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Proceedings of the

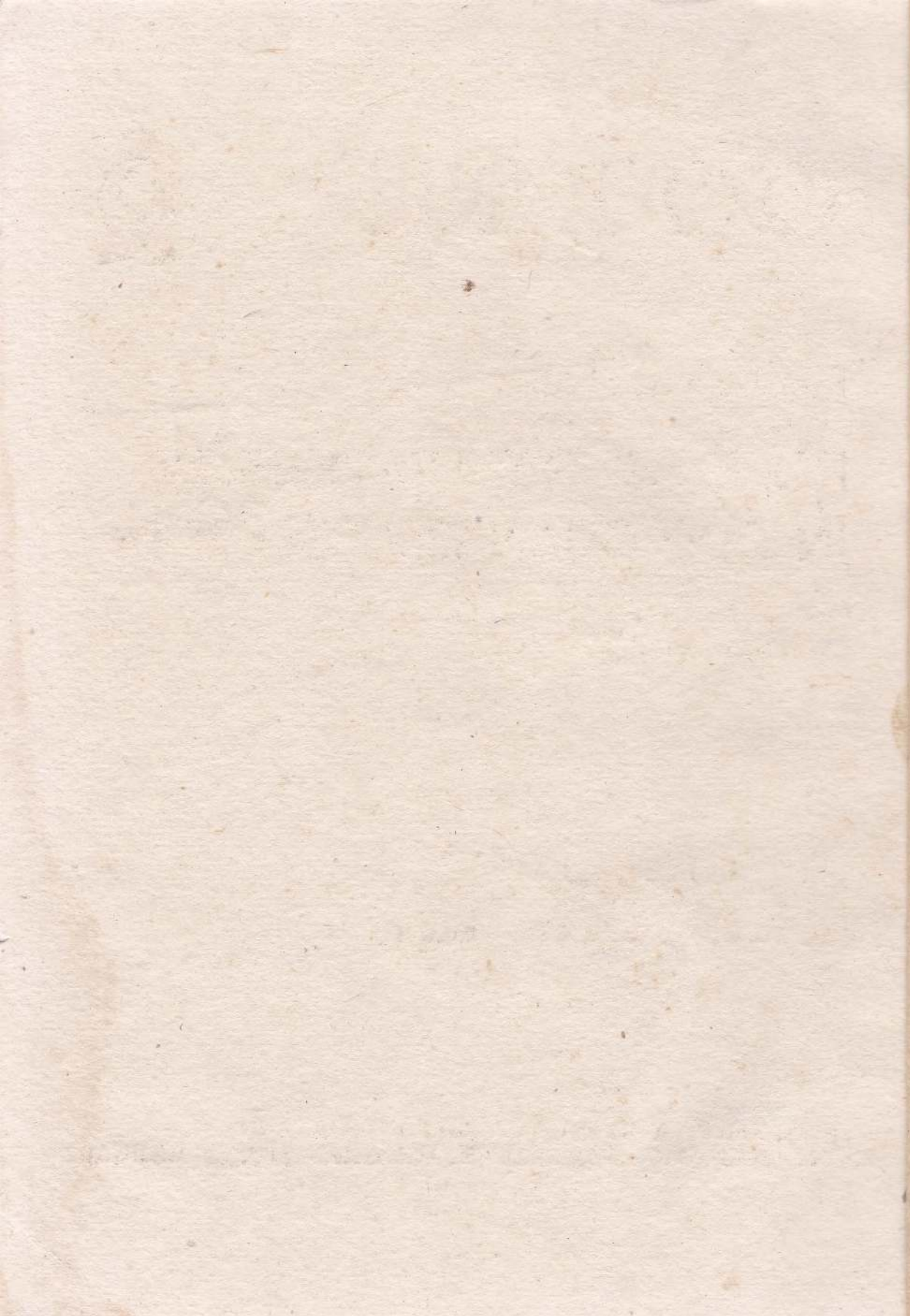
ROLE OF THE UNIVERSITY IN OUR CHANGING SOCIETY

(With special reference to the
University of Jaffna)

September 20, 1980

University of Jaffna, Thirunelvely

SPONSORED BY THE OOTRU ORGANISATION IN
COLLABORATION WITH THE SOUTH ASIAN STUDIES SEMINAR



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DEDICATED

TO

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COMPILED

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FOREWORD

At a time when University Education is undergoing re-appraisal, it is heartening to note the various faculties at the University of Jaffna coming forward to examine their role in the University system. The University of Jaffna is young by any standard and its vigorous growth can be ensured by continuous dialogue and discussion. That the Ootru Organisation has come forward to initiate just this type of development is most welcome. In an era of rapid changes, progress depends on the extent and ease with which adjustments and adaptations are made. New organisations must be brought into being, new methods initiated and new curricula developed. Old boundaries will have to be torn down, and new loyalties and new allegiances created. Such changes cannot be brought about overnight. The various articles reproduced here represent just a beginning. It is to be hoped that the discussions will be carried forward so that a worthwhile contribution could be made to the development of University education in the country.

Prof. T. Jogaratnam
Director
Postgraduate Institute of
Agriculture.

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INTRODUCTORY ADDRESS

Prof. K. INDRAPALA
Head, Dept. of History
University of Jaffna

We are gathered here today as a group of responsible educators interested in discussing some of the major issues relating to the development of a university in this part of the world and if possible in chalking out some guide-lines for the future development of this University. In the present bewildering state of the world and national affairs, a new university like this should have a profound sense of direction and I expect some basic questions relating to this to be raised in this Seminar today.

Today's universities, as we all know, are directly descended from the medieval European university—the university that developed in France, England and Italy in the twelfth and thirteenth centuries. The medieval university functioned under very different conditions from ours, in a period when 'the pace of change was slow and university education restricted to a small elite'. I have no intention of dwelling on this medieval prototype, for in this matter historical precedents are of little help to us in today's changed conditions. But I may say something at the outset about the manner in which we came to be heirs to such a European tradition.

When the European rulers, especially the British, established universities in their colonies in Asia in the 19th and 20th centuries, there was one significant model that influenced the shape of these Asian institutions of higher learning. This model is called the English or Oxford model of the 17th century which emphasized the training of a ruling class. "The implicit goal was to provide a common social, moral and intellectual experience for sons of the elite". Here the professor served, above all, as a moral and intellectual teacher. Thus, teaching a specific subject was not so important in itself as in the mental discipline it developed. Teaching provided an occasion for instilling moral and intellectual values."7 We all know that the first university established in this country at Peradeniya drew heavily on the Oxford model; and the later universities consciously and unwittingly

followed the Peradeniya model. Thus we have become heirs to the medieval European university tradition. And to this day we continue to look up to the British model in many respects in the development of our universities.

In general our universities function in a world that is substantially different from the medieval or colonial times. University education is no longer confined to a small class of elites. It is the case the world over. In our own country, as in most parts of the Third World, the demand for higher education in the post-colonial period has come from all sections of the population. So much so, attention has been directed mainly to the quantitative aspects of educational planning and considerations of quality have been seriously neglected. The politicians have found it impossible to resist the demand for university education even at the expense of a loss of quality and the educators have failed to resist the pressures of the politicians. From the early sixties, Sri Lanka has been facing this problem. More universities and campuses were established without any long-term plans, largely as a result of pressures from below for more and more places in the university. The new institutions have, as a rule, tended to follow the model of the original University of Ceylon, which itself, as I said, was patterned after the British model. The colonial dependence of our university institutions is a conspicuous element in our context.

Consequently we share the general problems of the universities in the Third World today. As these universities are essentially copies of institutions which were established in different cultural and social contexts, they face the major problem of having to adapt to the socio-economic conditions under which they exist. As they were originally intended to serve the needs of an elite, they face the problem of having to change to suit the needs of larger sections of the society. They have tended to be institutions isolated from society and now face the problem of having to relate to the real development requirements of the country.

Our own University was born in this background, inheriting the traditions and problems that are common to the universities of the Third World. Over the last six years, it has been growing with these traditions and problems and producing graduates, many of whom face an uncertain future like their counterparts elsewhere in the Third World. It is time for us to stop and ask, what must our University be like? What role has our University to play in our society, which is also now undergoing change?

