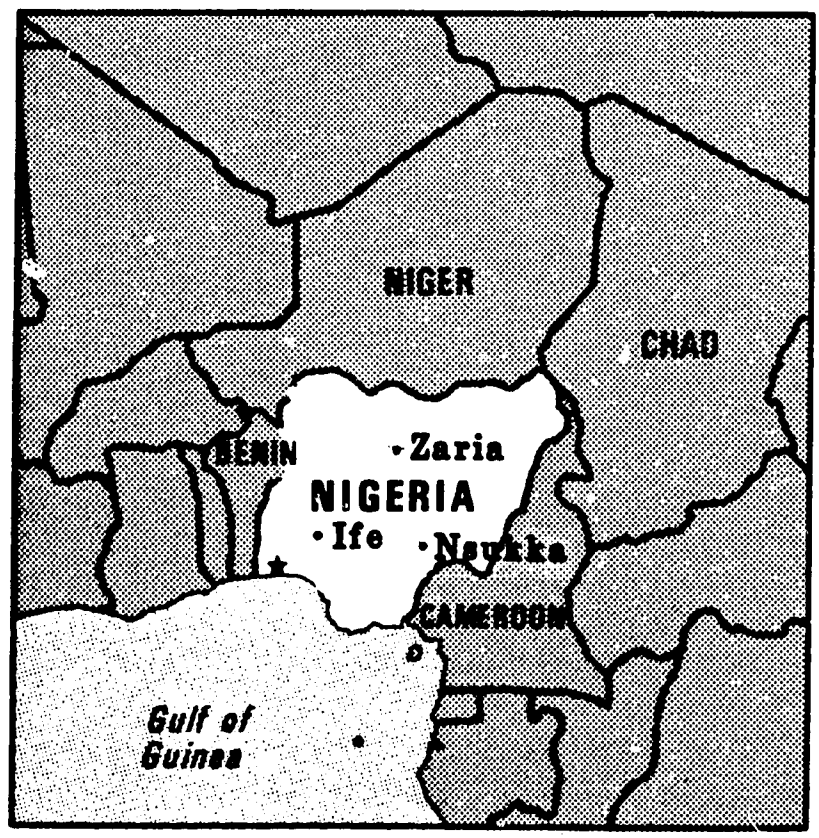
A REVIEW OF THE IMPACT OF AID ASSISTANCE TO THREE NIGERIAN UNIVERSITIES



WINROCK INTERNATIONAL

A REVIEW OF THE IMPACT OF AID ASSISTANCE TO THREE NIGERIAN UNIVERSITIES

Prepared for:

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PPC/CDIE

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PREFACE

The field portion of this study was undertaken between March 17 and April 13, 1986, to determine the degree to which a lasting impact had resulted from support by the United States Agency for International Development for cooperation between three Nigerian and three U.S. universities during the 1960s to 1970s.

The study team[1] traveled more than 2,500 miles by road through the western, northern, and eastern states to visit Ahmadu Bello University, Zaria, the University of Ife, the University of Nigeria, Nsukka, and sites where the universities are working on specific village or commodity projects.

A Rapid Rural Appraisal methodology[2] was used in interviews with more than 120 individuals plus a number of group meetings.

The team members, for the most part, carried out individual interviews but met daily to plan their work and to discuss their findings.

The excellent cooperation, cordiality, and openness to discussion by all those met made it possible for the mission to be accomplished and in no small way reflected the lasting good-will established through the programs in which Kansas State University, Michigan State University and the University of Wisconsin cooperated.

The team wishes to express its appreciation to the three Nigerian universities visited for their cooperation and to the International Institute for Tropical Agriculture for its hospitality and accommodation which greatly facilitated the team's work. A special note of appreciation also is given for the guidance and cooperation by the staff of the U.S. Embassy, Lagos; the USAID representative, Lagos; and the USAID liaison officer, IITA, Ibadan, without which the mission would not have been possible.

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[1] See Appendix G for notes on the study team members.

[2] See Appendix A for explanation of the methodology.

All three Nigerian universities have had some impact on past and present agricultural problems of the country. Each has made a contribution through staff participation in state, federal, and parastatal commissions and through the development of improved food-crop varieties. There also has been an impact from research in the areas of production economics, livestock nutrition, and animal health. However, except for Ahmadu Bello University (ABU), the impact has fallen short of expectations from the project. At ABU the transfer of the long-established Institute of Agricultural Research (IAR), National Animal Production Research Institute (NAPRI), and the Extension Research Liaison Service (ERLS) from the Northern Region gave the university a research and extension liaison base that enabled it to have immediate contact and credibility with farmers of the Northern Region. This was a distinct difference from the two other universities which have been unable to achieve a similar impact at the farm level.

Three primary factors seem to weigh heavily on the impact that universities in Nigeria have been able to make. First is the extent of political support (or at least the absence of government competition). The degree to which government ministries are willing to transfer functions like research and extension to universities will, to a large extent, determine the universities' abilities to register impact. Since research and extension are power (and employment) bases, ministries in Nigeria are reluctant to release them and, at present, these functions are still retained by the ministries. Second is whether impact research and outreach are rewarded by the prevailing promotion and incentive systems of universities. There is little evidence to indicate that they are. Third, the financial health of universities affects the amount of impact they can make.

3. To observe and discuss constraints the universities are now facing as they work to carry out their decisions.

There are two constraints that are common to all three universities: financial support and policy issues.

The major constraint at each of the universities is funding. They never shared sufficiently in government revenue even during the "oil boom." Most funds earmarked for higher education went to establish new state universities and infrastructure in general rather than to equip or to meet other needs for the long-term development at existing universities. Now in the post oil boom period, university and departmental budgets have been cut to the point that practically no funds are available beyond salaries and maintenance costs. This means international journals and other library materials have been cancelled, that draft textbooks cannot be printed, and that little equipment can be replaced. Funds for research are extremely short everywhere although at ABU the situation is somewhat less critical since IAR and NAPRI receive some separate funding for research from the federal government.

SUMMARY

This study was carried out in Nigeria between March 17 and April 13, 1986. The study team travelled more than 2500 miles by road to visit three Nigerian universities that had been assisted by USAID through university contracts during the 1960s and 1970s. Approximately one week was spent at each university. Trips were made to village projects and to farms. Over the course of the study, more than 120 university staff persons (including vice-chancellors), plus individual farmers, and students were interviewed.

During the 1960s and 70s "institution building" was one of USAID's prime objectives. Support for university development was an important manifestation of the objective, particularly in Africa where professional manpower needs were, and still are, paramount. The possibility of renewed support for faculties of agriculture in Africa is under active discussion and USAID now wishes to consider lessons from past experience that may be relevant to the current discussions.

The purpose of this study was to identify instances of internal and external impact associated with three of Nigeria's largest universities that had received U.S. assistance. The team conducting the study in Nigeria was instructed to concentrate on the four points of emphasis listed below.

1. Observe and discuss effects at the three Nigerian universities that trace back to support by USAID and cooperation with U.S. universities.

The team's visit on all three campuses confirms the tremendous goodwill that remains for cooperating U.S. universities. This goodwill carries over internationally between Nigeria and the United States and makes for long-term cordiality between the many Nigerians who studied in the United States and the American visitors to the several Nigerian campuses.

The most positive findings on this point were changes in curricula, coursework, teaching methods, examination procedures, and the high competency among Nigerian staff who did their post-graduate studies in the United States. Many feel as attached to their alma maters now as when they were students and some of them still correspond with their former professors. With regard to transferring the land-grant university "model," Ahmadu Bello University comes closest in practice. Staff at the other two universities appreciate the concept but have been limited in practicing it.

2. Observe and discuss the relevance and impact of research being conducted by university staff as it relates to past and present agricultural problems in Nigeria.

In regard to policy constraints, neither senior government officials nor highest level university officials appear to recognize how important the role for university research and outreach is for Nigerian agricultural development. These officials, with the possible exception of ABU, appear to view the university role as teaching rather than to be directly involved in the development process.

Returning to policy constraints, neither senior government nor highest level university officials appear to equate university research and outreach with agricultural development or to seriously think of agriculture as a springboard to development.

4. Determine what lessons may be drawn from the findings of the study which in turn may be used as recommended for USAID policy and planning.

The lessons learned suggest:

- that a long-term association of 20-25 years between host-country universities in Africa and U.S. universities is crucial for impact.

- that the training requirements for staff at African universities change with time, but an active training program is directly related to, and necessary, for impact.

- that greater and more effective effort should be made to include women in teaching, research, and outreach service, and that the problems of women as farmers (not merely farmers' wives) are critical to agricultural development.

- that the degree to which a land-grant university "model" can or should be transferred to Africa should be carefully considered at the point of project design and that political and financial realities should be given sufficient weight.

- that investment in project equipment must be kept within the realities of national budgets and maintenance capabilities. Resources and a maintenance and replacement plan are essential for equipment ordered under USAID projects. Provision of certain equipment is essential but this should be accompanied by providing on-site maintenance facilities and elevating the training of maintenance technicians to a level equivalent to that of academic staff.

- that packages of funds on the order of strengthening grants should be extended to overseas universities as "research and outreach grants" for serious agricultural research scientists. Some of the most important exploratory outreach research in Nigeria was done in the past, and is still being carried out, by energetic professors who lay the groundwork for follow-on research.

- that phasing down of U.S. university cooperation take place over a long period (rather than occur abruptly on a fixed date) if momentum is to be maintained and impact is to be fostered.

PROJECT DATA SHEETS

A. Ahmadu Bello University/Kansas State University (KSU)

1. Project Title: Faculty of Agriculture and Nondegree Schools, Ahmadu Bello University
Project No.: 620-11-110-743
Physical Implementation Span: LOP FY1962 through FY1978.

Financial Requirements: $6,899,350.00*
* [*Total amount reported in Appendix VI of Terminal Report by KSU on this project dated August 31, 1974.

2. Project Title: Faculty of Veterinary Medicine, Ahmadu Bello University
Project No.: 620-11-110-817
Physical Implementation Span: LOP FY1971 through FY1978.

Financial Requirements: $4,997,517*
* [*Estimated amount according to Terminal Report by KSU on this project as of July 31, 1977.

B. University of Ife/University of Wisconsin

Project Title: Faculties of Agriculture and Science, University of Ife
Project No.: 620-11-110-742
Physical Implementation Span: LOP FY1962 through FY1975

Financial Requirements: $5,474,930*
* [*Total amount reported in Appendix E of University of Wisconsin report "Ten Years at Ife" dated June 1975.

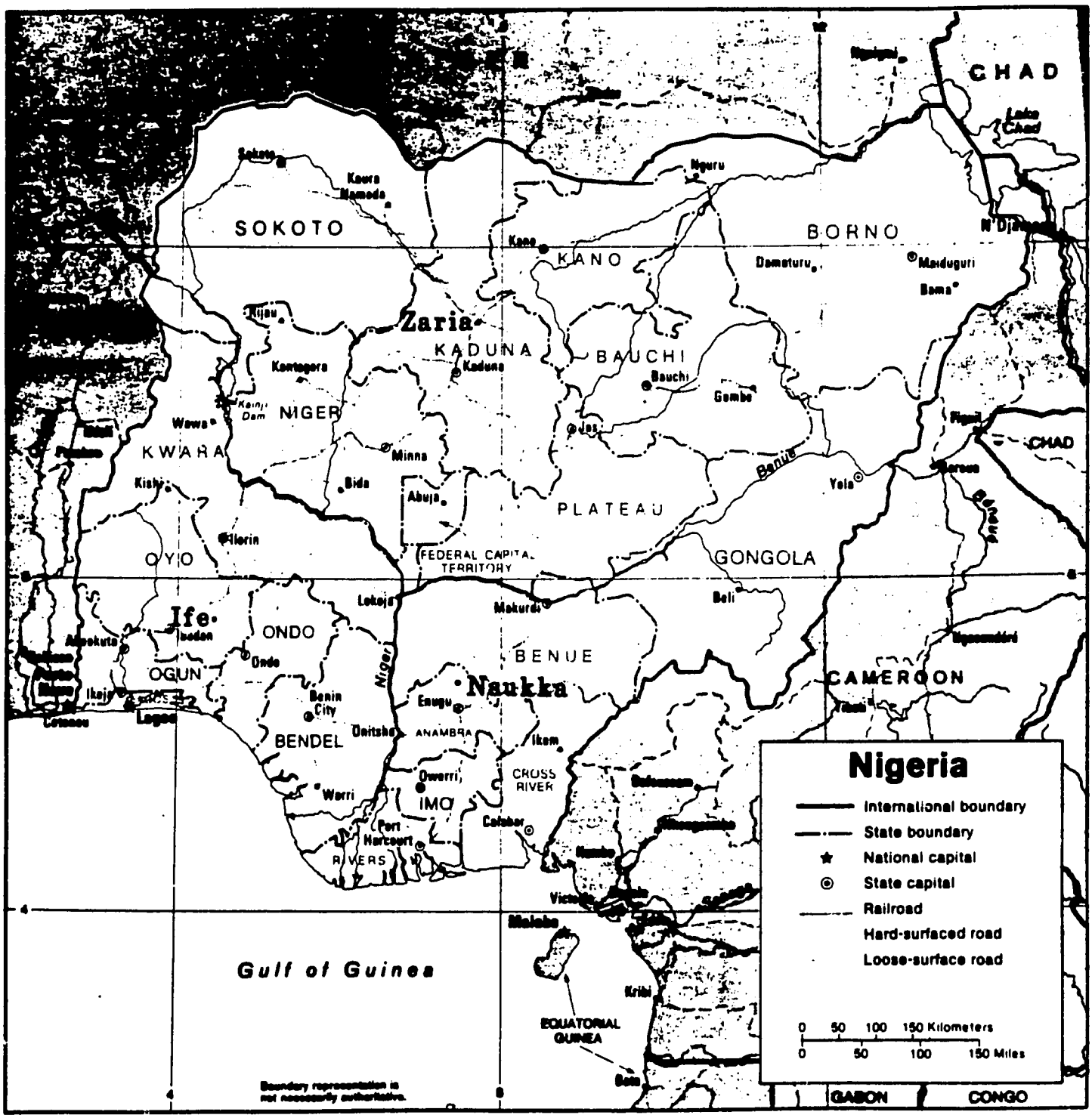
C. University of Nigeria/Michigan State University

Project Title: University of Nigeria
Project No.: 620-11-660-602
Physical Implementation Span: LOP FY1960 through FY1967.

Financial Requirements: $9,943,610*
* [*Please note this is the amount reported by Michigan State University in its final report on the project based on expenditure through December 1968 for the total university project. Only a part of this was for agriculture but the exact amount could not be identified by the study team.

GLOSSARY

ABU	Ahmadu Bello University
AERLS	Agricultural Extension and Research Liaison Service
BIFAD	Board for International Food and Agricultural Development
B.Sc.	Bachelor of Science Degree
DAC	Division of Agricultural Colleges
ERLS	Extension and Research Liaison Service (used interchangeably with AERLS)
FMG	Federal Military Government
GON	Government of Nigeria
IAR	Institute of Agricultural Research
IAR&T	Institute of Agricultural Research and Training
IITA	International Institute of Tropical Agriculture
KSU	Kansas State University
LOP	Length of Project
M.Sc.	Master of Science Degree
NAPRI	National Animal Production Research Institute
P&T	Posts and Telegraph
Ph.D.	Doctor of Philosophy Degree
UNN	University of Nigeria, Nsukka
USAID	United States Agency for International Development


CHAD
SOKOTO
BORNO
KANO
Zaria
KADUNA
BAUCHI
NIGER
KWARA
PLATEAU
FEDERAL CAPITAL TERRITORY
GONGOLA
OYO
Ife
ONDO
OGUN
BENUE
Nauka
BENDEL
ANAMBRA
CROSS RIVER
IMO
RIVERS
CAMEROON
Gulf of Guinea
EQUATORIAL GUINEA
GABON
CONGO
Nigeria
International boundary
State boundary
National capital
State capital
Railroad
Hard-surfaced road
Loose-surface road
0 50 100 150 Kilometers
0 50 100 150 Miles
Boundary representation is not necessarily authoritative.

THE SETTING

Nigeria's 100 million people make it the most heavily populated country in Africa in an area about one-tenth the size of the United States. Among its many ethnic groups, the three largest are the Ibos in eastern Nigeria, the Yorubas in western Nigeria, and the Hausa-Fulani in northern Nigeria. The country also is diverse in terms of ecological and vegetative zones ranging from a tropical forest zone along the Atlantic Ocean in the south (see map xii) where tree crops, root crops, and oil are found, to several savanna zones as one goes north that features cereal crops, cotton, peanuts, and cattle. Numerous vegetable and vine crops are grown in all zones. Nigeria also has one of the most elaborate university systems in Africa supported by federal, state, and private funds. In addition, there are a host of federally supported institutes that engage in agricultural research, elements of agricultural extension, administration, and other subject matter of public interest.

