GOVERNMENT OF KERALA
KERALA STATE PLANNING BOARD

FOURTEENTH FIVE-YEAR PLAN
(2022-2027)

WORKING GROUP ON
HIGHER AND TECHNICAL EDUCATION

REPORT

Social Services Division
March 2022

FOREWORD

Kerala is the only State in India to formulate and implement Five-Year Plans. The Government of Kerala believes that the planning process is important for promoting economic growth and ensuring social justice in the State. A significant feature of the process of formulation of Plans in the State is its participatory and inclusive nature.

In September 2021, the State Planning Board initiated a programme of consultation and discussion for the formulation of the 14th Five-Year Plan. The State Planning Board constituted 44 Working Groups, with more than 1200 members in order to gain expert opinion on a range of socio-economic issues pertinent to this Plan. The members of the Working Groups represented a wide spectrum of society and include scholars, administrators, social and political activists and other experts. Members of the Working Groups contributed their specialised knowledge in different sectors, best practices in the field, issues of concern, and future strategies required in these sectors. The Report of each working Group reflects the collective views of the members of the Group and the content of each Report will contribute to the formulation of the 14th Five-Year Plan. Each Report has been finalised after several rounds of discussions and consultations held between September to December 2021.

This document is the Report of the Working Group on "Higher and Technical Education". The Co-Chairpersons of the Working Group were Prof. Venkatesh Athreya, Eminent Economist and Dr. Venu V IAS, Additional Chief Secretary to Government. Dr. Jiju P Alex, Member of the State Planning Board co-ordinated the activities of the Working Group. Dr. Bindu P. Varghese,Chief, Social Service Division was the Convenor of the Working Group and Smt. Smitha H, Research Officer, Social Service Division was the Co-Convenor. The terms of reference of the Working Group and its members are in Appendix I of the Report.

Member Secretary

PREFACE

The Working Group on Higher and Technical Education had several rounds of intense discus-sions in its many meetings. Divergent opinions were exchanged in a cordial atmo-sphere, and the participation of all members and invitees contributed to the contents of the final Report. The Working Group benefited in its deliberations from the inputs provided by the Vice Chairman of the Kerala State Planning Board (KSPB).

The Report reflects the complexity of the issues facing the higher education sector in Kerala. The universalisation of education and the recent significant improvements in the provision of quality infrastructure have helped the school education sector of the state to emerge as an excellent performer among the major states of India. The challenge now is to strengthen the higher education sector through major educational initiatives consistent with the vision of Nava Keralam (New Kerala). While fully recognizing the limitations of the Report, I wish to emphasize that many of these limitations are inherent not only in the limited time within which the deliberations had to be concluded and written up, but also in the complexity of the issues referred to. It is hoped that the contents of the Report can be rendered more useful to the Planning and policy-making efforts through iterative processes involving all stakeholders in actively participatory discussions at decentralized levels as well as pilot initiatives over the coming months.

It is a pleasure to acknowledge all those who have contributed to the Report. Apart from the Working Group members and invitees, I must especially thank the sub group of the Working Group that worked on several drafts of the Report, with inputs from the officers of the KSPB.

Co-Chairperson   Co-Chairperson
Dr. Venu. V   Prof. Venkatesh Athreya

State Planning Board

CONTENTS

SUMMARY

The Working Group on Higher and Technical Education constituted by the Kerala State Plan-ning Board has been given, via its Terms of Reference, to cover the most significant challenges that the Government of Kerala faces in higher and technical education in the period of the 14th five-year plan. The challenge now is to strengthen the higher education sector through major educational initiatives consistent with the vision of Nava Keralam (New Kerala). Therefore, we must ensure that our graduate and post-graduate curricula and pedagogy provide a firm grounding in the respective disciplines and adequate exposure to relevant other disciplines to equip students to pursue interdisciplinary research at the Ph. D level. The higher education sector must promote highly competent and active research and innovation. While we need to encourage the development of institution-specific plans and programmes that take advantage of the specific strengths of each institution, we also need to promote the institutions concerned to align their goals and objectives and processes with overall state policy imperatives in higher education.

Strengthening the content of undergraduate and graduate curricula and the pedagogies utilised in transacting these curricula is a top priority in the quest for excellence. In addition to the revision of syllabus content, the careful evaluation of the existing academic mechanisms and how they would have to be modified, strengthened, and implemented to fulfil the envisaged curricular objectives is necessary. Significant advances in information and communication technologies and the emergence of interactive digital communication possibilities at relatively low cost present a huge opportunity for vastly enhanced knowledge production and transmission. These also widen the scope for the use of novel and effective pedagogical methods. Production, acquisition and transmission of knowledge are best pursued as cooperative endeavours carried out by institutions that support and synergise one another. Collaboration of HEIs with one another within the state will be a good starting point. A key challenge in higher education is putting in place adequate knowledge support systems (KSS). One of the central components of KSS, enormously crucial in higher education, is the library.

To cater to the plan objective, we now turn to specific issues and priorities in the report. The first issue we have addressed is upgrading the curricular aspect. The modes and needs of allocation of funds for curricular reforms, governance structures and related changes supporting curricular upgradation, the introduction of new academic programmes, teaching-learning and faculty development centres, strengthening undergraduate and postgraduate programmes, strengthening accreditation, digital repository, discipline-specific skill development programmes, student and faculty support programmes, institution-industry linkages, residential institutions, residential institutions, new environment for research and innovation, consultancy, collaboration and start-ups are a few in the detailed recommendations. Another thrust the report had given is the institutional and administrative reform. Though there is a separate commission for the same, some of the critical issues have been highlighted preceding the recommendations of the commissions, which are how to ensure democratisation, decentralisation, autonomy, academic flexibility, governing norms

of autonomous and self-financing institutions, and how the state government play a lead and facilitating role etc. In the new environment of learning and dissemination, how one can use technology, global networking for local needs, library and e-resource network in a pan state level, transforming the role of library spaces and librarian conducive of new environment etc., have been addressed. In the context of increased marginalisation, division and deprivation of different socio-economic and regional groups, socio-economic-regional inclusiveness in enrolment as student, staff and teaching fraternity, and institutional setting up have been addressed. Institutional development plan for universities and colleges in the form of mentorship and innovations, strengthening the internal quality assurance cells of the institutions, student activities and graduate attributes, financing of higher education and the possible new funding sources, etc., too addressed in the report.

CHAPTER I
INTRODUCTION

The Working Group on Higher and Technical Education constituted by the Kerala State Plan-ning Board has been given, via its Terms of Reference (ToR) , ten substantive items to consider. Together, the ToR cover the most significant challenges that the Government of Kerala faces in the field of higher and technical education in the period of the 14th five-year plan.

The public interventions that expanded and strengthened the educational sector in general and the school education in particular have been widely regarded as being among the im-portant fac-tors that brought about the unique development experience of the state. The universalisation of education and the recent significant improvements in the provision of quality infrastructure have helped the school education sector of the state to emerge as an excellent performer among the major states of India. The challenge now is to strengthen the higher education sector through major educational initiatives consistent with the vision of Nava Keralam (New Kerala).

Our suggestion is that while this Report can help initiate actions to meet the challenges in higher education, the conversation must continue, with participatory processes at several levels from the individual Higher Education Institutions (HEIs) to clusters, universities, re-search institutes, organizations of teachers and students, professional research bodies, elect-ed local bodies, town hall meetings and so on. This is, in our view, the only way in which justice can be done to the complexity of the task at hand. Of course, the conversations must be time bound, and ideally a clear Plan for the sector can emerge within a year based on all these inputs.

