due modification/justification.

As NAEAB ascertains eligibility of an institution for accreditation solely based on the information provided by the institution in its LOI and IEA, it is important that the information so provided by the institution should be accurate and factual.

The University submitted the LOI and IEA under the signature and seal of the Registrar who specifically certified to the accuracy of the information provided therein and subject to the condition that if the information furnished was false or misleading, the accreditation granted was liable to be cancelled. Audit Scrutiny of the IEA/report submitted by the University to NAEAB revealed factual inaccuracies as detailed below:

- **Statement of Compliance (Central and State Universities):** The University certified that it was governed by the UGC Regulations, 2010 and the UGC Ph.D. Regulations, 2009 and that it had complied with all its provisions. Audit scrutiny revealed that the University did not comply with the following UGC regulations:

  - **Regulation No. 1.1.1 of UGC Regulations, 2010** prescribing the qualification for appointment of teachers in the faculty of Agriculture and Veterinary Sciences as per ICAR norms, as discussed in paragraph 2.5.2.3.

  - **Regulation No. 6.0.11 of UGC Regulations, 2010** prescribing establishment of an Internal Quality Assurance Cell (IQAC) in all Universities/Colleges as per the UGC/National Assessment Accreditation Council (NAAC) guidelines. The functions of IQAC *inter-alia* include development and application of quality benchmarks, dissemination of information of various quality parameters, documentation of various programmes / activities of the university leading to quality improvement, development of quality culture in university etc. But the University did not establish IQAC as per UGC/NAAC guidelines. As a result, a proper system to document research data in terms of research papers published, did not exist in the University, as discussed in paragraph 2.5.3.1. The role of IQAC in the University was limited to the documentation and record keeping of career advancement scheme of the teaching staff.

  - **Regulation No. 13.1 of UGC Regulations, 2010** prescribing the procedure for appointing teachers on contract, as discussed in paragraph 2.5.2.3.

- **UGC Ph.D. Regulations 2009 superseded by UGC Ph.D. Regulations 2016** prescribing the procedure for award of Ph.D. degree, as discussed in paragraph 2.5.2.9.

- **Action taken report on the last recommendation/observation of NAEAB:** NAEAB had recommended that recruitment to the Officers' positions should be taken up periodically. In the proforma for IEA the University stated that it conducted recruitments to the Officers' positions regularly, as and when the positions fell vacant. Audit observed that the University did not conduct regular recruitment of Officers, as discussed in paragraph 2.5.1.2.

- **Fifth Deans' Committee recommendations**: The University stated that it implemented in full, the recommendations of the Fifth Deans' Committee including the recommendations on minimum requirements for establishment of new college in agriculture and allied disciplines. Audit noticed that the University did not comply with the recommendations on establishment of new colleges in respect of the College of Agriculture, Ambalavayal, as discussed in paragraph 2.5.2.5.

- **Conduct of Academic audit:** Audit noticed that the IQAC of the University did not conduct academic audit as prescribed in NAAC Guidelines. However, in the proforma for IEA the University stated that it had conducted academic audit in the last two years.

Thus, the University undermined the accreditation process by not disclosing the actual position in the IEA and the Compliance Statement submitted for renewal of accreditation. It is also pertinent to note that while granting accreditation (September 2020), the NAEAB also awarded the University with 'B' grade (out of possible four grades of A+, A, B and C) corresponding to a score of 2.90, which placed it among the Category III Universities. According to the University Grants Commission (Categorisation of Universities (only) for Grant of Graded Autonomy) Regulations, 2018, Category III Universities are eligible for the least autonomy. Further, accreditation was not granted to 14 of its programme and two colleges **(Appendix 2.5).**

The Government in its reply (October 2020) claimed that, the Peer Review Team of ICAR had visited all the campuses and had physically verified the facts stated in the IEA and LOI.

The reply of the Government is not tenable, as University has underplayed its lapses by merely referring to the Peer Review Team exercise. Further, the documents furnished by the University did not show any indication that the Peer Review Team had verified the process followed for regular and contract recruitment of teachers as pointed out by audit, compliance to UGC Ph.D. Regulation 2009 and adherence to the Fifth Deans' Committee recommendation in respect of new College of Agriculture at Ambalavayal.

2.5.2.3 Manpower Management

The sanctioned employee strength of the University consisting of faculty and other staff is 2,457. The manning levels as of March 2019 against the sanctioned strength is as shown in the following table:

Table-2.4: Staff strength position

	Sanctioned Strength	In-position	Vacancy	Vacancy *Percentage*
Faculty	766	342	424	55
Other staff	1,691	1,219	472	28
Total	2,457	1,561		

The recruitment of other staff is carried out by the Kerala Public Service Commission (KPSC). The recruitment of faculty members is conducted by the University directly. The University Manual 2001 (Chapter VII para 4) recommends the recruitment be a continuous process to fill up vacant positions with fixed schedules in order to avoid stress on regular employees. A total of 166 teachers[10] retired during the audit period 2014-15 to 2018-19. Audit observed that the University initiated recruitment process in 2016 after eight years of the previous recruitment in 2008. The recruitment process initiated in 2016 was finalised only in 2019. As a result, the strength of the regular faculty was reduced to below 50 *per cent* in its colleges, research stations and KVKs as shown in the following table. The main reason for arising of these vacancies was the failure of University to carry out regular recruitment against vacancies arising due to normal retirement.

Table-2.5: Faculty staff strength position

	Sanctioned Strength	In-position (regular faculty)	Vacancy	Vacancy *Percentage*
Colleges	415	176	239	58
Research Stations including AICRP	302	144	158	52
KVKs	49	22	27	55
Total	766	342	424	55

The University filled, on an average, 47 *per cent* of the sanctioned posts of teachers in its colleges through postings made on contract/daily wage basis during the years 2014-19. Audit observed the following lapses in the recruitment process initiated in the year 2016 and in the appointment of contract teachers:

- The UGC Regulations, 2010[11] issued on 30 June 2010 and notified on 18 September 2010 prescribing the minimum standards for appointment of teachers and other measures for maintenance of standards in higher education stipulates

[10] In 2014-15 : 22, 2015-16 : 46, 2016-17 : 47, 2017-18 : 28 and 2018-19 : 23.

[11] University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and other Measures for the Maintenance of Standards in Higher Education) Regulations, 2010.

that in respect of faculty of agriculture and veterinary science, the norms/regulations of ICAR shall apply. Accordingly, in December 2011, ICAR modified the norms for recruitment of Assistant Professor in respect of faculty of agriculture and veterinary science, according to which, NET[12] along with one publication in National Academy of Agricultural Sciences (NAAS)[13], New Delhi rated refereed journal was made compulsory for candidates having Master's degree for being recruited to the post of Assistant Professor and equivalent in the disciplines in which NET is conducted. The main objective of NAAS is to recognise and promote excellence of individual scientists in fields of agricultural sciences including crop husbandry, animal husbandry, fisheries, agro-forestry and interface between agriculture and agro-industry. NET could be waived off for candidates holding Ph.D. degree, provided it was done with course work as prescribed by the UGC Regulations 2009 and the candidate had at least two full length publications having a NAAS rating of not less than four on the last date of submission of application. Those candidates with Ph.D. degree without course work would not qualify for NET exemption. The modified norms had prospective effect from 01 January 2012. Universities which failed to implement NET essentiality as per the above provision were not to be given development grants by ICAR.

Audit observed that the University diluted the above provision in the recruitment notification issued in March 2016 in which the essential qualification prescribed were Master's degree with NET. Ph.D. was only a desirable qualification not eligible for NET exemption. This was contrary to the ICAR norm. The University thus failed to give due weightage to the research credentials of the candidates stipulated by ICAR. As the research product of the University in terms of the research papers published in scientific journals was below the benchmark, as discussed in paragraph 2.5.3.1, the University should have given emphasis to the research credentials of candidates as required by ICAR.

- According to UGC Regulations 2010, (Regulation No. 13) the qualification and selection procedure for contract appointment of teachers was to be the same as those applicable to a regularly appointed teacher. The selection committee for contract appointment to the post of Assistant Professor was to consist of eight members[14] from the field of education. The presence of at least four members, including two outside subject experts was required to complete the quorum.

[12] National Eligibility Test.

[13] NAAS allots score in the following manner - Category I: Those journals where Thompson Reuters Impact Factor is available, the scores are assigned as 6.00 + Impact Factor with capping on 20.00. Category II: Those journals where Thompson Reuters Impact Factor is not available, the marks are assigned on the basis of information provided by the Publishers in a prescribed proforma and also evaluation of scientific contents of the journals.

[14] Vice-Chancellor who will be the Chairperson of the Committee, three experts in the concerned subject nominated by the VC, Dean of the concerned Faculty, Head/Chairperson of the Department/School, an academician nominated by Chancellor and an academician representing SC/ ST/ OBC/ Minority/ Women/ Differently abled categories nominated by VC.

Audit observed that, the selection committees for the recruitment of teachers on contract basis were not formed as per the UGC regulations. Thus the composition and quorum of the selection committees were not as prescribed. It consisted of only three members against a quorum of at least four and included members from non-academic background also, thus rendering the decision of the selection committee challengeable.

The Government in its reply (October 2020) contended that the notification for recruitment to the post of Assistant Professors issued in March 2016 was issued in accordance with the Statutes of the University and the relevant UGC norms. It was further stated that the notification also contained a clause at the end stating that 'The mode of selection, applicable reservation, relaxation of age and all other matters relating to the appointment to the post shall be governed by the provisions contained in the University Statutes, UGC Regulations, 2010 and orders issued by the Government from time to time' making the notification compliant to the UGC regulations.

The reply is not tenable as the University notification for recruitment of regular faculty was a dilution of the essential qualification prescribed in the UGC regulations and binding on the University. Further, the subsequent recruitment notification issued (February 2020) by the University, is in line with relevant UGC regulation.

Regarding the recruitment of teachers on contract basis, it was stated that the University will ensure that the selection procedure will be the same as those applicable to a regularly appointed teacher as per UGC regulations.

In the application for accreditation (February 2019) submitted by the University it was, however, claimed that the University had complied with all the provisions of the UGC regulations as discussed in paragraph 2.5.2.2. This indicates that the University as an institution and the Registrar of the University who submitted the application for accreditation in particular, was uninformed on the regulatory norms governing the University. This reflects poorly on the governance of the University.

2.5.2.4 Functioning of Libraries

The University has a network of libraries, including a Central Library in the main campus, constituent colleges, RARS, research stations and KVKs. The Kerala Agricultural University Library and Information System (KAULIS) was established in 1995. The KAULIS consists of the Central Library, college libraries in constituent colleges and research stations. It has digitised repository of information on agriculture which includes Crop and Animal Production, Fisheries, Forestry, Nutrition and Rural Development. It facilitates digital access to most of the advanced sources of information like CABI e-Books (https://www.cabi.org), CAB Abstracts, KrishiPrabha, Indiastat.com etc. which facilitates knowledge updation for students and faculty.

Consortium for e-Resources in Agriculture (CeRA) provides access to full text of 3,951 journals from reputed publishers like Elsevier, Springer, Annual Review Inc., Wiley etc. Apart from that, users can request for articles to any of the libraries in the consortium through Document Delivery Service. India Agristat, 1,174 e-books and 17 e-book series published by Elsevier were also provided through CeRA.

Krishikosh is a digital repository of accumulated knowledge in agriculture and allied sciences which is maintained by ICAR. Full text of thesis submitted to the University can be accessed through the Krishikosh. The University is an Institutional Member of DELNET (Developing Library Network) which provides access to more than 20 million bibliographic records of books, journals, articles, CDs etc. The Inter Library Loan (ILL) and Document Delivery Services (DDS) are one of the most popular services of DELNET. Indian Digital Ensemble of Agricultural Libraries (IDEAL) is a platform for sharing library holdings through Union Catalogue (AgriCat) of Agricultural University Libraries of Indian National Agricultural Research and Education System (NARES). Bibliographic details of more than one lakh books available in College Libraries and Central Library is available through the IDEAL.

The average daily footfall of students and faculty visiting the library was 51 *per cent* and 48 *per cent* in the years 2017 and 2018.

2.5.2.5 Establishment of a new college

The report of the Fifth Deans' Committee released (July 2016) by ICAR recommended measures for improvement of the national agricultural education system and prescribed minimum standards for establishing new colleges of agriculture. These recommendations which were made mandatory by ICAR were linked to the accreditation of institutions and to the release of ICAR grants.

The University proposed (April 2018) to start the new college by upgrading the existing RARS at Ambalavayal subsuming its faculty and infrastructure facilities which was stated to be sufficient for the first two years. Government approved the proposal subject to the condition that no additional fund would be given and no new posts would be created. The College of Agriculture, Ambalavayal started to function (2018) by admitting one batch of 60 students from the academic year 2018-19 onwards.

Audit observed that the faculty strength and the infrastructure facilities available at RARS were far below the requirements recommended by the Fifth Deans' Committee as evident from the following table:

Table 2.6: Facilities required/ available at College of Agriculture, Ambalavayal

Sl. No.	Minimum facilities required as per Fifth Deans' Committee recommendation	Facilities available
1	Five smart lecture halls	Two ordinary class rooms (This was provided with the infrastructure diverted from the project 'Technology intervention and peoples participation for poverty alleviation in Wayanad district at Ambalavayal' as discussed in paragraph 2.5.3.4)
2	31 teaching staff	15 teaching staff
3	Two hostels (separate for boys and girls each with 150 capacity)	No hostel. (Students accommodated in congested trainees' hostel, conference hall and staff quarters)
4	12 full-fledged laboratories	Five under-equipped laboratories **(Appendix 2.6**)

In the application for accreditation submitted (February 2019) by the University to NAEAB, the University gave an undertaking that it had implemented the recommendation of the Fifth Deans' Committee in full which was contrary to the facts as shown in **Table 2.6**.

The Government in its reply (October 2020) stated that the University would earnestly take all necessary steps to ensure the minimum standards as recommended in the Fifth Deans' Committee Report, by the fifth year of the establishment of the College i.e., by 2023, when it becomes due for accreditation with the support of the Government.

The reply is untenable because according to the NAEAB's guiding principle, accreditation is granted based on the performance and facilities existing in the colleges for last five years. The Hon'ble Supreme Court has also ruled in Appeal No. 31813 of 2018 against a special petition that it should also be ensured that the courses in the past met the minimum standards prescribed by ICAR. So, the University is bound to adhere to the minimum requirements prescribed by ICAR since the inception of the College.

