

**REPORT ON THE
DEVELOPMENT OF A
UNIVERSITY
IN NORTHERN RHODESIA**

1963

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The Prime Minister and the Minister of Education wish to express their appreciation of the work done by the members of the Committee responsible for the production of this comprehensive report. They also wish to announce that they accept in principle its main recommendations. Action is being taken to establish a Provisional Council for the University on the lines recommended in the report

To: HIS EXCELLENCY SIR EVELYN HONE, K.C.M.G., C.V.O., O.B.E., Governor
of Northern Rhodesia.

YOUR EXCELLENCY,

Under arrangements made by the Department of Technical Co-operation with the assistance of the Carnegie Corporation, the American Council on Education and the Inter-University Council for Higher Education Overseas we were appointed to visit Northern Rhodesia to advise upon the development of a university there and its relation to other forms of post-“ O ”-level training and education. We now present our report.

Our several commitments have severely limited the time available to us for this task. We visited Northern Rhodesia between 27th September and 7th October, 1963. Mr. R. G. Hodgson was appointed to be our Secretary and he preceded us to Lusaka by ten days for the purpose of arranging our programme of work and assembling information for us. We wish to record our grateful appreciation of the easy efficiency of his preparatory work and of his contribution to the framing of our report.

We were not established as a formal body and the nature of our task did not require us to work in a formal way. The Government of Northern Rhodesia made prior announcement of our visit and invited interested persons to see us or to write to us. Thus we were able to proceed informally to talk to your Ministers and their officials, to visit educational institutions and to consult the representatives of mining companies and other commercial interests and of political parties. Although we could not but feel that our time was all too short we were most impressed by the willingness of so many busy people to give readily of their time to talk over the problems facing us. We were given frank and thoughtful advice and we have most carefully weighed all of it in the formulation of our proposals.

Our Chairman had visited Northern Rhodesia earlier in the year to make a preliminary examination of the university project and his note following that visit formed the basis of our consultations. Many of those to whom we spoke were therefore already familiar with the possible ways in which the project could be hastened and we found a remarkable unanimity of opinion in favour of the general lines which our Chairman had then postulated. Thus as we ourselves together worked out our joint ideas developing from this earlier work we were encouraged to believe that our final recommendations will find acceptance in most quarters and that there need be no delay in moving towards the accomplishment of an objective which we have personally come to look upon with the closest interest and enthusiasm.

Our work was made the more easy by the generous and comfortable arrangements made for our accommodation by the Government of Northern Rhodesia and we wish to express our thanks for this and for the help we received so readily from officials of several ministries and particularly, in the circumstances of our task, those of the Ministry of African Education.

J. F. LOCKWOOD (*Chairman*).

KARL W. BIGELOW.

A. TATTERSALL.

HUGH A. WARREN.

LONDON AND NEW YORK,
November, 1963.

PREFACE

We have deemed it convenient to present this report in three Parts so that in Part I may be found a general exposition of our views with a summary of our recommendations. We hope that Part I could stand on its own for the purposes of the reader who did not need a great deal of detail.

Part II contains eight chapters concerning those topics upon which we have felt it necessary to enlarge in detail in order to explain our views or to give guidance on such matters as finance and the constitution of the University.

Part III contains statistical tables.

PART I

GENERAL REPORT AND RECOMMENDATIONS

Northern Rhodesia is on the threshold of a momentous change in its status. The approach of independence calls for urgent decisions on educational policy. At the present time there is a great shortage of local Africans who have enjoyed the benefits of higher education or have had experience of the upper levels of administration in government and business. Much the same is true of the whole middle range of employment. Inevitably, independence will bring with it substantial and searching problems. Inevitably an increasing localisation of appointments will be expected and demanded as a matter of urgency, on the natural argument that an African country is not truly independent while the senior and responsible posts in official and other walks of life are mostly held by non-Africans. Risks will be taken, as elsewhere, in promoting young and inexperienced men and women to responsible positions. But, if administration is to proceed successfully and progressively during the next ten or twenty years, a large-scale educational programme, particularly at the secondary and higher levels, can alone supply the minds and hands to operate and support it satisfactorily.

2. Our concern is with post-“O”-level education and training. In our investigation we have naturally taken account of the ways in which pre-“O”-level developments have been moving so as to form as reliable a picture as possible of the flow of trained ability coming from the schools. But we have not attempted a detailed discussion of the pool from which this stream flows, since this is one of the tasks of the UNESCO planning mission which is currently visiting Northern Rhodesia. We have, however, been in touch with the mission. We would say only this. Secondary and higher education must be thought of as indissolubly linked. Without a sound secondary system, higher education has no solid basis. Since not all who are exposed to secondary education are fitted for higher education, the base of secondary education must be broad enough in numbers and the opportunities offered to produce an adequate supply of men and women qualified to go forward into one or other of the several fields of higher education. It is self-evident that the whole economy and life of the country will require a host of secondary-trained people to man the multifarious range of activities both in and out of government. The problem for every developing country is to strike the right balance between secondary and higher without diluting or debilitating the quality and value of either.

3. The starting-point of our inquiry into the establishment of a university has been a two-fold conviction; first, that the university must be responsive to the real needs of the country; secondly that it must be an institution which on merit will win the respect and proper recognition of the university world. Unless it satisfies these two criteria, it will fall short of meeting its national responsibility. It must combine practical service to the nation at a critical time in its life, with the fulfilment of the historic purposes of a university as a seat of learning, a treasure-house of knowledge, and a creative centre of research.

4. If it is to carry out satisfactorily the first of these responsibilities, it will need full freedom to define its own entrance requirements and to plan the range, structure and length of its degree courses. In order to enjoy

this freedom and the flexibility which freedom offers, the institution must be a university in its own right, not a university college in a special relationship for degree purposes with another university. If it were the objective of the foundation of a university institution to produce a relatively small élite of graduates to fill senior posts in government, schools, university, the professions and business, a special relationship arrangement would have something to commend it. But when well-trained men and women will be wanted in a broad spectrum of types of employment, a university free from the unavoidably constricting authority which the degree structures of another university would require is better fitted to encompass this wider range of interests and need.

5. Furthermore, it should conceive its national responsibility to be more extensive and comprehensive than has sometimes been the case elsewhere. It should draw its inspiration from the environment in which its people live and function. It should be a vigorous and fruitful source of stimulus and encouragement to education and training of all kinds and itself operate in fields which hitherto have not formed part of the normal United Kingdom pattern. As an independent institution it can be as inclusive as it wishes and experiment without hindrance in nationally desirable fields. Degree courses of a more vocational type can be contemplated. Subjects or areas of study which are described in the United Kingdom as "further" education could be considered as suitable for degree courses. The United States and some countries of the Commonwealth, not to mention other parts of the world, find no apparent difficulty in including them within the framework of university studies.

6. In saying this, we emphasise that these ideas do not conflict with the satisfaction of the second criterion. They do not preclude work of the highest quality. Nor would we wish to contemplate the establishment of a university which did not aim high and in its planning make provision for such work.

General Nature of the University

7. In developing the philosophy of the university idea along the lines of these two criteria, we have given special thought to the administrative structure which this philosophy requires. The extreme view, which we felt to have much attractiveness, would have been to combine "higher" and "further" education in a single university complex. Its appeal lay in its capacity to break down the artificial barriers between the two which have impeded the growth of technical education (in the widest sense) in other parts of Africa, to promote a better balanced growth of all forms of post-secondary school education and to encourage a widening of the secondary school curriculum. Only with great reluctance did we abandon this concept of a university comprehending all. Our main reason for rejecting it was the fear that the nascent university would be saddled with a heavy administrative burden which initially in its early years its staff could not carry. A new university institution, even on the simple traditional model, has serious problems enough to handle, often with the most limited resources of staff. To add to these problems might be to risk administrative break-down.

8. The proposals which we are putting forward, we believe, will prevent the growth of artificial divisions between "higher" and "further"

education, and will open up a wide field of co-operation between the two. We hope that these novel proposals will be enthusiastically welcomed as constituting a progressive step in the national interest.

NATURE AND STRUCTURE OF DEGREES

(i) *Entrance Qualifications*

9. Northern Rhodesia is fortunate in that the call for a university institution comes at a time when the system of secondary education is producing a steadily growing rise in the output of pupils, who will have completed courses up to the end of Form IV, i.e. to the point of being able to sit for the School Certificate or "O" level of the G.C.E. examination. The projections for the years to 1970 are encouraging and are significant for the planning of higher education. But sixth forms are few and an attempt to gear minimum university entrance requirements to the possession of a Higher School Certificate or a corresponding equivalent at the "A" level of the G.C.E. would so narrowly limit academic opportunities as to defeat the national interest. We therefore accept the wisdom of the man who said that "A university will not serve its social purpose if it sets its standards of admission so high that it is concerned only with a tiny minority of extremely able students and does nothing for the larger numbers of less spectacular ability who will not realise their full potential in service unless they have the advantage of a university education". We recommend that the normal entrance requirement for admission to a university degree course should be a suitable performance at the "O" level of the G.C.E. examination after twelve years of school education or the possession of equivalent qualifications. This accords with current practice in many countries of the world. The University will decide what constitutes a suitable performance and what equivalence means.

(ii) *Length of Degree Courses*

10. The full-time degree course itself should be of not less than four years' duration. For an ordinary (i.e. general or pass) degree the course should cover four years, divided into Part I (the first two years) and Part II (the second two years). For an honours degree, a further year at least of study would be required; but thought should certainly be given to the possibility of enabling outstanding students to obtain an honours degree in four years. Planning of the institution of honours courses should proceed actively during the first years of the University's life.

11. Since one of the dominant concerns of the university is with the meeting of national man-power needs, the university should be both multi-purpose and multi-level. In addition to these degree courses we attach great importance to the institution of two-year full-time courses leading to a certificate, diploma or associate degree. While these courses, particularly in more vocational and practical fields, should be complete in themselves, and qualify their recipients for useful work at, for example, good technician level, they should also wherever possible provide a basis upon which the more academically able and ambitious students might eventually proceed to a bachelor's degree. We should hope that within this type of courses some which were pursued elsewhere than on the University campus would be officially recognised by the University for the award of a certificate, diploma

or associate degree. The award, being granted by the University, would qualify the successful student for possible transfer to Part II of the relevant degree course. Such an arrangement would provide a channel of opportunity for those who had not satisfied the normal University degree entrance requirements, but who had shown in their technical or commercial studies a capacity to undertake academic studies beyond the point marked by the award of the certificate, diploma, or associate degree. We have in mind the possibility of transfer from a successfully completed course of at least two years' duration, if full-time, or of a longer period, if part-time, in such fields as teaching, agriculture, technical and commercial subjects, home science to Part II of an appropriate degree course. It would be desirable also for the University to accept a satisfactory performance at the "A" level of the G.C.E. examination as qualifying for exemption from one or more years of the degree course; this would go some way towards allaying the fears about the place of sixth forms in post-"O"-level education.

(iii) *Degrees and other Qualifications by External Study and Correspondence*

12. But, if the aim of providing wide opportunities for higher studies is to be fully realised, it would be wrong to limit the activities of the University and its contribution to the advancement of the people by restricting a formal association with the University to those who could spend several years of full-time or part-time study on the campus or in some other institution. This would deny opportunities to many potential students, especially mature students, who could benefit by the chance to read for a University qualification but who were prevented by their employment or by other considerations from pursuing a natural ambition to improve their education, competence, and standing. We believe that the opportunities thus provided would prove beneficial to teachers, whose consequent upgrading would be of particular value to the nation. It is, therefore, of the greatest importance that the regulations of the University should allow its examinations for degrees and other qualifications to be open to candidates who have pursued their studies externally. The University has here a wide field in which to offer a national service through valuable incentives to study and personal betterment. The facility which we propose could be of great advantage nationally. It could help internationally since there could be no valid objection to making it available to people in other African countries. External advisory services and correspondence courses, coupled with a good extra-mural extension system, should be set up and arrangements made for "summer schools" and short residential courses for off-campus students who might perhaps be required under the University regulations to attend them. We would prefer that there should be no distinction by name between internal and external degrees (or other qualifications).

(iv) *Degree Subjects and Field of Study*

13. Cost-factors, if nothing else, will necessarily and quite inevitably set a severe limitation on the range of offerings in the early life of the University. It is better to do well the things that can be properly afforded than to attempt inadequately and inefficiently a too extensive spread of subjects. No university which is concerned about its standards would take any other view. Northern Rhodesia will have to concentrate its attention on the type of educated people it really and urgently needs to promote national

progress. The man-power survey which has recently been prepared had not been published in time for this report, but the priorities of immediate need are fairly clear without a detailed assessment.

14. An accelerated development of secondary education will demand a great increase in the number of well-qualified teachers. For teachers a course for the bachelor's degree (B.A. or B.Sc.) of which the practical, professional element is an integral part, perhaps about one-sixth of the whole, would offer an excellent preparation; the major content of the course would consist of two teaching subjects. For this purpose alone some basic arts and science degree courses will be wanted from the very outset, or soon thereafter, such as geographical and historical studies with an appropriate African content, English studies, mathematics, the physical and biological sciences.

15. In a country which is largely agricultural the design of university courses to deal with specific local problems in the improvement of production is essential, and such courses should have a high priority.

16. Technology has its own special problems. The existence of the mining industry on the Copperbelt and the needs of the government, for example, in civil engineering, clearly imply some potential demand for graduate engineers and metallurgists, though the greatest need at present is at the sub-professional level. Before a Faculty (or College) of Technology (or Engineering) is established, a very thorough investigation should be made of the exact extent of the needs for various kinds of engineers. It would be folly to rush at once into founding a Faculty (or College) so costly as one of Technology, until it can be shown that the expense can be justified. Prudence would suggest that for the next few years would-be professional engineers should seek their training outside Northern Rhodesia. Nevertheless an investigation as suggested above should be initiated without delay.

17. Some of the social sciences—economics, administration and business management, commerce (to include accountancy, banking, insurance, taxation, etc.), law, statistics, psychology, sociology and social administration, and possibly home science—must find a place in the University at a fairly early stage, since the country will have a considerable need of administrators, lawyers, economists, statisticians and welfare workers. The University will probably want at a convenient time, though not immediately, to create an Institute for African Studies, which might grow out of the social studies field; this could serve as a meeting point for the research activities of the relevant University departments and provide a stimulus to such studies.

18. We propose that where the degree-courses are framed to suit professional and vocational purposes, the titles of the degrees should refer specifically to the subject. For example, such titles for bachelors' degrees might include B.Agric., B.Com., B.Tech. or B.Eng., B.Econ., LL.B., B.Admin., B.Soc.Admin.

19. If a speedy start is to be made in establishing a university, it will probably be necessary to begin with non-laboratory subjects. Laboratories for degree courses need the most careful planning and must await the appointment of professors who will rightly expect to be responsible for their design. We, therefore, recommend that subjects in the arts and the social sciences should be the first to be undertaken for degree purposes. Scientific subjects

should follow with the minimum of delay, since the country must have an increased corps of science-teachers and will need to initiate the training and development of some of its own nationals for posts in the University itself. We would assume, however, that, if our proposals for certificates, diplomas, or associate degrees are accepted, the University will lose no time in introducing courses leading to these awards and in considering and approving such courses in associated institutions as are felt to deserve recognition as courses leading to these awards; such approval might give a useful additional encouragement to students to enter these courses.

(v) *Counselling, guidance, and remedial work during degree courses*

20. We set great store by the provision of diagnostic, counselling, and remedial services for students in their first year and for transfer students in the first year of their Part II course. There should be a definite and systematic effort to obtain evidence, apart from that given by the schools, of abilities, talents, and interests. In this way a basis can be laid for checking tentative occupational ambitions. The data thus obtained can help the teaching staff in planning their courses. Where weaknesses are disclosed, special remedial work should be provided. Everything possible should be done to assist the students to carry their studies to a successful conclusion. Wastage of talent cannot be afforded in a developing country.

(vi) *Recognition of the degrees of the University*

21. We have laid much stress on our two criteria for the University, that the University should at once serve the real, urgent national needs and that it should be a University commanding respect in the academic world. In forming our judgments on the University and framing our recommendations we have kept these criteria in the front of our minds. Any doubts about the international acceptance of ordinary (or general or pass) degrees gained after four years of properly planned study from "O" level and of honours degrees obtained after five years of properly planned study should disappear. The intrinsic excellence of the courses will validate them and the evident quality and subsequent performance of the men and women to whom the degrees have been awarded will end all remaining argument. We appreciate the motives of those who feel that the new University should seek sponsorship from an already well-established university. But the idea of a formal sponsorship has become out-moded; it is held to represent an infringement of the autonomy of the university and has elsewhere been found unacceptable. We believe that the results expected to follow from sponsorship can be better secured if the University is prepared to accept external examiners and foreign academic advisers, and to encourage its departments to enter into informal relationships with outstanding departments in other foreign universities. The academic standing of its staff, the soundness and value of its courses, and the quality of its graduates will be the real guarantee that the University can hold its head high among its sister universities.

LIBRARY

22. One of the first buildings which will be required will be for the Library. In every university the Library is an essential focal point of the academic courses. A well-stocked collection of books and periodicals for undergraduate and research work is a *sine qua non*, and no effort should be spared to begin assembling it without delay.

FACILITIES FOR SOCIAL LIFE

23. The success of a university depends not only on the academic performance of its students but on the quality of the human society in which they live. It is essential that the University should provide adequate amenities for the promotion of an atmosphere in which social life can flourish. In particular, there should be a Students' Union building in which the corporate activities of the students can be centred. Everything possible should be done also to foster easy social contacts between staff and students.

STRUCTURE AND LOCATION OF THE UNIVERSITY

24. Simple answers to the question of the structure and location of a University have been bedevilled by the growth of a number of unrelated institutions in and near Lusaka and elsewhere in Northern Rhodesia. Is the University to be something entirely separate from them? Can any of them be absorbed into the University? Is it right to distort the expressed purposes of any of these institutions by admitting them wholly or partially into the University complex? These are the institutions:

- (a) The Rhodes-Livingstone Institute, now linked to the University College of Rhodesia and Nyasaland, pursues graduate work in the social sciences.
- (b) The Oppenheimer College of Social Services is mainly aiming at the training of professional social workers.
- (c) The College of Further Education covers such fields as general education, subjects for women, apprentice-training, commerce, audio-visual aids.
- (d) The Northern Technical College, comprising institutions at Ndola, Kitwe, Mufulira, Chingola, Luanshya, and Broken Hill, at present gives craft training and will later develop this to technician status.
- (e) The Hodgson Technical College does not come within a University concept at the present time and seems particularly well fitted to be a most valuable trades school, within the secondary education system, and giving special entry to the higher courses for technicians to be developed elsewhere.
- (f) The Natural Resources Development College has a site of some 750 acres allocated to it about seven miles from Lusaka. Its purpose is mainly to provide a central training institution for agricultural and veterinary officers of the middle range and for people of similar status in forestry, community development, and co-operatives.
- (g) The Staff Training College is designed to offer in-service training and also instruction to persons intending to enter government service; the courses will be aimed at the administrative and executive grades.
- (h) Chalimbana Training College, about thirty miles from Lusaka, has a course of three years' duration, for which the minimum entrance requirement is five credits in the Cambridge School Certificate examination.

