SIERRA LEONE: NJALA UNIVERISTY COLLEGE

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PREFACE

This report was possible only because of the generous assistance given us by many persons both inside and outside of Sierre Leone. Space permits mention of only a few, but we must express our thanks in particular to Mr. J.B. Paul-Short (Deputy Permanent Secretary) and S.M. Pessima (Deputy Chief Agriculturist) of the Ministry of Agriculture, to David Sheku (Permanent Secretary) of the Ministry of Education, to Vice Chancellor Kosa Thomas of the University of Sierra Leone, to several officials and faculty members at Fourah Bay College, to Dr. John Kamara (Principal), George Goba (Registrar) and Dr. J.B. George (Dean of Agriculture) of Njala University College, as well as the department heads, faculty and staff of that institution, to administrators and faculty of Makeni Teachers College and of Milton Margai Teacher Training College, to the staffs of various research centers and development projects, and (but not least) to Archie Hogan of USAID and Al Agard of the ACRE project.

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SUMMARY

In 1961, when Sierra Leone became independent, the country had no facilities to train agriculturalists to the bachelor's degree level and few if any Sierra Leoneans were obtaining such training overseas. In order to address the need for trained manpower, the GOSL and AID funded the establishment, in 1963, of Njala University College. For a decade, from 1963 to 1973, AID provided $4.5 million in grant funds to finance the provision of long-term expatriate faculty and the training of Sierra Leonean faculty in U.S. universities.

In the 20 years since its founding NUC has been extremely effective in pursuing the twin educational missions of the College to provide scientifically trained agriculturalists and to train teachers for rural schools - in particular teachers of rural science and of agriculture. Njala graduates now occupy positions of responsibility in the MOA and are engaged at many levels in research and extension activities. Likewise, its graduates staff secondary schools and the faculties of the training colleges throughout the rural areas of Sierra Leone.

The above achievements have been accomplished despite the fact that NUC's effectiveness has been increasingly constrained by an expanding admissions policy and by major decreases in budgetary resources. NUC's physical plant is now so badly deteriorated and limited in capacity that parts of its educational, research and outreach programs have been abandoned or drastically curtailed.

Beyond the production and employment of its graduates within the education and agricultural sectors NUC has had limited impact on the process of rural development in Sierra Leone. In part this condition can be attributed to inadequate funding from the GSOL to support a strong research and extension program at NUC. However, a wider set of institutional practices and policies have also served to neutralize NUC's larger impact on the rural sector. Thus, throughout the research and extension system there is an increasing emphasis on adaptive research which relegates the researcher and extension agent to the testing of technical packages rather than on problem identification in the generation of solutions. This approach, which has been adopted at the behest of major foreign donors, including AID, is marginalizing the national research effort as it bypasses the direct link between researchers and farmers which is necessary for meaningful technology development.

A major lesson from the NUC experience is that donor policies can seriously hamper the growth of a stong and effective agricultural college. The lack of a long-term focus by donors on the development of NUC's institutional needs and linkages with the larger agricultural research and extension system, in addition to a concomitant donor emphasis on adaptive over problem-solving research, and capital over recurrent funding has served to constrain the performance and impact of NUC.

GLOSSARY

"A" LEVEL	Advanced level, a standard for passing a General Certificate of Education Examination
ACRE	Adaptive Crop Research and Extension
CIMMYT	International Maize and Wheat Improvement Centre
CERTIFICATE	Given for a two-year or three-year program that does not lead to a degree
UNESCO	United Nations Educational, Scientific and Cultural Organization
URDSB	University Research and Development Services Bureau
ACRE	Adaptive Crop Research and Extension
AID	United States Agency for International Development
APD	Animal Production Division
ASSP	Agricultural Sector Support Project
B.Sc.	Bachelor of Science
CTC	Certificate Training Center
DIPLOMA	Given for a pos-graduate program that does not lead to one of the usual post-graduate degrees
EEC	European Economic Community
FAO	Food and Agriculture Organization of the United Nations
FBC	Fourah Bay College
GCE	General Certificate of Education
GNP	Gross National Product
GOSL	Government of Sierra Leone
IADP	Integrated Agricultural Development Project
IDRC	International Development Research Centre (Canada)
IFS	International Foundation for Science
IITA	International Institute for Tropical Agriculture
IRRI	International Rice Research Institute

MANR	Ministry of Agriculture and Natural Resources
MOA	Ministry of Agriculture
MOE	Ministry of Education
NARCC	National Agricultural Research Coordinating Council
NUC	Njala University College
"O" LEVEL	Ordinary level, a standard for passing a General Certificate of Education Examination
ODA	Overseas Development Administration
PL 480	U.S. Public Law 480
SEPA	Science Education Program for Africa
SLPMB	Sierra Leone Produce Marketing Board
U.S.	United States
UOI	University of Illinois
UOSL	University of Sierra Leone
USAID	United States Agency for International Development
NARCC	National Agricultural Research Coordinating Council
NUC	Njala University College
ODA	Overseas Development Administration
UNDP	United Nations Development Programme
USL	University of Sierra Leone
WARDA	West African Rice Development Association

I. PROJECT SETTING

In 1961, when Sierra Leone became independent, only two percent of the secondary school age group were enrolled in secondary schools in 1960, and educational opportunities outside Freetown were severely limited [World Bank, 1981, p. 181]. In rural areas it was difficult to obtain adequately trained teachers and teacher training facilities were not sufficient to provide the teachers needed for the growing educational system [Odell, 1972, p.1]. Lastly, Sierra Leone had no facilities to train agriculturists to the bachelor's degree level and few Sierra Leoneans were obtaining such training. Sierra Leone, however, did offer university degrees at Fourah Bay College, established in 1896 as the first college of its kind in West Africa.

In 1976 Sierra Leone was one of the 29 countries (over half of them in Africa) with per capita GNP figures below $200 [World Bank, 1978, p.4]. Rural incomes were well below the country-wide average. The 20 years since the establishment of Njala University College have been characterized by intense development activity in all sectors of the economy of Sierra Leone. The agricultural sector has witnessed numerous donor-assisted development activities, the establishment of NUC being only one. Pressure on the Sierra Leone government to maintain its contribution to these activities, both during and after the termination of external funding, has been enormous. Njala University college itself typifies a problem which is almost endemic in West Africa - insufficient or malfunctioning infrastructure following the government's inability to fulfill its commitments.

II. PROJECT DESCRIPTION

Njala University College was established in 1964 with the assistance of USAID (Contract No. USAID/Afr-293). It was to be an institution of higher learning dedicated to the education of both agriculturists and primary and secondary teachers..." [Gardner, 1964, p.6], and was placed within the Ministry of Education. The new institution inherited the facilities of three existing institutions already located at Njala: the Teacher Training College, the Oil Palm Research Station and the Agricultural Experiment Station. In 1966 the University of Sierra Leone (UOSL) was established as a single institution comprising the two colleges, Fourah Bay and Njala University College. [Odell, 1972, 1976; Gardner, 1964; Kaplan, 1976, p. 129.]

At its founding great emphasis was given to the agricultural mission of NUC. A major theme was the desire to improve agriculture through education based on the land-grant model and philosophy. One project document written just prior to the opening of the College speaks of the need for staff and students alike to be "imbued with the same enthusiasm for this philosophy: dignity of all work conscientiously attacked, the debt of educated men to the greater community, the University as an active participant in the problems of the country, and the spirit of service to the group and to the individual at all levels of society" [Gardner, 1964].