2.5.2.6 Institution of academic programme

The University instituted a five year academic programme of B.Sc-M.Sc. (Integrated) Degree [15] in 'Climate Change Adaptation' in its Academy for Climate Change Education and Research (ACCER) during the academic year 2010-11 with a sanctioned strength of 10 teaching staff and a yearly intake of 20 students. The programme, claimed to be the only one of its kind in Asia, and was commenced with expected career prospects including research in State/Central government departments related to agriculture, conservation and natural resource management, animal science, fisheries, forestry, water resources and environmental protection. As of March 2019, 72 students of four batches had passed out from the Academy. Audit examination of the functioning of the Academy revealed the following;

- The University could not make regular appointment of teachers since the inception of the programme as it had not framed statutes for recruitment of regular teaching staff. As a result, classes were handled by teaching staff on contract and

[15] It was an integrated degree programme of five year duration leading to award of Master's Degree

visiting staff from other institutions. This resulted in lack of continuity in the academic programme and was creating difficulties in the routine activities (Academic Officer/Hostel Warden/Accompanying students on study tour etc.). Further, the academy is not in a position to explore research funding opportunities due to lack of permanent teaching staff.

- This being a unique degree, the University could not convince potential employers of equivalence of this degree to other similar Master's degree[16]. As a result, the career prospects of the students were adversely affected. The Master's degree holders of this course were eligible to appear for recruitment exams for common posts only, for which the qualification was general undergraduate degree and the position remained the same even after the passing out of the fourth batch (March 2019).

The Government in its reply (October 2020) stated that necessary steps were being taken to frame Statutes and to appoint teachers.

2.5.2.7 Non-compliance with the UGC guidelines on Students' Entitlements

The UGC issued (April 2013) 'Guidelines on Students' Entitlements' to all universities with a view to make the students aware of their entitlements along with other student related services and also to simplify the procedure for redressing grievances. It was mandatory for every college/university to publish these guidelines in full in their prospectus and also to post it on the homepage of its website. The Guidelines, among other things, provided for the following students' entitlements:

- Publishing a document, known as 'Prospectus', specifying the curricula including syllabi, names, academic profile and status of the faculty, mode and frequency of evaluation, duration of the course, academic calendar, comprehensive information about fees or charges of any kind and refund rules.

- Disclosure of full and correct information about any institution of higher education in which the students study or propose to study. Every college/university must disclose in the prospectus and on its website information regarding its status, its affiliation, accreditation rating, physical assets and amenities, membership of governing bodies and minutes of the meetings of bodies like Academic Council/Executive Committee, sources of income and the financial situation and any other information about its functioning necessary for a student to make a fully informed choice.

[16] Like M.Sc (Environmental Science), /M.Sc. (Agricultural meteorology), M.Sc (Meteorology), etc.

Audit noticed the following:

- The University did not publish the guidelines in the prospectus. Instead it published an illegible copy of the guidelines on the website. Publishing of the prospectus in this University is done on the authority of the Academic Council.

- The name, academic profile and the status of the faculty were not given in the prospectus.

- The status of available physical assets and amenities was not disclosed in the prospectus.

The Government in its reply (October 2020) stated that all the information required as per the guidelines were made available in the website and continuously updated.

The reply of the Government is not tenable as the guidelines require that the information should be published in the prospectus which is an authoritative document. Further, the webpage of the College of Agriculture at Ambalavayal does not provide the actual status of infrastructure and the webpage of ACCER does not provide full profile of the faculty members.

2.5.2.8 Conduct of examinations

Integrity of the process of conducting examinations which culminates in the award of marks/grades/certificates is of highest concern as it has a bearing on the status of both the institution/ university that conducts the examination and the students. Hence, a system should be in place to prevent any possible irregularities in the conduct of examinations.

According to the Act (Section 16(m)), the Executive Committee is responsible for the conduct of examination and declaration of results based on the Regulations framed by the Academic Council for conduct of examinations. Further, Section 52 of the Act require the Academic Council to frame regulations on the duties of examiners. The University did not notify any Regulation in this regard.

Audit noticed the following:

- Access to the premises of the University press where question papers are printed was not regulated by maintaining a record of visitors to the press.

- No restriction was placed on the use of mobile phones or other recording devices within the Press which can compromise the secrecy of question papers.

- The blank answer sheets printed at the Press were neither machine numbered nor barcoded, as a result they could not be distinguished.

- The University did not issue any guidelines regarding the accounting of blank answer sheets.

The Government in its reply (October 2020) stated that Regulations prescribing the procedure for the conduct of examinations and duties of examiners would be formulated and that corrective action was initiated on the audit observations regarding printing of question papers and accounting of blank answer sheets. Further, in the exit conference (October 2020), the University stated that CCTV cameras were installed in the press.

2.5.2.9 Non-compliance to UGC Regulations in the award of Ph.D. degree

Government of India, Department of Higher Education, had instructed (November 2008) the UGC under Section 22 of the UGC Act, to frame and notify regulations for the award of Ph.D. degree. Accordingly, UGC notified and published in the Gazette of India (11 July 2009) the UGC (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2009. This was superseded by the UGC (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2016. These Regulations, *inter alia,* prescribed that:

- All Universities shall admit M.Phil./Doctoral students through an entrance test conducted at the level of individual University.

- The University shall issue a Provisional Certificate to the effect that the Degree was awarded in accordance with the provisions of the aforesaid UGC Regulations.

Audit scrutiny revealed the following:

- The University did not conduct an entrance test, instead admitted students to the Ph.D. course on the basis of an interview and the academic merit of the applicant. 143 Ph.D. degrees were awarded by the University to such students during the period 2014-15 to 2018-19.

- The University did not issue provisional certificate as prescribed in the UGC Regulations.

In the order issued (March 2010) by Government of Kerala for implementing pay scales to university teachers and in subsequent clarifications, Government authorised grant of incentives to holders of Ph.D./M.Phil. degree and other higher qualifications. The grant of incentive was, among other things, subject to the condition that the Ph.D. degree should have been awarded by a University in accordance with the provisions of UGC Regulations, 2009.

Audit scrutiny revealed that the University had granted advance increments to its faculty members who were directly admitted to its Ph.D. programme and awarded Ph.D by the University. The award of Ph.D. by the University was not according to

the provisions of the UGC Regulations, 2009 in that, the University had neither conducted an entrance exam nor issued provisional certificate as mandated under the Regulations. The University also granted advance increments to those teaching staff who possessed Ph.D. degree from other universities. The provisional certificate submitted by them did not conform to the UGC regulations, as the same did not indicate that the Degree was awarded in accordance with the provisions of the UGC regulations.

The Government in its reply (October 2020) stated that, it would conduct an entrance test for admission to Ph.D. as mandated in UGC regulations, from the 2020 Academic year onwards. It was also stated that action would be taken to review the advance increments granted, if any, in contravention of Government order and recoveries would be effected. In the exit conference (October 2020), the Vice-Chancellor stated that the admissions to the Ph.D. programme were based on the ICAR guidelines which permitted admission of students on the basis of entrance examination or on the merit of the applicant at the Master's degree level or a combination of both.

The contention of the University that the admissions were based on the ICAR guidelines is not tenable, as ICAR guidelines cannot supersede the UGC regulations.

2.5.3 Research

The research initiatives undertaken by the University are focused on increasing the productivity of crops currently grown in the State. The research agenda is set through consultations with the farming community and the extension personnel and is based on need assessment by the faculty, the State and National level agencies and institutions engaged in development and research.

The University has officially released 320 varieties of different crops including 121 varieties of rice, the staple food crop of the State. The rice varieties 'Jyothi' and 'Uma' released by the University in 1974 and in 1998 respectively, occupy more than 80 *per cent* of the cropped area of the State. During 1980s the University identified a bio-control agent called *Cyrtobagus salviniae* for successful control of the aquatic weed (*Salvinia molesta*) which infested the water bodies of the State. '*Keramithra*', a coconut de-husking tool invented during the 1990s and patented by the University is one of the most popular inventions of the State.

The University has released more than 300 varieties of different crops. This includes 121 varieties of rice, the staple food crop of the State. Its rice varieties 'Jyothi (PTB39)' and 'Uma(MO16)' occupy more than 80 per cent of the cropped area of the State.

The research projects in Kerala Agricultural University are mainly funded by the State Government, ICAR, Indian Council for Forestry Research and Education, Directorate of

'Keramithra', a coconut de-husking tool invented and patented by the University is one of the most popular engineering inventions of the State.

Biotechnology, Department of Science and Technology and the Kerala State Council for Science Technology and Environment. The projects are implemented by the scientists working in the colleges and research stations of the University. These scientists are also discharging extension and teaching duties. Post graduate and doctoral research projects also contribute to the research outcome.

The Director of Research is in charge of the research management in the University and is supported by nine Associate Directors of Research (one each located in five zones and four at the Headquarters). There are three faculties, namely Agriculture, Forestry and Agricultural Engineering. There are 24 subject specific Project Co-ordination Groups, 19 in agriculture, two in Forestry and three in Agricultural Engineering. All the projects, including PG and Ph.D. projects, are coordinated by the Professor (Research Co-ordination).

Audit analysed the performance of the University in areas of research product, impact and excellence, implementation of selected projects and in emerging areas of Intellectual Property Management. The audit observations are discussed below:

2.5.3.1 Research Product

In order to maximise the benefits from research, the results of the research activities must be disseminated through publications at the earliest and in the most effective manner. Publication of research article in journals is a criterion considered for appointment of faculty and evaluating their performance for career advancement. It is also a mandatory requirement for the award of Masters/Doctoral degrees and an important factor of consideration for ranking of Universities by various agencies. The quality of a research article is relative to the quality of the journal in which it is published.

In agriculture and allied subjects, the quality of a research article is determined by the score allotted by the NAAS to the journal in which it is published. According to the data on research papers submitted by the University to NAEAB for accreditation, a total of 689 papers were published during the period 2014 – 2018. The Audit findings on the analysis of the data are shown in the following table:

Table-2.7: Details of research papers published

Year	No. of papers published as per the data submitted by University	Repetition of papers noticed	Actual No. of papers published (2)-(3)	Published in Journals			Predatory[17]	Conference papers/ News letters
				with NAAS score below 5	with NAAS score of 5 and above	not rated by NAAS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2014	17	0	17	8	7	1	1	0
2015	62	4	58	29	24	4	0	1
2016	187	6	181	96	45	15	22	3

[17] Verified from the following URL https://web.archive.org/web/20170111172309/https:/scholarlyoa.com/individual-journals/as mentioned in the UGC public notice dated 31st July 2019.

2017	219	40	179	85	64	18	10	2
2018	204	27	177	66	78	18	15	0
Total	**689**	**77**	**612**	**284**	**218**	**56**	**48**	**6**

Details at column Nos. 3 to 9 were obtained on analysis of the item at column No.2

- The fact that 77 out of the total 689 (11 *per cent*) research papers included in the list submitted to NAEAB were duplications indicates lack of proper system of research data management in the University. As per UGC Establishment and Monitoring of the Internal Quality Assurance Cell in Universities (2012-2017), the IQAC is responsible for the documentation of various programmes/activities of the University leading to quality improvement. As research papers are a key quality indicator, the IQAC of the University should have developed an organised methodology of its documentation. The deficiency in the functioning of IQAC is discussed in paragraph 2.5.2.2.

- The University does not have a procedure to verify the quality of journals in which the works are published by its faculty and students. This is evidenced from the fact that 104 (17 *per cent*) out of the 612 publications showcased by the University as its achievement were in non-NAAS rated/ predatory journals[18]. This is also an indication that the University has not adopted the ICAR Guidelines for Internal Evaluation and Forwarding Research Papers to Scientific Journals and Data Management in ICAR Institutes which recommends stringent evaluation before submission of manuscripts to research journals.

- Of the 502 research papers published in NAAS rated journals, 284 (57 *per cent*) were published in journals having a score of five or below. They do not qualify for either ICAR accreditation or ranking.

The minimum benchmark adopted by ICAR for ranking of agricultural universities in 2017 and 2018 was 0.6 papers[19] per faculty per year, published in journals having NAAS score of above six. Audit mapped the research papers to individual faculty member authors and found that 139 (38 *per cent*) out of the 367 faculty members as on 30 October 2017, including 37 faculty members posted at various research stations, did not author/co-author even a single research paper during the period 2014 to 2018. This contributed to low productivity per faculty in terms of research papers published.

The Government in its reply (October 2020) stated that repetitions were compilation errors made during the effort to make the list as exhaustive as possible, and that individual faculty members were asked to furnish a list of publications for the given period. It was further stated that there was a decline in the number of papers published

[18] A predatory journal is a publication that actively asks researchers for manuscripts. They have no peer review system and no true editorial board and are often found to publish mediocre or even worthless papers. They also ask for huge publication charges.

[19] As per the criteria fixed by NAAS, the number of research papers per faculty is to be calculated by dividing the total number of research papers published by the faculty members of the University by the total number of faculty members. If the number of research papers per faculty is less than 0.6, no marks are awarded and for those above 0.6, marks are awarded based on a slab fixed by NAAS. Hence, the minimum bench mark fixed for the obtaining mark is 0.6.

in Non-NAAS rated/predatory journals in proportion to the total numbers, indicating heightened awareness and that a single criterion like number of papers published would neither be comprehensive nor adequate enough to capture performance/ contribution of the faculty members. In the exit conference (October 2020), the Vice-Chancellor contended that the faculties were engaged in teaching, research and extension activities, therefore papers per faculty should be considered as a criteria only for those faculties engaged in research activities instead of considering the total strength of the faculty.

The reply of the University confirms the audit observation regarding lack of effective system for research data management and lack of procedure to verify the quality of journals in which the papers are published. The view expressed in the exit conference cannot be acceded to, as the criteria adopted by audit was the same as that adopted by ICAR for ranking purposes, in which, research paper per faculty is determined taking into consideration the total strength of the faculty irrespective of their engagement in teaching, research or extension.

2.5.3.2 Research Excellence

For ranking of agricultural universities, ICAR evaluates their research excellence by considering, among other things, their achievement in release of crop varieties, granting of patents (discussed in para 2.5.3.3), etc. Audit examined the achievement of the University in the above mentioned areas and observed the following;

- **Varieties released and notified:** The State Seed Sub-Committee under the Department of Agriculture and Farmers' Welfare, Government of Kerala released 47 varieties of crops developed by the University during the period 2014-2018. However, the State Seed Sub-Committee could not initiate action for notification of these varieties under the Seeds Act, 1966 as the University failed to submit the notification proposal.

  The notification is made by the Central Government on the recommendation of the Central Seed Committee. The varieties accepted for release by the State Seed Sub-Committee has to be submitted to the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for notification. For this, the breeder (the University) concerned should submit sufficient copies of the notification proposals in the prescribed proforma to the State Seed Sub-Committee for onward transmission to Central Sub-Committee. This *inter-alia* includes deposition of seed material to Gene Bank, NBPGR[20], New Delhi

Audit observed that the University failed to submit the notification proposal despite repeated requests from the Department of Agriculture. The Department of Agriculture can popularise only the notified varieties. In the absence of notification, such newly released varieties could not be included in the seed plan of the Department for procurement of seeds and supply to farmers free of cost.

