Chapter IV

CENTRES OF EXCELLENCE
Kerala had improved a lot in the areas of general education and health. The growth of educational institutions at the grass root level has made the common people aware of the importance of education. People are conscious of the significance of giving education to their children. The growth of mass literacy and spread of schools in the government and private sectors have made the state educationally forward. Similar public awareness can also be observed in the field of health and hygiene. Apart from the government hospitals, large number of private hospitals can be seen even at the village level. The state government has been spending a sizable part of its budgetary allocation for the progress of these two sectors.

Though Achutha Menon was very particular for the proper maintenance of these sectors, he was not satisfied by the general standard maintained by these institutions. No outstanding institutions having national level reputation was functioning in the state. Though Kerala had three medical colleges none of them were of national standard like Indian Institute of Medicine in Delhi, Indian Institute of Management and Tata Institute of Fundamental Research in Mumbai. Achutha Menon wanted to establish some centres of excellence in the fields of education, medicine
and Local Self Government which should concentrate on higher research and production oriented activities and training. It was with this ultimate objective that he took personal interest in starting the centres namely Centre for Development Studies, Sree Chithira Thirunal Institute of Medical Science. Centre for Earth Science Studies, Kerala Forest Research Institute and Regional Research Laboratory.

The first Chief Minister to adopt a Science and Technology policy in Kerala was C. Achutha Menon. There were some institutions which gave importance to research in different branches of science and technology but they were limited to academic activities and did not give results affecting the society as a whole. Achutha Menon had an unusual insight and perception of the creative role of academic institutions like the universities in opening new frontiers of knowledge and its dissemination through research and teaching. But he was also aware of the shortfalls in the university system and the genesis of its failure to rise up to his expectations. Therefore a specifically oriented policy for the development of science and technology was needed. This was realized by Achutha Menon and the science and technology policy adopted by the government of Kerala during the Fifth Five Year Plan envisaged the establishment of
autonomous institutions to undertake research in areas which are important for the economic development of the state. This was definitely a bold and imaginative administrative step taken by the Chief Minister. The government under his leadership felt the application of developments in biological, technical and social sciences could considerably increase standard of life in the state. It was as a part of this policy that the government decided to start a number of Centres namely Centre for Development Studies, Sree Chithirathirunal Centre for Medical Science, Centre for Water Resource Development and Management, Centre for Earth Science, Kerala Forest Research Institute, Keltron and Regional Research Laboratory.

**Centre For Development Studies**

Achutha Menon had a clear concept regarding the vital and positive role of senior academicians and scientists of high calibre and reputation in their respective fields and utilizes them properly. The Centre for Development Studies needed an eminent social scientist who could lead a team of experts in finding out solutions for the socio economic problems confronting the state. He persuaded Dr. K. N Raj, an outstanding
economist working then at the Delhi School of Economics who incidentally had denounced the Vice Chancellorship of Delhi University, to come down to Thiruvananthapuram and take up the onerous task of building up the new institution.¹

The Centre for Development Studies which was registered as a society under the Travancore Cochin Literary, Scientific and Charitable Societies Act, started functioning from 1971. Its main objective included to initiate studies on the social and economic problems having a bearing on development, to organize and run new post graduate courses in disciplines and problems relevant to development, to work on close cooperation with the University of Kerala and other universities and institutions of national and international importance, publish research papers relevant to development. The areas of research covered by CDS included planning and development, empirical problems like public finance, analysis of the performance and problems of different sectors, population, health, education and demographic trends. Individual researchers enjoyed freedom to pursue research in their own areas of interest and choice.

In 1975 CDS received an assignment from the UNO for development planning to make a study covering such subjects as
magnitude of unemployment, proportion of educated unemployed, public work programmes and their employment potential level of underemployment and malnutrition. The study was completed in time and submitted to the UN Centres\textsuperscript{2}. The study ensured the active participation of the entire faculty of CDS. The findings of the study challenged some of the conventional wisdom on development, poverty, nutrition, health, fertility, and demographic transition. Kerala’s example came to be extolled as a model for low income developing countries to emulate.

