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LESSONS FROM INSTITUTION BUILDING EFFORTS IN AFRICA: US UNIVERSITY EXPERIENCES BUILDING COLLEGES OF AGRICULTURE

by

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INTRODUCTION:

Institutional development is a high priority within USAID as an approach to encouraging development because according to USAID effective institutions:

- enhance a country's ability to marshal its own human capital and financial resources for development;
- expand people's opportunities to undertake successful development by providing increased incentives for investment;
- increase the likelihood that A.I.D. and host country resources will foster development that can be sustained after external assistance is withdrawn. That is, AID's investment should stimulate a process of investment and re-investment by beneficiaries themselves that continues after the termination of donor involvement. (U.S.A.I.D. 1983)

The development of colleges of agriculture has been a major focus of institution building efforts from the inception of USAID. For some the phrase 'institution building' is synonomous with 'college of agriculture' or 'institution of higher education', though there are clearly many other institutions besides academic ones that promote development and even agricultural development.

By 1968 there had been established some 68 USAID supported institution building projects involving colleges of agriculture with 35 Land-Grant institutions in 39 countries around the world (Propp, 1968). Fully 50% of those had been started in the 1950's. However, in Africa most of the institution building efforts on behalf of colleges of agriculture did not start until into the 1960's, considerably later than the efforts in other parts of the world. The reasons are of course related to the slower demise of colonial rule and emergence of independent nations in Africa which did not take place until into the 1960's. In fact the only African college of agriculture project started in the 1950's with AID support was the Oklahoma State work in Ethiopia, whose colonial history is quite different from much of the rest of Africa.

When attempting to evaluate the overall impact of the past and current investments in building colleges of agriculture in the Third world, Africa creates major problems for us. Generally, in the past two decades food production in the world has outstripped population growth except in Africa where in the years 1975 - 1984 per capita food production has actually

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declined by 0.9%. The reason for this evaluative problem in Africa is because we point to the increases in per capita food production in other parts of the Third World - the Green Revolution - as partial evidence of the success of institution building efforts in those regions. Therefore, by the same logic, we must judge the efforts in Africa to be something less than successful.

In all likelihood the logic is in error in both cases. The contributions of agricultural colleges are probably less significant in Latin America and in Asia than we credit them, and our expectations of them in Africa should also have been more modest. However, it is the agricultural development crisis in Africa that has caused a substantial reexamination of past development efforts throughout the donor community, and that brings me to report to you on the review that David Wilcock and I made of the experiences of US university personnel who were involved in institution building efforts in colleges of agriculture in Africa.

This general reexamination of development strategies will likely give us all some new insights into other aspects of development. Just one example is worth mentioning because it reflects on the role of African colleges of agriculture. In a forthcoming paper Judd, Joyce and Evenson report that the ratio of agricultural extension workers to agricultural researchers is greater in Africa than in any other part of the world (Judd, Joyce and Evenson, 1986), suggesting the possibility that there has been a relative over investment in extension as opposed to research personnel in Africa.

In examining the experiences in building colleges of agriculture in Africa we met with 60 individuals who were involved in 9 US Land-Grant university institution building efforts in 14 locations in Africa. The table below identifies and summaries those institution building efforts. In addition to the interviews, our report on this research (Wilcock and McDowell, 1986) is based on a review of the literature and reports of research on institution building and agricultural development, AID and university documents describing the several projects, and our personal knowledge of Africa and of agricultural development. However, our work has not been validated by checking it against the experiences and impressions of Africans who are concerned with similar questions or have had personal experiences with the same African institutions. That remains the major limitation of the work.

Our interviews and thus our report focused on the several aspects of the development and implementation of these projects including;; a) project origins; b) on-campus support, rewards and leadership; c) objectives and accomplishments of the project in the field; d) relations with the host country; e) relations with USAID both in country and in the US; and f) the model or strategy employed by those carrying out the project in the field. For the purposes of this paper the major focus will be on those insights and aspects that relate primarily to the conduct and accomplishments of the projects in the field.

In the remainder of this paper we will summarize the major findings from our interviews that relate to the projects in Africa and then will give our interpretation of the meaning of those findings for future college of agriculture institution building projects.