The debate on the role of universities in society is not something in which only we are indulging. It is taking place all over the world including the developed countries. During the Vietnam war, in the aftermath of the

student unrest, a major debate raged all over the United States on the role of the universities.² While liberal opinion endorsed the role of the university in 'Combining service to all sectors of the public and dedication to the advancement of human knowledge' (Clerk Kerr, President of California, 1963), there were others who disapproved of the university's role as a service station and advocated a return to the concept of the traditional university dedicated to learning and study and set apart from society (Jacques Barzun, Columbia Professor, 1969). It was argued that 'It is not a violation of the purpose of the university that some part of its activity serve society; but the university must determine through its own critical agency that the society it is to serve is a place in which the spirit of man may be nurtured and advanced'. (Richard Lichtman, Professor, University of California, Berkeley).³

In my view, our university, as any other in the Third World today cannot expect to live apart from society. The main functions of the university, namely teaching, research and consultancy, cannot be done without national relevance. The teaching function of our university should result in the training of experts and leaders that our society needs; our research should help to accumulate knowledge; and on the basis of this knowledge the university should be able to serve the administration, economy and society in an advisory capacity. These functions must, of course, be carried out with that academic freedom that will help to preserve the ability of the university to maintain standards of teaching and research unaffected by outside pressures.

It is my view that our university should be prepared to render services to our society. It should be innovative and its curricula and training should reflect the needs of our society. Our university must be one which draws inspiration from our environment and nourishment from our soil.

It is in this setting that we would like to discuss the future development of this university and I believe that those who are reading papers on the role of the different faculties will be putting forward some guide-lines for such development.

The facilities and resources in this university are no doubt limited at the moment, and may not compare favourably with those of many of the universities in the Third World. But with proper planning and utilization of resources, the prospects for this institution need not be bleak. There are areas in which it could excel and it is our duty to identify such areas of excellence. Already the Faculty of Arts has drawn up a plan for the maximum utilization of its resources in one area—namely South Asian Studies, an area that is culturally and economically relevant to our society. It is not for me to deal with these matters—there are specialists here from each Faculty to deal with them.

To me it is clear that we have much to do to set our own house in order. Change, even of a fundamental character, is necessary. It will require all our care and energy in the coming years to combine change with continuity, to provide this university with a real and regular role in our society.

Foot Note:-

1. D. W. Light, 'The Academic Career', *Dialogue*, Vol 6, No. 3, 1973, pp. 34-35.
2. See, for instance, the special section on 'The Changing University' in *Dialogue*, Vol. 6, No. 3, 1973, and another special section on 'University and Society', *ibid.*, Vol.13, No. 1, 1980. Also, *The Task of the Universities in a Changing World*, ed. Stephen D. Kertesz, Notre Dame, Indiana, 1971.
3. Opinions quoted here are from *The University Crisis Reader I; The Liberal University Under Attack*, ed. I. Wallerstein and P. Starr, New York, 1971.

THE HUMANITIES IN THE UNIVERSITY

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PROF. K. KAILASAPATHY
Dean, Faculty of Arts
University of Jaffna

It is common knowledge that higher education is in a state of transition if not in a state of crisis all over the world. At a time, when virtually all aspects of higher education are under close scrutiny it is natural that different faculties are earnestly reviewing their present problems and planning innovations. 'The world is obviously faced with a vast need for new ideas and for manpower trained in new areas of knowledge'.

It is true that certain general and common problems are faced *albeit* in different degrees and varying measures by Universities all over the world both in the advanced post - industrial and Third Worlds: relationship between the state and institutions of higher learning, growth in student enrolment, ever increasing costs of higher education, student discipline, the relevance of curricula to student aspirations and expectations, the need for planning and co-ordination, specially in the context of trained manpower, are some of the vital issues that have generated great public interest in recent years. It has been observed that all over the world educational systems are "faced with the same problems of how to harmonize the interests of students, faculties, administrators, governments, and the general public".

While this is true at the macro level, it is equally true that Universities have to face special and specific problems at the micro level. Not only national interests but ethnic and regional interests may have to be integrated into the over-all plans of departments and faculties. Certain cultural factors may have to be studied in depth and certain local problems including the obligation to provide opportunities for the disadvantaged, may have to be brought into focus. Here again the problem of harmonizing regional and national pressures has to be faced by the Universities.

It is in such a context that I approach the subject of 'The Humanities in the Universities'. More particularly I would like to talk of the Humanities at our University, delineating the problems and the prospects. By Humanities is generally meant Classical and Modern Languages, History, Religions, Civilizations, Philosophy, Fine Arts and at times Sociology, although the Social Sciences probably have a greater claim over it.

Before going on to discuss the main point of my subject, namely the role of the Humanities, I should perhaps tarry for a moment to say a few words about the present state of Humanities in the Universities. Within the general crisis of higher education as a whole, the Humanities have been facing deeper shocks. In particular the dwindling number of students opting for those subjects lends poignancy to the crisis. As M. I. Finley has observed in *Crisis in the Humanities* (London, 1964) "Other arts subjects now attract larger numbers of students, of equal ability and 'respectability', and the scientists press in more and more strongly every minute".

Finley's observation based on his experience at Cambridge is applicable to our Universities, too. This is not the place to ask why and wherefore this predicament has come about. Needless to say the Humanities seem to face more acutely the consequences of a changing world than some of the other disciplines. In passing, it may be conceded that the causes for this situation were not entirely outside the control of the Humanities themselves. For, as Prof. M. A. Fitzsimons has stated in his essay "The Humanities and Education for Humanity", "Over the centuries, then, the Humanities have been indifferent to economics and pretty largely to politics and society - the Social Sciences".

This is a general charge and by and large it is pertinent to our Institution as well. The point however is to rectify the lapse. Without sounding too immodest, I must say that from its very inception in 1974, the Faculty of Humanities (which was re-named as the Faculty of Arts in 1978) was conscious of its academic and social responsibilities. Attempts have been made to foster not only inter-disciplinary activities but also promote intellectual inquiries within the Faculty that will have implications beyond the confines of the University. The Jaffna Archaeological Society, the South Asian Studies Seminar and other forums have drawn in people from the community who never had the opportunity to work with University academics. And yet these were, doubtless, endeavours born out of the enthusiasm of the few Faculty members rather than the mainstream of academic life itself.

Looking back over the years it is now evident that since the mid-sixties, the teachers of the Humanities were pre-occupied with the problems of teaching in the national languages. Vexed by questions of feasibility at the begin-

ning and then the real problems of switching over to *Swabhasha*, the anxiety and concern to maintain standards, the numerous efforts to make the mother tongues responsive and adequate to higher learning and above all to ensure continuity in academic traditions were the immediate and urgent problems confronting those engaged in teaching the Humanities. Not that the problems have now been solved, but they are certainly less aggravating. The pre-occupation with the medium of instruction was central to all academic discussions. Hardly any radical thinking was manifest in regard to courses and curricula. Although the pioneers of "Swabhasha education" in the 20s and 30s came from all walks of life and from all disciplines, those from the Humanities did provide the vanguard. Historically speaking, the academics in the Faculty of Humanities in our University in the 60s and 70s carried forward this mission. However one important factor has to be pointed out. In the process of campaigning for the introduction of *Swabhasha* education at the University and helping to implement it, many a teacher of the Humanities over-emphasised the importance of language and culture. In doing so they created a climate in which linguistic and cultural problems loomed large somewhat to the detriment of a balanced and sober outlook. Much of the basis for linguistic chauvinism too could be traced to this attitude. In other words, undue emphasis on the mother tongue as a panacea for all educational problems, defeated the very purpose for which the principle of teaching in the mother tongue was invoked and introduced. It is only very recently that a more balanced view of the problem seems to emerge.

While a certain degree of innovation in the undergraduate courses is inevitable and desirable the main thrust of development will be in postgraduate research and studies. Taking into account various factors, some of which are historical, the Faculty hopes to develop area studies in some magnitude. It is true that area studies programmes require considerable funds. It is also known that some form of foreign collaboration is often essential for these programmes. However, it is hoped that our University will develop a Centre for South Asian Studies that can bring together the available resources, both financially and intellectually. The idea of a South Asian Centre serves several interests.

In the context of the growing significance of the Third World, South Asia is the immediate area relevant to our scholarly pursuits. Linguistics, religions and the cultural and economic features of the countries of this area are not only closely related but invite sustained study and in-depth research. All the Departments involved in teaching the Humanities in our University share a common interest in the study of this area. There are also opportunities for establishing academic links with other Centres for South Asian Studies in Universities in India, Malaysia, Pakistan and of course the Western

Countries. The conditions in our University are also conducive to such a Centre flourishing in our midst: from the inception of the Jaffna Campus, the Departments concerned had been working towards the establishment of a South Asian Studies Centre by a) building up a specialized collection in the South Asia Room of the Library, (b) publishing the *Journal of South Asian Studies*, and (c) running the South Asian Studies Seminar. It is hoped that the centre would provide the necessary climate for comparative studies in many subjects.