The educational initiatives in the higher education sector must seek to create an academ-ic ecosystem conducive not only to knowledge production of the highest order, but to independent, creative and critical thinking as well. This demands an unflinching com-mitment to academic freedom and promotion of a spirit of inquiry. We must ensure that

Terms of Reference

1. To provide a summary account of the physical resources and human resources now existing in the higher education system.
2. To make recommendations for curriculum reform and innovation in higher education.
3. To suggest measures to bring about institutional reform and innovation, and in particular, administrative regulations that are flexible, transparent, and responsive.
4. To identify and recommend new technologies of instruction and suggest measures to set up inter-university groups for developing online courses.
5. To suggest ways to expand Kerala's national and international networks for teaching, research, and student exchange.
6. To recommend measures to transform libraries to enable e-resources sharing between institutions on different cam-puses and use of information technology and data source on campus.
7. To propose means to deepen the socially inclusive nature of higher education an achieve regional balance.
8. To suggest ways that individual institutions can formulate specific plans and programme as and when the need arises.
9. To suggest measures to address problems pertaining to finance in higher education

our graduate and post graduate curricula and pedagogy provide strong grounding in the respective disciplines and adequate exposure to relevant other disciplines to equip students to pursue inter-disciplinary research as well at the Ph D level. Higher education sector must promote highly competent and active research and innovation. We need to promote a culture of academic excellence in our universities and research institutes, and interactions with academic institutions of excellence in other parts of India or abroad can play a significant role in this regard. Considerable investments also need to be made to achieve the goal of our HEIs; achieving all round academic excellence at national and international levels. An exercise to identify fields and areas where we have the potential to excel in this manner will be valuable for making progress in this regard.

Kerala as a state has, in comparison with other Indian states, an enviable track record in respect of issues of access, equity and excellence in school education. This achievement now needs to be extended into higher education as well. The challenge here is far greater, given the historically inherited inequalities across regions and social groups, and given the fiscal and other constraints imposed both by the economic policies of the Union government and national education policies that have paid little attention to issues of inclusion and diversity, notwithstanding the rhetoric in some of the official documents of the Union government in this regard.

Here again, as has been suggested in the deliberations of the Working Group, a survey of the regional distribution of HEIs and their resources across the state can provide a part of the data base required to design policies to redress regional inequalities. The individual HEIs in Kerala have evolved out of the region-specific socio economic, political and cultural processes that have been quite distinct from one another. Over the years, with rules and regulations and policies that apply to the state as whole, there has been some degree of convergence across the state among HEIs. Nonetheless, many institutions have retained some distinct inherited features and have evolved in distinct ways as well. Ideally, while we need to encourage the development of institution-specific plans and programmes that take advantage of the specific strengths of each institution, we also need to encourage the institutions concerned to align their goals and objectives as well as processes with overall state policy imperatives in higher education.

Strengthening of the content of undergraduate and graduate curricula as well as the pedagogies utilised in transacting these curricula is a top priority in the quest for excellence. In addition to the revision of syllabus content, the careful evaluation of the existing academic mechanisms and the ways in which they would have to be modified and strengthened and implemented to fulfill the envisaged curricular objectives is necessary. The existing modes and mechanisms of governance in our HEIs also need to be critically examined and modified and upgraded to achieve the goals of both equity and excellence.

Significant advances in the field of information and communication technologies and the emer-gence of interactive digital communication possibilities at relatively low cost, present a huge opportunity for vastly enhanced knowledge production and transmission. These also

widen the scope for use of novel and effective pedagogical methods. Properly designed and applied, these advances can also help us in reaching those historically deprived of reasonable and equal access.

Production, acquisition and transmission of knowledge are best pursued as cooperative endeavours carried out by institutions which support and synergize one another. Collaboration of HEIs with one another within the state will be a good starting point. Organized efforts of HEIs at academic collaboration with other HEIs at national and international levels must also be encouraged. Going beyond the academia, collaboration with industries at state and national levels aimed at excellence and valuable application potential in the arena of research and development as well as their commercialization must be encouraged. In this process, prioritizing public sector institutions and encouraging affordable access to the people of the state to the benefits of such collaborative R and D and innovation efforts should be an important objective.

A key challenge in higher education is that of putting in place adequate knowledge support sys-tems (KSS). One of the central components of KSS, enormously important in higher education, is the library. It hardly needs reiteration that the conceptualization of a modern library goes far beyond. Some key factors in this process of change include the increasing importance of interdisciplinary research, availability of online resources and the rapid advances in information and communications technologies going far beyond just the internet that make possible worldwide academic/research/technology-oriented interactions. All these lead to new user demands on the library system. This, in turn, places an enormous pressure on libraries, with most of them not empowered to adapt to and learn from these changes and thus unable to meet the rapidly evolving and changing vectors of user needs and expectations. An examination of the state of libraries in HEIs clearly indicates there has been little change. Rather, there has been a dire lack of attention to development, modernization and technological upgradation of libraries in HEIs in general, not only with respect to the Kerala state. Our libraries need immediate attention and systemic revamping. Though we are impressed with the huge physical infrastructure of the libraries abroad, it is not only the building and equipment that needs to be put in place though those are important. A careful analysis of the basic requirements of the profession of librarianship, its education, services, research in library and information sciences, standards, tools and technology, physical infrastructure and other facilities is needed for redesigning the library system in HEIs in Kerala.

CHAPTER II
SPECIFIC ISSUES AND RECOMMENDATIONS

Curricular Upgradation
- The strengthening of curriculum and pedagogy requires for their effective implementa-tion in appropriate academic mechanisms with respect to the transaction of syllabus content as well as assessment mechanisms of student learning processes and outcomes. An academic environment that fosters rote learning has to be discouraged. The teaching-learning-evaluation processes must have as their primary goal the development of critical thinking and analytical rigour in the students.
- An evaluation system focused on a summative end-of-term assessment through a single class room examination of specified duration, for instance, tends to promote a lopsided learning environment. The assessment systems that are to emerge, possibly through well designed experiments, must place considerable importance on the learning processes and provide space for new ways of thinking and learning on the part of students. The components of internal assessment have to be integrated with the learning management system. The assessment criteria have to be explicitly stated to make it fair, objective and free from student victimisation.
- The topics to be included in the syllabus content and the quality of its transaction in the classroom are seriously affected by the unfavourable academic environment currently prevailing in HEIs. These limitations are imposed by the excessive daily administrative chores, engagement with the student support mechanisms, abnormally high work load resulting in part from unfavourable teacher student ratios. In addition, the lack of opportunity to undergo faculty development also affects the delivery of curricular objectives.
- Across the world, there is increasing emphasis in higher education on both strong disci-plinary grounding and inter/multi-disciplinary approaches at the post graduate/doctoral levels. The academic ecosystem has to evolve mechanisms that will strengthen discipli-nary competence and encourage multi/inter-disciplinary orientation among faculty and students.

Allocation of funds for curricular reforms
- Allocation of funds for conducting workshops/training programmes with a view to initiating curriculum revamping exercises that strengthen the quality of teaching-learning process by anchoring it on activities leading to research, faculty development programmes aimed at the effective implementation of the revised curricula, the establishment of infrastructure necessitated by the curricular and pedagogical upgradation, measures that strengthen the assessment systems by incorporating scientific methods. The curricular changes have to promote strong disciplinary grounding, critical and rigorous analytical thinking, and encourage research orientation as well as inter/multi–disciplinary perspectives.