Even before Nigeria became independent in 1960 the United States had made arrangements for economic assistance, and by the mid-1960s had installed the largest U.S. assistance program in Africa. Now 25 years later, USAID requested that a team return to Nigeria to assess the current situation at three of Nigeria's largest universities (and especially their agricultural colleges that had received extensive assistance) in order to determine the nature of internal and external impact and to identify lessons that might be useful to USAID in the future.

A university's impact is affected by its environment as well as by its own organization and capability. U.S. support for Nigeria's universities (Ife, Ahmadu Bello and University of Nigeria) was such that impact would relate mainly to ethnic/geographical regions laid out before independence rather than to a broad national impact. While Nigeria's regions functioned within a federal system, and these universities are now supported by federal rather than regional or state funds, this has not altered their regional and ethnic affiliations.

In addition to the ethnic/geographical factor, it is useful to look at university expansion and its impact in Nigeria over a period of time. The important time periods just before and after 1960-61 were the formative years of the new universities. The euphoria of independence was upon Nigeria, and the United States was reflecting the up-beat spirit of the Kennedy administration. Thus optimism existed on both sides of the Atlantic. Then came a follow-on university growth period and U.S. assistance during the 1960s and 1970s with physical, academic, and programmatic expansion of the new Nigerian universities. This was followed by a post-USAID phaseout time period which included the "oil boom," and finally the present lean economic conditions (see Appendix D)

featuring a time period of collapsing oil prices and severe budget constraints on the country and its universities.

As the date for independence approached in Nigeria, agricultural training was confined to several nondegree institutions in each region and a small agricultural program at the Federal University College at Ibadan (now the University of Ibadan). The shortage of professional manpower was acute. In 1959 this prompted the commissioning of a study on "Needs in Post-Secondary Education Over the Next Two Decades." The first draft of the report, commonly referred to as the Ashby Report, recommended that new universities (including agricultural colleges) be established in the Eastern Region, the Northern Region, and in the Lagos Region. Western Nigeria, it reasoned, would be satisfied with the Federal University College at Ibadan, then capital of the western region.

But even before the final draft of the commission's report was completed, Western Nigeria not only rejected it (consistent with the spirit of prevailing regional politics) but set out to establish its own University of Ife. From the beginning, ethnic, geographical, and political imperatives have paralleled educational, agricultural, and other needs of development.

Between 1961-63, the Eastern, Western, and Northern Regions were in the process of establishing regional universities that were to include agricultural colleges to serve as instruments for agricultural development and were charged with relieving the critical manpower shortage and projecting ethnic values.

Committed to "institutional development," USAID had no reluctance in assisting the new universities. Contracts were therefore drawn up with Michigan State University (MSU) to assist The University of Nigeria, Nsukka (UNN), in Eastern Nigeria. The University of Wisconsin was to assist The University of Ife in Western Nigeria, and Kansas State University (KSU) was to assist Ahmadu Bello University (ABU) named for the ruling premier of Northern Nigeria.

IMPACT: FINDINGS AND ANALYSIS

INTRODUCTION

Few conditions are uniform between countries nor within a particular country. Thus a discussion of university impact requires that we have a clear concept of the environment where these institutions exist.

Nigeria had been a British colony for decades before the three universities under review were established. As previously noted, only one university (at Ibadan) was functioning prior to independence. The few Nigerians who held degrees in agriculture at the time of independence had been educated in Britain where the primary function of a university was to teach and engage, perhaps, in academic research. In Britain, the concept of a university to provide direct benefits to farmers was not present since agricultural research and extension were firmly controlled by government ministries. These ideas and practices had a considerable impact on university development in Nigeria.

It is worth noting, however, that the three universities under study were established at a time when, in spite of a British legacy, it was fashionable for educated Nigerians to "begin thinking for themselves." However, no precedent existed for an African-conceived university, nor did the Nigerians come forward with a university philosophy or the contribution that it should make to national development. Rather, regional universities were viewed by Nigerians as being tied firmly to prestige factors, to an image of progressiveness, and to institutions that represented the culture and values of the ethnic groups, whether Yoruba, Ibo, or Hausa/Fulani. In fact the location of universities at Ife and Nsukka clearly supports the latter point.

In the absence of a clear Nigerian philosophy, the U.S. presence in Nigeria gave it an excellent opportunity to have an impact on university development. From its beginning in 1959, the U.S. assistance program in Nigeria had made agricultural training its highest priority and, indeed, was supporting the huge Agricultural Leaders Project for degree training in U.S. universities before Nigerian universities were established. A few Nigerian officials had studied in the United States and were impressed with the bounty of U.S. agriculture and the land-grant university system. It also happened that the independent Nigerian government in Lagos was installed only a few months before the Kennedy administration was installed in Washington. Thus optimism and idealism about the future coincided. Educators from U.S. land-grant universities emphasized "working with one's hands," problem solving, and university outreach, all of which seemed appropriate for nation building. Moreover, Nigeria was one of two countries (the other being Brazil)

selected in 1961 for long-term U.S. commitment of funds for development ($225,000,000 for Nigeria over 5 years), and institution building was high on USAID's list of priorities. It was natural, therefore, for the United States to assist the new universities in Nigeria.

It seems clear then that the Nigerian universities were initially shaped by a British legacy; by a strong ethnic/regional character indicated by Nigerians; by the absence of a guiding philosophy except a generality such as "service toward problems and needs of Nigeria"; and by a U.S. land-grant model that meant little to ruling politicians and government officials but was accepted by influential academicians.

Given this environment, what difference have these universities made in agricultural development, service to government, service to their students and faculties, educational progress, economic policy guidance, research direction and results, and benefits to farmers? What lasting imprints were left by U.S. universities that assisted them? How can we explain what did or did not happen in the commmunities where the universities are located? What lessons can be learned for the universities themselves and for USAID as an agency? The purpose of this study was to seek answers to questions like these and to estimate the impact that has been engendered.

APPROACHES

In this study, impact was viewed from several points. First, the team wanted to estimate the nature and degree of impact internal to the three universities and also the nature and extent of external impact, i.e., in the larger community. Second, since the three universities were in the same country but under different ecological and social influences, what elements of impact were common among the three universities, which differed, and why?

Internal Impact

"Internal impact" as used in this study means observable outcomes within the campus and on outlying university property such as subcampuses or the university farm.

Common Impact Elements

Elements of internal impact that were observed at all three Nigerian universities relate to several broad but critical issues and sets of subissues. Recalling that Nigeria financed these universities from agricultural proceeds (sale of cocoa in the west, groundnuts [peanuts] in the north, and palm products in the east) before the oil boom, the first issue has to do with the growth patterns of Nigerian universities. This impact element clearly sets Nigeria apart from most other African countries.

The size, high standards, vitality, approach to education, layout of campuses, and extent of support during most of their existence in spite of a long civil war and eight changes of government have, by any measure, been remarkable. College enrollment since the 1960s has increased from a few hundred students in each university to 21,000 at Ahmadu Bello (including nondegree schools) and 13,000 and 12,000 at the University of Ife and the University of Nigeria, respectively. Small departments of agriculture at each university have been expanded to become faculties or colleges of agriculture with six or seven departments each. Methods of teaching, examination procedures, curricula, and student/faculty relationships have all undergone significant changes in contrast to those that prevailed at the point of independence. The pace and quality of staff training and the high retention rate have been a tremendous success as reflected in the high proportion of Ph.D.s in each department of each university. Staff quality throughout would be creditable at any institution of higher learning. In fact, the pool of professional talent at these three universities far surpasses any other pool in the country and perhaps in all of sub-Saharan Africa.

Other internal attributes are common to the growth patterns of the three universities. The Joint Admissions and Matriculation Board for Nigeria (JAMB) sees to it that enrollment is democratized with some 60-70 percent of the student body coming from rural areas. This is reflective of the general distribution of the population [1]. Notwithstanding the colonial heritage, each university professes attachment to a land-grant concept of integrated teaching, research, and service. Given the odds, perhaps nowhere has change and progress in university development been more profound in the space of one generation.

In all three Nigerian universities the imprint of U.S. counterpart universities is marked. Contract staff from U.S. universities taught and assumed leadership roles as department heads, deans, and even vice-chancellors. They selected staff for overseas training, laid out laboratories, and installed equipment. They encouraged research, encouraged change in the style of teaching, and they helped to modify other existing practices. Veterans of the present agricultural faculties assert that the hard work, zeal, and mature guidance of U.S. staff during the formative years of these universities still are remembered fondly. In each case, the mutual respect and goodwill between Nigerian and U.S. universities and to an extent between the two countries are still strongly evident.

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[1] In Nigeria the distinction between rural and urban becomes fuzzy. Members of nuclear families and extended families regularly alternate between rural and urban places of residence to grow crops and small animals.

The positive internal impacts that were generated and which have lasted are not, however, without opposing constraints, negative impacts, and contradictions. This assertion leads to the second overarching issue. Spectacular growth patterns reached a plateau between the late 1970s and early 1980s. At Ife and UNN the tide has moved in the opposite direction to the extent that earlier progress is now being threatened and in some cases reversed. Books and research journals are no longer being ordered, refresher training for faculty members is rare, faculty travel, including travel for research, is almost at a halt, half completed buildings are left standing on all campuses, and the academic atmosphere is being adversely affected. How do we explain this turn of fortune?

The major constraint at each of the three universities is funding. They never shared sufficiently in government revenue even during the "oil boom." Most funds earmarked for higher education went to establish new state universities and infrastructure in general rather than to equip or to meet other needs for the long-term development at existing universities. Now in the post oil-boom period, university and departmental budgets have been cut to the point that practically no funds are available beyond salaries and maintenance costs.

A subissue that parallels funding as an explanation for the current standstill is prioritization of needs and allocation of scarce resources. For example, Nigeria has greatly democratized enrollment in higher education and has reached an all-time high of 130,000 students in colleges and universities. This has been very costly to the quality of education itself. With some 30 colleges and universities in operation, it is clear that Nigeria has greatly overexpanded its educational facilities. Moreover, a considerable number of government-supported agricultural research institutes continue to be funded with little reference to the universities' capabilities to participate. In theory these institutes and universities are to be complementary but, in fact, little if any mutual benefit exists between faculties of agriculture and commodity institutes that are located over the country. Rather, they appear to compete actively for dwindling resources.

The effects and distortions in funding constraints are noticeable everywhere. Highly trained staff are underused. University farms that once were well maintained are now deteriorating and income from them goes into a general fund rather than for operating expenses on the farm. Internal dynamics and impact that seemed quite visible on campuses in the 1960s, and for ABU and the University of Ife through the civil war and the 1970s, are in serious trouble.

Just as U.S. universities contributed to university growth in Nigeria, the lack of long-term planning and implementation also have contributed to the lack of continued growth and development. Nigerians contacted by the team spoke with one voice to say that the tours of duty of contract professionals were limited almost invariably to a brief 2 years, and that the tenure in Nigeria of U.S-counterpart universities was itself too short and their departure too abrupt. They note that our own U.S.-land-grant universities were operational half a century before they were able to offer effective and sustained contributions to agriculture. Consequences of early and abrupt departures in Nigeria are easy to identify.

A number of Nigerians commented that U.S. professors and administrators assigned to Nigeria's universities had too little time to work closely with returning Nigerian staff. The Nigerians who were replacing U.S. contract staff were often young people fresh from graduate school. Their dissertations had dealt with agricultural problems outside Nigeria; and all of them were without experience and, for that reason, were reluctant to try to introduce changes.

Another example of how U.S. projects contributed to the present malaise is seen in relics of obsolete, worn out, and broken down equipment that was purchased under the project. It is found in every laboratory, on every university farm, and in vehicle graveyards. Sophisticated dairy equipment, for example, was purchased under one of the contracts to accommodate the import of exotic dairy cattle. One Nigerian professor remarked, "We were glad to get the equipment, but it was ordered and installed before considering whether the exotic cattle would survive (they didn't), or even whether Nigerians liked milk." In retrospect attention to training technicians for equipment maintenance and to the assurance of maintenance facilities would have increased the benefits of the equipment supplied to the three Nigerian universities.

Nothing in the university literature or USAID documents that came to the team's attention revealed a concern for or recognition of the role of Nigerian women in agriculture. In Nigeria women have always had an important role as independent farmers as well as participants in family farming enterprises. Under the contracts in the 1960s and still in many cases in the Nigerian universities today, the role of women is thought of as being only "wives of farmers" when in fact they do much of the planning and actual farmwork. During the team's visit to villages, women voiced their desires to have income-producing agricultural inputs the same as men. It appeared to the team that even in sections of the country where for religious reasons women must work only with women that the universities have done little

to increase the number of women researchers and extension personnel needed to work with women farmers. The team believes that future USAID contracts should be sensitive to this issue and should provide greater support for training women interested in agriculture to provide technology inputs for women farmers as well as for men.

Internal Impact Differences

While there are many common elements affecting internal impact at the three universities, differences also are clearly evident. Most of them relate to university outreach and will be discussed below under "external impact" but a few differences relate to matters internal to the universities.

It is worth repeating that at the point of independence in 1960 approaches to teaching, research, and extension, and vested interests associated with them, already had been established. Federal and state agricultural ministries, for the most part, retained control of research and extension. In western Nigeria the government's promise in the 1960s to release research and nondegree training to the University of Ife has been fulfilled only to a very limited extent. In eastern Nigeria, where UNN is located, the function of agricultural research and extension remains solidly with the state ministries.

Although universities shared a common Nigerian heritage and shared many common problems, ABU evolved differently than the other two universities, which enabled it to more nearly approach the land-grant model. A well-established Institute of Agricultural Research (IAR) at Samaru and a National Animal Production and Research Institute (NAPRI) at Shika were transferred totally to the new Ahmadu Bello University. Both institutes date back to the 1920s and were going concerns under the former Northern Region's government with a strong cadre of experienced and well-qualified research staff. Moreover, an Extension and Research Liaison Section (ERLS) had been created by the northern region's government in 1963 to act as a link between agricultural research and the ministry's extension service. In 1969 ERLS also was transferred to ABU, first in a merger with IAR and in 1975 as a separate institute under the university where it is now called Agricultural Extension & Research Liaison Service (AERLS).

The transfer of these key institutes to ABU made it unique for Nigeria and perhaps for all Africa.

Another internal difference was associated with the University of Nigeria at Nsukka. Whereas the University of Wisconsin was concerned with only the college of agriculture at the University of Ife and the scope of work for Kansas State University at ABU covered agriculture, veterinary medicine, and a few off-campus agricultural training schools, work under the Michigan State University contract at Nsukka called for involvement "in the

development of the total university." This meant everything from advice on construction to provision of the first two vice-chancellors. We can only speculate on what would have happened at UNN if the civil war had not caused abandonment of the contract activity.

External Impact

The team used "external impact" to mean those elements of university activity that have been identifiable and important in the larger community. As with internal impact several critical issues and their related subissues stand out. It was found, for example, that the state of the economy and related budgetary decisions influence external impact by determining job opportunities for graduates, by limiting what a university can (and cannot) do, and by what faculty members are willing to do. In addition, the way a university is able to organize, administer, and control its work again raises critical issues and subissues that greatly influence the external impact that a university can have.

Common Elements of External Impact

In each of the three universities, the team found that faculty members served regularly on state, federal, and parastatal boards and commissions. By doing so they are able to influence the content of government budgets and development plans and have an impact on policy. To a more limited extent they also serve as consultants to financial institutions and private enterprises. This indicates that competencies on university campuses are widely recognized. However, since none of the universities have yet developed a philosophy that projects their professional image, it is the individual consultant rather than the university who receives greater recognition.

The team also found that each university has researched and released improved varieties of agricultural commodities that include cowpeas, maize, guinea corn, numerous vegetables, and condiments. Also, promising progress has been made in production economics, livestock, and animal health research.

In estimating impact it is necessary first to determine whether the expectations for the projects were realistic. When we consider that all three Nigerian universities were novel in concept, and to a large extent were built "from scratch," and that U.S. universities were immersed in many phases of university activity, it is now clear that USAID's expectations were overly optimistic. In the time allotted U.S. universities were unable to set all the wheels in motion for effective external impact. In retrospect, tours of duty of U.S. university staff for less than 4-6 years and a goal of full-scale university development in less than 20-25 years were unrealistic.

The Economic Issue

All university staff interviewed by the team commented on the acute shortage of funds for both capital and operational budgets as a major constraint to external impact. It was also evident to the team that the shortage of funds was a serious constraint. However, it was equally evident that an increase in funds would not automatically lead to greater external impact. A number of changes common to all three universities are required. Among these changes are 1) the basis for university staff promotion, 2) incentives for farmer-oriented research, and 3) government funding commensurate with the universities' capabilities to carry out the much needed research.

