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CONFIDENTIAL

**DEPARTMENT OF STATE
BUREAU OF INTERNATIONAL INFORMATION
MANAGEMENT, Rm. 6202**

INTERNAL SECURITY CASE

**Request and Recommendations
for the Review of the
Development Case Function**

SECRET - INTERNAL SECURITY INFORMATION

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CONFIDENTIAL

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

UNCLASSIFIED

AID-DLC/1-1006

March 20, 1972

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Nigeria - Ahmadu Bello University

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$7,000,000 to the Federal Military Government of Nigeria to finance the foreign exchange and local currency costs for expansion of the Faculties of Agriculture and Veterinary Medicine of Ahmadu Bello University, including construction of new facilities, purchase of equipment and the provision of certain technical assistance.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee at a meeting on Friday, March 24, 1972.

Rachel H. Agee
Secretary
Development Loan Committee

Attachments:
Summary and Recommendations
Project Analysis
ANNEXES I-VI

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NIGERIA - Ahmadu Bello University Faculties of Agriculture and Veterinary
Medicine

SUMMARY AND RECOMMENDATIONS

1. BORROWER: The Federal Military Government of the Republic of Nigeria (FMG)
2. AMOUNT OF LOAN: \$7.0 million
3. TERMS: To the FMG
 - A. Interest - 2% per annum for the first ten years, 3% per annum thereafter.
 - B. Maturity - 40 years including a ten-year grace period.
 - C. Currency - Interest and principal payable in U.S. dollars.
4. TOTAL COST OF PROJECT:

A.I.D. Contribution	\$7,000,000
FMG Contribution	<u>2,442,000</u>
Total Project Cost	\$9,442,000
5. DESCRIPTION OF PROJECT: The project consists of the construction and equipping of facilities required for teaching, administration, and research, and housing for students and staff for the faculties of Agriculture and Veterinary Medicine at Ahmadu Bello University, Zaria, North-Central State, Nigeria.
6. BACKGROUND: Ahmadu Bello University, the only university in Northern Nigeria, was established in Zaria in 1962. The University is without adequate facilities for Agriculture and Veterinary Medicine training. Kansas State University (KSU), under grant financing by A.I.D., prepared an Education Requirements Analysis for these facilities. A formal application for a loan to implement the KSU recommendations was presented to A.I.D. by the Nigerian Government in October 1966. However, implementation was delayed by the intervening civil war, and it was not until March 1970 that activity was resumed on the Nigerian Government's request.
7. PURPOSE OF THE LOAN: The loan will finance the foreign exchange costs and a portion of the local costs of the project.

8. EXPORT-IMPORT BANK CLEARANCE: Originally obtained April 15, 1966. Re-cleared February 3, 1972.
9. COUNTRY TEAM VIEW: The project is strongly supported by the Country Team as a major contribution to the agriculture and education sectors.
10. STATUTORY CRITERIA: Satisfied. See Annex I
11. ISSUES: None
12. RECOMMENDATION: Authorization of a Development Loan to the FMG of an amount not to exceed \$7,000,000 to finance the foreign exchange and a portion of the local costs in accordance with the draft authorization attached as Annex VII.

CAPITAL ASSISTANCE COMMITTEE:

	<u>USAID</u>	<u>AFR/CDF</u>
Capital Development Officer:	R.J. Berg/APatrick	L.M. Marshall
Engineer:	A.L. Pitcher	J.L. Sloan
Counsel:	J.R. Clyne	M. Kitay
Desk Officer:		J. Wilson

I. THE PROJECT

A. Definition of the Project

The objective of the Project is to facilitate expansion of the student enrollments from the current 202 to the projected 502 in the Faculties of Agriculture and Veterinary Medicine at Ahmadu Bello University (ABU) in Northern Nigeria, and to permit related expansion and upgrading of classroom, laboratory and research facilities.

The total project includes plant and equipment for both teaching and research purposes as well as housing for staff and students. The Project will provide 167,740 sq. ft. of new structures and expansion of certain existing offices, laboratories, and auxiliary structures. Equipment for classrooms, laboratories, and research offices is also included. Technical services of quantity surveying and equipment procurement will also be financed under the Loan to supplement those services currently financed under the A.I.D. grant funded KSU contract and the assistance of other donors. The specific Project components are discussed in further detail in Requirement Analysis.

The improved plant as proposed in this project will meet the principal needs of the Faculties of Agriculture and Veterinary Medicine for many years to come. The new plant will allow greater flexibility in curriculum planning, and will provide much greater capability for broader research activities by both faculty and students. Additionally, the new facilities will permit the effective use of ABU for regional research and educational programs.

B. Need to Which the Project is Directed

Agriculture and livestock production and health, is of paramount importance to Nigeria, and particularly to Northern Nigeria. In 1970, agriculture (including forestry, fisheries) and livestock constituted about fifty per cent of Nigeria's gross domestic product. Some ninety per cent of the nation's non-petroleum exports come from its tree and field crops, of which groundnuts and cotton are dominant in the Northern States. It is also estimated that about eighty-five percent of Northern Nigeria's more than 39 million people are engaged in subsistence and commercial agriculture. (The same is true for 70% of the national population). Over two-thirds of the nation's meat supply is produced in the Northern States. It is an imperative of economic planning and development in Nigeria that the growing population of the North become more effectively employed in the agricultural sector, both to reduce the influx of the rural population to the nation's cities and to meet the food needs of the country. An annual deficit in meat production on the order of 200,000 metric tons has been projected for Nigeria by 1980¹, and the National Development Plan recognizes that a major effort

1

"Supplying Middle West Africa with Meat": FAC 1968 (Fonds d'Aide et de Cooperation)

is needed to assure that supplies of food crops keep pace with growth of population and urbanization.²

The Government of Nigeria has given high priority in its National Development Plan to agriculture and education. Among the 16 categories of public investment, only transport is to be allocated more financial resources than agriculture or education. "Federal Government allocation for the development of the University is to tune of \$71.4 million. The Northern States' contribution to the development of ABU will amount of \$14.4 million during the Plan period."³ However, in the Northern States, in which agriculture plays so dominant a role, and whose agricultural produce is so important to the National economy, agricultural and veterinary graduates are fewer in number and are being augmented at a lesser rate in comparison to need than elsewhere in the nation. This severely hampers efforts to up-grade agricultural practices and institute new programs in the North. The present lack of physical facilities is an acknowledged constraint in meeting the national and regional needs of adequately trained agriculturalists and veterinarians.

The proposed project will make possible a significant increase in the number and diversity of agricultural and veterinary students at Ahmadu Bello University, thereby increasing substantially the annual flow of graduates to meet the needs of the six states of the North. Analysis of the projected requirements for trained personnel in these fields appears in Section II.B.

The Project will also permit expansion of research activities in important phases of veterinary medicine as well as in plant science, soil science, animal science, and agricultural engineering. This is of critical importance. Agricultural productivity in West Africa is extremely low by any standard. Improved agricultural productivity is a pre-requisite for improvement of living standards, and depends upon development of new techniques being applied to local needs.⁴

C. Background

1. Northern Nigeria

Northern Nigeria is composed of six states in the Federal Republic of Nigeria and is a large territory of 277,000 square miles. From the semi-desert northern provinces it stretches south for 770 miles through zones of increasing rainfall to the northern boundaries of the six southern coastal states. It has a climate of sharply contrasting wet and dry seasons and the dominant vegetation is of the savanna type. By African standards it is densely populated with approximately 39 million inhabitants.

² "Second National Development Plan 1970-74" (1970), p. 107

³ *id.* p. 239

⁴ "Planning for the Green Revolution in Africa", by Dr. D. Aresvik (Ford Foundation), Sept. 1971

Agriculture is the main industry of the region and the wealth of northern Nigeria is derived largely from the exports of groundnuts, and cotton. Other crops of major domestic importance are guinea corn (sorghum), millet, cowpeas and vegetables which form the staple diet of the population. In addition to crop production, large numbers of cattle, sheep, and goats are kept, skins and hides being of considerable importance as items of export.

Zaria is one of the main centres of education in northern Nigeria. It lies in the middle of North Central State, some 50 miles north of Kaduna, the state capital, and 110 miles south of Kano, a major commercial center. It lies on the main road and railway line from Lagos, the Federal capital, to Kaduna and Kano. Zaria is an old walled city of some 85,000 inhabitants, and is the administrative headquarters of the province that bears its name.

2. Faculty of Agriculture

In 1960, the Ashby Commission Reports⁶, a comprehensive and highly regarded survey of education requirements in Nigeria, stated that "the flow of agricultural graduates was pitifully inadequate for the Nation's needs." The Commission recommended that a Faculty of Agriculture be established in the former Northern Region and that a working relationship be developed between the University and non-degree schools and extension services operating in the Northern Region.

ABU was established in 1962 to meet the then recognized need that Nigeria, and particularly Northern Nigeria, required additional University graduates to fill top level administrative and management positions. A Faculty of Agriculture was inaugurated during the 1962-63 academic year with an initial enrollment of six undergraduate students. This Faculty, since 1964, has been the beneficiary of an A.I.D. grant funded technical assistance contract with Kansas State University (KSU), under which KSU has provided expatriate professors, administrators participant training in the U.S. for prospective Nigerian faculty members, and assistance in planning curricula, research programs, coordination of teaching, research and extension operations. The 1971/72 enrollment of the Faculty of Agriculture has grown to 74 students. It is desired to raise this to a total enrollment of 268 by 1979-80.

⁵ "Nigeria now has a population of about 10 million cattle, 25 million sheep and goats and 60 million poultry..." Alhaji Aminu Salihu, PermSec., North Central State Ministry of Agriculture and Natural Resource- The Daily Sketch, 14 September, 1971

⁶ Investment in Education, prepared by a Commission of British, American and Nigerian educators, lead by Sir Eric Ashby, "Ashby Commission," for Federal Ministry of Education, September 2, 1960.

In recent discussions, Dr. Bukar Shaib, Permanent Secretary of the Federal Ministry of Agriculture and Natural Resources, said that overcrowding in ABU's agriculture and veterinary medicine classes is a definite constraint on the number and quality of the graduates. Dr. Embert H. Coles, KSU Chief-of-Party and Dean of ABU's Faculty of Veterinary Medicine said that presently the limited staff and physical facilities are taxed to the maximum effective use, and that any increase in enrollment (in the Vet. Med. Faculty) will force an undesirable double-shift evening use of staff and facilities and very likely a triple-shift in the near term.

The law creating ABU not only established a Faculty of Agriculture, but also decreed that the University should have a semi-autonomous research institute, the former research division of the Northern Nigerian Ministry of Agriculture. In October 1962, that research division was taken over by the University under the title of Institute of Agricultural Research (IAR).

In 1963, a Research Liason Section (now the Extension Research Liason Service-ERLS) was established within the Northern Regional Ministries' Agricultural Services Divisions, and relaying problems back to the researchers. At present it also produces and distributes agricultural extension information materials and runs training programs for extension personnel in using these materials. It also provides specialized subject matter backstopping to the Ministries (in agricultural engineering, irrigation agronomy, livestock, poultry, entomology, etc.) and supervises specialized short term training courses for state extension personnel.

ERLS, together with three non-degree field schools of ABU in the North, train virtually all of the North's agricultural extension workers. Thus, ABU provides the complete package of research, agricultural degree candidates, training for agricultural extension and coordination and dissemination of new agricultural programs and practices.

3. Faculty of Veterinary Medicine

In March 1965, the KSU team undertook a Requirements Analysis of the need for graduates in veterinary medicine, and the need for additional physical facilities to achieve the needed increase in enrollments and graduates. Based upon the findings, the Faculty of Veterinary Medicine was launched in October 1965 with a class of 15 students (11 pre-vet and 4 veterinary medicine). The 1971-72 enrollment for the DVM degree course is 128. The project will permit an expansion to the planned ultimate level of 234 students by 1977-78.

There has been a marked increase in the demand for trained veterinary service personnel to staff the expanded programs in livestock production, education, research and preventive medicine programs that have

emerged in recent years, especially following the war. In order to meet this increased demand, it is apparent that expanded facilities will be required to produce not only more vets but vets better prepared to operate effectively in the Nigerian environment. To address this problem the staff of the Faculty has been actively engaged in re-organizing the teaching program to assure that emphasis is placed principally on the most urgent needs of Nigeria, i.e., animal production and health, and preventive medicine.