Governance structures and related changes supporting curricular upgradation

- Fundamental changes in the governance structures of HEIs are required to fulfill the aims of curricular and pedagogic upgradation. Centralized resource management system for academic and research activities are to be established to streamline various pro-grammes, playing an enabling role.

- Formation of centres that coordinate and facilitate the inter and multidisciplinary pro-grammes and courses in each HEI has to be supported. Appropriate institutional changes are to be made to facilitate the inter-university faculty and student exchange programs and for the sharing of academic resources. The responsibilities and workload of the faculty members are to be reviewed and appropriate governance mechanisms have to be incorporated to strengthen the research environment of the campuses.

- The faculty workload with respect to direct teaching shall include tutorials as per norms stipulated by the 7th Regulations of the UGC. The administrative responsibilities of the faculty members related to the conduct of various student support mechanisms and ac-tivities have to be dispensed with by setting up an office for student services. The ap-pointment of teaching assistants to courses where the student strength is greater than the prescribed norms will take away the tutorial load from the faculty members and will help the faculty members to realise their comparative advantage in teaching and research.

- The establishment of schools and centres reflective of both streams of knowledge (schools) and emerging specializations (centres) will help to overcome the problems of compartmentalism entrenched by the organisational structure in terms of discipline-based departments. It will help in offering multi and inter disciplinary programmes and will also address the problems of work load in colleges related with the single faculty departments. Appropriate changes are to be incorporated in the governance mechanisms of HEIs for this purpose.

- Establish faculty in residence positions for hosting eminent scholars/thinkers/artists in HEIs. Creation of adjunct faculty positions for scholars and experts from industry and scientific institutions (as also other persons of exceptional eminence considered capable of making significant academic contribution) in Universities may be supported. Sabbati-cal leave provision may be allowed for faculty members to spend in another universi-ty/institution in the country with necessary funding.

New Academic Programmes

- New academic programmes such as joint degree programmes with other universities, dual degree and double degree programmes, new integrated research oriented masters programmes and super integrated Ph.D. programmes, programmes in emerging areas that surmounts the limitations of disciplinary silos focusing on multidisciplinary convergence and interdisciplinarity have to be explored. Global campus programmes and joint online programmes/courses in collaboration with universities in and outside the country are also to be explored.

- Integrated master's programmes (MA, MSc) with an exit option at the end of three years can be tried out. The curriculum and course sequencing can be so designed that

students take general Science/Language/Social Science courses in the first two years. In the third year, the student has to choose courses keeping in mind the specific discipline he/she wants to take up in the final two years. An extension of this idea would be an integrated Ph.D programme with four years provided after the completion of the Master's degree in five years.

- Introduction of new interdisciplinary programmes at post graduate level such as Virology, Mycology, Forensic Sciences, Bioinformatics, Nano medicine, Nano biotechnology, Nanotechnology, Systems Biology, Disaster Management, Environmental Management, Women Studies, Gender Studies, Social Inclusion and Exclusion, Anthropology/Social Anthropology, Cultural Studies, Area Studies such as African, Latin American, North American, European, West Asian, Central Asian, South Asian, East Asian and Oceanic, Design, Social Design, Social Engineering, New Media are to be made.

- All the basic/conventional science courses in the university at present may be encour-aged to continue as such since the basics of science are the root of all kinds of applied sciences. It should be the case that no hybrid courses replace the conventional courses. However, hybrid courses also need to be encouraged.

- New teaching/research departments in emerging areas in universities and colleges are to be set up. New research departments in the areas like Digital Education Technology, Green Energy Sources, Artificial Intelligence and Robotics, Data sciences, Blue Econo-my, Astronomy and Astrophysics, Neuro and Cognitive Sciences, Forecasting technolo-gies, International relations, Integrative Biology, Nanotechnology etc. should be started to strengthen teaching and research in these frontier areas.

- Initiatives to promote research in engineering and basic medical sciences in all our uni-versities are strongly recommended.

- Introduce one year away programme for UG students from one institution to spend a year in another institution/University. This will require funding, to meet the tuition fee, and MoUs between institutions for credit transfer.

- Special measures are required to strengthen the existing foreign language departments in universities and colleges. Short-term/long term certificate/diploma courses in foreign languages with credit transfer facilities should be encouraged.

- In all of the above, the dangers of having insufficient faculty strength have to be kept in mind for ensuring the academic viability of programmes.

Teaching-Learning Centres/Faculty Development Centres
• The establishment of teaching-learning centres for faculty development in all Universi-ties have to be promoted. Such centres may focus upon curriculum development based on student centred approaches, ICT integrated teaching and learning, scientific meth-ods of student evaluation, pedagogic interventions, tutorial programmes, effective methods of remedial teaching and student mentorship, provision of induction pro-grammes to new-ly recruited faculty members, research methodology workshops, work-shops on academic writing, faculty development workshops that support teachers for the effective transaction of revised and updated syllabi and continuous quality improvement in teaching. Teachers

need to be given orientation and training programmes to develop leadership skills and capability so that they become good institution builders as well.

Strengthening Accreditation
- With a view to improving the outcomes in higher education, adequate funds and support have to be extended to all HEIs to move towards the accreditation environment of University Grants Commission (UGC) National Assessment and Accreditation Council (NAAC) and the accreditation activities of State Assessment and Accreditation Council (SAAC). The networking of Internal Quality Assurance Cells (IQAC) in Universities and Colleges is also desirable to strengthen the accreditation initiatives.

Digital Repository
- The establishment of digital repository of academic details of students, research scholars, research fellows and   faculty members will help to organize various collaborative initiatives.

Discipline specific skill development programme
- In an economy of the kind we have, unemployment is inherent in the logic of the system. The argument that skills would ensure (or even significantly enhance) employability is a red herring that we reject. However, acquisition of specific skills relevant to any particular discipline may be quite useful and necessary for pursuing the academic goals. Appropriate infrastructure for such discipline specific skill acquisition may be provided in HEIs where necessary.

Student Support Mechanisms
- The setting up of a centre that caters to the various student support services is needed in all colleges for the effective and efficient conduct of such activities. This will reduce the time spent by faculty members on administrative matters. This, in turn, should enable faculty to focus on teaching and research activities.

Faculty Support Mechanisms
- Adequate programmes and mechanisms are to be implemented for writing peer reviewed high quality text books in the form of text book grants with a provision to appoint teaching assistants. Generating research funding and publishing in peer reviewed journals can be suitably incentivised.

Institution industry linkages
- HEIs   functioning in the domains of vocational and professional education may be en-couraged to develop collaborative relationships with Industry (including agricultural en-terprises). This will be of pedagogic value and can also strengthen research.

Residential Institutions
- The provision of adequate residential facilities in HEIs will help establish residential campuses and enable stronger academic interaction among students and faculty. It will also enhance opportunities for peer learning.