[20] National Bureau of Plant Genetic Resources

The Government in its reply (October 2020) stated that notification of varieties involves additional data generation by DNA fingerprinting of varieties. The University has initiated activities in this direction. A proposal for DNA fingerprinting of all varieties as a prerequisite for notification has been developed and work is in progress.

2.5.3.3 Intellectual Property Management

India as a member of the World Trade Organisation (WTO) is obliged to comply with the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement) which requires the member countries to provide for protection of intellectual property rights (IPRs) in one form or the other, in all fields of technology including agriculture. The IPR, among other things includes patents, protection of plant varieties and Geographical Indication (GI) of Goods. The study of Intellectual Property Rights is a course included in the syllabus of B.Sc.(Hons.) Agriculture and is a compulsory course for various disciplines of M.Sc. (Agriculture) programme of the University.

The University formed an Intellectual Property Rights (IPR) Management Cell in 2003 with the aim of (i) Protection and management of the IPR in Agriculture, (ii) Protection of Farmers' rights, Breeders' rights, patents and crop varieties, (iii) Protection of Geographical Indications, (iv) Development of policy guidelines for IPR and Transfer of Technology in the University, (v) Empowering of farmers, students and faculties to address IPR issues and (vi) organising awareness programmes. The ICAR released (2006) Guidelines for Intellectual Property Management and Technology Transfer/Commercialisation and recommended their adoption by the State Agricultural Universities suitably for internal use. Audit observed the following shortcomings in the Intellectual Property Management of the University:

- **Patents**[21]

  ICAR Guidelines prescribe that all research results which are patentable under law and have scope for technology transfer or for advancement of basic and strategic research, should be taken up for patent protection. The technologies developed by the University as a result of its research activities need to be protected against unauthorised use/exploitation by other agencies within and outside the country for commercial gains. Patents obtained under the Patents Act, 1970 offer such protection.

[21] It is an authority or license that confers a right or title for a set period, especially the sole right to exclude others from making, using, or selling an invention. In India, patents are governed by the Patents Act, 1970.

Audit noticed that during the period from 2014-15 to 2018-19 the University developed 16 products[22] and transferred their technology, but did not apply for patents except for five of them. Thus, 11 technologies transferred by the University were not protected by applying for patents.

The Government in its reply (October 2020) contended that obtaining of patent required five years to six years and that the long wait for completion of the patenting formalities before the technology could be transferred would render many technologies irrelevant.

The reply is not tenable as a patent application affords protection to the invention from the date of its filing. The University had applied for patents in respect of five products before transfer of technology thus protecting their patent. However, the technology in respect of remaining 11 products were transferred without applying for patent thus exposing the technology to unauthorised use/exploitation by other agencies as mentioned above.

- **Protection of plant varieties**

Plant varieties cannot be patented in India under the Patents Act, 1970 but they can be protected by registering them under 'The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001'. The PPV&FR Act, 2001 allows registration of four types of plant varieties, such as new variety[23], extant variety[24], farmers' variety[25] and essentially derived variety[26]. The varieties requiring registration should fulfill the criteria of distinctiveness, uniformity and stability (DUS) and should have a single and distinct denomination.

Audit noticed that the University has not initiated action for registration of any of the plant varieties under the PPV&FR Act, 2001 so far (March 2019**)** despite releasing over 300 varieties of different crops**.** As a result, the University cannot opt for any remedial measure against unacknowledged/unauthorised use of the varieties developed by it.

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[22] Technologies developed by the University - i) Veggie wash, ii) Ayar, iii) Osmovac dried Intermediate Vaccum dried Nendran Banana, iv) Sampoorna Rice micronutrient formulation, v) Sampoorna Vegetable micronutrient formulation, vi) Sampoorna Banana micronutrient formulation, vii) Tuber fortified cold extruded pasta/noodles products, viii) Liquid fertiliser from waste hair, ix) Kerasuraksha coconut climber, x) Coconut collector, xi) Palm basin digger, xii) Trichoderma & Pseudomonas, xiii) Banana Bunch covering device, xiv) KAU weed piper, xv) Jackfruit products, xvi) Bioreactor using high rate bio-methenation.

[23] A variety which is not in public domain in India earlier than one year before the date of filing; or outside India, in the case of trees or vines earlier than six years, or in any other case, earlier than four years.

[24] A variety which is notified under Seed Act, 1966 or a variety about which there is common knowledge or a farmers' variety or any other variety which is in public domain is considered as an Extant variety.

[25] A variety which has been traditionally cultivated and evolved by the farmers in their fields or a variety which is a wild relative or land race of a variety about which farmers possess common knowledge.

[26] An "essentially derived variety" shall be said to be essentially derived from such initial variety when it is predominantly derived from such initial variety, or from a variety that itself is predominantly derived from such initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotype of such initial variety and it is clearly distinguishable from such initial variety. An essentially derived variety conforms to such initial variety that results from the genotype or combination of genotype of such initial variety.

The Government in its reply (October 2020) stated that registration of plant varieties under the PPV&FR Act will be taken up on priority basis.

➢ **Geographical Indication of Goods**

The Intellectual Property Rights (IPR) Cell of the University has been at the forefront of conserving unique products of Kerala agriculture and getting them granted Geographical Indication (GI) registration. The University is the 'registered proprietor' of five GIs and has facilitated obtaining GIs of another five. In recognition of these efforts, the IPR Cell of the University was adjudged as the 'Top organisation for best facilitation of registration of GI and promotion of GI in India' in 2018 by the Department of Industrial policy, Promotion and Intellectual property, Government of India.

The protection of agricultural goods indicated to specific geographical territories/regions is governed by the Geographical Indication (GI) of Goods Act 1999. GI is an indication that the goods being commercialised under that indication have originated from a definite geographical territory either as an agricultural produce (e.g. Nagpur orange) or as a natural produce like from mining (e.g. Mussourie Rock Phosphate) or by manufacturing (production or processing or preparation e.g. *Banarasi* saree) or some specific local brews of tribal areas (e.g. *Agrekapetha*) and it has a special quality or reputation or other characteristics attributable to that origin. GI is the collective intellectual property of the entire community or society or organisation of the geographical region to which the goods belong.

The IPR Cell of the University has facilitated various farmers' collectives/ organisations in the State to obtain GIs for their agricultural produce. The University is the 'registered proprietor[27]' of five[28] GIs and has facilitated obtaining GIs of another five[29]. The efforts of the University on this front have won many accolades, the most recent being the National Intellectual Property Award 2019 instituted by the Indian Intellectual Property Office under the Ministry of Industries and Commerce.

Audit, however, noticed that the IPR Cell was not effective in preventing infringements on its GI. The University is a registered[30] proprietor of the GI 'Wayanad Jeerakasala Rice' a traditional aromatic rice variety cultivated in the Wayanad district of Kerala. Any company or person who wishes to use this GI tag has to get themselves registered as 'authorised users' under intimation to the University. There are no 'authorised users' for the GI 'Wayanad Jeerakasala Rice' as of July 2020. Audit observed that at least two companies which are not 'authorised users' of the GI 'Wayanad Jeerakasala Rice' were marketing the rice

[27] "registered proprietor", in relation to a geographical indication, means any association of persons or of producers or any organisation for the time being entered in the register as proprietor of the geographical indication.
[28] Pokkali rice, Vazhakkulam Pineapple, Central Travancore Jaggery, Wayanad Jeerakasala Rice and Wayanad Gandhakasala Rice.
[29] Kaipad Rice, Chengalikodan Nendran Banana, Marayoor jaggery, Tirur Vettila and Nilambur Teak.
[30] Registered in the year 2009.

branding it as '*Jeerakasala*' and also referring to it as 'Wayanadan Kaima' on the packing. Under the product description, the website of one company described it as '*Jeerakasala rice, also known as Wayanadan Kaima, is popular traditional small aromatic non-basmati rice, cultivated by the farmers in Wayanad District in Kerala'*. This is an indication of a potential infringement of the GI granted to the University.

The Government in its reply (October 2020) stated that the University's contribution in terms of GI registration has been the best in the country and has been nationally acclaimed. However, it may be noted that it is only a facilitator in most GI registrations and cannot address legally. It is the responsibility of the owners of the GI registration, the community of practice in our case to proceed against such infringements. The instance referred to involving *'Jeerakasala'* rice in Wayanad calls for in-depth investigations of scientific and legal nature before establishment of infringement.

The contribution of the University in obtaining Geographical indication is noteworthy and also it cannot address legally infringement cases in which, it is only a facilitator. However, the reply is not tenable in the instance of '*Wayanad Jeerakasala Rice'* as it is the 'Registered Proprietor' and not a facilitator. The University's inability to either confirm or deny potential infringement of GI owned by it, when brought to its notice indicates absence of an IP watch system as recommended in the ICAR guidelines.

2.5.3.4 Specific Research Projects

The University formulates new research projects on the basis of the thrust areas identified by various project groups. Each research project is scrutinised by the respective Project Coordination Groups duly approved by the Faculty Research Council before it is formally commenced. Audit, however, noticed that there was no general guideline governing the implementation of projects.

The University undertook 265 specific research projects with a total outlay of ₹73.06 crore during the period 2014-15 to 2018-19 as detailed below:

Table 2.8: Details of projects undertaken by the University

Funding agency	No. of projects approved during the audit period	Outlay (₹ in crore)	No. of projects completed during the audit period
Government of Kerala	123	22.89	19
ICAR	19	7.31	6
External agencies	123	42.86	25
Total	**265**	**73.06**	**50**

Audit selected 54 out of the 265 research projects for detailed review and noticed that four of them failed to achieve the objectives envisaged.

- The following projects did not achieve the objectives due to defective planning:

  - The project "Development of entrepreneurship and sustainable livelihood for SC / Tribe women through projection of tissue culture plants" which involved developing 15 lakh banana plants at an outlay of ₹9.35 lakh funded by State Horticulture Mission (SHM) failed as the physical target fixed was far above the infrastructural capacity provided to achieve it.

  - The project "Import of planting material by RARS Ambalavayal" which involved import of high yielding varieties of sub-tropical fruits, cut flowers and other perennials from foreign countries to replace the indigenous varieties could not be implemented, in spite of creation of required infrastructure at a cost of ₹24.28 lakh, due to the failure of the University to get import license from the Ministry of Agriculture & Farmers Welfare in time.

- In the following projects the University deviated from the project guidelines.

  - The University decentralised the implementation of the project "Creation of Seed Hub for increasing indigenous production of pulses at RARS, Pattambi" to other 13 research stations without the prior concurrence of ICAR, the funding agency, which resulted in unproductive expenditure of ₹37.47 lakh

  - The University diverted the infrastructure worth ₹3.13 crore created for the project "Technology intervention and peoples participation for poverty alleviation in Wayanad district at Ambalavayal" to an entirely different purpose, resulting in non-release of the balance fund amounting to ₹4.55 crore (59 *per cent*) by the Government.

  The Government in its reply (October 2020) accepted the audit observation on the first project. Regarding importing Planting materials it was stated that import license having validity of only six months was not applied for as the requisite infrastructure had to be readied first and that the import license had been obtained with effect from 28 February 2020. The reply is not acceptable as the University deviated from the approved DPR of the project which set a time frame of one year for implementation.

  In respect of the project on Creation of Seed Hub, the University replied that the reason for decentralisation of production was communicated to ICAR and approval sought in December 2017 but denial of sanction was intimated only in December 2018. The reply is not acceptable, as it was not correct on the part of the University to implement the project in decentralised manner without obtaining prior approval of ICAR, the funding agency.

  Regarding the project on "Technology intervention and people's participation", the University contented that the transfer of infrastructure did not have any impact on other activities but conceded that the resultant delay in implementation had led

to non-release of funds. The reply cannot be accepted, as the building constructed for the implementation of the project was being used as class rooms for the College of Agriculture, at Ambalavayal compromising the objective of the project.

2.5.4 Extension Education

The Extension Education Programmes of the Kerala Agricultural University are planned, organised, and coordinated by the Director of Extension (DoE) at the University level as mandated under the Act. The basic objective of the extension education programme is to make available to the farmers and others through the Government Departments concerned, useful information based on research findings. The extension education activities of the University are implemented primarily through the KVKs and other centres functioning under the DoE. The educational institutions and research stations of the University also implement extension education programmes.

KVK Kannur developed a Production Protocol for rice farming which resulted in enhanced yield of more than three times the state average.

The planned activities of the KVKs include on-farm trials, frontline demonstrations, trainings and extension programmes. Audit selected three[31] out of the seven KVKs operated by the University in the State for detailed scrutiny and observed that all of them had achieved their targets in the above activities. A noteworthy activity of the University was the practice of deputing Multi-disciplinary Diagnostic Teams to visit farmers' fields and recommend solutions to various problems reported by them. It has also designed a programme for the public to interact with the faculty about the latest developments in agricultural sector. Another notable achievement was that of KVK Kannur, which developed a production protocol for rice farming from sowing to harvesting and for value addition by processing and branding of organic rice under the Mayyil Grama Panchayath, in Kannur district. As a result, the productivity has enhanced to nine to ten tonnes/hectare as against the State average of 2.9 tonnes/hectare.

ICAR ranks agricultural Universities annually based on various parameters under teaching outcome, research and extension. In teaching, parameters with high score include performance of students in national level examinations. In research, parameter with high score include research papers with high NAAS rating. In extension, parameters with high score includes revenue generation. The University was ranked 14 in the year 2016, but its ranking slid to 34 in 2018. In the year 2019, it improved its ranking to 19 mainly aided by the performance of its students in national level examinations.

[31] Kollam, Kottayam and Kannur.

2.5.5 Financial Management

The University follows a decentralised financial system. The funds of the University are operated and managed in accordance with the provisions of Articles 45 to 47 of the Act. The Government of Kerala, in exercise of the powers conferred by section 63 of the Act, notified[32] the first statute (Statute SR. No.815/79) regarding "Finance Accounts and maintenance and management of all University Funds in General". The University amended the above Statute and issued Notification No.GA/8762/A3/83, dated 29 September 1983. The Statute permits the University to follow the Financial and Accounting Rules of Government of Kerala until such time the University prescribes and adopts its own Financial and Accounting Rules. The Kerala Financial Code mandates that every Government servant should see that proper accounts are maintained for all Government financial transactions with which he is concerned exercising specially strict and close control in regard to the maintenance of proper accounts.