Tamil cultural studies would be an important component in the Centre. Traditionally literature and grammar have been the core of Tamil Studies. Over the years there has evolved the concept of Tamilology - a contingent discipline drawing on anthropology, linguistics, archaeology, numismatics, law, psychology, philosophy and political science, as well as the history and sociology of knowledge. From a closed world, Tamilology has become an inclusive branch of knowledge that has also become socially committed. For far too long Tamil Studies have been confined to the books and the literati. The Faculty should play a positive role in rectifying this shortcoming. Graham Hough made the following crisp remark in his "Crisis in Literary Education". "The trouble with English Studies is that they have become too isolated, too purely literary; it is a question of what we ought to do about this". We should ask ourselves the same question. Graham Hough made one suggestion: "The study of literature should extend beyond itself and affect character and attitudes in the broadest possible way". The Faculty should do its utmost to extend the study of Tamil "beyond itself". Only thereby can it create a healthy and useful attitude towards language and literature in the society as a whole and generate constructive ideals.

Another crucial area for study and research is mass culture or popular arts. Not only do we have a situation of diglossia in our language but also the dichotomy of classical arts and popular arts, Fine arts and Commercial arts etc. Although a broad division between the Fine Arts and the folk arts has existed for many centuries, the polarisation has become sharper in our time due to the prevalence and dominance of mass media. For instance 'pop' music has a tremendous vogue due to its popularization by the mass media. In some sense, 'pop' culture, today, is truly international, transcending national boundaries. And yet classical forms of music, dance, etc. are still significant in our society. They have the aura of tradition. The cinema, for instance, even at its lowest commercial level, tries to bridge the two forms - the classical and 'pop'. On the other hand, we know that the great traditions of our folklore and folk arts are fast disappearing under the irresistible onslaught of modernisation and urbanization. The artistic and sociological implications of these problems have to be studied.


Generally speaking the Faculties of Humanities have been preoccupied with what is often called high culture or the so called mainstream of literary culture. But our Faculty should also concern itself with the sub-cultures or popular culture. The constant interaction between the two streams or to be more exact, the mingling of these two is an important phenomenon of our times. The key to many a sociological problem is to be found in the study of this phenomenon. Not only the literary and cultural traditions of Jaffna but the entire range of folk arts of the Eastern, Western, and Central regions of the country await systematic research. The prospect of excelling in this pursuit is very high and our endeavours would repay valuable results. Such in - depth researches can be undertaken singly and jointly by the Departments of Tamil, History, Hindu Civilization and Sociology. The Department of Hindu Civilization especially has a seminal role to play in the proposed Centre for South Asian Studies in micro studies on Tamil-Hindu culture.

Having adumbrated the salient features of our Area Studies Programme and the specific role some of the Departments can play, I must hasten to add that these cannot be considered or realized in isolation. Nor are "educational problems educational problems alone. Education cannot direct society by its own efforts, it is a function of society". None the less within the society and especially within the University itself the Humanities have a dynamic role to play. Professor Fitzsiman's observation seems apt.

"The objective of Humanities, man's growth in 'understanding himself, is largely achieved through the interplay of opinion, provocative questioning, and the recognition of persisting dilemma. Opinions and insights, however are not random and equal: they present varied measures of comprehension and penetration of life. Properly the first task of the humanities is to awaken and broden the intellectual awareness of the student and direct his enlivened concern to the major issues and questions of human living".

The Faculty of Arts in general, and the Humanities Department in particular, of the University of Jaffna, have to fulfil this obligation not only within the confines of the University but for the sake of the community as a whole. Only in doing so can it enrich itself and realize all its inherent potentialities.

THE SOCIAL SCIENCES IN THE UNIVERSITY



N. BALAKRISHNAN
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University of Jaffna

Social Science subjects, mainly Economics, Commerce and Geography attract a very large proportion of the students who enter the Faculty of Arts in the University of Jaffna. This is very much similar to the situation prevailing in the other Universities. This trend, which became particularly marked since the end of the 1960s, is likely to continue for many more years.

2. Of the average number of students admitted to the Faculty of Arts for the first year courses (280) in the academic years 1978 and 1979, nearly 90% (253) were enrolled for Economics, Commerce, and Geography. By the end of the next five years the annual new admissions to the Faculty of Arts, may be in the region of 600, and of this, the intake for Social Science subjects may be around 500-550.

Presently, the Department of Economics and Commerce in this University accommodates the largest number of students reading social science courses in the Faculty of Arts. In the Academic year 1978/79, 250 new students were admitted (excluding the Ramanathan Academy) to the Faculty of Arts; of this total number, 247 were enrolled in the Department of Economics and Commerce in the first year. In the following academic year (1979/80) 259 new students were enrolled in the Department of Economics and Commerce for the first year out of total number of 308 new students admitted to the Faculty of Arts as a whole. In the same year 86 students were enrolled in the Department of Geography, 11 students in the Department of History and 13 students in the Department of Philosophy for the first year; (a considerable number also enrolled for the first year in the Department of Tamil (132) and Hindu Civilization (60), partly because of the "special intake" for cultural subjects in 1979/80.

3. In the first year admissions pertaining to the Social Sciences, a noteworthy feature in the last two years has been the marked increase in the number of students enrolled to read Commerce as a subject (and the B.Com Special degree). In 1979/80, of the total number of students admitted to the first year courses in the Department of Economics and Commerce more than half (150) were enrolled to read Commerce as a subject in the first year. Out of this number nearly half (78) was assigned to the "Commerce stream" beginning in the first year and leading to the B.Com special degree at the end of the fourth year.

4. Social Science subjects - and others - are offered for the General degree (3 year course) and the Special degree (4 year course). At the General degree level Economics and Geography constitute the most sought after subject-combination by the students. Political Science, which has just been introduced as an additional subject, might offer equal attraction for the General degree students in the years ahead.

Out of the total number of new students enrolled for Social Science subjects in 1978/79 (247), 94 students opted for the General degree courses after the First in Arts Examination and the balance went over to Special Degree courses (153) in the following year (including the "Commerce intake"). If the "Commerce intake" is excluded from the total enrolment in the first year (1978/79), the number of students diverted to the General degree courses and the Special degree courses at the beginning of the second year amounted to 100 and 53 respectively.

During the academic year 1979/80, the total number of students enrolled for the Special degree courses in the 2nd, 3rd and 4th year levels in the Faculty of Arts stood at 288. Out of this 56 were enrolled for Economics, 142 for Commerce, 40 for Geography, and 15 for History. Because of the sizeable number allowed for the "Commerce stream" from the first year itself, there is a substantial number following the B.Com. Special degree. Of the 125 new students admitted to read Commerce as one of the subjects in the first year in 1978,79 94 students were enrolled for the B.Com. Special degree course from the first year onwards.

While there is now a great demand for the B.Com. course on the part of the students, because of better job prospects, the admission procedure also has added to the large number reading this course. Once the students are admitted to the "Commerce stream" on the basis of the list sent by the UGC (1979/80) they automatically become eligible from the first year itself to follow the B.Com. Special degree. This is different from the procedure adopted for the Special degree courses in the other subjects when students are selected at the beginning of the second year on the basis of their perfor-

mance at the First in Arts Examination. It would be desirable to adopt a similar procedure for the selection of students for the B.Com. Special degree course as well.

Since the B.Com- Special degree course has become increasingly popular with the students—and this is likely to continue in the future as well—there is a need to introduce greater specialisation and professional bias in this course. This would require the services of professionally qualified accountants and other specialists in the field. However, the existing schemes of recruitment do not easily permit the employment of such professionally qualified personnel on terms and conditions attractive to them. In order to attract such professionals, it would be desirable to evolve suitable schemes of recruitment whereby professionally qualified persons (such as Accountants and other specialists) may be employed by the University, while at the same time permitting them to engage in their professional work as well.

5. Political Science and Sociology, two key social science disciplines, have just been introduced in the University (Faculty of Arts) curriculum. These two disciplines should play a much greater role in the future and their further expansion should be one of the areas in the future development of social sciences in this University. For another five years or so, Political Science and Sociology can be offered, at the special degree level, as only majoring components of the Economics Special degree programme, thereby widening the options for the students reading Economics as a Special subject. Eventually with the recruitment of more experienced and trained staff, Political Science and Sociology should become very well established disciplines to be offered as special degree courses under separate Departments of study. At least the nucleus for such future expansion in terms of staff and other requirements should come into being by the mid-1980s.