25. We have no hesitation in declaring that the University should not be a mere collection of the existing colleges up-graded to university standard. On the other hand, it will have been clear from the earlier discussion of degrees and other qualifications to be awarded by the University that we see a real value in associating with the University some part of the work of the colleges; but a complete take-over appears impracticable.

26. The University must have its own headquarters on its own campus, where its central activities will inevitably develop on a large scale as new faculties and new academic interests and needs arise. The main campus should not be remote from Lusaka. Since the University must regard itself and be regarded as an intimate and important part of the life of the capital city and of Northern Rhodesian society, and since it will become the focus of many national and international activities and be the place where conferences and other gatherings will be held, its detachment from the immediate neighbourhood of Lusaka would be thoroughly undesirable. We recommend that a piece of land about one square mile in area situated on the Great East Road on the outskirts of Lusaka should be assigned to the University as the site of its main campus. We make no recommendation about a Faculty (or College) of Technology (or Engineering), beyond saying that if it is to be closely related with mining, engineering and metallurgy, a site on the Copperbelt would be preferable, and that, since the balance of advantage would suggest a site near to active mining operations and easily accessible for part-time lecturers from the mines themselves, a location near Kitwe would have more in its favour than one at or near Ndola.

27. In view of the emphatic recommendation which we made for the institution of external advisory services, correspondence courses and extramural extension services, and also of our expectation that the University may wish to offer some evening courses, we strongly urge that part of the central city area on which the College of Further Education and the Staff Training College have been built, should be acquired for these purposes.

28. Of the existing institutions in Northern Rhodesia we believe that three could be absorbed into the University. The Rhodes-Livingstone Institute, if it can be released from its present association with the University College of Rhodesia and Nyasaland, would form the impressive nucleus of a graduate-school in social studies, pursuing and developing research work of the highest quality and giving to the young University a unit which already enjoys an international reputation. It might then become by title the Rhodes-Livingstone Graduate School of Social Studies. The University would be well-advised to re-house it on the main campus, leaving its present site and buildings for staff residences and other purposes.

29. The work done at the Oppenheimer College could be absorbed as part of a Faculty of Social Sciences. Common sense would support the transfer of the work in due time to the main campus, freeing the present buildings for other uses. Whether this is feasible must depend on the readiness of the governing authorities of the College to contemplate a change of purpose so soon after its foundation.

30. The post-"O"-level work at the Chalimbana Training College should be taken over by the University as part of the work of the proposed

Department of Education on the main campus. The buildings of the College thus vacated could accommodate a training college for primary teachers or possibly a new secondary school.

31. The work envisaged for the Natural Resources Development College does not fit it for immediate absorption into the University, but we hope that it will have an association with the University and that some of its courses will be approved as qualifying successful students for University awards or, in some cases, for transfer to degree courses in the University Faculty of Agriculture. The College has been granted a site of some 750 acres, most of which is said to be good agricultural land. We urge that subject to independent expert advice consideration should be given to joint use of this land by the College and the University for the practical aspects of their work. There should be adequate space for the University farm as well as for the immediate needs of the College.

32. The Staff Training College should not be absorbed into the University. It has a series of special tasks to perform for the Government in the provision of short induction courses and refresher and advancement courses for administrative and executive officers and for local government officers. We feel that the University should establish its school of administration on the main campus but that, so far as possible, the University and the College should assist one another in providing visiting lecturers.

33. The College of Further Education and the Northern Technical College should also have an association with the University through the system of approval of some of its courses as qualifying successful students for the lower University award and for transfer to degree courses in an appropriate Faculty.

34. So far as can be judged at the present time, the Hodgson Technical College could not rank for formal association with the University in any part of its present work. It has a special and valuable function to perform and would probably be well advised not to depart from it.

35. We recommend also the exploration of a possible connexion between the Rhodes-Livingstone Museum and the University, since the staff of the Museum could probably assist in teaching and the development of research. Similarly government research establishments should be encouraged to form links with the University to promote co-operation in fields of scientific investigation and provide a panel of visiting lecturers in special subjects.

FINANCE

36. In attempting to present a reasonably clear picture of the likely financial demand of the University for the first quinquennium we have made certain assumptions.

- (1) That living accommodation for full-time students and academic and other staff will have to be provided.
- (2) That all the academic, administrative, and residential buildings and activities listed in Chapter 7 will have to be paid for in the first five years.
- (3) That the costs must be kept down to the minimum consonant with efficient working and satisfactory living conditions, and that

even radical measures such as the lengthening of the terms in the academic year should be explored.

37. University education is by its very nature an expensive commodity. No good university can be run on the cheap. Our estimate of the likely cost of the programme outlined amounts to more than £2,100,000 in capital expenditure, and to more than £1,600,000 (£175,000 in the first year rising to almost £470,000 in the fifth year) in recurrent expenditure. These figures do not include Government grants, which we hope will be generous in amount and quantity, to students to meet the cost of tuition fees and maintenance. Figures of this magnitude will confront the Government with a formidable problem. We have tried, by our proposals for the Rhodes-Livingstone Institute, the Oppenheimer College, Chalimbana Training College, and ultimately for the Natural Resources Development College, to reduce the possibility of over-lapping expenditures. We would further hope that by the bringing of the first three of these institutions wholly within the framework of the University, appeals to industry, business, foundations, and external governments or governmental agencies for grants could be channelled through the University so as to prevent the confusing multi-frontal approaches to which the proliferation of unrelated institutions gives rise. Even this measure of concentration leaves out other potential suppliants for outside grants, such as the institutions which have a limited association with the University.

NATIONAL COUNCIL FOR THE PLANNING OF HIGHER (INCLUDING FURTHER) EDUCATION

38. We would further recommend that the most serious and urgent consideration should be devoted to the advisability of setting up a National Council for the Planning of Higher (including Further) Education whose responsibility would be to present a balanced picture of needs of all kinds and to advise the Government and possibly other agencies or grantors on the allocation of funds and grants for teaching and research. A well-constituted Council of this kind could ensure that such monies as were likely to be available from all sources were allocated and used to the best advantage. It could also be a channel of advice to the Government on overseas scholarships on the lines of the Nigerian Bureau for External Aid to Education. It should also work in close co-operation with any Manpower Board or Human Resources Development Board which the Government might set up to make a continuing assessment of the national need for trained men and women in the various categories of employment.

PROVISIONAL COUNCIL OF THE UNIVERSITY

39. If, as we urgently recommend, the University is to be created in the very near future, it is of pressing importance that a Provisional Council should come into being immediately. The tasks of the Council will be to appoint a Vice-Chancellor or Principal (and a few senior academic and administrative colleagues, including the Librarian), to begin the academic and material planning of the institution, to prepare an instrument of government or a constitution for the institution, whether in the form of a charter or in some other form, and to collect and hold funds for the institution. If invited, the Inter-University Council for Higher Education Overseas and kindred American bodies could offer valuable assistance and advice.

40. It is understood that a Provisional Council could be set up by an administrative act, probably by an Order-in-Council of the Northern Rhodesia Government, and this appears to present the easiest procedure. This Council should not be large, possibly about eight or nine members in all, of whom five or six should be persons resident in Northern Rhodesia who are deeply interested supporters of the university idea and who can bring public experience and personal knowledge to the development of the project; and two or three academic persons from outside Northern Rhodesia, perhaps from the United Kingdom, the rest of the Commonwealth, or the United States of America, who can contribute from their own experience in universities to the taking of wise decisions by the Council on policy. The Chairman should be a person who commands widespread respect in Northern Rhodesia and, if possible, is outside current politics. There would be advantage if the Secretary to the Council could be selected with an eye to his becoming the Secretary or Registrar of the institution.

41. It will be the duty of the Provisional Council and of the Principal or Vice-Chancellor to define the purposes and objectives of the institution and its place in the contemplated or planned structure of higher education.

AUTONOMY OF THE UNIVERSITY

42. We take it for granted that the Government will respect and guarantee the autonomy of the University. Autonomy substantially means the freedom to select and appoint staff, to choose and admit students qualified by appropriate experience and by suitable test, to plan and provide courses of instruction, to foster and carry out research, to award degrees and diplomas, and to award scholarships. It certainly does not mean that an autonomous university has an absolute licence or an entitlement to pursue courses of action which are irrelevant to or unconnected with national needs. Government, in granting this autonomy, has a right to expect that it will not be abused. The Committee of Vice-Chancellors and Principals of Great Britain some years ago admirably defined the relationship which should obtain between an autonomous university and government: "The universities entirely accept the view that the government has not only the right, but also the duty to satisfy itself that every field of study which in the national interest ought to be cultivated in Great Britain is in fact being cultivated in the university system and that the resources which are placed at the disposal of the universities are being used with full regard both to efficiency and economy". It is a relationship which depends for its success on sympathetic mutual understanding between the University and the Government and its departments and is likely to thrive when the University demonstrates unmistakably a sensitive appreciation of national needs in the planning of its academic work.

RECRUITMENT OF STAFF

43. The academic well-being of a university springs in large part from the high quality of its staff. There is no superabundance of good university teachers in the world at the present time and competition for them is severe. Many new universities have been established and others are planned, while the older universities are undergoing rapid expansion. In Africa the recruitment of the right kind of staff will present problems which will be difficult for many years and, unless the most strenuous efforts are made to

train local people for academic employment, may be almost intractable. At the UNESCO Conference on the Development of Higher Education in Africa held at Tananarive in September, 1962, it was estimated that in order to man the universities in West, East, and Central Africa, as many as 7,000 expatriates would be needed up to the year 1980, by which date it was expected that locally born staff in adequate numbers would probably have been trained and be in post. It will not be easy to recruit staff of established reputation in some subjects, e.g. mathematics, pure science, economics, statistics, and law. But they must be found. Some may be provided by secondment schemes; one of the advantages of the relationship, to which reference was made earlier, between a department in the University and a distinguished department in a foreign university is that it often includes arrangements by which the foreign university supplies members of its staff, while itself offering facilities for post-graduate training to graduates of the African university. Part-time teachers can probably be enlisted locally in some fields of study. To attract high quality staff, good conditions of service and suitable opportunities and facilities for research are essential; there is no escape from these requirements. We recommend that advice and assistance in recruitment should be sought from the Inter-University Council for Higher Education Overseas in London and the Overseas Educational Service in New York.

FOREIGN SCHOLARSHIPS AND STUDENT INTERCHANGE

44. Until Northern Rhodesia's own University is fully in operation, the country will have to rely entirely on institutions elsewhere to provide opportunities for its young men and women to receive higher education to degree level. As soon as the University is established it should, of course, become basic national policy that Northern Rhodesians should take advantage of their own country's facilities.

45. However, it must be recognised that there will always be reasons justifying the attendance of some students at colleges and universities in other parts of the world. The most potent of these reasons will be the non-availability of certain programmes of advanced study at home. Modern higher education is marked by a wide variety of specialised programmes, essential for the development of particular skills, and no single university (or, indeed, national system of higher education) can afford to offer all of these. Thus, of many hundreds of institutions of higher education in the United States, only a handful conduct medical schools, and students from many countries who seek advanced training in horology converge upon Switzerland.

46. A second valid reason relates to the desirability that a proportion of the young people of any country should receive the special advantages that can be gained from study elsewhere. It is characteristic of the university world that a certain amount of international exchange of students is encouraged and facilitated in the interest of the broadening of horizons. The values of international student exchange, both to the sending and to the receiving countries, are now universally recognised.

47. For both these reasons Northern Rhodesia should expect and desire that there should always be a flow of its own young citizens to institutions of higher education in other countries and from other countries to its own institutions. This will be especially true as respects other countries of Africa, though interchange with other continents will also remain essential.

48. There is a problem, of course, of exercising a measure of control over such arrangements, and this can be particularly troublesome in the case of countries in which universities are being newly established. For students in such countries study overseas at well-known institutions is likely to have special attractions. Moreover, governments, institutions, and even individuals elsewhere may, for a variety of reasons, have developed scholarship programmes designed to be of benefit to young people of the nations hitherto lacking universities of their own or adequate places within them. In these cases deliberate efforts must be made to establish appropriate policies and to rationalise developments. It is recommended that such efforts be undertaken in Northern Rhodesia as an important element in national planning for the provision of higher educational opportunities. It is no way of developing a national university to have the cream of its potential students whisked away by the tempting offers of bursaries and scholarships to foreign universities, when courses are available at the home university.

49. Prime emphasis should be given by Northern Rhodesia to ensuring the healthy development of its own University and other institutions operating at post -“ O ”- level. To this end a study should be made of scholarship and comparable programmes of universities, private agencies, and governments in other parts of the world that have appeal for Northern Rhodesian youth and discussions launched with these in the interest of reaching common understanding as to policies to be pursued. Many such bodies are already aware of the problem to be dealt with and eager to function in ways that will be to the best interests of the new nations whom they desire to help and of the emerging institutions of higher education within these nations.

The following guide-lines to planning are suggested :

- (1) The basic policy should be in favour of Northern Rhodesia's youth obtaining their higher education in their own country. Government should not normally grant undergraduate scholarships for foreign study where courses are available at the University in Northern Rhodesia, and should not actively encourage undergraduate students to accept foreign awards, except where no course is provided in Northern Rhodesia.
- (2) Nevertheless, a certain amount of student exchange should be welcomed, particularly in the case of post-graduate students. This implies the attraction of students from other countries to Northern Rhodesia as well as the reverse.
- (3) In the case of students requiring specialised training not available in Northern Rhodesia, guidance in the choice of institutions to be attended should be provided in the interest of making as certain as possible that the programmes of study to be followed will fit the needs of the individuals and of the nation. Attention should also be given to the availability of suitable opportunities elsewhere in Africa, especially those in neighbouring countries. We have noted the emphasis which the Report of the UNESCO Conference at Tananarive, Chapter IV, “The Financing of Higher Education”, laid on the importance of the greatest measure of co-operation between African countries in the development of higher education. This is particularly necessary in the

fields of expensive professional and specialised disciplines, such as medicine, veterinary science, and engineering. The possibility of reaching reciprocal agreements for the facilitation of student interchange should be systematically explored, as should the extent to which it may prove practicable and desirable to continue to use the facilities available at the University College of Rhodesia and Nyasaland. The prospective formation of an association of African university vice-chancellors should prove helpful in this regard.

CONCLUSION

50. In this short general report we have attempted to set out succinctly the principles which should govern the character and objectives of a University in Northern Rhodesia. In making our survey of the situation and in formulating our views we have sought consistently to regard the national need and the contribution which the University can make towards nation-building as our chief guiding lights. We have not thought it proper to try to present a detailed blue-print of the whole structure and operation of the University. The preparation of such a blue-print will be the duty of the authorities of the University when they come into being. But we firmly believe that the suggestions which we have put forward are thoroughly practical and that service in the University as we visualise it will offer an inviting challenge to enterprising, lively and imaginative academic teachers and research workers. We hope that the Government will recognise the importance of providing adequate financial support both from its own resources and procuring aid from external sources from which it can be suitably sought. It is our opinion that our proposals are such as to commend themselves to potential donors.

We list now in summary form our main proposals:

- (1) A University should be established without undue delay, and a Provisional Council should be appointed at once to begin the planning.
- (2) The University should be an autonomous institution, empowered to award its own degrees and other qualifications.
- (3) Its main campus should be sited on the Great East Road on the outskirts of Lusaka, with subsidiary campuses on the central site in Lusaka and (for the Faculty or College of Technology or Engineering) on the Copperbelt.
- (4) It should direct its courses and research particularly to meeting national development needs, with special concentration initially on teacher-training, administrative, social, and legal studies, agriculture, and technical education.
- (5) The disposition of the various subjects of study among Faculties or Schools should be decided by the University authorities.
- (6) The normal minimum entrance requirement for its degree courses should be an approved standard of performance at the Ordinary level in the General Certificate of Education examination or its equivalent.
- (7) Degree courses would normally require a minimum of four years' full-time study for an Ordinary (or General or Pass) degree, with a further year of study for an Honours degree.

- (8) The four-year degree courses would be divided into two periods, the first two years for Part I, the second two years for Part II.
- (9) Provision should be made for certificate, diploma or associate degree courses which would cover two years of full-time study or a longer period if pursued part-time. The University would recognise courses pursued in associated institutions for the award of University diplomas and associate degrees.
- (10) In appropriate cases the University would grant the right to students who have successfully pursued these certificate, diploma or associate degree courses to transfer to Part II of a suitable degree course. This will almost certainly require an adjustment course in the third year only for the students transferring.
- (11) The University should throw open its degrees and other awards to private students working externally and should set up correspondence courses and advisory extra-mural and extension services to assist such students. This concession should not be restricted to Northern Rhodesia.
- (12) The Rhodes-Livingstone Institute should, if possible, sever its connexion with the University College of Rhodesia and Nyasaland and become the Rhodes-Livingstone Graduate School of Social Studies in the University.
- (13) The Oppenheimer College of Social Services should be absorbed into the University as the nucleus or as part of the University Faculty of Social Sciences.
- (14) The post-“ O ”-level work of the Chalimbana Training College should be transferred to the University campus as part of the Department of Education, its present buildings being used to house another training College or secondary school.
- (15) The Staff Training College should not at the present time be linked with the University.
- (16) A category of associated institutions should be established. These would be institutions such as the College of Further Education, the Northern Technical College, and the Natural Resources Development College in which full degree studies were not included but which conducted approved courses for diplomas or associate degrees.
- (17) The Rhodes-Livingstone Museum should be invited to enter into relationship with the University.
- (18) Adequate resources and facilities should be provided for research and everything possible done to ensure proper co-operation between the University and Government research establishments in the development of scientific research.
- (19) As soon as is possible and convenient the development of an Institute of African Studies should be considered which initially would provide a meeting-point for the research activities of the relevant University departments and provide a stimulus to such studies.
- (20) Since it is desirable that there should be a single University channel through which could pass grants to assist the work for

courses aiming at the degrees and other qualifications of the University, the Council of the University should perform this function.

- (21) Since it is also desirable that there should be a rational planning of higher and further education, a National Council for the Planning of Higher (including Further) Education should be established, which, in association with a Manpower Board or a Human Resources Development Board could advise the Government and external aid-giving bodies on the allocation of grants and assistance to the University and to other institutions.
- (22) Investigation should be initiated without delay into the character of the need for the Faculty (or College) of Technology (or Engineering) and into the timing of its inception.

PART II

Chapter 1

LOCATION OF THE UNIVERSITY

51. We have naturally given much thought to the location of the University. It was in particular represented to us by the Municipal Council and by certain of the citizens of Ndola that there were irrefutable arguments in favour of deciding that rather than being in Lusaka the University should be on the Copperbelt. Once this was decided, so the argument ran, then it followed naturally that it should be sited at Ndola. A secondary argument developed in these representations was to the effect that in the interests of economy and speed the University might well be divided so that the Arts faculty was based upon existing facilities in Lusaka while the rest of the University, including its central administration, was at Ndola. We have considered all of these arguments very carefully because they had an important bearing on the related problems of the existing technical college and the future of technological training.

52. We have every respect for the civic aspirations of Ndola but we cannot feel that all of the factors adduced in argument are valid. We believe moreover that the first university institution in Northern Rhodesia (and there will surely be others in the future) will, once it is soundly established and over the inevitable early difficulties, be so significantly concerned with the needs of Government in many fields that it must be close to the seat of Government. In saying this we are not mindful of any considerations of mere prestige, either of the Capital or of the University, but solely of the necessary working arrangements which may be to the best advantage of both Government and the University. We do not believe that except in the case of the later development of higher technological studies there are good grounds for dividing the University and we recommend therefore that the University should be at Lusaka.