CDS started an M.Phil course in Applied Economics to train candidates in methods of Economic analysis essential for understanding problems of development and planning. The course was affiliated to JNU. A cream of dissertations reflecting seminal research on topics of current interest and concern such as agriculture, Gulf Migration, forestry, manufacturing industries and technology came out throwing new light on issues of contemporary relevance. CDS had also organized a few short term courses for the benefit of planners, administrators, engineers, doctors and teachers keeping with one of its objectives. CDS had close collaborations with the University of Whale in USA.
CDS had built up an excellent library with the number of books exceeding one lakh and a good number of periodicals both Indian and foreign. The CDS library meets the felt needs of the students, research scholars, teachers and other researchers from India and abroad who want to study about Kerala.

**Centre for Water Resources, Development and Management**

Due to the availability of frequent rains and river systems in Kerala water was hardly a problem for the state. The recurrent droughts since 1980 and flash floods, soil erosion, landslides during two monsoons in the recent past have all proved beyond the necessity of a well-coordinated research investigation and scientific solution to the problems in the state water sector. Thus out of the great vision of Achutha Menon a new research organization was born namely the centre for Water Resources, Development and Management as an autonomous body under the Science and Technology Programme of the state government. The headquarters of the Centre was at Calicut with six sub Centres at Kannur, Kasaragode, Palakkad, Muvattupuzha, Kottayam and Trivandrum and Liaison office at Delhi. The objective of the centre was to institute
advanced studies and research in the assessment, conservation, management and utilization of water resources including precipitation, surface runoff ground water.

The Centre has a number of scientific divisions namely; Surface Water, Ground Water, Water Management (Agr) and Irrigation Management. The Centre has been involved in the following major activities. Formulating and executing major research projects on water related issues, training professionals involved in water supply, irrigation, agriculture and related subjects. It also provided consultancy in various government, semi government and private organizations in water sector. The Centre has risen from very obscure beginning in 1978 to a level of internationally known Water research institute within a decade.\textsuperscript{4}

**Sree Chithira Thirunal Institute of Medical Science**

Even though Kerala has given top priority for the Medical facilities it did not have a Centre with super specialities in different branches of Medical Science. It was the hope of Achutha Menon to start an institute of Medical Science like the one at New Delhi. This concept gave him the courage to take the bold decision to start a Centre where research
oriented activities were given top priority. The decision was historic because there was no other institution of Medical research in the world which functions under the jurisdiction of the Department of Science and Technology. The institution was made autonomous with the intention of having complete freedom of its activities.

Like all the great administrators, Sri Achutha Menon chose the executives with care and chair them alone to do the job. To make the job successful he gave the responsibility of managing the institutions to Dr. P. K. Gopalakrishnan and chose K.N. Raj to chair the executive committee. What he sought essentially was to set up services in super specialties and promote research. Both of which would provide tangible benefit to the people.

The institute today has 200 beds for cardiac neurological patients who receive up to date services in diagnosis and treatment. The laboratories for non-invasive cardiology, cardiac, catheterisation, Neuro physiology and clinical chemistry have modern equipments. The services offered include coronary care, intervention procedures and open heart and major vascular operations numbering over 1500 a year. The hospital has also earned national recognition for its services in neuro radiology and
complex neurosurgical procedures. Inspite of budgetary constraints, efforts were not spared for updating the facilities and the latest example was the setting up of a major facility for Magnetic Resonance Imaging (MRI) which would vastly enhance the diagnostic power over the existing CT scanner. In spite of the high cost for specialized care, the hospital offers 20% of all services free of charge and another 20% at half rates for low income groups, a benefit not available in any other speciality institutions in the country. Incidentally this is one of the principal reasons for the sadly lengthening queue of patients in the hospital.