Several examples indicated that a small but reliable source of local funds with a modest foreign exchange complement would go a long way to keep research momentum going. In one case, an enterprising professor sought and received from an overseas donor a small research fund with which he is conducting vital research among small-scale farmers. In another case, a BIFAD-funded CRSP is providing critically needed research funds. Without funding from some outside source, the team fears that lethargy and disincentives among university researchers will rule out fruitful research.

A subissue relevant to all campuses relates to lack of employment opportunities for graduates. This decreases the opportunity for external impact by their graduates.

It should be recalled that university development in Nigeria has gone through a pre-civil war phase, a civil war phase, an oil-boom phase, and now a post-oil-boom phase. Typically, employment for university graduates has been mainly in the public sector--federal, state, and local governments; parastatals; agricultural development projects (ADPs) supported jointly by Nigeria and IBRD, river basin projects, and banks; and to a lesser extent in oil-related businesses and private firms. Under the present severe budget crunch (See Appendix D) not only are public institutions suffering internally but also the supply of college graduates far exceeds demand. Students are well aware of this. Some students attempt to prolong their graduate work to ride out the job depression, others cluster into departments like agricultural economics because this degree gives them more flexibility in the job market, while others are beginning to seek lower paying jobs in secondary and elementary teaching. Meanwhile, the ranks of the degree-holding unemployed are swelling.

The team was assured that obtaining land for farming was no problem. A repeated question therefore was why didn't more agricultural graduates seek careers as active farmers? Several replies were given.

Nigerian economists pointed out that persons without capital must resort to back-breaking hand-tool farming where returns to labor are still miserably low--much lower on average than salaries that college graduates have come to expect in cities. Thus, based on opportunity costs, even the remotest prospect of a nonfarm job is more appealing than farming. "The negative graduate mentality toward agriculture" combined with ease of entry and heavily subsidized university educations means that Nigeria is rapidly "educating itself out of farming." An urgent need in Nigeria appears to be to make farming more attractive and to create more job opportunities in the private sector.

It is seen, therefore, that the current budgetary crisis in Nigeria is adversely affecting the operation of the universities at large, adversely affecting employment opportunities for university graduates, and is making it extremely difficult for faculty members to engage in external research. Reducing student enrollment, limiting scholarship subsidies for students, or closing some of the newer colleges may need to be considered soon.

External Impact Differences

The point has been made that whereas all universities engage in off-campus activities, ABU in northern Nigeria has more influence off its campus than the other two universities. This was concluded because 1) more improved varieties of crops have been released to farmers, 2) more attention has been given to cropping systems and livestock diseases, 3) villages were visited with more regularity, 4) trials were more in evidence on farmers' fields, and 5) farmer criticisms were less strident. In general ABU seems to be looked upon more as a regional center of excellence. How can these differences of external impact be accounted for?

The team probed this question with care. The differences did not arise from lower quality departmental staffs. Those at Ife and UNN were equally competent. The top administrators at each university were of the highest intellectual caliber. Budgets and other resources are short at all three universities. It became apparent that the critical differences were to be found in the formative years of these institutions and had to do with how they were organized.

At the time the universities were established, there was no doubt about the need for more professional manpower and the need for universities to supply it. Many assumed that because U.S. contract universities were land-grant, that Nigerian universities would be encouraged by external assistance to undertake research and extension, as well as teaching, that would be complementary

to the work in the ministries. It was also assumed that the ministries would release their research and extension activities or, at least, support university efforts. As it turned out, government officials were not willing to transfer research and extension to universities since these represented important power bases for the respective ministries. An exception, to a limited extent, was in the Northern Region where the government transferred IAR, NAPRI, and ERLS to ABU where they are elements of a larger "agricultural complex" (See Appendix B) under ABU. With this transfer came resources for external impact by ABU.

The team's view is that a university's impact in Nigeria should not be measured by how closely the land-grant model is followed. There are other factors such as historical circumstances and resources that have had an important role. It is true, however, that ABU has been given the means for delivering technology and research results that carry an impact to the states in northern Nigeria which in turn give more credibility and support to the university.

One of the implications here is that from the beginning of a project design that university objectives must be thought out carefully and the means of reaching these objectives must be effectively committed over a long time period.

Finally, it was not clear to team members how or when university impact will be accelerated. Will universities become campus bound because of depressed budgets, or will they find ways to serve farmers effectively? Will they be brought into the large Agricultural Development Project (ADP) system? ADP development is partially funded by a World Bank loan and the Bank recognizes that universities should handle training of extension agents who, as planned, will be released by the states and brought under the ADP program. Can or should these large federal universities become the core of an effective national research system by forming networks with commodity institutes and/or with state colleges? Current budget problems are so severe that few people in Nigeria are thinking ahead to issues like these.

LESSONS LEARNED AND POLICY IMPLICATIONS

It is worth noting that the issues and implications arising from this study of three universities in Nigeria are very similar to those reported by Wilcock and McDowell in their draft report of March 1986 on Building Colleges of Agriculture in Africa: U.S. University Experiences and Implications for Future Projects. This is important, for their issues and implications were reached on the basis of interviews with U.S. university staff who served overseas while the issues and implications reached by the study team in Nigeria were derived on the basis of interviews with Nigerian university staff and their direct observations in the field.

The United States Agency for International Development distinguishes between achievement of immediate project objectives (or purposes, as they are also called) and broader impact on development goals. As already stated, all three universities/faculties of agriculture helped by USAID and U.S. land-grant university assistance benefited greatly. As projects, all three achieved their immediate objectives, and hence must be considered as effective, in USAID terms. Viable faculties were created; equipment and buildings were put in place; people were trained--and returned in high proportions to do high-quality work; undergraduate and graduate students were enrolled in the called-for number of departments. In fact, both numbers of students and numbers of departments surpassed the original targets.

But what of lessons learned from this experience?

Through its current plan for supporting agricultural research and agricultural faculties in Africa, USAID proposes to select a limited number of high-potential countries (in terms of competence to carry out agricultural research) that will have an agricultural faculty (or faculties) commensurate with strong university systems. To embark on such a project where African universities are to be assisted, the following lessons from the Nigeria study should be considered under the following headings: project approval, project design, project implementation, and project institutional linkages.

PROJECT APPROVAL

Before approving new projects with university support, consideration should be given to the present institutional staff strength and potential for contributions to teaching and research relevant to agricultural problems and development in Africa.

Approval should be based on:

1. The extent of faculty organization and well-trained staff that can, with external resource support, provide a solid base for development and service to a wider community.

2. Recognition within the university that the Faculty of Agriculture is one of the most important faculties and should receive the full support of the university administration. This should not be limited to vocal support but substantial and clear evidences of support.

3. Evidence of support for and the integration of teaching and research on African agricultural problems.

4. Interest and unqualified support by university administrators to network with universities and research institutions both inside and outside of the home country.

5. A clear understanding in advance of how extension is to be managed and by whom so that agricultural research results are effectively utilized in agricultural production.

PROJECT DESIGN

1. In designing projects where faculties of agriculture are the central focus, USAID should go beyond project content and host-country concurrence and consider what, at the outer limit, can be achieved in the African agricultural environment.

2. The design should be cast in terms of "worst-case" scenarios, especially in terms of what one may expect in the long run from host governments in terms of resources and the degree of cooperation and complimentarity that may be expected from government research and extension organizations, development authority organizations (such as river basin projects), and parastatal organizations. An "expectation" that effective cooperation will be worked out after the project has been initiated has been shown to be wishful thinking.

3. In designing projects, realistic time requirements need to be built into the project. Few direct external impacts should be expected in the first 5 to 10 years of support, even where the institution being supported has a good starting base. The U.S. land-grant university experience, in a situation where good political support was available, took more than 50 years to become fully

functional. The initial planning and implementation periods should be for 20 to 25 years in Africa.

4. The transfer of the land-grant model to Africa's universities may not be possible. Instead a realistic compromise with much potential would be to combine teaching and research (with appropriate on-farm testing) to be administered by the colleges of agriculture and to let extension and its administration remain with the government ministry.

5. Project design for equipment should include a plan and support for the development of a maintenance program with qualified technicians (who will require support for training), well-equipped maintenance facilities, and allowances for repairs and replacements. Equipment planning must parallel program planning.

6. Planning should identify a source of support for research projects that provide the incentive and the means for faculty members to undertake research outside the university campus or farm that addresses problems or constraints to agricultural production and development. Such research support cannot be assumed since university budgets are often the first to be cut during periods of economic stress. Morever, present staff promotion policies in many African universities give a bias to more "academic" research than to work on local problems.

7. Project designers should consider joint research between the host university and the U.S. university to maximize the comparative advantage of each.

8. Project design should take into account the present numbers of trained staff. Future projects may not require large sums for postgraduate training because institutions selected for future "institution building" may already have the basic staff numbers required. In this case funds should be provided for "in-service" professional short-term training.

PROJECT IMPLEMENTATION

1. Provision should be assured for both female and male students to participate in agricultural programs. An increase in the number of female students could be encouraged by providing research support for problems relevant to women's roles in agriculture.

2. In a proposal that emphasizes research as a part of the faculty/college or university's program, step by step "impact planning" should become a part of the

implementation plan. Examples in northern and eastern Nigeria suggest that the first step leading to meaningful impact is to study the existing farming systems and identify specific constraints before going for full impact. These early studies are best done by staff who gather and interpret meaningful data, thus setting the stage for future impact work. In other words, the university should grow into an impact stance.

3. Collaborating U.S. universities should be chosen that have a strong interest and commitment to cooperation and whose staff can benefit from participation rather than jeopardize their promotions because of service outside the home campus. Two-year appointments by U.S. universities, which has been the norm in the past, is not long enough. Four- to six-year staff appointments should be considered. Short-term U.S. university staff with special competence required for a project should be identified for periodic work with the host-country university.

4. Where postgraduate participant trainees are part of the project, arrangements should be made for them to conduct their research in African institutions that are dealing directly with home country problems.

5. Attention and follow-through must be maintained concerning the support required for all aspects of the project such as maintenance of equipment, networking, research incentives, and continuing linkages.

6. In regard to networking, if USAID is to provide special assistance to selected high-potential countries, networking within a particular country and among surrounding lower potential countries becomes essential. This is certain to be the most difficult element of new university-related projects. Success in the high-potential countries will depend on complementarities and cooperation in a particular country; "success" between high-potential and lower potential countries will depend on a clear indication of "what's in it" for the lower potential countries. In both cases, getting one's politics right will be crucial to success.

PROJECT INSTITUTIONAL LINKAGES

1. Provision should be made for continuing linkages between the host-country university and the collaborating U.S. university. This should be a mature partnership designed to maximize the comparative advantage of each

university. In some cases, in order to assist the host-country university to reach the stage of development for a mature collaborating arrangement, a strengthening grant might be provided similar to those provided to U.S. universities under Title XII.

2. Networking between universities will need regular monitoring and support. Even though many past attempts have not been successful, there are good examples of commodity research networks that should be studied. They offer mechanisms that will facilitate this important cooperation.

CONCLUDING STATEMENTS

1. Indicators suggest that full-blown land-grant models imposed on weak African countries that are seeking financial, administrative, and political stability, tend to overload the system, no matter how appealing they may otherwise be. Taking all factors into consideration, we might ask ourselves, what should a university concerned with economic development in Africa be like? Impact may well be related to an answer to this question.

2. The team recommends that a terse summary of university impact studies by PPC/CDIE and the recent BIFAD paper prepared by Wilcock and McDowell become a framework for follow-on assistance to universities.

APPENDICES

A. Methodology

B. Historical Notes on Each University

C. Impact: Findings and Analysis

D. Economic Factors and University Impact

E. Data Sheets

F. Persons Met

G. Notes on Team Members

H. Bibliography of Materials Consulted

APPENDIX A

METHODOLOGY

METHODOLOGY

The methodology employed in this impact evaluation is that of Rapid Rural Appraisal. This involves a combination of largely qualitative research techniques, done over a short but intense period of time, by an experienced, multidisciplinary team whose members continually refine what they have learned individually by discussing their preliminary findings with each other. The basic principle is "triangulation" - an attempt to approach a particular topic from more than one perspective. This technique, combined with the common expertise of the team members, is aimed at generating findings that are reasonably valid even though samples may not be random and time in the field may be short.

Among the data collection techniques utilized for this study were group interviews, interviews with key informants, analysis of available documentation and statistics, participant observation, and, occasionally, "mini-surveys" that generally involved purposive samples aimed at representatives of relevant population subgroups rather than random sampling methodology. Another feature of the methodology was its attempt to provide comparisons and contrasts, e.g., between those who received project inputs and those who did not, between the impressions of team members who interviewed community leaders vs those who interviewed small-scale farmers.

The objective is not a "quick and dirty" look at an area and a particular issue, but rather, a "quick and fairly clean" research process. When team members reach a deeply felt consensus on the major parameters, problems, and lessons learned, based on a multiplicity of data resources, Rapid Rural Appraisal may be considered to be completed to reasonable satisfaction, independent of time spent in the field. Most typical Rapid Rural Appraisals involve three to six team members who spend 2 to 6 weeks in the field. For this study, a four-person team spanned a period of nearly 4 weeks in the field and emerged with findings believed valid even though they may not be quantitatively supported.

APPENDIX B

HISTORICAL NOTES ON EACH UNIVERSITY

AHMADU BELLO UNIVERSITY

[2]

Historical Background

The Commission on Post-School Certificate on Higher Education in Nigeria (the Ashby Commission) in 1960 recommended negotiations with a view to establishing a university in the northern region 'with its headquarters in Zaria...' and further recommended that advice should be sought from overseas before any decision was made on the scope and activities of the university.

At the request of the former government of Northern Nigeria a delegation from the Inter-University Council for Higher Education Overseas, under the chairmanship of Sir Alexander Carr-Saunders, visited the area in April 1961 and in the same month issued its recommendations on the scope and activities of the university.

In April 1961, a law establishing the Provisional Council of the University of Northern Nigeria was passed by the legislature of Northern Nigeria. The provisional council, under the chairmanship of the Hon. Shettima Kashim C.B.E. (a member of the Ashby Commission - now Sir Kashim Ibrahim, K.C.M.G., C.B.E., formerly governor of Northern Nigeria), was established in November. The first principal (later vice-chancellor) was appointed in July 1961 and assumed office in November.

Courses for a B.Sc. (pharmacy) degree developed from the diploma course of the University School of Pharmacy, commenced in 1970. The Faculty of Pharmaceutical Sciences was created at the beginning of the 1977/78 session.

During the first 2 years of the university's existence, agriculture and veterinary medicine together formed one faculty and the initial planning for teaching veterinary medicine was undertaken by the faculty as a whole. In 1965, this responsibility was assumed by a separate Faculty of Veterinary Medicine.

By the Ahmadu Bello University (transitional provisions) Decree in August 1975, the university was taken over by the federal military government.

The Faculty of Environmental Design, born out of the department of architecture of the defunct Nigerian College, came into being in 1962 on the main university site.

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[2] Source: Ahmadu Bello University Calendar, Zaria, 1984/86.

The Faculty of Law was established in 1962. It developed out of the former Legal Department of the Institute of Administration, which began in 1959 as the first law school in West Africa to give in-service courses and to provide courses leading to Part I of the bar examinations of Lincoln's Inn in the United Kingdom.

In 1961, the federal government, in a White Paper, decided that by 1970 there would be a full-fledged Faculty of Medicine at Ahmadu Bello University. The National Universities Commission, in its report in 1963, fully supported the intention of the federal government and, in accepting the report, the government agreed to honor this commitment. The university council approved the establishment of the faculty to become operative in the 1967/68 session. In June 1972 the university conferred its first graduate awards in medicine.

Courses leading to the combined honors degree of B.Sc. commenced in October 1962 on the establishment of the Faculty of Science from the nucleus of the Nigerian College's departments of biology, chemistry, mathematics and physics. In 1965 the first science graduates were awarded a combined honors degree, and in 1967 some were awarded a single honors degree in their various fields of specialization.

The Faculty of Arts and Social Sciences came into being in the 1966/67 session after the council, in March 1966, had approved the establishment of a joint faculty to replace the former Faculty of Arts. Teaching for the B.A. (combined honors) degree commenced in October 1962, in the newly established departments of English, history and geography. The faculty has since expanded and with the establishment of the Joint Faculty of Arts and Social Sciences, several departments, including those teaching social sciences subjects, were subsequently created.

In November 1967, the council approved the establishment of the Faculty of Education, which came into being in 1968. Previously only a department of education existed in the Faculty of Arts and this was acting in a complementary capacity to the Faculties of Arts and Social Sciences, offering subsidiary courses in education, and the postgraduate certificate in education.

Departments of engineering were founded in the Nigerian College in 1955 and in 1957 became the Faculty of Engineering of the University College, Ibadan. Students were then trained for the S.Sc. (Eng.), degree of the University of London under the Scheme of Special Relation; the first London degrees were awarded in October 1960. The Faculty of Engineering of the Ahmadu Bello University began in October 1962.