The University of Illinois was the contracting agency for the AID grant. between 1963 and the termination of University of Illinois/AID involvement in 1973, AID's contribution was about $4.5 million, primarily for (1) salaries and support for the Illinois staff and (2) overseas participant training for NUC staff. Over this 10-year period the Illinois/USAID input was 966 man-months, with Illinois staff numbers varying from two in 1963/64 to a high of 12 between 1966 and 1970. Illinois staff performed a range of planning, administrative, academic, teaching, research and extension roles during this period. Thirty-four degrees were earned under the participant training program, twenty-five of them at the MS level, with 50% of the training specialized in some area of agriculture.

The AID contract was a technical assistance contract, which provided few funds for physical facilities or infrastructure. These were the responsibility of the Sierra Leone government. However, $450,000 in U.S. PL 480 funds were provided for a laboratory, a men's dormitory and other purposes, while contract USAID/Afr-648 made $75,000 available for another men's dormitory [Odell, 1972, 1976].

The principal source of income of NUC is the annual recurrent grants from GOSL (Appendix F). Since 1973 AID has provided no further direct financial assistance although it has maintained some presence at NUC, primarily through the joint USAID/GOSL ACRE project which was initiated in 1978.

III. IMPACT FINDINGS

The primary goal of this particular USAID development activity was to establish and foster the initial growth of an institution for higher agricultural education in Sierra Leone. It was expected that this institution would eventually make a significant contribution to the agricultural development of Sierra Leone. Twelve years after the termination of USAID direct involvement in NUC, the college is fulfilling its primary objective of providing higher agricultural education while making a range of contributions, both directly and indirectly, to agricultural research and extension in Sierra Leone.

The demand for all levels of education by Sierra Leoneans is enormous. In 1984/5 there were 1,289 'recognized' primary, 164 secondary schools and 6 teacher training colleges in Sierra Leone. Sixty percent of primary teachers are classified as 'unqualified' but of the 4,744 secondary school teachers only 100 are expatriate. The university is clearly under pressure to expand, both to meet the existing requirements for teachers, and to satisfy the growing pressure and expectations of younger students which are based on very real salary differentials. In 1985, for example, over 53 percent of the 29,000 candidates for entrance to secondary schools - the springboard to university - passed.

In the same year, "O" level agricultural science candidates, many of whom were aspiring NUC undergraduates, numbered 2,292. Agricultural Science is now taught in all secondary schools in the provinces of Sierra Leone and in all 6 teacher training colleges.

In twenty-one years, annual enrollments at NUC have grown from zero to 887. NUC now graduates around 200 students a year. The details of student and admission requirements are given in Appendix C.

As a result of the expansion of NUC classes are often too large for the seats or space available, and students must go without seats, or try to listen while standing outside. Where laboratory space is inadequate, some classes have been divided into two sections meeting at different times: this obviously places additional burdens upon the faculty. Roads, buildings, toilet facilities and other components of the infrastructure have deteriorated to the point at which their condition is an obstacle to the work of the college.

The original conception when NUC was established was that the GOSL, through capital grants, would provide the infrastructure needed. In the early years rather generous funds were provided, but capital grants soon came to an end. This has left NUC operating almost entirely with temporary structures, many of them already old and inadequate when they were turned over to NUC by their previous users.

It was expected also that the GOSL would make recurrent grants that would provide for the continuation of the NUC programs. The GOSL regularly makes annual grants to NUC, Fourah Bay College and other institutions of higher learning in Sierra Leone. During the first two or three years these grants , plus the assistance received from AID, allowed the work of the college to proceed fairly well, but severe financial difficulties caused grants per student to be sharply reduced after the 1966-67 academic year. Eventually they began to grow again, but not nearly enough to keep pace with inflation. The Le 3029 received per student in 1981-82 was worth in purchasing power only 58 percent of the Le 2008 received in 1975-76.

A. Training and Teaching

The primary objective of the participant training program was to develop a group of qualified Sierra Leoneons who would become the core staff of the new college. The Illinois participant training program was highly praised by Njala's faculty. This program set a course which continues to this day in Njala's highly effective manpower development program. In 1966, two-thirds (11 out 17) of the resident staff of the Faculty of Agriculture were foreign; by 1983 the proportion was only one-fifth (6 out of 31); by 1985 no non-nationals were employed. In addition, the procaess of staff development continues. Seventien Sierra Leonean members of the Faculty of Agriculture were on study leave. Of the fourty members of the Faculty, thirteen now have their doctorares, and the number whose highest degree was the baccelaureate has dropped to seven in number.

The initial objective of the NUC degree teaching program, which relied heavily on Illinois/USAID staff, was to provide a sound basic undergraduate education for agriculturalists and teachers, with which some students would be capable of pursuing higher degrees overseas. Students trained overseas under this program now form the core of the senior teaching and research staff at NUC (Appendix B) while others are in senior positions in government, private business or outside Sierra Leone.

When NUC opened in 1964 it offered 4 year degree programs in Agriculture and education, including home economics, and 2 year certificate programs in agriculture, trade and crafts, and home economics (See Appendix D). In the Faculty of Agriculture there have been modifications since the 1960s, but the core curriculum still reflects many aspects of the land-grant philosophy. In many respects, NUC undergraduate course requirements and content are strikingly similar to those for a Bachelor's degree at a U.S. land-grant university. This philosophy is also evident in the programs in science education and agricultural education, and in the work done on curriculum and teaching materials for rural science. It is also apparent in the general emphasis on preparing students for teaching in rural areas.

Much of the background documentation around the establishment of NUC bemoans the theoretical, academic and disciplinary nature of education in Sierra Leone, and cites the need for the more practical orientation which the land-grant model was thought to embody. Practical demonstrations of modern agriculture and student "farm practice" have always been a part of the Njala curriculum, beginning in the first year of admission for students in the Faculty of Agriculture. While the formal courses at NUC closely resemble those found in US agricultural colleges, and appear to have presented few problems, the practical work has historically been more difficult to organize, and has involved a number of different approaches.

During the Illinois/USAID contract period, the various departments of the Faculty of Agriculture developed examples of 'modern' agriculture to be used for demonstration teaching. In Animal Science, adaptation to the local environment was demonstrated by the use of local feed resources in swine and poultry rations. The university farm, on the other hand, was in part to be used to demonstrate whole farm management by integrating the systems developed in the various departments. Farm practice also included visits to NUC's abattoir and feed mill, agricultural shows and field days, and visits to neighboring villages. Students were also involved in the development of 'modern agricultural enterprises' in the villages. The full development of the university farm, however, is still being discussed, and external funding sought, although there appeared to be little consensus on the nature of its eventual contribution to NUC. Demonstration teaching, research and income generation were variously discussed as the priority activity for the farm.

Using a different approach to farm practice, students in the Department of Agricultural Education were allocated individual farm plots where they could learn basic agricultural principles. This exercise was focused on methods of establishment and management of school plots which are an intregal part of the agricultural curriculum in Sierra Leone's secondary schools.

Apart from individual student farm plots which do not depend on surrounding infrastructure, all other aspects of the practical work at NUC have suffered from lack of resources. Currently, however, following the appointment of 2 staff trained in agricultural extension and rural sociology, there are initiatives to strengthen the farm practice activities for students in the general agriculture program. A committee made-up of 5 departmental farm practice "coordinators" has been organized, and in the future the successful completion of farm practice will be a degree requirement. Further, a proposal is now being considered for a change to a five year curriculum, with two years set aside specifically for practical training and subject matter specialization.

B. Research

Research activities were supposed to provide NUC with the tools to help "modernize" agriculture in Sierra leone - through both teaching and extension. Within the first five years NUC took its place in the center of the agricultural research arena. The rice research station at Rokupr (the oldest in West Africa) was placed under NUC, as were the Oil Palm Research Station at Njala and the Cattle Station at Musaia. In addition, the University of Illinois staff and trainees returning from higher degree studies overseas initiated research programs at Njala in agronomy, soil survey, animal science and agricultural economics.