With the shifting of responsibility for most livestock services to the six Northern States, there has been a marked increase in the demand for trained veterinary service personnel to provide both administrative/management and technical services for these departments. The Federal Livestock and Meat Authority and the Federal Department of Veterinary Research also employ a substantial number of veterinarians. Veterinary medicine is an attractive profession and ABU has favorable prospects for increasing its enrollment. Emphasis in the veterinary medicine program is upon increasing the quality of education and upon expanding animal disease research activities at ABU. Recently the Faculty of Veterinary Medicine has shown increasing interest in broadening the curriculum to include more training in subjects such as animal husbandry, nutrition and breeding, which would better equip the student for working under West African conditions.

4. Development of the Project

KSU's phased plan for expanding the facilities of the two faculties⁷ was endorsed by ABU, the National Universities Commission and the Government of Nigeria. A loan application was submitted to A.I.D. in October 1966. Since that time, both of the University's quinquennial capital budgets have relied upon the assumption that A.I.D. would finance the cost of constructing the facilities. In early 1967, the Project was advertised to solicit the interest of architectural/engineering firms. Selection of a firm to do the schematic design was suspended due to the political situation in Nigeria, in 1967.

Subsequently, negotiations were resumed with the selected architect/engineer, the U.S. firm of Nostrand-Horner (NH). On November 17, 1969, NH signed a contract with ABU for \$50,400 which was largely financed from an AID grant. NH proceeded to perform schematic design services for the space requirements identified in KSU's 1965 requirements analysis, which were completed with the submission of its report in March 1970. ABU and AID found the preliminary report acceptable. A new architectural engineering firm, Dalton-Dalton-Little-Newport (DDLN) of Cleveland, Ohio, was selected to perform final design, quantity survey and supervisory services. ABU signed a contract with DDLN on October 6, 1971. The contract is being financed from an AID grant of \$313,000 and a contribution from ABU of \$23,000. First-phase (field work) of final design commenced on November 22, 1971.

⁷ Contained in their Education Requirements Analysis, October 1965

An experienced veterinary-education expert, Dr. H.L. Stoddard, was hired by A.I.D. to evaluate AID's Project 817 (Kansas State University's contract "to assist in the establishment of a Faculty of Veterinary Medicine"). He spent one month traveling in Nigeria, interviewing key veterinarians, V.M. students, projects, ministries, etc. in an effort to evaluate the effectiveness of the Vet. Med. Faculty programs in meeting the animal health and related problems in Nigeria. In his draft report⁸ he indicated that "a consensus among professionals" had estimated the present need for veterinarians at 600⁹ versus the existing 189. His own estimation of future needs by 1980 was a total of 1,000 to 1,200 for all of English-speaking West Africa.

D. Place of the Project in the FMG Educational Program and in the National Development Plan

The educational and research objectives of the Project have a high priority under the FMG's Development Plan, and are particularly well adapted to the needs of the North. The Project will provide the physical plant which will permit ABU to meet its full projected requirements for enrollment in the Faculties of Agriculture and Veterinary Medicine; to permit some diversification in curriculum with room for specialization; to broaden research efforts; and to further the application of research activities into practical operating procedures coordinated dissemination of information.

The expansion of trained manpower resources for agriculture and livestock activities is of great importance. Continuation and expansion of the IAR agricultural research program is a well established priority for the North. The marked improvement which will result in the scope and quality of animal health and production research, conducted by the Faculty of Veterinary Medicine, will be a critical achievement, given the large projected deficits in meat, and the need to increase efficient utilization of available forage and water resources by the existing livestock population. Improvement in livestock disease research is fully justified by the needs of Northern Nigeria, but is also expected to prove to be a valuable contribution to Africa-wide research efforts to combat livestock diseases.

E. Place of the Project in AID's Economic Assistance Strategy for Nigeria

The Project is entirely consistent with AID's program in Nigeria. Two principal goals of AID's development assistance program are: 1) to improve Nigerian education in each major sub-sector of education to assure that Nigerian education keeps pace with the qualitative and quantitative manpower requirements of her developing economy; and 2) to help Nigerian manpower and institutions which will enable Nigerians to plan

⁸November 17, 1971

⁹Not including the African International and Regional demands.

their own agricultural development programs. The project directly supports realization of these goals.

AID commitment in support of ABU as a major vehicle for assisting the development of Nigerian agricultural development programs was initiated in 1962 as part of the AID commitment made in 1961 to provide £ 80 million to support Nigeria's six year Development Plan. Since that time, technical assistance grants funding U.S. university contracts to strengthen the Faculties of Agriculture and Veterinary Medicine have totaled nearly \$7 million. The proposed loan investment in the physical plant will maximize the extensive AID technical assistance efforts to date and planned for the future and permit more effective development of manpower skills needed for management and administration of agricultural and livestock programs in Northern Nigeria.

Additionally, the expanded facilities will further enhance the role of ABU as a national university, which will help de-emphasize provincial and tribal sectionalization that impedes a sense of national unity and identity. Concurrent with expanding the influence of the Federal Government, ABU, as a major institution serving English-speaking West Africa, will strengthen Nigeria's position of leadership in this area south of the Sahara.

Although Nigeria has made steady improvement in her financial condition, this loan proposes important local cost financing. This stems from a long standing A.I.D. involvement with the construction project. AID established the policy of financing 80% of the costs of Loan projects under the Commitment mentioned above, including the necessary local cost financing. AID mission Directors and senior AID/W personnel have reiterated to the FMG on several occasions both prior to and following the civil war that AID would follow through with our planned assistance to the ABU construction project. Based on ABU's understanding with A.I.D., the University has budgeted for the construction of these facilities with major A.I.D. assistance. (See Section II.D.1.) These understandings have also been included in the FMG's budget process for assistance to the nation's universities. This is the last project for Nigeria under which AID will finance local costs. With this loan, the U.S. discharges the only remaining unfulfilled commitment to the FMG made prior to the civil war.

F. Borrower and Beneficiary

The Borrower will be the Federal Military Government of Nigeria (FMG). All eligible items financed under the loan will be transferred to the University as a grant from the FMG. ABU will be the executing agency of the project. Under its Estates Management Department, the University has and is carrying out a variety of capital expansion, financed both internally and by other donors. The Department also is responsible for the physical maintenance of the campus. Departmental personnel include architects, engineers, administrators and skilled artisans. All project contracts shall be entered into with the University. USAID has observed that the University contracting procedures are prudent and professional. It is the Mission's judgment that the University is fully capable of administering the project. The Mission Director's GLL (c) certification is attached.

II. EVALUATION

A. National Development Plan 1970-74

The 1970-74 Plan was launched in November, 1970. A major target was to increase the average annual rate of growth of the economy from its pre-war level of 4.7 per cent to 7.1 percent from 1969/70 to 1973/73. (In fact, it is now estimated that the economy grew approximately 10 per cent annually from 1969 to 1971).

The Plan projected total investment for the four years of ₦1,596 million (\$4.5 billion), with approximately one-half being private sector investment and one-half public sector investment.

Agriculture (including livestock) is allocated 13 per cent of public investment. The Plan calls agriculture the "mainstay" of the economy, and lists as objectives of agricultural policy: the ensuring of domestic food supplies, the expansion of agricultural exports, the provision of inputs to industry, the creation of rural employment opportunities, and the development of institutional and administrative structures for agricultural development.

Education is allocated 16 per cent of public investment (and very large shares of State recurrent Budgets). The Plan identifies as major problems: low level of enrollments generally, North-South regional imbalances, qualitative defects in curricular, and shortages of competent teachers.

B. Requirements Analysis

1. Agriculture and Vet. Med. Curricula and Relation to Sector Priorities

The Faculty of Agriculture curriculum focuses upon the training of students for staff positions in Nigerian agriculture. The curriculum is a broad, largely unspecialized one that is aimed to equip the graduates to help with the improvement of agricultural production. It is expected that for the time being most graduates will enter state governmental ministries of agriculture and will be required to assist mainly in administration and planning of extension programs.

The Faculty of Agriculture is organized with a three year curriculum, although a preliminary year is available for those who have general academic deficiencies. This preliminary year program is of critical importance because of the very limited number of students completing the sixth form in Northern schools. A general agricultural curriculum is stressed but limited options are available for specialization in the last year of the program. Plans are also now being formulated which will lead to the establishment of a complete and approved department of Agricultural Engineering by 1975/76.

IAA's activities focus upon improving agricultural output both by increasing quantity and quality. This involves studies for increasing production of crop and livestock products, better storage techniques, better marketing arrangements, etc. Most phases of production and storage are studied. Their Rural Economic Research Unit has begun investigating the economic behavior of the northern small farmer, particularly the rationale behind intercropping. The state governments, through such institutions as cropping conferences regularly request the IAA doing research work on the problems facing the State Ministries of Agriculture.

For the livestock sector, the Faculty of Veterinary Medicine channels all its resources into addressing the identified priorities of the Nigerian veterinary community. Of the highest priority is the production of doctors of Veterinary Medicine (DVM), who through specialized training are particularly well adapted to work in the Nigerian setting. Following graduation, about 90% of the Nigerian graduates will be employed by the Federal and State Governments whose main concern is attacking the problem of the rapidly growing deficit in the animal protein supply. In covering this need, the graduates will be attempting to increase the productivity of the livestock community through improved husbandry systems, husbandry and disease control. The remaining 10% of the graduates are expected to either continue their education in anticipation of assuming a senior faculty staff position or to enter private industry.

At the present time, the curriculum is undergoing a complete review to insure its relevancy to Nigerian conditions. The recommendations of two recent AIC staff reports on this subject are being implemented which will increase emphasis on animal health and production and preventive medicine. In recognition of the needs of veterinarians for broad training in all phases of animal production, however, basic veterinary courses are being retained. While presently the course of study is divided into one year of pre-vet and four years of veterinary medicine, it is anticipated that this system will be replaced by a five year vet course leading to a DVM degree in 1977.

Instead of just producing DVM's, the Faculty of Veterinary Medicine will be playing an increasingly important role both through its research efforts and through its diagnostic and treatment service functions. At present there is limited knowledge, at best, of even some of the more basic facts concerning animal diseases in Nigeria. With the proposed expansion of the present facilities, the Faculty will have enough increased capacity to make a substantial research effort in this area. Recognizing the need for development of cooperative research projects, it is planned that some research projects will be jointly undertaken with other facilities as well as institutions outside the University, i.e., Federal Department of Veterinary Research at Vom. In addition to research, the Faculty will be equipped to provide the necessary working community with essential continuing education programs designed to maintain the effectiveness of practicing vets in a situation where the conditions are rapidly changing.

USAID has concluded that the curriculum of the two faculties relates well to the sectoral priorities established by the IAG. Particular

recent attention has been focused on an analysis of the veterinary medicine curriculum. A high level consultant, Dr. H.L. Stoddard, was put under contract by AID/W to review the ABU Vet Med Program. His conclusion (draft report dated November 17, 1971) is that the Vet Med program "is responding positively to the animal production and health needs as well as the public health needs of Nigeria and Africa."

The curriculum is directed by conscientious professionals who regularly review it for relevancy. Some changes are known to be planned, others surely will take place over the life of the planned facilities; for this reason the facilities are being designed to permit flexibility of use and change of function.

2. Manpower Requirements in Agriculture and Veterinary Medicine

a. Agriculture

Since 1960 various commissions and study groups have made estimates of the required number of graduate agriculturalists, and have made recommendations concerning the need for expansion of university training programs.

The FAO report (Agricultural Development in Nigeria 1965-1980), on the basis of assumptions concerning the number of farm families and the required size of the agricultural extension staff, estimated the requirements for specialist and senior supervisory personnel in the northern states to be 1,113 in 1979/80. The report then compared the "requirement" with the prospective output of ABU, and concluded that with an output of 30 - 40 graduates per year the target could not be attained. The FAO report recommended that enrollment at ABU "should be raised to a minimum of 220-240 by 1972/73" so that annual output of graduates could reach 50-60.

A CSNRD* analysis by James S. Long ("Analysis of the Needs and Resources for University Education in Agriculture in Nigeria"--- CSNRD // 28) made "high" and "low" projections of the "manpower requirements" in agriculture in 1985. Long estimated that required annual intake of new graduates in the northern states in 1985 would be between 67 to 120. He concluded that the northern states' manpower requirements in agriculture will likely exceed the present capacity of ABU. He recommended that "present plans to expand ABU's agricultural faculty to produce 70 first-degree graduates annually be implemented."