Political Science, in addition to being a subject for the Special degree, has considerable attraction and validity to be offered as one of the subjects for the General degree as well. Sociology may also be offered as a General degree subject. But as a discipline by its very nature, it would be more suitable as a subject for the Special degree and that is how its future expansion in the University should be planned. The progress of the Departments of Sociology in the other Universities (University of Peradeniya and University of Colombo) in the country has not been smooth and has been seriously disrupted because of the departure of qualified staff. Presently, there is also an acute dearth of qualified persons in this field in the country. In any programme of development of this discipline in this University, the services of persons from outside (say, from India) may have to be obtained - on a contract basis - to initially plan and build up a Department of Sociology.

6. In the existing Social Science Departments in the University, there is an inadequate number of trained and experienced staff, especially at Lecturer/Senior Lecturer level. And a fair amount of teaching has to be done by the young probationary staff. This is, needless to say, not a satisfactory state of affairs. In the Departments engaged in the teaching of Social Science subjects, there is an urgent need to strengthen the middle grade staff by recruitment at that level and by a speedy and systematic programme of postgraduate training—abroad or locally—for the younger staff.

While it is very much desirable for the probationary staff to get their postgraduate training and qualifications abroad, such opportunities have become increasingly difficult due to a number of reasons. Many of the probationary Assistant Lecturers face considerable uncertainty in regard to their postgraduate training and qualifications, and, consequently, in respect of their confirmation and promotion. This makes it all the more necessary to provide them with facilities for postgraduate training locally. Such facilities that are to be provided and expanded should form part of the development of a postgraduate studies programme in the Social Sciences. Although the bulk of the work in the Social Science Departments is presently geared to undergraduate teaching, the establishment of postgraduate studies programme in the field—a beginning has already been made in this direction—should be another important area for future development.

7. One of the important questions in the teaching of social science disciplines—as well as in other fields—is concerned with the proficiency in English to be acquired by the students, when mother tongue is the medium of instruction in the University. This has an important bearing on the quality of graduates who pass out of the University. Essentially the problem is one of giving the right type of instruction so as to enable the students to acquire a “working knowledge” of English adequate to handle the basic reading material available in English in the different subjects. This is especially important in the case of the students who read the Special degree courses. The students should be exposed to a more varied type of reading material in English in the different disciplines in which they are specialising. In addition to the formal English teaching programme by the Sub-Department of English, it may be worthwhile experimenting with a limited number of lectures/discussions in English, especially to the Special degree students in the different subjects, provided the staffing position of the Departments concerned can permit this. The Sub-Department of English in this University is not adequately staffed, nor is it provided with other facilities, such as teaching aids, etc, to undertake a full-scale programme of intensive course in English. Early steps should be taken to remedy these shortcomings and to strengthen the Sub-Department of English so that it could be fully geared to a programme of teaching of English.

8. With a number of disciplines in the Social Sciences the existing ones, those being developed and new ones planned (e.g. Education, Agricultural Economics, as part of the proposed Faculty of Agriculture) a greater inter-disciplinary and inter-departmental collaboration in teaching at undergraduate and postgraduate levels and research could be envisaged for the future. With the number of courses provided in Economics, Geography, Political Science, Sociology, History, Mathematics and Cultural subjects (and others yet to come) a well integrated and inter-disciplinary course in "Development Studies"—initially at the undergraduate level and subsequently at the postgraduate level—should be planned for the immediate future. This should be treated as one of the priority areas for the 1980s. This course could form part of the programme, already envisaged, for the development of a Centre for South Asian Studies linking the Humanities as well.

9. The University of Jaffna would largely, though not exclusively, assume the role of a 'regional' University. As such, teaching and research in the social sciences (and in other fields) should adequately reflect the socio-economic environment of the region in which the University is situated.

There are many of areas of study pertaining to the region—such as rural agriculture, land use, water resources, fisheries, physical environment, rural—urban interrelationships, socio-economic arrangements and institutions, socio-cultural patterns, etc.—which should be reflected in teaching and research in the University. A great deal of research remains to be done relating to, the region in many of the above fields. A University that is not fully involved in its teaching and research with such regional perspectives and problems would not be able to make much impact on the society. In this respect, the Departments engaged in the teaching of social science disciplines, which by their very nature deal with people, institutions and society, should be able to make a significant contribution.

THE ROLE OF THE FACULTY OF MEDICINE

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PROF. N. SREEHARAN
Head, Dept. of Medicine
University of Jaffna

Universities today, and the medical schools that are part of them, have a broad social mandate. The Medical School of the University of Jaffna has just completed the second year of its existence and the students have commenced their clinical training. The Faculty was established both as part of the programme for the development of the University of Jaffna and from the policy decision of the government to increase the production of medical graduates to combat the acute shortage of doctors in Sri Lanka. Although critics may argue, with some justification, that the Medical School was established with minimal planning, it has survived the last two tormentous years with creditable competence. It is now essential to formulate concrete proposals and plans as to how the school should develop over the ensuing years. I am convinced that the school, with proper guidance and adequate financial support, would contribute to the advancement of medical knowledge and to the delivery of health care, both at a regional and national level and, with time, even internationally.

It is widely recognised that the mission of any medical school encompasses education, research and service to society. Accordingly, the Jaffna Medical School must undertake three relatively interdependent functions;

- (a) Teaching; It should be the prime duty of the school to prepare, by a comprehensive programme of undergraduate and post-graduate teaching, well qualified persons for general and specialised health service at every level and in every facet.
- (b) Research; The school should stimulate, plan, design and conduct both theoretical and applied research in all fields relevant to the needs of the society.

- (c) Service; It should provide expertise in health and community services and counsel to society on matters of health needs.

These three functions of the school are interdependent but the one on which all other activities of any medical school must depend on is its service commitment to society

Clinical and community services:

Our health care system finds itself at a crossroad because of the by now well known and widely publicized shortcomings. Indeed, even the traditional standard by which a health system is judged—viz. the incidence of disease and death—is outmoded. We have been so obsessed and preoccupied with the concept of 'disease' that the true concept of 'health' has been totally ignored. The new standard of assessment of the health system should be whether the system possesses the ability to provide the best possible health to all the people—this has been demonstrated by the World Health Organisation's goal of 'health for all by 2000 AD'. It is within this framework of the W.H.O. objective that the service commitment of the Medical School of Jaffna should develop.

The Department of Community Medicine of the Faculty has already initiated a programme within an area involving Kokuvil and Kondavil, whereby the health of the people will be monitored and the appropriate advice given and remedial measures taken. Such monitoring will be carried out by a team including medical students and the staff of the Faculty belonging not only to the Department of Community Medicine but to several other departments as well. It augers well for the medical school if Community Medicine becomes a total Faculty commitment with several departments within the Faculty participating. This preliminary programme should gradually be extended with the objective of involving the entire Peninsula so that all aspects of the health of the population could be assessed and health standards improved accordingly. Such a programme needs the participation not only of the staff of the Faculty but also the members of the Community Services of the Department of Health—viz. the Medical Officers of Health, Public Health Inspectors and Nurses, Midwives etc, and in addition, the active involvement of the people themselves and the help of voluntary organisations.

Although community medical services should form an important aspect of the Faculty's service commitment, the ongoing therapeutic clinical services should be developed in keeping with the traditions of a teaching hospital. Such services form the basis of the Clinical departments of Medicine, Surgery Paediatrics, Obstetrics & Gynaecology and Psychiatry and the Para Clinical

departments of Pathology. The General Hospital at Jaffna has been 'elevated to the status of a Teaching Hospital. It would be an error to assume that the grafting of University Professorial Units onto a hospital and the ensuing addition of students will automatically create a University Teaching Hospital. The difference exists beyond the staffing levels and the financial resources. It has to DEVELOP into a centre of excellence and this would include not only expertise in clinical skills and investigatory facilities but also in areas other than directly clinical ones such as documentation, communication and analysis of work done. And to this goal both the University units and the Health Department units within the hospital should work in unison and close consultative capacity. I have no doubt that such a close liason and cordial relationship will continue to develop between the two groups.