The Illinois team placed great stress in its researhc program on the ;mechanization of agriculture, includeing tractor plowing, etc. Although this accorded with conventional wisdom at the time, it has become evident that U.S.-style mechanization is inappropriate for Sierra Leone. While mechanization is extraordinarily productive in the U.S. environment, where labot is expensive, and capital and mechanical skills are cheap, in Sierra Leone, capital and mechanical skills are scarce, labor is cheap and much still needs to be learned about ropical soils.

The Illinois team also placed much emphasis on research and extension activity in cattle, swine and commercial poultry production, but paid little attention to goats and sheep. A major problem here is similar to that facing agricultural mechanization: large animal production requires a great deal of capital in comparison with the resources available to the ordinary household.

From the beginning, however, research was clearly subordinate to the college's main mission - education - and when financial resources were restricted in the late 1960's and 1970's it was the research program which was first restricted. For example, activities at Rokupr were curtailed and when no budget was forthcoming the Masaia cattle station was handed back to the Ministry of Agriculture and Natural Resources.

On-going research at NUC is generally along traditional disciplinary lines using standard methodologies. Research of NUC staff thus reflects the orientation of the educational and research institutions in which they were trained. Nonetheless, current research by NUC staff and students touches upon the range of contemporary themes in development research. Farming systems research, "adaptive" research, identification of constraints and the role of land tenure systems in agricultural development are now major themes in staff and student research. These themes are apparently pursued largely on an individual basis.

The lack of resources within the university to support research has forced the staff to seek research funds elsewhere, including ACRE, the IADPs, other projects within Sierra Leone, and external donor agencies (IDRC, IFS, FAO). We would suggest that the effect of this situation might be the diversion of NUC's research efforts by the various donors, and the forestalling of the development of NUC's own research agenda.

C. Extension

Extension is considered a key to the land-grant model providing the essential link between researchers and farmers. It was presumed from the beginning that NUC would play a major role in directing the national extension activities, even though the MOA had always held responsibility for agricultural extension in Sierra Leone. It was not until early 1968 that NUC was able to reach an agreement with MOA on its extension role and mandate. At that time NUC was given "responsibility for training extension agents for the ministry" (a responsibility it already held) and freedom to "develop and conduct extension activities exclusively within 15 to 20 mile radius of the campus, and this for the purpose of providing a field laboratory for developing, testing and evaluation various extension procedures and to provide field experience for extension agents in training". Additionally, NUC agreed to provide MOA with technical assistance and advice related to problems encountered by extension agents in the field.

NUC extension activity, which covers four chiefdoms near Njala, was based on the mechanical cultivation of rice, intensive swine and commercial poultry production units and intensive vegetable production for women. In return for fees participating farmers had access to cultivation services, fertilizer, planting materials and animal feed from the mill at

NUC. The poultry program broke down in 1976 when feed and imported day-old chicks were no longer available, and the mechanized cultivation service ended in 1982 when the last tractor failed and the farmers shifted to a Ministry of Agriculture scheme. Only the women's vegetable production program, considered of relatively minor importance at the time, has taken root and flourished without major inputs from NUC.

Apart from this limited direct extension activity, NUC has had a significant indirect extension input through its teaching of extension to degree students, and training of MOA extension personnel at the certificate level. Earlier at the main NUC campus, and more recently at the new CTC campus, Faculty of Agriculture staff have taught what are designed to be more practically orientated courses to MOA personnel. The Faculty is also involved in developing the CTC curriculum in cooperation with MOA personnel and others. Ministry staff with certificate training, in addition to their contribution to MOA extension activities, are the foundation of almost all extension activities of the IADPs and numerous other development projects.

NUC's own future involvement in the training of extension staff may be less direct than at present. ODA funding provided CTC with a new instructional and residential campus, and with funds for training a core teaching staff overseas. NUC's most direct link with CTC (and Sierra Leone's extension workers) at present is via the involvement of Faculty staff teaching at CTC. In future, this teaching role will be sharply curtailed and NUC staff involvement limited to specialty teaching and curriculum development.

Extension is also taught in the degree programs. It was originally taught within several departments, but gradually developed into a special final-year course taught by members of the Department of Agricultural Economics and Extension. With the appointment of specialists in extension and rural sociology, the extension curriculum was revised in 1985/86 academic year to include expanded opportunities for farmer contact. Each student will now be required to identify a farm family and describe its structure and needs. Students will subsequently plan, implement and evaluate an extension program for each identified family.

D. NUC Graduates and Employment

The NUC teaching program has been responsible for producing a large body of graduates now present in all sectors of the Sierra Leone economy. By 1985, the Faculty of Agriculture had graduated 1172 and the Faculty of Education 1359 students with degrees, diplomas and certificates.

The Ministry of Agriculture has been the principal employer of graduates in Agriculture, but some have gone into teaching, project employment or such institutions as the National Development Bank. Njala graduates now occupy positions of responsibility in the MOA and are engaged at many levels in research and extension activities in Sierra Leone. Graduates of the Faculty of Education staff secondary schools and training colleges throughout the rural areas of the country in addition to finding employment in agricultural development and extension programs.

Opportunities for private sector employment are restricted almost entirely to a few large private companies, including Rokel Leaf Toabacco Company and some pig and poultry farms near Freetown. Self-employment of graduates in the sector is almost non-existent.

Very few women graduates are employed in agriculture. Their underrepresentation in the student population as a whole (1:5) partly reflects the lack of science training in women's secondary schools, but it also indicates an apparent lack of interest in job opportunites which might be less flexible than teaching. The popularity of NUC's agricultural education program compared with General Agriculture is heightened for women graduates.

Currently, some graduates, both in general agriculture and in agricultural education, find employment in various development projects where they are often quickly placed in relatively senior positions. Two 1982 NUC graduates, for example, are in charge of extension training in the Eastern IADP under one expatriate coordinator. Five others, employed in the same year, are "research officers" responsible for tree and food crops. All seven were graduates in the agricultural education program at NUC. Degree graduates in agriculture often spend a year or two teaching before finding employment in the MOA or their development projects. Undergraduates in the agriculture program, aware of the situation, sometimes shift to the agricultural education program to be more competitive in the teaching market.

There has been increased emphasis on extension and communications within the MOA, IADPs and other development agencies, the effect of which has been to further popularize the agricultural education program over general agriculture. This trend was repeatedly mentioned throughout discussions with students, project staff and teachers who observed that the teaching profession was becoming a mere stepping stone to such employment. Agricultural project employment is particularly attractive, not only for its marginally higher salary, but because it offers opportunity for further training, frequently overseas. This trend would appear to be taking a severe toll on the teaching profession itself: the negative effects of high teacher turnover rates on the agricultural science programs at secondary schools were particularly evident. This is compounded by the fact that the funding of secondary school agricultural projects such as gardens and livestock is dependent largely on the initiative of individual teachers. Recently improved terms of service for teachers in teacher training colleges is an effort to reverse this general trend away from teaching.

IV. IMPACT ANALYSIS

A. Agricultural Training and Agricultural Production

There are few formal linkages between NUC and the Ministry of Agriculture and hence, apart from employment of NUC graduates in agriculture, we can draw few conclusions about the effect of NUC on agricultural production itself. NUC exists in an educational and agricultural production environment which is itself subject to many influences which must be taken into account when assessing impact.

While NUC might monopolize tertiary level training in agriculture, this is not true of "development" or "practical" education as a whole. This has long been the concern of a number of rural-based teacher training colleges, of which Bunumbu Teacher's College is probably the best example. Although NUC plays a key role in the design of agricultural curricula for pre-university training, these other institutions also participate. Many of the faculty of these colleges are former graduates of NUC. Bunumbu, with expected UNESCO funding, is presently proposing to nationalize its "innovative primary school curriculum adapted to the local environment," which places strong emphasis on agriculture and rural development.