*Consortium for the Study of Nigerian Rural Development

b. Veterinary Medicine

Estimates of requirements in veterinary medicine vary widely. The FAO report cited two estimates. The first estimate (no date given), based on an assumed ratio of veterinarians to livestock, was that Nigeria required 389 veterinarians. The second estimate (made at end of 1963) was that Nigeria required 150-200 professional veterinarians "now and in the near future." Long estimated that by 1985 Nigeria would require an annual intake of 20-36 veterinarians (northern states 14-26 veterinarians).

Dr. H. L. Stoddard, the A.I.D. consultant who studied the ABU program in late 1971, spent a considerable amount of time interviewing leading agricultural planners and governmental officials in an attempt to determine the national requirement for DVM's, and whether ABU's program of expansion was consistent with those needs. Stoddard estimated that between 1,000 to 1,200 DVM's would be required by 1980 in English-speaking West Africa.

Dr. Stoddard fully supported ABU's expansion as being on target in helping to meet the national needs for DVM's.

3. Projected Agriculture and Veterinary Medicine Student Expansion at ABU

The Northern States have a great and growing need for agricultural degree graduates.

ABU, conscious of the important role it has to play in addressing this need, is moving ahead on several levels to insure that the University will be regularly provided with students for the Faculty of Agriculture.

First, ABU is assisting the secondary school system in improving the science curriculum which would increase the available number of qualified entrants to the University. The School of Basic Studies established by ABU in 1970 will also aid in increased student enrollment in October 1972.

Second, the Faculty of Agriculture has launched an active recruitment program with the secondary schools throughout Northern Nigeria. This program, although relatively new, has already proven its effectiveness by almost doubling enrollment in the freshman class from 17 in 1970/71 to 30 in 1971/72. We have every reason to believe that this program will continue to be as successful in the future as it has been to date.

Finally, the University is giving considerable thought to increasing its scholarship programs for qualified students.

a. Faculty of Agriculture

The 1970/71 enrollment in the Faculty of Agriculture was 59 under-graduates students. In 1971/72 enrollment in the first year class has nearly doubled in size. ABU has projected enrollment of the total Faculty of Agriculture undergraduates and graduates to rise to 119 by 1974/75, and to 268 by 1979/80. As explained in the footnote to the table below, Faculty of Agriculture facilities will also serve the annual equivalent of 34 full time veterinary medicine students during this period.

The following is the projected expansion of student enrollment for ABU and for the Faculty of Agriculture through 1979-80.

Projected Enrollment, Faculty of Agriculture

<u>Undergraduates</u>	<u>71/72</u>	<u>72/73</u>	<u>73/74</u>	<u>74/75</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
	<u>Actual</u>								
First Year	30	30	40	40	60	75	84	84	84
Second Year	14	28	28	37	37	56	70	78	78
Third Year	22	12	27	27	35	35	54	66	74
Fourth Year (Ag Engineering)					5	7	10	10	10
Graduate Students	8	10	12	15	15	18	20	22	22
TOTAL*	74	80	107	119	152	191	238	260	268

*The above table does not show the load on Faculty of Agriculture facilities and staff as a result of their also serving veterinary medicine students beginning 72/73. Vet. Med. students will have about 15% of their five year courses in the Fac. Agr. classrooms and laboratories. This means that, from 72/73 onwards, these facilities will serve an annual equivalent of 34 students per year over and above the enrollments projected above.

b. Faculty of Veterinary Medicine

The Faculty of Veterinary is not experiencing the same enrollment difficulties as the Faculty of Agriculture. For the academic year 1971/72, the Faculty received 75 applications from qualified secondary school graduates of whom 20 were accepted for admission. An additional 10 new students transferred from the Basic Studies Course at ABU. The remaining qualified applicants had to be turned away for lack of space.

Assuring the projected enrollment in the Faculty of Veterinary Medicine will depend upon some of the same factors as for the Faculty of Agriculture: entrance requirements which will permit entry of the planned number of students, sufficient scholarship funds to finance the education of most of the student body, and perhaps, the establishment of quotas for colleges graduating eligible veterinary students. It appears likely that the enrollment goals for the Faculty of Veterinary Medicine will be realized.

Actual and Projected enrollments in the Faculty of Veterinary Medicine are more favorable and are expected to reach the desired student level of 234 by 1977/78.

A level of 45 graduates per year for the Faculty of Veterinary Medicine is projected following 1977/78. ABU expects enrollments to grow as follows:

Projected Enrollment in the Faculty of
Veterinary Medicine 1971/72 Through 1979/80 Sessions

Year	71/72 <u>Actual</u>	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80
Pre-Vet.	30	30	50+	50	50	50	50	50	50
DVM I	28	29	29	48	48	48	48	48	48
DVM II	26	27	27	28	46	46	46	46	46
DVM III	20	25	26	26	27	45	45	45	45
DVM IV	<u>24</u>	<u>20</u>	<u>25</u>	<u>26</u>	<u>26</u>	<u>27</u>	<u>45</u>	<u>45</u>	<u>45</u>
TOTAL	128	131	157	178	197	216	234	234	234

The increase in pre-veterinary students during this session is based on the assumption that the new physical facilities will be completed and ready for occupancy by students in the DVM I year by the beginning of the 1974/75 session.

4. Staff Requirements

A. Faculty of Veterinary Medicine

KSU's 1965 Education Requirements Analysis (ERA) recommended a teaching staff/student ratio (SSR) of 1:5 and this is what is proposed for the Faculty of Veterinary Medicine. This ratio is a standard for professional schools.

ABU's requirements specify that teaching staffs divide their time equally between instructional and research activities. With the projected 1979/80 staff/student complement of 43 and 234 respectively, the Faculty of Veterinary Medicine will have an effective teaching SSR of 1:10. In addition to their teaching and research duties, many faculty members have job-related, administrative responsibilities while others perform diagnostic and analysis services. Actual computable teaching ratio will probably net out on the order of 1:12 when the Veterinary Medicine program is fully established.

The projected faculty expansion is as follows:

Ten-Year Staff Pattern - Faculty of Veterinary Medicine

	<u>70/71</u>	<u>71/72</u>	<u>72/73</u>	<u>73/74</u>	<u>74/75</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
KSU/AID	9	9	9	9	7	5	5	5	2	1
ABU STAFF	14	14	14	20	23	25	30	35	40	40
Other	<u>2</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
TOTAL	25	27	27	33	33	32	37	42	44	43

B. Faculty of Agriculture

The Faculty of Agriculture is now organized into six departments: Animal Science, Agricultural Economics, Agronomy, Crop Production, Plant Science, and Soil Science. Staffing patterns for the Faculty of Agriculture/I.A.R. (teaching man years and research man years) are given in the following table, through 1977/78 when full Nigerianization of teaching staff is projected.

KSU's Requirements Analysis recommends teaching staff/student ratio of 1:13. Projected 1979/80 staff of 38.7 and 268 students gives a SSR of 1:6 which equates with teaching ratio of 1:12. Teaching faculty spends one-half time in research activities pursuant to University Guidelines that require teaching staff divide time equally between teaching and research. In addition, several Agriculture faculty members will have significant administrative responsibilities. Consequently, equivalent teaching staff ratio will approximate 1:15.

Faculty of Agriculture

Distribution of Manpower in Teaching and Research

<u>Year</u>	<u>KSU/AID</u>	<u>Expatriate</u>	<u>Nigerian</u>	<u>Aid</u> (IAR-Major cereals people only)	<u>Total</u>
Teaching - man years					
68/69	4	3.3	1.5	---	8.8
69	4	3.8	2.0	---	
70	5.8	10.8	3.5	---	20.1
71	5.8	11.0	6.0	---	22.8
72	3.2	11.0	9.5	---	23.7
73	3.2	9.5	14.0	---	26.7
74*		12.7	18.5	---	33.2
75		11.7	23.0	---	34.7
76		9.7	26.0	---	35.7
77		8.7	30.0	---	38.7**
Research - man years					
68/69	1	57.7	12.5	4.0	75.2
69	1	62.7	19.5	4.0	87.2
70	1.2	62.0	31.5	5.0	99.7
71	1.2	63.5	43.5	5.0	113.2
72	.8	63.0	54.5	5.0	123.3
73		62.8	58.0	5.0	125.8
74		59.8	63.0		122.8
76		55.1	68.0		123.1
77		50.1	74.0		124.1

*KSU/AID assistance to Faculty of Agriculture will phase out at end of 73/74.
 **Anticipate this staff level will maintain to 1979/80.

5. Student and Staff Housing Requirements

Construction of housing to meet the increased student and staff expansion in the subject two facilities, forms a major portion of ABU's contribution to this project.

A.I.D. has looked with particular care at the University's plans for housing with two objectives in mind: (1) to assure reasonably adequate plans exist to house students who are to use projected A.I.D. financed facilities, and (2) as basis for calculating reasonable FMG financial contribution to overall project.

A. Student Housing

It is the University's policy to provide for all students who need housing and ABU's planning assumes that 15-20% of all students live off campus. The University has an ambitious five year plan running through 1975-76, which calls for construction of 3,000 housing units. One thousand units are now under construction and will be completed in January 1973. An additional 1,000 units will be contracted for with completion scheduled for 1974. The final 1000 units will be completed in 1976. While detailed plans for construction of student housing beyond 1976 have not yet been made, ABU officials have demonstrated their determination to improve housing so that available facilities will meet established university standards.

Costs of the housing construction mentioned above is estimated at \$3,417,000 for the 1000 units under contract and \$3,750,000 for the 1000 units to be completed in 1974.

ABU, like most U.S. universities, is firmly against assigning housing to specific faculties, but A.I.D. has been assured that enrollment projections for Faculties of Agriculture and Veterinary Medicine are fully included in the University's student housing plans and A.I.D. has every reason to believe that Agriculture and Veterinary Medicine students will equitably share in the available housing. As the 1973/74 projected Agriculture and Veterinary Medicine enrollment will comprise 4.6% of total University enrollment, we have calculated the ABU contribution for student housing at this same percentage of planned construction, i.e. \$329,682 of \$7,167,000.*

B. Staff Housing

ABU's policy is to provide housing for all Senior Staff which currently numbers 668. Anticipating a substantial staff increase over the next four years, ABU has a total of 211 faculty housing units under contract for \$2,889,840 and an additional 239 units to be contracted in 1973/74 for an estimated \$3,500,000.

With the Senior Staff of Agriculture and Veterinary Medicine averaging 7.4% of total staff projects over the next four years, we have attributed a like percentage to total staff housing expenditures or \$472,848.

*Calculation excludes third 1000 unit block as it will not be financed until 1975 nor completed until 1976 which will be after A.I.D. loan disbursed.

C. Central Services

Several central and administrative services are to be expanded over the next two years which are essential to support the expansion of the two project faculties. While the University's plan does not specifically allocate each central service to specific faculties, A.I.D. has been assured that Veterinary Medicine and Agriculture will continue to receive their fair share of central facilities and that the proposed Agriculture and Veterinary Medicine expansions will be fully considered in the planning level of necessary central and administrative services required in the coming years. The costs of central services allocable to the Veterinary Medicine and Agriculture faculties total \$1,497,279. See Annex II for detailed calculations.

The total ABU project contribution approximates \$2,300,000 as calculated from A, B, and C above.

6. Evaluation of Expanded Research Program

a. Agriculture

A National Agricultural Research Council has been recently founded to establish guidelines and coordinate all Nigerian crop and animal agriculture. Both project faculties are represented on this council and all major research, including interdisciplinary concerns, will be coordinated through this body.

The Faculty of Agriculture staff members hold joint appointments to IAR. The research role of professors who spend most of their time teaching needs further clarification. The basic philosophy is that a person teaches in the Faculty and researches in the Institute. At the present, most individuals appointed primarily for teaching in the Faculty spend very little time on research. (While some quality research projects are under way, the lack of adequate facilities, the heavy teaching loads for a limited number of faculty members, logistic support and funding are all factors limiting the immediate implementation of a full-fledged program.) Changing this depends upon increased physical facilities and the return of participants now in training abroad. Many people who are appointed to IAR at levels above research assistant do not teach at all. It is expected that eventually the Faculty members will spend more time on research in IAR; and, as recommended in the technical assistance project evaluation, IAR staff members will spend a minimum of 25 percent of their time teaching in the Faculty. A Faculty research coordination committee has been established. The role of research in the Faculty itself is concerned with the teaching/learning process.