Research and Innovation

- The research activities of HEIs have to be coordinated and streamlined to maximise the synergy among various research departments and its activities. In this regard, the establishment of research directorates in Universities and HEIs will be helpful. The setting up of Central Instrumentation Facility (CIF) under the research directorate of each institution will facilitate the smooth and efficient conduct of research activities.
- Set up a state level research foundation as like the National Research Foundation to give grants for research activities and projects by faculty members, research scientists and students.
- The establishment of research clusters among institutions in each area will promote col-laborative research and enable the sharing of research infrastructure. Collaborative re-search activities across centres and HEIs may be encouraged with appropriate financial and infrastructure support. This will strengthen a culture of research in all HEIs.
- The creation of capacity building fund for faculty members and researchers to develop research skills and expertise will improve the quality of research work.
- Seed Money or Start-Up funds have to be given to the newly appointed faculty members. Mobility funds for PhD and post graduate students similar to Erasmus Programme in Europe have to be sanctioned.
- One-time endowment grants may be provided to selected departments of the Universi-ties, colleges and research centres. Appropriate incentive mechanisms to encourage faculty members and researchers to publish academic papers in renowned journals may be evolved at the university and state government levels.
- The services of UGC approved software for checking plagiarism should be made availa-ble in all HEIs to promote quality in research publishing.
- More allocation should be made for Post-Doctoral Research Programmes and PhD in-ternship programmes. Visiting research fellowship programmes may be supported. Re-search funds for student projects having short duration may be provided to encourage development of research orientation and pursuit of a research career among students.
- To meet the increasing financial requirements by way of scholarships, a pool of "Research Fund" may be provided to the Kerala State Higher Education Council. The pooled research fund shall be given to all research scholars in the teaching and research departments of the Universities and also given to the research scholars under various research centres of the universities on the basis of clearly specified norms and through a transparent process.
- A state level eligibility test (JRF) may be conducted for admission into doctoral pro-grammes. The experience of states such as Tamil Nadu which have been holding such tests can be studied to explore this issue further.

Consultancy, Collaboration and Start Ups

- The prospects of generating revenue out of the academic knowledge and expertise that

HEIs possess have to be explored by establishing centres that promote the culture of Invent-Patent-Publish-Incubate. Suitable revenue sharing mechanisms are also needed to enable the success of such efforts.

- Organisation of centres that develop entrepreneurial venture capital enterprises could be explored to help the transformation of innovative ideas into socially and commercially viable investments.
- The establishment of cooperative institutional frameworks could also be explored for undertaking consultancy services and other collaborative initiatives.
- All the initiatives listed above should be pursued without detriment to the core teaching and other academic responsibilities of the faulty towards students.

Strengthening UG & PG Programmes

The   UG and PG programmes of the colleges could be strengthened by enhancing the quality of the academic process by reorganizing the incentive structure faced by students and faculty members. The following broad measures are suggested but the details and the required regulations are to be formulated by the academic bodies of respective Universities.

- The student assessment process may be strictly on the basis of well-defined criteria ex-plicitly stated in the curriculum document. The current practice only mentions the scale of assessment with letter grades. There must be a clear statement regarding the percent-age wise distribution of questions that assess the different levels of learning on the basis of Bloom's Taxonomy (such as Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation) in each examination. In addition, the percentage of questions that assess the higher order learning level has also to be stated in the curriculum and it is suggested that the total marks assigned to such questions may be at least thirty percent of the total marks.
- The transaction of the syllabus content should seek to ensure that students read the recommended material as per the syllabus.
- The assignments given to the student for continuous assessment may be submitted through the learning management system with plagiarism check. The submission dead-lines are to be clearly stated in the curriculum document. It is suggested that there may be at least three assignments for each course in a semester. The assessment criteria for the assignments are also to be explicitly stated.
- The curriculum must aim at the development of strong grounding in the discipline con-cerned.
- The regulations regarding the promotion of students from each semester to the next should be included in the curriculum statement. These regulations should be uniform across universities in the state and may be evolved through a participatory exercise in-volving stakeholder representatives.

Institutional and Administrative Reforms

HEIs in the state fall broadly into two significant categories, Universities (or institutions deemed equivalent) and Colleges affiliated to universities. Historically, governance issues of higher education have mostly related to these two categories. It is necessary to address

governance issues relating to autonomous colleges and self-financing institutions. Issues concerning the role and responsibility of statutory apex bodies like the UGC and the All India Council for Technical Education (AICTE) interacting and dealing with the university system also need discussion. The present governance system needs to be substantially modified and upgraded to meet the new challenges in higher education.

Democratisation

- Kerala legislature shall consider enacting a "Protection of Academic Freedom Act" to ensure that governance structures and processes in HEIs protect and strengthen the right to critical thinking and free expression, and to academic freedom in the broadest sense.
- A democratic internal culture and a democratic relationship between faculty and students and amongst faculty should be created. The administrative as well as policy and decision making bodies of HEIs should be composed substantially of elected members, with adequate representation to teachers, students and non-teaching staff.
- Legal frameworks such as Acts, Statutes, Ordinances, Rules, Regulations, and Orders may be restructured to a commonly accepted framework allowing the provisions of di-versity the institutions stand for. Separate legislation shall be made for affiliating, unitary and stand-alone institutions within this general framework.
- Every academic department/centre/school of a HEI shall have a department council that shall meet at least once a month where all the faculty (including temporary and tenured) members shall be entitled to participate in the Council deliberations. The HEI shall ensure that minutes of such meetings are recorded and circulated to the members concerned.
- Implement rotation scheme for HODs /Directors in affiliated colleges also.
- A Charter of Student Rights may be evolved through a participatory process in which elected representatives of students of HEIs are actively involved and incorporated.

Decentralisation

- Act, Statutes, Ordinances, Regulations, Byelaws, Rules and Orders are the legal corpus of a University. They reflect the specific conjunctures in which they were enacted and amended from time to time. It is important, in the context of the historic project of Navakeralam, that these legal provisions are updated to ensure decentralized operation of administrative as well as academic activities. A new comprehensive Act covering all HEIs may be an appropriate vehicle for providing legal authority thereto.
- There are special provisions in the Acts of all the Universities in the State which empower the Vice Chancellors to assume the powers of the Senate, Syndicate and the Academic Council. Though they were assigned to avoid administrative bottlenecks in the day to day affairs of the University it is to be noted that such provisions can lead to serious erosion of democratic decentralization. It is therefore suggested that the special provisions may be exercised with clearly defined terms.
- There should be a Council of Affiliated Colleges (CAC) in every affiliating university to advise the university in all matters concerned. Various categories of affiliated

colleges such as Government, Aided and Unaided colleges should be represented in the Council. The members of the CAC may be nominated by the Vice-Chancellor in consultation with the Syndicate / Executive Council. The Vice-Chancellor shall be the Chairman of the Council and the Pro-Vice- Chancellor, the Vice-Chairman. The existing College De-velopment Councils (CDC) should be integrated with the CAC.

- Governing Councils for aided Colleges should be made statutory as well as mandatory. The Governing Council should have representatives of the Management, Government, University, Teachers, LSGs, Students, Parents and Non-teaching staff. The representa-tion of primary stakeholders (Teachers and Students) in the Governing Council should be increased and the governing councils should be given more powers and responsibili-ties.
- Single window policy should be introduced wherever possible. Many decisions should be taken at lower levels and files should be disposed of rapidly. Routine files should not be sent to the syndicate. Only files related to major policy decisions should be seen by the syndicate.
- Self-certification of teachers and students, wherever possible, should be encouraged.

Role of State Government

- The government has to address the problem of multiplicity of regulatory bodies, authorities and structures that cause confusion and even unnecessary litigations and contradictory directives. For instance, all the academic matters of affiliated colleges (Govt, aided, autonomous and self-financing) shall be under the purview of universities concerned. The administrative and financial matters of the affiliated colleges are to be under the jurisdiction of director of collegiate education/technical education with the dept of higher education acting as the apex supervisory body. The State Higher Education Council shall focus upon evolving the common guidelines for HEIs with respect to academic matters that require coordination, equivalency of programmes from outside the state, accreditation and ranking frameworks, matters of inter institutional research, collaboration, research fellowships (MPhil/PhD/PDF), and research grants. The Kerala State Higher Educational Rules may be formulated which would clearly spell out the prerogatives of the government, the powers to be enjoyed by the Universities and the service conditions of teachers and non-teaching staff. A Manual of Academic Administration may be formulated instead of the Manual of Office Procedures or the Secretariat Office Manual now in place. The Manual may incorporate adequate flexibility in its provisions, given the specific requirements of higher education.