The legislature at that time in Northern Nigeria and the provisional council accepted the main recommendations of the

Carr-Saunder's Report. The provisional council then prepared a constitution, which is embodied in the Ahmadu Bello University Law passed June 1962.

During the year staff were recruited or transferred from institutions which were absorbed into the university, and students transferred from courses in the Nigerian College. The university came into existence, legally, on October 4, 1962, and teaching to some 400 students commenced on October 10.

The Faculties

Most of the faculties of the Ahmadu Bello University have developed out of the departments of the defunct Nigerian College of Arts, Science and Technology, Zaria, the Institute of Administration, and the Institute for Agricultural Research, all of which were incorporated at the foundation of the university.

The Faculty of Administration developed out of the former department of administration, which was established at the Institute of Administration where in-service training courses had been available since 1957. In November 1966, the university council approved the establishment of the present Faculty of Administration.

The Faculty of Agriculture began and accepted its first students in October 1962. It was (and is) closely coordinated with the Institute for Agricultural Research.

Institutes, Colleges, and Other Units

A feature of the constitution of the university is the inclusion of two previous Northern Nigerian government institutions into the university as semiautonomous institutes. These are the Institute of Administration, Zaria, and the Research and Specialist Services Division of the Nigerian Ministry of Agriculture, Samaru. Both were set up to serve the particular needs of northern Nigeria, and it is for this reason they were given a degree of autonomy. While completely university institutes under the control of the university council, they are not--as are the faculties--directly under the control of the Senate, except in respect of courses leading to degrees or diplomas of the university.

The Institute of Health was established by law in 1967 as part of the university and, at this time, it took over the general hospitals in Kaduna and Zaria, the Orthopedic Hospital in Kano, and some other medical/nursing institutions formerly operated by the government of the former Northern Nigerian government. A further hospital, at Malumfashi, was opened in 1968.

Two other institutes are those of education and the National Animal Production and Research Institute.

In January 1970 the university opened the School of Basic Studies on the main campus in Samaru. Its aim is to prepare candidates with the requisite basic admission qualifications for entry into the various degree programs of the university.

In 1968, the Extension and Research Liaison Section, set up by the previous government of Northern Nigeria in 1963, was handed over to the university. In the same year the schools of agriculture at Kabba and Samaru were taken over by the university; and in 1969 the Livestock Services Training at Kaduna came under the university's control. Until 1971, these were administered within the Institute for Agricultural Research, but were then reconstituted by law as the Division of Agricultural Colleges. The activities of the Faculty of Agriculture, and Faculty of Veterinary Medicine, the Institute for Agricultural Research, and the Division of Agricultural Colleges are coordinated under the control of the provost for agriculture and veterinary medicine in the office of the vice-chancellor. The College of Agriculture, Bakura, which was established in 1972 at Samaru, moved to its present site in Bakura in July 1975.

In addition to the Kashim Ibrahim Library, which may be considered the main general university library, eight other libraries cater to specialized studies, while the Samaru Public Library, which includes a large section for children, serves as a training ground for students in the department of library sciences.

Other units of the university include the Adult Education and Extension Services, established in 1971; the Centre for Economic and Social Research; the Centre for Nigerian Cultural Studies, established in 1972; the Centre for Educational Technology; the Computer Centre. A university press was established in 1974 and became the Limited Liability Company, owned by the university, in 1978. The University Bookshop was opened in 1967 on the main campus, and there is a branch bookshop at the Institute of Administration, Zaria.

The Abubakar Tafawa Balewa College, Bauchi, was established in October 1984 following the federal military government's decision to merge the former Federal University of Technology, Bauchi, with the Ahmadu Bello University.

Development Plan

Ahmadu Bello University is in its third quinquennial development plan. For a university located in relatively rural surrounding its development program must entail not only the provision of the usual range of academic and administrative buildings, but student accommodations and housing for its junior,

intermediate, and senior staff as well. It has also to maintain its own medical services, water works, refuse disposal plant, and motor vehicles, and be responsible for its own building maintenance and a host of other services, all of which require a large staff, capital, and recurrent expenditure.

For its development during the first quinquennial (1963-1968) the university derived its finances, insofar as degree programs were concerned, equally from the federal government and the former Northern Nigerian government for both capital and recurrent expenditure. The Institute for Agricultural Research and other nondegree programs of the university were wholly financed by the former Northern Nigeria government. For this quinquennium capital grants amounted to N7 million, of which the contribution of the former Northern Nigerian government was N3.7 million.

Owing to the crisis in the country, the second quinquennium development plan, originally scheduled to commence in 1968-69, had to be postponed for at least 2 years. In the biennial (1968-70), modifications were carried out at the Zaria and Kaduna hospitals in order to bring them into line with teaching hospital standards. The School of Basic Studies was established, academic facilities expanded, and student and staff housing provided. Improvements in student amenities were also undertaken from the reserves built up by the university during its relatively short history.

For its second quinquennial development plan (1970-75), the university and its constituent institutions proposed to expand academic facilities to include a new N1.5 million library, a new medical school building, staff and student housing, and a new teaching hospital.

Sites and Projects

With the exceptions of administration and law, all facilities etc. are on the main campus, 11 kilometers northwest of Zaria. Adjoining the main campus is the site of the Institute for Agricultural Research at Samaru and the School of Agriculture. The Institute has out-stations at Kano and Mokwa, and there are other agricultural schools at Kabba and Kaduna. The Faculty of Administration and Faculty of Law are located at the Institute of Administration in Zaria Township.

From 1972 to date a considerable volume of capital projects has been undertaken by the university in order to meet the ever-increasing need for academic and laboratory facilities, students' hostel accommodations, staff quarters, and the necessary supporting services and infrastructure deemed essential due to the increase in student enrollments.

Having in mind the vital importance of an adequate community water supply, the university embarked on the Kubani Dam project. Other projects affecting student and staff welfare include the provision of a new sewage system.

Academic Programs

The rapid increase in student enrollment has--in order to cope with the range of courses to meet students' needs and to be in accord with national objectives--resulted in a concomitant expansion in academic programs.

Staffing

The staffing strength throughout the university has risen substantially. While recruitment of excellent and scholarly staff continued uninterrupted, the university persistently pursued one of the corner stones of its policy, which is the Nigerianization of administrative and academic posts.

The Agricultural Complex

Throughout this report references have been made and implied about unique features of ABU and its potential as a "model" for other African countries. Not only has the Institute of Agricultural Research (IAR) and Agricultural Extension and Research Liaison Service (AERLS) been brought under the university, but the Agricultural Complex also includes the Division of Agricultural Colleges (DAC) comprised of three colleges of agriculture in the states of Kwara, Sokoto, and Kaduna, respectively, and one college of agriculture and animal science in Kaduna state. The Faculty of Agriculture and the Faculty of Veterinary Medicine also are part of the complex.

Standing interdisciplinary committees from jointly appointed staff - (e.g., a professor usually serves on a faculty with an appointment to IAR as well) - oversee each research project. All components of the Agricultural Complex are coordinated by the university provost. These frequent contacts on one campus ensure knowledge of each component's strengths and problems and good communication to solve them. Splits between teaching, research, and extension are therefore minimized.

THE UNIVERSITY OF IFE

Historical Notes[3]

The history of university education in modern Nigeria dates from 1948 when the University College of Ibadan was established. For more than a decade the college remained the only institution on university standing in Nigeria. Although the Eastern Nigerian government had enacted a law establishing the University of Nigeria, Nsukka, in 1955, it was not until 1961 that the university came into existence.

In April 1959, the federal government had appointed a commission under the chairmanship of Sir Eric Ashby, Master of Clare College, Cambridge, to survey the needs of postsecondary and higher education in Nigeria over the next 20 years. The commission submitted its report to the federal government in September 1960.

One of the most lasting results of the commission was the establishment between 1961 and 1962 of three universities in Nigeria. One of these three universities is the University of Ife.

The government of Western Nigeria first announced in 1960 its intention to establish as soon as possible a university in Western Nigeria that would be of the highest standard. Its policy would be to open its doors to students from all parts of the federation and of the world.

The planning of the university was entrusted to two committees. One, the University Planning Committee, was comprised of persons qualified to advise on the planning of a new university, and who in effect undertook the preparatory work connected with the establishment of the university pending the setting up of a provisional council of the university; the other was the University Parliamentary Committee, which would be advisory to the Minister of Education. On June 8, 1961, the law providing for the establishment of the Provisional Council of the University of Ife was formally inaugurated under the chairmanship of Chief Rotimi Williams.

On June 11, 1970, an edict known as the University of Ife Edict, 1970, was promulgated by the government of the western state to replace the Provisional Council Law of June 8, 1961. This edict has since been amended by the University of Ife (amendment) Edict No. 11 of 1975 and the University of Ife

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[3] Source: University of Ife, Nigeria, Calendar 1984-86.

(transitional provisions) Decree No. 23 of 1975. This new decree effected a take over of the University of Ife by the federal military government and established a provisional council as an interim governing body of the university which shall be subject to the general direction of the head of the federal government, control the policies and finances of the university, and manage its affairs. This provisional council has since been replaced by a governing council.

The site selected for the university was at Ile-Ife, a town about 80 kilometers northeast of Ibadan in the Oyo state, with a population of about 130,000. Ife is famous as the center of an ancient civilization and home of the museum which contains the renowned Ife heads. It was intended that temporary buildings should be put up on the site for teaching to commence in October 1962 while the permanent buildings were being planned and erected. But when the federal government transferred the Ibadan Branch of the Nigerian College of Arts, Science and Technology to the university, it was decided that it would be unnecessary to put up temporary buildings at Ife, and the university was temporarily located on the site of Ibadan Branch of the Nigerian College.

Teaching began in October 1962 with an initial enrollment of 244 students. The teaching, administrative, and technical staff, either transferred from the Nigerian College or newly recruited from abroad, numbered about 80.

The university started with five faculties - agriculture, arts, economics and social studies (now social sciences), law, and science. Five new faculties have since been added, namely the Faculty of Education (established on October 1, 1967), the Faculty of Pharmacy (established on October 1, 1970) and the Faculty of Administration (which replaces the former Institute of Administration since October 1, 1979).

The Faculty of Education includes the department of continuing education, educational foundations and counseling, special education and curriculum studies, educational administration and planning, educational technology, the Institute of Education, the Adeyemi College of Education, and the Institute of Physical Education. The Faculty of Pharmacy embraces studies in pharmaceutics, pharmaceutical chemistry, and pharmacognosy. The Faculty of Technology comprises the departments of agricultural engineering, chemical engineering, civil engineering, computer sciences, electronic and electrical engineering, mechanical engineering, and food science and technology.

The Faculty of Health Sciences' consists of twenty departments: multidisciplinary laboratories, medicine, chemical pathology, hemotology and immunology, restorative dentistry, morbid anatomy, radiology, physiology sciences, dermatology and venereology, obstetrics and gynecology, preventive and community dentistry,

pediatrics and child health, oral pathology and peridontology, maxillo facial surgery, anaesthesia, nursing, mental health, medical microbiology and parasitology, community health and nutrition, surgery, environmental health and epidemiology. The faculty aims at training a health team of graduates, medical and paramedical personnel to work in both rural and urban areas. The Faculty of Environmental Design and Management includes the departments of architecture, building technology, estate management, quantity surveying, and urban and regional planning.

In addition to the preceding faculties the following are institutes and/or research units in the university: agricultural research and training, industrial research and development, technology planning and development, drug research and production, and ecology.

The student population rose steadily from 244 to 11,975 at the end of the 1983/84 term.

Development Plans

The site comprises about 5,605 hectares of which 1,012 are being developed as the central campus; 1,214 hectares are set aside for the teaching and research farm, and another 2,023 hectares are earmarked for the commercial farm. An additional area of approximately 6,256.2 hectares of land along the Ife/Ede Road was also acquired.

The building of a university in any shape or form is very expensive, but a university situated in rural surroundings in Nigeria must necessarily be self-sufficient in every way. It must therefore be accepted that from the beginning, in addition to providing adequate lecture rooms, workrooms and laboratories, administration buildings, a well-equipped library, and residential accommodations for most of its students, the university is also obliged to provide quarters for most of its staff, external services such as electricity, water, sewage, clubs, schools, shops, shops transport, and other amenities and services, and also be responsible for the maintenance of its own buildings, roads, estate and landscaping, and transport. All these requirements need additional capital, additional recurrent expenditure, and additional staff.

The first major transfer of students to the permanent site was effected on January 29, 1967, when 500 students of the faculties of arts, social sciences, and law came into residence at Ife. The Faculty of Agriculture and Faculty of Science were retained at the Ibadan branch of the university pending the completion of the agriculture buildings. When these were completed, the Faculty of Agriculture and the departments of botany and zoology moved to Ile-Ife in January 1968. The faculties of arts, social sciences, education, and law were accommodated in the three blocks of the humanities buildings.

The former department of biological sciences has been reconstituted into a number of departments and housed in its own building. The Faculty of Education moved into its own building in 1974.

The Faculty of Law also moved into its own building on October 14, 1981, while the Faculty of Social Sciences moved into its own building in September 1982. The Faculty of Pharmacy moved to Ife in 1972 when the pharmacy building was completed. The new library building has been in use since October 1, 1969. An extension to the library has been completed.

The Faculty of Science building completed in 1970, now accommodates the departments of physics, chemistry, mathematics, electronics and electrical engineering - as well as computer science and the computer center. The department of geology has its own building which it has occupied since 1974. Extensions are being made to the Sports Centre to provide for more variety of games and sports. Additional student hostels have been completed and accommodations on campus are available to over sixty-three percent of the students. An ultra-modern university guest house has also been completed.

The attractive and spacious buildings of the department of biological sciences and preclinical courses were completed and occupied at the beginning of the 1974/75 session. The buildings of the Faculty of Administration and the Central Administration Secretariat were ready for occupation during the long vacation in 1974 and are now in full use. The indoor sports hall, the student union building, the food science and technology and chemical engineering building and the staff canteen were also completed during the year 1974 and are now in full use.

The assembly hall, otherwise known as Oduduwa Hall was completed during the year 1976, the Conference Centre was completed in 1977 and both are now in use.

The Faculty of Health Sciences buildings have been completed and have since been occupied.

The University Teaching Centre has also been completed structurally but has not been commissioned for use until final furnishings are completed.

The emergency power station was commissioned in 1977 and is now in use, and the Opa Dam to improve the water supply situation on the campus was completed in December 1980. Work on the construction of a one-million-gallon water reservoir has been completed.

Contract has been reawarded by the federal government for the reconstruction of the 12 blocks of the collapsed students'

hostel which was nearing completion before work was suspended on them.

The University of Ife telephone extension has not yet been completed. The completion of the project is linked with the completion of P. & T. Ife Exchange.

Contracts have been awarded for the following projects: a civil engineering building, an environmental design and management building, mathematics and first year laboratory building, computer science/computer center building, fire fighting station, natural history museum extension to the University Hall and extensions to the Conference Centre.

Some development projects are also underway to improve the Institute of Agricultural Research and Training at Ibadan and Akure campuses and the buildings of the research section are being constructed on the main campus at Ile-Ife.

There is also the Adeyemi College of Education. The academic programs of the college are being reviewed with a view to making the college cater more fully to the growing teacher needs of Oyo, Ondo, and Ogun states.

The senate approved a two-semester-system calendar for the university as from the the 1977/78 session. The calendar consists of the Harmattan Semester running from the last week in September to the middle of February the following year with a two-week break for Christmas and New Years; the Rain Semester from the last week in February to the first week in July.

UNIVERSITY OF NIGERIA

Historical Notes[4]

A law to establish the University of Nigeria was passed by the legislature of Eastern Nigeria in 1955. As a first step towards the implementation of the commitment, the Eastern Nigerian government invited both the United States of America and the United Kingdom to send advisers to undertake the planning of the physical plant and the academic programs of the proposed university. Under the joint auspices of the Inter-University Council for Higher Education Overseas and the International Development Co-operation Administration (now the United States Agency for International Development), The following team came to Nigeria in 1958: Mr. J.W. Cook, vice-chancellor of the University of Exeter; Dr. John A. Hannah, president of the Michigan State University; and Dr. Glen L. Taggart, dean of international programs at the same university.

On November 30, 1958, the result of the survey and extensive investigations conducted by the team was published in a White Paper by the Eastern Nigerian government. In April 1959, a provisional council was appointed and vested with the financial and administrative powers necessary to build the university. The university was formally opened on October 7, 1960, while the Federation of Nigeria was celebrating the attainment. On October 1 of that year of her full sovereignty, Her Royal Highness, Princess Alexandra of Kent, representing Her Majesty, Queen Elizabeth II at the Nigerian independence celebrations, performed the opening ceremonies and laid the foundation stone of one of the university's early buildings. On December 16, 1961, Dr. Nnamdi Azikiwe, M.A.,M.Sc., Hon.LLD. Hon. D.Lit., then governor general of the Federation of Nigeria and the chairman of the provisional council, was installed as the first chancellor of the university. The university conferred its first honorary degrees on that occasion. In December of the same year, the University of Nigeria Law (1961) was passed. The law dissolved the provisional council and established a council.