IAR has done some very valuable practical research on Nigerian agricultural problems for several decades. It is one of the foremost agricultural research institutions in West Africa. Information has been obtained on the fertilizer needs of common crops. It has developed new, higher yielding varieties of groundnuts, sorghum, cotton and millet. New varieties are being evaluated. IAR studies disease and insect pests and investigates livestock production methods. The Rural Economic Research Unit collects basic economic data on small-holder agriculture. A survey of the northern states soil resources and land use capabilities is being completed. IAR plans to have new research substations to cover the major farming regions of the north more adequately.

The IAR operates under the direction of an advisory board on which sit high ranking representatives of the Agriculture ministries in the Northern States. This board deliberates on policies and programs and passes on the Institutes's budget. Thus the IAR program is planned with the interests of the north firmly in mind.

In addition, ERLS, as an integral unit of IAR, plays a very important role in directing research planning. Not only do ERLS workers take research results to the Ministries' extension services, but they bring back requests for answers to specific problems. Thus, IAR workers are apprised of specific problems needing solution.

Much more needs to be done. The proposed additional staff and improved facilities of this project are needed to make it possible to complete these tasks. The new facilities being planned will be used for both teaching and research activities by the Faculty and IAR staffs.

AID has examined the research programs of both the Faculties and IAR, and we think they are appropriate to the problems of Nigeria. The programs appear to be completely formulated, guided and carried out. The research activities of the faculties are supported as being an integral part of the building of the institutions and as providing a key contribution to the efforts at increasing food and animal production in Nigeria.

b. Veterinary Medicine

The Faculty's research program at this point in time is not fully developed. However, a Faculty research coordination committee has been established. While some quality individual research projects are underway, lack of adequate facilities, heavy teaching loads for a limited number of faculty, logistic support and funding are all factors limiting the immediate implementation of a full-fledged program.

The average staff time devoted to a fully developed program will range between 10% and 60% of departmental staff time while only an estimated average of 5% is presently allotted. It will serve a dual role. Not only will it be programmed to solve problems in productivity and the utilization of natural and human resources, it will also play an equally important role in the teaching-learning process.

A National Agricultural Research Council has been recently founded to establish guidelines and coordination for all Nigerian crop and animal agriculture. The ABU veterinary faculty is represented on this Council and all major research, including projects with other disciplines on problems of common concern, will be coordinated through this body.

7. Regional Implications

This project has been proposed, and is being justified on the basis of internal benefits which will result to the economy of Nigeria. Nevertheless, because of the importance of Ahmadu Bello University, and of the agriculture and livestock research and training programs which will be provided there, this project may have significant regional implication.

The IAR research program has focused primarily upon the major crops of Nigeria. These crops also are the principal food crops of other West African countries. The new seed varieties and improved cropping practices, the development of agricultural extension materials, and the training of extension and degree professional personnel can bring substantial benefits to other West African nations.

While the main thrust of the Faculty of Veterinary programs is directed towards improving the animal agriculture situation in Nigeria, the programs will most definitely have a regional impact as well. Approximately ten percent of the student body come from other African countries thus helping to meet skilled manpower requirements of neighboring nations. Likewise, it is planned that other Africans will be active participants in the continuing education program as it becomes developed. Certainly, veterinary medicine is a classical example of a discipline whose projects by their very nature transcend national boundaries. A successful campaign to control an animal disease in Nigeria also helps control the same disease in Niger.

The potential for the most effective and sustained regional impact, however, rests with the research program. Under U.N. leadership, several donors, including IBRD, Ford and Rockefeller Foundations, as well as AID, are actively planning for one or more regional livestock research centers for Africa. It appears that one of these centers will be located close to ABU. With the development of this center, opportunities will abound for cooperative efforts in production and disease research with the benefits being enjoyed by all countries in the region. Given the impending deficiencies in meat supply for Nigeria and indeed for all of West Africa, increasing attention must be given to developing or adapting technology to increase the productivity of livestock produced in the interior regions of West Africa, i.e., Northern Nigeria and the Sahelian Zone from Mali to the Sudan. Few, if any, existing institutions are capable of performing practical applied research in animal nutrition, range management, disease identification and control and animal breeding. The Faculty of Veterinary Medicine at ABU will most definitely play a vital role in this regional effort. The CBNRD-23 report on this subject also envisages that "the center could also provide opportunities for scientists from universities and other tropical research agencies to receive intensive specialized training designed to strengthen the research of the agencies with which they are affiliated" (p.4).

C. Engineering Analysis

1. Description

Construction proposed under the loan-financed project consists of the addition of new buildings for the Faculty of Agriculture and for the Faculty of Veterinary Medicine. The loan will also finance equipment for the new teaching and research facilities.

The area allocations and costs for the building complex are set out below.

CONSTRUCTION COST
AHMADU BELLO UNIVERSITY

<u>Item</u>	<u>Gross Area Square ft.</u>	<u>Cost per S.F.</u>	<u>Total</u>
Lab. and Library	24,000	31.15	\$ 747,600
Auditorium	2,600	33.80	87,880
Lecture Theatre	3,400	32.45	110,330
Multi-Discip. Lab.	7,600	27.50	209,000
Faculty Research	38,000	26.50	1,007,000
Diag. Lab.	6,100	31.30	190,930
Animal Colony	300	11.20	3,360
Small Animal Barn(4)	10,400	14.20	147,680
Large Animal Barn(2)	11,400	11.10	126,540
Agriculture Eng.	7,600	20.20	153,520
Main Bldg.	33,420	30.45	1,017,639
Library	6,600	23.20	153,120
Greenhouses(1)	8,400		54,740
Animal Prod.	3,600	23.20	83,520
Animal Metabolism	2,500	19.15	47,875
Arena	2,000	8.80	17,600
1st Floor Cov. Walkway	1,440	9.00	12,960
2nd Floor Walkway	6,600	4.50	29,700
Landscaping (Allowance)			20,000
Water Towers			15,000
Asphalt to Concrete	15,000	.35	5,250
Gravel Paving	55,000	.08	4,400
			Subtotal 54,425,644
			Contingency 625,356
			Total 55,100,000

The breakdown of foreign exchange and local costs for the above construction figures are as follows:

	<u>Foreign Exchange</u>	<u>Local Cost</u>	<u>Total Cost</u>
Construction	\$1,506,219	\$2,920,925	\$4,427,144
Contingency	229,281	445,075	674,356
	\$1,735,500	\$3,366,000	\$5,100,000

The cost of built-in furniture and fixtures is included in the estimated cost of the various buildings. Loose furniture and equipment costs have been developed by ABU and are estimated to cost as follows:

<u>Faculty of Agriculture</u>	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total Costs</u>
Furniture		\$ 86,000	\$ 86,000
Equipment	\$ 323,263		323,263
<u>Faculty of Veterinary</u>			
<u>Medicine</u>			
Furniture		44,000	44,000
Equipment	973,365		973,365
Subtotal	1,296,628	130,000	1,426,628
Contingency	<u>216,872</u>	<u>12,000</u>	<u>228,872</u>
Total Furniture & Equipment	\$1,513,500	\$ 142,000	\$1,655,500

2. Background

Preliminary design was performed by Nostrand and Horner and Associates for \$50,400 grant financed by A.I.D., and completed in March 1970. Final design contract documents and invitations for bids are being prepared by Dalton-Dalton-Little-Newport, Inc. under a grant-funded \$336,000 contract signed on October 6, 1971. This contract also provides for DDLN to supervise construction, the \$286,500 cost of which will be financed by the Loan.

3. Site Description

The site selected for the facilities is within the existing boundaries of the ABU campus. The buildings are located in order to function efficiently in conjunction with existing buildings and utilities. The architectural appearance of the new buildings will be in harmony with the existing structures.

Foundation conditions have been well established in the campus area and no special foundation problems are anticipated.

Water supply for the buildings will be tied to the existing system and additional storage tanks are included in the design to provide a two day reserve storage.

Sewage disposal will be through septic tanks sized to accommodate the maximum anticipated building occupancy. Storm water and waste water will be handled by separate systems to reduce the septic tank loads. Disposal fields will be located to prevent possible contamination of sources of drinking water.

Electricity is available from the existing campus transmission lines but the supply is subject to failure as a result of storm damage. Two standby generators will be provided for emergency use to maintain power to vital equipment.

Experience at ABU has shown an increasing need to design for mechanical ventilation to enable buildings to be used at maximum utility. This is particularly important in laboratories, lecture theaters and study rooms, therefore, provision has been made for air-conditioning certain limited specific areas in the various buildings.

Annex IV provides a more detailed description of the site work and design considerations.

4. Cost Analysis

The estimate of cost shown in Section 1 is based on the design and space requirements prepared by Dalton-Dalton-Little-Newport, Architects and Engineers and accepted by ABU and A.I.D.

The unit costs are inclusive of labor, materials, overhead and profit and an allowance for escalation of costs.

5. Engineering Soundness

Based on its review of the plans, specifications and cost estimates prepared by DDLN to date, A.I.D. is satisfied that the project is technically, functionally and economically sound, and that the project meets all of the requirements of Section 611(a)1 of the Foreign Assistance Act.

Since the project is to be built entirely upon the present University's grounds, the only system A.I.D. has considered with any environmental impact is the disposal of sewage. As noted above in paragraph 3, the disposal of effluent will be through anaerobic primary systems, secondary treatment through disposal fields and tertiary treatment will be by leaching with negligible residuals. In utilizing these methods of treatment, therefore, A.I.D. has determined the proposed project does not qualify as a project with a significant environmental impact.

6. Space Utilization Analysis

USAID Nigeria representatives reviewed and discussed with the ABU and KSO team a documented utilization analysis for the proposed Veterinary Medicine facilities in February, 1967. The average usage for the four teaching classrooms will be 55%; teaching laboratories will be utilized on an average of 77%; ABU plans to use the proposed research laboratories on a full-time basis (including preparation time and process supervision by technicians). Veterinary Medicine involves a complete technical curriculum which has many of the aspects of medical training. Many technically sophisticated facilities are needed if the curriculum is to cover the basic scientific areas involved. Classroom facilities, too, are utilized in a less structured manner than would be expected of other facilities planned: (1) it is frequently necessary to run extra class sessions if a difficult area is being covered, (2) classroom sessions are frequently needed during and after complicated laboratory exercises, (3) seminar and tutorial sessions are expected but cannot be planned

very far in advance, (4) and service courses for agriculture students and students from other facilities are anticipated but have not yet been scheduled. Thus the classrooms will be utilized well in excess of the scheduled times.

Other limitations on scheduled class usage arise from the special scheduling needs of the curriculum. The teaching laboratories will have to be used for some part of the mornings in order to set up facilities for afternoon laboratory teaching sessions. The faculty stated that afternoon laboratory sessions, rather than morning sessions, are needed in that preparation cannot be done the previous afternoon, and because laboratory sessions should be open-ended so that difficult experiments can be completed in one session. Thus the faculty strongly advocates generally scheduling classroom lectures in the morning and laboratory sessions in the afternoon. We believe that the Veterinary Medicine utilization analysis should be compared against a like analysis of U.S. veterinary campuses. Given the professional nature of the curriculum, A.I.D. standards for the utilization of the ABU planned facilities are not higher than U.S. standards.

A.I.D. has recently reviewed the space utilization data originally prepared in 1967. A comparison was made of the earlier data with utilization rates of U.S. veterinary medicine campuses at the present time (specifically, Oklahoma A&M, Tuskegee Institute and Kansas State). The rate for teaching laboratories and classrooms in the U.S. campuses contacted is clearly lower than the utilization rate estimated for the proposed ABU facilities. Teaching laboratories are utilized up to 65% of the time (versus a planned 77% for ABU), and classrooms are used an average of 40% of the time (versus a planned 55% for ABU).

Although the average classroom use would still be 7% below the Africa Bureau's recommended utilization rate of 89% for general education, there are special factors involved in a veterinary medicine curriculum. Oklahoma A&M, Tuskegee and Kansas State (Manhattan) corroborated the fact that the factors mentioned are involved in planning the use of veterinary medicine facilities and that such facilities should not be expected to be utilized to the extent of other general facilities. Because of this, A.I.D. finds the utilization rates acceptable as set forth above.