53. It was with this possibility in mind that the Government had earlier sought to make provisional reservation of suitable land and the City Council of Lusaka had accordingly reserved a parcel of land of approximately one square mile area bounded on the north by the Great East Road, on the west by the Agricultural Society Showgrounds, on the south by the Airport and on the east by the track running south from Handsworth Park. We have examined this site and believe it to be very suitable for the University's purposes.

54. Planning must take into account the position of the University twenty or fifty years from now. Even if present necessity forces a measure of non-unitary existence in the early years, growth can be expected at the centre and a central institution on a large scale will inevitably develop as new faculties and new academic interests and needs arise. A site of at least a square mile is desirable, if academic buildings, student residences, and playing fields are to be suitably sited and landscaped. It is also essential that the University headquarters and its central buildings should not be remote from the city. The University should regard itself, and be regarded as an intimate and important part of the life of the city and of Northern Rhodesian

society. Its future as the focus of many national and international activities, as the place where conferences and other gatherings will be held, as an assembly-point of learning linked to practice, makes its detachment from the immediate neighbourhood of Lusaka thoroughly undesirable. If this thesis is right, an area on the fringe of the city has to be sought. The area set aside is of suitable acreage and a good deal of it is on a gentle southward slope. Its farthest point from the city centre by the Great East Road and Cecil Rhodes Drive is about three and a half miles and its nearest, if access could be gained from Rose Mary Road (by the Airport) would be little more than one and a half miles. It would be spacious enough to hold in attractive dispositions the buildings of every kind needed by the University and in the lower, flatter parts could probably provide adequate playing fields. The northern part of the site is about two miles from the Rhodes-Livingstone Institute and three to four miles from the proposed Natural Resources Development College with its extensive farm; by the longer route it is about four miles from the Oppenheimer College, and if a shorter route is found possible, only about two miles. It is also within easy distance of the proposed Lusaka Stadium.

55. We therefore recommend that this land should now be formally acquired for the University's main campus.

56. At an earlier stage in the proposals for the establishment of a university it was suggested that the central city site, on which now stand the College of Further Education and the College of Staff Training, should be used for the University. We are satisfied that had the whole of that site been available it would not have been suitable for the long term planning which is so desirable. We now believe however that it would be of great advantage both to the public and to the University if a portion of that site were to be acquired for the University. We understand that the City Council is minded to develop the whole area for cultural and educational purposes so that there is not likely to be any objection to the University having a part of it. There are two reasons in our minds—(i) that here would be the sensible and convenient place for the development of the Correspondence School and the Department of Extra-Mural Studies and (ii) that future practical associations of the University with the Colleges of Further Education and Staff Training might be more readily facilitated. The first of these reasons is the more significant and compelling. We have already shown that although we want the University to have unconstricted room for future expansion we want it to be a part of the community at large. To have land on the fringe of the present city limits is a necessity for the future and we do not think it to be so isolated as to inhibit the growth of community relations, but if in addition there can be some University activity in the very heart of the city then we feel that the development of these relations will be speedy and effective. No activity could be more appropriate to this end and this place than that which is directly concerned with a wide variety of people. We therefore recommend that a sufficient part of the central city site be acquired for the University for the development thereon of the Correspondence School and the Department of Extra-Mural Studies.

57. We have elsewhere stated that we believe that a future detailed investigation will show that the development of higher technological studies will be appropriately located on the Copperbelt. We are reluctant to pre-judge the issue of siting but more anxious not to be thought to have evaded

this issue. Therefore, while making the reservation that development in the next few years may invalidate the conclusions we have drawn from our necessarily brief survey, we believe that we ought briefly to indicate our general line of thought on this matter.

58. We have no doubt that the Northern Technical College must develop, and indeed must flourish, in the performance of its vital tasks and we are confident that it will establish many links with the University. We are equally certain that the actual site of the Technical College at Ndola is too limited to permit of its transformation into a technological faculty of the University. Since some other place would therefore have to be found it would undoubtedly be sensible to settle upon a place which is central in the Copperbelt, which is at the core of the industrial and technological activities of the country and which is as near as possible to the greatest number of the many varieties of professional and technical experts who must be called upon for consultation and advice and for part-time teaching. We conclude that most of the requirements could best be met by placing future engineering and mining studies at high levels in the neighbourhood of Kitwe.

Chapter 2

EDUCATION

59. No responsibility of a university is greater than that of contributing to the maintenance and continuous improvement of the social institution of which it itself is a leading part—the system of education.

60. The welfare and progress of any society depends, more than upon anything else, upon its people. Natural resources may be great, but their potentialities can only be realised through the application to them of human knowledge and skill. On the other hand a nation whose people's talents have been highly developed can prosper even if its natural resources are meagre.

61. Education is the process whereby human talents are deliberately and systematically cultivated. It is the process whereby the potentialities of men and women are enabled to find constructive expression, to the benefit both of the individuals and of society. It is the process whereby there is created that human capital that must be present alongside material capital if a prosperous modern economy is to exist. It is the process through which only can there be developed those man-power skills without the presence of which a well-governed, well-fed, humane society is to-day impossible.

62. It follows that for a new and aspiring nation nothing is more necessary than a well-planned, well-staffed, and well-conducted system of education. Such a system will comprise educational units at the primary, secondary, and higher levels. The University will be its keystone.

63. The development and steady strengthening of a system of education requires many things. It requires a wise selection of goals: to what ends should education be directed? It requires the discovery and use of efficient means: what should be taught and how? It requires decisions as to organisation, plant, equipment, administrative arrangements. It requires co-ordination amongst its several elements.

64. Above all, it requires the presence of an adequate supply of able, dedicated, and professionally competent teachers. And this requires an

effective system for the recruitment, pre-service education, and continuous professional development of these teachers.

65. The role of the University as regards these matters is multiform. It should itself be preparing not only classroom teachers but also teachers of teachers and specialists in educational research, planning, administration, and the performance of such functions as selection, testing, and guidance. It should be a chief locus of educational research and a leading conductor of scientifically designed educational experimentation. It should be a participant—often a leading participant—with other units in the educational system (including appropriate departments of Government) in joint efforts to appraise and improve the operation of the system as a whole. It should make its services freely available to such other units.

66. That such functions should be performed by one or more universities is necessary in any country. That they should be effectively performed by the sole university of a country in which the swift and efficient development of a national system of education is of primary importance is absolutely essential.

67. For these reasons there should be established a Department and an Institute of Education in the new University in Northern Rhodesia at the moment of its creation.

68. In considering in more detail the work that should be done by the new University in the field of Education, it will be convenient first to organise the discussion under the headings: (i) teacher education, (ii) research, and (iii) field services and co-ordinative activities. Issues of organisation and staffing can then be examined.

TEACHER PREPARATION

69. The University should prepare qualified graduate teachers through the inclusion of an appropriate component of professional education within the structure of its ordinary (i.e. general or pass) degrees. This type of arrangement (which saves a year's time as compared with the system that concentrates professional study in a post-graduate year) has long been followed in a number of leading countries of the world and may well be on the verge of being introduced in the United Kingdom. It was recommended for Nigeria by the Ashby Commission and has been already adopted by the University of Nigeria and the University of Ibadan. In East Africa such a plan has been introduced at Makerere College and is being developed for use at the University College of Dar-es-Salaam.

70. The planning of the undergraduate course designed for the preparation of teachers should be shared in by the several Arts and Sciences and Technical departments as well as by the Department of Education. One teaching subject should be carried to such a level as will enable outstanding students to proceed to Honours or advanced degree work. A second, related subject should be pursued in somewhat lesser depth. The strictly professional component should be allotted from 15 to 20 per cent. of the twelve-term course, not including teaching practice which should be scheduled to be done during one or more of the long vacations.

71. In view of the pressing national need for qualified graduate teachers, early and persistent efforts should be made to identify students with promise for such work and to encourage them to prepare for it. This effort should be shared in by the entire academic staff and not left to members of the Department of Education alone.

72. What degree should be granted to students successfully completing the course particularly designed for teachers? Makerere awards a B.Ed., Ibadan a B.A.(Ed.) or B.Sc.(Ed.), and Dar-es-Salaam plans to grant the straight B.A. and—eventually—the B.Sc. The Dar-es-Salaam scheme, which has long-established precedent in the United States and elsewhere, has much to commend it and we support it for Northern Rhodesia.

73. Reference has already been made to the importance of ensuring that graduates who have prepared for teaching should be able—if otherwise qualified—to proceed in due course to Honours and higher degree levels. Such work might be done exclusively in the Arts or Sciences or in technical subjects but the probability is that committed teachers will wish to include in their advanced programme elements designed to increase their professional knowledge and competence. This prospect should be recognised from the outset and thought given to the eventual provision of appropriate opportunities for advanced and specialised work relating to Education. Workers in the field of education who carry administrative, inspectorial, university teaching, and research responsibilities have special responsibilities that can best be discharged by those with special training. The proper place for such training is, evidently, the University.

74. While every effort should be made to ensure that prospective teachers obtain their professional training at the undergraduate level some persons who have pursued alternative courses may later desire to become teachers. Should this seem likely to become the case, plans for meeting the needs of such persons at the post-graduate level should be, in due course, laid.

75. It may safely be assumed that for an indefinite period Northern Rhodesia will find it impossible completely to man its secondary schools with graduate teachers: reliance will continue to have to be placed, in the lower forms, on non-graduate teachers as well. These teachers should have completed Form IV, but may have been admitted to further study on a standard falling somewhat short of that required for four-year courses at the University, and in any case will themselves follow a course of briefer duration.

76. A three-year course for such teachers is now offered at Chalimbana, and there is convincing testimony that the third year (the course previously lasted for only two) is especially fruitful. However, with the introduction of a four-year degree course at the University and in view of the general basic two-year/four-year pattern being recommended for adoption at the post-school level it would seem desirable that this pattern also be followed in the case of teacher education. However, should it appear practically necessary (in the interest of most efficient cultivation of talents) to admit to non-degree courses students whose existing attainment levels called for considerable gap-filling and remedial work in addition to that required to raise them to the two-year University standard, continuation of the three-year course might be justified, the first year being considered preliminary in University terms.

77. A number of universities in Africa have, during their early years, conducted two-year non-degree courses for teachers in the upper primary and lower secondary grades and it seems probable that the new University in Northern Rhodesia should undertake to do the same. As is recommended throughout this Report, competent products of these courses (and of comparable courses conducted elsewhere) should be eligible to carry their work eventually to degree level.

78. As regards teachers for the primary schools generally the fact must be recognised that it will be a long time in Northern Rhodesia before graduates can be spared for such work. However, as will be stressed in some detail later, the University should be deeply concerned with the welfare of the nation's primary schools and their teachers. Thought might well be given, therefore, to inclusion among the teacher-preparatory courses of the University, of a course of two (or with a preliminary year, three) years' duration designed for teachers in the lower grades. Standards of admission should, of course, be the same as for those entering courses of equal length in preparation for teaching in the upper primary and lower secondary grades.

THE IN-SERVICE EDUCATION OF TEACHERS

79. Even with the best-prepared beginning, teachers have much still to learn, and with the progress of educational research and experimentation the same is true of even the ablest teachers with long experience. For all teachers, therefore, opportunities to receive in-service educational assistance throughout their careers are important. When, as is the case in Northern Rhodesia, many serving teachers lack even modest professional qualifications for the tasks they are performing, massive efforts to provide in-service training are essential. The University should undertake to play a leading role in the provision of such training, and should exhaust its ingenuity in so doing. Its concern, in this regard, should be with teachers (and, indeed, all kinds of educational workers) at every level.

80. However, in planning and carrying out its responsibilities as regards in-service education the University should not act alone. Through its Institute of Education and a National Council on Teacher Training it should co-operate systematically with officials of the Ministry of Education (and quite possibly other Ministries) and with all the teacher training colleges of the nation.

81. Short refresher courses should, of course, be mounted, but also more extended courses and workshops should be offered during the long school vacations. Of special importance will be the development of correspondence courses carefully designed to enable serving teachers in various categories appropriately to develop their knowledge and professional skills.

82. Successful additional attainment by teachers through participation in its system of in-service education should be suitably recognised both by the University and by the Ministry of Education. It should be possible for non-degree holders to proceed to degree level by these means as well as through normal residence. But all achievements making for improved teaching ability should be recorded, and—when certain levels have been reached through the completion of approved patterns of in-service study—suitably rewarded.

83. In developing in-service programmes of study the University would be well advised to pay special attention to those designed for educational workers occupying positions of widespread influence. Among such would be training college tutors, school principals, inspectors, and provincial and district education officers—all persons in a position to exercise a special leadership in the steady development of a superior national educational system.

EDUCATIONAL RESEARCH

84. The goals of education and the means to be employed in the attainment of these goals are everywhere issues of the greatest importance. Too often they are decided on bases including little in the way of tested knowledge. It is the function of research to provide such knowledge, without which decisions are likely to be taken that fail to have desirable or desired consequences.

85. Since education is carried on in relation to particular groups of persons in particular countries, the findings of educational research produced elsewhere must always be of doubtful relevance. The ways in which children grow and develop in Northern Rhodesia must be presumed to differ from the ways occurring in, say, the United Kingdom or the United States of America, or Ghana, or the Sudan. Inferences as to learning and teaching drawn from research studies carried out in such countries cannot, therefore, be presumed to be reliable for application in Northern Rhodesia. Similar statements could be made regarding research related to selection tests and measurements, curriculum construction, teaching methods, counselling and guidance, school administration, school design, school finance, and, indeed, the whole range of educational problems.

86. All these matters call for research rooted in the realities of Northern Rhodesia. The Institute and Department of Education in the new University should, patently, be centres for such research, functioning in co-operation with other relevant research bodies such as the Rhodes-Livingstone Institute and the research divisions of Government. The co-operation, too, of the schools and of their teachers is essential.

87. That educational research should be closely related to the pressing problems and current efforts of those charged with the conduct of the educational system should be self-evident. Equally evident should it be that research findings should be promptly applied. The processes of thinking about problems and of doing something about them should go hand in hand.

88. The clear implication is that the University's research and instructional activities, relating to education, should be closely linked, and that arrangements should be established whereby the implications of research findings can be promptly tested through school experimentation. The University should take a lead in establishing the co-operative relationships necessary for such a process. To this end it might well establish "laboratory schools" on its own campus or develop special linkages with schools in its own neighbourhood or at a greater distance.

89. In any case, in view of the profound national importance of swift improvement of the national system of education in its every aspect, the

University, from the moment of its establishment, should accept the responsibility of conducting educational research and experimentation as a major one, and should be staffed and equipped to discharge that responsibility well.

FIELD SERVICES AND CO-ORDINATIVE ACTIVITIES

90. By the term "field services" is meant those activities whereby the Institute and Department of Education may provide appropriate and desired assistance to the schools, training colleges and departments of Government, and other independent agencies concerned with education in Northern Rhodesia. Such provision will have as its purpose the utilisation of the special resources of the University in the interest of the shared goal of strengthening the national educational system.

91. The University, particularly but by no means exclusively in its Institute and Department of Education, will possess specialised human and material resources that should be available to be drawn upon by other educational agencies. Its staff will necessarily include persons with expert knowledge respecting many educational problems of pressing concern to such agencies. Its Institute of Education should have as a major responsibility the facilitation of access by schools, training colleges, and Government departments to such expertise.

92. Through the rendering of field services the University will itself gain much. Efforts to identify the major problems of all parts of Northern Rhodesia's educational system and to contribute to their solution will ensure that the University staff keeps realistically aware of the nation's basic educational needs. Such awareness will provide solid guidance to the University's research activities and to its arrangements for the instruction of those who must help meet these needs in various capacities.

93. As the apical element in Northern Rhodesia's system for the education and training of teachers the University should hope to assume a role of co-ordinative leadership. Through its Institute of Education it should, with the approval and support of the Ministry of Education, seek to bring into being a National Council on Teacher Training in which all training colleges should have a part. This Council should engage in continuous efforts to appraise and improve existing programmes for the preparation of teachers. It should approve courses and syllabuses, though in an experimental rather than a standardising mood. It should establish standards of achievement to be met by students pursuing various types of teacher-training programme, and recommend to the Ministry the kinds of recognition to be awarded to those successfully reaching such standards. In the case of programmes reaching beyond the School Certificate or "O" level, the University's Institute should (as a consequence of a "special relationship") be authorised to issue or endorse the certificates attesting successful completion, and to identify whatever parts of the work done might be counted for credit towards the award of higher certificates or degrees under strict University auspices. Finally, the National Council should undertake to set up agreed standards to govern the appointment and promotion of staff members in the teacher colleges.

94. The advantages of co-ordination of the sorts here recommended should be patent. The University should accept a leading responsibility in assuring such co-ordination.

ORGANISATION

95. The responsibilities of the new University as respects the whole system of education in Northern Rhodesia will, it must now be evident, be very considerable and quite varied. While the work must inevitably begin on a relatively modest scale, eventual developments should be anticipated from the outset and organisational plans made with these prospective developments in mind.

96. In accordance with a familiar pattern, it will probably seem wise to distinguish between a Department of Education, responsible for instruction, and an Institute of Education, responsible for field services and coordinative activities, but the lines of division between the two should be thought out afresh in view of the unusual characteristics that it is recommended should mark the new University. Close integration of these parts will certainly be essential and sharing of staff members will surely prove desirable.

97. The Department can be expected to concern itself with the planning and conduct of all courses of study designed for teachers and other educational workers and leading to the degrees, diplomas, associate degrees and certificates awarded by the University. These will, if the recommendations of the report are accepted, be attainable not only through the customary full-time residence but also by correspondence-study and attendance at vacation courses. Members of the Department should be fully involved in all such work. The Department will also need to determine the credit to be awarded for the successful completion of various parts of a course programme, whether at the University or at a teacher training college or other non-degree-granting unit within the national system of higher education.

98. The Institute will take the lead in building and maintaining relations of mutual value with the training colleges and schools of the nation, and with the Ministry of Education. It should also accept a special responsibility for the promotion of research and educational experimentation. However, as will be set forth in more detail later these statements do not imply a sharp division of function between staff members within the University, or between them and persons attached to training colleges or the Ministry of Education. While some organisation in terms of jobs to be done is essential, it does not follow that individual staff members should be restricted to particular jobs. Indeed, it will be recommended that at the outset, at least, a single person should head up the entire work of the University in the field of Education.

99. Something should now be said about the effect of the creation of a University on existing institutions, in Northern Rhodesia, in which teachers are being prepared. Of these, only Chalimbana raises serious questions since only Chalimbana admits students at approximately the level being proposed for the new University, and only Chalimbana prepares teachers for the secondary schools.

100. Moreover, the location of Chalimbana is of significance. It is not far from Lusaka, where it is in this report recommended that the new University should have its headquarters; yet its situation is relatively isolated and it lacks easy access to primary and secondary schools where its students may observe, participate, and responsibly engage in teaching practice.

101. A further point to be considered is the issue of the relative advantages of concentration as contrasted with dispersal of effort.