During the first few years of its establishment, the university concentrated its efforts on building a solid foundation for undergraduate courses and infrastructural facilities. It was not until 1964, with the establishment of the Economic Development Institute, that the first postgraduate program - for the award of the postgraduate certificate in economic planning - was established. The journalism department followed subsequently. By 1967 a total of fourteen students had been awarded certificates in economic planning. Four were

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[4] Source: School of Postgraduate Studies, Postgraduate Prospectus, 1983-84.

awarded the diploma in education and one was awarded the diploma in religion and one diploma in journalism. During the same period, the programs of the department of plant/soil science (now broken up into the departments of crop science and soil science), education, mathematics and statistics (now departments of mathematics and statistics) and the Institute of African Studies were approved by the senate for studies leading to the award of appropriate master's degrees. Postgraduate work and other activities in the university were, later in the same year, affected adversely by the Nigerian civil war.

As part of the efforts at reconstruction after the war, a subcommittee on postgraduate studies and research was established in May 1970 by the Planning and Management Committee (PMC) of the university. In 1970/71, the university senate reconstituted its Postgraduate Studies Committee which in 1975/76 set up two subcommittees to review the administrative and academic structure of postgraduate studies. At its 104th meeting held on May 30, 1979, the senate approved the recommendation of its Postgraduate Studies Committee that a school of postgraduate studies be established in the university. With its unique and well-designed postgraduate programs, the university has had a growing international reputation for excellence but is now acutely short of resources. Since its inception, however, the school has awarded 150 diplomas, 118 master's degrees, and 22 degrees of doctor of philosophy. Postgraduate enrollment, which currently stands at 750 including 29 foreign students, is on a steady increase.

APPENDIX C

IMPACT: FINDINGS AND ANALYSIS

IMPACT: FINDINGS AND ANALYSIS

Introduction

Three universities are included in this study. Each will be addressed separately in regard to the internal impact on the university, the external impact of the university from teaching, research, and service on the agricultural community it serves, and lessons learned from the joint program between each Nigerian university and the cooperating university from the United States with support from USAID. Additional comments will be added on exogeneous factors as they may apply.

The three Nigerian universities that enjoyed long-term support from USAID are located in three major regions of the country in the north, west, and east. Ecologically the north is quite different from the west and east. They also have strong differences in their ethno-cultural backgrounds. Although each is a federal university to serve the nation at large, each has strong regional ties and comparative advantage, particularly in carrying out research and service to serve the region in which it is located or to similar regions. There are, however, strong commonalities among the three universities that can be traced in large part to the "institution building" activities of the three cooperating U.S. universities that brought their own land-grant university concept to the cooperative effort.

All three universities have had very rapid growth in student numbers in the nondegree programs, degree programs, and postgraduate study programs. The targets for growth for all three universities have been exceeded.

Staff capability is very good in all three universities with a very high proportion of staff holding Ph.D. degrees. The present situation in this regard is noted in Appendix E.

The major constraint at each of the three universities is funding. The three universities did not share fully in benefits during the "oil boom" years in Nigeria because much money was used to establish new universities and infrastructure in general rather than equipment and other needs for their long-term development. Now in the post-oil boom period, university and departmental budgets have been cut until there is practically no money for support of research, transportation, equipment, and supplies.

AHMADU BELLO UNIVERSITY

Internal Impact

The association between Ahmadu Bello University (ABU), Zaria, Nigeria, and Kansas State University, Manhattan, Kansas, between the year FY1962 and FY1978 resulted in a very substantive internal impact on the development of Ahmadu Bello University. However, from the outset, it must be recognized that there were other sources of support to Ahmadu Bello University at the same time. First and foremost was the government of Nigeria, but there was, among others, substantial support from the British government, the Dutch government, and the Ford Foundation. Therefore, it is difficult to ascribe the progress at ABU solely to the USAID project. There is no doubt that the project had a very considerable internal impact on organization of the Faculty of Agriculture, the Faculty of Veterinary Medicine, the Division of Agricultural Colleges, and the Extension Research Liaison Service (ERLS). The project was probably an essential factor in the rapid progress at ABU but not a sole and sufficient condition.

At the time of the founding of ABU in 1962, there was already a well-established Institute of Agricultural Research (IAR), which had been in operation since 1922 in the Northern Region of Nigeria, and a livestock management and cattle breeding program, which was established in 1928. Together they formed a basis for the agricultural program of the university. These well-established programs had a positive effect for the university in terms of its credibility but posed some problems for internal impact of the project under study because with well-established procedures, organization, and administration, they showed initial reluctance to be absorbed into a "land-grant college" model. The livestock management and cattle breeding program became the National Animal Production Research Institute (NAPRI) and under a slightly different name was first a part of IAR, but in 1975 it became an autonomous institute administratively attached to ABU.

The internal impact[5], as a result of the cooperation between Kansas State University and Ahmadu Bello University, was timely and effective in terms of staff development, organization, curriculum development, the initiation of a course work system, and the institutionalization of the concept of a university with three functions of teaching, research, and service. Further, the impact of individuals and professional contacts of an institutional and personal nature has been an important and lasting contribution.

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5 See Terminal Report, Program of Kansas State University, Manhattan, Kansas, at Amandu Bello University, Zaria, Nigeria, August 31, 1974.

Of the 43 persons from the Faculty of Agriculture, ERLS, the Division of Agricultural Colleges, and IAR who were supported abroad for M.Sc. or Ph.D. programs under the ABU/KSU project, 22 (i.e., 51%) are still with ABU. If account is taken of those retired or deceased, then the percentage of retention is raised to 58%. This is a very good retention rate 10 years after the return of the participant trainees, particularly given the rapid growth in the number of universities and parastatal organizations that drew on staff from ABU. In the Faculty of Veterinary Medicine 35 persons were supported abroad for postgraduate studies under the project, of whom a high proportion are still on the faculty staff, which gives a retention percentage of 40%.

The effect on organization is not only seen in the Faculty of Agriculture and Faculty of Veterinary Medicine, but also in the total agricultural complex. During the course of the project, it was suggested by the KSU team that the position of provost be added to head the Agricultural Complex . This suggestion was accepted by ABU and the position was initially funded by the Rockefeller Foundation in 1969, but later the KSU chief of party served as provost. The position has been continued and is held by a Nigerian who also serves as director of NAPRI. During the course of the ABU/KSU project, several organizational changes took place as a part of the growth and development process of ABU. The Agricultural Complex was formed as noted above, joint appointments for teaching and research were established between some IAR and Faculty of Agriculture staff members. The Extension and Research Liaison Service was first incorporated into IAR and later separated as an autonomous unit under the provost. The Faculty of Agriculture started with a single department, agriculture, but gradually expanded into its present six departments:

Agricultural Economics and Rural Sociology
Agronomy
Animal Science
Crop Protection
Plant Sciences
Soil Sciences

The Faculty of Veterinary Medicine also has six departments:

Veterinary Anatomy
Parasitology and Entomology
Pathology and Microbiology

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6 The Agricultural Complex is made up of the Faculty of Agriculture, the Faculty of Veterinary Medicine, the Institute of Agricultural Research, the Division of Agricultural Colleges (composed of four two-year diploma-level colleges), the Agricultural Extension and Research Liaison Services (AERLS--formerly called the Extension and Research Liaison Services), and the National Animal Production Research Institute (NAPRI).

Physiology and Pharmacology
Public Health and Preventative Medicine
Surgery and Medicine

In 1971 the Division of Agricultural and Livestock Services (later changed to Division of Agricultural Colleges) was established to direct and coordinate the nondegree schools of agriculture at Kabba, Kaduna, Samaru, and Bakura under ABU. Curricula were modified for the schools, new buildings were constructed, student intake was increased, and prestige and stature of the schools were elevated.

From the outset of the project, ABU and KSU established an institutional and professional partnership that prevailed not only through the contract period but continues to be viable. Clearly, members of the staff within the Agricultural Complex of ABU highly value their association with KSU. Several staff made pointed reference to their active and frequent professional contact with former KSU professors. During the first years of the project, KSU professors served as heads of departments and the KSU chief of party was elected dean while Nigerian staff persons were being trained to take over these positions. Throughout the tenure of KSU's staff, the land-grant foundation was laid whereby teaching and research are coordinated at the department level through their joint appointment between thedepartment and IAR and close contact with AERLS which, as organized, can draw upon expertise from any agricultural (including livestock) discipline.

An area that appears to have had little lasting internal impact, or perhaps was never given sufficient consideration, concerns issues of women and their role in agricultural production, marketing, and decision making in agriculture in addition to their role as wives of farmers.

Another area where the internal impact that would be desired is not evident is in equipment maintenance. The project provided important and useful equipment, not all fully appropriate to Nigerian conditions, but there is no evidence that there was an effort made to establish a cadre of qualified maintenance technicians and an organization (and budget) to keep equipment operative and replace equipment/spare parts essential for teaching and research. Hence, most of the equipment is inoperative.

One issue that repeatedly was raised in the interviews with individual staff members was the problems caused by the fairly abrupt cut off of the project rather than project provision for an extended phase-out period and some continuing cooperation between ABU and KSU for a lengthy period (15 to 20 years) beyond the termination of the project.

External Impact

The external impact of ABU is very noticeable and can be traced to the well-established research and demonstration work of IAR dating back to 1922 and the livestock work dating from 1928. As noted, these units were serving the old Northern Region well before the establishment of the ABU and the cooperation with KSU. Therefore, when these units were incorporated into ABU, they gave the university a presence and credibility in the agricultural development of Northern Nigeria and the capability to serve the savanna region of Nigeria and similar regions throughout Africa. Also, the formation of AERLS helped link research and extension for the university.

The staff of the department of agricultural economics of the Faculty of Agriculture, in close cooperation with the Institute of Agricultural Research, carried out extensive studies in the region served by ABU to understand the farming systems, identify constraints faced by farmers, and reasons for adoption or non-adoption of research results, taking into account social and economic factors. The interaction between the staff of the department of agricultural economics and the researchers in IAR on the results of these studies had a very positive effect on the work of the research staff to assure more relevant research and greater awareness of the real constraints on adoption of research results. This work, though closely linked with the KSU team, was supported to a large extent by the Ford Foundation.

The early studies of the department of agricultural economics apparently did not consider the role of women in farming in sufficient detail. To some extent this was corrected as the studies progressed but may still be considered a problem area in maximizing the benefits of research (and problem identification) with all of the members of the farm family engaged in agricultural production. This point concerns not just the studies conducted by the department of agricultural economics but may be generalized throughout the units of the Agricultural Complex where the importance of women in farming and how to effectively reach them does not appear to be fully addressed.

The units of the Agricultural Complex, individually and collectively with an integrated approach, have developed improved crop varieties and relevant research and extension on agronomic problems, crop protection, animal health, livestock feeding, social and economic issues, and livestock improvement. Some results that have been adopted by producers in the northern states of Nigeria include the following:

- cowpea, maize, millet and sorghum varieties
- crop protection on the above crops and on cotton and groundnuts

- determination of critical animal health problems and establishment of programs for prevention and control of rinderpest, contagious bovine pleuropneumomia, clostridial diseases, and avian diseases
- participation in regional vaccination programs with animal health services to livestock and assistance from ambulatory clinics
- feeding systems based on rough forage and browse
- agronomic practices for crops noted above
- socioeconomic evaluation of farming systems

The Agricultural Extension and Research Liaison Service, one of the units in the Agricultural Complex of ABU, was transferred to ABU from the Ministry of Agriculture in 1968 with the strong support of KSU staff. It was then merged with IAR, but in 1975 it was separated to become one of the units in the Agricultural Complex. The AERLS has played an important role in linking research from ABU with extension particularly in the 10 northern states and thereby improving the external impact of the university.

The external impact of the university now faces serious problems due to the extreme financial constraints placed on it. IAR has had to reduce staff, and departmental funds for research are extremely scarce. This financial situation affects all units of the Agricultural Complex.

Lessons Learned

This section identifies those lessons learned that are specific to ABU.

1. Institutional linkages - From the team's impressions and experiences, they strongly suggest that university development programs should make provision for modest funding to enable a continued and mature working relationship between the host-country university and the participating U.S. university after primary university development tasks have been completed. Such support would enable the interchange of information and materials, staff exchange, postgraduate training of critically needed personnel, and procurement of vital spare parts and supplies.

2. Integration of research, education, and extension - ABU and KSU planned for and implemented an integration of research, education, and extension within their capabilities and enforced constraints. However, they were not able to take their integration to its optimum level. Linkage between research and education is clearly evident and fairly strong, but the transfer of information from the research programs

through extension (AERLS) is limited. The linkage between the department of animal science, the Faculty of Veterinary Medicine, and NAPRI is good but could be strengthened. It is therefore suggested that as programs evolve for the integration of the education, research, and extension functions, that working linkages with allied institutes and organizations should be established.

3. Integrated agricultural systems - ABU and KSU adopted and implemented an integrated approach to agricultural education, research, and extension. Examples are 1) early work on farming systems, 2) the establishment of AERLS to enable the packaging of technical information for agricultural extension and 3) steps for cooperation between the faculties of agriculture and veterinary medicine and their sister institutes (IAR and NAPRI). The integration of agricultural systems has been successful and emphasizes the importance of designing university development programs that will make the greatest contributions to the improvement of overall agricultural productivity and income.

4. Maintenance of facilities and equipment - The situation at ABU parallels that encountered in many universities in developing countries. Much equipment is inoperable for lack of spare parts, maintenance, and/or repairs. Facilities are only marginally maintained. Funding limitations, including a shortage of foreign exchange, are a primary cause of these problems. However, equally important is the inadequate attention that has been given to training personnel to maintain equipment and facilities and in providing the structure and resources to effectively complete these tasks.

5. Role of women in agriculture - The proportion of females enrolled in agriculture and the content of courses do not represent the traditional role of women in farming. There is a need for more well-qualified female staff persons in teaching, research, and extension to adequately address the issues and to overcome the social and cultural barriers in working with women as farmers. This need is especially evident in northern Nigeria where contact for women with men outside the family is restricted.

6. Institution building time frame - USAID often puts all of its time and effort on the front end of projects, (i.e., project design) with little attention to conditions of phaseout and post phaseout. These efforts should be better balanced.

7. External impact from ABU - More external impact is indicated from ABU than from most African agricultural situations. The obvious reasons are that teaching, research, and part of the extension package are bound together so that failure of one immediately weighs on the other components. Unless the three components can be assured at design, project implementation, phase-out, and post phaseout with a reasonable level of funding, an alternative should be found for the land-grant model.

8. Credit services - Credit and timely access to inputs are critical and must complement what the universities provide for farmers.

UNIVERSITY OF IFE

Internal Impact

Since its founding less than 25 years ago, the University of Ife has become a well-respected university throughout Africa for the quality of its staff and graduates. Its Faculty of Agriculture, with the cooperation of the University of Wisconsin and support by (USAID), is one of the strongest faculties at the university and has a very capable and dedicated staff in six departments and one institute . The cooperative program with the University of Wisconsin greatly assisted the rapid and quality development of the Faculty of Agriculture through support for postgraduate training for faculty members, the development of curricula relevant to Nigeria, and the land-grant university concept of teaching, research, and service.

Of the 38 faculty members sent abroad for postgraduate training for M.Sc. or Ph.D. degrees under the project, all returned to Nigeria, and 20 are still on the staff, which gives a retention rate of 53%. Taking into account those deceased or retired, the retention rate is 59%, which should be considered very good, given the demand for well-trained staff by the large number of new universities.

Without a doubt the impact generated by the University of Wisconsin on the Faculty of Agriculture and other internal elements of the university was, and still is, tremendous. Veterans of the present agricultural faculty assert that the hard work, zeal, and mature guidance of the Wisconsin staff during the university's formative years was of immeasurable value. A total of 42 Wisconsin professionals served at Ife in every department of the agricultural faculty over 10 years and helped to convert agriculture from a department to a faculty of the university. From 39 students at the contract entry point in 1964, enrollment in the Faculty of Agriculture grew to almost 1,000 students in 1986.

During the first contract year, 1964/65, a few Wisconsin professors taught a total of 26 courses. At the request of their Nigerian counterparts, they assumed leadership roles in the

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[7] 1964-1974. See Ten Years at Ife, a report of the Faculty of Agriculture at the University of Ife, Nigeria, and College of Agriculture and Life Sciences, University of Wisconsin, Madison. June 1975.