Development perspectives also feature in many educational curricula, including that of Fourah Bay College, and reflect international trends in approaches to development. A major concern at present, however, must be the apparent degradation in the quality of practical agricultural education. While insufficient recurrent government funding has reduced the capacity of all institutions to function efficiently, practical education appears to have suffered most. Secondary school farms are largely neglected, farm visits by NUC undergraduates have been reduced and individual farm practice has been replaced by group activities in many educational institutions. Injections of external funds into individual institutions, such as UNESCO's funding of Bunumbu, the Peace Corp's fish pond project at Bo Teachers College, or Plan International's rabbit and swine activities at Milton Margai Teacher's College create opportunities to expand practical training in the short run. However, these activities have important, long-term implications which were not necessarily foreseen when assistance was accepted. They can result in gross distortions in curricula and focus: the current emphasis on rabbit husbandry in schools and training colleges - an endeavor which has failed throughout West Africa - is a prime example.

The training of agricultural extension personnel is one area which has received long-term external funding from a number of donors. Beginning at the Makali Training Centre, whose facilities were up-graded by ODA, a 6-month course of both extension and technical training, largely in swamp rice production, produces agro-technicians from school leavers previously employed by the Ministry of Agriculture. Two years later, these same graduates are eligible to apply for the two-year certificate in

agriculture formally at NUC itself, or at the new CTC/NUC campus, to become agricultural instructors. If developed as currently planned, the 250-acre farm at CTC will be the largest functional teaching farm in Sierra Leone. As already indicated, NUC's own future involvement in the training of extension staff may be less direct than at present, and ironically, the Faculty of Agriculture of NUC, of which CTC is an arm, has been long unable to secure funds to develop its own 2,250 acre farm for training and research purposes. While ODA funding provided CTC with a new instructional and residential campus, it also provided funds for training new core teaching staff.

In service training in agricultural extension is also carried out by most development projects (also externally funded) and is frequently not under the direct control of either the Ministry of Argiculture or Education, or NUC. It forms part of a much broader body of specialist training on offer to most levels of project staff by donor agencies.

Perhaps the most striking feature of the agricultural sector is the proliferation of projects in an attempt to increase agricultural production. This expansion follows in the wake of donor policies which support new capital investment rather than recurrent costs of existing projects and institutions. The six integrated development projects which now cover 80 percent of Sierra Leone provide a striking example of the force of this funding policy. All six have the same general objectives, and utilize many existing Ministry of Agriculture staff on attachment. External funds are used in an apparently uncoordinated manner to expand research, extension and inservice training activities while bypassing existing programs and institutions.

The IADP's embody another feature of the agricultural sector - its fragmentation among numerous external donors. All six IADP's were planned and operationalized by different funding agencies over a period of 13 years and cover different geographical areas. All but one project involved the attachment of Ministry of Agriculture personnel, particularly in the area of extension. The exception, the Bo/Pujehun Project, automatically included all MOA staff working within the project area who were not already allocated to some other project. Currently, more than 60 percent of senior IADP staff are MOA personnel, and all projects, from ACRE to Plan International, have Ministry staff on attachment, who continue to be paid by the government of Sierra Leone. These Ministry staff are thus the implementing agents for a multi-faceted, poorly-coordinated development agenda, which often places extension staff from different projects in the same area offering farmers different and potentially conflicting packages.

The University and the government of Sierra Leone are themselves acutely aware of the current state of disarray among agricultural development activities and the need for more formal linkages between itself and government. They acknowledge this to be positively related to the deteriorating state of the Sierra Leone economy. In the face of increasing pressure from donors and the feverish activities of other development agencies, it remains to be seen whether the government and the university can direct and control their own development path.

Within projects there is increasing emphasis on communication skills, particularly as related to "adaptive" research and "talking to" and "learning from" farmers. This emphasis is reflected in the apparent preference for NUC graduates in agricultural education, as well as in the on-going revision of the extension curriculum at NUC and CTC. Extension agents are thus expected to both teach and learn from the farmers, yet, as is true throughout the world, the way in which these two tasks can be effectively combined is not immediately obvious. Throughout our study for example, we were repeatedly told of the need to convince Sierra Leone's "subsistence" farmers of the value of new technology.

All these approaches to solving the problem of agricultural development via extension, outreach and technology transfer, bypass the direct link between researchers and farmers which is necessary for meaningful technology development itself. Their prevalence presumes that relavent technology exists and justifies the concentration on adaptive research. Adaptive research focuses the researcher on the testing of "packages" rather than problem identification and the generation of solutions. The present emphasis on adaptive research by Sierra Leoneans (including NUC staff) and donors (including USAID through ACRE) suggests that this situation will continue, thus further marginalizing the national research effort of which NUC forms a major part. While the involvement of NUC staff in extension teaching at CTC might have helped alleviate this problem, the eventual return of the new CTC core staff will remove NUC's significant research capability one step further from Sierra Leone's farmers.

While Sierra Leone's national institutions' own research output has declined as funds for recurrent expenditure have been reduced, and the focus shifted to adaptive research, regional research institutions based outside Sierra Leone have come into prominence. WARDA, IRRI and IITA are each placing demands on the national research capacity by advancing, both directly and indirectly, their own research agendas.

WARDA's presence at Rokupr Rice Research Station provides a prime example of the potential undermining by regional institutions of Sierra Leone's existing research programs. The Sierra Leone government had initially hoped to house the headquarters of WARDA. Instead Sierra Leone was selected as the regional center for mangrove swamp rice research. With WARDA's arrival in 1976, therefore, Rokupr totally abdicated its responsibilities for mangrove swamp rice research, which had been its first priority since the station was established in 1934. Rokupr's own attention shifted to the country's remaining four rice ecologies, with which it had considerably less experience. As the main production areas for some of these ecologies lay far from the station, pressure on Rokupr's own declining research budget presumably increased. Rokupr had expected its association with WARDA to provide some badly needed infrastructure inputs, but these have not materialized.

B. NUC, ACRE and CTC

The position of NUC vis-a-vis ACRE and CTC highlights the complexity of the relationship between donor funding and agricultural development, and in the special case considered here, donor funding for successful institutional development for a particular sector of the economy, agriculture.

ACRE like NUC was established as a jointly funded project by USAID and the government of Sierra Leone. Structurally, ACRE lies within the Ministry of Agriculture, and it utilizes the research personnel of NUC while maintaining a separate campus within NUC grounds. ACRE's own birth was apparently closely linked with the All Sierra Leone Coordinated Agronomic Trials and Adaptive Research and Extension activities at Rokupr. ACRE was seen as a way of linking research and extension. However, since NUC staff were already involved in the training of extension personnel, a more coordinated funding policy on the part of USAID could have involved them in funding NUC directly, rather than in funding a separate institution. This policy would have strengthened the original institutional investment in NUC. The strategy would also have been an implicit, if not explicit recognition of the need for long term funding for institutional as distinct from other kinds of development activity. The incorporation of ACRE within NUC might also have reduced the additional financial pressures on the GOSL, following the establishment of a separate institution with co-funding arrangements. Finally, ACRE's focus on improved varieties and technical packages rather than on problem identification and the generation of solutions, which has acted to further isolate NUC's research activities, might have been avoided.

CTC was established with ODA funds, which corresponds with the general pattern of agricultural sector fragmentation with specialized donor funding. Again, following the general character of donor funding, the initial emphasis was on capital; the establishment of a set of buildings and a farm, rather than on recurrent expenses, and the upgrading of buildings at NUC and investment in the NUC farm . The present strategy of utilizing NUC staff for teaching at CTC can be seen as a continuation of the plan for extension training to take place within NUC, i.e. cooperation among the donors. As observed, however, this practice will change in the future.