As noted above, a Space Utilization Analysis (SUA) study required by the Africa Bureau's Educational Project Guidelines was carried out in early 1967. A new, updated SUA was not carried out since the overall factors of utilization have remained approximately the same. The square footage of space planned for the project facilities is mainly unchanged, i.e., in some cases decreases occurred, but there were no increases. At the same time, the number and variety of course offerings has increased and the space allocations have increased and the space allocations have been changed to increase the functional utility of planned facilities. For instance, multi-purpose labs were substituted in the Veterinary Medicine facility for formerly-planned specialized teaching labs. The multi-purpose labs occupy approximately the same space as those previously planned, but because of an increased flexibility in design, they are expected to be utilized more hours per week. A.I.D. did not carry out a new Space Utilization Analysis, since it is clear from the above analysis that a new analysis would show a higher space utilization rate than the level previously accepted by A.I.D.

D. Financial Management

1. University Budgets

While most of ABU's capital and recurrent budgetary needs are provided from internal sources, special programs receive, at times, substantial donor support. Several important campus buildings were donated by the U.K. Ongoing programs receive support from a variety of donors including A.I.D. grants to the project faculties and ABU's Institutes of Administration and Education. Most campus financial needs are provided by the FMG and the northern six states (Kwara, North Western, North Central, Kano, North Eastern, and Benue Plateau) under a 75:25 sharing arrangement. The six states have budgeted \$14.5 million toward capital expansion programs at ABU during the 1970-74 Development Plan period, 1/3 of which will be from ABU's home state (North-Central). The loan project is the only major donor-financed capital expenditure anticipated in the 1970-74 period.

The current operating budget of the University is \$17 million, broken down as follows:

	\$ equivalent (in millions)
Main Campus	\$6.6
Institute of Agricultural Research (IAR)	2.2
Institute of Administration	1.0
Institute of Health	4.8
Institute of Education	1.2
Abdullahi Bayero College (Kano)	.6
Div. of Agriculture & Livestock Services	
Training	.7
Extension Research Liaison Service (ERLS)	.2
	\$17.3

Significant recurrent budget increases are expected in the years immediately ahead due to the planned expansion of several University programs.

2. Project Faculties Recurrent Budgets

Because of their close interdependence, it is relevant to look at both the Faculty of Agriculture's and IAR's recurrent budget in appraising ABU's budgetary efforts in the agricultural side of the project. The current and projected budget summary for these programs for 1970-78 follows. A.I.D.'s grant assistance to the Faculty of Agriculture is included as this input is a part of the total financial resources devoted to agricultural programs.

Agriculture Recurrent Budgets 1970-78
(\$ rounded to nearest \$1,000)

	<u>Faculty of Agriculture</u>		<u>Institute</u>	<u>Total</u>
	<u>ABU</u>	<u>AID-KSU+</u>		
1970-71	\$140,000	\$530,000	\$1,906,000	\$2,576,000
1971-72	198,000	693,000	2,231,000++	3,122,000
1972-73	234,000	639,000	2,189,000	3,062,000
1973-74+++	282,000	675,000	2,294,000	3,251,000
1974-75	309,000	-	2,395,000	2,704,000
1975-76	336,000	-	2,520,000	2,856,000
1976-77	364,000	-	2,660,000	3,024,000
1977-78	392,000	-	2,730,000	3,122,000

- + Participant training excluded
- ++ Requested
- +++ End of AID/KSU assistance

As the table indicates, a substantial portion of the Faculty's budget is provided by A.I.D. through the KSU grant covering staff salaries and support services and commodities. Nearly all of this assistance will phase out by June 1974 by which time the faculty is expected to be well on the way to being Nigerianized. ABU expects to finance its share of the recurrent budget of the Faculty from recurrent reserve. It is expected that the level of other donor support for the Institute will continue at substantially the same magnitude as at present.

Recurrent budget data for the Faculty of Veterinary Medicine is presented below. The Faculty is the beneficiary of A.I.D. and other donor grants. The A.I.D. grant projections are shown separately. Other donor grants for salaries now total \$117,040 and are included in the current budget data. These grants are expected to continue until Nigerian staff are available to fill staff positions later in the decade. Where possible, budget data has been broken down between teaching and research in an effort to make the data comparable with the budgetary information on agriculture.

Veterinary Medicine Recurrent Budgets 1970-78
(\$ rounded to nearest \$1,000)

	<u>Teaching</u>	<u>Research</u>	<u>AID Grant⁺</u>	<u>Total</u>
1970-71	\$300,000	\$ 19,000	\$401,000	\$720,000
1971-72	312,000	21,000	467,000	800,000
1972-73	364,000	31,000	495,000	890,000
1973-74	369,000	41,000	399,000	809,000
1974-75	367,000	53,000	360,000	780,000
1975-76	360,000	82,000	300,000	742,000
1976-77	356,000	113,000	189,000	658,000
1977-78	363,000	128,000	132,000	623,000

+ Participant training excluded.

Although the Faculty's activities will increase markedly over the decade, the teaching budget decreases slightly to reflect the substitution of less expensive Nigerian staff for current expatriate staff (now largely donor-assisted).

The recurrent budgets for the two project faculties have been examined in detail. Adequate support for each department of the faculties appears assured. The budgets do not appear overly ambitious and are within the capability of ABU's total projected resources as verified by University officials in review of the above presented data.

An analysis of the projected recurrent costs per student was conducted based on the enrollment and recurrent cost estimates presented above. The following information was developed:

<u>Fac. Agr.</u>	<u>#Students</u>	<u>Non-IAR Recurrent Costs</u>	<u>Costs/Student</u>
71/72	74	\$891,000	\$12,040
72/73	80	873,000	10,912
73/74	107	957,000	8,944
74/75	119	309,000	2,597
75/76	152	336,000	2,211
76/77	191	364,000	1,905
77/78	238	392,000	1,647

<u>Fac. Vet. Med.</u>	<u>#Students</u>	<u>Non-IAR Recurrent Costs</u>	<u>Costs/Student</u>
71/72	128	\$800,000	\$6,250
72/73	131	890,000	6,793
73/74	157	809,000	5,152
74/75	178	780,000	4,382
75/76	197	742,000	3,767
76/77	216	658,000	3,046
77/78	234	623,000	2,663

E. Effect on U.S. Economy and Private Enterprise

This project will not compete with U.S. private enterprise. In fact, the procurement of certain goods and services will have a direct and very positive effect on U.S. commercial activity in this area. The U.S. firm selected as the supervising engineers as well as several U.S. equipment suppliers will benefit from the opportunity to provide goods and services which would not, in the absence of A.I.D. financing, be of U.S. origin. The contract for the construction of this project will be awarded to a private U.S., A.I.D. Geographic Code 941 or Nigerian firm.

III. Loan Administration

A. Financial Planning

1. Capital Cost of the Project

The estimated total capital cost of the project is summarized below:

<u>a. Physical Facilities</u>	<u>Fixed Cost</u>	<u>Local Cost</u>	<u>Total Cost</u>
Faculty of Agriculture & Faculty of Vet. Med.	\$1,504,719	\$2,920,925	\$4,425,644
Contingency - 15%	229,281	445,075	674,356
Supervisory Engr. Services	257,500	29,000	288,500
Student and Faculty Housing and Central Facilities		<u>2,300,000</u>	<u>2,300,000</u>
Total Facilities	\$1,991,500	\$5,695,000	\$7,686,500

b. Equipment and Furniture

	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total Costs</u>
Faculty of Agriculture	\$ 323,263	\$ 86,000	\$ 409,263
Faculty of Vet. Med.	973,365	44,000	1,017,365
Professional Procurement Services	<u>100,000</u>	-	<u>100,000</u>
Subtotal	\$1,396,628	\$ 130,000	\$ 1,526,628
Contingency	<u>216,872</u>	<u>12,000</u>	<u>228,872</u>
 Total Equipment & Furniture	 \$1,613,500	 \$ 142,000	 \$ 1,755,500
 Total Facilities & Equipment	 \$3,605,000	 \$5,837,000	 \$ 9,442,000

2. Financial Plan

A.I.D. plans to finance the engineering, facilities, equipment and equipment services to the two faculties and ABU will finance the additions of student and staff housing, and the local costs of furniture and equipment. The loan will finance all the eligible foreign exchange and local costs of the teaching and research additions to the two faculties.

The financial requirements shown above will be financed in one of two ways, depending on whether the successful construction contractor is a U.S. or an A.I.D. Geographic Code 941 firm, or is a local firm. If a U.S. or A.I.D. Geographic Code 941 firm, the costs will be divided as follows:

<u>Case I</u>	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total</u>
A.I.D. Loan	\$3,605,000 (100%)	\$3,395,000 (58%)	\$7,000,000 (74%)
FMG Contribution	-	2,442,000 (42%)	2,442,000 (26%)
Total	\$3,605,000 (38%)	\$5,837,000 (62%)	\$9,442,000

If, however, a local firm is the successful low bidder and is awarded the construction contract, the costs will be divided as follows:

<u>Case II</u>	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total</u>
A.I.D. Loan	\$2,905,000 (100%)	\$4,095,000 (63%)	\$7,000,000 (74%)
FMG Contribution	-	2,442,000 (37%)	2,442,000 (26%)
Total	\$2,905,000 (31%)	\$6,537,000 (69%)	\$9,442,000

In either case above, the proposed A.I.D. loan authorization will finance all of the foreign exchange costs, and in Case I, approximately 58% of the local currency costs, and in Case II, approximately 63% of the local currency costs. If supply or procurement conditions necessitate, the FMG will finance up to 5% of Foreign Exchange costs from their contribution.

This is the last loan to Nigeria under which local cost financing is anticipated. A.I.D.'s decision to finance local costs, given Nigeria's improving financial situation, results from the fact this is an old commitment which has not been discharged, in part because of past U.S. policy considerations. A.I.D. has made it clear in recent discussions with the FMG that we will be interested in financing only foreign exchange costs of projects. However, for this loan, we propose financing a significant level of local costs in order to permit the honorable discharge of a longstanding commitment to the FMG.

The proposed loan will have a term of 40 years including a 10-year grace period. Interest will be 2% per annum during the grace period and 3% per annum thereafter. The loan will be to the Federal Military Government of Nigeria, which in turn will grant the loan proceeds to ABU.

3. Repayment Prospects

A separate report on Nigeria's financial condition is given in Annex III. Based on the analysis in that report, we conclude that the prospects for repayment of the loan are good.

4. Alternative Sources of Financing

Nigeria is assisted by most of the major donors under the auspices of a consultative group chaired by the IBRD. The last meeting of the consultative group was in May 1971 at which time A.I.D.'s planned assistance to the project was understood.

The University already benefits from significant other-donor financing. Under a U.K. grant, several campus buildings were constructed including a surgery and medicine building for the Faculty of Veterinary Medicine. The Rockefeller Foundation provides funding for the position of Provost for Agriculture and Veterinary Medicine. The Dutch provide staff for the physiology department of the Faculty of Veterinary Medicine.

It is expected that the additional programs facilitated by the project construction will attract added interest of West African countries and other donors. The most likely new initiative at ABU may be the decision of a group of donors to locate a complex for livestock disease research at ABU. This proposal is receiving serious interest from a committee of donor representatives now considering the establishment of a regional livestock research center in West Africa.

B. Project Execution Plan

1. Contracting Arrangements

Dalton-Dalton-Little-Newport, Inc. will provide construction supervisory services as part of the professional services to be financed under the proposed loan. The project housing additions are contracted for separately by ABU's Estates Management Department (or, for routine structures, is handled by the Department's architect/engineering staff) and are presently under construction and scheduled for completion prior to completion of this project.

Construction of all project facilities will be under competitively-bid unit priced construction contracts. The loan-financed construction will be bid under one contract and will be advertised in the U. S. and Nigeria. Only prequalified firms will be permitted to bid. Construction of faculty and student housing financed by the FMG will be under competitive bids limited to firms registered in Nigeria.

The equipment to be financed under the loan will be procured by competitive bids under A.I.D. procurement rules. It is expected that all specialized laboratory equipment will come from the U.S. ABU has experience with such equipment, since under the grant-financed KSU contract, a quantity of specialized equipment and commodities have already been provided.

ABU intends to contract with an architectural/engineering firm for the preparation of equipment lists, specifications and invitations for bid for procurement and installation of laboratory equipment and furniture. There is a possibility, due to the nature of the timing and phasing of procurement of the equipment and furniture, ABU may wish to contract with Kansas State University in lieu of an A/E firm for the procurement services. The key difference would be the installation of the equipment and furniture.