When the Kerala Government endorsed the decision of Medical Centre to start a major research programme in medical technology there was scepticism in several quarters. What was the need to do research in technology which was the business of large institutes in India and abroad? The linking of medicine and technology was a mere hotch potch. Why should Kerala Government waste funds on highfalutin schemes? These and similar questions did not deter Achutha Menon whose confidence was further strengthened when the Department of Science and Technology (DTS) Government of India stepped in with a matching grant of one crore rupees for the novel technology development programme in
1976. Over a decade later the scientific laboratories at the Campus were not only flourishing but the technologies developed such as those of blood bag, Oxygenator hydrocephalus shunt and heart valve have been transferred for commercial production with factories in Trivandrum, Madras and Bangalore. It is no exaggeration to claim that the endeavor of Sree Chithira Thirunal Medical devices industry has earned a name of its own in India.

Given the history of the Medical Centre, Achutha Menon was delighted when it became an institution of National importance by an Act of Parliament in 1981. The Act transformed the Medical Centre into the Sree Chithira Thirunal Institute for Medical Science and Technology and ensured full financial support from the Department of Science and Technology, Government of India for its expanding range of activities. It also conferred on the new institute the status of a University with the statutory authorities to admit students, conduct examinations and award degrees. There was national recognition for the idea which Sri Achutha Menon had conceived barely a decade earlier. He was of course delighted with the happy turn of events.
**Centre for Earth Science Studies**

The Centre for Earth Science Studies (CESS) was created by the Government of Kerala as an autonomous research institution under the provisions of the Policy Resolution on Science and Technology, Government of Kerala (1976) to foster science particularly to the development of the State of Kerala.\(^7\)

Since its inception in 1978 it has grown into a major scientific institution capable of undertaking multidisciplinary research in the fields of geology, geochemistry, geography, marine geology, physical oceanography, environmental sciences and resource evaluation. For the effective implementation of the various research programmes the scientists of CESS have been grouped into various scientific divisions such as geosciences division, marine science division, atmospheric science division, geophysics division, environmental science division, chemistry division, geodata information group and central computer facility. Necessary laboratory facility has been installed and there is also a reasonable good central library facility.
The more important research activities of CESS during the years of its existence include:

1) Generation of geological data pertaining to the various rock types of Kerala, having significance on the crustal processes and evolution of the Kerala region, qualitative studies on mineralized zones of Kerala with particular reference to the placer deposits along the coastal stretch, of gold mineralization in Nilambur and China clays, studies on laterites and coastal sedimentary formation etc. The hitherto unknown geological features of Kerala have been documented and published. These studies are being carried out under the ambit of geo-scientific division.

Wave parameters along the Kerala coastal line was systematically monitored by the marine science division and this resulted in the evaluation of energy potential of the Kerala coast. Based on these data the Department of Ocean Development Government of India identified the situation of the country’s first wave powered electricity generating system at Vizhinjam. Similar studies were undertaken in the Lakshadweep Islands by CESS through financial support from the Government of India. Studies on the formation of
chakaras along the Kerala Coast have published the role of Ocean waves and failure in their formation. Studies have also been conducted on the problem such as erosion, pollution and sustainable development.

Resource Atlas prepared by the resource division of CESS in 1984 covers a number of themes and provides a data base for planning the development activities of the state. It covers information on important topics like natural resources administrative problems, infrastructure resource development, agricultural development, tourism, different development regions etc.

Studies on the mangroves of Kerala with particular reference to reservation of rare endemic and endangered and environmental impact analysis (EIA) of valley projects for the KSEB were taken up by environmental sciences division during the years. CESS also actively participated in monitoring pollution in the sea of the coastal stretch from Kanyakumari, under the coastal pollution programme of Department of Ocean Development Government of India.

Regional Radiometric Surveys covering parts of Trivandrum and Kollam districts were completed by the geophysics division with an idea about the total radioactivity in the districts. In addition to the
list of the important activities above, the scientist belonging to various
divisions of CESS actively participate in implementing research
programmes sponsored by the departments of Ocean Development,
Environment Atomic Energy, Conventional Energy Island
Development Authority etc of the Government of India, Council of
Scientific and Industrial Research (CSIR) and the State Committee on
Science, Technology and Environment. Some of the noteworthy
projects under this head include studies on Sea level rise due to green
house effect and crustal processes. At the instance of the planning
commission total ground water resource potential of the Lakshadweep
islands was assessed for sustainable management of the only and
fragile drinking water source. Scientists of CESS have also studied
about the natural disasters and their recommendations have been
forwarded to the state government for disaster mitigation management.