102. Bearing all these matters in mind, it is recommended that the present post-“O”-level work of Chalimbana be transferred to the new University, according to the patterns already proposed above. Such concentration within the University should ensure the most efficient and economical utilisation of staff and other resources for the immediate future. Fortunately, there seems to be no doubt that the Chalimbana plant could be effectively utilised for the training of primary school teachers or as a secondary school.

103. It is in accordance with the general concept, set forth in this report, of a functional University, responsive to national needs, concerned with the maximum development of human talent, and uninhibited by irrelevant traditions, that the University in Northern Rhodesia should willingly undertake teacher preparation not only to the Bachelor's degree level but also—as recommended above—through shorter courses. It should, therefore, be ready to take over all the post-“O”-level work of Chalimbana.

104. Eventually, no doubt, other centres for the provision of the shorter courses may be required, in parts of Northern Rhodesia remote from Lusaka, and perhaps even in that vicinity, but for the time being concentration of effort is indicated.

STAFFING

105. It would be unwise, if not impossible, to make too precise recommendations as to staffing of the Department and Institute of Education of the new University at this juncture. But certain principles can be set forth.

106. Most important is the selection of staff members who combine undoubted professional competence with certain important personal attributes. They should be attracted, and even excited, by the opportunity to share in the development of a University suited to the needs of Northern Rhodesia, which, therefore, while partaking of the characteristics of universities in other parts of the world will not hesitate to deviate from some patterns elsewhere in response to realities in Northern Rhodesia. This should constitute no problem, and may indeed prove an advantage, since there are people of undoubted competence for university work who are looking for a chance to break new trails.

107. As has already been noted, it is recommended that—at the outset at least—a single head be appointed for both the University's Department and its Institute of Education. Unification of development in the early stages is essential, as well as avoidance of the multiplication of administrative posts. The appointment in question should be made at the earliest possible moment in order that the person appointed may share from the beginning in the working out of detailed plans for the University as a whole. It goes without saying that selection for this post will be of critical importance.

108. Decisions as to the number and specialities of other staff members in the field of education cannot be made in the abstract at this stage. The Professor (and Director of the Institute), working with his colleagues in other departments, should be counted on to develop recommendations as to

these matters. But in view of the central importance, for Northern Rhodesia, of the development of its national system of education, of the central role of the University in bringing this about, and of the range of responsibilities that that University must be expected to discharge—teaching, research, field services and co-ordinative activities—generous staffing should be assumed to be essential.

Chapter 3

TECHNICAL AND TECHNOLOGICAL STUDIES

109. This Chapter is primarily concerned with a study of the prospects for University-level courses of technological and similar studies in Northern Rhodesia. It is not concerned with the details of provision for craft and technician level training except in so far as these may have a relation to University entry.

110. Nearly all our witnesses were insistent that the immediate need was for developments in the technician levels of training, and that full graduate qualifications could at present be absorbed only in very small numbers in Northern Rhodesian industries, including mining. At the same time copper forms such a high proportion of Northern Rhodesian exports that a Faculty of Technology closely associated with the Copperbelt mining area, thus providing specialists in research and development, and supporting the scientific advancement both of the industry and of its marketing organisation, would seem to be more readily justified in terms of the country's economy than any other proposed Faculty, except Agriculture.

111. The two levels of training, and the numbers enrolled for each, must be considered as one organic whole. Neither the University graduate nor the technician can adequately fulfill his proper functions without the existence of the other. Unfortunately this basic truth is all too readily obscured in the United Kingdom, in the United States of America and in other countries, with the result that there is often an imbalance in the numerical relation of these two qualifications. In the United Kingdom this is complicated by Further Education being within, and University education without, the control of the Minister of Education, so that any unified control is at best on a voluntary basis.

112. For this and other reasons we sought from the outset to put the Technical College (and similar institutions) into closer organic relationship with the proposed new University. At first sight it appeared to be an attractive proposition to take under the wing of a University *all* post-school education. This, however, would have resulted in much minor work—e.g. typewriting, craft-training, domestic subjects of non-vocational type—of considerable value but not readily associated with the traditional conception of a University, being incorporated within it. It would also have meant a cumbersome hierarchy of control if all the many institutions doing this work were to be subject to the University Senate in financial control. Moreover, the Further Education Department of the Ministry of Education would then virtually cease to exist, or alternatively if it continued, the traditional autonomy of the University would be impaired.

The plan recommended below therefore, whilst retaining the division of Further Education on the one hand and University Institution on the other, seeks to effect the very closest relation between them as equal partners, each branch having valuable facilities to be offered to the other.

EXISTING PROVISION FOR TECHNICAL EDUCATION

113. Only a brief summary is given here since almost the whole of the present work is below the standard which could be put into effective relationship with the University.

THE NORTHERN TECHNICAL COLLEGE

114. From 1st January 1964, this will comprise the Ndola Technical College and associated centres at Kitwe, Chingola, Luanshya, Mufulira and Broken Hill, the first four of these associated centres having previously been establishments of the Copperbelt Technical Foundation. The technical work done in this and past sessions has been concerned with apprentice-training, both day-release and evening classes, up to City and Guilds craft certificate level, and heretofore for the South African National Technical Certificate. Plans for the future include a replacement of the day-release system by block-release with hostel accommodation at Ndola, concentrating on this centre by transfer from the outlying centres mentioned; also use of the City and Guilds new Technician qualifications, Courses Nos. 293 and 57, in Mechanical and Electrical Engineering respectively, in place of the South African qualifications. Neither of these proposals has yet come to fruition, but they will both do so, it is hoped, in 1964 when the hostels will have been completed, and further staff appointed. The buildings at Ndola are new, attractive, and well designed. Extensions are still taking place. The site is not well placed—Ndola being near, but not in, the mining area—for the development of a full Faculty of Technology there but it is adequate for the present and future needs of technician and craft-training.

THE COLLEGE OF FURTHER EDUCATION, LUSAKA

115. This most attractive seven-storey building was only recently completed, and has not yet experienced the commencement of an academic year. Enrolments are therefore very limited and no judgment of them, or of the work of the College, can yet safely be made. It is intended to provide courses for general and secondary education, commercial and business training, home economics, audio-visual aids and draughtsmanship. Evening classes, both of vocational and non-vocational character are also intended, and are already in part operative.

116. This College also would seem to have a valuable role to play in connection with technician training, especially in light-current electrical practice, and in electronics associated with telecommunication and television services in and around Lusaka. At present, whilst some basic science laboratories have been provided, there are no workshops or specialised technical laboratories.

THE HODGSON TECHNICAL COLLEGE

117. This institution provides training over three, four or five years full-time up to City and Guilds Craft and sometimes Advanced Craft Certifi-

cate standard in brickwork, plastering, concrete work, carpentry and joinery, plumbing, painting and decorating, electrical installation, motor vehicle work, tailoring and leather-work. The entry level is at Form II standard, which for Africans means an age around 16 to 19 years. Hostel accommodation is provided for all who need it.

118. One report states that the College is undertaking "technician" level training but we saw no evidence of this, and plans for higher work were as yet very nebulous. There is a proposal outstanding that in-service training of building apprentices (not provided at Ndola) should be provided for here.

119. The present work done corresponds fairly closely (except in age) to a Vocational High School of the United States of America, or to a French collège d'enseignement technique (formerly centre d'apprentissage) and this would appear to be the right development for Hodgson, namely to provide an alternative way of secondary education with subsequent special entry to Further Education. If Further Education work is continued at Hodgson it should be as a temporary expedient only because these two components—secondary and further—do not mix well, their requirements and the outlook of the students being intrinsically different.

120. At all events, it was impossible to envisage the useful incorporation of Hodgson Technical College into the structure of the University. It was hoped, however, that this institution as a secondary school would form a valuable base for higher forms of technical education.

THE FACULTY OF TECHNOLOGY

121. In the limited time available for our investigation it was difficult to secure the volume of evidence that would be necessary to form a well considered judgment on the feasibility of establishing a Faculty of Technology, or even a more limited Faculty of Mining. We believe that at an early stage in the University's life there must be a detailed survey made through the whole industrial field to determine the potential market for engineering graduates and we do not consider that a Faculty of Technology could be satisfactorily established until a minimum output of twenty per year could be taken up in the market.

122. The question of site would then arise. With the development of sandwich courses (alternating periods of college attendance and works experience) and the very valuable practice of using visiting lecturers from industry as specialist lecturers, siting in or very near a centre of industrial activity is not only desirable but essential. Kitwe fulfils those conditions; Ndola does not, being one and a quarter hours by road from the centre of activity in the Copperbelt. In this respect it is unfortunate that the new institution to be known as the Northern Technical College has been centred in Ndola, since that weakens prospects for the close ties that would have been both valuable and economic between the Technical College and the University Faculty.

123. We recommend, therefore, that no immediate provision be made for the founding of a Faculty of Technology or Engineering, or of Mining, but that a more detailed survey of needs and possibilities should be made. It would then be possible to reach a decision on the type of engineering, or other technological degree courses that should be offered by the new University, and on the timing of their introduction.

124. Whilst the place recommended for its foundation is a site in or around Kitwe, there is some case also to be made out for Lusaka, remembering the advantages, material and educational, that would accrue from close co-operation with other faculties in the University there, and having regard also to the developing electrical and telecommunication services in the Capital. There should be no consideration for location in any town having little industry and not in proximity to the University centre, for that would be to lose both advantages.

125. Opinion rightly favoured the general type of course in engineering, similar to that in operation in London University some twenty-five years ago, rather than the more specialised course of the present day.

126. The courses in technology, like those in other Faculties, would, it is recommended, be of four years' duration, starting with the entry qualification of "O" level passes in G.C.E., or the School Certificate; or of two years' (minimum) duration after entry qualification at technician level (this to be obtained in the Technical Colleges), as described in the following section.

RELATIONSHIP BETWEEN UNIVERSITY AND TECHNICAL COLLEGE

127. The accompanying diagram will show the relationship proposed between Further Education, at or above "technician" level (this term being used to denote a status rather than a particular occupation), and the four-year University courses.

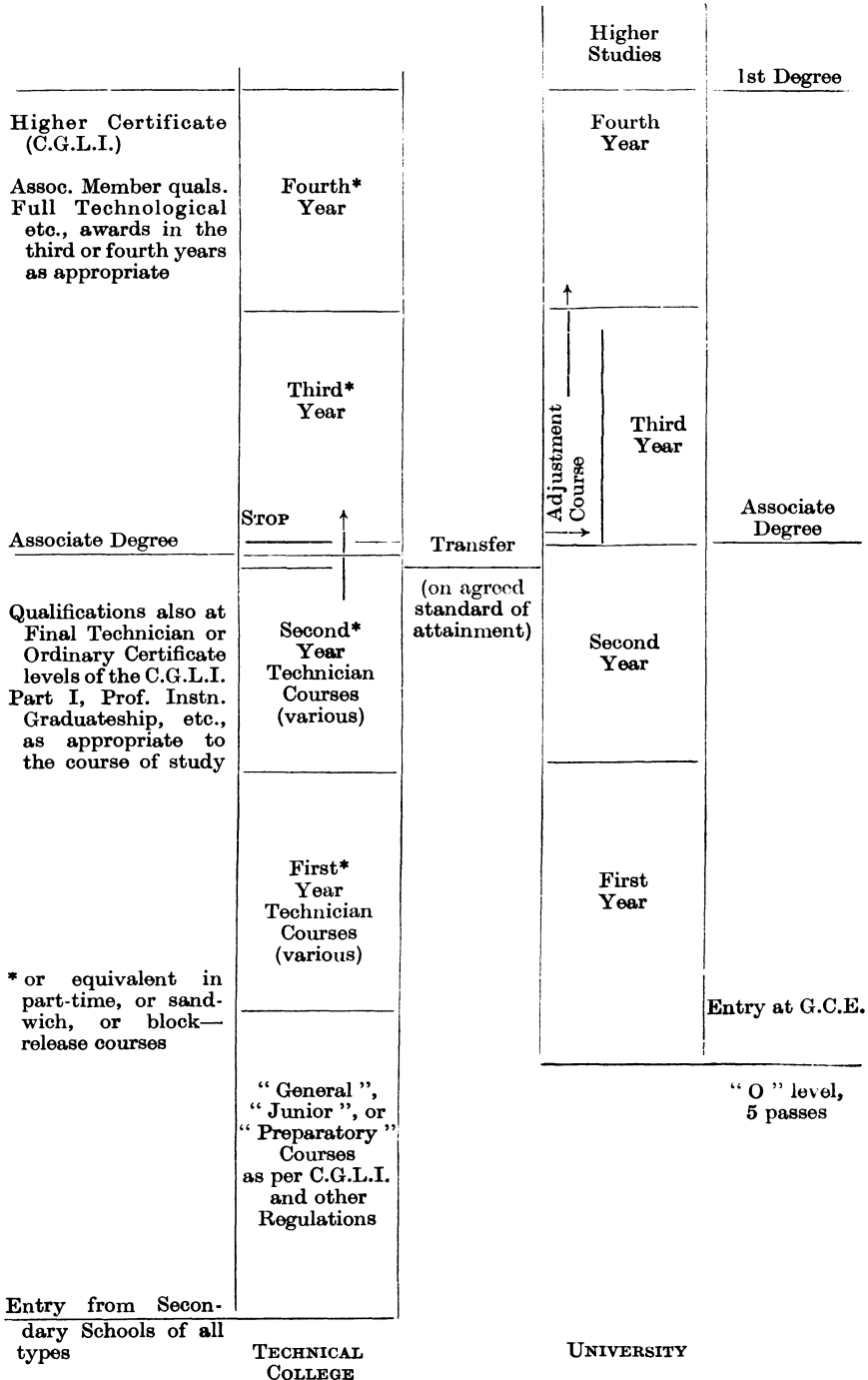
128. In explanation of the purposes and advantages of this partnership the following points are outstanding:

- (1) The University courses would recruit entrants having the School Certificate, or G.C.E., with the required number of passes, probably five, in the normal way.
- (2) The Technical College technician type courses would, whilst not precluding School Certificate entries, recruit in the main from those who had not reached that level of attainment at their secondary school. Such candidates form the majority of all pupils even in well-developed European countries. Their adaptation, through various "General", "Junior" or "Preparatory" courses, to technical and commercial courses and qualifications, has been the major development of the century in the industrial countries of Europe. Some 7 per cent. of these have eventually reached a final qualification of full professional rank, and a much greater percentage have gained one of "technician" level. It is the "second way" of education and training, without which the United Kingdom and other European countries could not possibly have produced technicians in sufficient number in the last forty years. The proposed organic connexion, recommended in this Report, with the degree courses of the University would be a further valuable and original development in which Northern Rhodesia would be doing pioneer work.
- (3) The granting of recognition by the University to the first two years full-time or equivalent part-time courses of this type at the Technical College, and the award of an associate degree

(to use the standard American nomenclature) would set a seal on such work, and would make it possible to organise courses even where no suitable City and Guilds, or Royal Society of Arts, or Professional Institution qualification exists; or alternatively to dispense with such external qualifications when, in the years ahead, Northern Rhodesia comes to full nationhood and economic independence. In practice, a slow transition could thus be effected between the two alternative qualifications.

- (4) It is estimated that some 20 per cent. of those who reached technician or associate degree qualification in the Technical College would be suitable, and would wish, to transfer to the University. A further 20 per cent. would probably go on in the Technical College to an Associate Membership type of qualification, and the remaining 60 per cent. rest at the Technician level. The transfer mechanism at the two-year stage could thus perform the function of a fine-adjustment controlling the numerical proportions of technicians to full graduates, in the best interests of the individual and of the nation.
- (5) Those transferring would, by the nature of technician courses (and the same applies to the diplomas of Agricultural Institutes) be more advanced in technical subjects and less advanced in the basic sciences and the humanities, than those who had followed the first two years of the University courses. An equalising or adjustment course during the third year would thus be feasible and desirable.
- (6) The fact that the Technical College had a "top" up to professional level, parallel to the University's final years, would preserve more nearly a balance between the two systems, and allow a partnership on a basis of equality of respect. It is possible also that a reverse flow—University to Technical College—at the two-year level might assist the careers of some students.
- (7) Whilst the above explanation has been in terms of "technicians" the general principle, of exchange at the two-year level, is clearly applicable to all courses of similar standing in any or all of the Colleges in Northern Rhodesia. The exact standard agreed for transfer is clearly a matter to be regulated by the University and Technical College. The main object of this pioneer development is that the catchment area for the University's work is widened to embrace *all* ex-secondary school pupils of reasonable standard and not merely those who have reached the "grammar school" level of attainment. This is particularly appropriate and necessary in Northern Rhodesia where the number qualifying at "O" level, whilst increasing year by year, is never likely to satisfy the intake demands of both graduate and technician courses—as indeed it fails to do in European countries also. In co-operation with the University Correspondence Course system, by part-time or block release, or sandwich courses, all are thus given an opportunity to study for and gain a University degree. The whole organisation, Technical College-cum-University, will thus become in the most true sense a "University of the People of Northern Rhodesia".

RELATIONSHIP OF TECHNICAL COLLEGE AND
UNIVERSITY IN NORTHERN RHODESIA



Chapter 4

AGRICULTURE

129. In Northern Rhodesia, as in so many other countries of Africa, the importance of agricultural work in the University cannot be over-estimated.

130. From the outset therefore we have given close consideration to the Government's proposals for the establishment of a Natural Resources Development College, as one of two central staff training institutions provided for in the 1961-65 Development Plan, because this College, and the recognised needs which have led to its establishment, are closely related to our assessment of the University's contribution to the Territory. Thus, to take the extreme example, if we thought that the Natural Resources Development College represented all that Northern Rhodesia needed or could afford to have in the foreseeable future then clearly the University need have no concern in the immediate future with agriculture. To our minds this is unthinkable. We cannot believe that without an immediate entry into agriculture the University would have any relevance to the needs of the country and its people. With our thoughts then directed to the intractable problems of priorities and costs we have had to consider whether the University and the Natural Resources Development College should go their own ways separately, each making its own appropriate contribution towards meeting the undoubtedly widespread needs in agriculture, or whether there must not of necessity be from the very outset an association well beyond co-operation and co-ordination.

131. The Natural Resources Development College represents part of the Government's determination to provide the best possible training for its staff and its first efforts are intended to be directed to that end not only in agriculture but in veterinary science, co-operatives and marketing, community development, home economics and, to a certain extent, in training for forestry and fisheries staffs. It is to be built near Chelston on the Great East Road, not far from the site which we recommended for the main University campus, and is to have a farm of some 700 acres in extent. It is proposed that the basic work of the College shall be two-year diploma courses fitting the student for employment in the middle-grade ranks of the Government service and that, with obviously necessary exceptions, entry shall be in general at school certificate or "O" level standard. The capital cost of the first phase was estimated to be £500,000 although present financial limitations have called for re-phasing. Residential accommodation, with study bedrooms, is proposed for 140 students, together with high quality workshops, laboratories, classrooms, hall, library and administrative offices. A good deal of staff housing is required. Clearly this is an important and imaginative project which was designed as a vital part of the country's Development Plan and which was rightly seen as a key factor in providing for the future beneficial exploitation of Northern Rhodesia's resources. We believe that the Government will now find it necessary to re-examine the scope of this project with a view to determining whether it can in fact be launched on the scale proposed. In saying this we do not in any way criticise the conception of this College; we ask whether, eighteen months after the drafting of the Development Plan, it might not be wise to consider if circumstances now call for a revision of the planning to take into account the need to relate the development of the College with the future of the University.