Autonomy

- Academic and administrative autonomy are essential to academic excellence in HEIs. Instances of the Chancellor's office taking an active role in the day to day affairs of the University is against the principle of autonomy of the University. Institutional structures should be created distancing the Chancellor / Pro-Chancellor from day-to-day administration of the Universities.
- The powers of the academic bodies need to be adequate, well defined and designed to

promote academic excellence.

- The constitution of Faculty Councils (FCs) acquires importance in the context of pro-moting multi/inter-disciplinary academic activities. The FC may comprise the Dean of Faculty, Heads of Department Councils, Chairpersons of the Boards of Studies included in the particular Faculty and a few eminent academicians, internal and external, nominated by the Vice Chancellor with the concurrence of the Academic Council. Subject to the directions of the Academic Council, the FCs shall be in charge of the administration of teaching and the programmes of study and research in subjects pertaining to that particular Faculty. Deans of Faculties should be appointed from among the Senior Professors of the university /affiliated /constituent colleges by the Vice-Chancellor from among a panel of names approved by the Academic Council.
- Academic community should be encouraged to play an active role in institutional gov-ernance, including in efforts at resource mobilization and long term strategic planning and in helping to ensure continuous improvement in academic activities of HEIs.
- The various academic bodies that serve both academic and administrative functions in a university need to operate with relative autonomy, each discharging its responsibilities, both on its own and in collaboration with the others.
- The Chapter dealing with Private Colleges in the Acts of the affiliating universities must be examined and amended as required, so as to define with clarity the relationship between affiliating university and the institution affiliated.

Academic flexibility

- Currently, our academic regulations lack the flexibility that will enable students to take programmes and courses in other institutions than the one where they are enrolled for a degree. They do not generally have the opportunity of doing courses in other institutions and having the credits thus obtained transferred to their academic record. We should develop more flexible regulations providing for credit transfer. We may also provide for multiple entry and exit, and enable personalised self-learning, anytime, anywhere, and at any level. The current credit structure is insufficient for graduate study abroad. To address this issue, we may enable students interested in study abroad to acquire additional credits by studying those courses which are useful within the programme structure. A menu of such courses can be suggested by the respective Board of Studies (BoS) or Academic Council. The acquired marks from such courses shall be added to the mark list. These additional credits, acquired for purposes of study abroad or else, shall not be considered as an additional weight for any appointment or admission in Kerala. Credit transfer between institutions and programmes for academic mobility within the state may be ensured. The respective BoS/Academic Council may decide the modalities, norms and procedures in this regard.
- The problem of equivalency between various programmes has to be resolved purely on the basis of academic considerations and the details of the equivalency may be explicitly stated at the time of approval of curriculum itself rather than on popular demand or compulsions after the start of the programme. No state level equivalency is necessary

for programmes offered by HEIs inside the state. However, the programmes offered by HEIs outside the state have to be evaluated and granted equivalency by the Kerala State Higher Education Council (KSHEC).

- All the programmes offered by any member university/institution of Association of In-dian Universities may be recognised and necessary provisions may be given in the respective statutes of universities. This provision must also be incorporated in the guidelines of public service commission.

Autonomous and Self-financing Institutions

- The act/statutes/amendments related to service conditions of teaching (Guest/Contract/Tenure) and non-teaching staff especially regarding the timely disbursal of salaries in all HEIs including self-financing have to be enacted. Pay and other service benefits & conditions of the Guest/Contract/Tenure faculty members should follow a general rule of equal wage for equal job.
- Affiliation and academic matters of the autonomous and self-financing institutions should be brought under the provisions of the University Statutes.

Use of Technology

- Every HEI shall be given high speed internet connectivity through Optical Fibre Cable (OFC) with campus WiFi facility enabled to all students and staff including the hostels and canteens by the means of Kerala – Fibre Optic Network (KFON). To begin with, priority may be given to Universities and Govt colleges.
- Technology enabled academic administration with flexibility to address changing needs of education is very critical. The virtual platforms that have become so popular during Covid 19 must be used for conducting regular networking meetings with experts and various stakeholders. The different committees, working groups, executive teams etc. must utilise the communication platforms.
- Every institution has to develop strategies to harness the opportunities that the digital revolution offers. Strengthening the Information and Communication Technology (ICT) enabled management of the various academic and administrative activities of an HEI with the implementation of systems such as "Campus Suite" developed by the National Informatics Centre (NIC) will certainly undergird the institutional capabilities and markedly reduce the administrative load currently borne by the faculty members.
- The processes related to student services need to be simplified and de-bureaucratised. Digitisation of all student services (student life cycle) shall be implemented through an appropriate education suite such as, for instance, 'Campus Suite' developed by NIC. The KSHEC may take the lead in this regard.
- All the academic submissions part of the curricular requirements made by the stu-dent and the evaluation are to be invariably made through the learning management system (LMS) with plagiarism check. This will generate appropriate incentives to the student to explore the curriculum in a continuous manner.

New Environment of Learning

- Allocation has to be made urgently to develop the infrastructural facilities required to match the increase in student intake. Construction of new building and lab infrastructure and the modernisation and computerisation of the existing facilities are to be undertaken. Adequate financial assistance has to be released to the HEIs on the basis of detailed project reports.
- Financial assistance has to be extended for conducting Open and Distance Learning (ODL) programmes based on UGC regulation on ODL 2018.
- The scope of online platforms shall be explored and utilised for both teaching and learning in the HEIs.
- Necessary infrastructure facilities may be provided for each Department to prepare learning materials for online courses. Faculty need to be provided with required training to build digital competence, as instructors to create online courses.
- Faculty members shall be encouraged to upload courses as Massive Open Online Course (MOOC) in the website of the HEIs or social media.
- Identify areas of demand and offer short term and long-term online courses jointly with experts from alumni / industry / research institutions. Necessary provisions may be in-cluded in the regulations to enable students to learn a course in the curriculum by attending online courses which are listed by the respective Board of Studies or Academic Council. Necessary provisions may be included to conduct proctored online examinations by the University to award credits for such online courses attended by its students.
- Students should be allowed to take courses offered under MOOC, National Programme on Technology Enhance Learning (NPTEL) and Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platforms and the credits should be accepted.
- Quantitative as well as qualitative improvements in digital and technological infrastruc-ture shall be provided. Virtual labs and state of the art studios in all HEIs have to be established. Adequate financial support shall be earmarked for the purpose.
- Pedagogy for online teaching and learning shall be developed and implemented.
- Form a policy to adjust workload for faculty members who develop online courses.

Global Networking for Local Needs

The processes of production, acquisition and dissemination of knowledge can be made more effective if carried out as a cooperative endeavour by institutions which support and encourage one another. Collaboration with academic institutions and industries at national and international levels may also be encouraged for these purposes. Some modalities are indicated below:

- Introduce joint degree programmes with the involvement of partner university within India & abroad (ERASMUS MUNDUS model)
- Offer courses jointly with experts in the National/International levels through online and offline modes.
- Global campus programme for joint online programmes/courses of universities in the country and abroad.