V. LESSONS LEARNED

1. Institution building projects must be designed so as to fit within or complement the existing national institutional environment. In the case of NUC, its presumed role in national extension went against a long tradition of extension activities being firmly situated within the Ministry of Agriculture. This made the implementation of the land-grant model impossible, and has minimized the impact of NUC in this area. From the beginning, therefore, a different model which emphasized certificate training of extension personnel should have been used, since certificate training was the existing direct link between research and extension. USAID and the GOSL attempted to address the issue later in the creation of ACRE as a bridge between Sierra Leone's existing research and extension institutions.

2. Uncoordinated donor polices over time, both by individual agencies and within the donor community as a whole, may lead to the dilution of earlier investments. USAID's investment in ACRE, as a separate institution, and ODA's in CTC as an independent body, is serving to undermine the fulfillment of NUC's role and contribution to research and extension training. This was particularly important in the case of NUC's extension role since NUC was initially placed outside the national institution with primary responsibility for agricultural extension. Both ACRE and CTC should be an integral component of the NUC program.

3. The success of donor projects aimed at establishing a national research capability and generating research initiatives can be hampered by other donor funding which is accompanied by explicit research agenda and approaches. For example, USAID's regional strategy which focuses largely on adaptive research would appear to be minimizing the potential impact of national research capabilities. In Sierra Leone, this strategy has been implemented through ACRE, which while utilizing NUC's research capabilities was established with a predetermined research and development agenda. This is the very antithesis of the land grant philosophy which involves an emphasis on a problem-solving approach to agricultural research and extension.

4 Donor policies which mandate capital funding by the donor and recurrent funding by the host government lead to project proliferation and a cumulative long-term burden on government resources. This situation often results in deteriorating infrastructure and reduced ability to fulfill project objectives. The newly constructed and presently functional campuses of CTC and ACRE, which lie adjacent to the badly deteriorated NUC campus, are a striking example of the effect of these policies.

5. "Hands-on" agricultural and extension education is particularly susceptable to budgetary constraints. These activities are dependent on continuous expenditures over and above salaries; for example, transport and agricultural inputs. The decreased capacity of NUC to maintain its emphasis on practical training, which was originally conceived to be a key element of NUC's mission, has reduced the richness of the educational experience for students and faculty alike. The same effects can be seen in secondary schoool agricultural programs throughout Sierra Leone.

APPENDIX A

METHOD

The goal of this study was to determine the contribution NUC has made to the agricultural sector of Sierra Leone. Njala is only one of the agencies working to improve agricultural productivity. The Ministry of Agriculture and many foreign donors have contributed their funds and efforts toward this end; no single one can claim full responsibility for whatever may have been achieved.

Sources of information for the study included (1) NUC records, documents, and a variety of reports and papers (published and unpublished) concerning Sierra Leone or the experience at Njala, (2) personal communications by letter or telephone and (3) interviews with students, faculty, employers of students, government officials, former students or faculty members, etc.

Interviews were conducted as a team, particularly when visiting Ministry officials, to explain the objectives of the study or seeking advice as to what agencies to visit and whom to see. Thereafter, the team split into two, with Dr. Okali and Dr. Sumberg taking responsibility for matters concerning research, extension, educational programs and the employment of students. Dr. Smith dealt with matters of organization, administration, enrollments, admissions, numbers and types of graduates, finances, adequacy of facilities, the nature of AID support, and problems imposed upon NUC because of the economic environment within which it has been operating.

The team visited the Ministries of Agriculture and of Education, administrative officials at the UOSL, Fourah Bay College and NUC, faculty members at NUC, former students in many types of employment, representatives of various donor agencies, secondary schools, teacher training colleges, employers in private and public industry, rural development projects, the ACRE project, and the Rokupr Rice Research station. The team also contacted former faculty members and others who were closely associated with Njala during her first ten years or so.

APPENDIX B

EDUCATIONAL PROGRAMS

When NUC opened in 1964 it offered four-year degree programs in Agriculture (including Home Economics) and Education, two-year certificate programs in Agriculture, Home Economics, and Trades and Crafts, and a three-year Higher Teachers' Certificate Program in Agricultural Education. The latter set higher admission requirements than the two-year certificate programs, but did not lead to a degree. The 1980 NUC Prospectus lists the college's instructional programs as follows:

Faculty of Agriculture

Bachelor of Science in Agriculture
Bachelor of Science in Home Economics General
Bachelor of Science in Home Economics Education
Certificate in Agriculture

Faculty of Education

Master of Science in Science Education
Post-Graduate Diploma in Science Education
Post-Graduate Diploma in Agricultural Education
Bachelor of Arts in Education
Bachelor of Science in Education
Bachelor of Science in Agricultural Education
Certificate in Science Education

While there have been modifications in the NUC structure (Table B.1) and curriculum since the 1960's, the core curriculum and its vision of agriculture and agricultural development remain largely unchanged. Within the limits set by college facilities and the availability of books and supplies, the NUC undergraduate course requirements and content are strikingly similar to those for a Bachelor's degree at a U.S. land-grant university.

Table B.1

DEPARTMENTAL ORGANIZATION OF NJALA UNIVERSITY COLLEGE - 1964 AND 1985

1964	1985
Faculty of Agriculture	Faculty of Agriculture
Department	Department
Plant Sciences	Agronomy
Animal Sciences	Animal Sciences
Agricultural Economics & Cooperation	Agricultural Economics & Extension
Agricultural Engineering	Agricultural Engineering
Home Economics	Home Economics
Agricultural & Home Economics Extension	
Faculty of Education	Faculty of Education
Department	Department
Teacher Education - Secondary, Primary	Teacher Education
Extension	Agricultural Education
	Biology
	Chemistry
	English
	Geography
	Mathematics
	Physics
Faculty of Basic Sciences	
Department	
Biological Sciences	
Physical Sciences	
Social Sciences	

APPENDIX C

FACULTY

NUC staff continue to secure higher degree training at universities in Africa, Europe, the U.S. and elswhere. Most have studied within the U.S. and U.K. educational systems and some have received degrees from both. At all levels the staff continue to take advantage of an improessive array of formal and informal training opportunities funded by various countries, donor agencies and development projects.

The effects of the NUC faculty development effort can be seen in Tables C-1 and C-2. In 1985, there were thirtien Sierra Leoneans who held the Ph.D. degree, three times the number in 1977. In 1966, half of the faculty were expatriates, whereas in 1985, no expatriates were serving on the faculty.