132. We would not be justified in putting this view without some further discussion of the factors we believe to be relevant. These are as follows:

- (i) We entirely accept that there is now, and will continue to be, an urgent need for training to the diploma level in the agricultural and other fields;
- (ii) We believe that the next few years will bring to light a clearer need than may now be apparent for agriculturalists at graduate level and that the desirable ratio of these to the technician level may be higher than is now assumed;
- (iii) Although the development of secondary education may be confidently expected greatly to increase the "O" level output, these students will nevertheless still be, in manpower terms, very scarce;
- (iv) We consider that in the face of conflicting financial priorities the College is planned on too costly a basis.

133. To quote these factors alone would lay us open to the charge that while conceding the need for the College we feared merely that there would be no resources left to further the University's interest in agriculture. There are two points to be made in answer to this charge. They are, first, that we are convinced that Northern Rhodesia's needs will very shortly demand that the University must start to produce agricultural graduates and that it would therefore be ridiculous not to work from the outset for a close co-ordination of farm and laboratory facilities at two adjacent institutions and, secondly, that we are in any case by no means convinced that if this is not done the Government will be able to secure the capital finance needed for the Natural Resources Development College.

134. However, having said this we must point out that, if there is acceptance of our general conception of the University as one having wider interests and activities than we are accustomed to in the traditional British form, then the Natural Resources Development College whose main work is to be a two-year diploma course is already a project falling naturally into the sphere of the University we envisage. It could do so without any loss of purpose. The College would fall into place in our scheme at the "technician level" giving two-year courses to a diploma recognised as the equivalent of the associate degree. From that point there would be an avenue of transfer into the University degree courses. There is no reason why the College should not also offer lower-level courses of training for a variety of purposes.

135. The problems to be solved are those of administration, organisation and control. Is the Natural Resources Development College to remain strictly as a Government institution? How, in this case, are its relations with the University to be arranged? If it does not remain as a solely Government institution, how is the Government to ensure that it retains control of the training policy it requires to be effected? These and many other questions cannot be answered unless we first attempt to define objectives. Before doing so we must indicate some of the more important features of representations made to us on behalf of the Ministry of African Agriculture.

136. Noting that in present circumstances the majority of positions requiring formal education in agriculture are in the Government service, the Ministry of African Agriculture sees five factors operating in Northern Rhodesia over the next decade:

- (i) a substantial increase in the numbers of children reaching "O" level in secondary education;
- (ii) a marked advance in levels of farming accompanied by some decline in the number of subsistence cultivators.
- (iii) growth in the agricultural sector of the economy creating attractive alternatives to government employment for those in agriculture. The number of these competitive alternatives might exceed the number of government posts by 1975 especially for those below the diploma level of training;
- (iv) the expansion of mass-media communications and a general increase in educational levels necessitating an upgrading of entry requirements for government appointments; and
- (v) the growth of commercial farming calling for an increased number of government workers in agriculture.

137. The Ministry sees the need for four levels of agricultural training and education:

- (i) certificate: one to two years usually not beyond Form IV level of general education;
- (ii) diploma: two or more years after completion of Form IV level of general education;
- (iii) degree: two or four years depending upon entrance requirements;
- (iv) post-graduate:

and suggests that in the next decade an appropriate target would be a ratio of:

Post-degree	...	...	1
Degree	...	...	4
Diploma	...	...	20
Certificate	...	...	±100 (including programmes at secondary schools, farm institutes, etc.).

138. From this it is argued that 5,000 employed "agriculturalists" in government, most of them at or above the diploma level, would be a not unreasonable estimate for 1975 and the Ministry suggests that bearing in mind the tremendous agricultural potential there ought to be a rapid development of diploma institutions with an output of up to 400 a year and of a University level of agricultural education providing 80 to 100 graduates a year. The Ministry therefore recommended to us that planning should envisage University work in agriculture commencing by 1967 with an immediate increase in planned enrolments, on a low pupil-cost basis, in the Natural Resources Development College.

139. We do not feel that it is for us to accept or reject the target figures suggested by the Ministry of African Agriculture. Indeed it might be impertinent for us to comment upon them without a good deal of further study but we quote them as evidence to show, as it seems to us, that Government is itself aware that future needs are such as to call for a close examination of priorities in agricultural education.

140. We accept the view that University courses in agriculture ought to start by 1967 and have indicated this in our expenditure estimates (see Chapter 7). We therefore consider that immediate objectives should include the following:

- (i) acceptance in principle that the Natural Resources Development College shall be regarded not only as a training institution of the Government but also as one, like the Northern Technical College, offering courses approved by the University to the associate degree level; and
- (ii) the sharing of farm and farm laboratory facilities.

141. How these objectives are to be attained must be a matter for Government to decide in conjunction with the University but we would suppose that the best way will be found in devising means whereby the University and other interested Ministries have effective voice in the direction of the College although we believe that like the Staff Training College it should remain for the time being a Government institution. There would undoubtedly be value in seeking independent expert advice upon the agricultural education problem. An expert assessment could be made in quite a short period.

Chapter 5

ADMINISTRATIVE TRAINING AND LEGAL EDUCATION

142. We have examined the Government's proposals for a College of Staff Training which is now being built on the central site adjacent to the College of Further Education and we have been concerned to see whether there is not also here much that ought to be provided by the University. The Staff Training College was originally intended to provide in-service training to the executive officer level but it is now also proposed to include administrative officers' training.

143. In the light of experience elsewhere (and we have much in mind the example of the Institute of Administration at Zaria in Northern Nigeria) we have concluded that at this stage in the Territory's development the Government undoubtedly needs to have the facilities available to provide whatever kind of practical training it wishes for its administrative and executive officials and for local Government officials, and that there will be a continuing need in the next five years or so for a variety of short courses for these purposes.

144. However, the Institute at Zaria was at work in this field for some years before there was any question of a local university there. In Lusaka the comparable institution is coming into being only very shortly before a University and is standing beside the new College of Further Education and also the headquarters building of the Northern Rhodesia Library Service. Having in mind the threefold problem of competition for staff, limited

availability of students and the limitation of capital resources for libraries and hostels we must question whether there ought to be any further development at all on this site except under one planning authority.

145. We are nevertheless satisfied that at this stage it would be undesirable to attempt to absorb the College of Staff Training itself into the structure of the University. The Government needs and must have this institution for its own purposes. These purposes ought to be clearly defined and should not exceed those of the governmental training function. We believe that the Government has this clearly in mind as has been stated in paragraphs 63, 64 and 65 of the Development Plan 1961-65 as follows—

“ ADMINISTRATIVE AND PROFESSIONAL TRAINING

63. While the higher education and professional training needed for the administrative and professional grade can be provided only at public institutions, especially at universities, the Government has to provide for induction courses and for special refresher and advancement courses. Study courses at which particular aspects of administration are considered are also important for the maintenance and improvement of the practical skills of officers in this grade. Further, courses at Government training institutions can often meet the special training requirements of officers in the executive grade who are selected for advancement to the administrative grade. Indeed, some of these requirements can be met only by special courses designed for the purpose.

64. All these Government courses could appropriately be provided at central institutions.

CENTRAL TRAINING INSTITUTIONS

65. It is accordingly intended to establish two central institutions for staff training which will provide all the Government courses for administrative, professional, executive and technical officers that can appropriately be provided centrally. Initially a capital allocation of £400,000 is made for the purpose. This amount will not be enough to complete the whole project but it will enable an effective first stage to be completed during the period of the plan and go a long way towards meeting requirements.”

146. This extract refers to both the College of Staff Training and the Natural Resources Development College. The latter is considered elsewhere in this Report (*see* Chapter 4).

147. If the administrative training at the College of Staff Training is thus properly confined to induction courses, practical case studies and secretariat procedures, all designed to contribute to on-the-job efficiency, the question then arises what immediate provision the University ought to make for administrative studies, bearing in mind that there will be a need at a fairly early stage to introduce studies in business administration and management. The College of Staff Training might be expected in later years

to be integrated with the University. The College of Further Education on the same site is now and will increasingly be concerned with commercial courses. It might seem therefore that the balance of advantage would be in the University establishing its School of Administration on the central site in the City. In the early years this would facilitate the sharing of amenities and staff, and the way would then be open at any appropriate time for the College of Staff Training to combine with the University's School of Administration. However on a longer term view there are clearly grave disadvantages in not having the school of administration on the main campus close to the related studies of law, government and economics and we feel that it is not impossible that by the time the College of Staff Training is ready for integration its own buildings on the central city site might be more appropriately put to some other educational use, perhaps in connexion with the College of Further Education. This is clearly not a decision which we can or should make for the University. We can only say that while it might seem immediately attractive for the University, with its eye on the College of Staff Training buildings, to build modestly nearby with a view to a later conjunction we feel that this would be wrong in terms of practical working in the future and also open to a good deal of criticism about the sort of buildings being put on the city site. We feel that the University will be better advised to make what shift it can in the early years to accommodate the foundation of its administrative training, with the intention of establishing its school of administration on the main campus.

148. The need to do this is reinforced by a consideration of the sort of syllabus needed for a degree course in administration. We assume that the University will wish to base its course on the same general lines as that of the University of South Africa. In the Faculty of Commerce and Administration of that University, in which first degrees of B.Com. and B.Admin. are granted, there is a large group of subjects in which the syllabus is identical with those for the B.A., B.Sc. and LL.B. degrees. These include Law, History, Geography, Economics, Political Science, Psychology, Anthropology, Sociology, Native Administration, Modern Languages, Science subjects and Mathematics. Those subjects which are particular to the B.Admin. course are Accounting, Public Administration, Statistics, Industrial Psychology and Municipal and Rural Administration. The B.Com. degree may be qualified for under any one of five headings—General, Administration, Accounting, Statistics and Law—in each of which the syllabus is biased to some extent so that there is a greater total variety than in the B.Admin. syllabus but there is nevertheless still a major part of the course which is identical with the syllabus for other degree courses. We are confident therefore that when the University feels that the time is ripe to develop the B.Com. and B.Admin. courses it will be clear that these must be close to the faculties of Arts and Social Studies.

149. We do not venture to say exactly when administrative studies should be introduced but we believe that the need will be foreseen fairly early in the first quinquennium and our suggestions on the pattern of expenditure would allow for a modest start to be made right from the beginning. We have no doubt that the earlier a start can be made the better and if sufficient students are not immediately available there will nevertheless be need for the early planning of suitable courses to include accountancy, banking, insurance, mercantile law and many aspects of local government.

150. There are solid reasons, both educational and pragmatic, for the immediate introduction of courses in law into the University. The chief initial requirement is to produce enough lawyers to administer justice throughout the country. We venture to quote a passage from a paper on "Legal Education in Africa" by Mr. A. O. R. Mitchley which sets out some of the official appointments for which formal legal training is obviously essential:

"The administration of justice itself presents many categories of officials who require legal training, although not necessarily of identical content. There are Magistrates who deal with minor criminal cases; Magistrates who deal with serious criminal and civil cases; Judges who hear High Court criminal and civil cases; Registrars who have civil jurisdiction; Clerks of Court who assist in a variety of courts throughout the territory and have certain civil jurisdiction; Crown Law Officers who prosecute in criminal cases in the High Court and advise on civil matters; members of the staffs of the Administrator-General, the Registrar of Lands and Deeds and the Official Receiver, who also require legal knowledge. In addition, police officers must have legal training, especially those concerned with prosecutions. All these officials require legal training to a certain extent. Ideally, a full Law qualification should be obtained by most of them."

151. We assume from our consultations that Northern Rhodesia will wish to follow the lead of other African Commonwealth countries in requiring a degree course of appropriate length as a necessary part of the preparation for professional legal practice. We assume, too, that those who intend to practise law professionally will be required also to take a further year of practical training in a Law School before being allowed to practise.

152. We hope that the Law Faculty will actively concern itself with the provision of teaching in legal subjects where these are needed by other departments in the University.

153. We wish to emphasise also that the course for a law degree, when properly constructed, is invaluable for a whole range of other purposes than the purely professional practice of law, for posts in industry and commerce, and for administrative posts. It is also an important form of education in its own right.

Chapter 6

EXTRA-MURAL STUDIES, EXTENSION WORK AND CORRESPONDENCE COURSES

154. One of the most regrettable features of the scene in any country whose formal educational system has, for one reason or another, been slow to develop, is the existence of large numbers of men and women of ability who had the misfortune to be born too early. When they were of school and university age they were unable to gain a full school or university education, either because the facilities did not exist or because they were unable to take advantage of them. Such people undoubtedly exist in Northern Rhodesia now, and constitute a reservoir of human talent which, for the sake of the country and of the individuals themselves, ought to be tapped and utilised at the earliest possible moment. Many teachers in up-country schools who had

to cut short their own education at the primary level could do a better job in their own schools or tackle more advanced work, given the opportunity to upgrade themselves for further study. This would be good for both the schools and for themselves. Many men and women now in relatively lowly positions in other sectors possess the potential for more responsible duties. Meantime, they are thwarted and frustrated.

155. Intelligence and ability are not the prerogatives of any particular generation. We consider that it is a matter of the highest priority to do something now for those of an earlier generation who missed the educational bus; and with them we would group the "late developers". Northern Rhodesia cannot afford to leave able people without opportunity for betterment. The country needs their ability, and they themselves are entitled to cultivate these abilities to the full.

156. There are two ways in which this could quickly and effectively be done, and we consider that both of these could properly fall within the ambit of the University. The first way is the well-tried system of extra-mural classes which has worked well in other African universities. The second is the correspondence course of which there is also some African experience with favourable results.

157. A system of nation-wide extra-mural classes under the University would operate as follows. Resident Tutors would be appointed, to work possibly one to each province, with perhaps a greater density in the areas of higher population. Each Resident Tutor would himself give courses of lectures and would organise courses to be given by other suitable people in his area. There is no dearth of possible part-time lecturers of this kind. The Tutor would have, through his own efforts and with the aid of advisory committees in his area, to assess the places where classes could effectively be formed, and the subjects that would attract students, and to locate suitable teachers to supplement his own efforts. A programme of reading and of written work would normally be set in connexion with each course, and book-boxes with collections of appropriate books would be sent out to classes. Residential classes, either at the University, or elsewhere, lasting anything from a week-end to a fortnight, or longer in special cases, would be held, either to fill in parts of a course that could not be dealt with in outlying classrooms, or to tackle subjects of particular interest.

158. Not all such courses would lead to an award of the University, but there is no reason why some of them at the appropriate standard and with regular written work included, should not do so. Subjects taken would most commonly lie in the social studies and arts field. We support the recommendation (No. 52) of the Tananarive UNESCO Conference on the Development of Higher Education in Africa that "African studies should play an important part in extra-mural studies." But science subjects in certain fields and at certain levels should not be precluded, provided that they could be backed up with concentrated laboratory work done on a residential basis. School laboratories, where they exist, could help.

159. Although such work would not by itself in all cases lead to a formal qualification, it has been shown to give an enormous amount of satisfaction to, and have a vitalising effect on, people who would otherwise be starved of intellectual stimulus, and it would produce voters who had been encouraged to think about the issues presented to them at election times.

160. The work of the Resident Tutors would be co-ordinated at the centre by a Director of Extra-Mural Studies, who would be responsible for the central residential courses, for library (book-box) services and for the general development of the work. He would be a member of the University's Senate, with professorial status, and would need to travel widely throughout the country, to assess its needs.

161. Alongside this orthodox extra-mural organisation we think that there should be established a School for Correspondence Courses whose object should be to train anyone who shows his fitness for such work, for a wide variety of qualifications offered by the University or outside bodies, rising as high as the Bachelor's degree of the University. Correspondence courses tend to have a bad name in some quarters, because some (not all) of them have concentrated on the making of money rather than on the interests of the pupil, and because there has been in most cases only the scantiest of contact between teacher and taught. The kind of courses we envisage would be much more like the nation-wide system operated in France under government auspices. The contents of the courses would be the University's responsibility, and its teachers would participate in their construction and in the marking of scripts. There could be insistence on regular participation in residential courses where student and teacher could get to know each other, personal teaching would be given, and laboratory work done. A particular feature of the Scheme would be provision for the up-grading of teachers through courses designed in conjunction with the University Department and Institute of Education. There would be a link with educational T.V. and radio. There is no need for us to elaborate this in detail: from the outline given above, it will be clear that standards will be set by the University; the student's interests will be paramount; and the contact between teacher and taught will be far greater than in the profit-making type of course which is usually thought of when a correspondence course is mentioned.

162. There would have to be close liaison between the Director of Extra-Mural Studies and the Director of the Correspondence School, who should enjoy similar status. They might have offices in the same building, and share the use of the same residential centre; but it would be advisable for each to have a separate library under his control. Resident Tutors' offices in the provinces could perhaps act as information centres for the Correspondence School, but they would have too much to do to be able to give any more help than that.

163. We think it most important that the central offices of these two activities should be on the smaller campus of the University on the central site in Lusaka, readily accessible to the public. The Extra-Mural office need not be large but it would need some library and book-store space. The Correspondence School would need a fair amount of accommodation, including rooms where teachers could talk with students and space for processing scripts. The residential accommodation associated with both activities should have accommodation for 80 to 100 students with classrooms, refectory, etc. An example exists at the University of Nigeria at Nsukka, and its experience might be usefully drawn on.

164. Finally, we would emphasise the importance of the suggestion briefly made above, that the University should take power to offer its degrees to external students. Such degrees would not be open to the criticism sometimes levelled at the University of London External Degree system, that

contact between the student and the University is non-existent. Candidates for such degrees could be required to come up through the University's own Correspondence School. By these means the untapped reservoir of latent human talent spoken of in paragraph 154 above could most readily be rendered useful both to itself and to Northern Rhodesia, and we would rate these two developments as among the very first which the new University should undertake. We have read with great interest the report of Mr. H. C. Sheath, Director of External Studies, University of New England, Armidale, New South Wales, Australia, which offers valuable suggestions for the administration of correspondence courses for University degrees.

Chapter 7

RECURRENT AND CAPITAL COSTS

(With a Note on Student Numbers)

165. The figures collected and published in the report of the Tananarive Conference on Higher Education in Africa show that the new African universities have all been expensive institutions in their early years, and that even after fifteen years of teaching, some of them are still running at a cost substantially above the European level. There are a number of reasons for this: the inescapable reliance on expatriate staff, with their leave requirements; the need for advance on a wide rather than a narrow front, since trained personnel in every field are urgently wanted; the relatively slow build-up of student numbers, due usually to the secondary school bottleneck; the fact that living accommodation has to be provided, and maintained, for virtually all of the students and staff; and the requirement for a generous staff-student ratio, not only to provide the intensive teaching which the African student needs when so often he has not in earlier schooling enjoyed "background" facilities regarded as normal elsewhere, but also to allow for the research and local enquiry on which fresh teaching relevant to local conditions can be based. Most of these factors will be present in the Northern Rhodesian situation, at any rate for some time to come. The only unusually favourable indication is the progress made with the secondary schools development plan though so far the quality of the output has not kept up with the rise in quantity.