- Introduce integrated five-year masters programmes in major disciplines by engaging em-panelled faculty members (both serving and retired) with known expertise and scholar-ship in respective courses offered. These programmes may be offered and co-ordinated by the respective departments of the universities. Teaching assistants may be appointed to assist and conduct the programmes.
- Cluster colleges shall be encouraged as means of promoting excellence by sharing of re-sources, optimum utilization of existing facilities, promotion of new co-operative ven-tures, promotion of teaching learning, research and extension etc. Clusters should be formed on the basis of physical proximity, possibility for sharing resources, travel and other conveniences of students, possibilities for sharing faculty resources etc.
- Research clusters may be established for promoting research.
- Universities and colleges should formally build up academic partnership with indus-tries to help students to gain experience with the disciplinary skills.
- Faculty and students shall get exposure to research practices through interaction with industry, research establishments and institutions of repute. Possibilities of twinning of courses and academic programmes, exchange of students and teachers, and joint research are to be explored.
- University Grants Commission (UGC) has required the universities to appoint a re-search information and guidance officer in charge of the promotion of international collaboration of universities. It is reasonable to recommend the appointment of at least one such officer at the state level, attached to the Higher Education Council to facili-tate interactions and collaborations across the world.
- The central and state funded research institutes and the academia of the state are cur-rently functioning as two verticals with minimum interaction. Apart from this, the requirements of the Local Self Governments and Government missions in terms of solution to engineering problems are not being catered to, effectively. This scenario needs urgent intervention whereby a centre can be established which acts as a link, facilitating a mutual give and take between research institutes, Local Self Government Departments (LSGDs)and Government missions on one side and academic insti-tutions particularly the Government Engineering Colleges of the state, on the other. This is also expected to attract researchers to do more meaningful research, thereby spearheading their objectives to reach out to the society.
- A research portal can be set up, which will act as a platform where the faculty members can showcase their research activities and research interests. Colloquiums with repre-sentatives from the various research institutes across Kerala, LSGDs, Government mis-sions and interested faculty supervisors can also be held paving way for probing into unharnessed realms. Thereafter, research institutes, LSGDs and Missions interested to collaborate with the Government institutions will also be given access to the portal where they can showcase their focus areas of research/requirements.
- Elected Local Bodies, organizations of working people (cooperatives, trade unions, farmers' organizations and so on) and regional industries may be encouraged to asso-ciate with higher education institutions for knowledge dissemination and technology transfer.

- Universities and colleges should build up ties with nationally important institutions like Indian Institute of Science (IISc), Indian Institute of Science Education and Research (IISERs), Indian Institute of Technology (IITs), Indian Institute of Information Tech-nology (IIITs), Institute of Science and Technology (IST) etc. They should develop in-teractions with research institutions like Tropical Botanic Garden and Research Institute (TBGRI), Centre for Water Resources Development and Management (CWRDM), Kerala Forest Research Institute (KFRI), National Transportation Planning and Research Centre (NATPAC), National Coir Research and Management (NCRMI), Rajiv Gandhi Centre for Biotechnology (RGCB), Central Tuber Crops Research Institute (CTCRI), Central Plantation Crops Research Institute (CPCRI), Centre for Earth Science Studies (CESS), Centre for Development Studies (CDS) etc. Appropriate measures and guidelines shall be issued to facilitate the same.
- Institute a mechanism through which faculty of departments and affiliated institutions and colleges can collaborate in the teaching learning process. Conduct workshops to enable faculty and students to interact with external experts and thus to build networks with such people.
- Funded projects can give way to better research outputs and better publications. The HEIs of the state are lagging behind in this regard. Faculty should be encouraged and enabled through capacity building to apply for funded projects and adequate funds are to be earmarked as research grants.
- Principal investigators of funded projects, in case of transfers subsequent to promotions or other inevitable circumstances, may be allowed to visit and utilise facilities at the re-search centres on duty, on request.
- Collaborative research, involving more than one institution and several researchers, can be funded either directly by the state or through it facilitating access to funding from other sources. Research/projects with outcome directly beneficial to the society can be given special incentives.

Library and E- Resource Network

We can consider the demand for digital and online information services that are fast emerging as an integral part of libraries. There is a great demand for digital services. Many libraries went for digitization and digital repositories are being hosted. Evaluations such as National Assesment and Accreditation Council (NAAC) and National Institutional Ranking Frame Work (NIRF) have even included digital repositories and institutional repositories as one of the evaluation criteria. The other emerging area is data management. Libraries will soon be expected to manage data; whether academic data or research data. Worldwide the scientific community have recognized the value of preserving data and making them reusable and this thought process has lead the area titled 'Research Data Management [RDM]'. It is observed that increasingly the responsibility of collecting data from groups, organizing data, duration of data and rendering services on the data sets and also the responsibility of preservation of data for its re-use is now passed on to libraries. The emerging role of library as 'Community Information Centres' also to be taken care of.

The role of libraries as lead centres, which is to provide a space for inquisitive discus-sions and critical interactions, has to be emphasised. The existing library resources that comprise over thousand publicly accessible libraries have to be strengthened for scien-tific knowledge production, which at present is missing in the state. The younger generation is unfortunate-ly getting distanced from the library movement and the trend needs to be reversed. For that, the library facilities have to be revamped, upgraded with more knowledge books and digital technology enhancing e-book readership as well as catering to their needs. We need to have under the State Library Council larger district level study centres promoted by Universities or Institutes of Eminence.   This will help improve the knowledge base of the society, en-courage meaningful public policy debates and strengthen democracy. This can lead to the development of a common platform for scientific research through social participation, the next stage revolution in knowledge production.

- It may be extending examination support and career information services to the stu-dent community.
- Setting up a State Library Grants Commission as an apex body for the holistic devel-op-ment of the library sector and establishing a State Library and Information Science Institute are proposed. The Institute shall be entrusted with the responsibility of devel-oping immediate actionable recommendations for improving the status of the libraries in HEIs.
- Government should purchase all the repositories other than UGC Information and Li-brary Network (INFLIBNET (N-LIST) such as Hein Online (HOL), Science Direct, Springer, Elsevier, Ebsco, J-Gate, Oxford, Cambridge, Wiley Blackwell, Sage, Taylor & Francis etc., and be made available to all research institutions through Kerala Library Network, which might be connected through the KFON.
- The Kerala Academic Library Network (KALNET) set up by the Kerala State Higher Education Council that enables to locate library resources, digitalized research materi-als, and e-books in the libraries of universities in the state, from anywhere in the world, has to be expanded to the libraries of all research institutions and colleges in the state. It should introduce the book loan facility. Recommend digitalization of the journal back volumes and old research reports of all universities and colleges for accessing through KALNET.

State Library and Information Science Institute will be responsible for:
a) Professional Structure: revamping the professional structure from the traditional ca-dres of assistant librarian, deputy librarian and chief librarian etc., to a structure that is commensurate with requirements of knowledge based services and as recommended in the UGC Regulations 2018, according to which the designations are: Assistant Librarian, Associate Librarian, and University Librarian.
b) Provide for in-service training of library professionals to keep them up to date with scientific developments and the academic and scientific community information re-quirements.

c) Prepare a document that brings out the requirements as per stakeholder's needs (academic community, service providers, content providers, administrators, technology providers).

d) Make recommendations regarding physical infrastructure - including networking and consortia, e-infrastructure, knowledge resources and financial resources to the library sector in HEIs.

e) Facilitate research in Library and Information Science (LIS)

f) Monitoring and evaluation: evolve parameters for evaluation to gauge effective and suggest implementing any required adjustments.