Table 1. US and African Institutions Represented In Survey.

US University	Number of Interviews	African Country and Institutions	Year Contract Began	Number US Personnel Long Term in Africa
Illinois	7	Sierra Leone: Njala University College	1963	30
Kansas St.	16	Nigeria: Ahmadu Bello University	1963	75
Michigan St.	8	Nigeria: University of Nigeria, Nsukka	1960	79
Wisconsin	6	Nigeria: University of Ife	1964	37
Massachusetts	5	Malawi: Bunda College of Agriculture	1963	11
Oklahoma St.	4	Ethiopia: Alemaya Agricultural College	1952	140
Minnesota	6	Morocco: Institut Agronomique (IAV)	1969	15
Texas A & M	2	Tunisia: Chott Maria Agricultural College	1962	20
West Virginia	6	Uganda: Makerere Univ.	1964	10
		Arapai Ag. College	1963	8
		Bukalasa Ag. College	1963	9
		Vet. Training Instit.	1963	4
		Kenya: Edgerton Coll.	1962	12
		Tanzania: Morogoro Ag. Coll.	1961	8
Totals	60			458

PRINCIPLE FINDINGS:

1. Perceptions of Project Objectives and Success in Meeting Them

Most of the individuals interviewed indicated that there had been an explicit attempt to incorporate Land-Grant structures and attitudes into their work with the African agricultural college. In a number of cases there were explicit attempts to take control over agricultural research and extension in the country or region and add that to the instructional role of the college in order to duplicate the U.S. Land-Grant structure. This

was attempted explicitly in Sierra Leone and at Ife, Nigeria. For the most part when people spoke of the US Land-Grant college as a model they had in mind establishing some kind of linkage between the African college and research and extension.

In general the individuals we interviewed felt that their US university's efforts in Africa had been quite successful in meeting the following objectives: 1) "Bricks and mortar" activities, 2) temporarily filling of teaching slots, 3) extensive curricula development efforts, 4) production of new instructional materials more closely related to the African environment, 5) developing college farms that contributed significantly to practical aspects of instructional programs, 6) promoting a "psychological break" in educational style with the colonial past.

In addition, participant training was a very important part of the institution building process in the minds of most of the people interviewed and most felt those efforts to have been successful. Table 2 below summarizes the numbers of long-term participant trainees associated with the respective projects. In addition to these degree training efforts a number of the projects provided shorter term non-degree training in the US for staff associated with the African institution. Such efforts represented the means whereby Africans would rapidly acquire the training necessary to assume direct responsibility for activities being initiated by Americans under the contracts.

There was considerable variation in the way that different institutions approached this part of their efforts. The approaches used by the Kansas State veterinary project at Amadu Bello University, Nigeria and the Minnesota approach in conjunction with the IAV in Rabat, Morocco seem to have been particularly successful in directing US degree related research of participants towards relevant African topics and in preparing the student for research and scholarship in Africa.

Table 2: Total Number of Long Term Participant Trainees in the US.

INSTITUTION	LEVEL OF TRAINING	NUMBER
Illinois - Njala, Sierra Leone	MS & PhD	30
Kansas State U. - ABU, Nigeria	MS & PhD	78
UMASS - Bunda, Malawi	BS & MS	9
Michigan State - Nsukka, Nigeria	MS & PhD	92
Minnesota - Rabat, Morocco	MS & PhD	253
Oklahoma State - Alemaya, Ethiopia	MS & PhD	57
Texas A & M - Chott Maria, Tunisia	BS	44
West Va. Univ. - East Africa	BS, MS, PhD	117
Univ. of Wisconsin - Ife, Nigeria	MS & PhD	38
Total		718

It is fair to say that the greatest dissatisfaction with the progress of these projects reported to us was the degree to which there had been success in establishing institutional or even informal working relationships with either research or extension activities in the country. The

most forcefully resisted attempts at such linkages were those where there were 'take over' attempts on behalf of the college. In other places there were a variety of liason efforts and, despite the fact that the colleges were to be a major training facility for both research and extension personnel, there appeared to be little linkage success. In general, on the basis of the retrospective information reported to us and on the knowledge those interviewed had of current conditions, we concluded that most of the African colleges of agriculture covered by our report are primarily teaching institutions with little direct involvement in either research or extension.