In the 130 years that have elapsed since the General Hospital in Jaffna was founded, the hospital has expanded in a haphazard way resulting in the accumulation of buildings in a totally unplanned manner. The need for a better, well equipped hospital for the Jaffna Peninsula which, in addition, will function as a Teaching Hospital for the University of Jaffna cannot be overemphasised. The 1971 census gives the population of the Jaffna Peninsula as just over 700,000. Since then the population of the Peninsula would have increased considerably. But Jaffna Hospital remains as not only the only General Hospital in the Peninsula but also in the entire northern region, drawing patients as far as Mannar, Vavuniya and Mullaitivu. Consequently, the hospital is acutely congested and overcrowded and the atmosphere is certainly not conducive for an effective clinical training programme. The consultants of the Jaffna Hospital have drawn up a plan for a phased development programme for the hospital, which I hope will become a reality. In addition, there remains a need for a University Hospital in close proximity to the Medical School, which is essential if the clinical training programme of the school is to be placed on an internationally recognisable footing. In addition to its effect on medical education, such a hospital would improve the health care of the people of the area and some of the congestion of the Jaffna Hospital. Finally it has to be pointed out that the upgrading of the Government Hospital at Tellippallai, although accepted by the Ministry of Health several years ago, has not been implemented upto now. The urgency has now arisen for immediate action on this matter which would benefit both the delivery of health care and the teaching programme of the medical school

Teaching:

It is essential that medical education must be relevant to the needs of the society in which it exists. Health needs are changing rapidly in many societies and Sri Lanka is no exception. Medical education policy must be responsive to such changing needs. Unfortunately, training patterns in

many of the medical schools in the developing countries, including Sri Lanka, are carbon copies of the curricula from the schools of the western world. But the pattern does not quite fit. The problems encountered by the physicians of the developing world are distinctly different from those seen in the developed nations. It could then be said that the new medical school should essentially have an epidemiological basis for its medical education programmes. Mortality, morbidity, other health patterns and profiles, and epidemiology in general are now much more amenable to measurement. Thus, data concerning health patterns and delivery of health care has to be collected both at a regional level in the north and at a national level so that a correctly balanced emphasis on disease patterns can be included in the curriculum of the Jaffna Medical School. However, this suggestion that learning experiences should be directed more towards preparing students to solve health problems has been criticised on the grounds that those desiring the change are interested only in preparing a 'technician', i.e. one who will no longer have a grounding in the sciences or be interested in a life of scholarship and study. In reality medicine is a profession that requires a balanced education; in other words, a medical school is a professional school in which the students should learn both the sciences and a set of professional skills through which to apply those sciences to the solution of health problems. It is therefore essential that we in Jaffna maintain a correct balance and integration between the clinical and basic sciences in the educational programme.

The present sequence of instruction in Sri Lanka is based on familiarising the student with what has been termed the 'basic sciences' viz. Anatomy, Physiology and Biochemistry, on the concept that an understanding of the normal structure and function should precede the study of the abnormal disease processes as is encountered in the wards. But it has been the experience in many of the progressive medical schools around the world that it is only by comparison of the abnormal with the normal that the normal becomes clearer to the student. Such a scheme would necessitate the early introduction of the student to clinical material. This should be aimed for in our medical school. But in the mean time an integrated inter-departmental teaching programme has been introduced for the third year students in the form of a System Orientated approach. Such a programme will involve the teaching of each system of the human body in coordination with several departments. This approach will not only result in a better understanding of the subject content by the students but, in addition, helps to surmount inter-departmental barriers which would otherwise tend to obstruct modifications in existing programmes. I hope that this experiment will finally develop into a lengthy and fully integrated course which would cover all aspects of each system of the human body, both in health and in disease.

If the community approach is to take a firm hold in the system of health care delivery, it should be introduced in the medical school curriculum as well. Rural health work and preventive and community medicine may be perceived as dull experiences if they are forced upon the student as compulsory activities outside the context in which he is pursuing his career interests. However, if these activities are made an integral part of the actual clinical learning, the situation may be changed.

To help alleviate the present shortage of practising physicians in the country, one of the prime goals was a greater production of medical graduates. Numbers are important and it is certainly true the nation needs a great deal more doctors. But there is no strength in numbers alone. The public needs new kinds of physicians willing to attack the health needs of a total population. It needs physicians committed to revitalising the practice of medicine, to preventing as well as curing. It needs physicians concerned with sociomedical problems such as malnutrition, mental health, communicable diseases etc. In short, the school must provide settings in which multiple roles are being learned and understood as part of a total health effort designed to meet the needs of patients and society. The challenge will be to carry out this new responsibility without sacrificing those special qualities that have enriched and stimulated the curricula so far. Changes in the curricula should not be made merely for the sake of changes but every single modification should be analysed and discussed in minute detail by groups concerned with medical education and the delivery of health care.

The General Hospital of Jaffna has now been accepted as one of the centres for the training of post graduates by the Post Graduate Institute of Medicine. The Heads of Departments of the clinical disciplines of the Faculty have been appointed to the respective Boards of Study of this Institute. But, as commented by Dr. Stokes, the W.H.O. Consultant invited to make a feasibility study of various hospitals in Sri Lanka on their suitability for post graduate training the G. H. Jaffna has run down over the years and there remains a serious question mark as to its suitability as a post graduate training centre. He has strongly recommended that the hospital be upgraded on par with Colombo and Kandy and the PGIM has accepted this proposal in principle. The development of an effective post graduate programme in Jaffna would certainly provide the impetus for setting Medical Education in Jaffna on a sound footing.

RESEARCH:

It is probably in the task of setting up a research programme that the new medical school meets its greatest problems and in some ways its greatest opportunities for recognisable achievement. There is no doubt that good

research can be carried out without superbly equipped buildings and laboratories and it is even possible that too comfortable an existence can drain some of the stimulus to work effectively. As one renowned educationist remarked 'there is no teaching without research and no research without teaching' The Jaffna Medical School should therefore aim to promote community orientated clinical and fundamental research within the framework of the existing and available resources. For this task the school should collaborate with a variety of agencies and use a multidisciplinary interdepartmental approach wherever appropriate. In the absence of funds for the purchase of highly sophisticated laboratory equipment for basic research, the research priorities of the Faculty should be identified to include:

- (a) The identification of the major community health problems and to collect data for determining the health status of the community and the health man power needs.
- (b) Research through model or trial health care delivery systems, for determining the basic system suited to the community.
- (c) Research into existing systems of traditional or indigenous medicine for the purpose of determining
 - the extent and nature of their contribution to health care
 - the role that they should fulfil in the general health care delivery system
 - to what extent health personnel are to be orientated to indigenous systems as part of their formal training.
- (d) Promotion of clinical and fundamental research with due consideration of the possible application of such research in solving the community health problems.
- (e) Educational research aimed towards the optimal design, implementation and evaluation of the teacher-learning process in health in order to improve educational planning and the management, development and implementation of the new curricula and thus prepare the manpower needed to implement the national health plan.

I have attempted to place before you some ideas as to how the Medical Faculty should function with particular reference to the changing needs of the society. It is appropriate that 30 years after the establishment of what was the first formal medical education programme in this country by Samuel Green, once again the north has been accepted as one of the centres of medical education in this country. I wish to conclude my paper with an optimistic note and hope that with time it will develop into the centre of Medical Education in this country.

THE ROLE OF THE FACULTY OF AGRICULTURE

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ABSTRACT

Sri Lanka is an agricultural country and her economy is heavily dependent on agriculture. Both as a tool for economic growth and as the single largest sector providing employment, agricultural development will continue to receive high priority in national planning. Manpower surveys indicate that there is a great need to produce more graduates than what is produced by the existing institutes of agriculture. However various socio-economic factors place a constraint on the number of graduates employed by the Govt. Thus a Faculty of Agriculture at the University of Jaffna should, in addition, consider the possibility of training personnel at the middle level and direct its attention in formulating a plan of research aimed at solving some of the local problems. Only by adopting such a course of action, this Faculty could become a success.

INTRODUCTION

Aristotle said about two thousand years ago, "A law-giver should direct his attention above all to the education of the youth". Throughout the centuries, mankind has accumulated a great deal of wisdom and fortunately, this collective wisdom is usually available to all people in all countries, provided they have the appropriate key to this great store house. The key is the ability to read and understand the language in which it is written, not only the different languages spoken in different countries, but the technical languages of specialists in different disciplines. No one man can master all these languages, but a modern nation or a modern society needs among its people, men who can understand most of them and use that knowledge for the betterment of mankind.

We may differ widely on the kind of education, on the field of specialization, on education methods, on the amount of education, and on many other questions, but there is an almost universal appreciation of the value of education, especially the higher education which has become unavailable to most of our youth.

IMPORTANCE OF AGRICULTURE

Approximately 35 years after independence, Sri Lanka still remains an agricultural country as evidenced by the following relevant characteristics:

Agriculture is the single largest production sector that contributes significantly to the country's economy (Table 1), and agricultural products are still the largest export commodities and the major foreign exchange earners (Table 2).