166. Given that quantity of output can be increased without loss of quality, a quicker build-up of student numbers, and therewith a quicker approach to a satisfactory economic status for the University, could probably be achieved in Northern Rhodesia than has been possible elsewhere. At the same time, the findings of research done in the United States of America, mostly under the auspices of the Fund for the Advancement of Education (Ford Foundation) on optimum size of class, better utilisation of college premises, and a rearrangement of the academic year, all merit the closest consideration in the African context, and might result in substantial economies in running costs. The recurrent estimates which follow will seem low to those accustomed to standards prevalent up to now during the build-up period in universities in English-speaking Africa; they probably strike an intermediate note in the range of transatlantic practice, where the variation in cost as well as quality is wide. It is emphasised that, in this field as well as in others, in general one gets what one is willing to pay for, though economies are possible through rationalisation of practice, and no traditions are

sacred. The type of university now envisaged for Northern Rhodesia will be economical in that the pattern of "O" level entry plus four years for an ordinary (i.e. general or pass) degree followed by an end-on honours course for a minority of students, will postpone for a few years the expensive requirements of honours teaching; on the other hand, the needs of external degree work, through correspondence courses and vacation residence, will not be small, and the burden will fall on the University staff. The recurrent estimates now put forward should enable this big programme of work to be done, at current rates—but only just. They should be regarded as minimal, and since no attempt has been—or can be—made at this stage to allocate the pool of likely students between faculties or courses, they should not be allowed to become a set pattern for faculty development. Some give-and-take will be necessary. These estimates, it is reckoned, provide for a viable build-up for Faculties and Departments over a five-year period, given constant costs. Priorities will have to be established within the University, once its Vice-Chancellor and Heads of Departments have been appointed and have had time to consult with local interests and sources of information about the country's needs.

167. Opportunities of co-operation, with a view to rational provision of teaching in special fields and resultant economies, should be explored with other governments. Wasteful duplication should be avoided wherever possible, consistently with the provision of teaching suitable to the country's needs.

168. Detailed notes on the recurrent estimates are appended hereto. It would be inadvisable at this stage to go more deeply than this into detail lest the pattern, which must remain flexible and responsive to local requirements, should harden in too rigid a fashion.

169. On the capital side, notes are likewise added to the estimates appended hereto. It is emphasised again that these estimates are tentative ones. They should provide premises adequate for the build-up period over five years, and perhaps a little longer; but again, the ideas of Heads of Faculties and Departments, when appointed, must be given the fullest consideration, and some give-and-take will be inevitable, as well as some pooling of accommodation in the early stages. Priorities have been mentioned as falling into two classes during the first five years; closer assessment than this is not possible now.

170. Capital costs have been based on figures of building costs in Northern Rhodesia supplied by local architects and quantity surveyors, whose help is gratefully acknowledged. Allowance has been made for a rise in costs of anything up to 10 per cent. over the quinquennium. The figure of 55s. a square foot is assumed as a possible allowance, at present-day prices for relatively uncomplicated buildings with a simple but decent standard of finish; and the University's buildings of this description have been costed at 60s., to give a margin for rises in cost, while 80s. has been allowed for buildings needing elaborate services and equipment. All buildings should be sited and planned so that later extension will be easy, and a system of unit construction, with as far as possible standard modules, should be adopted with some consideration of prefabrication techniques so far as they can be made applicable to conditions in Lusaka. In science laboratories fixed partitions should be avoided in order that internal adaptation to changing needs can be easily carried out, and designs should be as flexible as possible, with

services carried overhead and not in floor ducts, to allow for easy changes. In this sphere flexibility matters more than neatness of appearance.

171. It has been assumed that locally-available gas will be adequate for all laboratory purposes (including glass-blowing), and no provision has been made, therefore, for a Gas Generating Plant.

172. The programme envisages capital construction at the average rate of £400,000 a year—rather more in the earlier years. It is for consideration whether the building trade in Lusaka could cope with this volume of work, but it is thought that the chance of substantial contracts will attract builders and that the requisite amount of skilled and unskilled labour could be found.

SUMMARY OF RECURRENT ESTIMATES—FIRST QUINQUENNIAL

	(£000's)	Year	Year	Year	Year
	Year	1	2	3	4
	(pre-	(courses			
	paratory)	begin)			
EXPENDITURE:					
Arts	20	31·5	32	45	55·5
Social Studies (excluding Oppenheimer College)	20	31	31·5	44	55
Education	9·5	18·5	27·5	32·5	37·5
Science	32	46	48·5	65·5	79·5
Agriculture and Farm	7	16	19	21	26·5
Extra-Mural Department	6·5	9·5	13·5	14·5	18·5
Correspondence School	6·5	9	10	11	12
Library	10	15	20	25	30
School of Administration	5·5	8	8·5	11	14
Rhodes-Livingstone Institute	23	25	26	28·5	29
Administration and Central Services (including Wardens)	20	31·5	40	52	62·5
Research Fund	—	1	2	3	4
Miscellaneous (estate, power, light, water, insurances, etc.)	15	30	35	40	45
TOTALS	175	272	313·5	393	469
FIVE-YEAR TOTAL EXPENDITURE			£1,622,500	gross	
INCOME:					
Tuition fees (at £30 p.a. per student)	—	3	7·5	12	18
Rent of Staff Houses (average £75 p.a.)	2·25	4·05	4·5	5·85	7·5
TOTALS	2·25	7·05	12	17·85	25·5
NET EXPENDITURE	172·75	264·95	301·5	375·15	443·5
FIVE-YEAR NET EXPENDITURE			£1,557,850		
Number of Internal Students	—	100+	250+	400+	600+
Incidence of Senior Staff appointments (including non-teaching staff)	30	54	60	78	100

N.B.—Reference should be made to the accompanying explanatory notes.

NOTES ON RECURRENT ESTIMATES

(1) The largest item of recurrent expenditure is of course staff salaries and attendant costs (F.S.S.U., Family Allowances, Leave Passages). Ahead of decisions by the University Council, estimates can only be approximate, but scales and conditions in the University of East Africa may perhaps serve as a guide.

(2) Scales there are as follows:

Professor	£3,000	} These scales include an inducement figure for expatriates of roughly £300 p.a. (U.C.R.N scales are roughly £100 higher except for Professors.)
Reader	£2,425 – 2,725	
Senior Lecturer	£1,950 – 2,550	
Lecturer	£1,350 – 2,150	
Assistant Lecturer	£1,100 – 1,250	

Since these scales were approved, a salary increase has been granted in the United Kingdom which the University of East Africa has as yet been unable to implement, so that the "inducement" element is now barely existent. A further increase when the National Incomes Commission has finished its review of university salaries is not impossible. The attached estimates should therefore be regarded as minimal.

(3) Attendant costs are briefly:

- (i) F.S.S.U. (superannuation): 10 per cent (inevitable).
- (ii) Children's allowances: £50 for each child up to the end of full-time education is the usual figure, but since school fees were substantially increased recently through the withdrawal of Government subsidies, the University of East Africa has raised the allowance for children at boarding schools, and the pattern of allowances at the University of Northern Rhodesia would have to be settled in the light of the educational facilities accessible to staff. In some universities there is a limit on the number of children who qualify for the allowance.
- (iii) The normal pattern for leave for expatriates is three months every other long vacation, with tourist air fares up to the equivalent of five adult passages. Local staff have "contact" leave to the United Kingdom every fourth year. The U.C.R.N. experiment of not allowing for regular home leave proved unsuccessful and should not be followed.)

(4) For the purposes of these estimates, the £50 child allowance has been used for an average of two children and also the leave passages pattern described in (3) (iii). This gives median figures for each grade, based on average point of entry to scales, of—

Professor	...	...	...	...	£3,850
Reader/Senior Lecturer	...	...	...	...	£3,050
Lecturer/Assistant Lecturer	...	...	...	...	£2,365

Leave passage provision is spread over two years.

(5) The normal staff build-up in a department in Arts, Science, Social Studies and Law Faculties has been assumed thus:

	Year —1 (preparatory)	Year 1 (courses begin)	Year 2	Year 3	Year 4
	£	£	£	£	£
Professor ..	(1) 3,850	(1) 3,850	(1) 3,850	(1) 3,850	(1) 3,850
Senior Lecturer ...	—	—	—	(1) 3,050	(1) 3,050
Lecturer ...	—	(1) 2,365	(1) 2,365	(1) 2,365	(2) 4,730
TOTAL ...	(1) £3,850	(2) £6,215	(2) £6,215	(3) £9,265	(4) £11,630

There will be a certain amount of give and take through appointments being made at different points on incremental scales, and there will be some savings on unfilled or late-filled posts. These savings are virtually the only contingency provision which the university has.

(6) The Faculty of Education might build up as follows:

	Year —1	Year 1	Year 2	Year 3	Year 4
Professor ...	1	1	1	1	1
Reader or Senior Lecturer ...	1	1	2	2	2
Lecturer ...	—	3	5	7	9
Salaries, etc., Cost	£6,900	£13,995	£21,775	£25,505	£30,235

It would run a big programme of "Institute" work as well as its normal internal teaching.

(7) Agriculture's development might lie roughly half-way between that of the "normal" department and that of Education, rising to a staff of eight by year four.

(8) In addition to salaries, one must add the cost of secretarial, technical and clerical assistance and provide for departmental expenses. These vary with departments: e.g. History's needs are small; Geography (with students to send on field courses) is more costly; and Education (with students to send on school practice and supervision to provide, often over a wide range of schools) more expensive still. Science departments make large demands for apparatus, materials and technical assistance. Adequate provision for secretarial and technical help is in the end an economy, since teachers are more productive if adequately supported. An average expenses figure per "normal" department of £300 at the outset, rising to £600 might be reasonable, with greater provision for the more expensive departments.

(9) On the administrative side, a Vice-Chancellor should be appointed at the first possible moment, and after him a Librarian and a senior administrative officer. It would not matter if he were called Registrar or Secretary, and in the early stages he could handle both the

academic side (planning of courses, etc.) and the building programme; but he would soon require an assistant on the side which was the less familiar to him, as well as a Bursar. Modest provision for Faculty administration will be needed.

(10) In Arts, one might anticipate that Departments of English, History, Geography and African Studies and Linguistics would be created; in Science, Departments of Mathematics, Physics, Chemistry, Botany, Zoology and Geology (a smaller department). Geography and Mathematics would be common to both faculties, though located as shown; and Mathematics would for the time being include Statistics. Social Studies would consist of Economics, Political Science (or Government) and Sociology, with Psychology perhaps added later in the quinquennium. (Cross-faculty selection of subjects would be permissible in appropriate cases).

(11) The attached estimates are no more than an overall guide to the financial implications of the project. They should not be regarded as a strait-jacket for departments as they come into being. They are based on mainly expatriate staffing, which is realistic in present circumstances, but any local appointments that were possible should naturally be made. The estimates will of course be affected by the rate of progress with the building programme, and those costs which are related to the occupancy of buildings would be reduced by delays.

(12) There will be special problems associated with the integration of the Oppenheimer College of Social Services into the University. This College is already doing work which could easily be incorporated in the teaching programme of the University as now envisaged. Its staffing, both teaching and administrative, is generous. Some of its staff are supported by grants, for varying periods, from external sources, and their costs do not appear in the College's recurrent budget. Its salary scales would appear to be on the high side. With its existing staff it could probably take on a share of the projected normal degree teaching, and provide much of the administration for the Faculty of Social Sciences; but it then becomes a matter for consideration whether the Faculty should be concentrated on the present site of the Oppenheimer College, in isolation from the rest of the University; whether the College should leave its present buildings, to be used for some other purpose, and be rehoused on the main Great East Road campus, with the rest of the Faculty; or whether the Faculty should be split between the two sites. Although some duplication of Library facilities and some travelling by staff would be involved if the latter compromise were followed, for reasons of speed and economy this might be the best course in the early years, with concentration on the main campus as the ultimate objective.

(13) Under the Extra-Mural Department allowance is made for a build-up to a staff of Director plus three Resident Tutors over the quinquennium. Any wider or quicker build-up, while clearly desirable, might have to depend on help from external sources of finance; it is a purpose which Foundations have been usually very willing to aid.

(14) The School of Administration might look forward to a later link-up with the Staff Training College when the latter has fulfilled its immediate purpose of providing short-term upgrading courses, in-service, for Government employees. (See Chapter 5.)

(15) The overall rate of build-up of both staff and students, on which the estimates are based, is an unusually rapid one. It has been adopted because the country clearly needs trained men and women quickly, and because secondary school output is planned to increase rapidly also. It depends on adequate financial provision. The staff, it must be remembered, will be engaged in the work of the Correspondence School as well as in normal teaching, and will have a fair load of vacation teaching to do. If secondary school output falls below the Ministry of Education's estimates, and if its quality is not improved, the student intake will fall off, since there is a standard below which the University could not and should not accept entrants. If this were to happen, the rate of staff recruitment could be slowed a little, and expense reduced; but it is earnestly hoped that the secondary school development effort will succeed as planned, since the country so badly needs its output. At the end of the five-year period the staff-student ratio would be 1: 7.5 in the strictly academic departments (eighty teaching staff, 600 students approximately) and this is in every way respectable, judged by all the precedents. The staff will certainly be harder worked than the majority of their colleagues, and their research may be impeded by this, but the University will be spreading its effort more widely throughout the nation than any other institution of this kind in Africa has succeeded in doing.

(16) The next priority, after the Faculties and Departments listed in the estimates, would be a Faculty of Technology, to start at the beginning of the next quinquennium.

(17) On the income side is shown an item for Tuition Fees. Much of this income would of course derive from Government Bursaries for students, based on parental means, and this element does not therefore greatly reduce the overall cost of the University to be met from Government resources. However, tuition fees are usually set at a low level figure (say £30 a year for territorial students); but other governments who wish to send students could be charged a more substantial and realistic figure. Outside governments might contribute on a capitation or a block grant basis.

(18) Nothing is shown in the estimates for residential costs, since it is assumed that the Residential Fee (also an element in Government Bursary arrangements) will be an economic one.

CAPITAL DEVELOPMENT—FIRST QUINQUENNium
ROUGH ESTIMATES BASED ON CAPACITY
OF 600 STUDENTS

<i>Project</i>	£
1. LIBRARY:	
(a) Stage I of Building Shelving for 50,000 volumes and reading space for 200 at Stage I. Priority I. Site—Great East Road.	60,000
(b) Initial Book Grant Book purchase spread over four years: back periodicals needed. Priority I-II.	50,000
2. ARTS BUILDING, Stage I	50,000
English, History, Geography, African Studies and Linguistics. Building details in schedule attached. Administration could be housed here until Admini- stration building was completed. Priority I. Site— Great East Road.	
3. SOCIAL STUDIES AND LAW, Stage I	54,000
Economics, Government, Sociology, Psychology and Law. For initial period use classrooms at Oppen- heimer and College of Further Education for teaching, and Staff rooms in Arts building. Oppenheimer would become part of University and Stage II could include its re-housing on Great East Road site (present Oppenheimer buildings then free for other purposes). Law would have separate building at later stage. Priority II. Site—Great East Road.	
4. CENTRAL ADMINISTRATION	30,000
Offices, Senior Common Room, Large Hall (capacity 500, capable of later expansion); Guidance and Testing Service; various ancillary services. Priority II. Site—Great East Road.	
5. SCIENCE FACULTY:	
(a) <i>Physics and Geology</i> , Stage I	70,000
Geology would move out later, providing ex- pansion space for Physics. Priority I. Site— Great East Road.	
(b) <i>Chemistry</i> , Stage I	65,000
Internal design would have to be extremely flexible, since the three branches of the subject have different needs; Stage II would enable Organic to split from the other two. Priority I. Site—Great East Road.	
CARRIED FORWARD ...	£379,000

	BROUGHT FORWARD	...	£379,000
5.	SCIENCE FACULTY (<i>continued</i>)		
	(c) <i>Biology (including Zoology)</i>		40,000
	At first Botany and Zoology in here. Botany would hive off as soon as possible. Priority I. Site—Great East Road.		
	(d) <i>Botany</i>		35,000
	When built, this would enable 5 (c) Biology to revert to Zoology, with some common services. Both might need extension later. Priority II. Site—Great East Road.		
	(e) <i>Mathematics and Statistics</i>		15,000
	Priority I. Site—Great East Road.		
6.	EDUCATION:		
	(a) <i>Institute, Stage I</i>		70,000
	“Method” rooms need to be large. Priority I. Site—Great East Road.		
	(b) <i>Demonstration School</i> (primary day school) ...		—
	£30,000 to be provided by Ministry of Education. School bus required. Use Munali Secondary School for secondary work. Priority I. Site—Great East Road.		
7.	AGRICULTURE:		
	(a) <i>Faculty Building, Stage I</i>		50,000
	(b) <i>Laboratories and Hostel at Farm</i>		30,000
	(c) <i>Farm Development</i>		10,000
	Very serious consideration must be given to the possibility of sharing the 700 acre farm, and all its facilities, at the Natural Resources College, and of integrating the work of these two institutions. Seven hundred acres should be enough for both, provided water supply is adequate. Priority II. Site of faculty building—Great East Road.		
8.	EXTRA-MURAL DEPARTMENT AND CORRESPONDENCE SCHOOL, Stage I:		
	(a) <i>Offices</i>		19,000
	Extra-Mural—1,950 sq. ft.:		
	Correspondence School—3,300 sq. ft. (later enlargement). Priority I. Site—City.		
	(b) <i>Residential Centre for 100</i>		80,000
	At £800 per place—minimal. Some day-time use of C.F.E. classroom contemplated (cf. Nsukka, Eastern Nigeria). Priority I. Site—City.		
	CARRIED FORWARD	...	£728,000

	BROUGHT FORWARD ...	£728,000
9.	SCHOOL OF ADMINISTRATION, Stage I See Chapter 5. In the early stages it may be advisable to make use of classroom facilities available in the College of Further Education. Priority II. Site—Great East Road.	25,000
10.	STUDENTS' UNION, Stage I Late in quinquennium—Halls of Residence will provide facilities till then. Priority II. Site—Great East Road.	20,000
11.	ESTATE DEVELOPMENT Roads, electricity and water reticulation, car parks, street lighting, landscaping, fencing etc. Spread over period. Priority I-II. Site—Great East Road and City.	100,000
12.	STAFF HOUSING: Flats and Houses One hundred units (including resident tutors in Provinces). Flats and houses in proportion 1 : 4. Purchase or build. Allow average of £4,740 per unit. Spread over five years. Priority I-II. Site—Great East Road and elsewhere.	475,000
13.	STUDENT HOUSING: Halls of Residence (Including quarters for domestic staff, etc.). Probably three Halls, each of 200, one every two years. Allow £1,000 per place. As women will be few a women's wing, with shared Dining Hall, could be put into first hall to be built. Explore possible economies through central catering. Bring Halls into operation wing by wing as soon as completed. Some double rooms and cafeteria service would be an economy. Priority I-II. Site—Great East Road.	600,000
14.	SUBORDINATE STAFF HOUSING Keep to minimum, but location of site will necessitate some provision. Thirty units. Priority I-II. Site—Great East Road.	40,000
15.	WORKSHOPS: (a) <i>Maintenance</i> (b) <i>Science</i> Including equipment. Cheaper to provide own services than hire contractors. Priority I. Site—Great East Road.	20,000 5,000
16.	TRANSPORT One car, four buses. Priority I-II.	10,000
17.	SPECIAL EQUIPMENT Mainly for Science departments, depending on research interests of staff. Priority II.	20,000
	CARRIED FORWARD ...	£2,043,000

	BROUGHT FORWARD	...	£2,043,000
18.	RHODES-LIVINGSTONE INSTITUTE: Re-House on Campus		20,000
	Offset by value of existing buildings to be used for other purposes. Priority II. Site—Great East Road.		
19.	CONTINGENCY	... ..	50,000
	TOTAL	...	<u>£2,113,000</u>

- NOTES.— (i) As a general principle, buildings should be so designed and sited that each can easily be extended. Space should be provided for fourfold extension centrifugally. (*See* rough lay-out plan at end of Report).
- (ii) Basis of calculation: 60s. per sq. ft. for normal and uncomplicated buildings such as Faculty of Arts; 70s. to 80s. per sq. ft. for those with more complicated services such as Department of Chemistry.
- (iii) Fees, furniture and equipment are included, averaged at 20 per cent. over.
- (iv) Building costs can be expected to rise.
- (v) Faculty of Technology to be developed in ensuing quinquennium—*See* Chapter 3.
- (vi) During the build-up period more fortunate departments will doubtless offer hospitality to those whose accommodation is delayed, and buildings will have to be designed with this in mind.