2. Relations with USAID and Project Success.

There was reported a wide variation of experiences in the relationships between the projects and AID missions in Africa. In general there appeared to be greater understanding of the projects and support from AID in the field when the mission provided some level of logistical support to the contractor. However, much of the difference in AID behavior in the field appears to have been a function of other events and changes taking place in the US during the decade of the Sixties (York). At the beginning of the decade strong AID field staff took active interest in college of agriculture institution building efforts and worked closely with US university staffs. Later in the decade mission staffs began to decline in both number, quality, and supportiveness. By the late sixties a number of AID missions were closed down entirely. In general there was a feeling by university staff in the field that their projects were under fire and in the cases of Malawi/ University of Massachusetts and Sierra Leone/Univ. of Illinois, institution building contracts were concluded several years earlier than was expected.

While a variety of USAID practices and procedures such as "buy America", "fly American", "R & R elsewhere", and "when's the next flight out of here?" by AID staffers were annoying to staff in the field, the most disturbing aspect of the AID/University relationship was the seeming lack of understanding on the part of many AID staff of the nature of the institution building task. Once the bricks and mortar were in place, many interviewees reported AID staff to be impatient with the time required to develop teaching programs, and attempt the linkages with other agencies and organizations. This tendency had two manifestations. One, it caused AID missions to be quite eager (or under outside pressure) to close out the agricultural college projects, often before the date anticipated in the project design. Second, it resulted in an almost total lack of continuity of relationship between the African institution and the US institution after the projects were closed out. There seems to have been almost no use of small sums of money to carefully and selectivly foster continued contacts that could have proved particularly valuable to the new African institutions and their new faculties.

ISSUES AND IMPLICATIONS FOR AFRICAN AGRICULTURAL COLLEGES IN THE 1980°S.

We believe that as a general proposition, it makes sense for African agricultural colleges to be heavily involved in the production and dissemination of new technology for the farmers of their country even though that is not now the case. However, we do not believe that establishing this general expectation of these institutions and encouraging them in that

direction is a substitute for support to national research systems. Further, we do not believe that the colleges of agriculture will likely be the primary source or focus for new farm level problem solving research or its dissemination. Having stated this general proposition, we assert that because of the great variety of agronomic conditions, institutional heritages, and levels of development across the African continent, the appropriate roles for colleges of agriculture and the nature of their linkages to other agricultural institutions must be assessed for each unique national environment. It now remains for us to defend these assertions.

Lessons From Trying To Apply The Land-Grant Model

Throughout our research into the early experience in building colleges of agriculture in Africa we encountered extensive reference to the use of the "Land-Grant model" as a guide to project strategies both in Africa and elsewhere in the Third World. However, by almost anyone's estimation, there is little resemblance between African agricultural colleges and the expectations suggested by the Land-Grant model. There are several possible explanations for the discrepancy between the programs of these colleges and the model including the following: 1) the Land-Grant model was inappropriate in the first place; 2) there was not a clear understanding of the essential elements of the model by those who employed it; 3) national institutional and cultural traditions precluded implementing the model; or 4) the model is of a mature agricultural college and none of the African colleges are sufficiently mature to judge the degree to which they conform to the model.

We believe that all of the above reasons explain the current state of African agricultural colleges; give clues to the what can be expected of them; and suggest directions for enhancing their future contributions to the pressing problems of African farmers.

A Review of the Land-Grant Model:

The conventional understanding of the major dynamic in the Land-Grant model is that a college of agriculture has a unique strength when it combines teaching, research and extension. We view this characterization as an oversimplification that leads to the conclusion that it is the administrative combining of these functions that is the important feature of the Land-Grant model. In fact, those efforts to transfer that administrative structure lock, stock and barrel created major problems in the process. In our opinion, the administrative combining of functions has been far less crucial to the success of the Land-Grant colleges in the U.S. than that these major functions were consistent with populist democratic principles that dominated America during their formation.