Of the total land area of 16 million acres in Sri Lanka, about 5 million acres (or 33%) are under cultivation and about 3.9 million acres are in small holdings (Table 3).

The cost of importing food items, a major portion of which can be produced in Sri Lanka, is about 25% of the total import expenditure.

Agriculture is still the single largest sector providing employment for people as shown in Table 4. (The relevant information for the Northern Province is furnished in Table 5.) The population of Sri Lanka is growing at a rate of approximately 1.8 percent annually, and according to ILO projections, the labour force of Sri Lanka will be increasing at an annual rate of 2.6% between 1975-1985. With other industries facing various input restrictions and international competition, it is to the agricultural sector that governments will look for the expansion of employment.

All these indicators point to the fact that agricultural activity is a very vital component of the economy of this country, and agricultural development will continue to receive top priority from policy makers. This, therefore, implies that agriculturally trained personnel will be called upon to play an increasingly important role in the future developmental programs of Sri Lanka.

NEED FOR AGRICULTURAL EDUCATION

The great strides made in agriculture in most developed countries and their strong position in agriculture today are a result of their enormous investments in agricultural education, research and extension services. Statistics bear evidence to this. The hundreds of thousands of men these agricultural institutes have trained, the research they have done, the auxiliary services their graduates have helped to develop and the techniques they have devised for getting the new information to farmers promptly have been the secret of their success.

If any significant increase in agricultural production is to be realized in a developing country like ours, it is necessary to effect a shift from a traditional to a science-based agriculture. This enormous task cannot be com-

pleted by professing such ideas on political platforms or even by a mere change in government policy towards the import of agricultural inputs. But, it demands an unprecedented emphasis on 'quality' agricultural education both at higher level and at middle level. Only such a program can yield the required large number of trained and skilled personnel who could utilize the modern scientific knowledge available in other disciplines for better and more efficient crop production, and who could experiment, under our conditions, some of the advances already achieved in other countries.

It may be useful to stress, once again, that our concern with education, not in agriculture only but in other fields as well, should not be directed to mere quantity but should be aimed even more to its quality. In recent times, due to various reasons, there has been a tendency in our country to concentrate on the number of graduates produced, without sufficient attention to the quality of such products. Any educational institute that indulges in and encourages such an act is only adding to the frustration of the youth, the parents and society as whole.

MANPOWER NEEDS

Several surveys conducted in Sri Lanka have directed their attention to a quantitative assesment of the manpower needs in agriculture.

The manpower needs I am presenting to you today is based exclusively on a survey conducted by the USAED (United States Academy for Educational Development) team, presently in Sri Lanka, helping to develop the Faculty of Agriculture at Peradeniya. This survey involved virtually a full enumeration of all public and private organisations in Sri Lanka employing high level agricultural manpower. Projections of manpower need were made based on information from 82 different organisations.

The survey indicated that at the post-graduate level, on an average, 72 persons have to be trained every year. Since the University of Jaffna will not be involved with post-graduate training for the time being, I shall not devote much time to this aspect. However, I would like to point out that even with the establishment of the Post-graduate Institute of Agriculture at Peradeniya, only about 50% of the country's need for post-graduate trained personnel will be satisfied unless the Institute develops the appropriate facilities to increase the student intake.

As for the demand and supply at the B.Sc. level, the survey estimates, that there is a need to produce about 200 graduates by the year 1982 with a possible sustained demand of about 250 graduates annually throughout the foreseeable future. There are two aspects of Sri Lanka's agriculture that were not considered in projecting this demand;

- (1) because of the limited market for tea and some other export crops, future agricultural development must occur through crop diversification which will need a large number of research and extension personnel and
- (2) due to the limited availability of land, a high demand for food will call for intense research towards increased production per unit of land. This necessitates more sophisticated techniques and the attention of more agriculturally qualified research officers.

These two factors could in effect push the total demand for agriculturally trained personnel much higher than 250.

It might be appropriate, at this point, to look at the situation in Japan, a country in which the typical farm business is small but very successful and labour-intensive—somewhat comparable to the pattern observable in the Jaffna Peninsula. The average area per male worker in Japan is about 3.5 acres and there are more than 400 agricultural research institutions manned by several thousands of trained personnel. For a population, the size of Sri Lanka's, this would correspond to approximately 2200 agricultural research workers. But, if you look at the situation in Sri Lanka, the number is now a pitiful 300 or less.

At present, the Faculties of Agriculture at Universities of Peradeniya and Ruhuna Campus train about 120 and 25 students respectively, making a total of 145 graduates. This leaves a deficit of 55 to make up to the estimated projected demand of 200 graduates up to the year 1982 and a deficit of approximately 100 thereafter. This means there is a need to produce more agriculture graduates in addition to what is being produced at Peradeniya and at Ruhuna Campus.

A WORD OF CAUTION

Often these surveys on man power needs tend to reflect a demand situation under a set of assumed conditions. These conditions may and do change with the change of government policies, directorates of the various employing agencies and availability and allocation of funds.

In fact statistics reveal that the actual number of graduates employed by various agricultural institutes, such as the Rubber Research Institute, the Coconut Research Institute, the Tea Research Institute, the Dept. of Agriculture, the Sugar Corporation, etc., has always fallen short of the projected demand. This has been primarily because of the reasons mentioned above.

Thus, one must exercise extreme caution in basing the student intake policy purely on the man power surveys. By saying this, I am not trying

to paint a gloomy picture about the future of agriculturally trained personnel or about the role of the Faculty of Agriculture. I am only requesting you to be realistic in the direction in which you propose to develop this Faculty; I am also suggesting that you should deviate from the path followed by the existing institutes of Agriculture in our country and to look at the new trends evident in some Universities of India and Japan. This Faculty of Agriculture should have a clear vision about the purpose that it can and must serve in this part of the country. Mere production of graduates must not be the sole aim—such an approach would be very detrimental in the long run.

Thus, questions arise in our minds as to the actual purpose of establishing this Faculty. The necessity to establish any faculty depends on the role it wishes to play. There are two traditionally accepted functions and responsibilities of a university, especially with respect to those faculties that deal with fields of immediate concern to the society. One is the production of qualified personnel and the other is the participation in research activities.

As for the first responsibility of producing qualified personnel, I have already shown you that although there is a great need to generate a large number of B.Sc. and post-graduate qualified personnel, the employment opportunity for such people, who will obviously want to be employed either in the Government sector or in established private sectors, is highly variable and cannot be easily predicted with accuracy. There is however a need and a place for people qualified at middle level. Such people, if unsuccessful in obtaining a government employment, do have the necessary capability and the willingness to fall back on the land. I have said at the outset that if we have to make a significant increase in the national agricultural productivity, agriculture should be made more scientific. One of the surest and the easiest way of infusing modern scientific methods of production into agriculture is to encourage the educated youth to seek self-employment in agriculture. Studies have shown that the effort required to motivate a farmer to start a new practice in his profession is an inverse function of the number of years of education he has had.

I would like to point out an important aspect of agricultural education at this juncture. Unlike most universities of the world, some institutes of agricultural education in Sri Lanka have shown a lack of sufficient concern about the necessity to teach basic sciences to agricultural graduates. It is absolutely essential for agricultural teachers and agronomy leaders to recognise that crop science is a multi-faceted biological issue. Such a discipline cannot be studied without adequate understanding of the basic sciences. Any attempt to isolate students of Agriculture from basic sciences will only result in the production of graduates that are not very different from an ordinary

farmer. I urge the University of Jaffna to make a special attempt to introduce basic sciences in the curriculum of agriculture graduates.

At the same time, it is important to realise that while being familiar with the underlying sciences, one must also master the art of crop-production. It might be useful to appreciate the fact that even when and if cell fusion or recombinant DNA are perfected among crop species, it is certain that much traditional breedings and field testing will be needed before the grower can benefit such inventions. Thus, students must have sufficient facilities to undergo field-training during their career in the University. A program such as 'earn while you learn' practiced in some Indian Universities might be worthwhile considering. The benefits of such a component in the curriculum are manifold.

This brings us to the question of a suitable site for the Faculty of Agriculture. Although it is not my intention here to suggest a specific location I wish to say that the following factors must receive serious consideration in selecting a site:

- (a) availability of enough land for future physical development of the Faculty
- (b) availability and suitability of land for field training of students
- (c) proximity to areas where major agronomic problems exist and where new crop production methods have to be introduced
- (d) the potentiality for future agricultural expansion, and
- (e) proximity to agricultural experimental or research stations

Administrative problems, on the other hand, should receive the least consideration in selecting a site. Given the necessary administrative skill and commitment, such problems are not beyond solution.