2. Procurement

Procurement under the loan will be limited to U.S., Nigerian and A.I.D. Geographic Code 941 countries. Invitations for bids will be advertised in accordance with A.I.D. regulations in order to assure the greatest possible interest in project procurement. A.I.D. will approve specifications for bids and will approve all awards in excess of \$25,000.

C. Timetable for Implementation of the Project

Loan Authorization	March 1972
Loan Signing	April 1972
Prequalification of Construction Contractors	May 1972
Final Design Completed	June 1972
Conditions Precedent excluding Construction Contract Met	June 1972
IFB's for Construction Contract	July 1972
Construction Contract Award, Final C.P. Met	September 1972
Start Construction	October 1972
Begin Purchase of Equipment	December 1972
Complete Construction and Equipment Purchase	September 1974
Terminal Disbursement Date	December 1974

D. Conditions Precedent and Covenants

The following special conditions precedent and covenants are expected to be discussed and negotiated with ABU and the FNG.

1. Conditions Precedent

Prior to issuance of the first letter of commitment or other disbursing authorization under the loan, the Borrower shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

a. Evidence of arrangements for the transfer of loan financed commodities and services as a grant from Borrower to Ahmadu Bello University (ABU);

b. Evidence that the Faculties of Agriculture and Veterinary Science of ABU will budget for maintenance and purchase of spare parts and will contract for or will have the capability themselves for maintenance of the equipment financed under the loan;

c. Prior to disbursement for procurement of laboratory and specialized equipment, arrangements for procurement and installation of equipment to be financed under the Project.

2. Covenants:

The Borrower covenants and agrees that it shall take all necessary actions to assure:

a. Availability of adequate capital and operating budget resources to the Faculties of Agriculture and Veterinary Medicine of ABU to permit ABU to meet the teaching and research objectives of this Project;

b. Prompt clearance through customs and transfer to ABU of equipment and materials financed under the loan; and

c. Provision of foreign exchange and local currency funds for all costs of the Project over and above the proceeds of the loan.

CHECKLIST OF STATUTORY CRITERIA
DEVELOPMENT LOAN FUND

Many of the questions require only yes or no answers. Others, however, must be answered more fully. In those cases, a specific reference to explicit discussion of the matter in the loan paper will suffice. But where the loan paper does not deal explicitly with a matter that clearly requires more than a yes or no response, sufficient response must be made to indicate that the matter has been appropriately considered.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended, incorporating amendments effected by the Foreign Assistance Act of 1971.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1971.

MMA - Merchant Marine Act of 1936, as amended

Space for answers is provided in the margin to the right of each question. This form must be made a part of the Capital Assistance Paper.

I. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§201(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Nigeria supports an extensive agricultural extension and marketing program, most of which continued despite the civil war. Post war development places high priority on agriculture.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

Nigeria has encouraged foreign and domestic private investment through investment incentives (such as pioneer industry laws), development banks, and investment guaranty participation.

(c) Increasing the people's role in the developmental process.

Widespread private ownership of farms and industry, agricultural extension, and small industry promotion projects are increasing popular participation in development.

(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.

Nigeria's increased military expenditures during and following the civil war were not and are not devoted to external intervention and were deemed necessary to her national survival.

(e) Willing to contribute funds to the project or program.

Satisfied.

(f) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

Nigeria's history shows significant progress in meeting these goals. With the end of the war, Nigeria's press is again one of the freest in Africa. Nigeria has compiled an impressive respect with regard to the other factors listed.

(g) Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

Nigeria has borne most of the expense of her development. Currently discussed reconstruction plans continued to reflect the principle of self-help as well as vital economic, political and social concerns of the people.

B. Relations with the United States

1. FAA §620(c). In the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's, or a predecessor's unconditional guarantee?

No such indebtedness is known to exist.

2. FAA §620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 10% of its enterprise's annual production during the life of the loan?

Not applicable. The project is not a productive enterprise and will not provide any exports.

3. FAA §620(e)(1). Has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate or nullify existing contracts or agreements with such citizens or entity, or (c) imposes or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps if any has it taken to discharge its obligations?

No such action taken.

4. FAA §620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?

No mob action against U.S. property has taken place.

5. FAA §620(l). Has the government instituted an investment guaranty program under FAA §221(b)(1) for the specific risks of inconvertibility and expropriation or confiscation?

Yes. There is an existing agreement which is currently being renegotiated.

6. FAA §620(o): Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.

No such instance is known to have occurred.

7. FAA §620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?

No.

8. FAA §620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?

Satisfied. Nigeria has maintained diplomatic relations with the U.S.G. since Nigeria's independence.

9. App. #106. Describe any attempt made by the country to create distinction because of race or religion in granting personal or commercial access or other rights otherwise available to U.S. citizens generally.

No such attempt made.

C. Relations with Other Nations and the U.N.

1. FAA #620(1). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?

Satisfied. No such representation is known.

2. FAA #620(a), 620(n); *Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Viet-Nam items of economic, military, or other assistance?*

Satisfied. No instances of such trafficking are known.

3. FAA #620(n); App. #108 What is the status of the country's U.N. dues, assessments, or other obligations? Does the loan agreement for any use of funds to pay U.N. assessments, dues, or arrears?

Satisfied. No instances known of arrangements on U.N. dues, assessments or other obligations, funds to project costs only.

D. Military Situation

1. FAA #620(1). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance?

Satisfied. No such efforts known.

2. FAA §620(a). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment? Is the country diverting U.S. development assistance or P.L. 480 sales to military expenditures? Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant circumstances.) Has the country spent money for sophisticated weapons?

Satisfied. USAID's recent estimate is that as much as 25-30% of the FMG's recent budgets were devoted to military purposes. AID also estimates that, during the last year of the war, about 25% of Nigeria's foreign exchange expenditures were for military purchases. More recent data regarding this issue is not available. (The Symington Interagency Committee determined in November 1969 that the Symington Amendment was not applicable to Nigeria.

II. ' CONDITION OF THE LOAN

A. General Soundness

-- Interest and Repayment

1. FAA §§201(d), 201(b)(2).
Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest?

Satisfied. The rate of interest is concessional and appreciably lower than Nigeria's legal rate of interest. The grace period interest rate is 2%, followed by an interest rate of 3% for the duration of the Loan.

-- Financing

1. FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

Satisfied.

-- Economic and Technical Soundness

1. FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

Satisfied.

2. FAA §611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonably firm estimate of the cost of assistance to the U.S., been completed?

Satisfied.

3. FAA §611(b); App. §101. If the loan or grant is for a water or related land-resource construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?

First questions not applicable. The project meets the relevant U.S. construction standards.

4. FAA §611(e). If this is a Capital Assistance Project with U.S. financing in excess of \$1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?

Yes. The Mission Director's certification is presented in Annex VI.

B. Relation to Achievement of Country and Regional Goals

-- Country Goals

1. FAA §§207, 281(a). Describe this loan's relation to:

a. Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development.

No direct relevance. Indirectly, by improving the PMG's ability to maintain reasonable stability, this type of project facilitates participation on the part of the people in the task of economic development.

- b. *Enabling the country to meet its food needs, both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity.* Not applicable.
- c. *Meeting increasing need for trained manpower.* Satisfied. The project will have a direct impact on Nigeria's ability to meet increasing needs for trained manpower.
- d. *Developing programs to meet public health needs.* Not applicable.
- e. *Assisting other important economic, political, and social development activities, including industrial development; growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws.* Not applicable.
2. *FAA §201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to realisable long-range objectives.* Satisfied. See Section I-B and C.

3. FAA §201(b)(9). *How will the activity to be financed contribute to the achievement of self-sustaining growth?* Satisfied. See Section I-3, C.
4. FAA §201(f). *If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.* Satisfied. See Section I-B, C.
5. FAA §201(b)(3). *In what ways does the activity give reasonable promise of contributing to development of economic resources, or to increase of productive capacities?* Satisfied. See Section I-B.
6. FAA §281(b). *How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.* Satisfied. The country is strongly seeking stability, trained and skilled Police who will assist the return of civilian democratic rule.

7. FAA §601(a). How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?
- Not applicable.
8. FAA §202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.
- Satisfied. See Section III. A and B.
9. FAA §611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?
- No legislative action required.

-- *Regional Goals*

1. FAA 8619. *If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?*

Nigeria has been independent since 1960. The project serves a national need and is not of a type which multi-lateral organizations typically funded.

2. FAA 8209. *If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multi-lateral assistance is presently being furnished to the country?*

Satisfied. See Section II. B. Re second question, the IBRD is active in Nigeria. AID is participating in two major multilateral projects in Nigeria, the Niger Dam and the Telecommunications expansion project.

C. Relation to U.S. Economy

-- *Employment, Balance of Payments, Private Enterprise*

1. FAA 88201(b)(6); 102, Fifth. *What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.*

See Section III.

2. FAA 88612(b), 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign-owned currencies are utilized in lieu of dollars?

The USG does not currently have local currency available for project financing.

3. FAA 8601(d); App. 8105. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?

First question: Have encouraged U.S. firms' participation pursuant to details in Section III. A and B.

Second question: AID procurement procedures will be followed.

4. FAA 8608(a). Provide information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

Not appropriate for this type of project.

5. FAA 8602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?

The Agency advertising requirements will be fully complied with.

6. FAA §621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?

Not applicable.

7. FAA §611(c). If this loan involves a contract for construction that obligates in excess of \$100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?

Yes. See Section III. B.

-- Procurement

1. FAA §604(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?

Procurement will be limited to U.S. AID Geographic Code 941 and borrowing country.

2. FAA §604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?

No.

3. FAA §604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity? No.

D. Other Requirements

1. FAA §201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year? Yes.

2. App. §106. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms? Yes.

3. FAA §620(k). If the loan is for construction of a productive enterprise, with respect to which the aggregate value of assistance to be furnished will exceed \$100 million, what preparation has been made to obtain the express approval of the Congress? Not applicable.

4. FAA §§620(b), 620(f):
 Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (including, but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) been made and reported to the Congress?
- Satisfied. Determination has been made. Second question not applicable.
6. FAA §620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?
- Loan agreement restricts use of loan funds to project.
7. App. §110. Will any funds be used to finance procurement of iron and steel products for use in Vietnam other than as contemplated by §110?
- No.
8. FAA §636(i). Will any part of this loan be used in financing non-U.S.-manufactured automobiles? If so, has the required waiver been obtained?
- No.

9. FAA §§620(a)(1) and (2), 620(p); No.
*Will any assistance
 be furnished or funds made avail-
 able to the government of Cuba or
 the United Arab Republic?*

10. FAA §620(a). No.
*Will any part
 of this loan be used to compensate
 owners for expropriated or nationalized
 property? If any assistance has
 been used for such purpose in the
 past, has appropriate reimbursement
 been made to the U.S. for sums diverted?*

11. FAA §201(f). See Section III. A and B.
*If this is a
 project loan, what provisions have
 been made for appropriate partici-
 pation by the recipient country's
 private enterprise?*

12. App. §104. No. Loan Agreement
*Does the loan restricts use of loan
 agreement bar any use of funds to
 pay pensions, etc., for persons
 who are serving or who have served
 in the recipient country's armed
 forces?* funds to project.

13. MMA § 901.b. Does the loan agreement provide, for compliance with U.S. shipping requirements, that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately owned U.S.-flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels? **Yes.**
14. FAA. Section 481. Has the country failed to take adequate steps to prevent narcotic drugs from entering the U.S. unlawfully? **No, Nigeria is cooperating with the U.S. and international organizations in the control of narcotic drugs.**
15. FAA. Section 605(e). Has there been compliance with restriction against procuring with AID funds agricultural commodities outside the U.S. when the domestic price of such commodity is less than parity. **No agricultural commodities will be procured with funds provided under this loan.**
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CENTRAL SERVICES CONTRIBUTION

<u>Item</u>	<u>Cost</u>	<u>%Attributable</u>	<u>\$Attributable</u>
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Water, Sewerage, Roads	\$2,250,000	15 (Note 1)	DOL 337,500
Admin. Block	1,050,000	4.6	48,300
Library	2,550,000	3 (EST)	76,500
Electric Distri	180,000	5 (Note 1)	27,000
Estate Offices, Stores	600,000	4.6	27,600
Student Center	750,000	4.6	34,500
Inst. of Ag. Research	1,200,000	33.3 (Note 2)	400,000
Staff School	750,000	7.4	55,500
Faculty of Science	1,350,000	9.5 (Note 3)	128,250
Computer Science Center	300,000	4.5 (EST)	13,500
Pharmacology	450,000	4.5 (EST)	20,250
Non-Degree Agriculture	1,200,000	15 (Note 4)	180,000
TOTAL	DOL 12,630,000		DOL 1,348,900
11% Engineering on Above	1,389,300		148,379
GRAND TOTAL	DOL 14,019,300		DOL 1,497,279

Note 1: Most improvements are in part of campus where project facilities to be located. Note 2: Half time faculty agriculture in research which equals about 13% IAR research effort, in addition IAR research results make substantial contribution development AG curriculum. Note 3: Chemistry and Biology courses in Faculty Science attended by Vet. Med and Agri. students, total portion use approximately 9.5%. Note 4: Non-Degree schools expected make major contribution in Agriculture enrollment.