Table C.1
HIGHEST DEGREES HELD BY SIERRA LEONEANS ON THE TEACHING FACULTY
FACULTY OF AGRICULTURE
NJALA UNIVERSITY COLLEGE
1977, 1983, and 1985

YEAR	1977			1983			1985		
Highest Degree Held by Sierra Leonean Faculty Members	In Residence	On Leave	Total	In Residence	On Leave	Total	In Residence	On Leave	Total
Diploma	1	0	1	0	0	0	1	0	1
Bachelor's	3	6	9	4	3	7	2	5	7
Master's	23	3	26	13	11	24	13	9	22
Doctor's	3	1	4	8	3	11	10	3	13
TOTAL	30	10	40	25	17	42	26	17	43

Source: Dr. J.B. George, Dean, Faculty of Agriculture

Table C.2
STAFF PROFILE
FACULTY OF AGRICULTURE
NJALA UNIVERSITY COLLEGE

NATIONALITY	SIERRA LEONEANS (number) on post / on study leave										FOREIGN (number)					TOTAL (number)				
YEAR	66	77	81	83	85	66	77	81	83	85	66	77	81	83	85	66	77	81	83	85
DEPARTMENT																				
AGRICULTURAL ENGINEERING	1	5	4	3	6	1	2	1	2	3	1	1	0	0	0	3	8	5	5	9
AGRICULTURAL ECONOMICS & EXTENSION	2	3	8	4	6	1	5	2	7	3	2	0	0	0	0	5	8	10	11	9
AGRONOMY	3	12	9	9	6	0	3	6	5	9	5	4	1	3	0	8	19	16	17	15
ANIMAL SCIENCE	0	6	5	6	5	1	0	0	1	0	2	1	0	1	0	3	7	5	8	5
HOME ECONOMICS	0	5	2	3	3	1	1	3	2	2	1	2	2	2	0	2	8	7	7	5
TOTAL	6	31	28	25	26	4	11	12	17	17	11	8	3	6	0	21	50	43	48	43

Source: Dr. J.B. George, Dean, Faculty of Agriculture

APPENDIX D

STUDENTS

1. Admissions

Admission to the standard four-year degree programs at Njala requires passing the nationwide examinations for the General Certificate of Education (GCE) at "O" (Ordinary) level in at least five subjects, including English and either mathematics or a science. (An equivalent West African School Certificate is also acceptable). In addition students entering in agriculture must pass at "O" level one additional subject chosen from a specified set of nine (mainly in science). For some majors the individual departments require certain specific subjects.

Because individual departments limit the number admitted in accordance with the number of spaces available, many who obtain the GCE are not accepted. Only those with the best academic preparation gain admission. Probably twice as many students would be available and admissible if the space and facilities needed could be secured.

Most students admitted are able to obtain scholarships intended to provide full maintenance, either from the GOSL or from donors. (The GOSL emphasizes agriculture and the sciences in allocating its scholarship funds.)

2. Enrollments

Njala University College had 887 students in the 1984-85 academic year. The College began, in 1964-65, with 102. In 1966 NUC graduated its first class--129 students in the two-year certificate program in general agriculture. The next year ten students graduated in the three-year Higher Teachers' Certificate in Agricultural Education, plus 27 from two-year certificate programs. By 1968 the first group of baccealaureate degrees was granted, 33 of them in General Agriculture.

Enrollment in the 1967-68 year reached 306. From there it grew rather steadily until it reached 670 in 1978-79. In the 1980's it has ranged between 836 and 887. (See Table D.1.) For the last ten years enrollments at NUC have been approximately 60 percent of those at Fourah Bay.

Table D-2 gives a detailed breakdown of student enrollments by programs, sex and year of study, for the year 1984-85. As course requirements are fixed for each year of each program, one can infer something about class sizes from these figures, except that students from different programs may be combined in a single class Few, if any, classes are offered in more than one section. Classes are large in the general agriculture and education programs; they are small in home economics.

A number of departments have recently begun to offer work for graduate degrees on a limited basis. (See Table D-3.)

Foreign students represented from 1/6 to 1/5 of total NUC enrollment in 1968-69 and during the 1970's. As agricultural universities have developed in other parts of Africa the proportion has declined, until only about 1/16 of the total in 1984-85 were from outside Sierra Leone. Zimbabwe has provided the largest number of students during the 1980's, but that contingent fell considerably during the last two years. The United Republic of Cameroon, the Gambia and Liberia have been sending some eight to ten students apiece during the 1980's.

3. Graduates

Between 1966 and 1985 NUC graduated 2,607 students. Of these 1,359 were from the Faculty of Education: 894 with bachelor's degrees in Education, 276 with B.Sc. degrees in Agricultural Education, 121 with Diplomas or Certificates in Science Education, 66 with Diplomas or Higher Teachers' Certificates in Agricultural Education, and two with master's degrees . Graduates of the Faculty of Education (and some from Agriculture) are staffing secondary schools and faculties of training colleges throughout the rural areas of the country.

In the same period the Faculty of Agriculture graduated 1,172 students. In the general agriculture program there were 352 with B.Sc. degrees and 672 with Certificates. In home economics there were 148, with B.Sc. degrees or Certificates. In addition, there were 76 special students (temporary transfers from U.S. colleges or universities) not assigned to the separate Faculties.

By the 1980's the total number graduating annually from NUC as whole ranged around 200. Education was still the most popular degree program, with agricultural education and general agriculture programs competing for second place. However, the two-year Certificate program in general agriculture usually graduated appreciably more students than either of the latter two.

TABLE D.1

NUMBER OF STUDENTS ENROLLED,
1964-65 THROUGH 1984-85
(AS OF DECEMBER 1964, ETC.)

ACADEMIC YEAR	FOURAH BAY COLLEGE	NJALA UNIVERSITY COLLEGE
1964-65	549	102
1965-66	552	166
1966-67	541	203
1967-68	426	306
1968-69	511	297
1969-70	747	303
1970-71	829	315
1971-72	882	372
1972-73	936	428
1973-74	1015	464
1974-75	1088	572
1975-76	1012	614
1976-77	1016	n.a.
1977-78	984	610
1978-79	1035	670
1979-80	1136	n.a.
1980-81	1349	838
1981-82	1454	869
1982-83	1522	836
1983-84	1464	851
1984-85	1482	887

Sources: Fourah Bay College: Registrar.
Njala University College:
through 1975-76, Odell (1976, Table 1, p.67);
1977-78 and 1978-79, by subtraction from enrollment data for UOSL in Annual Digest of Statistics, 1982; 1980-81 through 1984-85, Registrar, Njala University College.

n.a. Not available.

D.2

FULL-TIME STUDENTS ENROLLED[a]
BY COURSE OF STUDY,
NJALA UNIVERSITY COLLEGE 1984-85

Program	Year of Study 1st M	1st F	2nd M	2nd F	3rd M	3rd F	4th M	4th F	Other M	Other F	Totals M	Totals F	Total
Bachelor of Science													
Agriculture-General	61	1	59	1	37	3	54	2			211	7	218
Home Economics		21		15		11		14				61	61
Agricultural Education	41	3	37	1	27	1	39				144	5	149
Education	58	9	60	7	47	8	52	8			217	32	249
Bachelor of Arts													
Education	19	5	20	2	22		20	5			81	12	93
Master of Science													
Agriculture									1		1		1
Master of Arts													
Education									1	1	1	1	2
Master of Education									3	2	3	2	5
Doctor of Philosophy													
Science Education	6	1									6	1	7
Certificate													
Agriculture-General	56	3	39								95	3	98
Science Education	4										4		4
SEPA													
Special													
Totals	245	43	215	26	133	23	165	29	6	2	764	123	887

Source: Registrar

a As of December 31
b Kalamazoo Program
M Male
F Female
SEPA Science Education Program for Africa

D.3

STUDENTS ENROLLED IN POST-GRADUATE
COURSES, NJALA UNIVERSITY COLLEGE, 1985-86

Program	Number	Totals
Faculty of Agriculture		
Master of Science		
Crop Science	1	
Soil Science	2	
Agricultural Extension	1	
Doctor of Philosophy		
Applied Entomology	1	
Diploma		
Post-Harvest Technology	1	
		8
Faculty of Education		
Master of Arts		
Master of Education	10	
Diploma		
Science Education	6	
Certificate		
Science Education	4	
		20
Total		28

Source: Registrar

By the 1980's the total number graduating annually from NUC as whole ranged around 200. Education was still the most popular degree program, with agricultural education and general agriculture programs competing for second place. However, the two-year Certificate program in general agriculture usually graduated appreciably more students than either of the latter two.