The second responsibility of the Faculty is to engage in research activity. This assumes greater significance under our context. Scientists, especially those in the field of Agriculture, have a moral obligation to initiate research directed towards increasing the production of good quality food. It is true that Universities are expected to do supportive fundamental research, but our immediate needs are such we cannot afford this luxury now.

Agronomic research has been stunningly successful in increasing the production in several developed countries during the last two or three decades, and such an achievement must be our aim. It is in this direction that I believe the new Faculty of Agriculture should march on. Only by formulating and carrying out a program of research aimed at solving some of the local problems, this Faculty can effectively serve the primary purpose for

which it is established. An unshakable conviction of and a strong dedication to this goal can make this Institute one of the finest and the foremost in this country.

Sometimes it is believed, that the Northern Province, especially the peninsula, has only a very few problems that deserve the serious attention of agricultural scientists. Even the Department of Agriculture has only recently widened its activities and is attempting to establish a 'meaningful' research station in this region, although intensive agriculture has been practiced in the peninsula for such a long time. It is unfortunate, that some of the existing and potential problems are masked by the apparent economic success of the farmers in some parts of the Northern Province.

It is not the appropriate place, and it is in fact not possible, to list all the specific problems that need to be studied. However, I wish to point out the following major aspects that should receive the special attention of this Faculty. It is by no means a complete list.

- (1) Availability, use and conservation of water
- (2) Breeding crops for drought and salinity resistance
- (3) Investigations on soil fertility under intensive cultivation
- (4) Crop diversification and introduction of new crops
- (5) Introduction of new cropping patterns
- (6) Development of the palmyrah and coconut industries
- (7) Studies on farm power and machinery
- (8) Utilization of traditional and non-traditional animal feeds
- (9) Improving fertility in local breeds of farm animals
- (10) Development of goat and sheep industry
- (11) Management planning for maximum utilization of all the existing resources

In this regard, I would like to stress that even in acknowledging the success story of Jaffna farmers, there is a great need to determine the factors that have been responsible for such a success, so that ways and means could be found to ensure that those factors will continue to be available.

In addition to these two functions, which are expected of most other disciplines of study in a University, a Faculty of Agriculture is also called upon to fulfil another responsibility of utmost importance. It is necessary to appreciate that it is not simply the quantity or quality of research conducted in various Agric. Research Institutes that finally decides the national agricultural productivity. The final productivity is directly dependent on the decisions made by the millions of farmers in the field. It is the crop

variety they select, the fertilizers they use, the agro-chemicals they choose to apply and the other management practices they decide to adopt that ultimately determines the success of the agriculture industry. Thus, it is absolutely essential that all those worthwhile findings and conclusions of research should finally reach those that till the soil. This is probably a unique role for the Faculty of Agriculture. The Faculty should thus develop a strong outreach program for disseminating the knowledge by such activities as seminars, workshops, field days, production of extension material and conducting vocational training for farmers.

This responsibility becomes especially important in a changing society like ours where instead of the most illiterate persons who took to farming at one time, now more and more educated youth are compelled to seek employment in agriculture. These people will seek for and immensely benefit from such a program.

Table 1: The relative importance of different production sectors in Sri Lanka's economy (1977)

Sector	% contribution
1. Primary Sector	
(a) Agriculture, forestry and fishing	32.5
(b) Mining and quarrying	2.5
2. Secondary Sector	
(a) Manufacturing	13.0
(b) Construction	4.0
3. Tertiary Sector	
(a) Transport, communication etc.	10.0
(b) Trade and commerce	13.5
(c) Housing services	3.0
(d) Public administration and defence	6.0
(e) Other services	15.5

Ref: Statistical pocket book of Democratic Socialist Republic of Sri Lanka.
Dept. of Census and Statistics - 1979.

Table 2: Composition of Sri Lanka's exports (1978)

Commodity	Rs(million)	% of total
Tea	6,400	48.5
Rubber	2,025	15.3
Coconut products	,970	7.4
TOTAL	9,393	71.2
All other domestic products	3,778	28.8
GRAND TOTAL	13,173	100.0

Ref. Statistical pocket book of Democratic Socialist Republic of Sri Lanka
Dept. of Census and Statistics - 1979.

Table 3: Total land area and acreage under cultivation in the Northern Province and Sri Lanka

Area	Total agricul- tural small holdings	Total land area	% under cultivation
	(Ac)	(Ac)	
Jaffna District	135,807	609,596	22.3
Vavuniya District	76,205	905,374	8.4
Mannar District	43,708	605,642	7.2
Nothern Province	255,720	2,120,612	12.1
Sri Lanka	3,887,287	16,000,000	24.3

Ref. Census of Agriculture (Small Holdings) Dept. of Census and Statistics—1973.

Table 4: Employed population of Sri Lanka classified by occupation (1971)

Occupation	Persons ('000)	% of total
Paddy cultivation	802.8	22
Other field grains	1.8	—
Vegetable fruit gardening	62.2	1.7
Tea, Rubber and Coconut	740.3	20.3
Cultivation of other crops	132.4	3.6
Livestock	4.7	—
Forestry and Fishing	84.8	2.3
TOTAL	1929.0	50.1
Other occupations	1819.8	49.9
GRAND TOTAL	3648.8	100

Ref. Economic Review, August 1978, People's Bank of Sri Lanka.

Table 5: Percent of total population in Jaffna, Mannar and Vavuniya Districts involved in Agricultural operation

Area	No. of agricultural operators*	Total population**	% in Agriculture
Jaffna District	103,303	701,603	14.7
Vavuniya District	13,393	77,780	17.2
Mannar District	11,460	95,243	12.0
Nothern Province	128,156	874,626	14.6
Sri Lanka	1,623,386	12,689,897	12.7

*Ref. Census of Agriculture (Small Holdings) Dept. of Census and Statistics—1973.

**Ref. Statistical pocket book of Democratic Socialist Republic of Sri Lanka. Dept. of Census and Statistics - 1979.

THE ROLE OF THE FACULTY OF ENGINEERING

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INTRODUCTION

A great University should have the following characteristics:-

- 1. The University should be a stronghold of scholarship in the pure theoretical subjects from which any expansion of knowledge takes place e.g. physics, chemistry, mathematics, biology, economics, political science, literature history, philosophy, and in the applied subjects like agriculture, engineering, medicine which deal in the application of knowledge derived from the basic disciplines.*
- 2. The University should have post-graduate and under-graduate divisions that are both strong.*
- 3. The University should maintain a balance between its long-term goals and its short-term obligations, i.e. between its responsibility to pure scholarship and its responsibility to the society of which it is a part.*
- 4. The University should maintain a sense of community. Here human beings are engaged in activities that are important, pleasant and exhilarating. All resources at our disposal will be needed to achieve this i.e. the residential system ; deployment of staff so that no student is face-less and anonymous; improved techniques of orientation and counselling; an increasing recognition of the role that students and staff can play in reaching important decisions about the future of the University.*

Such great institutions are not developed accidentally. Their existence depends upon a combination of public and private planning and support, and their continued strength on the devotion of those both within and without the walls of the University, who know and love them.

A great University should have faculties in all branches of study so that it can serve the society well.

Professional Engineer

A professional engineer has to be a scientist with a thorough background in relevant scientific principles and techniques, and also an artist capable of doing creative work in moulding the forces of nature to the service of mankind. The professional societies for the different branches of engineering have adopted definitions for the branches of engineering in which they specialise in. For example, the following definition for Civil Engineering was adopted by the American Society of Civil Engineers Board of Direction in 1961:-

“Civil Engineering is the profession in which a knowledge of the mathematical and physical sciences gained by study, experience and practice is applied with judgement to develop ways to utilize, economically, the materials and forces of nature for the progressive well-being of mankind in creating, improving and protecting environment, in providing facilities for community living, industry and transportation, and in providing structures for the use of mankind”.

Engineering Education in Sri Lanka

Prior to 1942, one had to go abroad to obtain engineering qualifications. A number of our older engineers obtained their qualifications in countries like India and United Kingdom. In 1942, the Ceylon Technical College was allowed to present candidates for the external degree in Engineering of the University of London. In 1950, the Faculty of Engineering was established in the University of Ceylon in Colombo and entrusted with the training of engineers. This Faculty was transferred to Peradeniya in 1964.