At present CESS is functioning as the nodal agency for the
implementation of the Panchayath Resource Mapping (PRM)
Programme of the Government of Kerala with financial support from
central agencies as well. This programme aimed at the evaluation of the
resource position and developmental needs of the smallest
administrative units namely the panchayaths is meant to introduce special concept in decentralized developmental planning with active participation of village population after necessary training. The scientific components of the programme aim at better land, soil and water resource utilization management after proper survey. The environmental appraisal map arising out of these two components would form the basis for formulating eco sustainable and locally manageable developmental conscientious village population. So far about 50 panchayaths have been covered under the programme and volunteers from three voluntary agencies have been trained in asset mapping.⁹

**Kerala Forest Research Institute**

Kerala Forest Research Institute was established at Peechi about 20 Km east of Trichur in the year 1975. It was a bold step taken under the initiative of C. Achutha Menon because of the role played by forests in the development of Kerala¹⁰. It is intended to provide technical support to facilitate scientific management and utilization of forests social benefit and to furnish information and advice to wood using industries and
general public on forest related subjects. KFRI carries out research on all aspects of forestry including plantation forestry management of natural forest, the forest environment, forest interaction, wild life biology and management of wood science and utilization of timbers. The research programmes are identified taking into account their environmental and social relation also.

The thrust areas of research at KFRI are providing the productivity of plantations, standardizing appropriate inputs like soil improvement, pest and disease control, genetic improvement, developing techniques for plantations for desirable species, method for sustainable management of natural forest, standardizing methods for afforestation of degraded lands, enhancement of wood efficiency through reduction of wastage, preservative treatment and utilization of known non conventional tree species to sub popular forest timber, building a data base for developing management methods for wild life, socio economic analysis of forestry activities including the study of the demand and supply of various forest products and needs of forest base industries. The following activities were conducted by the institution.

1. Timber identification
2. Vegetative propagation of bamboos and reeds
3. Preservative treatment of rubber wood
4. Termite control in building
5. Prolonging the service life of bamboo poles
6. Quality improvement canes for better furniture
7. Polyurethane foam nursery
8. Disease control
9. Afforestation of Pattikkad hills
10. Documentation of medicinal plants of Kerala
11. A hand book of Kerala timbers

KFRI scientists are willing to solve forestry related problems confronted by the people and forest based industries (public and private). Some of the services rendered by KFRI are identification of wood, timber, insect, plant, specimens, advising on soil plant growth related problems to private tree growers, wood treatment preservation to entrepreneurs, control of disease pest in households, establishment of green belt around industries to control pollution, investigating environment related problems in setting court cases. Scientists provide their expert advice as part of the consultancy on the above mentioned areas. During the past few years the
institute has organized training courses and workshops for carpenters on use of rubberwood, innovative uses of timbers in house construction and a timber training course.

During the short period of its existence, KFRI, has attained wide national and international recognition in the field of forestry research. This is evidenced by the large inflow of research funds from various international agencies like IDRC(Canada), FAO, Ford Foundation (USA) etc. KFRI research report have received world wide acceptance. It is because of the institute’s commitment to applied research that every KFRI Scientist is approached by various private and government agencies for solving some of their forestry based problems.

KFRI serves as the research arm of the Kerala Forest Department and is attending to problems suggested by the Department. Priority is given to problem solving research though basic research is also conducted. The institute maintains a data base on all the forest plantations in the state to species.
Kerala Electronic Development Corporation

Rapid industrialization was answer to the unemployment problem in Kerala. A way had to be found for absorbing the job searching educated men and women. Taken in to account the acute power shortage, the density of population, the heightened level of social consciousness and sensitivity towards ecological and environment issues and the high level of literacy and educated unemployment particularly amongst women it was considered that electronic industries which need but little power create no pollution problem and can engage intelligent and literate and semi literate are the most suited for Kerala.\textsuperscript{12}

Like in many other diverse areas here too it was the wisdom and sagacious foresight of C. Achutha Menon which made this possible. Realizing that electronics(which was still in its infancy in India in the early seventies) held the key to Kerala’s survival and growth. The government led by Achutha Menon took time by the fore clock and launched KELTRON, Giving Kerala had the credit to start the first state sector electronics development corporation in the country.