APPENDIX E

EMPLOYMENT

The demand for all levels of education by Sierra Leoneons is enormous, and this has provided a growing market for graduates from NUC. In 1984/85 there were 1,289 "recognized" primary schools, 164 secondary schools, and six teacher training colleges in Sierra Leone. Although the secondary school system no longer depends heavily upon non-nationals (only 100 of the 4,744 secondary school teachers are expatriate), sixty percent of the primary teachers are still classified as unqualified.

The universities are clearly under pressure to expand, both to meet the existing requirements for teachers and to satisfy the growing pressure and expectations of younger students. In 1985, for example, of the 29,000 candidates for entrance to secondary schools - the springboard to the university - over 53 percent passed. In the same year, "O" level agricultural science candidates, many of whom are aspiring to become NUC undergraduates, numbered 2,292. Agricultural science is now taught in all secondary schools in the provinces of Sierra Leone and in all six teacher training colleges.

While the demand in the education sector for NUC graduates is quite high, the same is not the case in the agricultural occupations. When Njala University College was established there was a large stock of positions requiring agricultural training for which qualified Sierra Leoneans were not available. That backlog of unfilled positions has now nearly disappeared. For years the Ministry of Agriculture was the principal source of employment for agricultural graduates, but the number of new positions being filled by the MOA each year is now less than the annual number of graduates. Degree graduates in agriculture, faced with the necessity of waiting a year or more for a position in the MOA, often turn to teaching, although that is their second choice. With the strong demand for graduates in agricultural education and rural science, undergraduates in the agriculture program, aware of this situation, sometimes shift to agricultural education while still in the undergraduate program.

Currently, some graduates, both in the general agriculture and in agricultural education programs, find employment in various development projects where they are often quickly placed in relatively senior positions. Two 1982 NUC graduates, for example, are in charge of extension training in the Eastern IADP under one expatriate coordinator. Five others, employed in the same year, are "research officers" responsible for tree and food crops. All seven were graduates in agricultural education at NUC.

The government's present emphasis on extension and communications has served to further popularize the agricultural education program over general agriculture for employment in the agricultural sector. This trend was repeatedly mentioned throughout discussions with students, project staff and teachers who observed that the teaching profession has become a mere stepping stone to such employment. Agricultural project employment is particularly attractive, not only for its marginally higher salaries, but also because it offers the opportunity for further training, frequently overseas. This trend would appear to be taking a severe toll on the teaching profession itself. Recently improved terms of service for teachers in teacher training colleges are an effort to reverse this trend. However, at the same time, this compounds the problem for the secondary schools by luring faculty to the teacher training colleges.

Private sector employment for agricultural graduates is severely limited. Agricultural production in Sierra Leone remains largely in the hands of small farmers. Opportunities for private sector employment are restricted almost entirely to a few large private companies, including the Rokel Leaf Tobacco Company and some pig and poultry farms near Freetown. Self-employment of graduates in the sector is almost non-existent.

Very few women graduates are employed in agriculture. Their underrepresentation in the student population as a whole (1:5) partly reflects the lack of science training in women's secondary schools, but also an apparent lack of interest in job opportunities which might be less flexible than teaching. The popularity of NUC's agricultural education program compared with general agriculture is heightened for women graduates.

Throughout the team's field work only three women graduates were identified as working directly in agriculture, one in the Eastern IADP, one on a large private farm near Freetown, and one in the north (although no one was able to say exactly what the latter was doing). The Eastern IADP apparently deliberately sought a woman for an extension training position for its "women's projects". The study team was informed that some Home Economics graduates, all of whom are women, are engaged in project nutrition work, but none were identified. At NUC, unless prospective women students have a previously identified job within the Ministry of Social Welfare and Development, they are actively discouraged from entering the General Home Economics course.

The picture in the extension field is similar. Within the Bo/Pujehun project area, no women extension officers were available at the start of the project, even though 10-15 percent of the Ministry's field assistants were women. CTC presently has three women among its 100 certificate-level students. One of these was sent to CTC by the Eastern IADP after being responsible for its vegetable production projects for women. While hampered by a lack of women applicants, CTC apparently maintains a positive bias toward women applicants, and USAID has recently agreed to fund a women's hostel on the CTC campus.

APPENDIX F

GOSL SUPPORT

The principal source of income for NUC is the annual recurring grant from the GOSL. Next in importance are student payments: tuition, fees, board and lodging.

1. Annual Recurrent Grants

Table F.1 shows the annual recurrent grants given by the GOSL to the University of Sierra Leone and its two components, Fourah Bay College and Njala University College. The figures given for the University of Sierra Leone (created in 1966) are funds for its own use - for its services as administration and secretariat.

In the years for which data are available the total grant for NUC has been about 70 or 80 percent of that for Fourah Bay. For 1967-68 there was a sharp drop (to 68 percent of the Fourah Bay grant), even though enrollments fell at Fourah Bay and rose at Njala. Grants per student in 1967-68 were comparable between the two institutions (Le 2451 for Fourah Bay and Le 2328 for Njala). See Tables F.2 and F.3.

It appears that during the last ten years the GOSL has increased its per capita contribution to higher education at Njala, despite the serious financial difficulties the government has faced. This is true, measured in current Leones, but a glance at Table F.4 shows how misleading these numbers are. Crude though the estimates of Table F.4 may be, it is clear that the 1975-76 grant of Le 2008 per student would purchase less than half the goods and services the same grant would have purchased in 1961. Yet prices were comparatively stable between 1961 and 1973.

In the mid-1970s prices rose by 15 percent or more per year; during the early 1980's by 20 or 30 percent. By late 1985, according to the Wall Street Journal (December 26, 1985, p.4)., they were rising at the rate of 109 percent per year. Government grants lagged far behind. The grant of 3029 Leones per student in 1982 would buy about one quarter of what that same grant would have purchased in 1961.

2. GOSL Student Support

The GOSL, through the scholarships it provides, is also the source of nearly half the tuition and fees received by NUC, as well as for the board and lodging expenditures of the students it supports. In 1981-82 the GOSL granted full maintenance scholarships to 47 percent of the entire student body at NUC Another 45 percent of the student body receive tuition and maintenance primarily from foriegn donor agencies.

TABLE F.1
ANNUAL GOVERNMENT GRANTS
FOR RECURRENT EXPENSES (LEONES),
UNIVERSITY OF SIERRA LEONE, FOURAH BAY COLLEGE AND
NJALA UNIVERSITY COLLEGE

Academic Year	(1) University of Sierra Leone[a]	(2) Fourah Bay College	(3) Njala University College	(4) Total Grants	(5) Grant to UOSL as Percentage of Total
1964-65	b	n.a.	405,970	n.a.	n.a.
1965-66	b	n.a.	515,323	n.a.	n.a.
1966-67	n.a.	1,062,900	850,000	n.a.	n.a.
1967-68	n.a.	1,044,082	712,500	n.a.	n.a.
1968-69	n.a.	1,001,000	784,090	n.a.	n.a.
1969-70	n.a.	n.a.	809,000	n.a.	n.a.
1970-71	n.a.	n.a.	n.a.	n.a.	n.a.
1971-72	n.a.	n.a.	n.a.	n.a.	n.a.
1972-73	n.a.	n.a.	n.a.	n.a.	n.a.
1973-74	n.a.	n.a.	n.a.	n.a.	n.a.
1974-75	n.a.	n.a.	n.a.	n.a.	n.a.
1975-76	n.a.	1,957,789	1,232,917	n.a.	n.a.
1976-77	750,000	1,827,091	1,293,219	3,870,310	19.38
1977-78	843,314	1,931,837	n.a.	n.a.	n.a.
1978-79	982,759	2,133,088	n.a.	n.a.	n.a.
1979-80	1,150,000	2,135,338	n.a.	n.a.	n.a.
1980-81	1,212,349	3,171,083	2,344,896	6,728,328	18.02
1981-82	1,326,000	3,222,734	2,632,000	7,180,734	18.47
1982-83	1,445,818	3,187,500[c]	2,550,086	7,183,404	20.13
1983-84	1,531,783	3,795,504[c]	n.a.	n.a.	n.a.
1984-85	1,755,073	n.a.	2,760,000	n.a.	n.a.