In 1966, the Ceylon College of Technology was established at Katubedda to provide courses at engineer's level. This became the Katubedda Campus of the University of Sri Lanka in 1972 and later the University of Moratuwa in 1979.

Engineering education at technician level is being provided by the University of Moratuwa and the Hardy Technical Institute at Amparai.

In this country, generally it takes a minimum period of eight years for a person to become a professionally qualified engineer. He spends the first four years in the University following the under-graduate course in engineering and the next four years in Industry obtaining professional training in engineering works. The University takes the main responsibility for the academic training of the undergraduate and the Industry takes the main responsibility to provide the graduates with the necessary professional training. Those graduates who are successful in obtaining the required profes-

sional training become Corporate Members of the Institution of Engineers, Sri Lanka, which is the professional body in this country for engineers.

Objectives of the Under-graduate Course in Engineering

Under-graduate courses in engineering during the allocated time of study aim at (i) imparting the required scientific knowledge, (ii) developing the creative faculties of the students to enable them to use sound judgement in drawing conclusions and (iii) developing the powers of decision-making.

A professional engineer is often called upon to make his decisions based on a large number of intangible factors in addition to the basic engineering principles. Therefore, it has become necessary to supplement the engineering subjects in the under-graduate curricula with subjects such as economics-history, sociology, management, law, communications and commerce. Further, since the sum total of both scientific knowledge and practical know-how seems to be increasing exponentially and since the scientific knowledge imparted to the student should cater to the needs many years ahead, the contents of the engineering subjects at under-graduate level need to be wide and varied. On the other hand, the obvious limitation imposed by the duration of the course has to be considered. Bearing these needs and limitations in mind, the objectives of the under-graduate programme are often limited to imparting selected fundamental principles which will have lasting application, and developing an attitude of mind in students suited for the pursuit of a career in engineering.

The basic contents in an under-graduate course therefore must include instruction in (i) fundamental scientific principles, (ii) technology and (iii) broadening subjects. However, technology should be kept to the essential minimum which enables an engineering graduate to be able to start work constructively with the first employer.

In Sri Lanka, there is a greater need for engineers with broad-based knowledge capable of handling a particular job that involves different specialities than for highly specialised engineers and therefore specialisation right from the first year of the under-graduate course should be avoided. Further, students admitted to the University come from differing social strata, and with little or no engineering bias. This imposes a further burden on the under-graduate programme of initiating and instilling an interest in engineering.

It is very desirable to integrate the under-graduate academic programme with work experience that would bring the engineering student into direct contact with Industry and the engineering profession. This experience

allows an early appreciation of the social and personal aspects of engineering through direct association with a technological environment. Work experience assists in producing a socially conscious engineer.

Continuing Education for Engineers

Under-graduate education programmes for engineers should walk a fine line between preparing a student for today's problems as well as giving him a foundation and a perspective which will at the same time prepare him for the problems of the future. Engineering education is a life-long education and the under-graduate programme must prepare the engineer for self-education throughout his career. A successful engineer should be familiar with the new techniques and developments that are taking place in his branch of engineering.

However, the University and Industry should assist the engineer in his education by organising continuing education programmes. Such programmes generally take the following forms:- (i) up-grading, where the engineer is taught to undertake higher technical responsibility, (ii) up-dating, where the engineer is given refresher courses, (iii) diversifying, where the engineer trained in one field of engineering learns to shift to another field, and (iv) broadening, where the engineer has to learn non-engineering subjects that enables him to be a better manager and a cultured and responsible citizen.

Need for Expansion in Engineering Education

The Faculty of Engineering at Peradeniya was planned for an annual intake of 150 students and this number was increased to 250 in 1978. The Faculties of Engineering and Applied Science at Moratuwa has increased their annual intake from 125 to 150, and a further increase in intake is likely to take place when the building programmes presently in hand are completed. These increases have been made in response to (i) enormous pressure from the ever increasing number of students who are achieving eligibility grades at the G.C.E. (A.L) Examination and (ii) a very strong conviction on the part of the government that there is a large increase in the demand for engineers. Hence, the total annual intake for engineering at present is 400 which is about 1 for every 35,000 of the population or about 1 for every 1000 students sitting for the G.C.E. (O.L) examination in all disciplines.

The approximate figures of the population per engineering student admitted annually in a sample of countries are given below. Countries that are showing a fairly good rate of development have been selected.

U.S.A.	4,000	(1976)
U.S.S.R.	1,500	(1968)

Japan	1,550	(1971)
India	26,000	(1971)
South Korea	9,000	(1971)
Thailand	28,000	(1973)
Singapore	5,000	(1979)

If Sri Lanka is to aim for an intake rate of 1 for every 25,000 of the population by year 1990 and 1 for every 10,000 by year 2000 annual intake must rise to about 750 and 2000 by these respective dates.

There have been no manpower surveys of the demand for engineers in recent years and the surveys that were made about five to ten years ago (Amarakone Report, Selvaratnam - Planning Ministry Paper) are out of date to be of any use even as guide-lines.

The demand for engineers has swollen rapidly in the recent times and is continuing to grow with the increase in development activities. A large number of posts are vacant in many of the larger organisations that employ engineers. Even raw graduates are being snapped up by private sector and state corporations at attractive salaries. Retired engineers are being recruited by the public and private sectors. Increasing number of senior, experienced engineers are being sought after for managerial or technical managerial posts in the public sector in preference to persons whose education was in disciplines like humanities, science, accountancy and law.

Hence, it seems that our engineering admissions to Universities should be increased by about 200 within the next five years and by a further 200 in the subsequent five year period.

Engineering Faculty in University of Jaffna

The strongest case for setting up the new Faculty of Engineering in the North arises from the fact that the North is inhabited by an ethnically distinct racial linguistic group. These people are desirous of achieving an all-round development of their homelands in the context of an all-round and balanced development of the whole country.

The established Faculties at Peradeniya and Moratuwa being far away from Jaffna, have made negligible direct contribution to the development of the Northern areas in terms of technical advice, consultancy and a contribution to the technical "sub-culture" of the region.

However, there has been a certain amount of autonomous development of light industry and medium heavy industry in the North. Small workshops equipped with lathes, drilling machines etc. turning out spare parts for

machinery and motor vehicles, a large number of electrical re-winding and repair shops, boat building and small scale marine shops have emerged. Also few larger industries associated with cement, chemicals and aluminium products exist. The autonomous light industry that has appeared, although it shows a great deal of ingenuity, is not capable of taking off into a more sustained cycle of industrialisation unless the prevailing technological level in the North is raised on a broad scale.

The setting up of an Engineering Faculty will help considerably towards enhancing technology. Consultancy services, computer programming facilities, designers and specialists who can pass judgement on designs, a library of handbooks and standard specifications, facilities for testing of products and quality control, and joint development programmes between the University and outside industries are some features that will develop. The ingenuity that the autonomous small scale industrialisation has already shown confirms that, given an opportunity such as this, there are people in the area who will know how to make the maximum use of it.

Nature of the Faculty

The Faculty in the North should not be confined to Tamil-speaking students only and closed to students from other parts of the country. Tamil students should continue to be admitted to Engineering Faculties in Peradeniya and Moratuwa as well.

This is desirable for purposes of technical cross-fertilization and further, students of all races can meet in the institutions of higher education and get to know one another professionally and personally. However, the majority of students in the proposed Faculty will be drawn from Northern, North Central, North Western and Eastern Provinces. A certain percentage of these students can be educated closer to their homes. This may be cheaper and also more desirable from the point of view of integrating them into the community and its development programmes.

Since it is envisaged that different Faculties of Engineering will develop different technological traditions, outlooks and methods, and achieve excellence in different fields of specialisation, it will also be necessary that students from different parts of the country and from different communities continue to have access to all these schools of engineering. The Faculty in the North while providing education in the basics of engineering science, should specialise in areas not available elsewhere in the country. For example, Marine-Engineering, Maritime and Coastal Engineering, Environmental Engineering and Electrical Machine Design could be some of the areas of specialisa-

tion for this Faculty. The course should be oriented towards the industrial needs of the Northern and North Central Provinces.

There should be inter-relations and interactions between the community and the Faculty. The Faculty should build a role in helping to solve engineering problems that might arise in the economic life of the community. Industrialists and others could approach the Faculty to obtain solutions to specific problems that come up in their enterprise and in the course of their development. This will help to orient the engineering students in the correct way. The Faculty should have service facilities like mechanical workshops, electronic workshops, tractor shops, testing facilities, computer systems etc. which the community can use for a fee.

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