KELTRON brought about an electronic revolution. It was able to demonstrate that it was possible to implant sophisticated
technology in to a rural scenario without unduly disturbing the local socio natural environment. It is today one of the few electronics corporations in the country with the widest span of electronics products starting from the basic grade materials which integrate into components, the components into equipment and the equipment into systems.

With his keen eye on talent, Achutha Menon was quick to spot out K.P.P Nambiar in NELCO and persuade him to come to Kerala to set up this industry. A dynamic no nonsense go better Scientist-technologist, Nambiar got down to business in right earnest thanks to the whole hearted moral and political backing received from Achutha Menon. To enable Nambiar to get things done fast cutting through procedural bottle necks imposed by the stiff necked and stone bottomed bureaucracy, Achutha Menon appointed him as chairman and managing director of KELTRON.

Rights from its inception and true to its philosophy KELTRON chose to build up its production centers in rural areas. Time has proved that the remote villages are ideally suited for building up a strong base for electronics. The arrival of these industrial units brought new roads, where tracks never existed. Power and water where darkness
and drought prevailed, money and banks where poverty once persisted. Villages became buzzing bee hives of productive activity, people had work to do. And they were beginning to sense what quality of life meant.

KELTRON swiftly switched over to commercial and high-tech items such as controlling traffic signals, cybernetics, communications-industrial and defence, electronic items etc, make the state of art technology available within the country. The company has developed close international affiliations with world leaders in technology. KELTRON units at Sreekaryam and Karakulam provided equipments for defence purpose. It had eight branch offices, fourteen area offices, ten sales depots, and a network of 2500 dealers and service centers throughout the Nation.

**Regional Research Laboratory**

Regional Research Laboratory in Trivandrum is one of the youngest national laboratories under the umbrella of the Council of Scientific and Industrial Research (CSIR). It has the long way since its inception and acquired national and international recognition as a Centre of excellence in the areas of science and technology. As a multi
commodity and multi disciplinary research Centre it is now emerging regionally and nationally relevant.

Thanks to visionaries like late Shri C. Achutha Menon, Chief Minister of Kerala and late Professor Y. Nayudamma, Director General SIR whose joint meeting held on 3rd and 4th February 1975 at Trivandrum paved the way to the funding of this budding laboratory. The generous grant of the state government on 1st October 1975 helped to reform the form of the existing infrastructure into Industrial Training and Research Laboratory (ITRL). The granting of 25 acres of land around it in Trivandrum became the basis for initiating research activities of the CSIR in Kerala. It was then upgraded to the Regional Research Laboratory on 6th October 1978 with its own charter and research action plan.

The Lab is known for its basic research in related fields through its publications in national and international journals. About 150 research papers are published every year and a series of honours, awards, fellowships and higher degrees won by the Research Scholars and Scientists. The Lab is respected for its contribution to technical assessment and forecasting. The research studies coming out of the lab go in a long way in shaping the future of the country.
This Lab has a bright future subject to its willingness to accept the emerging challenges with the vigour and commitment as it has been doing far. Some in line are 1) development of modern training. 2) a modular type pilot plant in collaboration with TCC, for the manufacture of high grade synthetic rutile from ilmenite 3) Establishment of modern spice oils oleresin units for user industries, synthesis of new pest control agent thus integrating with emergency technological and industrial trends of Kerala with the world.14
Notes and References


2. Poverty, unemployment and development policy: A case study of selected issues with reference to Kerala,1975, UN.


7. Dr. K.M Nair, ‘Centre for Earth Science Studies’, *For an Indian Model*, p.54.


10. Dr. S. Chand Basha, ‘Kerala Forest Research Institute’, *For an Indian Model*, p.56

11. *Ibid*, p.57


13. Dr. V. Govinda Rajlu, ‘Regional Research Laboratory-A profile’, *For an Indian Model*, p.60.