Changing Role of Library spaces and Librarians

a) New spaces like open study areas, computer zones, and meeting spaces to accom-mo-date the emerging digital tech collaborative culture.

b) Librarians have to be academics offering on e-Textbooks and open educational re-sources, help researchers navigate complex terrains of specialised knowledge, ensure public awareness of the library's resources and encourage its users to leverage the library website, and make sure that the library is up-to-date and user- friendly

c) Librarians can organise academic events and activities to link researchers with one another and provide them space for meetings for interactive learning. It can enhance collective learning culture in the campus. They should communicate with students, teachers and researchers to learn about their library needs and provide appropriate service.

Social and Regional Inclusiveness

In order to achieve inclusiveness with respect to social, economic, political and regional characteristics, the issues of equity, accessibility and diversity in the field of higher education need to be addressed.

Students Enrolment and Inclusiveness

- Unlike the New Educational Policy (NEP) 2020, the reservation norms should be maintained to ensure, equity, access and affordability in higher education.
- To achieve the targeted Gross Enrolment Ratio (GER) growth, new HEIs should be started preferably in public sector
- New academic programmes need to be made available in publicly funded institutions
- Increase intake in universities and colleges with special emphasis on public funded higher education institutions
- Single Window System (SWS) may be for admission of foreign students in state universities/colleges
- Steps to be taken to increase enrolment and reduce dropout of SC/ST students.
- The regional imbalance that results in an urban bias with respect to the access to various under graduate and post graduate programmes needs to addressed by increasing the institutional density in rural/backward/remote/coastal areas of the state and incorporating deprivation points for admission.
- Increase the number of scholarships for the Nava Kerala Post-Doctoral Fellowship

- Special scheme for first generation learners and marginalised sections with financial support.
- Increase the existing hostel facilities in universities/colleges and establish sufficient hostel facility in all HEIs.
- Implement Earn While You Learn (EWYL) scheme starting with professional colleges
- Distribute scholarships in time bound manner
- Establish research scholarship for Ph.D scholars in addition to Nava Kerala Post-Doctoral fellowships.
- Institute need based scholarships
- Enhance the existing scholarship amount in tune with the UGC/Council of Scientific and Industrial Research (CSIR) rates.
- Establish state level mechanism for resolving problems related to student loan
- Measures to address regional imbalances in higher education.
- For clearing the educational loans, it is necessary to impose moratorium for a sufficient period for the unemployed students.
- Exploring the possibility of the idea of "interest free loans" or loans at lower rate with the help of Cooperative Banks or other banks.
- The students from other states other than the linguistic minority of the state need to be enrolled as part of increasing diversity by sanctioning additional seats of five percent.
- Students from foreign countries should be encouraged to enroll in HEIs.
- Area specific studies and inter regional studies should be introduced, in order to strengthen perspective of diversity.
- Provide laptops to all the students enrolled in universities and colleges free of cost for backward sections and cost recoverable in installments for others.

Appointment of Teachers and Ensuring Inclusiveness
- The number of aided colleges being far greater than that of government colleges, the quality of higher education, especially at undergraduate level, depends on these institu-tions. The process of appointment in aided colleges needs to be monitored. It must be ensured that at least fifty percent of the appointments should be done by government based on the norms of Kerala Public Service Commission. This was one of the recom-mendations of the Working Group on Higher and Technical Education of the 13th FYP.
- There shall be strict monitoring to ensure that only persons meeting the UGC/State government stipulated qualification norms are appointed as teachers in unaided institu-tions.
- Special schemes such as "Educational Service" for attracting talent to teaching positions will be helpful in developing good educational leaders.

Institutional Development Plan for Universities and Colleges: Mentorship and Innovations
- Provision had to be made in every HEI to have an active patent cell, incubation faci-li-ties, built in ecosystem for start-ups and science parks. Affiliated colleges may be

in-volved in this activity as cluster units. The establishment of institutional arrangements to initiate academic collaborations, consultancy services, start-up activities and incubation facilities in all HEIs with appropriate revenue sharing mechanisms.

- Setting up an institutional mechanism for the effective conduct of mentorship activities in all HEIs has to be initiated and supported.
- Financial assistance for starting UGC Consortium of Academic and Research Ethics (CARE) and internationally indexed research jour-nals by the departments/HEIs has to be encouraged with adequate financial support.
- Funds are to be allocated to establish an Entrepreneurial Centre in every HEI for providing jobs under Earn While You Learn (EWYL) scheme.

Strengthening the IQAC
- Strengthen the IQAC (Internal Quality Assurance Cells) of HEIs by providing all the necessary infrastructure and administrative support for its effective functioning. A vibrant IQAC is necessary in an emerging environment of accreditation and ranking frameworks.
- The technique of SWOC (Strength, Weakness, Opportunity and Challenges) analysis, which forms a vital component in the UGC NAAC accreditation process has to be im-plemented in all HEIs by emphasising upon the academic version of the technique. Faculty may be made familiar with the technique through workshops.

Student Activities and Graduate Attributes
- The academic mechanisms to streamline the student engagements to fulfill the graduate attributes or the programme outcomes have to be established. The working time of the HEIs could be rescheduled by extending the noon interval starting from 12:30 to 2:30 with an overall working time ranging from 9:30 to 4:30. The two hours' lunch break will provide enough time for exploring the curricular requirements for fulfilling the graduate attributes without overlapping with the five-hour classroom teaching.
- The graduate attributes are currently not evaluated by majority of the HEIs. Appropriate assessment methods in this regard have to be developed and deployed.

Financing of Higher Education - Sources of Funds
- The role and importance of public investment in higher education cannot be overlooked given the non-rival nature of knowledge (public good nature) and the quantum of positive externalities it generates. The source of funding (public investment or private investment) has an important bearing upon the question of equity with respect to access and outcomes in higher education. Public investment is very crucial in deciding the development of growth capability and eventually the growth potential of the economy given the distributional consequences of benefits generated.
- In addition to the public funding, the possibility of mobilising private philanthropic funds, CSR funds, alumni contribution, private donations and endowments could also be explored to augment the public investment in higher education. The scope of fund

mobilisation on the basis of the idea of "interest free loans" has to be explored. All such funds have to be channelized either by setting up a state level co-operative institution or Chief Minister's Higher Education Fund (as a special purpose vehicle). Such an institutional arrangement will ensure the social control over the financing of higher education.

- The Major Infrastructure Development Projects Fund (MIDPF) could be expanded to include institutions like Institute of Human Resource Development (IHRD) for infra-structure development.
- The possibility of revenue generation through consultancy services and research collaboration with appropriate revenue sharing mechanism need to be explored.
- For financing research in higher education, collaborations between HEIs and universities and research institutes outside of Kerala may be explored. Rules and regulations of universities may be streamlined to facilitate this.

CHAPTER III
OTHER RECOMMENDATIONS

- Performance based plan fund allocation has to be instituted to incorporate incentive compatible mechanisms in HEIs.
- Pockets of excellence should be identified and funded adequately to develop and nurture them to the academic standards of highest possible level.
- Guidelines may be formulated for facilitating investigators from multiple institutes to take part in a research activity in any of the state funded research centres.
- We should ensure that every village has a social space for science and scientific temper which is accessible to all persons who are inquisitive on scientific research.

PROCEEDINGS OF THE MEMBER SECRETARY
STATE PLANNING BOARD

(Present: Sri. Teeka Ram Meena IAS)

Sub: - Formulation of Fourteenth Five Year Plan (2022-27) – Constitution of Working Group on **Higher & Technical Education**– reg.

Read: 1. Note No. 297/2021/PCD/SPB dated: 27/08/2021
    2. Guidelines on Working Groups

ORDER No. 448/2021/SS(H&TEdn.)SPB Dated:10.09.2021

As part of the formulation of Fourteenth Five Year Plan, it has been decided to constitute various Working Groups under the priority sectors. Accordingly, the Working Group on **Higher and Technical Education** is here by constituted with the following members. The Working Group shall also take into consideration the guidelines read 2nd above in fulfilling the tasks outlined in the ToR for the Group.