[8] Departments of agricultural economics, agricultural extension and rural sociology, animal science, plant science, soil science, and the Institute of Agricultural Research and Training.

administration of the college as deans and department heads. They recommended curriculum reforms and submitted their proposals for change to the university senate. They encouraged modification in teaching methods toward "open door" contacts between students and staff, internal examinations and outside readings as a complement to textbook teaching. Perhaps the most profound impact from the Wisconsin staff was in local staff development. The Wisconsin staff helped to select candidates for graduate training in the United States and provided predeparture tutoring.

Wisconsin faculty members worked side by side with Nigerians in establishing the university farm and its several livestock and crop enterprises for teaching purposes. Under the contract, equipment and supplies worth almost $500,000 were ordered and installed in every department of the college and on the farm. The mutual respect and goodwill between the two universities are still strong and the internal impact generated by the University of Wisconsin is as evident today as at the time the contract ended.

The internal impact generated by the University of Wisconsin is not without questions, however, and in some cases may have been negative. For example, relics of obsolete, worn out, and broken-down equipment provided under the contract are found in every laboratory, on the farm, and in vehicle graveyards. In discussing sophisticated dairy equipment, which was provided to accommodate the import of exotic dairy cattle, one Nigerian professor remarked, "While we were glad to get the equipment, it was ordered and installed before considering whether the exotic cattle could survive (they didn't), or even whether Nigerians liked milk."

It is readily evident that the land-grant university philosophy has been firmly established in terms of understanding but there is only limited evidence of the philosophy being put into practice in research and extension.

It was mentioned by many faculty members that the time period for the project was too short and the cut off too sharp. An extended period of support and contact would have been welcome and would have greatly assisted in lasting benefits.

External Impact

External impact reflected by outreach work of the Faculty of Agriculture at large has been far less dramatic than the internal impact. The University of Wisconsin staff and their Nigerian counterparts drew up meaningful research plans to assist small-scale farmers common to western Nigeria, but never assured a mechanism for institutionalizing these efforts.

The heavy teaching load and lack of facilities hampered research at the beginning of the contract period, but the need for a relation between research, teaching, and extension was firmly established. By 1967, when the Ife campus was occupied, the faculty research committee was chaired by a member of the Wisconsin team and practical problem-solving research was strongly encouraged.

With regard to the farm community, the University of Wisconsin recommended from the very beginning, and imparted this perception clearly to Nigeria, that all agricultural research and training being fostered by government ministries of agriculture would, as agreed, be transferred to the University of Ife. This has been accomplished only in part. The Institute of Agricultural Research and Training (IAR&T), with its subprofesional school at Akure, has been incorporated into the University of Ife but is still headquartered in Ibadan. The move and the integrated relationship that was anticipated has not yet been completed. Moreover, agricultural extension is now under state ministries of agriculture with little or no university contact. The Institute of Agricultural Research and Training was to form the research, training, and later the extension arm of the Faculty of Agriculture. Its physical separation from the faculty and the university has been a handicap, and support for IAR&T has been sporadic. The subprofessional certificate and diploma school at Akure operates as a unit of IAR&T, and its graduates continue to have a good reputation.

External service to farmers is thus fragmented in spite of good intentions voiced by highly qualified scientists at the university. The department of agricultural extension and rural sociology (which also includes a program in home economics) has the primary responsibility for outreach work among farmers but integrated, systematic research with other departments is sporadic with little support for and little reward to researchers during this period of severe budget constraints. Much of the research performed is on topics and subject matter related to the agriculture of western Nigeria, but is not based directly on village data and village problems.

Concerning specific examples of external impact, two new crop varieties have been developed and appear to have fairly wide acceptance in the region. These are the Ife brown cowpea and the Ife plum tomato.

A second type of wider impact involves the adoption by state and national policy makers of ideas and advice from faculty members. These ideas have been disseminated via published articles in refereed journals, other publications, talks and consultancies. Several sources mentioned this type of impact.

A concrete example was given by a faculty member in the home economics program of the department of agricultural extension and rural sociology. This resulted from two published articles in the Nigerian Journal of Nutritional Science in 1981. These detailed her research in training private vendors to prepare and sell nutritious weaning foods for preschool children. The articles were read by people in the Ministry of Health, and the idea of using private vendors--who receive some training in nutrition enhancement--struck fertile ground. According to our informant, the Ministry of Health now has turned to such private vendors to assist with feeding primary and secondary school students throughout the country.

Since 1969, the department of agriculture extension and rural sociology has been involved in development activities in nine villages centered around Isoya. From time to time, members of other departments--not only from the Faculty of Agriculture, but for example, from health sciences--have collaborated. These villages are located in the tropical forest zone, quite close to the university. Over the last 3 years, they also have begun working with three more distant villages located on the edge of the savanna zone near Ede. Visits to these villages were made by the study team members with staff members from the Faculty of Agriculture, and discussions were held with groups and individual farmers to gain a first hand sense of "impact."

The first benefit mentioned by a leader of a men's cooperative in the Isoya area was the "promotion of social interaction and integration." A second benefit mentioned their enhanced ability to generate capital within the group. This is an especially relevant benefit, given the present hard times and resource scarcity affecting Nigeria as the price of oil plummets. Similarly, the benefit most stressed and appreciated by the leader of a women's cooperative was the "loan and savings scheme" they were able to undertake after learning to organize themselves into cooperative bodies. Nevertheless, both men and women have asked for additional help in generating funds (via credit or other means). The men want the funds for agricultural inputs ranging from tractors to fertilizer to files to sharpen their handtools. The women want funds to be used initially as working capital for trade--their traditional economic activity. It was interesting to note that the women's final objective is to enhance the scale of their trade in agricultural products, but they also asked for help with precisely the same range of agricultural inputs as the men: tractors, fertilizers, files. Many women would like to get into market-oriented farming, using their profits from increased trade as a springboard.

One of the striking findings from the village group meetings was the uniformity of both the men's and the women's wants. In all four villages, the men stressed their need for inputs--tractors, fertilizer, pesticides, herbicides, chemicals

for stored corn, credit. Surprisingly, since we had been told that the women's main income activity was trade and that "they only helped on the farm," the women emphasized their need for precisely the same agricultural inputs; they wanted to farm to produce more income and food. In the third village where the women were organized, they wanted to parlay enhanced trade earnings (including income from project-taught handicrafts, which had not yet produced any income) and savings or loans into a poultry project. In short, both sexes wanted help with income-producing agricultural production projects. But whereas the men were receiving project assistance in this direction, the women were not. Project efforts for them were focused on home economics activities and handicrafts. The problem, the home economists explained, is that they are afraid to launch the women into high investment/high-risk, high-gain projects involving agricultural production or processing (e.g., palm oil, melon seed oil, kola nuts, corncrib storage) when they don't have the time, training, resources, or vehicles to follow up. So they demonstrate low-investment/low-risk, low-gain handicrafts.

Other specific examples of impact include soil mapping and classification; socioeconomic studies and the utilization of the results to improve income; goat production under confinement; animal nutrition; and crossing of tsetse tolerant N'dama cattle with white Fulani breeds to augment size and body weight.

Impact of the university through its graduates has been an important factor. Also, Ife faculty members serve on boards and commissions and as consultants to local, state, and federal governments, parastatals, and private firms and thus carry some external impact on important national programs and policies. One senses, however, that the university has yet to develop a philosophy that can project its professional image and worth; thus off-campus work reflects more the individual's credits than the university's.

Financial constraints in recent years have greatly hindered research work that might have an external impact. However, it must also be recognized that in spite of adopting a land-grant university philosophy, there are few incentives or rewards for faculty members to do "relevant " research. Promotion within the faculty is, to a large extent, based upon "high quality" research published in well-recognized international journals and little recognition is given for the resolution of constraints at the farm level.

Lessons Learned

A careful review of the program at the university's Faculty

of Agriculture suggests a number of lessons for USAID. Without order of priority, important ones are listed below:

1. Where research, teaching, and extension are to be highlighted and other elements of institution building attempted, 4- to 6-year postings overseas are recommended. (A review of postings under the Wisconsin contract shows 2-year tours for most contract employees.)

2. An agreement to provide essential equipment and supplies should immediately be supported with plans to take care of obsolescence, maintenance, and repairs, including provisions for spare parts and related needs. It would be of lasting benefit if institutionalizing a maintenance and repair unit could precede other contract activities.

3. Short of extreme necessity, U.S. university contracts should be of long duration and none should phase out abruptly. And even with a rational phaseout there should be a meaningful legal agreement and USAID funding for continuing mutually beneficial relationships between the two institutions.

4. Institution building on the concept of land-grant university principles (even allowing for local conditions and needs) requires agricultural research to be a functional part of the university's program under the head of the university. If agricultural extension remains outside the tri-relationship (of research, teaching, and extension), a well-funded agricultural extension liaison service should be organized to promote extension linkage with the university.

5. Coordination and cooperation with other organizations, public and private, must be anticipated and worked out at the time of contract planning. Under the best circumstances universities will be unable to supervise and conduct all the elements needed to promote successful agriculture. Input supply is a case in point.

6. The prospect of acute shortages of funds and other resources should be taken into account during planning and subsequent budget periods. The efforts of competent university staff to make substantial impact can be stymied or nullified by lack of funding.

7. In carrying out impact studies, about 4 to 5 days should be the maximum time spent on campus. Moreover, for intensive work of this kind, at least the team leader, and if possible one or more team members, should be knowledgeable about the country and have appreciation of what can or cannot be accomplished.

UNIVERSITY OF NIGERIA

Internal Impact

At the outset it should be noted that distinctions existed between the University of Nigeria, Nsukka (UNN), and Michigan State University (MSU) that did not apply to the other two Nigerian universities and their U.S. counterparts. These distinctions affected outcomes in agriculture and other departments of the several faculties.

First, paralleling the all-Nigeria Ashby Report that recommended establishing a university in eastern Nigeria, a second team overlapping the Ashby Report was invited to the region to study the situation and make specific recommendations concerning a new university at Nsukka. Two members of this three-person team were from Michigan State University. Notwithstanding the tremendous task of converting a small college of arts, science, and technology at Enugu (as a second campus) and building a new campus at Nsukka, the team's report issued in 1958 was positive. It recommended that the new university be established as soon as possible and be based on "service to problems and needs of Nigeria." Considerable attention was to be given to careful planning, with emphasis on academic fields in the sciences, agriculture, engineering, medicine, law, home economics, education, and several other disciplines. Thus, unlike the University of Wisconsin and Kansas State University, MSU was able to generate a degree of impact at the very beginning of the UNN's planning process.

Other distinctions in the MSU/UNN association stood out. Whereas the University of Wisconsin was concerned only with the college of agriculture at Ife and the scope of work for Kansas State covered agriculture, veterinary medicine, and a few off-campus agricultural training schools, the scope of work under the contract with MSU called for that university to involve itself "in the development of the total university." This meant help with site plans, construction, certain administrative functions including the vice-chancellorship, and other general elements of assistance with a goal of "enrolling 6,000 students by 1972." More specifically the project's activity targets included assistance with physical planning, staff development, curricula development, development of terms reference for research, and provision of equipment and supervision of construction and program layout for a continuing education center and an economic development institute. Planning postgraduate programs, establishing laboratories, and building relations with the regional government also were expected. In fact, MSU was involved in a beehive of on-campus activities between 1960 and 1967 when the imminent civil war caused an abrupt break in activities. Thus, whereas internal impact was strong and unmistakable, external impact under MSU assistance lacked the time to plan and implement.

The predecessor of the Faculty of Agriculture was established as an academic unit of the Faculty of Science when the university was founded in October 1960. In 1961, it assumed a full faculty status comprising six departments. Several changes in departments took place in the ensuing years, and in 1980 the departments concerned with veterinary medicine were combined and became the Faculty of Veterinary Medicine. The Faculty of Agriculture now comprises seven academic departments:

Agricultural Economics
Agricultural Extension
Animal Science
Crop Science
Food Science and Technology
Home Science and Nutrition
Soil Science

All departments, in addition to the undergraduate programs, have developed postgraduate programs leading to the award of M.Sc. and Ph.D. degrees.

Elements of Internal Impact

After almost 25 years, including 3 years of war when the university was abandoned, the imprint of MSU is still strong in the several agricultural departments. Faculty members assert that in spite of almost insurmountable odds, a strong faculty has held together and has, according to them, the most competent agricultural scientists in all Africa. This feeling of self-confidence, many say, can be traced back to the formative years of the university when MSU staff were active in all departments and in Nigerian staff development. The need for all senior staff members to engage in meaningful research was emphasized, and a fully equipped university farm and experimental station were laid out for teaching purposes. Finally, to round out the land-grant approach, MSU hoped that equitable extension schemes could be worked out with the regional ministry of agriculture. In any case, extension work and extension training for agricultural officers and assistants were highlighted in workshops and conferences at the new Continuing Education Center. Without doubt, MSU generated impact in almost every internal element of university development during its formative years, and the land-grant philosophy at the university was anchored in a burst of academic activity representative of a newly independent country.

Although only five persons received postgraduate training in agriculture under the Michigan State contract, this training set the stage for extensive postgraduate training in the 1970s and early 80s. Also, following the civil war, many persons who

had remained outside Nigeria during the civil war and who had completed their postgraduate studies during this period, returned to eastern Nigeria. Not only have sizeable numbers of persons been trained (almost all members of the Faculty of Agriculture have Ph.D. degrees), but also the training has highly influenced the shaping of the relationship between education and research. Especially encouraging is the reservoir of good-will, camaraderie, and mutual identity that has persisted between Nigeria and MSU. Nigerian staff strongly and openly identify with staff and departments at MSU and other U.S. universities that they attended. The number of staff trained is important, but of equal or greater importance is the impact the U.S. university had on philosophy and approach to university development and the role of a university in the society it serves.

Impact on curricula development directly relates to the philosophy and skills of staff who prepare them. The MSU group was influential in initially shaping the land-grant approach and promulgated it by Nigerian staff trained in the United Sta es. Although some adjustments have been made to meet local conditions and accommodate the views of administrators and faculty members trained elsewhere, the land-grant approach has prevailed. From the start, a course work system was introduced on the land-grant university model and has remained intact.

The Faculty of Agriculture, in spite of the potential of its very capable staff and an agriculturally productive region and country, has not fared very well in terms of resources. It is poorly housed and almost without funds for research, equipment, and supplies. It appears to have fared less well than other faculties in the university. It is a tribute to the dedication of the staff and students that morale appears to be reasonably high and that a willingness to continue prevails. Although the University of Ife and Ahmadu Bello University face similar financial constraints, these do not seem to be as severe as those at the University of Nigeria.

For the most part, much equipment supplied under the project was damaged or destroyed during the civil war. Nonetheless, it was encouraging to see a number of items of scientific equipment that subsequently had been salvaged and put back in operation. At the University of Nigeria there is a noteworthy sense of initiative to make things work.

In summary, the internal impact of the project on the Faculty of Agriculture has been large in terms of organization, curricula, course work concept, and in the desire for continuing contacts. This is especially notable given the short period of association and the abrupt cut-off of MSU due to the civil war in Nigeria. The desire for renewal of association with MSU or another leading U.S. land-grant university is very strong as voiced by all with whom the study team members spoke at the University of Nigeria.

External Impact

Impact can only be discussed in post Nigerian civil war time frame. As in the case of the other two universities, the greatest external impact is through its graduates who are employed in ministries of agriculture, departments of agriculture, parastatal organizations, and in a few private firms.

Some professors serve on government boards and commissions and thus influence policies relevant to these assignments. According to the staff members of the Faculty of Agriculture, some of these staff did much of the work for the analytical framework for the 1981-85 Nigerian development plan. Bits and pieces of other university-related impacts can be discerned.

- Through plant breeding, one UNN professor has developed a preferred chili pepper that is in widespread production.

- An ex-student is the Federal Director of Rural Development (i.e., the National Agricultural Development Program).

- Others have found ways to process yam flour and mass produce moi-moi, a nutritious food substance made from ground cowpeas.

- There is collaborative research with the cowpea CRSP, The international Institute for Tropical Agriculture (IITA), and some technical assistance to the National Root Crop Production Company.

- Work on livestock feeds has had an impact and contact with livestock producers is maintained through an ambulatory clinic and vaccination program.

On the whole, however, the preceding items are fragmented pieces that bear little if any institutional imprint. No philosophy exists to propel the university to external achievement. The heavy teaching load (an average of 22 credit hours in agricultural economics) limits what one can do outside. Only limited and sporadic support from higher university management is noted and, in any case, no resources are available for transport, supplies, enumerator costs, and related needs. As an example, the soils department fits the pattern. It has competent staff who are grounded because of budget and resource constraints that in time frustrate all attempts toward serious outreach research and community service. With an extremely small budget spread among nine professors and two graduate assistants, little can be accomplished. Even the purchase of laboratory chemicals or trips to potential research areas must often be borne as personal out-of-pocket costs.