The receipts and expenditure of the University for the period 2014-15 to 2018-19 were as follows:

Table-2.9: Receipts and Expenditure during the period from 2014-15 to 2018-19

(*₹ in crore*)

Source of Fund	Description	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Plan	**Receipt**	31.37	29.17	42.25	38.90	15.00	**156.69**
	Expenditure	21.55	23.94	20.77	14.24	15.61	**96.11**
	Excess/ Savings	9.83	5.23	21.47	24.66	-0.61	**60.58**
Non-Plan	**Receipt**	208.82	250.53	281.91	324.20	338.09	**1,403.55**
	Expenditure	216.72	260.06	306.19	335.13	343.00	**1,461.10**
	Excess/ Savings	-7.90	-9.53	-24.28	-10.93	-4.91	**-57.55**
ICAR (100%)	**Receipt**	13.92	5.44	10.73	14.92	21.26	**66.27**
	Expenditure	21.95	16.18	22.45	19.39	19.82	**99.79**
	Excess/ Savings	-8.03	-10.74	-11.72	-4.47	1.44	**-33.52**
ICAR (75%)	**Receipt**	9.47	11.14	9.36	13.40	16.53	**59.90**
	Expenditure	16.26	17.73	18.23	19.48	16.72	**88.42**
	Excess/ Savings	-6.79	-6.59	-8.88	-6.08	-0.19	**-28.53**
External Agencies	**Receipt**	36.72	17.20	15.82	18.54	12.30	**100.58**
	Expenditure	27.18	20.94	13.32	11.11	12.44	**84.99**
	Excess/ Savings	9.54	-3.74	2.50	7.43	-0.14	**15.59**

Audit noticed the following weaknesses in the financial management of the University.

[32] Notification No. GO(MS) No.257/79/AD dated 23 June 1979.

2.5.5.1 Deficiencies in the UFAST[33] accounting software

The University prepares its annual accounts and submits the same to the Government as per Section 47 of the Act and Statute No.815/79. The annual accounts are prepared through the UFAST software developed internally. The UFAST generates parallel bank statements and reconciles the office cash balance with it instead of the statement generated by bank. The UFAST generated bank balances were found to be different from the actual bank balances. Generation of parallel bank statements through UFAST software and the reconciliation of the book balance with the same is irregular. Audit observed that the UFAST generated bank balances shown in the annual accounts were often modified after their submission as the software allowed adjustments even after the closing of accounts.

Audit test checked the bank balances exhibited in the accounts with those generated by UFAST on 19 December 2019 and found that the same did not match with the statements generated for the finalisation of accounts. For instance, the closing balance of ₹131.75 crore for the 2016-17 was corrected as ₹144.10 crore after the submission of the annual accounts. Consequently, the opening balance of 2017-18 showed an excess balance of ₹12.35 crore. Option to enable modifications/adjustments in the items contained in the accounts after their closure and submission to Government is indicative of major deficiency in the Software. Audit also noticed that the accounting software was adopted without certification of its reliability and controls by an external agency. The adoption and use of software without ensuring their security and reliability can lead to malpractices and frauds through manipulation of figures.

The Government in its reply (October 2020) accepted the audit observation and stated that corrective action was taken to ensure that there was no mismatch between UFAST and bank statements. It was, however, silent about the security and reliability of the software.

2.5.5.2 Non-preparation of Balance sheet

The original Kerala Agricultural University Act, 1971 required the University to submit its balance sheet along with the Annual Accounts to the Government. Statute No. 815/79 framed under this Act prescribed responsibility of the preparation of balance sheet by the Comptroller. The non-preparation of the balance sheet was commented in the Report of the C&AG for the year ended 31 March 1998. Meanwhile, the Act was amended in 2001 removing the clause requiring the submission of balance sheet along with annual accounts to the Government.

The Committee on Public Accounts (PAC) in its 57th report, based on the aforementioned C&AG Report presented to the legislature on the 17th of March 2008 recommended double entry system in accounting and the valuation of assets. Further, Statute prescribing the duties of the Comptroller to prepare balance sheet is still in

[33] University Functional Accountability System.

force. Moreover, prudent accounting practice warrants the preparation of balance sheet in double entry accounting system.

In the reply furnished (October 2020) the Government stated that comprehensive balance sheet was not being made but effort was on to make the balance sheet inclusive of all assets and liabilities of the University. The reply is not tenable as it does not justify the delay in preparation of balance sheet, which is stipulated in the Statutes notified in 1979 and also recommended by the PAC in 2008.

2.5.5.3 Inadequacy of non-plan funds released by Government leading to diversion of money from the PF contributions of employees

According to the Act, every year the Government shall make non-lapsable lump-sum grants to University not less than the estimated net expenditure of pay and allowances of the staff, contingencies, supplies and services of the University and also to meet such additional items of expenditure recurring and non-recurring as the Government may deem necessary for the proper functioning of the University.

Audit noticed that, the non-plan grants released by the Government to the University were less than the demand and actual expenditure of the University from the year 2000-01. Audit analysed the grant released and non-plan expenditure during the period 2014-15 to 2019-20, and the details are as follows:

Table-2.10: Details of grants

(₹ in crore)

Financial year	Grant requested	Grant received	Non-plan expenditure	Shortage
2014-15	269.48	208.82	246.72	37.90
2015-16	328.53	250.53	260.02	9.49
2016-17	413.59	281.91	306.20	24.29
2017-18	405.24	324.20	419.38	95.18
2018-19	463.50	338.10	343.40	5.30
Total	**1,880.34**	**1,403.56**	**1,575.72**	**172.16**

Audit noticed that the University met the deficiency in the non-plan grant by diverting amounts from the General Provident Fund (GPF) contributions of the employees, which also depleted the balance in their GPF accounts to the extent of ₹96.61 crores. As a result, the University has not been able (February 2020) to transfer the provident fund of the employees who opted for Kerala Veterinary and Animal Sciences University (KVASU) and Kerala University of Fisheries and Ocean Studies (KUFOS) on trifurcation (2011) of the erstwhile Kerala Agricultural University. The amount due to KVASU was ₹33.31 crore while the dues to KUFOS has not been ascertained.

The Government in its reply (October 2020) accepted that the inadequacy of non-plan fund released by the Government had caused a deficit of nearly 100 crore in the GPF accounts and that 60 *per cent* of the deficit in GPF subscription amount of the

employees had been made good by now. It was also said that GPF closure amounts were being disbursed to employees at the time of their retirement.

2.5.6 Internal Controls

The internal controls of an entity to safeguard its assets, promote accountability and efficiency are generally elaborated in its Accounts manual, Stores and Purchase manual, policy documents etc. Audit noticed that the University did not frame any such manual; and that the duties and powers of various authorities from which the internal controls of the University are derived were not separately documented or declared by Statutes.

Audit noticed the following weaknesses in the internal control of the University.

2.5.6.1 Inadequacies in the functioning of internal audit system

In order to strengthen the existing internal audit system and to bring uniformity in audit, Government of Kerala issued (19 December 2003 and 10 June 2005) guidelines on internal audit to all heads of departments. Accordingly, the University formed three internal audit circles (South, Central and North) for conducting internal audit.

Audit observed that the University has not framed its own internal audit manual so far. Further, even though the funds received at the University headquarters are distributed to the various stations coming under the three audit circles, the internal audits were not evenly covered. For example, during the period from 2013-14 to 2017-18, funds were transferred to 65 stations coming under the three circles; but the audit programmes of the period were restricted to South and North Regions only covering 31 centres. More than 52 *per cent* of the stations were outside audit purview for several years. The University headquarters did not have a record of the internal audit programmes conducted.

The above lapses indicate the inadequacy of the existing Internal Audit system of the University and points to the need to improve governance.

In its reply (October 2020), the Government has accepted the audit observations and stated that earnest effort was being taken to frame an Internal Audit Manual of the University and to strengthen the Internal Audit System so as to improve governance.

2.5.6.2 Non-maintenance of Asset Register

Statute No.815/79 mandates the Director of Physical Plant to maintain an Assets Register containing the details of its plants and buildings. Audit noticed that such a register was not being maintained in the University. As a result, the University did not have proper control over its immovable assets.

The Government replied (October 2020) that necessary steps were being taken to maintain the Asset Register.

2.5.6.3 Irregular Operation of revolving funds

Revolving funds are maintained to meet the day to day expenditure on revenue generating activities like production and sale of seeds/seedlings, vegetables, other agricultural produces etc. The Act permits the University to have such other funds as may be prescribed by Statutes.

Audit noticed that the University operated 77 revolving funds and had a balance of ₹20.94 crore as of March 2019. But none of them had any legal back up as they were not prescribed by Statutes as required under the Act.

The Government in its reply (October 2020) stated that the audit observation regarding lack of legal backing was taken note of and that necessary steps would be taken to achieve the objective.

2.5.6.4 Lack of responsiveness to PAC recommendations.

The Committee on Public Accounts (PAC) in its 57th report presented to the Legislature on the 17 March 2008 made the following recommendations on the basis of the report of the Comptroller & Auditor General of India for the year ended 31 March 1998.

- To adopt Double Entry System in accounting and Valuation of Assets as mentioned in paragraph 2.5.5.2 (Recommendation No.1.9).

- To undertake a work study on the faculty and redeployment of idling/ underutilised faculty (Recommendation No.1.13).

Audit noticed that the University has not implemented the recommendations so far. Further, the University had assured the PAC that a register containing the details of the extent of land was being maintained and was updated. Audit noticed that this was contrary to the facts.

The Government replied (October 2020) that necessary steps were being taken to adopt the double entry system in the accounting software of UFAST and to undertake a work study on the faculty and redeployment of idling and underutilised faculty.

2.6 Conclusion

The governance framework of the University was weakened by non-updation of Statutes, Ordinance and Regulations. It was further impacted by non-appointment of Officers of the University. In Academic activities, most of the programme offered by it are in demand and are fully subscribed. However, the University failed to comply

with the provisions of UGC regulations governing it in recruitment of faculty members and award of Ph.D. degree. As a result, faculty members awarded with its Ph.D. degrees were not eligible for advance increments as per Government norms. It also failed to comply with ICAR recommendations on establishment of new college at Ambalavayal. In research activities, the number and quality of research papers published in scientific journals per faculty were below benchmark as more than a third of the faculty did not publish research papers. The rice varieties released by the University occupy more than 80 *per cent* of the cropped area of the State in the case of rice, which is the staple food crop of the State. However, the popularisation of new varieties released by the University was hindered due to non-notification under the Seeds Act. The technologies developed and varieties released by the University are not protected by patents and by registration under the PPV&FR Act respectively. The University has obtained and facilitated Geographical Indication for various agricultural products of the State, however it lacks expertise to determine infringements to Geographical Indications owned by it. The internal controls and financial management of the University needs strengthening.

2.7 Recommendations

The Audit recommends that :

- Immediate steps may be taken to frame/update its Statutes, Ordinances and Regulations to ensure that the appointments of Officers of the University are done regularly and in compliance with the provisions of the Act, UGC Regulations and ICAR guidelines.

- Revamp its existing recruitment policy so as to attract high calibre faculties capable of strengthening its research output.

- Evolve a mechanism to monitor and update its compliance to various UGC regulations and ICAR Guidelines on a regular basis.

- Evolve a system for notification of newly developed and released varieties to be notified under the Seeds Act, 1966.

- Adopt appropriately the ICAR guidelines relating to Intellectual Property Management and Internal Evaluation of research papers.

- Develop own resources to improve its financial position and strengthen internal audit.

- University may put in place a suitable mechanism to inventorise and monitor the assets available in all its constituent colleges and research units.

Chapter III
Compliance Audit Paragraphs

CHAPTER III

COMPLIANCE AUDIT PARAGRAPHS

PUBLIC WORKS DEPARTMENT

3.1 Fraudulent payment to contractors through submission of original and duplicate copies of invoices in support of purchase of bitumen for different works

Non-exercise of caution and checks by departmental officials enabled contractors to defraud the Department of ₹30.65 lakh by submitting multiple copies of the same invoices in support of purchase of bitumen for different works.

The quantity of bitumen required for a road work is worked out on the basis of the estimated quantity of bituminous items required to be executed. According to the instructions issued by Chief Engineer (Admin & NH) in circular dated 22 October 2003, which also form part of the agreement conditions[1], the requisition for purchase of bitumen should be placed to the Bharat Petroleum Corporation Limited (BPCL) through the Executive Engineer (EE) of the Division concerned. The EE should issue a letter to the BPCL comprising details like name of the work, the contractor and agreement number of the work, for supply of the required quantity of bitumen. The contractor would then procure the bitumen by paying its cost and BPCL would issue invoices in the name of the EE.

The Public Works Department (PWD) adopted the Central PWD Schedule of Rates and the Ministry of Road Transport & Highways (MoRTH) Specifications in the State with effect from 01 October 2013[2]. The MoRTH, in January 2015 instructed[3] the Chief Engineer, National Highways to ensure that copies of the invoices for purchase of materials are enclosed with the running/final bill of works in proof of procurement of the required quantity/grade of materials, and that a clause to this effect should be included in the contract agreement. The instruction was not adopted by PWD Roads Wing and a clause to this effect was not added in the contract agreement.

Audit test checked the accounts and registers relating to 2018-19 and 2019-20 in respect of seven out of 16 Roads Divisions of PWD. Out of the 6,922 works, audit scrutinised 442 works with total Agreed Probable Amount of Contract (PAC) of ₹1,762.11 crore and found the following irregularities in respect of five works under three Divisions as detailed below:-

[1] Para 12 of Agreement conditions.
[2] GO(P) 36/2013/PWD dated 17/04/2013.
[3] Letter No.RW/TRI/ Tech/Misc/3/2008 dated 15/01/2015 of MoRTH.

The Superintending Engineer, PWD (Roads & Bridges), North circle, Kozhikode awarded (11 May 2017) a work[4] to a contractor[5] under PWD Roads Division, Kannur at an agreed PAC of ₹5.92 crore. The items of the work included in the contract were of MoRTH Specifications. The bitumen required for the work was to be procured by the contractor. The contractor submitted 31 original invoices to the EE, PWD Roads Division, Kannur, in support of procurement of 463.19 Metric Ton (MT) of bitumen VG[6]-30/NRMB[7] for the work. Audit scrutiny revealed that four of the invoices produced (in the original) in support of purchase of 59.79 MT of bitumen, belonged to another road work[8] executed by the same contractor under another division viz. Roads Division, Wayanad as shown in the table below:

Table 3.1 Details of bitumen purchased and work for which invoice submitted

Sl. No.	Invoice No. and date	Grade of bitumen	Quantity purchased (in MT)	Cost (₹)	Work for which bitumen was purchased	Work to which the original invoice was submitted
1	6300007585 dated 22/04/2017	NRMB (bulk)	15.04	4,68,543	Thavinjal-Valad-Kunjome road, km 0/000 to 8/300, under Roads Division, Wayand **(Copy of the invoices submitted)**	Airport road - Providing Dense Bituminous Macadam to Thalassery-Irikkur road from km 3/300 to 15/000 under Roads Division, Kannur
2	6300007589 dated 22/04/2017	NRMB (bulk)	14.89	4,63,870		
3	6300019349 dated 22/05/2017	VG-30 (bulk)	14.93	4,55,287		
4	6300019486 dated 23/05/2017	VG-30 (bulk)	14.93	4,55,287		
			59.79	**18,42,987**		

Audit noticed that the agreement executed for the work under Roads Division, Kannur did not contain provision for departmental supply of material. Further, no material was transferred to the work from any other work/Division.