The Land-Grant colleges were established in the belief that any aspect of human endeavor was a legitimate subject for scholarship. They drew significant inspiration from the integration of science into the German universities in the mid 1800's, yet were in stark contrast to the elitism of many of the European universities where the only legitimate scholarship was in the arts and letters, the law and theology, and perhaps medicine. They were committed to the notion that the respectful examination of the problems of ordinary people could lead to worthwhile scientific advancements. That is, the scientific and scholarly agenda was democratized and

itself further contributed to the democratization of the society. From the outset the Land-Grant colleges were to do more than instruct students in the classroom; they were to be more than just vocational schools. Rather, they were to undertake the application of science to agriculture and the mechanical arts and that meant that their students were not just those in the classroom but also those who could never qualify to be students in its classrooms.

In several ways the original Morrill-Wade Act of 1862 failed to accomplish its stated purpose. After students in the new Land-Grant colleges had studied the few standard works on scientific farming, little was available to them. It became apparent that the application of science to agriculture required more than classrooms and students; it required new knowledge. This new knowledge could only be supplied by research and experimentation. Thus the Hatch Act was passed in 1887 to establish agricultural experiment stations as an integral part of the Land-Grant colleges in each state. Still the benefits desired by agricultural interests in their support of the Morrill-Wade and the Hatch acts were not forth-coming. According to Rainsford (1972), most of the students in the Land-Grant colleges did not study agriculture, even though they came from farm families; results of research and instruction did not reach farmers because they stayed on the farm. In 1914, further corrective legislation was undertaken in the form of the Smith-Lever Act that established a cooperative extension service in each state. Finally after 52 years, the Land-Grant purpose appeared to be achievable.

It is clear that the Land-Grant colleges are a product of the American political process. In transferring the concepts of the Land-Grant colleges and universities to the Third World it is important to remember their political-economic significance rather than the structural components that were necessary to implement those principles in the context of the United States in the late 19th and early 20th century.

The Land-Grant colleges were a political phenomenon and envisioned as an experiment in democracy; the application of science to agriculture was both a scholarly and a political act, and each was democratizing. The Land-Grant model was designed as a means to keeping the scholars feet to the fire with respect to the type of research that was accomplished. Crafting that institutional arrangement required political support; maintaining it today also requires such support. In addition to the non-formal education role that Extension was established to play in response to the political demands of agricultural interests, it is also a major political arm of the system, collecting grass roots support from the clients each college or university serves. An analysis of the most propitious way to conduct and design extension programs in order to generate and collect that support may be as important to the continued support of U.S. Land-Grant universities as it is to analogous Third-World institutions (McDowell, 1985).

In our opinion then, the key principles underlying the Land-Grant model are the following:

1. Complex institutions require sustained political support for their continued growth and vitality. That support must come from the constituency that the institution intends to serve. The program of the institution will in turn be influenced by that support.

2. The application of science to the problems of ordinary people is a political act and has the potential, in an open, pluralistic system to generate considerable political capital on behalf of institutions that produce solutions to such problems.

3. The magnitude of the political capital generated from a scientific or technological innovation is a function of the number of information users and of its net value to each. Where such users are otherwise politically disenfranchised, their support may be of little consequence. On the other hand, the improvement of their economic lot through applied science may help increase their political fortunes.

4. The collection of political capital usually requires a separate transaction from the capital-generating act of introducing the user to the innovation. The solicitation and collection of political support frequently involves either assisting clients to organize interest groups or establishing relationships with existing interest groups (McDowell, 1985). Farmers' cooperatives, farmers' associations, and other farmers' organizations (eg. the American Farm Bureau) can be useful in the dissemination of information as well as in the collection of political support.

5. Sustained political support for these institutions requires that they produce a sustained flow of useful information to their non-student clients. That requires that there be some institutionalized test of the relevance of the research agenda, as well as an opportunity for users to modify that agenda.

The African Context:

In order to accurately assess the performance of the early institution building efforts in Africa and the application of these institution building principles to African agricultural colleges, it is necessary to understand their setting. For the most part a populist base of political support among farmers comparable to that which generated the Land-Grant system in the U.S. does not exist in most African countries.

Given the British or French colonial heritage of most African nations, agricultural colleges offering degree level instruction are frequently within education ministries and separate from agricultural extension and research, both of which are the domain of a ministry of agriculture. Where there is an agricultural college under a ministry of agriculture, it usually only offers terminal diploma-level work. Its graduates are qualified to fill the junior ranks of extension organizations but are precluded from more advanced study.