GENERAL DATA, NATIONAL ECONOMY1. National Economic Situation

The Nigerian economy grew at an estimated average annual rate of 4.7 per cent from 1962 to 1966. The civil war in 1967 interrupted sharply the growth of the economy. But in the second half of 1969, rapid aggregate growth began again and has continued to the present time. It is estimated that GDP grew in excess of 10 per cent annually from 1969 to 1971.

The satisfactory aggregate growth of the economy from 1969 to 1971 consisted of uneven sectoral performances. Some sectors--petroleum and manufacturing--have grown very rapidly and others--especially agriculture--much less rapidly. Petroleum production increased from 630 thousand barrels per day in December 1969, to 1.630 million barrels per day in September 1971. The index of manufacturing production increased from 212 in third quarter 1969 to 282 in first quarter 1971 (base 1963 = 100). On the other hand, while the output of agricultural export commodities increased from 1969 to 1970, it declined from 1970 to 1971 to a level estimated to be below 1969. Information on the output of food commodities is less readily available, but rapid price increases are indications of slow growth of food production.

In addition to the differing rates of growth for the various types of commodities, it is clear that the private sector has been performing better and the public sector worse than anticipated in the 1970-74 Development Plan. As an illustration, it is estimated that while private sector fixed capital formation during 1970/71 was in excess of the Plan's projections, the public sector's fixed capital formation was far below the Plan's projection. Private sector investment has grown rapidly since 1969, while Federal Government non-defense capital expenditures in 1970/71 were only a little above the 1969/70 level, and only about one-fourth of the Plan's projected level.

In spite of the rather uneven performance, many of the problems which appeared during the war and which continued during 1970 appear now (late 1971) to be well on their way to solution. The problem of Federal Government finance and the balance of payments are rapidly being solved, due in large part to the rapid growth of petroleum production, and the consequent rapid growth of government revenues and foreign exchange.

Nigeria has become a major petroleum producer and exporter. Nigeria ranked 20th in the world in 1963 (averaging 76 thousand barrels per day) and 10th in the world in 1970 (averaging 1.086 million barrels per day). It is estimated that average production in 1971 will slightly exceed 1.5 million barrels per day, and careful projections available to USAID indicate an average in excess of 2.0 million barrels per day in 1972 and in excess of 2.5 million barrels per day in 1973.

Both government revenues from petroleum (in 1971 approximately \$1.50 per barrel, totaling an estimated \$770 million, representing about one-half of Federal Government revenues) and foreign exchange earnings (since government revenues are paid in foreign exchange) will increase rapidly, at least for the next few years. These large increases in government revenues (and ipso facto foreign exchange earnings) will be due both to the projected large quantity increases mentioned above and to the recently concluded negotiations between the oil companies and the government, which increased the government's revenue per barrel.

The Federal Government's financial picture has shown large improvement in the past three years. In 1969/70 the budget was in substantial overall deficit, with recurrent revenues only 53 per cent of total expenditures. In 1970/71 the budget was still in deficit, but revenues amounted to 82 per cent of expenditures. In the current fiscal year, 1971/72, it is estimated by USAID that the budget will be in surplus.

The balance of payment situation is improving. While current earnings of foreign exchange are probably equal to the demand for foreign exchange for current imports of goods and services, Nigeria still owes substantial amounts for imports received over the past year.

ANNEX III

2. Revenue and Expenditures of the Nigerian Federal Government

Table 1 presents data on revenues and expenditures for 1969/70 and 1970/71, and two estimates for revenues and expenditures for the current fiscal year, 1971/72.

In 1969/70 the budget was in substantial overall deficit. Revenues amounted to 53 per cent of total expenditures (recurrent plus capital). The deficit was financed by substantial domestic borrowing and reduction of reserves. As a consequence of domestic borrowing, internal debt increased by 46 percent during 1969/70. (Money supply increased by 50 percent during 1969/70.)

The budget picture for 1970/71 showed substantial improvement over 1969/70. Expenditures (capital plus recurrent) increased by 12 per cent over 1969/70, but revenues increased by 74 per cent. While the budget was still in overall deficit, revenues amounted to 82 per cent of expenditures. The deficit was financed by substantial domestic borrowing. In fact, domestic borrowing was larger than the deficit and cash reserves of the government increased. As a consequence of the domestic borrowing, internal debt increased by 24 per cent during 1970/71. (Money supply increased by 30 per cent during 1970/71).

The table contains two estimates of revenues and expenditures for the current fiscal year, 1971/72. The first estimate is the budget provided by the Federal Government on April 1, 1971, prior to the petroleum settlement. This budget substantially understated likely petroleum revenues and import tax revenues. Because of these serious underestimates and probable underestimate of recurrent expenditures, the budget is not a useful estimate.

The second estimate for 1971/72 is one by USAID. It takes account of petroleum revenues which will result from the recent settlement. In addition, it assumes large increases over actual expenditures in 1970/71 on both recurrent and capital items. Even if these large expenditures come about (and achievement of the large increase in capital expenditure will be very difficult) it appears likely that revenues will exceed expenditures in 1971/72. Even though fiscal year 1971/72 is more than half over, only indirect data on revenues and expenditures is available. The indication is that revenues are at least equal to expenditures. There has been no increase in internal debt in the last six months. (Money supply has declined slightly during the last six months.)

The rapid growth of petroleum revenues (from £35 million in 1969/70 to an estimated £351 million in 1971/72) is largely responsible for the improvement in the budget picture. (See Table I next page)

TABLE I

**REVENUE AND EXPENDITURES OF THE
NIGERIAN FEDERAL GOVERNMENT**
(In £ millions, Fiscal Year ending March 31, 1971)

	Actual		FMG Budget	USAID
	1969/70	1970/71	1971/72	Estimate 1971/72
<u>RECURRENT REVENUE</u>	<u>218</u>	<u>379</u>	<u>476</u>	<u>653</u>
<u>OF THIS:</u>				
Oil	35	108	225	351
Import Tax	80	116	97	151
Export Tax	19	20	15	20
Excise Tax	39	66 ^a	82	76
Other	45	69 ^a	57	55
<u>RECURRENT EXPENDITURE</u>	<u>383</u>	<u>424</u>	<u>366</u>	<u>514</u>
<u>OF THIS:</u>				
Non-Defense	113	124	133	155
Defense (incl. Defense Capital)	180	157	107	180
Revenue Passed to States	90	143	128	179
<u>CAPITAL EXPENDITURE</u>	<u>32</u>	<u>40</u>	<u>139</u>	<u>90</u>
OVERALL SURPLUS (+) DEFICIT (-)	<u><u>-197</u></u>	<u><u>- 85</u></u>	<u><u>- 29</u></u>	<u><u>+ 49</u></u>
<u>FINANCING OF DEFICIT</u>				
Long-term Domestic Loans	18	20		
Foreign Loans-Grants	11	28		
Short-term Domestic Borrowing	126	108		
Cash Reserves and Others	42	- 71		

^a

The "other" category for 1970/71 may contain some revenue that should be counted in the "oil" category.

3. Balance of Payments

Table II presents data on Nigeria's balance of payments for 1965-1970, and projections for 1971-1973. The "Non-oil plus oil surplus and deficit" line illustrates Nigeria's balance of payments problems from 1967 to 1970. The large gaps between sources of foreign exchange (oil and non-oil exports and capital inflow) and uses of foreign exchange (imports of goods and services) were met by declining foreign exchange reserves (1967) and by increases in the "backlog" (1968 to 1970);

The most important items in the projections for 1971 to 1973 are non-oil imports and net oil sector contribution. These items are so large that small changes in their projected rates of growth dominate changes in the other items in the table, and cause big changes in the deficit-surplus projection.

Nigeria's balance of payments for the immediate future will be determined largely by the race between rapidly growing non-oil imports and rapidly growing earnings from oil exports. It appears that in the months ahead Nigeria's earnings of foreign exchange will be roughly equal to the demand for foreign exchange for current imports of goods and services. But, as mentioned above, Nigeria has a "backlog" problem. The backlog represents foreign exchange owed for imports received in Nigeria up to April 1, 1971. In the eight months after April 1, 1971, £150 million were applied to the backlog. The amount remaining to be paid is estimated to be approximately £65 million.

On April 1, 1971, a new mandatory credit system was imposed on imports. Under the new system, some imports are paid for upon arrival in Nigeria, others (and most imports fall into this category) are paid for either 90 or 180 days after arrival, and some capital goods are paid for over many years. On July 1, the Central Bank began paying for imports in the 90-day payment category (90 days after April 1) and on October 1, the Central Bank began payments on the 180-day category (180 days after April 1).

Thus, even though foreign exchange receipts in the immediate future will probably be sufficient to pay for imports of goods and services in the immediate future, Nigeria will be using foreign exchange receipts to reduce the backlog remaining from April 1, 1971, and in meeting her obligations under the new 90- and 180-day mandatory credit system.

It is uncertain when the balance of payments will be completely current, that is, when all lags in foreign exchange payments will be normal commercial lags. The more rapid the growth of imports, the further into the future is pushed the day when backlog is removed and the new mandatory credit system can be scrapped and replaced with normal commercial arrangements. If the high import projections in the

table are realistic, and if the remainder of the pre-April 1, 1971, backlog is as high as £65 million, that day may not come before 1973.

Apart from the short-term problem of removing the backlog and getting payments back to a normal commercial basis, the balance of payments prospects for the next few years are good. Nigeria's large and rapidly growing export earnings will probably allow the importation of the goods required for and due to the growth of the economy at a satisfactory rate. But achievement of good balance of payments performance will not be automatic; careful attention needs to be paid to the exchange rate and tariff structure to achieve both good performance of the balance of payments and incentives for efficient industrialization.

TABLE II

NIGERIA'S BALANCE OF PAYMENTS
(£ millions, calendar years)

	ACTUAL						PROJECTION		
	1965	1966	1967	1968	1969	1970	1971	1972	1973
<u>Non-oil Sector</u>									
<u>Current Account (net)</u>	- 81.9	- 73.7	- 86.2	- 64.9	-115.1	-211.1	-385	-493	-619
Exports	+197.2	+187.1	+166.8	+173.1	+189.0	+184.0	+190	+193	+206
Imports	-254.6	-228.5	-200.9	-176.6	-220.0	-327.5	-480	-576	-690
Services (net)	- 27.2	- 34.0	- 59.8	- 75.5	- 92.1	- 79.2	-100	-120	-140
Transfers (net)	+ 2.7	+ 1.7	+ 7.7	+ 14.1	+ 8.0	+ 5.0	+ 5	+ 5	+ 5
<u>Capital Account (net)</u>	+ 48.6	+ 19.5	+ 10.7	+ 15.2	+ 21.4	+ 26.9	+ 32	+ 36	+ 24
Private Capital (net)	+ 19.6	+ 6.0	- 6.0	+ 5.0	+ 22.5	+ 15.0	+ 15	+ 15	+ 15
Official Capital	+ 35.9	+ 24.9	+ 26.3	+ 21.6	+ 12.9	+ 26.9	+ 32	+ 36	+ 24
Official Debt									
Amortization	- 6.9	- 11.4	- 9.6	- 11.4	- 14.0	- 15.0	- 15	- 15	- 15
<u>Errors and Omissions</u>	+ 9.6	+ 2.0	- 12.1	+ 1.3	+ 10.9	+ 16.5	-	-	-
<u>Net Oil Sector Contribution</u>	+ 35.6	+ 43.4	+ 48.7	+ 27.8	+ 55.9	+130.0	+315	+510	+625
<u>Non-Oil plus Oil Surplus (+)</u>									
<u>Deficit (-)</u>	+ 11.9	- 8.8	- 38.9	- 20.6	- 26.9	- 44.3	- 38	+ 53	+ 30
<u>Balanced By</u>									
<u>1/</u>									
Backlog	--	--	- 3.6	- 20.5	- 28.6	- 44.3			
Reserves	+ 11.9	- 8.8	- 35.3	- 0.1	+ 1.7	--			

1

USAID estimate. Consists of payments due abroad awaiting transfer by Central Bank. Minus sign indicated increase in backlog.