SCHEDULE FOR ARTS BUILDING

		sq. ft.
1	lecture theatre 30' × 30' (capacity 100) approximately	1,000
2	large classrooms at 800 sq. ft.	1,600
6	small classrooms at 400 sq. ft.	2,400
1	map room	400
16	teachers' rooms, average 150 sq. ft.	2,400
2	seminar rooms at 250 sq. ft.	500
	Stores	500
	Dean's offices and secretaries	400
		<u>9,200</u>
	<i>Add</i> 50 per cent. for corridors, stairs, lavatories, etc.	4,600
		<u>13,800</u>
		£
	13,800 sq. ft. at 60s. per sq. ft.	41,400
	<i>Add</i> fees, furniture, equipment—20 per cent.	8,280
		<u>£49,680</u>
	Say	<u>£50,000</u>

STUDENT NUMBERS

173. Prediction is notoriously difficult in this field. The following table gives a possible picture of the potential pool on which the University of Northern Rhodesia could draw.

<i>For admission in March or July</i>	<i>African</i>			<i>Non-African</i>			<i>Total annual pool</i>
	<i>M</i>	<i>W</i>	<i>Total</i>	<i>M</i>	<i>W</i>	<i>Total</i>	
1964	95	15	110	20	10	30	140
1965	147	20	167	25	10	35	202
1966	196	31	227	30	15	45	272
1967	212	42	254	30	15	45	299
1968	259	77	336	35	15	50	386

174. The imminent change in the school examinations system makes it difficult to present output in terms of the existing Cambridge School Certificate system. However, the University will be interested in making its selection of students, probably, from those obtaining the future equivalent of a good Class II School Certificate or better. The above table represents, in respect of Africans, a possible projection of numbers attaining such a standard based on recent trends and on numbers entering or expected to enter appropriate courses. The girls will not all want to go on to University. Not all applicants with Grade II C.S.C. can be assumed to be university material. Some H.S.C. holders may wish to go on to courses (e.g. Medicine) not available at the University. And there are the needs of other occupations. As against this, as the University develops its "second way" courses its pool of candidates will be widened. The non-African figures are pure guesswork.

175. Of those admitted, some will do a two-year course and some a four-year course, and there will be some wastage. Assessment of likely numbers within the University is therefore even more problematical than assessment of the number of "qualified" applicants. In the unlikely event that a range of courses could be offered in temporary accommodation in 1964, and supposing that all "qualified" candidates (as indicated in paragraph 173 above) were accepted, then the numbers available to the various course-years might, it appears, build up as follows:

	<i>First Year</i>	<i>Second Year</i>	<i>Third Year</i>	<i>Fourth Year</i>	<i>Total</i>
1964	140	—	—	—	140
1965	202	130	—	—	332
1966	272	190	100	—	562
1967	299	260	140	100	799
1968	386	290	200	140	1,016

It is emphasised that the above is not an estimate of student numbers, but of the pool of possible candidates, projected forward year by year, from which selection might be made.

176. These figures must be viewed with extreme caution. The total in the "First Year" column will depend for its realisation on the achievement of a most ambitious programme of secondary school growth, and the big question in this area is not merely whether output can be increased, but whether an output of sufficiently high quality can be guaranteed. In 1958 thirty-four out of 130 African C.S.C. candidates got Grade I,

C.S.C. In 1963 twenty out of 327 got Grade I, C.S.C. The University will be interested in quality and in adequacy of preparation for work at university level.

177. In any case, 600 residential places is the most that the University could hope to have in the last year of its first quinquennium so that on the above numbers a measure of selection would be needed.

178. However, a target of 600 students in residence by the end of the first quinquennium seems capable of achievement, provided that the secondary schools play their part. A possible build-up estimate, given that all required conditions are fulfilled, might be:

Year —1	Year 1	Year 2	Year 3	Year 4
—	100	250	400	600

Halls would need to be brought into use in sections.

179. There may be a small number of non-resident students, coming from suitable homes in the Lusaka neighbourhood, to be added to these. Teaching accommodation would be available for them.

Chapter 8

CONSTITUTION OF THE UNIVERSITY: DRAFT ORDINANCE AND STATUTES

DRAFT ORDINANCE

1. This Ordinance may be cited as the University of Northern Rhodesia Ordinance, 1964, and shall come into effect on a day to be appointed by the Governor by Proclamation in the *Gazette*.

2. In this Ordinance, unless the context otherwise requires—

“ University ” means the University of Northern Rhodesia;

“ Chancellor ”, “ Vice-Chancellor ”, “ Deputy Vice-Chancellor ”, and “ Treasurer ” respectively mean the Chancellor, Vice-Chancellor, Deputy Vice-Chancellor, and Treasurer of the University.

“ Council ” and “ Senate ” respectively mean the Council and Senate of the University;

“ Officers ” means the Officers of the University;

“ Members ” means the persons holding the offices or positions referred to in “ Statute ”.

“ Statute ” means Statute of the University.

3. There shall be established on such day (hereinafter called Foundation Day) as the Governor of Northern Rhodesia may appoint a University of Northern Rhodesia. The Authorities of the University are hereby constituted a body corporate which shall have perpetual succession and a common seal and they may sue and be sued in its corporate name.

4. The objects of the University shall be:

(a) to provide and recognise regular courses of instruction in the humanities, the sciences and other branches of theoretical and

practical learning of a standard required and expected of a university of the highest standing;

- (b) to promote research and the advancement of science and learning;
- (c) to secure the diffusion of knowledge throughout Northern Rhodesia;
- (d) to promote the social, cultural and economic development of Northern Rhodesia.

5. For the purpose of carrying out the objects specified in the last preceding section the Authorities of the University shall have such powers and duties as are set out in this Ordinance and in the Statutes.

6. Membership of the University shall be open to all suitably qualified persons without distinction of race, sex or religion.

7. The Governor of Northern Rhodesia shall be the Visitor of the University. The Visitor may, in addition to the powers conferred upon him by other provisions of this Ordinance from time to time and in such manner as he thinks fit, direct a visitation to the University for the purpose of ensuring the effective fulfilment of its objects as set out in this Ordinance.

8. The Authorities of the University shall be the Chancellor, the Officers, the Council, the Senate and such other bodies as may be prescribed by Statute.

9. The Chancellor shall be the Head of the University and shall be appointed by the Governor of Northern Rhodesia after consultation with the Council; he shall hold office for seven years or until his resignation, whichever period be the shorter, and shall be eligible for reappointment.

10. The Chancellor when present shall preside at the ceremonial and other assemblies of the University, and shall in the name of the University confer all degrees of the University; and in addition to his other functions provided for in this Ordinance shall be entitled to call for information in regard to any matter relating to the welfare of the University from the Vice-Chancellor and the Chairman of the Council whose duty it shall be to provide such information.

11. The Vice-Chancellor shall be the chief academic and executive officer of the University and shall be a member of the Council and the Chairman of the Senate.

12. The Deputy Vice-Chancellor shall act as Vice-Chancellor in the absence of the Vice-Chancellor.

13. The Treasurer of the University shall be the Deputy Chairman of the Council.

14. The Council shall be the supreme governing body of the University with power to manage all matters not provided otherwise in this Ordinance or by the Statutes and shall be able to delegate any of its functions and powers to Committees which may include persons who are not members of the Council.

15. The Chancellor shall on the nomination of the Council appoint a person, whether already a member of the Council or not, to be Chairman

of the Council. The Chairman shall hold office for four years or until he resigns, whichever period be the shorter, and may be reappointed for one or more further periods of four years.

16. The Senate shall, subject to the Statutes and Decrees of the University, and subject also to review by the Council, have the control and general regulation of—

- (a) the instruction, education and research within the University;
- (b) the instruction and education in such courses of study held in associated institutions as may be approved by the University for University awards;
- (c) the conduct of examinations;
- (d) the award of degrees, diplomas, associate degrees, certificates and other distinctions.

They shall have power to discuss any matter relating to the University and to communicate their views on such matters to the Council, and also such other powers and duties as may be conferred upon them by Statute or Decree.

17. Subject to the right of appeal from the decision of the Senate to the Council and from the decision of the Council to the Chancellor, the Senate shall have power to deprive any person who has been convicted of a crime or who in their opinion has been guilty of dishonourable or scandalous conduct of any degree, diploma, associate degree, or certificate, of the University which has been conferred upon him.

18. The Council and the Senate shall be competent to act notwithstanding any vacancy in their respective membership.

19. The Statutes of the University shall, subject to the provisions of this Ordinance, prescribe or regulate as the case may be the composition, constitution, powers and duties of the Authorities of the University, and all other matters relative to the Authorities and to the objects of the University which are thought proper to be so regulated or prescribed.

20. The first Statutes shall be those scheduled to this Ordinance.

21. The Council may from time to time by Special Resolution make new or additional Statutes, and may revoke, amend or alter existing Statutes in order to give effect to this Ordinance and its provisions.

22. All Statutes made under the last preceding clause which are not repugnant to this Ordinance shall be operative and have effect when allowed and approved by the Chancellor and not before.

23. The power of the Council to make Statutes shall not be limited by or with reference to the first or any subsequent Statutes or to the several matters therein dealt with.

24. A Special Resolution means a resolution passed at one meeting of the Council and confirmed at a subsequent meeting held not less than one calendar month nor more than twelve calendar months after the former, provided that the Resolution be passed at each meeting by a majority which shall be:

- (a) not less than three-fourths of those present and voting; and
- (b) not less than half the whole membership of the Council.

25. The Council and the Senate may from time to time make Decrees and Regulations respectively to direct and regulate, subject to this Ordinance and the Statutes, the University and its Authorities and Members. The power to make Decrees and Regulations shall include the power to repeal, amend, add to or alter any Decrees or Regulations theretofore made.

DRAFT STATUTES

Interpretation

1. In these Statutes unless the context otherwise requires " Ordinance " means the University Ordinance;
 - " University ", " Chancellor ", " Vice-Chancellor ", " Deputy Vice-Chancellor ", " Treasurer ", " Council ", " Senate ", " Officers " shall have respectively the same meaning as they have in the Ordinance;
 - " Associated Institution " means an institution in which courses of study approved by the University for awards of the University are pursued;
 - " Faculties " and " Boards of Studies " shall mean Faculties and Boards of Studies of the University;
 - " Professors ", " Readers ", " Senior Lecturers ", " Lecturers ", " Assistant Lecturers ", " Registrar ", " Librarian ", " Graduates ", " Students " shall respectively mean the Professors, Readers, Senior Lecturers, Lecturers, Assistant Lecturers, Registrar, Librarian, Members, Graduates, and Students of the University;
 - " Approved course of study " means a course of study approved by the University;
 - " Decrees " and " Regulations " respectively mean the Decrees and Regulations of the University;
- Words importing the masculine gender shall include females;
Words in the singular shall include the plural and words in the plural shall include the singular.

The Members of the University

2. The following persons shall be Members of the University:
 - The Chancellor;
 - The Vice-Chancellor;
 - The Deputy Vice-Chancellor;
 - The Treasurer;
 - The Members of the Council;
 - The Members of the Senate;
 - The Members of the Academic Staff;
 - Such other Teachers and Officers as shall under Decree be granted the status of Member;
 - The Registrar and Librarian of the University;
 - Emeritus and Honorary Professors;
 - The Graduates;
 - The Students.

The Officers of the University

3. The Vice-Chancellor shall be appointed by the Council with the consent of the Chancellor on the advice of an Advisory Board composed of the Chairman of the Council and four other members two of whom shall be members appointed by the Senate.

4. The Vice-Chancellor shall hold office for such period and on such terms and conditions as may be determined by the Council.

5. The Vice-Chancellor shall:

- (a) in the absence of the Chancellor confer degrees of the University;
- (b) have the right and duty at all times to advise the Council on any matters affecting the policy, finance and administration of the University;
- (c) be generally responsible to the Council for maintaining the efficiency and good order of the University and for ensuring the proper enforcement of the Statutes, Decrees and Regulations;
- (d) be responsible for discipline in the University and in this behalf may make rules which, on their making, shall come into force, but shall be submitted by him to the Council at its next meeting for ratification;
- (e) have power to refuse to admit any person as a student and to exclude from the University any student until the next meeting of the Council.

6. The Deputy Vice-Chancellor shall be appointed by the Council from among the members of the Senate who are or have been members of the Council after consultation with the Vice-Chancellor.

7. The Deputy Vice-Chancellor shall hold office for two years and shall not be immediately eligible for re-election.

8. The Treasurer shall be elected by the Council.

9. The Treasurer shall hold office for three years and shall be eligible for re-election.

10. The Registrar and the Librarian shall be appointed by the Council on the recommendation of Advisory Boards as set out in Statute 30 on such terms and conditions as may be determined by the Council.

11. The Registrar shall be Secretary to the Council and Secretary to the Senate. He shall be responsible to the Vice-Chancellor for executive action arising from decisions of the Council and the Senate.

12. The Bursar shall be appointed by the Council on such terms and conditions as may be determined by the Council.

13. The Dean of the Rhodes-Livingstone Graduate School of Social Studies shall be appointed by the Council on the advice of the Senate.

14. The Council may appoint such other officers as may be prescribed by Ordinance.

The Council

15. In addition to the Chairman of the Council, the Vice-Chancellor, the Deputy Vice-Chancellor and the Treasurer, the Council shall consist of the following persons:

- (a) three persons nominated by the Chancellor;
- (b) four persons nominated by the Legislative Assembly of Northern Rhodesia;
- (c) four persons nominated by the Senate;
- (d) two persons from universities or educational bodies outside Northern Rhodesia who shall be nominated by the Council;
- (e) not more than four persons co-opted by the Council.

16. The Chairman, the Vice-Chancellor, the Deputy Vice-Chancellor and the Treasurer shall hold office while they occupy the positions named respectively. All other members of the Council shall hold office for three years or for such shorter period as the appointing person or bodies may determine. Except where otherwise provided all retiring members shall be eligible for reappointment.

17. Subject to the provisions in this Ordinance and the Statutes the Council shall be the governing body of the University and shall exercise the powers thereof. Without derogating from the generality of its power it is specifically declared that the Council shall exercise the following powers:

- (i) to enact Statutes provided that no Statute shall be enacted until the Senate has had an opportunity of reporting thereon to the Council;
- (ii) to make Decrees for any purpose for which Decrees are or may be authorised to be made provided that no Decree shall be made until the Senate has had an opportunity of reporting thereon to the Council;
- (iii) to govern, manage, and regulate the finances, accounts, investment, property, business and all affairs whatsoever of the University, and for that purpose to appoint bankers and any other officers or agents whom it seems expedient to appoint and to cause proper books of account to be kept for all sums of money received and expended by the University and for the assets and liabilities of the University so that such books give a true and fair view of the state of the affairs of the University and explain its transactions;
- (iv) to borrow money on behalf of the University;
- (v) to invest any money belonging to the University;
- (vi) to sell, buy, exchange, lease or accept leases of any real or personal property on behalf of the University;
- (vii) to provide the buildings, libraries, laboratories, premises, furniture, apparatus and other equipment needed for carrying on the work of the University;
- (viii) to enter into, vary, perform and cancel contracts on behalf of the University;
- (ix) to receive gifts;

- (x) to found and endow fellowships, studentships, scholarships, exhibitions and other prizes for which funds or property by bequest, donation, grant or otherwise may be provided;
- (xi) to affiliate or associate other institutions or branches or departments thereof and accept attendance at courses of study in such institutions, branches or departments thereof in place of equivalent attendance at courses of study in the University and upon such terms and conditions and subject to such regulations as may from time to time be determined by the University;
- (xii) to enter into agreement for the incorporation in the University of any other institutions and for taking over its rights, property and liabilities and for any other purpose not repugnant to the Act;
- (xiii) to provide for printing and publication of research and other works which may be issued by the University;
- (xiv) to receive from the Senate estimates of expenditure required to carry out the work of the University and to provide the requisite money in so far as the estimates are approved by the Council;
- (xv) to appoint the Vice-Chancellor, the Deputy Vice-Chancellor, the Treasurer, the Registrar, the Librarian and the Bursar;
- (xvi) to appoint all members of the academic staff on the recommendation of an Advisory Board on such terms and conditions as the Council may determine;
- (xvii) to make such other appointments as the Council deems necessary on such terms and conditions as the Council may determine;
- (xviii) with the consent of the Senate to institute professorships and other teaching posts;
- (xix) with the consent of the Senate to abolish or hold in abeyance any professorship or other academic post;
- (xx) to award degrees *honoris causa*;
- (xxi) to take into consideration, and, if the Council deem it proper so to do, to take action on, reports from the Senate on those matters upon which the Senate is authorised or required by Statute or Decree to make reports;
- (xxii) to suspend the membership of any student or to expel any student after consultation with the Senate;
- (xxiii) to appoint external examiners on the recommendation of the Senate;
- (xxiv) to provide for the welfare of all persons employed by the University and the wives, widows and dependants of such persons including the payment of money, pensions or other payments and to subscribe to benevolent and other funds for the benefit of such persons;
- (xxv) to provide for the welfare of students;
- (xxvi) to review the instruction and teaching in courses of study leading to degrees, diplomas, associate degrees, certificates and other awards of the University;
- (xxvii) to encourage and provide for research within the University.

18. The Council may make Standing Orders from time to time for the proper conduct of its business.

19. The Council shall meet at least three times in each academic year and at any time on the written request of the Chairman of the Council, the Vice-Chancellor or of any five members of the Council.

20. Seven days' notice in writing of any meeting of the Council shall be sent by the Registrar to each person entitled to receive notice of the meeting with the agenda thereof, and no business not on the agenda shall be transacted if any two members present object.

The Senate

21. The Senate shall consist of the following persons:

- (a) The Vice-Chancellor who shall be chairman;
- (b) The Deputy Vice-Chancellor;
- (c) All Professors;
- (d) The Dean of the Rhodes-Livingstone Graduate School of Social Studies;
- (e) Principals of Associated Institutions;
- (f) The Librarian;
- (g) The Director of Extra-Mural Studies;
- (h) The Director of the Correspondence School;
- (i) Representatives of the non-professorial staff, elected by members of that staff in such number as may be determined by Decree.