Verification of records of the PWD Roads Division, Wayanad, revealed that the contractor had submitted duplicate copies of the same four invoices as mentioned above in support of purchase of bitumen made for a road work executed by him under the Division. This indicated that there was underutilisation of 59.79 MT of bitumen in either of the two works (under Roads Divisions Kannur and Wayanad) leading to fraudulent gain of ₹18.43 lakh by the contractor.

Audit also came across duplicate/quintuplicate copies of five invoices worth ₹12.22 lakh submitted by three contractors in support of purchase of bitumen for three road

[4] Airport road-Providing Dense Bituminous Macadam to Thalassery-Irikkur road from 3/300 to 15/000 (Airport work).
[5] Farooque Constructions, Alappuzha.
[6] Viscosity Grade.
[7] Natural Rubber Modified Bitumen.
[8] Thavinjal - Valad - Kunjome road km 0/000 to 8/300 under Roads Division in Wayanad district.

works. It was observed that these invoices pertained to purchase of bitumen for five separate road works. As noticed in the above instances, illegal gain by contractors through submission of the originals of these invoices elsewhere could not be ruled out **(Appendix 3.1).**

The PWD did not adopt the MoRTH instructions (January 2015) regarding submission of copy of invoices along with work bills. It also failed to introduce a fool-proof system for payment of work bills by insisting on the submission of original invoices of bitumen along with the work bills. This system failure along with the lackadaisical approach of the departmental officials who verify the contractors' claims enabled contractors to defraud the Department of ₹30.65 lakh[9].

The Government replied (February 2020) that an amount of ₹33.62 lakh[10] was recovered from the Contractor's Certificate (CC) 3rd and Part bill of another work[11] of the same Contractor[12] under Roads Division, Wayanad. However, on an enquiry with Executive Engineer of Wayanad Road Division, it was stated (December 2020) that the amount deducted from the contractor's bill was kept under Deposit Head and not transferred to Revenue Head.

It was further stated by the Government that to stop the malpractice of submitting duplicate bills for more than one work, the Government was considering a suggestion submitted by the Chief Engineer (Roads) to insist for (i) original invoice from oil companies for admitting the usage of bitumen; and (ii) production of non-payment certificate and transfer order of Executive Engineer of originating division in cases where material is transferred from one division to another.

As this was a test audit in the sampled works in selected road divisions, Department may examine the position in rest of the works to ensure that payments were made on the basis of original invoices to prevent such malpractices.

Recommendation: The Department may streamline the system by including enabling clauses in the tender/agreements insisting to invariably furnish original invoices of bitumen along with work bills in all road works involving bituminous items.

[9] ₹18.43 lakh + ₹12.22lakh = ₹30.65 lakh.
[10] ₹18.43 lakh pointed out by Audit plus further shortage of bitumen worth ₹15.19 lakh detected by the department.
[11] Improvements and providing BM&BC to Nedumpoyil – Mananthavady road chainage km 38/000 to 81/000 (portion from km.50/400 to 81/000 of Thalasseri Bavali road) Balance work.
[12] Farooque Constructions, Alappuzha.

3.2 Inadmissible payment made for sinking reinforced cement concrete circular wells for foundations of three bridges

Revision of estimates by the Department in favour of the contractors resulted in inadmissible payment of ₹1.99 crore in three bridge works

Conditions No.1 and 2 under the special conditions of contracts in Public Works Department (PWD) stipulate that the rate quoted by the contractor shall be an inclusive one, covering all the operations contemplated in the specification of the work and tender schedule and all incidental works necessary for such operations. The rates quoted for the various items shall be inclusive of tools and plants required for the proper execution of work and all other incidental charges. Separate claims for these will not be entertained under any circumstances.

Section 1216(e) of the Ministry of Road Transport and Highways (MoRTH) specifications for Road and Bridge works stipulates that the contract unit rates for sinking of wells shall cover the cost of labour, tools, equipment and plant and for all operations and other incidentals for sinking of wells including seating.

During the period 2018-19 and 2019-20, the Roads Divisions under Roads and Bridges, North Circle, Kozhikode made final payments amounting to ₹607.33 crore to contractors in respect of 188 bridge works. Audit examined the payments pertaining to 59 works involving ₹397.78 crore and noticed irregularities in three[13] works.

The agreement schedule of the three bridge works included an item of work namely, sinking of Reinforced Cement Concrete (RCC) circular wells of different dimensions[14] **in all classes of soil other than rock** to lines and levels and plumb by scooping out earth from inside and below steining with dredgers or any other appliances for pier/abutment wells **including hire charges**, **labour charges**, dewatering, casting, vibrating, **removal of obstacles**, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.

While the execution of the three works was in progress, the Department revised their estimates for an amount of ₹1.99 crore. The contractors completed the works and the Department paid them as per the Revised Estimates.

Audit examined the files relating to the three bridge works and noticed that the additional/extra items included in the revised estimates such as **hire charges of labourer/ equipment, cutting/breaking down of boulders of more than 40 dm^3 and logs of more than 100 dm^3 in size, removal of obstacles and seating of wells** were

[13] Construction of (1) Pathikkalkadavu bridge connecting Venniyode and Kurumani across Venniyode-Valiyapuzha at Kottathara Panchayat, (2) Chekkikadavu Bridgein Kannur District, and (3) Kariyattukadavu Bridge across Kadalundi River (Balance work).

[14] RCC circular wells of 9.00m external diameter and 6.60m internal diameter for abutment wells and RCC circular wells of 6.50m outer diameter and 4.30m inner diameter for pier well.

already part of the specifications of the work included in the original estimate/agreement schedule, and the **seating of wells** was an incidental item to the sinking of RCC circular well. As such, there was no need to include the same in the revised estimate as additional/extra items of work. Besides the rates quoted by the contractors in the tenders were inclusive of all these operations as well as the incidental items. So, the contractors were bound to carry out the work at their quoted rates. Details of the additional payments made to the contractors on account of the inadmissible items are given in the **Appendix 3.2**.

In the reply, Government stated that the specification for 'Well sinking' excludes boulders of size more than 40 dm^3 and extra payment was payable for cutting and breaking obstacles into small pieces. An explanatory note from the standard data book was quoted in support of this argument. The reply is untenable. The Standard Data Book along with the Schedule of Rates only forms the basis of preparation of Detailed Estimate. The Standard Data Book is neither part of the agreement nor there is a reference to it in the agreement. The original item of work mentioned only "removal of obstacles" in the Detailed Estimate and did not distinguish between boulders below or above 40 dm^3.

It was also stated in the reply that the payment for actual labour and machineries were to be made on the basis of Daily Labour Reports (DLRs). The reply is not acceptable for the reason that the payment of daily labour through a contractor, instead of by muster roll in the usual way, is objectionable in principle as per Kerala Public Works Account Code. The Code also states that in a case of great emergency[15] it may sometimes be found impossible to employ labour otherwise than through a contractor and when this course is adopted, a report of the number of labourers of each class employed daily (DLR) should be prepared. Further, the department itself had admitted that there were no hard and fast rules available in the department for claiming actuals in well sinking, the procedure being followed is based on DLRs. There were no recorded underlying emergency conditions which warranted payment based on DLRs.

Government also stated that there was no intention at all to insert the words "obstacles below 40 dm^3 in the revised estimate, as the obstacles were actually above 45 dm^3 or 100 dm^3 size[16]. But this claim is not true, as the item of work in the original estimate did not contain these words. In the revised estimate, these words were included under original item of work in order to facilitate an extra for removal of obstacles above 40 dm^3 or 100 dm^3. Further, there was no pre-measurement or post measurement of the obstacles to prove the size of the boulders and to justify the revision of the estimate. The Government have admitted that no such measurement was feasible since the obstacles were invisible.

Further, the Government claimed that, during the well sinking process, obstacles were met with in both the abutments and six piers. As per the boreholes chart enclosed with

[15] Great emergent condition like breach of canal, natural calamities like flood, earthquakes, tsunami etc.

[16] Government reply erroneously quoted 45dm^3 instead of 40dm^3.

the investigation report, eight boreholes were taken and huge boulders were not met with except pebbles. The department argued that the bore hole chart prepared at the time of investigation may not be a true replica of actual happening at site and the result of eight bore holes cannot be considered as the same for entire structure. This is also not tenable since the department itself admitted in the reply relating to Karyattukadavu Bridge, that the presence of obstacles can be noticed on boring, though the size, quantity and nature of work required cannot be assessed.

It was also claimed that the boulders/logs were actually above 45 dm^3/ 100 dm^3 in size and was got verified by the top officials of department including Chief Technical Examiner (CTE), during their inspection at site. If so, it should have been documented giving complete history of each well and the problem met with during sinking operation as envisaged under MoRTH specification 1208.1. The department admitted that this mandatory document was not maintained. In the absence of this mandatory document, the claim that the boulders/logs were actually above 40 dm^3/100 dm^3 in size is not acceptable.

Thus, revision of estimates of the three bridge works by the Department in favour of the contractors gave undue benefit to the contractors and resulted in inadmissible payment of ₹1.99 crore.

Recommendation: The Department may issue directions making it compulsory that in unforeseen circumstances where boulders above 40 dm^3 or logs above the size of 100 dm^3 have be found, it should be documented giving complete history of each well and the problems met with during the sinking operation as envisaged under MoRTH specification 1208.1. Further, as use of DLRs are objectionable in principle, Government may issue directions that it is used only in emergency conditions and not in routine circumstances as in the above works.

3.3 Undue benefit to the contractors due to non-recovery of differential cost of departmental bitumen from them

Failure of the Department to recover the differential cost of departmental bitumen from contractors consequent on the decrease in the market price of bitumen resulted in undue benefit of ₹4.36 crore to the contractors

In Kerala Public Works Department, road works were being tendered and arranged with provisions for supply of bitumen by the department. As per the provisions in the PWD Manual and Code, in the case of works with provision for departmental supply of materials[17], contractor's profit and tender variation are not allowed on the cost of departmental supplies and the bidders were allowed to quote exclusive of the cost of departmental materials. Further, in all such works, the cost of departmental materials has to be compulsorily recovered from the contractor at the time of payment of his running account bills. The cost of departmental materials to be recovered is calculated

[17] Departmental supplies included bitumen, steel, cement etc. But from 2012, the system of departmental supplies of materials except bitumen was stopped.

on the basis of Schedule of Rates prevalent at the time of preparation of the Detailed Estimate and shown separately in the Detailed Estimate, Tender Schedules and Agreement Schedules.

In the case of departmental supply of bitumen, Government introduced an alternate system (2003) for large works costing above a limit which was fixed by the Government. In this system, instead of the Department directly purchasing the bitumen from the manufacturer, transporting it to PWD Store and later issuing it to a work, the Department authorised the Contractor to purchase the bitumen from the manufacturer based on the indent issued by the Executive Engineer of the Division, making the payment and then transporting it to the work site. The contractor will be reimbursed the actual cost of the bitumen on furnishing the original invoice. A clause to this effect is included in the Agreement and therefore, the contractor is legally bound to submit the invoice to the Department. As the cost of bitumen purchased and used in the work is totally borne by the Department, it is treated as departmental supply of bitumen. Hence, as per the provision of the PWD Manual and Code, the cost of bitumen is to be recovered from the contractors running account bills. This system was introduced to insulate the contractor's from suffering loss due to increase in the price of bitumen in the market and also to benefit the Department when the price of bitumen decreases in the market.

During the years 2018-19 and 2019-20, the roads divisions[18] under the Roads and Bridges (R&B) North Circle, Kozhikode made payment of ₹2,838.28 crore in respect of 5,191 road works. Of these, Audit examined payment of ₹1,607.08 crore relating to 352 works. It was noticed that the aforementioned process regarding recovery of the cost of bitumen was not correctly followed in 34 works, as detailed below:

- As ascertained by Audit from the purchase invoices produced by the contractors and from the price list of M/s Bharath Petroleum Corporation Ltd., the supplier of bitumen, the market price of bitumen was lesser than the cost of bitumen included in the estimate in all the 34 cases.

- In three works, the office of the Superintending Engineer (R&B), North Circle, Kozhikode committed an error of noting a recovery rate of bitumen (per MT) in the agreement which was lesser than rate included in the respective estimates. The cost of bitumen was recovered from contractors at the rates noted in the agreements. This led to short-recovery of ₹1.91 crore from work bills of contractors (**Appendix 3.3**).

- In 21 works, the Department should have recovered the cost of bitumen from the contractors at estimate rates and reimbursed them the cost of bitumen at purchase rates. Instead, the Department abstained from recovering the cost of departmental supply of bitumen from the contractors and reimbursing the actual cost as per the invoice to them. As the estimate rate of bitumen recoverable from the contractors

[18] Roads divisions Kasargod, Kannur, Kozhikode, Wayanad, Manjery and Palakkad.

was higher than the purchase rates, the non-recovery of cost of bitumen resulted in loss of ₹2.70 crore to the Government (**Appendix 3.4**).

- In the remaining 10 works, only part of the estimated cost of bitumen was recovered from the contractors by the Department and the reimbursement to the contractors was also limited to that extent. Lapses in the recovery procedure resulted in loss of ₹46.78 lakh to the Government (**Appendix 3.5**)

Thus, lack of diligence on the part of the departmental authorities in the above 34 cases led to undue benefit to the contractors to the tune of ₹4.36 crore.

Government have accepted the objections and agreed to initiate recovery of excess payments made to the contractors.

As this was a test audit in the sampled works in selected divisions and the audit observation is of a nature that may reflect in other works not covered in test audit, the Department may like to internally examine the position in rest of the works with a view to ensure that the provisions prescribed in this regard are followed scrupulously to avoid losses to the Government.

Recommendation: Government may issue directions that the cost of bitumen which is a departmental supply shall invariably be deducted from the payment of contractor's bills.

3.4 Unfruitful expenditure of ₹18.34 crore on payment of salary to the staff attached to Road Rollers

The Department incurred an unfruitful expenditure of ₹18.34 crore during the period 2014-15 to 2018-19 towards the salary of staff attached to 86 road rollers idling in eight PWD divisions.

