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SUMMARY OF OBSERVATIONS ON NIGERIAN AGRICULTURE
AND AGRICULTURAL INSTITUTIONS

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by Richard Bradfield

Our principle concern on this trip was to explore, in greater depth than on previous visits, the suitability of Nigeria, in general, and of the University of Ibadan in particular, as a site for an International Institute of Tropical Agriculture.

The Climatic and Ecological Setting

The proposed Institute, as I understand it, is to be developed into an international research and advanced training center which will focus its resources primarily on the broader and more basic problems which limit agricultural production in tropical climates. While tropical areas are usually delineated by latitude, strictly 23° 27' north and south of the equator, the sub-tropical zone which is often included with the tropical zone for certain agricultural considerations, extends to 30° north and south of the equator. With rare exceptions, due to peculiarities in the local environment, this

broad band centering on the equator and 60° wide is free from frost throughout the year. While the growth of crops in this zone is but rarely limited by temperature, it is often limited by the supply of water. In many areas the total annual rainfall is adequate but the distribution is irregular. Large areas have a well defined rainy and dry seasons. It would seem desirable to locate the Institute in a tropical country in which areas with a rather wide range in annual rainfall are readily accessible. It should also have water available for irrigation during the dry season at the principle research centers. Nigeria meets these requirements better than most tropical countries. The annual rainfall along the coastal zone in the south is very high, 120 inches or more and the dry season, if any, is short. It decreases in roughly parallel bands from south to north. Along the coast is a strip of mangrove swamp, with brackish water. This grades into a strip of fresh water swamp which is thought to have great potential for rice growing. The next parallel band has a high rainfall...80-90 inches per year...but the land is higher and better drained. This zone is well suited to African oil palm, rubber, coconuts, etc. Above this is the belt in which much of the cacao is grown. Maize, yams, cassava, citrus fruits and bananas are the principle food crops. As the rainfall decreases in successive bands toward the north, maize is replaced by grain sorghums, peanuts, sweet potatoes, etc. At the extreme north the rainfall drops to 20 inches or less and the grazing of cattle is the principle occupation of the rural people.

As would be expected from the wide variations in rainfall and parent rocks, Nigeria has the wide range of soils which is typical of most tropical areas. The reserves of fertility are low. Most of the annual food crops are grown in systems of "bush fallow" or "shifting cultivation" which are very extravagant in their demands for labor and which require a very high proportion of the time of the people to produce even a bare subsistence that they cannot be expected to provide a very high standard of living. Considerable evidence was found that, with appropriate research, improved systems of soil management can be developed which will be economical. Two areas, the Jos Plateau and the Eastern border with the Cameroons, have altitudes of about 4,500 and 7,500 feet respectively. As a result of their cooler climates, these areas add further diversity to the soils and crops of the country and for the people, opportunity for an occasional respite from the monotony of the tropical climate.

Most of these regions are now reasonably accessible by air and car. A research station, with land for experimental purposes, a nucleus of a scientific staff, usually with fair living accommodations and a helpful background of basic information about soils and crops of the area is found in most of the more important ecological zones. While the subject was not discussed directly, I feel sure that it would be possible to arrange for cooperative research at most of these stations if and when it becomes advisable.

The Institutional Structure

The Universities

The National University at Ibadan, organized about 13 years ago as a University College under the University of London, is without question the strongest university in the country today and the most desirable for the New Institute to affiliate with. It has capable top leadership, a student body of over 2,200, strong basic science departments, a small College of Agriculture already offering some graduate work, a good start on a library, an excellent medical school, with good facilities for basic biochemistry. A small farm, recently enlarged by over 1,000 acres of undeveloped land, mostly in jungle, with another lot of about the same size likely to be added. Living conditions for the staff would seem to be good. An attractive university community is developing rapidly. Primary school facilities are good and a new International High School has just been completed and opened this fall which will provide splendid secondary school training for the children of the staff. A number of other agricultural institutions are located near Ibadan: (1) The Federal Research Station, (2) The Western Regional Station and (3) The Practical School of Agriculture, all located on the old Moor Plantation, and the (4) The Agricultural College of Ife University is at present located adjacent to the University of Ibadan. The Ministry of Agriculture of the Western Region is also located in Ibadan.