Source: 1965-70: Based on Central Bank of Nigeria Statistics.
1971-73: USAID projection.

ANNEX IV

DESCRIPTION OF SITE AND DESIGN CONSIDERATIONS

Site Conditions

Buildings have been sited inside the University boundaries in as compact an area as possible to reduce walking distances and to reduce the cost of services and utilities, such as storm water drains, sewage, water and electricity. Consideration has been given to the functions of the proposed buildings in conjunction with existing facilities on the campus and allowances have been made for possible future expansion of these facilities.

No particular foundation problems are anticipated. In general the soil consists of silty and sandy clay overlaying granite bedrock at varying depths. Foundations in the past have normally been taken to a depth of about four feet below ground level with an expected bearing capacity of from one to two tons per square foot.

Two sources of water are available for the campus. The main supply, from the town of Zaria about 8 miles to the south, is pumped into a 300,000 gallon underground reservoir and from there into a 60,000 gallon overhead tank for gravity distribution. The secondary supply is pumped from the Yelwa River through a treatment plant and then to the underground reservoir. In the past there have been shortages of water on the campus and the design provides for 30,000 gallon overhead tanks at the Agriculture School and Veterinary Medicine School sites. These reserve tanks will supply supplementary water for a 48 hour period.

The academic buildings on the main campus are connected to a sewage treatment plant, but neither the size nor the location of the plant allows its use for the Veterinary Medicine or Faculty of Agriculture buildings. The design provides for the use of septic tanks with leaching fields, and in order to reduce the load on the tanks, separate drainage systems will be used for storm and waste water.

The campus receives power from the hydro-electric installation at Kainji and the existing transmission lines have sufficient capacity to supply the project buildings. Two standby generators will be installed at each of the project building sites for emergency use during periods of power failure.

Design Considerations:

The buildings and space allocations conform to the Education Guidelines of the Africa Bureau, taking into account the requirements of the specialized facilities.

Provision has been made in the design for air-conditioning of certain rooms, such as: laboratories, libraries, lecture theatres, study rooms and offices. In order to reduce the air-conditioning load, consideration has been given to the reduction of solar heat by effective use of solar screens, reflective coloring and insulation elements. Rooms have also been oriented to benefit from breeze penetration in event of a close down of the mechanical system.

The selection of materials used in construction will be limited by considerations of cost, the capability of the local labor force, the effects of climate, insect attack and ease of maintenance.

A modular grid has been used to allow the maximum use of standard materials and dimensions and simple construction methods.

The following is a detailed summary of the functions and space allocations for the various buildings, excluding circulation space:

1. EXTENSIONS TO FACULTY OF VETERINARY MEDICINE:

Main Teaching Research Complex.

Administration.

Dean's Office
Dean's Personal Secretary
5 Offices for the Dept. Heads
Secretaries Offices (to serve and be shared by all Dept. Heads)
General Office (to house 5 Steno typists, one for each Dept.)
Archives Room (to store all permanent records)

Conference Rooms:

- a) Conference room (to accommodate all staff (40))
 - b) 2 Conference Rooms (For private conferences involving one department and for other small groups)
- Staff cloakrooms for male and female staff

Teaching

4 Teaching Laboratories
Service Room (General)
Service Room for Anatomy
Animal Holding area
Issuing Store
Maceration Laboratory
Medical Illustration & Visual Aids Room
Histology Technicians Room
Auditorium
3 Lecture Theatres
Reading Room/Library
Lounge

Locker Rooms:

To accommodate 200 Male students.
20 Female Students
40 Senior Staff, Male
Senior Staff, Female
Junior Staff, Male

Toilet Facilities

To accommodate 250 students, undergraduate and graduate
Female students
Senior Staff, Male
Senior Staff, Female
Junior Staff, Male.

Research

5 Research units (inclusive of offices, research labs,
preparation and storage areas.)
Electronics Workshop
Vitamin Dark Room
Staff Clerkroom

FACILITIES FOR TEACHING & RESEARCH IN ANIMAL DISEASES

2 Poultry Barns
2 Swine Barns
2 Large Animal

Diagnostic Laboratory Unit

Walk-in Cold Room
Walk-in Incubator Room
Microbiology 3 No. cubicles
Serology Room
Fluorescent Microscopy 2 No. cubicles
Tissue Culture 3 No. cubicles
Secretary & records Office
Directors Office
Histopathologists Office
Microbiologists Office
Technicians Office
Washing, preparation & Sterilizing room
Animal Laboratory
Specimen Storage Room
Avian & Small Animal Necropsy
Cloakrooms
Dark Room & Library facilities used By Parasitology
Toxicology, Clinical Pathology
2 Animal Colony Rooms

2. EXTENSIONS TO FACULTY OF AGRICULTURE

Planning areas

1. Main Building
 - a) Faculty Accommodation
Dean's Office
Dean's Secretary's Office
General Purpose Conference Room
1, Lecture Room
2, Lecture Rooms
Cloakrooms
 - b) Soil Science Department
12, Research Offices
4, Ordinary Offices
3, Ordinary Offices
Research Laboratories
Plant Analysis Laboratory
Soil Physics Laboratory
2, General Wet Laboratories
Special Research Rooms
Combined Balance Instrument Room
Preparation Room
2, Balance Rooms
2, Instrument Rooms
Soil Store Museum
Instrument Workshop
2, Constant Temperature Rooms
Plant Preparation Room
Extension Research Laboratory

Store Rooms

Chemical Apparatus Store 1
Chemical Apparatus Store 2
Plant Samples Store

Teaching Laboratories

Combined Soil & Animal Science Laboratory
Soil Option Laboratory
Soil Chemistry Laboratory
Soil Physics Laboratory

c) Animal Science Department
8, Offices

Biochemistry Laboratory
Animal Physiology Laboratory
Animal Physiology Room
Preparation Room
Balance Room
Grinding Room
Store Room

d) Agricultural Economics Department
11, Offices

1, Office
1, Store
Data Processing Room
Graduate Students Room
Store Room (Archives)
Seminar Room

Library

Librarian's Office
Work-room
Stack Room
Catalogue Area
Students Reading Room
General Reading Room

Animal Products Building

The Product Control Laboratory
2, Offices
Store
Production Room
Junior Staff Cloak & Changing Room

Agricultural Engineering Building:

6, Offices
1, Teaching Classroom
Classroom^oStore
Cloak Rooms

Green & Screen Houses

Growth Chambers
Glass House
Screen House
Storage

Animal Metabolism Building

Large Animal Metabolism Room
Small Animal Room
2, Feed Rooms (Stores)
1, Office
Micro Ingredients feed mixing Room
Preparation Room
General Storage Room

Livestock Arena

Total Net Area = 120,000 square feet

Total Gross Area = 168,000 square feet

Exterior circulation = 8,000 square feet

BUILDING CONSTRUCTION TECHNIQUES

FACULTY OF VETERINARY MEDICINE

Faculty and Research Building, Multi-Discipline Laboratories,
Laboratory Services and Library, Diagnostic Laboratory

Reinforced concrete beams and columns.
Reinforced concrete floor and roof slabs.
Roof slope to be lightweight fill (minimum slope 1/8" per
1'-0"). Built up roof - aluminum coating.

Floor finishes - hardened concrete and resilient tiles.

Walls stuccoed inside and out over "sandcrete" block
exterior walls cavity type.
Aluminum windows.

Lecture Theatres and Auditorium Buildings

Reinforced concrete columns.
Steel roof beams and purlins with steel roof deck and
rigid board insulation.
Built-up roof aluminum coating.
Suspended acoustic ceilings.
Floor finishes hardened concrete and resilient tiles.
Walls stuccoed inside and out over "sandcrete" block.
Aluminum windows.

FACULTY OF AGRICULTURE

Main Building, Library, Animal Products

Reinforced concrete beams and columns.
Reinforced concrete floor and roof slabs.
Roof sloped with lightweight fill.
Built-up roof - aluminum coating.
Floor finishes - hardened concrete and resilient tiles.
Walls stuccoed inside and out over "sandcrete" block -
exterior walls cavity type
Aluminum windows.

Agricultural Engineering Building

Offices, Classroom, Lobby, etc., as above.
Workshop area - reinforced concrete columns - steel roof
trusses with corrugated transite roofing.
6" hardened concrete floor slab.
Walls stuccoed inside and out over "sandcrete" block.
Aluminum windows.

Greenhouse and Screenhouse

Completely prefabricated unit designed to program specifications.

BARN AND MISCELLANEOUS BUILDINGS

Animal Metabolism Building

Flat roof area - reinforced concrete beams and columns.
Reinforced concrete floor and roof slab.
Roof sloped with lightweight fill.
Built-up roof - aluminum coating.
Walls stuccoed inside and out over "sandcrete" block.
Aluminum windows.
Large animals holding room.
Reinforced concrete columns.
Steel roof trusses with corrugated transit roofing.
Concrete floor slabs.
Walls stuccoed over "sandcrete" block.

Livestock Arena and Barns

Reinforced concrete columns.
Steel roof trusses with corrugated transite roofing.
Concrete floor slab where called for.
Walls stuccoed over "sandcrete" block.

HOUSING

Construction of student and faculty housing is based on standard designs developed by the University and currently being used for expansion of these facilities. Staff housing consists of two and three bedroom units utilizing hollow sandcrete block walls, reinforced concrete floors, and roofs of either aluminum or asbestos cement sheeting. Student hostels are of similar materials but in multistoried and multiunit structures.

ANNEX V

CERTIFICATION PURSUANT TO SECTION 611 (e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, William R. Ford, Director USAID/Nigeria, taking into consideration the following factors, do hereby certify that the Government of Nigeria has the capability to effectively operate and maintain the proposed expansion of facilities for the faculties of Veterinary Medicine and Agriculture at Ahmadu Bello University at Zaria:

1. The satisfactory utilization and excellent maintenance of the existing facilities for the Faculties of Veterinary Medicine and Agriculture.
2. The adequate budgeting for the maintenance and operation of the proposed expansion in the project recurrent budgets of Ahmadu Bello University.
3. The high quality of the existing university maintenance program and the firm plans for expansion of maintenance staff and equipment which are based on the university's total expansion program.
4. The satisfactory maintenance and utilization of projects in Nigeria previously financed and /or assisted by the United States.

William R. Ford, Director

February 15, 1972

DRAFT

ANNEX VI

AID Loan No.
Cap. Asst. Paper No. AID/OLC/P
Project No.

CAPITAL ASSISTANCE LOAN AUTHORIZATION

Provided from: Development Loan Funds

Nigeria - Expansion of Faculties of Agriculture and Veterinary
Medicine of Ahmadu Bello University

Pursuant to the authority vested in the Administrator of the Agency for International Development (hereinafter called "A.I.D.") by the Foreign Assistance Act of 1971, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, chapter 2, Title I, the Development Loan Fund, to the Federal Military Government of Nigeria (hereinafter called the "Borrower") of not to exceed 7.0 Million Dollars (\$7,000,000) to finance the foreign exchange and local currency costs for expansion of the Faculties of Agriculture and Veterinary Medicine of Ahmadu Bello University, including construction of new facilities, purchase of equipment and the provision of certain technical assistance, this loan to be subject to the following terms and conditions:

1. Interest Rate and Terms of Repayment

The interest on this loan shall be two percent (2%) per annum on the disbursed balance of the loan during the first ten (10) years of the loan and three percent (3%) per annum for the remaining thirty (30) years of the loan. The principal of the loan shall be repaid in full within forty (40) years from the date of the first disbursement under the loan, and such repayment shall include a grace period of not to exceed ten (10) years from the date of first disbursement.

2. Currency of Repayment

Provision shall be made for repayment of the loan and payment of the interest in United States dollars.

3. Other Terms and Conditions

- (a) Equipment, materials and services financed under the loan shall have their source and origin limited to the United States, Nigeria and A.I.D. Geographic Code 941 countries.
- (b) This loan shall be subject to such other terms and conditions as A.I.D. shall deem advisable.

Assistant Administrator for Africa

Date