The Roads and the National Highway (NH) wings of the Kerala Public Works Department (PWD) attend to the planning, construction and maintenance of all roads including highways coming under the control of the PWD. The Roads wing and the NH wing have 16 and eight Divisions respectively for executing road works.

According to Para 7.3.16 of the Kerala Public Works Account Code, if any plant or machinery which is serviceable is not required for immediate use on any work in any Division, it shall be sold and if any plant is considered unserviceable, it shall be condemned with the sanction of the competent authority. According to Section 309 of the Kerala PWD Manual 2012, the quantum of work handled by the staff may vary from time to time necessitating suitable norms to be fixed so that the staff strength be augmented, reduced or arranged according to requirements. The HR Cell of the PWD is responsible for assessing the staff requirement and for submitting proposals to the Chief Engineer (Administration) for creation/deployment/abolishing of posts. The

Government has to, from time to time, fix the norms based on the suggestions from the Chief Engineer.

Departmental equipment and machinery including Road Rollers were frequently used in road works. However, with the introduction of modern machinery by contractors in road works, there has been a drastic decline in the use of departmental Road rollers. Moreover, the huge expense involved in their repairs made the maintenance of departmental Road Rollers uneconomical, leading to their idling.

The Government identified[19] 140 posts of Roller drivers and 110 posts of Roller cleaners as surplus and abolished (November 2003) 80 posts of drivers and 60 posts of cleaners, but they were allowed to be retained as supernumerary.

As of October 2019 the Department had 26 Roller drivers and 57 Roller cleaners, who were idling in their posts. According to the details furnished, (May 2018) the Department had 187 road rollers, of which 140 were non-functional. The status as of 31 March 2019 is awaited from the Department (March 2020).

Audit examined the records relating to the Road rollers and the salary paid to the roller drivers and cleaners in eight randomly selected Roads/NH Divisions covering the period from 2014-15 to 2018-19 and observed the following:

- Out of 86 road rollers available in the eight selected divisions, 73 were idling for periods ranging from 8 months to 27 years (March 2019). Further, 15 roller drivers and 26 cleaners were retained for maintaining the balance 13 operational road rollers.

- Out of the 73 rollers idling, 47 were beyond repair, but only nine of them were disposed of at a total value of ₹13.21 lakh.

- The average use of the 13 rollers in operation was around six days in a year.

- The Government did not explore the possibility of re-deploying the idling crew, whose basic qualification was ITI (Diesel Mechanic), to other departments such as Technical Education, Industrial Training, Motor Vehicles, Ground Water, etc. in posts requiring similar qualification.

- The Chief Engineer (Admn), PWD submitted several[20] proposals to the Government for re-deployment of the idling Roller drivers and cleaners, including proposals to deploy them as 'Ferry Man' in Local Self Government Department. The Transport Commissioner, Motor Vehicles Department (MVD) also submitted a proposal to deploy these staff as 'Guards' in MVD. But the Government did not take (June 2019) any action in the matter. As a result majority of the drivers and cleaners,

[19] GO (Rt) No.1078/2003/PWD dated 04/11/2003.
[20] FOn 23/11/2010, 08/11/2016, 20/07/2017 and 31/10/2018.

including those retained in supernumerary posts, remained idle drawing salary till their retirement.

Thus the indecision of the Government in re-deploying the idling staff attached to road rollers in the PW Department resulted in payment of idle salary of ₹18.34 crore to the drivers and cleaners during the period 2014-15 to 2018-19 (**Appendix 3.6**) in the eight Roads Divisions alone. Even though most of the 73 Road rollers are unserviceable, the Department retained them in the eight Divisions. Failure to take timely action to dispose them would result in reduction in their value when they are put to auction.

In response to an audit query CE (Administration), PWD admitted (October 2019) that many of the 26 Roller drivers and 57 Roller cleaners working under the Department were idling without doing any work as majority of the rollers were in condemnation stage.

Recommendation: Government may adopt a system for re-deployment of personnel who became supernumerary due to abolishing of posts or restructuring of departments in order to avoid unfruitful expenditure on idle staff retained as supernumerary

Thiruvananthapuram,
The *26th March 2021*

(K. P. ANAND)
Principal Accountant General
(Audit-II) Kerala

Countersigned

New Delhi,
The *5th April 2021*

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

Appendices

Appendix 1.1

Year-wise break up of outstanding Inspection Reports (IRs) as on 30 June 2019

(Reference: Paragraph 1.6.1 - Page: 4)

Year	Up to 2015-16	2016-17	2017-18	2018-19	2019-20 (Upto 30 June 2019)	Total
PUBLIC WORKS DEPARTMENT						
Number of IRs	224	36	31	07	04	**302**
Number of paragraphs	1,070	262	277	79	19	**1,707**
Number of IRs for which initial reply has not been received (number of paragraphs)	11(82)	06(56)	16(122)	02(22)	06(38)	**41(320)**
AGRICULTURE DEVELOPMENT & FARMERS' WELARE DEPARTMENT (CROP HUSBANDRY)						
Number of IRs	133	NIL	03	10	10	**156**
Number of paragraphs	271	NIL	27	66	67	**431**
Number of IRs for which initial reply has not been received (number of paragraphs)	03(16)	02(17)	04(30)	NIL	NIL	**09(63)**
ANIMAL HUSBANDRY DEPARTMENT						
Number of IRs	21	NIL	46	NIL	NIL	**67**
Number of paragraphs	37	NIL	150	NIL	NIL	**187**
Number of IRs for which initial reply has not been received (number of paragraphs)	05(08)	NIL	20(56)	NIL	NIL	**25(64)**
SOIL SURVEY AND SOIL CONSERVATION DEPARTMENT						
Number of IRs	06	NIL	NIL	18	01	**25**
Number of paragraphs	15	NIL	NIL	82	06	**103**
Number of IRs for which initial reply has not been received (number of paragraphs)	01(09)	NIL	NIL	18(82)	NIL	**19(91)**
DAIRY DEVELOPMENT DEPARTMENT						
Number of IRs	04	NIL	08	NIL	NIL	**12**
Number of paragraphs	07	NIL	67	NIL	NIL	**74**
Number of IRs for which initial reply has not been received (number of paragraphs)	02(03)	NIL	03(37)	NIL	NIL	**05(40)**
FOREST AND WILD LIFE DEPARTMENT						
Number of IRs	100	19	03	NIL	NIL	**122**
Number of paragraphs	294	126	14	NIL	NIL	**434**
Number of IRs for which initial reply has not been received (number of paragraphs)	02(04)	06(61)	NIL	NIL	NIL	**08(65)**

Year	Up to 2015-16	2016-17	2017-18	2018-19	2019-20 (Upto 30 June 2019)	Total
CO-OPERATION DEPARTMENT						
Number of IRs	24	06	02	20	NIL	**52**
Number of paragraphs	80	47	21	166	NIL	**314**
Number of IRs for which initial reply has not been received (number of paragraphs)	05(28)	05(34)	01(17)	20(155)	NIL	**31(234)**
FOOD, CIVIL SUPPLIES AND CONSUMER AFFAIRS DEPARTMENT						
Number of IRs	59	NIL	11	21	09	**100**
Number of paragraphs	138	NIL	73	194	105	**510**
Number of IRs for which initial reply has not been received (number of paragraphs)	05(12)	NIL	11(71)	21(194)	09(105)	**46(382)**
HARBOUR ENGINEERING						
Number of IRs	13	NIL	04	04	NIL	**21**
Number of paragraphs	28	NIL	32	17	NIL	**77**
Number of IRs for which initial reply has not been received (number of paragraphs)	NIL	NIL	NIL	NIL	NIL	NIL
FISHERIES DEPARTMENT						
Number of IRs	16	NIL	20	08	NIL	**44**
Number of paragraphs	38	NIL	160	75	NIL	**273**
Number of IRs for which initial reply has not been received (number of paragraphs)	01(01)	NIL	18(128)	NIL	NIL	**19(129)**
PORT & HYDROGRAPHIC SURVEY WING						
Number of IRs	11	1	NIL	8	NIL	**20**
Number of paragraphs	22	10	NIL	33	NIL	**65**
Number of IRs for which initial reply has not been received (number of paragraphs)	02(04)	01(10)	NIL	07(30)	NIL	**10(44)**
ENVIRONMENT AND CLIMATE CHANGE DEPARTMENT						
Number of IRs	NIL	NIL	NIL	NIL	01	**01**
Number of paragraphs	NIL	NIL	NIL	NIL	20	**20**
Number of IRs for which initial reply has not been received (number of paragraphs)	NIL	NIL	NIL	NIL	01(20)	**01(20)**
					Total IR	**922**
					Total Paras	**4,195**
					Initial replies not received (IR(Para))	**214(1,452)**

Appendix 2.1

Composition of the General Council

(Reference: Paragraph 2.1.1- Page: 6)

Sl. No.	Designation
	Ex-Officio members
1	The Chancellor;
2	The Pro-Chancellor;
3	The Vice-Chancellor;
4	The Agricultural Production Commissioner;
5	The Principal Secretary, the Secretary or the Special Secretary to Government, as the case may be, in the Departments of Agriculture, Finance, Fisheries and Animal Husbandry.
6	The Director of Agriculture;
7	The Director of Animal Husbandry;
8	The Director of Dairy Development;
9	The Director of Fisheries;
10	The Principal Chief Conservator of Forests;
11	The Chairman, Rubber board.
12	The Chairman, Spices Board.
13	The Chairman, Marine Products Export Development Authority.
14	The Director, Central Plantation Crops Research Institute.
15	The Director, Kerala Forest Research Institute.
16	One representative of the Indian Council of Agricultural Research.
17	The Member of the Legislative Assembly representing the constituency in which the Headquarters of the University is situated.
	Elected members
1	Four members elected according to the principles of proportional representation by means of single transferable vote by the members of the Legislative Assembly from among themselves of whom one shall be a member belonging to a Scheduled Caste or a Scheduled Tribe;
2	One member elected by the Deans of Faculties of the University from among themselves.
3	Four members elected by the teachers of the University from among themselves according to the principles of proportional representation by means of single transferable vote.
4	Two members elected by the students of the University from among themselves according to the principles of proportional representation by means of single transferable vote.
5	Two members elected by the non-teaching staff of the University from among themselves according to the principles of proportional representation by means of single transferable vote.
6	Two members elected by the permanent labourers of the University from

	among themselves according to the principles of proportional representation by means of single transferable vote.
	Members nominated by the Chancellor
1	Four eminent Scientists in the field of agriculture and allied subjects from the concerned university or from outside
2	Four farmers of whom one shall be a member belonging to a Scheduled Caste or a Scheduled Tribe and one shall be women.
3	One Member from the association of planters Kerala.
4	Two Presidents of Grama Panchayath.
	Other Members
1	Three members to represent respectively the University of Calicut, Cochin and Kerala, elected by the Senates of the respective Universities.
2	One representative of the Indian Council of Agricultural Research.
3	The member of the Legislative Assembly representing the constituency in which the Headquarters of the University is situated.

Source: University Records

Note:

1. General Council : The Act prescribes that the General Council shall meet at least once in four months. During the period 2014-15 to 2018-19, 15 meetings were held against the prescribed 15.

2. In the composition shown above, one representative of the Indian Council for Agricultural Research and one member of the Legislative Assembly representing the constituency in which the Headquarters of the University is included under both 'Ex-officio' members and 'Other members'.

Appendix 2.2

Composition of the Executive Committee

(Reference: Paragraph 2.1.1 - Page: 6)

Sl. No.	Designation
	Ex-Officio members
1	The Vice-Chancellor;
2	The Agricultural Production Commissioner and the Principal Secretary, the Secretary or the Special Secretary to Government as the case may be in the Finance department.
	Other Members
1	The member representing the Indian Council of Agricultural Research in the General Council;
2	One Dean of Faculty elected by the General Council;
3	One member elected from among the teachers in the General Council, by the Council;
4	Five non-official members of the General Council elected by the Council of whom one shall be a member belonging to a Scheduled Caste and Scheduled Tribe and one shall be a women.
5	The member of the Legislative Assembly representing the constituency in which the Headquarters of the University is situated.

Source: University Records

Note:

The Executive Committee shall meet as and when required. During the period 2014-15 to 2018-19 and a total of 40 meetings were held.

Appendix 2.3

Composition of the Academic Council

(Reference: Paragraph 2.1.1 - Page: 6)

Sl. No.	Designation
1	The Vice-Chancellor;
2	The Deans of Faculties;
3	The Director of Research;
4	The Director of Extension;
5	The Director of Students Welfare;
6	The Librarian;
7	Six members from among the Heads of Departments of the Faculties, nominated by the Chancellor on rotational basis.
8	Three members from among the staff of the research stations of the University, nominated by the Chancellor;
9	Two members from among the Post-Graduate students and one member from among the Research Students of the University, elected in such manner as may be prescribed;
10	One member elected by the teachers (other than the Dean) of each Faculty, from among themselves;
11	The Registrar,
12	Such other members as may be prescribed.
13	The Academic Council may co-opt as members, not more than ten persons for such periods and in such manner as may be prescribed, so as to secure adequate representation to different aspects of agriculture.

Source: University Records

Note:

As per the Statute, the Academic Council shall meet every trimester. But the University switched over to semester system. The Council had met 12 times during the period 2014-15 to 2018-19.