Efforts are already being considered for integrating the activities of these different units. Many of the leaders for the more recently organized Regional Universities were recruited from the staff of the University of Ibadan. There is no institution in West Africa which at present seems to offer as many advantages as a potential international agricultural research and training center as the University of Ibadan.

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The University of Nigeria at Nsukka in the Eastern Region is now 3 years old. Splendid progress has been made in this short period. The Michigan State University has given valuable aid in the development of the Agricultural Faculty through an A.I.D. contract. The President of the Federation, Azikewi, has taken a very active interest in this University and is serving as its Chancellor. The zeal for progress in the Eastern Region and its resources, including the recently discovered deposits of petroleum presage a rapid development there.

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The Ahmadu Bello University at Zaria in the Northern Region is not as far along as the one at Nsukka but it is now in operation, with many splendid facilities completed and others under construction. A contract with Kansas State University provides for 7-8 professors from that institution for the next few years. They now have 600 students and expect to have 1,500 within 5 years. They have a problem getting well qualified students due in part to the limited number of secondary schools in the Northern Region.

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The University at Ife in the Western Region has started a skeletal operation in temporary quarters at Ibadan. Plans have been evolved for a full-fledged university on a 16,000 acre tract of jungle near Ife. It is not yet clear how rapidly funds and the supply of trained men will permit this institution to develop. There seems to be a very firm commitment to its development. It should provide, eventually, another valuable center for cooperative research and advanced training.

The Practical Schools of Agriculture at Ibadan, Umadike, Samaru and Kadda are expected to train the leaders needed for many of the extension and development programs of both National and Regional governments. The training of these students is subsidized by the government and they are assured a government job when they graduate. They are being geared to turn out hundreds of these young men. Since their course of study is of only 1 to 2 years duration, the number graduated will be 2-4 times as great as from institutions with degree courses with the same over-all student capacity. The course of study will not be comprehensive or rigorous enough to prepare them for many jobs but it will be a substantial step forward.

The Agricultural Research Stations at Moors Plantation, Ilora, Benin, Umadike, Samaru Bedeggi, among others, have made and continue to make substantial contributions to Nigerian agriculture. Scientists going to Nigeria from any of the western countries will not be moving into a scientific vacuum. Many of these institutions have

been in existence for many years and they have had many capable scientists on their staffs. While there are many gaps which need to be filled, the lessons already learned should not be ignored nor the past mistakes repeated.

The Farm Settlement Schemes were designed to interest the "school leavers" in farming. They consist of about 120 standardized farm units, usually ranging from 20-50 acres in size, depending on the type of crops grown. They are organized around a center which will be supervised by government specialists, who are graduates of the Practical Schools of Agriculture. They are designed to provide, when in full operation, an annual income of about \$1,000.00 per family per year. This is over 10 times the average annual income of farmers now. While these projects have been unnecessarily expensive so far, they may yet prove to be a good investment in research and education in the difficult problems of finding ways to move from a communal shifting type of subsistence agriculture to an individual commercial type. In any case, because of their leadership they may prove of value as a practical testing ground, on a large scale, of promising new practices developed by research at the Institute and other research Institutions.

General Comments

The environmental conditions and the institutional framework in Nigeria seems to provide a suitable setting for an International Institute for Tropical Agriculture. The country has substantial resources in timber, coal, petroleum, limestone and water for both power and supplemental irrigation. The zeal for education is very great, especially in the Eastern and Western Regions. If this zeal is fostered and directed into proper channels, Nigeria should develop a pool of trained manpower for operating her developing economy more rapidly than most underdeveloped countries.

When examined from the standpoint of the global interests and progress of the Foundations, this seems to be a logical center for their second major cooperative venture.