Sources: Column 1, Mr. John Coulson, Assistant Finance Officer, University of Sierra Leone; Column 2, Mr. Charles Davies, Acting Assistant Finance Officer, Fourah Bay College; Column 3, Musa Sesay, Acting Senior Assistant Finance Officer, and A.G. Lahai, Budget Control Section, Njala University College.

n.a. Not available

a. The University of Sierra Leone, in addition to its administrative functions, serves as a Secretariat. Only the two Colleges have students and teach classes.

b. Not created until 1966.

c. Unaudited

TABLE F..2
TOTAL AND PER STUDENT ANNUAL GOSL RECURRENT GRANT,
1964-65 to 1984-85, FOURAH BAY COLLEGE

Academic Year	(1) Annual Recurrent Grant (Leones)	(2) Enrolment (Number of Students)	(3) Grant per Student (Leones)
1964-65	n.a.	549	n.a.
1965-66	n.a.	552	n.a.
1966-67	1,062,900	541	1965
1967-68	1,044,082	426	2451
1968-69	1,001,000	511	1959
1969-70	n.a.	747	n.a.
1970-71	n.a.	829	n.a.
1971-72	n.a.	882	n.a.
1972-73	n.a.	936	n.a.
1973-74	n.a.	1015	n.a.
1974-75	n.a.	1088	n.a.
1975-76	1,957,789	1012	1935
1976-77	1,827,091	1016	1798
1977-78	1,931,837	984	1963
1978-79	2,133,088	1035	2061
1979-80	2,135,338	1136	1880
1980-81	3,171,083	1349	2351
1981-82	3,222,734	1454	2216
1982-83	3,187,500[a]	1522	2094
1983-84	3,795,504[a]	1464	2593
1984-85	n.a.	1482	n.a.

Source: Column 1, Mr. Charles Davies, Acting Assistant Finance Officer
Column 2, Registrar
n.a. Not available
a. Unaudited

TABLE F.3
TOTAL AND PER STUDENT ANNUAL GOSL RECURRENT GRANT,
1964-65 to 1984-85, NJALA UNIVERSITY COLLEGE

Academic Year	(1) Annual Recurrent Grant (Leones)	(2) Enrolment (Number of Students)	(3) Grant per Student (Leones)
1964-65	405,970	102	3980
1965-66	515,323	166	3104
1966-67	850,000	203	4187
1967-68	712,500	306	2328
1968-69	784,090	297	2640
1969-70	809,000	303	2670
1970-71	n.a.	315	n.a.
1971-72	n.a.	372	n.a.
1972-73	n.a.	428	n.a.
1973-74	n.a.	464	n.a.
1974-75	n.a.	572	n.a.
1975-76	1,232,917	614	2008
1976-77	1,293,219	n.a.	n.a.
1977-78	n.a.	610	n.a.
1978-79	n.a.	670	n.a.
1979-80	n.a.		n.a.
1980-81	2,344,896	838	2798
1981-82	2,632,000	869	3029
1982-83	2,550,086	836	3050
1983-84	n.a.	851	n.a.
1984-85	2,760,000	887	3112

Source: Column 1, Musa Sesay, Acting Senior Assistant Finance Officer, and A.G. Lahai, Budget Control Section
Column 2, Registrar
n.a. Not available

TABLE F.4
REAL VALUE OF ANNUAL INCOME PER STUDENT AND GOVERNMENT RECURRENT GRANT PER STUDENT, NJALA UNIVERSITY COLLEGE, 1975-76, 1980-81 and 1981-82

Academic Year	Consumer Price Index Freetown[a] (1961=100)	Government Grant per Student		Income Per Student	
		Current Leones	In 1961 Leones	Current Leones	In 1961 Leones
1975-76	226.4	2008	887	2668	1178
1980-81	451.6[b]	2798	620	3549	786
1981-82	592.0[c]	3029	512	3959	669

Source: Consumer Price Index: Statistical Digest, 1977 and 1982 (No.'s 9 and 12); other data from our Tables M.3 and M.4

a. A consumer price index is not the most relevant index for the present purpose, and Freetown prices are not likely to be representative of prices in Njala, but these are the best data available.
We used the 1976 index as a deflator for the 1975-76 academic year, and so on, because the major part of the academic year was in 1976.

b. An unweighted mean of the four quarterly indices given for 1981.

c. An unweighted mean of the four quarterly indices given for 1982

Government support for students may be expected to decrease in the future. Moves have already been taken in that direction. Likewise, some important members of the donor community have decided to reduce student scholarship support, so Njala must anticipate declining income from these sources in the future.

APPENDIX G

PERSONS CONTACTED

ACRE Project

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Bank of Sierra Leone

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Central Statistics Office

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Ministry of Agriculture

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Allie, Sam	Training Officer
Jones, Dr. Rogers A.D.	National Agricultural Research Coordinator and Secretary, National Agricultural Research Council
Kamara, Raymond	Director of Agriculture
Kangbai, Braima S.	Principal Agricultural Officer, Special Projects
Lamin, Murray	Assistant Chief Agriculturalist
Mansa-Musa, S.	Staff Development Officer
Palmer, P.D.	Deputy Chief Conservator of Forests

Paul-Short, J.B.	Deputy Permanent Secretary
Pessima, S.M.	Deputy Chief Agriculturist
Scott,	Chief Extension
Sesay, C.B.	Chief Agriculturist

Ministry of Education

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Kuyemba,	Principal for Higher Education
Sheku, David	Permanent Secretary

University of Sierra Leone

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Davis, Bismarck	Personal Assistant to the Vice-Chancellor
Findley, Dr.	Institute of Marine Biology
Harry-Sawyerr, Canon Rev.	Warden, Bishops Court, Freetown and former Principal, FBC and Vice-Chancellor, USL
Thomas, Koso	Vice-Chancellor

Njala University College

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Goba, George B.	Registrar/Senior Assistant Secretary
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Hanson, Max	Extension Officer, Department Agricultural Economics and Extension

John, Peter S.	Stores
Kamara, Dr. John	Principal
Kamara, K.S.	Soil Scientist, Department of Agronomy
Kappia, T.D.	Manager, Bookstore
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Kuyembeh, Nathaniel G.	Vice-Principal (and Acting Principal, 1984-85)
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Taylor, D.R.	Plant Pathologist
Mansaray, M.S.	Plan Breeder

Milton Margai Training College

Usman S.A. Kagbo:	Principal
Victor B. Wilson:	Farm Instructor/Manager,
J.M.C. Williams:	Head, Department Agricultural Science

Makeni Teacher Training College

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Kanu, Abdul	Registrar
Kanu, MS. R.	Science Department

Sannoh, K.B.	Department of Education
Taylor, Lawali	Director of Studies
Wurie, A.B.	Department Agricultural Science
Yavonie, C.S.	Dean of Students

Eastern IADP, Kenema

Banya, G.S.	Agricultural Director
Jusu, J.	Training Officer
Lahai, J.A.	Coffee Officer
Scott, L.	Chief of Extension
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Brewah, G.F.	Agricultural Teacher, Bo Government School, Bo
Jones, H.	Head, Science Department, Bo Government School, Bo
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Williams, Dr. Olu	National Authorizing Office
Kargbo, Dr. Alimami	National Development Bank

APPENDIX H

BIBLIOGRAPHY

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