Appendix 2.4

Posts of Teaching Staff not having Statutes

(Reference: Paragraph 2.5.1.1- Page: 9)

Sl. No.	Post
1	Director of Education
2	Director of Students Welfare
3	Director (Planning)
4	Dean, Forestry
5	Controller of Examination
6	Associate Dean College of Agriculture, Padannakad
7	Associate Dean, College of Horticulture, Vellanikkara
8	Associate Dean, College of Agriculture, Ambalavayal
9	Associate Dean (CCBM)
10	Special Officer, ACCER
11	Associate Director of Research (Planning)
12	Associate Director of Research (GA)
13	Associate Director of Research (M&E)
14	Associate Director of Research (Coconut Mission)
15	Associate Director of Research (Vegetable Mission)
16	Associate Director of Research (NZ), Pilicode
17	Associate Director of Research (Seeds)
18	Associate Director of Research RARS, Kumarakom
19	Associate Director of Research, College of Agriculture, Vellayani
20	Associate Director of Research, RARS, Pattambi
21	Associate Director of Extension (South Zone)
22	Teaching Staff, ACCER

Source: University Records

Appendix- 2.5

Programmes/Colleges not granted Accreditation by NAEAB in September 2020

(Reference: Paragraph 2.5.2.2 - Page: 16)

Sl.	Name of the Programme/College	Reason	Action taken by the University
1	M. Sc.(Ag) in Agricultural Entomology & Nematology in CoA, Vellayani	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal for granting accreditation furnished as Department of Agricultural Entomology and Department of Nematology are two separate Departments of College of Agriculture, Vellayani, of which accreditation was requested only for the Department of Agricultural Entomology.
2	M. Sc. (Hort) in Pomology & Floriculture in CoA, Vellayani	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal for granting accreditation given as 134th Meeting of the Academic Council held on 13/12/2019 had bifurcated Department of Pomology and Floriculture into two separate Departments, viz., Department of fruit science and Department of Floriculture & Landscaping as per ICAR nomenclature.
3	Ph. D in Agricultural Entomology & Nematology in College of Agriculture, Vellayani	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal for granting accreditation furnished as Department of Agricultural Entomology and Department of Nematology are two separate Departments of College of Agriculture, Vellayani, of which accreditation was requested only for the Department of Agricultural Entomology.
4	Ph. D in Pomology & Floriculture in College of Agriculture, Vellayani	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal for granting accreditation given as 134th Meeting of the Academic Council held on 13/12/2019 had bifurcated Department of Pomology and Floriculture into two separate Departments, viz., Department of fruit science and Department of Floriculture & Landscaping as per ICAR nomenclature.
5	B. Tech in Food Engineering in KCAE & T, Tavanur	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal given. The nomenclature and syllabus was changed as per the recommendation of the ICAR's 5th Deans' committee in 2019 as B.Tech (Food Technology). From 2020 admission onwards, KAU is admitting students to B.Tech (Food Technology) programmes.
6	Ph. D in Processing & Food Engineering in KCAE & T, Tavanur	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Appeal furnished to ICAR. The nomenclature of this programme has been changed from Ph. D in Agricultural Processing & Food Engineering to Ph. D in Processing & Food Engineering from 2019 admission onwards as per the recommendation of ICAR.

Sl.	Name of the Programme/College	Reason	Action taken by the University
7	College of Co-Operation, Banking & Management, Vellanikkara, KAU, Thrissur and its following programmes •B.Sc. (Hons.) Co-Operation & Banking • M.Sc. (C&B) in Rural Marketing Management • M.Sc. (C&B) in Rural Banking & Finance Management • M.Sc. (C&B) in Co-operative Management • Ph.D (C&B) in Rural Marketing Management	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Academic Council has decided to have further discussions with stakeholders regarding changing the nomenclature of programmes as it may affect employment of the graduates.
8	Academy of Climate Change Adaption Education Sit Research Vellanikkara, KAU, Thrissur and its following programmes • B.Sc. (Integrated) Climate Change Adaptation • M.Sc. (Integrated) Climate Change Adaptation	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Changed to 4+2 system as per ICAR guidelines.
9	Integrated B.Sc. and M. Sc. programmes in Biotechnology	Not approved for accreditation on the ground Degree nomenclature not adhering to ICAR guidelines.	Changed to 4+2 system as per ICAR guidelines.

Source: University Records

Appendix 2.6

Details of laboratory equipment as per the Fifth Deans' Committee and in actual possession of College of Agriculture, Ambalavayal

(Reference: Paragraph 2.5.2.5 - Page: 21)

Sl. No.	Name of equipment	Requirement (MSHAE)	In the possession of College	Shortfall
1	Different types of ovens	14	4	10
2	Different types of microscopes	67	2	65
3	Different types of balances	39	18	21
4	Different types of cameras	8	1	7
5	Computers	37	3	34
6	Moisture box	30	0	30
7	Tube Auger	10	1	9
8	Bucket auger	10	0	10
9	Seed germinator	6	0	6
10	Conductivity meter	2	1	1
11	pH Meter	9	1	8
12	Moisture meter	7	0	7
13	Chlorophyl meter	1	0	1
14	Brix meter	2	3	-1
15	Water bath	6	0	6
16	Shaker	4	2	2
17	Drip and Sprinkler System	3	5	-2
18	Meter Scale	10	0	10
19	Tape	5	5	0
20	LCD projector	1	1	0
21	Digital voice recorders	5	0	5
22	Audio recording-mixing consoles	1	0	1
23	Insect box	60	17	43
24	Insect collection nets	60	5	55
25	Collection bottles	60	5	55
26	Insect collection big boxes for museum (1 for each order)	29	2	27
27	Soxhlet Extraction Apparatus	1	0	1
28	Patters Tower	1	0	1
29	Fumigation Chamber 01	1	0	1
30	Automatic seed/grain counter	1	0	1
31	BOD Incubator	3	2	1
32	Centrifuge	4	0	4
33	Growth chamber	1	0	1
34	Distillation assembly	2	1	1

Sl. No.	Name of equipment	Requirement (MSHAE)	In the possession of College	Shortfall
35	Hand refractometer	5	2	3
36	Digital refractometer	2	2	0
37	Refrigerator	3	1	2
38	Deep Freezer	2	1	1
39	Fruit crusher	1	1	0
40	Grinding and mixing machine	1	1	0
41	Grafting and budding knife	60	70	-10
42	Secateur	60	60	0
43	Saw	5	10	-5
44	Loppers	5	5	0
45	Mist Chamber	1	10	-9
46	Poly house with drip irrigation system	2	10	-8
47	Muffle furnace	1	0	1
48	Fruit penetrometer	2	0	2
49	Pulper	1	1	0
50	Juice extractor	1	1	0
51	Crown corking machine	1	1	0
52	Spectrophotometer	2	1	1
53	Poly pouch sealer	1	1	0
54	Crusher	1	1	0
55	Masala grinder	1	1	0
56	Dehydrator	1	1	0
57	Cold room	1	0	1
58	Vacuum pump	2	0	2
59	EC Meter	5	1	4
60	Flame Photometer	1	1	0
61	Hot Plate	3	1	2
62	Distilled water unit	3	1	2
63	Autoclave	4	4	0
64	Laminar Air Flow	1	3	-2
65	Digestion block	2	1	1
66	Hydrometer	5	0	5
67	Infiltrometer	2	0	2
68	Atterberg's limits meter	5	0	5
69	Nitrogen Analyser	2	1	1
70	Thermometer Max	5	3	2
71	Thermometer Min	5	3	2
72	Digital Anemometer	2	0	2
73	Cup Anemometer	2	1	1

Sl. No.	Name of equipment	Requirement (MSHAE)	In the possession of College	Shortfall
74	Pan Evaporimeter	1	1	0
75	Soil thermometers	15	9	6
76	Rain gauges	2	2	0
77	Sunshine Recorder	1	1	0
78	Stevenson's Screen	1	1	0
79	Thermograph	1	1	0
80	Hygrograph	1	1	0
81	Soil Heat Flux Plate	1	0	1
82	GPS	10	1	9
83	AWS (optional)	1	2	-1
84	Lysimeter (optional)	1	0	1
85	Luxmeter	2	0	2
86	Solar Pyranometer	1	2	-1
87	Sterobinocular	5	0	5
88	Sample processing board (Dry preservation of samples)	4	0	4
89	Wet preservation jars	50	0	50
90	Incubator	2	0	2
91	Occular meter	5	0	5
92	Stage Micrometer	5	0	5
93	5000/6500 Feed and Forage Analyzer	1	0	1
94	Micro kjeldahl N digestion & distillation apparatus	1	0	1
95	Soxhlet unit for fat estimation	1	0	1
96	Willy mill grinder	1	0	1
97	Milk analyzer (automatic)	1	0	1
98	Crude fiber estimation unit	1	0	1
99	Incubator cum hatcher	1	1	0
100	Brooder machine	1	0	1
101	Feeder	1	0	1
102	Waterer	1	0	1
103	Egg candling machine	1	0	1
104	Debeaker	1	0	1
105	Vaccinator	1	0	1
106	Chaff cutter	1	0	1
107	Lactometer	1	0	1
108	Castrator	1	0	1
109	Shearer	1	1	0
110	Electric dehorner	1	0	1

Sl. No.	Name of equipment	Requirement (MSHAE)	In the possession of College	Shortfall
111	Artificial vagina	1	0	1
112	Common medication device	1	1	0
113	Cattle crate	1	0	1
114	Seed drill	1	0	1
115	Working models of reaper and mowers	2	0	2
116	Cut model of CI & SI engine	1	0	1
117	Cut model of tractor	1	0	1
118	Internet Server	1	0	1
119	Intranet Server	1	0	1
120	Heavy duty photocopiers	2	1	1
121	Computerized Issue and Catalogue Systems	2	0	2
122	CCTV monitoring system for library	1	0	1
123	RFID and Access Control System (Optional)	1	0	1
124	Broadband Internet Connectivity with minimum speed of 1Gbps	1	0	1
Total		**853**	**305**	**548**

Source: University Records

Appendix 3.1

Instances of duplicate invoices submitted for different works

(Reference: Paragraph 3.1 - Page: 43)

Sl. No.	Invoice No. and Date	Amount (₹)	Quantity (MT)	Work for which bitumen was purchased (as noted in the invoice)	Work to which copy of the invoice was submitted in support of purchase of bitumen
1	63000592718 dated 27/03/2017	3,11,884	9.720 VG 30	Thavinjal-Valad-Kunjome road, km 0/000 to 8/300 under Roads Division, Wayanad, Contractor: Farooque Constructions, Alappuzha	Thavinjal-Valad-Kunjome road, km 0/000 to 8/300 under Roads Division, Wayanad Contractor : Farooque Constructions, Alappuzha **(Quintuplicate copy submitted)**
2	6300016644 dated 16/05/2017	2,30,012	6.370 Emulsion	Airport road-Providing DBM to Thalassery -Irikkur road from km 3/300 to 15/000 under Roads Division, Kannur. Contractor: Farooque Constructions, Alappuzha	Thavinjal-Valad-Kunjome road, km 0/000 to 8/300 under Roads Division, Wayanad Contractor : Farooque Constructions, Alappuzha **(Quintuplicate copy submitted)**
3	4550075564 dated 18/01/2018	2,96,987	7.826 Emulsion	Improvements and providing BM&BC to Methurumba - Chapparappadavu - Kuttoor road km 16/450 to 23/285 under Roads Division, Kannur. Contractor: M/s Abcon Engineering, Kasaragod	Improvements and providing BM&BC to Methurumba - Chapparappadavu - Kuttoor road km 16/450 to 23/285 under Roads Division, Kannur. Contractor M/s Abcon Engineering, Kasaragod **(Duplicate copy submitted)**
4	4550067335 dated 30/12/2017	1,19,312	3.094 Emulsion	Manvila-pullukadavu road km 0/000 to 3/000 under Roads Division, Thiruvananthapuram. Contractor: Sri. A. Thajudeen	Improvement to Karattee-Nagaroor-Puthusserymukku road, from chainage 0/000 to 4/000 under Roads Division, Thiruvananthapuram. Contractor Sri. A. Thajudeen **(Duplicate copy submitted)**
5	4550017329 dated 25/08/2017	2,64,139	9.469 VG30	Mechira-Sastampara-Vilappilsala road under Roads Division, Thiruvananthapuram. Contractor: Sri. A. Thajudeen	Improvement to Karattee-Nagaroor-Puthusserymukku road, from chainage 0/000 to 4/000 under Roads Division, Thiruvananthapuram. Contractor Sri. A. Thajudeen **(Duplicate copy submitted)**
		₹12,22,334	**36.48 MT**		

Source: Department Records

Appendix 3.2

Details of the additional payments made to the contractors on account of the inadmissible items

(Reference: Paragraph 3.2 - Page: 45)

Sl. No. & Name of bridge work	Items included in the Original Estimate	Additional/extra items included in the Revised Estimate corresponding to the items under Col. 2	Expenditure on the additional/ extra items (₹)	Remarks
1	2	3	4	
1. Construction of Chekki-kkadavu Bridge	**Item-7:** Sinking of RCC (M 200) circular well of 9m external dia and 6.60m internal dia in all classes of soil other than rock to lines and levels and plumb by scooping out earth from inside and below steining with dredgers or any other applications for abutment wells **including hire charges, labour charges,** dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, **incidental expenses** etc. complete as per standard specifications and as directed by the departmental officers. **Item-8**: Sinking of RCC circular well of 6.50 m outer dia and 4.30m inner dia in all classes of soil other than rock to lines and levels and plumb by scooping out earth from inside and below steining with dredgers or any other applications for abutment wells **including hire charges, labour charges,** dewatering, casting, vibrating, **removal of obstacles**, dumping the spoil at suitable places with all leads and lifts, **incidental expenses** etc. complete as per standard specifications and as directed by the departmental officers.	**Item No.30 of Appendix A: Actual labours & machineries** for removal of abstract **and seating of wells.**	**1,35,41,526**	According to Sn.1216 (e) of MoRTH specifications for Roads and Bridge works, the contract unit rates for sinking of wells shall cover the cost of labour, tools, equipment and plant and for all operations and other incidentals for sinking of wells including seating. The contract unit rates of items 7 & 8 are inclusive of the items 'hire charges, labour charges' and 'seating of wells' which is incidental to the work 'sinking of well. So, the contractor is not eligible for separate payments for any of these items.
2. Construction of Kariyattukadavu Bridge	**Item-5:** Sinking of RCC circular well of 6.5 m outer dia and 4.5 m inner dia for foundation of piers **in all classes of soil other than rock** to lines and levels and plumb by scooping out earth from inside and below steining with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	**Additional item No.28:** Cutting and breaking down in to small **pieces boulders more than 40 dm3 and** logs of wood more than 100 dm3 in size from below the cutting edge portion of the well kerb etc. complete.	**43,17,254**	The contract unit rate of item 5 of the original estimate was for sinking of well in all classes of soil, except rock and removal of obstacles irrespective of their **size.** The contractor quoted rates considering these aspects. So, the contractor was not eligible for separate payments for the

Sl. No. & Name of bridge work	Items included in the Original Estimate	Additional/extra items included in the Revised Estimate corresponding to the items under Col. 2	Expenditure on the additional/ extra items (₹)	Remarks
1	2	3	4	
				removal of boulders of more than 40 dm3 and logs of wood more than 100 dm3 in size.
		Item No.29: **Seating of well** in hard rock up to average depth of 50 cm by cutting and breaking down the rock by using Jack hammer, chisel etc. to maintain the well in correct level and embedment in rock etc. complete.		As stated against work No.1, seating of wells' is incidental to the work 'sinking of well. So, the contractor was not eligible for separate payments for that work.
3. Construction of Pathikkalkadavu bridge	**Item No.8: :** Sinking of RCC circular well of 8.5m outer dia and 6.5m inner dia for foundation of abutments **in all classes of soil other than rock** to lines and levels and plumb by scooping out earth from inside and below steining **with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles**, dumping the spoil at suitable places with all leads and lifts, **incidental expenses** etc. complete as per standard specifications and as directed by the departmental officers.	**Extra Item 2: Removal of obstacles and Seating of Well engaging Labour and equipment**	**20,19,088**	The contractor was not eligible for separate payment for removing obstacles and seating of well, for reasons stated in the remarks column against work No.1
	Total		**1,98,77,868**	