Co - Chairpersons

1. Prof. Venkatesh Athreya, Eminent economist, Mob: 9444444294, 8637678027

   email:venkatesh.athreya@gmail.com

2. Dr. Venu V, IAS, Additional Chief Secretary to Government, Higher Education,

   email: venuvasudevan1@gmail.com , venuvacs@gmail.com

Members (in alphabetical order)

1. Dr. Byjubai T.P., Director, Directorate of Technical Education, Mob: 9495230046, email: dtekerala@gmail.com

2. Prof. Virander S Chouhan, Former Chairman, University Grants Commission, and Arturo Falaschi Emeritus Scientist, ICGEB, New Delhi, Mob:9811292058, email: viranderschauhan@gmail.com

3. Prof. G. Mohan Gopal, Former Vice Chancellor, National Law School of India University, Bangalore, Mob:9540939693 , email: mohangopal@gmail.com

4. Prof.Rajan Gurukkal P.M., Vice Chairman, Kerala State Higher Education Council, Mob:9483861096, email: rgurukkal@gmail.com

5. Dr P Rajesh Kumar, Associate Professor, Department of Vedanta, Government Sanskrit College, Mob:9497892479, email: rajkup@gmail.com

6. Prof. P. B. Sunil Kumar, Director, Indian Institute of Technology Palakkad, Mob:9497718120, email: sunil@iitpkd.ac.in, director@iitpkd.ac.in

7. Dr. Devika P. Madalli, Professor, Documentation Research and Training Centre, Indian Statistical Institute, Bengaluru, Mob:9448256799   email: devika@drtc.isibang.ac.in

8. Dr. Sunil Mani, Director, CDS, Mob:9037096146, email: mani@cds.edu, director@cds.edu

9. Dr Arathy S Nair, Assistant Professor, Department of Economics, HHMSPB NSS College for Women, Neeramankara, Mob:9497323494, email: arathysnair@ymail.com

10. Dr. Rajasree M. S, Vice Chancellor, APJ Abdul Kalam Technological University, Kerala, Mob: 9497720277, email: vc@ktu.edu.in

11. Prof. Gopinath Ravindran, Vice Chancellor, Kannur University, Mob:8606248088, email: vc@kannuruniv.ac.in

12. Dr. Siddik R, Assistant Professor, Department of Economics, Kerala University,Mob:8111989221, email: siddikrabiyath@gmail.com

13. Prof. Sabu Thomas, Vice Chancellor, MG University, Mob:9447223452, email: sabuthomas@mgu.ac.in,

14. Dr. Santhosh T Varghese, Assistant professor, Maharajas College, Ernakulam, Mob: 9447872714, email: santhoshteve@gmail.com

15. Smt. V. Vigneswari IAS, Director, Directorate of Collegiate Education, Mob: 9446413107, 9952377790, email: dir.colledn@kerala.gov.in

Convener

Dr. Bindu P. Verghese, Chief, Social Services Division, State Planning Board, Ph: 0471-2540609, 9495098606, e-mail: ssdnklaspb@gmail.com

Co- Convener

Smt. Smitha H, Research Officer, Social Services Division, State Planning Board, Ph: 9496714282, e-mail: ssdnklaspb@gmail.com.

Terms of Reference

1. To provide a summary account of the physical resources and human resources now existing in the higher education system.

2. To make recommendations for curriculum reform and innovation in higher education.

3. To suggest measures to bring about institutional reform and innovation, and in particular, administrative regulations that are flexible, transparent, and responsive.

4. To identify and recommend new technologies of instruction and suggest measures to set up inter-university groups for developing online courses.

5. To suggest ways to expand Kerala's national and international networks for teaching, research, and student exchange.

6. To recommend measures to transform libraries to enable e-resources sharing between institutions on different campuses and use of information technology and data sources on campus.

7. To propose means to deepen the socially inclusive nature of higher education and achieve regional balance.

8. To suggest ways that individual institutions can formulate specific plans and programmes as and when the need arises.

9. To suggest measures to address problems pertaining to finance in higher education

Terms of Reference (General)

1. The non-official members (and invitees) of the Working Group will be entitled to travelling allowances as per existing government norms. The Class I Officers of GoI will be entitled to travelling allowances as per rules if reimbursement is not allowed from Departments.

2. The expenditure towards TA, DA and Honorarium will be met from the following Head of Account of the State Planning Board "3451-00-101-93"- Preparation of Plans and Conduct of Surveys and Studies.

(Sd/-)
Member Secretary

To

The Members concerned

Copy to

P.S. to V.C
P.A to M.S
C.A to Member (VKR)
Sr. A.O, SPB
The Accountant General, Kerala
Finance Officer, SPB
Publication Officer, SPB
Sub Treasury, Vellayambalam
Accounts Section
File/Stock File

Forwarded by order

(Sd/-)

Joint Director, Social Services Division
State Planning Board

PROCEEDINGS OF THE MEMBER SECRETARY
STATE PLANNING BOARD

(Present: Sri. Teeka Ram Meena IAS)

Sub: - Formulation of Fourteenth Five Year Plan (2022-27) – Constitution of Working Group on **Higher & Technical Education**– additional members- co-opted -reg.

Read: Order No.448/2021/SS(H&TEdn)SPB Dated 10.09.2021

ORDER No. 448/2021/SS(H&TEdn.)SPB Dated:08.10.2021

As part of the formulation of Fourteenth Five Year Plan, it has been decided to constitute various Working Groups under the priority sectors. Accordingly, the Working Group on **Higher & Technical Education** was constituted as per reference cited.

The following members are also co-opted in the Working Group of 'Higher and Technical Education'.

Members

1. Dr.B Prakash Kumar, Registrar, M.G. University, Mob:9447959320, email: prakashkumar@mgu.ac.in, registrar@mgu.ac.in

2. Dr P. Suresh Kumar, Director, Mob: 9447051774, email:drsureshmec@gmail.com, director@ihrd.ac.in

3. Sri. B. Chakrapani, Director, Centre for Science in Society (C-SiS), Cochin University of Science and Technology, Mob: 94464468650, email: bcpani@cusat.ac.in

4. Sri. Rajeev K.K, assistant Professor, Dept. of Computer Science and Engineering, Kannur, Mob: 9496161492 email: rkkasrajeev@yahoo.in

5. Dr. Sumesh Divakaran, Prof and Head, Dept. of Computer Science and Engineering, College of Engineering, Thiruvananthapuram. Mob: 9497321481, email: sdivakaran@cet.ac.in

6. Dr. Mohandas V.P., Prof. and Head Dept. of Mechanical Engineering, Govt. Engineering College , wayanad. Mob: 9447468484 email: mohandasvp05@yahoo.com

7. Dr. S. Nazeeb, Member, Syndicate, University of Kerala, Mob:9447722346, email: drnazeeb@gmail.com

Order under reference cited is modified to this extend.

<div align="right">
(Sd/-)
Member Secretary
</div>

To
     The Members concerned
Copy to
     P.S. to V.C
     P.A to M.S
     C.A to Member (Dr. Jiju P Alex, 9447010934)
     Sr. A.O, SPB
     The Accountant General, Kerala
     Finance Officer, SPB
     Publication Officer, SPB
     Sub Treasury, Vellayambalam
     Accounts Section
     File/Stock File

Forwarded by order

(Sd/-)
Chief, Social Services Division
State Planning Board