The study team observed, however, the skill of one staff member who successfully applied for a research grant from an external source and was conducting an important study in the yam producing area. The results of the study will provide valuable information to guide production, marketing, and nutrition research which, in the long run, could lead to an important impact.

Certain built-in weaknesses on the part of African universities in and out of Nigeria raise serious questions of what should and what should not be reasonably expected by way of external impact. Three examples of doubt can be offered. First, Nigerian professors, even those trained in U.S. land-grant universities and fully capable as scientists, have only a limited idea about how or why farmers do what they do. It is doubtful whether meaningful external university impact can be registered in, say, a yam-producing area before more facts are in about the farming system.

Second, even if UNN had facts about the farming system at hand to make a meaningful impact, it cannot manage input supplies (lack of which is the most vocal farmer complaint), and in the four states of eastern Nigeria, agricultural extension is firmly in the hands of state governments and in time may be passed to state agricultural development projects. At present, the university has nothing to do with extension. Unless mutual respect, accommodation, and cooperation are built into the project at the planning stage, the extent and success of university impact will rest heavily on performance of outside forces.

Third, no university impact was found by way of graduates undertaking farming careers. In terms of alternative opportunity, farming is not considered as an option for graduates with higher education. Thus, one can say that with intense interest and high expenditure on university development, Nigeria is "educating" itself out of agriculture. Much more thought should be given to how, not whether, universities in a developmental environment like Nigeria's can impact on farming communities. Too little has been done to date.

Lessons Learned

The University of Nigeria case history is unique and calls attention to the consequences of institutional development that are related to political forces. In the case of this university, some of the evident lessons are:

1. Institutional development programs that either lack an initial operational base and/or are disrupted by extraneous factors, will require assistance over a very long period to achieve impact objectives. The Nigerian civil war was far more damaging and

disruptive to the University of Nigeria than to either Ahmadu Bello University or the University of Ife.

2. It is well-known that funding is essential for productive university operation and that very little can be accomplished when budgets barely support staff costs with nothing available for research, educational materials, scientific journals, and service activities. The Faculty of Agriculture at UNN finds itself in this "no win" situation.

3. Inadequate funding and the lack of a well-trained maintenance staff makes it impossible to keep scientific equipment in operation with the result that both teaching and research suffer.

4. A university farm should be an example of good management and operation. However, a university farm needs financial support as well as good management. The payment of proceeds from sale of the university farm's produce into the general university fund without any return support for the farm destroys any incentive to increase production on the institutional farm.

5. A well-trained and capable staff is essential for the Faculty of Agriculture but without recognition within the university or adequate support, the desire to achieve begins to lag.

6. Innovative staff persons with good external contacts can and should attempt to obtain donor resources for research even in times of extreme internal financial constraints.

7. Even short-term association with another institution (MSU in this case) and staff from that institution can build lasting contacts, but continued support is required to make these contacts productive.

8. Too much may be expected of the introduction of the land-grant university concept into a developing country where teaching, research, and extension are historically divided and the political will is not present in government to change this situation.

9. Contacts with a single strong institution (U.S. university) with a real commitment builds lasting ties. It is doubtful if such ties could have been built with a multiuniversity arrangement.

The University of Nigeria, although unique in the sense of its disruption at an early stage of its development, presents an excellent case in university-to-university cooperation and lessons to be learned.

APPENDIX D

ECONOMIC FACTORS AND UNIVERSITY IMPACT IN NIGERIA

ECONOMIC FACTORS AND UNIVERSITY IMPACT IN NIGERIA

In a rapid institutional appraisal study, full attention to the general state of the host country's economy is beyond the usual terms of reference. Nonetheless, as the team moved from one university to the other and noted impact from internal and external viewpoints, it became increasingly clear that the most common constraint on Nigerian universities is inadequate funding. In the past all three universities engaged in outreach work supported by competent staffs. But despite the fact that farmers are still in critical need of information, inputs, and guidance, university outreach efforts are curtailed by depleted budgets, especially in eastern and western Nigeria.

Since the budget of each university is dependent almost entirely on government allocations, which in turn are tied to federal (and to a lesser extent state) revenue, what are the prospects that economic conditions in Nigeria will improve?

State of the Economy

The present level of infrastructure - roads, buildings, schools, universities, river basin development, input supply depots etc. - far surpasses anything in past years. Secondly, in spite of newly imposed import restrictions, more imported consumer goods are available in local markets than in prior years, people appear to be healthier, and there is far less evidence of malnutrition than in most African countries.

On the other hand, micro indicators in the economy are puzzling. Local prices are extremely high. For example, as observed by the team at the time of the visit, at official exchange rates of U.S. $1.00 = 1.00 naira, the approximate price of a chicken was $16.00, of a goat $85.00, of a yam $1.50, and of gasoline $2.20 per gallon. Farm laborers earn up to one naira per hour digging yam mounds, yet unemployment at all levels is rising rapidly. We asked why, at current prices, weren't more farmers growing goats and chickens? And since yams in southern Nigeria are so widespread, why are prices so high? One will always get a reply to questions like these, but few replies are based on hard evidence. Obviously much research work needs to be done, yet too little is being undertaken.

At the micro level the Nigerian economy is in a state of crisis with no short-term light at the end of the tunnel. We do not see funding relief in the short term. The government's current plans call for export earnings of 15.6 billion naira for the current fiscal year of which N14.1 billion would come from oil and N1.5 billion from tin and agricultural and livestock products.

However, because of the fall in oil prices the revenue short-fall based on underlying assumptions already surpasses N6.0 billion. Debt service alone (principal and interest) amounts to N5.3 billion leaving little for running the governments and even less for development. Delays in payments on letters of credit discourage those who export to Nigeria; thus few raw materials and spare parts are arriving in the country.

No IMF agreement has been negotiated but the new military government has put forward its own plans for meeting the crisis. These emphasize private initiative and austerity with particular emphasis on agriculture since 60% of the people are rural.

The Future of Agriculture

What can be said about the future of agriculture in Nigeria and the institutions (such as universities) that are to support it? During the oil boom with an overflowing treasury, Nigeria went through the motion of professing interest in agriculture, and the IBRD invested millions in the ADPs. It seems evident, however, that everybody, and especially the government, was dazzled by the flow of oil revenue and saw no immediate end to it. Why should one bother about slow-moving agriculture? Agriculture was therefore neglected but, ironically, it is the nonagricultural elements of the economy that are in deepest trouble, including the one steel mill that has gone through an on-again-off-again routine.

In the absence of an IMF agreement, the government took steps to ban imports of wheat, corn, and rice--all major imports in the past. Sugar imports also are to be restricted. These actions are causing temporary hardships and continue to fuel inflation. On the other hand, team members who know Africa well and can compare present agricultural conditions with those at the point of independence see grounds for optimism in Nigeria's agriculture. In effect the country is being forced to produce. Several points can be made in this regard.

1. In spite of the present economic crisis and the hold this places on impact by universities and others, the number of commercial farmers in Nigeria has increased significantly. These farmers are not totally dependent on government and thus can obtain improved inputs on the open market. They have a far better response potential than very small farmers.

2. More and more food farmers are becoming more commercial than in the past. The team talked with large-scale yam producers who, though modest in every outward appearance, use considerable capital and hire as many as 26 persons for land preparation and weeding of the crops. Other investors have large poultry units.

3. IITA is playing a major role on and off station in Nigeria. This international center assists universities and the agricultural communities; through joint efforts highly promising new varieties of many crops have been released. Hybrid corn farmers, for example, are managing several hundred hectares with high yields when weather is favorable. Currently there is a surplus of maize in Nigeria.

4. Farmers in every village know that they must improve inputs if production is to increase. This is quite a change. If the farmers holding these attitudes would form into strong pressure groups (which they seem angry enough to do), they and the institutions that serve them would benefit.

University Outreach

The need in Nigeria is not for huge amounts of funds, with disasters the exception. The need is for well-placed funds to put idle capacity to productive work. A CRSP in northern Nigeria has been highly successful; a single scientist with modest funds is doing an excellent research job not because the supply of funds is large but because it is reliable.

One can envisage a situation where universities with the capacity to do creditable outreach work would cut their dependence on oil revenue and form a much closer university-farmer alliance of mutual interest and support. By doing so the universities would return to being supported by agriculture and, as part of a team, universities could put much more pressure on the government for the funds needed to serve farmers.

If full reliance on government revenue continues without a constituency such as farmers, universities will be among the first to bear the impact of budget cuts.

APPENDIX E

DATA SHEETS

E1 - Ahmadu Bello University

E2 - University of Ife

E10 - University of Nigeria

AHMADU BELLO UNIVERSITY, ZARIA

FACULTY OF AGRICULTURE

SUMMARY OF TOTAL STUDENT ENROLLMENT - 1985/86 SESSION

	UNDERGRADUATE					POSTGRADUATE									
Discipline	Pre-degree	Year 1	Year 2	Year 3	Year 4	Year 5	1st-year Master's FT*	1st-year Master's PT** Grad. Asst.	1st-year Master's Others	2nd-year Master's FT	2nd-year Master's PT Grad. Asst.	2nd-year Master's Others	Ph.D. Program FT	Ph.D. Program PT Grad. Asst.	Ph.D. Program Others	Total
FAC./AGRICULTURE		110	119	89	67	-	-	-	-	-	-	-	-	-	-	385
Agr. Econ. & Rural Soc.		-	-	-	-	-	5	-	-	37	-	3	2	-	13	60
Agronomy		-	-	-	-	-	9	-	-	27	-	1	-	-	9	46
Animal Science		-	-	-	-	-	3	-	-	14	-	13	2	-	5	37
Crop Protection		-	-	-	-	-	-	-	2	17	-	2	-	-	6	27
Plant Science		-	-	-	-	-	3	-	-	2	-	-	-	-	3	8
Soil Science		-	-	-	-	-	4	-	-	8	-	-	-	-	7	19
FACULTY TOTAL	110	119	89	67	-	24	-	2	105	-	19	4	-	43	582	

* FT - Full-time
** PT - Part-time

AHMADU BELLO UNIVERSITY, ZARIA
FACULTY OF AGRICULTURE

STATISTICS OF FINAL-YEAR STUDENTS BY OPTION FROM 1965-1986

S/NO.	YEAR GRADUATED	NO. OF MALE	NO. OF FEMALE	TOTAL NO. BY OPTION					TOTAL NO. GRADUATED
				1. Agr. Econ. 2. Rural Soc. & Agr. Ext. 3. Animal Sci. 4. Crop Prod./ Protec. 5. Crop Prod./Soil Fertility					
				1	2	3	4	5	
01	1964/65	5	–	–	–	–	–	–	5
02	1965/66	4	–	–	–	–	–	–	4
03	1966/67	10	–	–	–	–	–	–	10
04	1967/68	18	–	–	–	–	–	–	18
05	1968/69	19	–	–	–	–	–	–	19
06	1969/70	28	–	–	–	–	–	–	28
07	1970/71	15	–	–	–	–	–	–	15
08	1971/72	23	–	–	–	–	–	–	23
09	1972/73	10	–	–	–	–	–	–	10
10	1973/74	26	–	–	–	–	–	–	26
11	1974/75	32	–	–	–	–	–	–	32
12	1975/76	50	–	–	–	–	–	–	50
13	1976/77	47	–	–	–	–	–	–	47
14	1977/78	64	–	–	–	–	–	–	64
15	1978/79	68	–	–	–	–	–	–	68
16	1979/80	–	–	–	–	–	–	–	–
17	1980/81	40	5	15	–	4	5	21	45
18	1981/82	50	4	27	5	9	2	11	54
19	1982/83	58	5	16	4	18	17	8	63
20	1983/84	60	2	29	–	8	11	14	62
21	1984/85	70	6	32	3	8	18	15	76
								TOTAL	719

AHMADU BELLO UNIVERSITY, ZARIA

FACULTY OF AGRICULTURE

TEACHING AND RESEARCH STAFF

Highest Degrees Held by Nigerian Staff in the Faculty of Agriculture

Highest Degree Held	1985
B.Sc.	14
M.Sc.	40
Ph.D.	69
Total	123

AHMADU BELLO UNIVERSITY, ZARIA

FACULTY OF AGRICULTURE

Budget for Recurrent Costs[9]

Year	Total Naira[10]
1976	840,890
1977	1,289,450
1978	1,312,800
1979	1,352,400
1980	1,478,932
1981	1,603,894
1982	1,934,102
1983	2,019,254
1984	2,429,692
1985	2,814,822

9 Budget includes salaries, supplies, and equipment for all departments and the dean's office.

10 Actual Naira budget. No adjustment made to place in constant Naira terms. During the period 1976 to 1985 the Naira devalued against the U.S. dollar from approximately U.S. $1.90 =N1.00 to U.S.$1.10 =N1.00 and in 1986 the dollar and the Naira were at par.

UNIVERSITY OF IFE

FACULTY OF AGRICULTURE

Student Enrollment

YEAR	No. of Students
1962/63	8
1963/64	13
1964/65	26
1965/66	39
1966/67	47
1967/68	72
1968/69	114
1969/70	126
1970/71	150
1971/72	211
1972/73	242
1973/74	225
1974/75	236
1975/76	244
1976/77	348
1977/78	480
1978/79	459
1979/80	517
1980/81	563
1981/82	713
1982/83	627
1983/84	723
1984/85	804

UNIVERSITY OF IFE
FACULTY OF AGRICULTURE

Undergraduate Enrollment by Specialization[11]

DEPARTMENT	1980/81		1981/82		1982/83		1983/84		1984/85		1985/86		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Agricultural Economics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77	4	NA	NA
Agricultural Extension and Rural Sociology	4	2	3	2	4	2	13	3	19	3	24	2	67	14
Animal Science	NA	NA	NA	NA	NA	NA	39	8	22	7	44	5	NA	NA
Home Economics (4-year course)	–	–	2	2	0	11	1	14	1	17	4	33	8	77
Plant Science	NA	NA	NA	NA	NA	NA	17	3	8	3	12	5	NA	NA
Soil Science	4	0	10	0	16	2	10	1	6	2	8	1	54	6

11 Undergraduate students have a three-year common program, then one year of practical work followed by a year (5th year) of specialization. Home economics is only a four-year course.

UNIVERSITY OF IFE
FACULTY OF AGRICULTURE

Postgraduate Enrollment

DEPARTMENT	1980/81		1981/82		1982/83		1983/84		1984/85		1985/86		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Agricultural Economics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40	3	NA	NA
Agricultural Extension and Rural Sociology	-	-	2	0	-	-	2	0	2	0	5	2	11	2
Animal Science	4	2	5	3	6	2	7	2	8	1	7	3	37	13
Plant Science	14	0	5	0	1	1	9	1	4	1	4	2	37	5
Soil Science	8	1	1	0	1	0	1	0	3	1	5	0	19	2

UNIVERSITY OF IFE

FACULTY OF AGRICULTURE

Highest Degree Held by Nigerian Staff in the Faculty of Agriculture

Highest Degree Held	1985
B.Sc.	8
M.Sc.	15
Ph.D.	47
TOTAL	70

UNIVERSITY OF IFE

FACULTY OF AGRICULTURE

Budget for Recurrent Costs[12]

Year	Total Naira[13]
1976	767,878
1977	996,392
1978	1,097,623
1979	NA
1980	NA
1981	NA
1982	1,698,233
1983	2,198,344
1984	2,216,846
1985	1,949,386

12 Budget includes salaries, supplies, and equipment for all departments and the dean's office.

13 Actual Naira budget. No adjustment made to place in constant Naira terms. During the period 1976 to 1985 the Naira devalued against the U.S. dollar from approximately U.S. $1.90 =N1.00 to U.S.$1.10 =N1.00 and in 1986 the dollar and the Naira were at par.

UNIVERSITY OF NIGERIA, NSUKKA
FACULTY OF AGRICULTURE

Undergraduate Enrollment by Specialization

DEPARTMENT	1975/76		1976/77		1977/78		1978/79		1979/80		1980/81		1981/82		1982/83		1983/84		1984/85		1985/86	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
+Agricultural Economics Extension	76	4	80	6	100	9	103	8	119	6	150	9	-	-	-	-	-	-	-	-	-	-
Agr. Economics	-	-	-	-	-	-	-	-	-	-	-	-	151	12	181	11	175	13	194	16	142	17
Agr. Extension	-	-	-	-	-	-	-	-	-	-	-	-	47	-	68	-	78	2	90	1	64	1
Animal Science	121	15	100	11	109	19	106	24	106	22	115	15	118	18	119	12	116	5	120	7	73	4
Crop Science	49	1	56	2	73	3	75	5	89	8	114	7	109	9	104	8	106	8	102	8	74	5
++Food and Home Sciences	16	34	24	29	31	42	37	45	48	53	59	65	-	-	-	-	-	-	-	-	-	-
Food Science & Tech.	-	-	-	-	-	-	-	-	-	-	-	-	61	22	75	24	64	30	76	35	87	40
Home Science & Nutri.	-	-	-	-	-	-		-	-	-	-	-	7	39	15	41	15	44	34	17	24	41
Soil Science	53	-	56	1	77	3	72	3	70	5	116	8	98	11	92	12	91	10	84	12	48	9
*General Agr. Programme	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	19
TOTAL	315	54	316	49	390	76	393	85	432	94	554	104	591	111	654	108	645	112	700	96	576	136

+ Split into two departments: agricultural economics and agricultural extension
++ Split into two departments: (i) food science and technology
(ii) home science and nutrition
* This represents the number admitted in 1985/86 session into the five departments that offer a bachelor of agriculture degree: agricultural economics, agricultural extension, animal science, crop science, and soil science.