Source: Department Records

Note :

The labour charges and hire charges of machineries for removal of obstacles and seating of wells, claimed as extra items in the revised estimates, were already included in the original estimate by the words, "*including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses*"

Appendix 3.3

Details of works involving short recovery of cost of bitumen

(Reference: Paragraph 3.3 - Page: 47)

Agreement No	Rate of bitumen as per Agreement / estimate (₹)	Quantity of bitumen used in the work (in MT)	Amount required to be recovered as per agreement/ estimate (₹) (2x3)	Amount actually recovered (₹)	Short recovery (₹)
1	2	3	4	5	6
SE (K) 60/2015-16 dated 22/08/2015	51,250	531.420	2,72,35,275	1,63,90,874	1,08,44,401
	37,500	25.940	9,72,750	8,00,081	1,72,669
			2,82,08,025	**1,71,90,955**	**1,10,17,070**
SE (K)331/2015-16 dated 27/02/2016	50,600	26.403	13,35,992	10,83,958	
	39,283	4.105	1,61,257	1,78,738	
			14,97,249	**12,62,696**	**2,34,553**
SE(K)122/2014-15 dated 27/03/2015	54,400	46.173	25,11,811	18,47,040	6,64,771
Total					**1,19,16,394**

Source: Department Records

Appendix 3.4

The works in which cost of bitumen was neither reimbursed nor recovered

(Reference: Paragraph 3.3 - Page: 48)

Sl No	Agreement No	Rate of bitumen as per Agreement / estimate (₹)	Quantity of bitumen used in the work executed	Amount required to be recovered as per agreement /estimate (₹) (3 x 4)	Amount required to be reimbursed to contractors (₹)	Undue benefit to contractors due to non-recovery of cost of bitumen (₹) (5-6)
1	2	3	4	5	6	7
1	SE (K) 138/16-17 dated 10/08/2016	41,000	326.879	1,34,02,039	1,00,24,455	
		39,283	23.908	9,39,178	7,96,300	
				1,43,41,217	**1,08,20,755**	**35,20,462**
2	SE(K) 16/17-18 dated 02/06/2017	38,167	557.821	2,12,90,354	1,86,07,729	
		39,961	321.971	1,28,66,283	1,27,73,900	
		33,294	55.942	18,62,532	19,79,082	
				3,60,19,169	**3,33,60,711**	**26,58,458**
3	SE(K) 375/15-16 dated 04/03/2016	41,000	400.198	1,64,08,118	1,44,21,476	
		39,283	35.556	13,96,746		
				1,78,04,864	**1,44,21,476**	**33,83,388**
4	SE(K) 126/15-16 dated 17/09/2015	41,000	312.598	1,28,16,518	1,05,10,209	
		39,283	8.048	3,16,150		
		29,800	15.759	4,69,618		
				1,36,02,286	**1,05,10,209**	**30,92,077**
5	SE(K) 202/15-16 dated 06/10/2015	50,600	67.694	34,25,316	20,16,682	**14,08,634**
6	SE(K) 306/15-16 dated 08/02/2016	41,000	10.977	4,50,057	3,95,578	
		39,283	1.590	62,460	58,857	
				5,12,517	**4,54,435**	**58,082**
7	SE(K) 9/16-17 dated 20/05/2016	50,600	10.511	5,31,857	64,89,618	
		41,000	187.936	77,05,376		
		39,283	5.499	2,16,017	1,73,416	
		29,800	9.616	2,86,557	3,01,644	
				87,39,807	**69,64,678**	**17,75,129**
8	SE (K) 37/2015-16 dated 09/07/2015	41,000	300.205	1,23,08,405	88,59,118	
		39,283	20.951	8,23,018	7,62,148	
				1,31,31,423	**96,21,266**	**35,10,157**
9	SE(K) 95/2014-15 dated 24/12/2014	41,320	187.124	77,31,964	48,68,599	
		34,975	27.520	9,62,512	7,71,427	
				86,94,476	**56,40,026**	**30,54,450**
10	SE (K) 64/2015-16 dated 26/08/2015	41,320	62.727	25,91,880	21,37,873	
		34,975	11.834	4,13,894	3,65,790	
				30,05,774	**25,03,663**	**5,02,111**

Sl No	Agreement No	Rate of bitumen as per Agreement / estimate (₹)	Quantity of bitumen used in the work executed	Amount required to be recovered as per agreement /estimate (₹) (3 x 4)	Amount required to be reimbursed to contractors (₹)	Undue benefit to contractors due to non-recovery of cost of bitumen (₹) (5-6)
1	2	3	4	5	6	7
11	SE (K) 99/2016-17 dated 15/07/2016	41,000	125.563	51,48,083	40,75,932	
		39,283	18.386	7,22,257	6,83,842	
				58,70,340	**47,59,774**	**11,10,566**
12	SE(K) 300/15-16 dated 06/02/2016	41,000	45.029	18,46,189	12,83,639	
		39,283	6.954	2,73,174	2,00,679	
				21,19,363	**14,84,318**	**6,35,045**
13	SE(K) 96/2014-15 dated 24/12/2014	41,320	29.534	12,20,345	7,88,690	
		34,975	8.868	3,10,158	2,41,486	
				15,30,503	**10,30,176**	**5,00,327**
14	SE(K) 332/2015-16 dated 27/02/2016	41,000	28.590	11,72,190	8,06,937	
		39,283	2.698	1,05,986	79,885	
		29,800	2.497	74,411	70,616	
				13,52,587	**9,57,438**	**3,95,149**
15	SE(K) 4/2015-16 dated 10/04/2015	50,600	9.653	4,88,442	2,83,239	
		39,040	1.924	75,113	58,032	
				5,63,555	**3,41,271**	**2,22,284**
16	SE (K) 287/2015-16 dated 27/01/2016	41,000	7.520	3,08,320	2,27,520	
		39,283	1.703	66,899	51,484	
		29,800	0.684	20,383	20,441	
				3,95,602	**2,99,445**	**96,157**
17	EE/85/2015-16 dated 16/11/2015	49,610	12.220	6,06,234	3,27,677	
		47,238	2.014	95,137	55,406	
				7,01,371	**3,83,083**	**3,18,288**
18	EE/155/2014-15 dated 13/10/2014	55,200	20.216	11,15,923	7,56,761	
		41,400	1.786	73,940	61,576	
				11,89,863	**8,18,337**	**3,71,526**
19	EE/128/14-15 dated 29/09/2014	50,800	14.405	7,31,774	5,36,389	
		38,100	2.042	77,800	70,402	
				8,09,574	**6,06,791**	**2,02,783**
20	EE/127/14-15 dated 29/09/2014	50,800	17.510	8,89,508	7,54,018	
		38,100	1.550	59,055	62,826	
				9,48,563	**8,16,844**	**1,31,719**
21	EE/122/14-15 dated 24/09/2014	50,800	12.353	6,27,532	5,59,254	
		38,100	0.961	36,614	38,952	**65,940**
				6,64,146	**5,98,206**	
					Total	**2,70,12,732**

Source: Department Records

Appendix 3.5

The works in which cost of bitumen was recovered / reimbursed partially

(Reference: Paragraph 3.3 - Page: 48)

Sl. No.	Agreement No.	Rate of bitumen as per Agt. /estimate (₹)	Qnty. of bitumen used in work	Amount required to be recovered as per Agt. /estimate (₹) (3 x 4)	Amount actually recovered (₹)	Balance to be recovered (₹) (5) – (6)	Amount reimbursed to contractor (₹)	Balance amount due to the contractor (₹)	Net amount due to be recovered from contractors (₹) (7) - (9)
1	2	3	4	5	6	7	8	9	10
1	SE(K) 46/15-16 dated 01/08/2015	41,000	320.600	1,31,44,600	1,28,24,554	3,20,046	1,08,10,989	2,37,080	
		39,283	21.238	8,34,292	7,07,801	1,26,491	6,58,522	99,531	
				1,39,78,892	**1,35,32,355**	**4,46,537**	**1,14,69,511**	**3,36,611**	**1,09,926**
2	SE(K) 42/2015-16 dated 24/07/2015	56,580	228.194	1,29,11,217	96,00,042	33,11,175	51,38,527	17,16,666	
		41,400	19.165	7,93,431	6,66,954	1,26,477	4,92,836	88,664	
				1,37,04,648	**1,02,66,996**	**34,37,652**	**56,31,363**	**18,05,330**	**16,32,322**
3	SE (K) 76/2012-13 dated 13/07/2012	38,167	818.476	3,12,38,773	2,15,58,163	93,08,015		75,88,304	
		33,294	64.710	21,54,455	19,02,686	2,51,769		2,42,523	
				3,33,93,228	**2,34,60,849**	**95,59,784**	**2,46,24,613**	**78,30,827**	**17,28,957**
4	SE(K) 14/2014-15 dated 14/05/2015	50,800	167.211	84,94,319	76,86,243	8,08,076	49,14,684	4,83,944	
		38,100	24.095	9,18,020	8,18,236	99,784	8,09,841	78,540	
				94,12,339	**85,04,479**	**9,07,860**	**57,24,525**	**5,62,484**	**3,45,376**
5	SE(K)346/2015-16 dated 02/03/2016	41,000	217.249	89,07,209	77,57,200	11,50,009	60,74,015	8,17,744	
		39,283	1.867	73,341	3,14,569	52,030		34,206	
		29,800	9.841	2,93,262					
				92,73,812	**80,71,769**	**12,02,039**	**60,74,015**	**8,51,950**	**3,50,089**
6	SE (K) 42/2013-14 dated 01/06/2013	37,073	65.132	**24,14,639**	**18,85,384**	**5,29,254**	**19,82,726**	**4,25,666**	**1,03,588**
7	SE(K)71/ 2014-15 dated 18/10/2014	41,320	410.502	1,69,61,943	1,67,81,291	1,80,651	1,75,48,757	1,48,222	
		34,975	35.108	12,27,902	11,97,404	30,498		29,956	
				1,81,89,845	**1,79,78,695**	**2,11,149**	**1,75,48,757**	**1,78,178**	**32,971**

Sl. No.	Agreement No.	Rate of bitumen as per Agt. /estimate (₹)	Qnty. of bitumen used in work	Amount required to be recovered as per Agt. /estimate (₹) (3 x 4)	Amount actually recovered (₹)	Balance to be recovered (₹) (5) – (6)	Amount reimbursed to contractor (₹)	Balance amount due to the contractor (₹)	Net amount due to be recovered from contractors (₹) (7) - (9)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
8	SE(K)38/2015-16 dated 10/07/2015	41,000	237.036	97,18,476	87,71,786	9,46,690	67,61,432	6,68,502	
		39,283	0.365	14,338	3,52,534	5,547	4,46,099	2,640	
		29,800	11.535	3,43,743					
				1,00,76,557	**91,24,320**	**9,52,237**	**72,07,531**	**6,71,142**	**2,81,095**
9	SE(K)70/2014-15 dated 16/10/2014	41,320	124.755	51,54,877	38,53,090	13,01,787	41,60,007	12,46,478	
		34,975	14.699	5,14,098	3,81,927	1,32,171		1,35,491	
				56,68,975	**42,35,017**	**14,33,958**	**41,60,007**	**13,81,969**	**51,989**
10	SE(K)254/2015-16 dated 07/12/2015	41,000	50.016	20,50,656	19,98,914	51,742	14,86,667	32,588	
		39,283	3.646	1,43,226	1,20,338	22,888			
				21,93,882	**21,19,252**	**74,630**	**14,86,667**	**32,588**	**42,042**
								Total	**46,78,355**

Source: Department Records

Appendix 3.6

Salary paid to the crew of 86 idling road rollers

(Reference: Paragraph 3.4 - Page: 50)

Period for which the rollers idled	Number of road rollers idling	Salary paid to the crew (in ₹) during the period 2014-15 to 2018-19
Up to five years	18	5,60,05,448
Five to 10 years	33	6,46,01,196
10 to 15 years	27	5,69,43,712
15 to 20 years	5	23,88,594
Above 20 years	3	34,52,572
Total	**86**	**18,33,91,522** **Rounded to ₹18.34 crore**

Source: Department Records

Glossary of Abbreviations

Glossary of Abbreviation used in the report

Abbreviation	Full Form
AB	Autonomous Body
ACCER	Academy of Climate Change Education and Research
BC	Bitumen Concrete
BM	Bitumen Maccadam
BPCL	Bharat Petroleum Corporation Ltd
CC	Contractor's Certificate
CCBM	College of Co-operation, Banking & Management
CE	Chief Engineer
CeRA	Consortium for e-Resources in Agriculture
CoA	College of Agriculture
CoH	College of Horticulture
CTE	Chief Technical Examiner
DARE	Department of Agricultural Research and Education
DLR	Daily Labour Reports
dm^3	Cubic Decimeter
DNA	Deoxyribo Nucleic Acid
DoE	Director of Extension
DPR	Detailed Project Report
DUS	Distinctiveness, Uniformity and Stability
EE	Executive Engineer
GA	General Administration
GI	Geographical Indication
GoI	Government of India
GoK	Government of Kerala
GPF	General Provident Fund
ICAI	Institute of Chartered Accountants of India
ICAR	The Indian Council of Agricultural Research
IEA	Institutional Eligibility for Accreditation
IPRs	Intellectual Property Rights
IQAC	Internal Quality Assurance Cell
IR	Inspection Report
JPV	Joint Physical Verification
KAU	Kerala Agricultural University
KUFOS	Kerala University of Fisheries and Ocean Studies
KVASU	Kerala Veterinary and Animal Sciences University
KVK	Krishi Vigyan Kendras

Abbreviation	Full Form
LOI	Letter of Intent
M&E	Monitoring & Evaluation
MoA	Ministry of Agriculture
MoRTH	Ministry of Road Transport and Highways
MSHAE	Minimum Standard for Higher Agriculture Education
MT	Metric Ton
NAAC	National Assessment Accreditation Council
NAEAB	National Agricultural Education Accreditation Board
NBPGR	National Bureau of Plant Genetic Resources
NET	National Eligibility Test
NH	National Highway
NRMB	Natural Rubber Modified Bitumen
NZ	Northern Zone
PAC	Public Accounts Committee
PF	Provident Fund
PG	Performance Guarantee
PPV&FR	The Protection of Plant Varieties and Farmers' Rights
PRT	Peer Review Team
PSC	Public Service Commission
PWD	Public Works Department
R&B	Roads & Bridges
RARS	Regional Agricultural Research Stations
RCC	Reinforced Cement Concrete
SE	Superintending Engineer
SoR	Schedule of Rates
SSR	Self Study Reports
UFAST	University Functional Accountability System
UGC	University Grants Commission
VC	Vice Chancellor
VG	Viscosity Grade