22. (1) Subject to the Statutes and Decrees the Senate shall have the following powers and duties:

- (a) to direct and regulate teaching and instruction in approved courses of study and to conduct the examinations leading to degrees, diplomas, associate degrees, certificates and other awards of the University, subject to the powers of the Council as hereinbefore defined;
- (b) to promote research by members of the University;
- (c) to appoint four members of the Senate to be Members of the Council;
- (d) to award degrees, diplomas, associate degrees, certificates and other distinctions;
- (e) to regulate subject to the Decrees of the University the admission of persons to courses of study at the University and their continuance at such courses;
- (f) to appoint internal examiners after report from the Boards of Studies concerned;
- (g) to recommend after report from the Boards of Studies concerned external examiners for appointment by the Council;
- (h) to report to the Council on all Statutes and Decrees or proposed changes thereof;
- (i) to report to the Council on any academic matter;

- (j) to discuss any matter relating to the University and to report its views to the Council;
- (k) to report to the Council on any matters referred to the Senate by the Council;
- (l) to prepare estimates of expenditure required to carry out the work of the University and to submit them to the Council;
- (m) to formulate, modify or revise, subject to the approval of the Council, schemes for the organisation of Faculties and to assign to such Faculties their respective subjects; also to report to the Council on the expediency of the establishment at any time of other Faculties, or as to the expediency of abolishing, combining or subdividing any Faculties;
- (n) to establish, modify or abolish any Board of Studies and to determine its membership and functions;
- (o) to fix, subject to any conditions made by the Founders and accepted by the Council, the times, the mode and the conditions of competition for fellowships, studentships, scholarships, exhibitions, bursaries and other prizes and to award the same;
- (p) to exercise such other powers and perform such other duties as the Council may authorise or impose.

(2) The Senate may make Standing Orders from time to time for the proper conduct of its business;

(3) the Senate shall meet at least once in each term and at any time on the direction of the Vice-Chancellor or on the written request of any five members of the Senate;

(4) seven days' notice in writing of any meeting of the Senate shall be sent by the Registrar to each person entitled to receive notice of the meeting with the agenda thereof, and no business not on the agenda of the meeting shall be transacted if any two members present object.

The Faculties

23. Each Faculty shall consist of the professors and other teachers of the subjects assigned by Decree to the Faculty.

24. There shall be a Dean of each Faculty elected by that Faculty. The Dean shall preside at meetings of the Faculty and shall hold office during such period and with such powers as are prescribed by Decree. He shall be eligible for re-election.

25. Each Faculty shall appoint a Faculty Board which shall have the following powers and duties:

- (a) to regulate, subject to the approval of the Senate, the teaching and study of the subjects assigned to the Faculty by Decree;
- (b) to appoint Boards of Studies;
- (c) to report to the Senate on Decrees and Regulations dealing with courses of study or any proposed changes thereof and on any questions relating to the work of the Faculty.

The Boards of Studies

26. It shall be the duty of each Board of Studies to advise the Senate on the courses of study within the purview of that Board of Studies and to advise the Senate on the appointment of internal and external examiners and on such other matters as the Senate may request.

27. (1) Each Board of Studies shall consist of the following persons:
- (a) The Vice-Chancellor *ex officio*;
 - (b) The Professor and teachers in the subject concerned;
 - (c) Such Professors and teachers in other subjects as the Senate may decide;
- (2) A Chairman shall be elected by the Board from among its members.

Academic Staff

28. The academic staff shall consist of the following persons:
- (a) The Vice-Chancellor;
 - (b) The Professors, Readers, Senior Lecturers, Lecturers, Assistant Lecturers;
 - (c) The Librarian;
 - (d) Such other persons as the Council may prescribe on the recommendation of the Senate.

Advisory Boards

29. An Advisory Board, whose function shall be to make recommendations on the filling of teaching and senior administrative posts, shall be constituted from among the following categories of persons:

- (a) The Vice-Chancellor or a deputy appointed by him;
- (b) Two members of the Council not being members appointed by the Senate;
- (c) Two members of the Council appointed by the Senate;
- (d) The Dean of the Faculty in which the appointment is being made;
- (e) Two external experts nominated by the Senate who shall not be officers or teachers of the University.

30. The Advisory Board for the appointments set out in the first column of the following table shall consist of the categories set out in the second column of the table relating thereto respectively:

	I	II
Professorship	a b c d e
Readership or Senior Lectureship	a b c d e
Lectureship	a b c d
Assistant Lectureship	a c d
Other junior appointments	a c d
Librarian	a b c e
Registrar and Bursar	a b c

The Students

31. Students shall be those persons who:
- (a) are receiving regular instruction in the University whether or not they are studying for a degree or other award of the University;
- or

- (b) are studying externally for a degree or other award of the University.

32. Students attending the University shall be subject to the disciplinary control of the University.

33. The University may demand and receive from any student such fees as the Council may from time to time determine.

34. There shall be a Students' Union. The constitution, functions, privileges and other matters relating to such Union shall be prescribed by Decree.

Degrees and Other Awards

35. The University may grant the degrees of Bachelor, Master and Doctor to students who have:

- (a) pursued a course of study provided or approved by the University;
- (b) passed the relevant examination or examinations; and
- (c) complied in all other respects with the prescribed requirements for such awards.

36. A candidate shall not be awarded the degree of Bachelor unless he shall have either:

- (a) attended approved courses of study as a matriculated student of the University for at least four years; or
- (b) pursued an approved course for at least two academic years at an Associated Institution and attended an approved course of study at the University as a matriculated student for at least the last two years of an approved degree course; or
- (c) have pursued as an external student an approved course of study of the University for at least four academic years from the date of his matriculation; or have pursued as an external student an approved course of study of the University for at least two academic years and also attended an approved course of study at the University for at least the last two years of an approved degree course; or
- (d) have attended another university as a matriculated student and shall have had such attendance recognised by the Senate as part of the attendance qualifying him for the award of the degree provided that he shall have attended an approved course of study of the University as a matriculated student for at least the last two years of a degree course, and that the total period of his attendance as a matriculated student of this and another university shall have been not less than four academic years.

37. No person shall be awarded the degree of Master unless he shall have pursued an approved course of study or research for at least twelve months:

- (a) after satisfying the requirements for the award of the degree of Bachelor of the University; or

- (b) after graduating at another university and having been admitted to the status of graduate student in the University under such conditions as may be prescribed by the Statutes and by Decrees and Regulations made under the Statutes.

38. No person shall be awarded the degree of Doctor of Philosophy unless he shall have pursued an approved course of research for at least twenty-four months:

- (a) after satisfying the requirements for the award of the degree of Bachelor of the University; or
- (b) after graduating at another university and having been admitted to the status of graduate student in the University under such conditions as may be prescribed by the Statutes and by Decrees and Regulations made under the Statutes;

and have submitted a thesis which is certified by the examiners to make a distinct and original contribution to the subject.

39. No person shall be awarded a higher doctorate unless:

- (a) he shall be a graduate of the University of at least seven years' standing; and
- (b) he shall have made in the opinion of the examiners a sustained contribution of distinction by published work to the advancement of his subject.

40. The Council may award the degree of Master or Doctor *honoris causa* upon any person who has distinguished himself in any field of learning or in any way which merits such award; provided that the holder of a degree which has been awarded *honoris causa* shall not, by the fact that he has been admitted to the degree, be entitled to practise any profession.

41. The Council shall not award any degree of Master or Doctor *honoris causa* except after considering recommendations submitted by an Honorary Degrees Committee which shall consist of the following persons:

- The Chancellor;
- The Vice-Chancellor;
- The Chairman of the Council;
- Three members of the Council nominated by the Council;
- Four members of the Senate elected by the Senate.

42. The University may grant diplomas, associate degrees and certificates:

- (a) to students who:
 - (i) have pursued a course of study provided by the University;
 - (ii) have passed the relevant examination or examinations;
 - (iii) have complied in all other respects with the requirements prescribed for such awards;
- (b) to persons other than those provided for in paragraph 42 (a) who are deemed by the Senate to possess the qualification appropriate for the award of such diplomas, associate degrees, and certificates provided that such persons:

- (i) have pursued an approved course of study therefor at an institution in Northern Rhodesia recognised for this purpose by the Senate; and
- (ii) have passed the relevant examination or examinations approved by the University.

Board of Examiners

43. For all examinations qualifying for the award of a degree, diploma or associate degree or qualifying for a higher degree of the University there shall be a board of examiners which shall consist of the following persons:

- (a) one or more internal examiners who shall be members of the academic staff of the University engaged in teaching the subject of the examination; and
- (b) one or more external examiners who shall not be members of the academic staff of the University and who shall not have taken part in the teaching of the candidates.

PART III

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TABLE I
POPULATION, NORTHERN RHODESIA

	<i>Thousands</i>
African (based on preliminary results of May/June 1963 Census)	3,408.5
European: estimated 31st December, 1962	77.0
Coloured: estimated 31st December, 1962	2.2
Asian: estimated 31st December, 1962	8.4
	3,496.1
	3,496.1

NOTE.—A preliminary and tentative estimate of the present 16-year-old age-group (born 1947) of Africans is 59,200.

(Source: Central Statistical Office, Federation of Rhodesia and Nyasaland.)

TABLE II
SECONDARY SCHOOL ENROLMENTS

A.—AFRICAN

	<i>I</i>	<i>II</i>	<i>Remove</i>	<i>III</i>	<i>IV</i>	<i>LVI</i>	<i>UVI</i>
30-9-1956 ...	508	339	136	113	76	26	—
30-9-1957 ...	697	477	136	132	111	25	22
30-9-1958 ...	680	619	172	117	123	21	26
30-9-1959 ...	815	645	186	155	118	33	22
30-9-1960 ...	1,311	747	235	139	111	28	28
31-12-1961 ...	1,732	1,175	426	241	150	40	30
30-9-1962 ...	2,258	1,674	630	395	235	50	38

(N.R. Ministry of African Education—Annual Summaries.)

B.—NON-AFRICAN

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
					<i>“ M ”</i>	<i>2 years</i>
					<i>level</i>	<i>together</i>
First Term: 1957 ...	991	849	655	302	91	44
1958 ...	1,076	973	777	416	130	47
1959 ...	1,096	1,064	887	496	66	176
1960 ...	1,330	1,123	1,086	595	115	183
1961 ...	1,361	1,294	1,032	692	140	217
1962 ...	1,357	1,364	1,228	779	146	266
1963 ...	1,407	1,280	1,263	932	171	282

(Federal Ministry of Education—Lusaka and Ndola Regional Offices.)

NOTE.—The “ M ”-level qualification, one year beyond the school certificate level, is relevant only to the entry qualifications to South African universities and has been taken only in the non-African Federal schools. It is a complication that we have not thought relevant to our considerations and we have in effect ignored it.

TABLE III
PROPOSED SECONDARY SCHOOL EXPANSION

A.—AFRICAN

		<i>Number of streams intake</i>	
		<i>Junior Secondary</i>	<i>Senior Secondary</i>
		<i>Form I</i>	<i>Form III</i>
1963-64	...	86	26
1964-65	...	93	36
1965-66	...	102	48

NOTES.— (i) The above figures are extracted from Development Plan 1961-1965.

(ii) Until now the senior secondary intake has been into a Remove class of six months followed by Form III and Form IV of one year each to School Certificate. From 1964 the school year will change and an intake into a full year in Form III will be followed by two years in Forms IV and V to G.C.E. "O" level.

(iii) The Development Plan assumed an average class enrolment of thirty in senior secondary classes and, without wastage, the Form V output figures from the above intakes would be—

1965	...	...	780
1966	...	...	1,080
1967	...	...	1,440

B.—NON-AFRICAN

Upon the break-up of the Federation the non-African secondary school system will revert to the Government of Northern Rhodesia and it is not yet known to what extent there will be an increase over the next five years in the output from these schools. At present it is thought likely that there will not be any significant expansion of these schools, present enrolments in which are shown in Table II B. If this is so then the "O" level output by 1966-7 would be about the same as that from the present African schools. The present "Federal" schools will become fee-charging and non-racial.

TABLE IV
EFFECT OF AFRICAN SECONDARY SCHOOL PLAN 1961-65

(Adaptation of Table 5 of Chapter 10 at Page 51 of
Development Plan 1961-65)

NOTES.— (i) Although our main interest lies in the output from secondary schools, we are nevertheless concerned in connexion with manpower studies, correspondence courses and extra-mural studies with what output there may be at lower levels in the system and it is to give some general indication of this that the following adaptation has been compiled.

(ii) The published table has been adapted as follows:

(a) figures for Boys and Girls are combined;

(b) percentages are omitted;

(c) "places available in Form I" are calculated on a class enrolment of thirty-five and *not* thirty as in the published table.

(d) lines 1-4 correspond to data shown in the published table and lines 5, 6 and 7 are merely sequential figures derived from lines 1-4.

*Total*TABLE IV—*continued.*

	61-62	62-63	63-64	64-65	65-66	61-66
1. Number likely to pass Standard VI	5,240	5,900	6,260	6,720	7,460	31,580
2. Places available in Form I	1,855	2,170	3,010	3,255	3,570	13,860
3. Number likely to pass Form II	855	1,445	1,690	1,930	2,415	8,335
4. Places available in Remove/Form III ...	450	600	780	1,080	1,440	4,350
5. Number from Standard VI unplaced in Form I (1-2)	3,385	3,730	3,250	3,465	3,890	17,720
6. Number from Form II "unqualified" (2-3) ...	1,000	725	1,320	1,325	1,155	5,525
7. Number passing Form II but not entering Remove (3-4)	405	845	910	850	975	3,985

TABLE V

HIGHER SCHOOL CERTIFICATE RESULTS, 1957-62

A.—AFRICAN

	<i>Total Number of Candidates</i>	<i>Number Entering for Part Examination only</i>	<i>Number Entering for Full Certificate</i>	<i>Number Gained Full Certificate</i>
	(a)	(b)	(c)	(d)
1957	22	2	20	8
1958	28	1	27	10
1959	26	5	21	9
1960	30	3	27	15
1961	30	2	28	18
1962	37	1	36	15

B.—NON-AFRICAN

	(a)	(b)	(c)	(d)
1957	32	13	19	10
1958	26	9	17	9
1959	56	28	28	11
1960	105	52	53	18
1961	112	59	53	28
1962	87	31	56	39

(Source: The above figures are supplied by the University of Cambridge Local Examinations Syndicate. They do not correspond exactly with figures obtained from the Federal Ministry of Education and the Northern Rhodesia Ministry of African Education).

TABLE VI

SCHOOL CERTIFICATE RESULTS, 1957-62

A.—AFRICAN

	<i>Total Number of Candidates</i>	<i>Numbers Gaining Certificates</i>			<i>Number Failed</i>	<i>Failed School Certificate but Awarded</i>
		<i>Div. I</i>	<i>Div. II</i>	<i>Div. III</i>		<i>G.C.E. (3 or more Credits)</i>
	(a)	(b)	(c)	(d)	(e)	(f)
1957 ...	112	12	39	37	24	—
1958 ...	137	34	56	32	15	—
1959 ...	125	23	60	29	7	6
1960 ...	114	20	49	17	9	19
1961 ...	151	15	68	29	22	17
1962 ...	232	18	88	69	33	24

B.—NON-AFRICAN

	(a)	(b)	(c)	(d)	(e)	(f)
1957 ...	233	15	61	76	81	—
1958 ...	322	66	93	102	61	—
1959 ...	299	55	86	80	62	16
1960 ...	134	32	34	40	22	6
1961 ...	393	72	85	130	84	22
1962 ...	480	90	124	140	93	33

(Source: The above figures are supplied by the University of Cambridge Local Examinations Syndicate. They do not correspond exactly with figures obtained from the Federal Ministry of Education and the Northern Rhodesia Ministry of African Education).

TABLE VII

AFRICAN EDUCATION, NORTHERN RHODESIA

TECHNICAL AND VOCATIONAL ENROLMENTS

	<i>Government Schools</i>	<i>L.E.A. Schools</i>	<i>Other Assisted</i>	<i>Unassisted</i>	<i>Total</i>
At 30th Sept., 1962 ...	356	450	575	—	1,381
30th Dec., 1961 ...	314	471	643	—	1,428
30th Sept., 1960 ...	224	450	769	2	1,445
30th Sept., 1959 ...	436	557	821	2	1,816
30th Sept., 1958 ...	441	537	862	—	1,840
30th Sept., 1957 ...	431	503	952	—	1,886
30th Sept., 1956 ...	387	497	973	—	1,857
30th Sept., 1955 ...	330	487	883	—	1,700

NOTE.—These enrolments are taken from Table I of the Annual Summaries. In each case Table IV of the Annual Summary gives fuller details for each year, together with explanatory notes—see below for 1962.

	<i>Government or L.E.A.</i>			<i>Assisted</i>			<i>Totals</i>		
	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>
At 30th Sept., 1962:									
Trades Courses ...	408	—	408	274	—	274	682	—	682
Hodgson Technical College ...	330	—	330	—	—	—	330	—	330
H.T.C. and F.T.C. Teachers Wives	—	68	68	—	107	107	—	175	175
Homecraft Courses ...	—	—	—	—	194	194	—	194	194
TOTALS ...	738	68	806	274	301	575	1,012	369	1,381

TABLE VIII

AFRICAN EDUCATION, NORTHERN RHODESIA
GOVERNMENT RECRUITMENT EXPENDITURE
(£000s) on—

<i>Year ending</i>	<i>Primary</i>	<i>Secondary</i>	<i>Teacher Training</i>	<i>Technical and Vocational</i>	<i>Adult</i>
30th June, 1962 ...	1,809	201	156	77	31
30th June, 1961 ...	1,625	119	107	87	38
30th June, 1960 ...	1,293	103	98	65	33
30th June, 1959 ...	1,175	106	111	109	21
30th June, 1958 ...	1,188	108	114	136	20
30th June, 1957 ...	1,161	90	89	86	—
30th June, 1956 ...	1,270	66	87	80	—
30th June, 1955 ...	689	58	79	72	—

NOTE.—These figures are extracted from Table V of the Ministry's Annual Summaries which should be referred to for more detail and for the explanatory notes which show that the Territory's accounting system does not permit of precise allocation under the heading shown.

The figures shown on this table are the sums, to the nearest thousand, of direct Ministry/Department expenditure on the Government institutions and of the expenditure by local education authorities who derive their revenue by grant-in-aid from Government. Expenditure by Missions and other agencies is *not* included.

TABLE IX

ESTIMATED NUMBER OF PERSONS EMPLOYED IN
INDUSTRY AND SERVICES, SEPTEMBER, 1962

<i>Industry</i>	<i>Africans</i>	<i>Non- Africans</i>	<i>Total</i>
Agriculture and Forestry	38,400	640	39,040
Mining and Quarrying	37,300	7,000	44,300
Manufacturing	19,600	3,540	23,140
Construction	24,000	1,800	25,800
Electricity, Water, etc.	2,800	540	3,340
Commerce and Finance	15,300	6,400	21,700
Transport and Communications	9,800	2,980	12,780
Services: Private Domestic	33,900	8,160	87,960
Other	45,900		
TOTAL	227,000	31,060	258,060

(Source: Extracted from Table 1 (a) (i) of Annual Report, 1962, Department of Labour, Northern Rhodesia).