UNIVERSITY OF NIGERIA, NSUKKA
FACULTY OF AGRICULTURE

Postgraduate Student Enrollment in the Faculty of Agriculture by Sex from 1975/76 to 1985/86 Sessions

DEPARTMENT	1975/76		1976/77		1977/78		1978/79		1979/80		1980/81		1981/82		1982/83		1983/84		1984/85		1985/86	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Agricultural Economics	-	-	1	-	3	-	6	-	10	-	16	-	28	-	33	-	48	1	74	3	99	8
Agricultural Extension	-	-	-	-	-	-	-	-	-	-	-	-	3	2	11	1	18	2	20	3	18	3
Animal Sociology	-	-	-	-	2	-	1	-	2	-	5	-	9	-	14	-	17	-	15	-	14	1
Crop Sociology	-	-	2		3	-	8	-	11	-	12	1	13	1	15	2	25	2	20	-	33	1
Food Science & Tech.	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	5	5	3	6	2	10	4
Home Science & Nutri.	-		-	-	-	-	-	-	-	-	-	-	-	1	-	4	-	13	-	12	-	15
Soil Science	-	-	3	-	9	-	17	-	27	-	36	1	58	10	80	12	110	22	144	21	193	33

UNIVERSITY OF NIGERIA, NSUKKA

FACULTY OF AGRICULTURE

Highest Degree Held by Nigerian Staff in the Faculty of Agriculture for Years Indicated

Highest Degree Held	1974			1982			1985		
	No. in Residence	On Leave	Subtotal	No. in Residence	On Leave	Subtotal	No. in Residence	On Leave	Subtotal
B.Sc.	1	9	10	6	2	8	4	-	4
M.Sc.	6	5	11	6	-	6	3	1	10
Ph.D.	11	5	16	52	2	54	49	6	55
		TOTAL = 37			TOTAL = 68			TOTAL = 69	

UNIVERSITY OF NIGERIA, NSUKKA

FACULTY OF AGRICULTURE

Budget for Recurrent Costs[14]

Year	Total Naira[15]
1976	1,922,681
1977	1,484,660
1978	1,503,707
1979	1,478,860
1980	2,198,909
1981	1,764,490
1982	2,768,490
1983	3,054,262
1984	2,946,711
1985	1,865,807

14 Budget includes salaries, supplies, and equipment for all departments and the dean's office.

15 Actual Naira budget. No adjustment made to place in constant Naira terms. During the period 1976 to 1985 the Naira devalued against the U.S. dollar from approximately U.S. $1.90 =N1.00 to U.S.$1.10 =N1.00 and in 1986 the dollar and the Naira were at par.

APPENDIX F

PERSONS MET

PERSONS MET[16]

Ahmadu Bello University

Prof. G. O. I Abalu	Agricultural Economics and Leader Farming Systems Research Program
Prof. Ango Abdullahi	Vice-Chancellor
Dr. Y. A. Abdullahi	Rural Sociology
Mr. S. S. Abubakar	Extension Irrigation Engineer
Dr. R. M. Agumbiade	Extension Agronomist
Dr. M. K. Ahmed	Agronomy
Dr. O. O. Akerjola	Prof. and Deputy Dean, Veterinary Medicine
Dr. O. A. Ansa	Virologist
Dr. I. O. E. Asenine	Acting Head, Dept. of Agronomy
Dr. M. O. Awogbade	Center for Social and Economic Research
Dr. S. T. Balogun	Extension Veterinarian
Dr. T. F. Bologun	Animal Science
Mr. J. H. Davies	Acting Director, Institute for Agricultural Research
Mrs. V. B. Dummade	Extension Home Economics
Prof. A. C. Ebenebe	Dean, Faculty of Agriculture
Dr. Rachael Egbarerba	Head, Horticulture, Samaree College of Agriculture
Dr. A. N. Ema	Prof. & Head, Department of Veterinary Anatomy
Prof. S. D. Erinle	Crop Protection
Dr. P. G. Eruotor	Plant Breeder
Dr. C. D. Ezeokali	Department of Surgery & Medicine
Mr. Philibon Gabon	Enumerator Dawadawa Project
Mr. Ahmed V. Hassan	Department of Pasture Agronomy, NAPRI
Dr. I. F. Ike	Assistant Dean (PG)
Mr. Alhaji Sarki Julani Jatto	Operator of Crop/Livestock Farm, NAPRI
Prof. O. I. Leleji	Head, Department of Plant Science
Mr. Lawal A. Mahautta	Department of Pasture Agronomy, NAPRI
Dr. S. K. Manzo	Acting Head, Crop Protection Dept.
Dr. I. P. Matheru	Acting Director, Division of Agriculture Colleges

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16 Persons Met is a list of those with whom discussions were held during the study for specific inquiry on the subject of the study. Differing amounts of time were spent with each by the study team members. The report represents the views and conclusions of the study team and should not be attributed to individual persons met. Any omission of names, incorrect spellings, or titles is regretted.

Dr. N. B. Mijindadi	Acting Director, Agricultural Extension and Research Liaison Services
Dr. S. M. Misari	Entomologist
Dr. S. L. Musoke	Lecturer on Farm, Farming Systems
Dr. P. C. Njoku	Lecturer I, Dept. of Animal Science
Dr. C. O. Njoka	Prof. and Head of Dept. of Pathology and Microbiology
Prof. Saka Nuru	Provost for Agriculture and Veterinary Medicine and Director, NAPRI
Dr. N. Nwude	Prof., Dept. of Physiology & Pharmacology
Dr. J. S. Odama	Acting Director, Center for Social and Economic Research
Dr. A. O. Ogungbile	Assist. Dean (Administration) and Agricultural Economics
Dr. R. A. Ogunsusi	Prof. and Head, Dept. of Parasitology and Entomology
Dr. Comfort Olayiwole	Vice Principal, Samaru College of Agriculture
Mr. O. Olu-Audu	Principal, Samaru Agriculture College
Dr. A. O. Olufade	Extension Entomologist AERLS
Dr. J. O. Olukosi	Sr. Lecturer, Agriculture Economics
Dr. Emmanuel O. Otchera	Dept. of Pasture Agronomy, NAPRI
Dr. M. R. Raza	Dept. of Agricultural Economics and Rural Sociology
Dr. E. A. Salako	Extension Agronomist AERLS
Prof. D. I. Saror	Dean, Faculty of Veterinary Medicine
Dr. J. V. Umoh	Senior Lecturer & Acting Head, Dept. Public Health and Preventive Medicine
Dr. N. N. Umunna	Head, Dept. of Animal Science
Prof. J. P. Voh	Head, Dept. of Agricultural Economics and Rural Sociology
Mr. J. O. Yusuf	Extension Publication Specialist AERLS
Dr. Y. Yusuf	Agronomy

Meeting with 32 postgraduate students:

Ag Econ/ Rur Soc		Animal Science		Plant Science		Soil Science		Crop Protec		Agronomy	
M	F	M	F	M	F	M	F	M	F	M	F
1	0	3	0	1	2	6	0	4	1	11	2

Farm visits to Dawadawa
Farm visits to Nazarowa

University of Ife

Prof. Wande Abimbola	Vice-Chancellor
Dr. A. A. Adesimi	Reader in Agricultural Economics

Mr. B. Adesina	Animal Health Superintendent
Dr. Remi Adeyemo	Lecturer I in Agricultural Economics
Prof. E. A. Aduayi	Head, Dept. of Soil Science
Dr. P. O. Aina	Soil Physics
Prof. I. A. Akinbode	Dean, Faculty of Agriculture
Prof. A. E. Akingbohungbe	Head, Dept. of Plant Sciences
Prof. J. A. Alao	Rural Sociology
Dr. E. E. Ekong	Rural Sociology
Dr. Y. L. Fabiyi	Senior Lecturer, Agricultural Economics
Prof. T. Fatunla	Plant Breeding
Mr. F. A. Ganiyu	Candidate for Master's Degree, Agricultural Economics
Prof. M. T. Ige	Head, Dept. of Agricultural Engineering
Prof. J. O. Ilori	Head, Dept. of Animal Science
Mr. O. Kolade	Senior Farm Manager
Prof. J. L. Ladipo	Pathology/Virology
Mrs. Particia A. Ladipo	Home Economics and Village Studies
Prof. O. O. Ladipo	Agricultural Economics
Dr. Laogun	Head, Extension in Dept. of Extension and Rural Sociology
Dr. T. A. Okusani	Soil Classification
Mr. O. O. Olufemi	Candidate for Master's Degree, Agricultural Economics
Dr. Banwo Oluforkumbi	Senior Lecturer, Agricultural Economics
Mr. I. E. Olukayode	Candidate for Master's Degree, Agricultural Economics
Prof. P. T. Onesirosan	Plant Pathology
Prof. S. A. Oni	Head, Dept. of Agricultural Economics
Dr. O. Onwudike	Senior Lecturer, Dept. Animal Science
Mr. S. O. Owalabi	Bursar
Dr. D. O. Oyeyemi	Head of Isoya Project, Dept. of Agricultural Extension and Rural Sociology
Dr. E. B. Sonaiya	Lecturer, Animal Sciences

Special group meetings with students:

Five undergraduate men students from agricultural economics, animal science, and rural sociology departments.

Four postgraduate women students from agricultural economics, animal science, plant science, and rural sociology departments.

Farm and village visits:

Isoya area (combines 9 villages) - Meetings with groups of men and women farmers.
Ede area - Visits to three separate villages - meetings with groups of men and women farmers.

University of Nigeria

Dr. N. N. Agbim	Dept. of Soil Science
Mr. C. Alerum	Agriculture Extension
Dr. E. O. Arera	Rural Sociologist in Agricultural Economics Dept.
Mr. Charles Asadu	Graduate Student in Soils Science
Dr. G. Chibueze	Lecturer, Dept. of Animal Science
Dr. S. A. N. D. Chidebelu	Lecturer, Dept. of Agricultural Economics
Prof. W. O. Enwezor	Dean, Faculty of Agriculture
Mr. Nnenna Enwo	Graduate Student in Soils Science
Prof. F. O. C. Ezedinma	Dept. of Crop Science
Mr. J. O. C. Ezeibe	Administrative Officer II - Veterinary Medicine
Dr. E. C. Shemelandu	Assoc. Dean, Veterinary Medicine
Prof. M. O. Ijere	Head, Center for Rural Development and Cooperatives
Dr. A. I. Ikeme	Lecturer, Food Science Dept.
Prof. Chimere Ikoku	Vice-Chancellor
Dr. J. Mboguou	Dept. of Soil Science
Dr. P. O. Ngoddy	Prof. and Dean of Post Graduate School
Dr. Felix I. Nweke	Dept. of Agricultural Economics
Dr. C. C. Nwosu	Head, Dept. of Animal Science
Dr. F. C. Obioha	Assistant Dean, Faculty of Agriculture and Senior Lecturer
Mr. E. U. Odighoh	Professor of Agricultural Engineering
Mrs. Uche Okafor	Dept. of Home Science and Nutrition
Mrs. E. Chinwe Okeke	Home Science and Nutrition Dept.
Dr. O. Okereke	Head, Dept. of Agricultural Economics
Dr. Aja Okorie	Lecturer I in Agricultural Economics
Mr. A. A. Okoye	Extension Dept.
Mr. C. Olerum	Agricultural Extension
Dr. N. D. Onwuka	Head and Senior Lecturer, Food Sciences Dept.
Dr. A. C. C. Udeogalanya	Dept. of Crop Science
Mr. B. O. Ugwu	Principal Research Officer
Dr. S. Unamba-Opara	Head, Dept. of Soil Science
Dr. Chuku T. Uwaka	Head of Extension
Dr. J. O. Uzo	Head, Dept. of Crop Science

Group meeting with postgraduate students from all departments except extension:

Soil Science		Crop Science		Agri. Economics		Animal Science		Food Sc. Tech.		Home Sc. Nutrition	
M	F	M	F	M	F	M	F	M	F	M	F
1	1	2	0	2	0	0	1	1	1	0	2

Village and farm visits with groups and individuals (men and women farmers)

Okpuji	Atani
Isienu	Umuagwo
Opi	Nkalagu
Yandeve	Obukpa
Zakibiam	Owerri (individual visit in connection with nutrition study.)
Abakaliki	

Others

Ms. Kristin Cashman	Farming System Program, IITA
Mr. Warren Clark	DCM American Embassy, Lagos
Mr. Herbert D. Gelber	Charge A'Affairs American Embassy, Lagos
Dr. Natalie Hahn	Socio-Economist, IITA
Dr. Isharat Hussain	Resident Representative, The World Bank, Lagos
IITA	Numerous staff persons on an informal basis
Ms. Elizabeth MacManus	Represenative, USAID, Lagos

APPENDIX G

NOTES ON THE TEAM MEMBERS

NOTES ON TEAM MEMBERS

Rae Lessor Blumberg is an associate professor of sociology at the University of California, San Diego. Previously, she was an assistant professor at the University of Wisconsin-Madison. All her degrees are from Northwestern University - B.S. in journalism and M.A. and Ph.D. in sociology. Her specialty is the sociology of economic development, an interest that was sparked during her stint as a Peace Corps volunteer in Venezuela. She returned to Caracas, Venezuela, for 2 more years as the resident adviser in sociological research in the Department of Educational Research of the Ministry of Education, associated with a University of Wisconsin-Ford Foundation institution-building project. She has undertaken research-related activities in Peru, Ecuador, Colombia, Guatemala, Honduras, the Dominican Republic, Jamaica, Australia, Israel, Egypt, and Bulgaria. She is the author of Stratification: Socio-economic and Sexual Inequality (Wm. C. Brown, 1978), is completing her second book, Gender Stratification: and Global Development for Praeger, and is the author of over 30 published articles and research monographs and some 70 papers presented at national and international conferences.

William K. Gamble is retired from the position he held for the past 5 years as the founding director general of the International Service for National Agricultural Research (ISNAR). Prior to this assignment he resided 8 years in Nigeria, first for 3 years as representative of the Ford Foundation for West Africa and then for 5 years as director general of the International Institute of Tropical Agriculture (IITA). His 15 years of field experience prior to Nigeria were in Burma, Mexico, Central America and the Caribbean, Colombia, and Venezuela. He has travelled widely in Africa, Asia, and Latin America in his work with the Ford Foundation and as director general of IITA and ISNAR. He holds B.Sc. and M.Sc. degrees from Iowa State University and a Ph.D. degree from Cornell University.

Vernon Johnson is a USAID retiree who, beginning in India in 1957 as agricultrual program assistant, moved to USAID's Africa Bureau in 1959 and remained with that bureau until his retirement at the end of 1979. During the interim he served as agricultural economist in USAID/Nigeria, as agricultural officer in charge of USAID's agricultural program in western Nigeria, as deputy director of USAID's agricultural office in the Africa Bureau (1964-1966), as trainee at the National War College, Ft. Nair, Washington; as deputy director of USAID/Nigeria (1968-70), as director for USAID/Uganda and USAID/Tanzania, respectively, and finally as deputy chief assistant secretary in the Africa Bureau, Department of State.

Upon retirement in 1979 Johnson was employed by Office of International Cooperation and Development of the United States Department of Agriculture and subsequently by International Programs, College of Agriculture, College Park, Maryland. Under this employment he was seconded to the Agricultural Office of AID's Africa Bureau. He departed that work December 31, 1985.

Ned S. Raun is the regional representative in Washington for the Winrock International Institute for Agricultural Development. Previously he was acting president and vice-president for programs of the former Winrock International Livestock Research and Training Center. He served in Latin America for 14 years as a Rockfeller Foundation staff member assigned to the Instituto Nacional de Investigaciones Pecuarias in Mexico, the Instituto Colombiano Agropecuario in Colombia, and to the Centro Internacional de Agricultura Tropical in Colombia. He has provided short-term technical assistance in 20 countries. He served in the Development Support Bureau of USAID and in the Animal Science Department of Oklahoma State University. He has a Ph.D. in animal nutrition from Iowa State University and a B.Sc. in animal science from the University of Nebraska.

APPENDIX H

BIBLIOGRAPHY OF MATERIAL CONSULTED

BIBLIOGRAPHY OF MATERIAL CONSULTED

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