Most agricultural research in Africa is carried out by the international research (CGIAR) organizations and some by the research divisions of individual national ministries of agriculture; very little research emanates from the colleges and universities. There are clearly exceptions where certain scholars, academic departments, or whole academic institutions have relatively greater involvement in research, but the generalization is not difficult to defend.

As reported earlier, African agricultural colleges are overwhelmed

with instructional duties, mostly at diploma or first degree (BS) levels. Among the factors contributing to this situation are the colonial tradition of academic institutions, the perception that there is a desperate need for trained staff, the role of government as the major employer of diploma and degree graduates, and the limited resources available to support these colleges.

For all these institutional, attitudinal, and circumstantial reasons it is clear that the major direct beneficiaries of the limited scientific capital within African agricultural colleges are students and not farmers. Further, on the grounds that they conduct little or no research and perform no institutional test of scholarly relevance, it can be argued that their programs are not adequate to serving the pressing scientific needs of agriculture in those societies today.

Implications for African Agricultural Colleges and Agricultural Development

- The Role of Extension:

In assessing the performance and programs of these institutions, it is important to understand the institutional maintenance aspect of the extension role, especially where there is an established extension service within the ministry of agriculture. The existence of an extension service in a separate organization from the college of agriculture does not negate the importance to that college of participating at some level in the extension activity, nor does it imply that the nation-wide extension function must be taken over by the college in order to fit the Land-Grant model. However, it does imply that there must be explicit mechanisms through which agricultural colleges can both contribute in an identifiable way to the extension education function and collect grass roots credit for doing so.

- Agricultural Research - Several Dilemmas

Although the extension function is the most explicitly political part of the political economy of the Land-Grant model, the research function and the research agenda was and is perhaps even more important to the political vitality of the Land-Grant institution. Without relevant new knowledge, there is nothing to "extend," and therefore no basis for collecting grass roots political support. The notion that academics should spend less time in teaching and more time in research was revolutionary and controversial in the U.S. when the Hatch Act was passed in 1887. The very notion that colleges and universities should develop and disseminate knowledge products through activities other than training and annointing students contrasts starkly with the elitism of the past. It also departs from the colonial traditions that currently influence many African colleges and universities.

The enormity of the task of applying science to the problems of African farmers requires that the best scientific minds have some direct role in the national research system even if a majority of the research is not carried out by agricultural colleges. Furthermore, in most countries, those scholars with faculty status in agricultural colleges do influence research standards as well as the research agenda; they do so indirectly through their participation within the community of scholars, and directly as advisors.

Failure to institutionalize a test of relevance for academics makes them more susceptible to influence by agendas developed by their international colleagues and less sensitive to the needs of their own country. Again, as was argued in the case of extension, the college of agriculture need not be made responsible for all agricultural research in the country or region. However, in order to generate grass roots support for the college and to democratize its science, it must engage in some research, at least a noticeable amount of which is of a sufficiently applied nature to be a credible source of information in the extension function.

The individual and personal commitment of academics and scientists to scholarship that is relevant to their country's agricultural needs is probably a necessary condition for the agricultural research agenda to move in productive directions. This is why most projects that involve the graduate training of Third World scholars set as one of their key objectives the development of the scholarly values, personal commitment, and research approaches consistent with local needs. However, scholarly attitudes alone are not enough. In order for the scientific enterprise to maintain a desired course, incentives and tests of relevance must be institutionalized. The incentives -- salary adjustments, research funding, promotions, etc. — must be sensitive to changes in the needs of local users. The test of grass roots political support is as good a relevance test as any.

- Training of African Scholars and Scientists

Given all of the incentives within the colleges of agriculture in Africa that mitigate AGAINST a well trained African scholar or scientist undertaking problem solving research on an African problem, the training of that scholar takes on even greater importance. The evidence from both the Ahmadu Bello University/Kansas State and the Rabat/University of Minnesota projects is that those scholars who did their dissertation research in Africa were better able and more quickly able to conduct research in Africa as faculty members.

A second value to the accomplishment of dissertation research in Africa is that though "graduate study" may be accomplished in the US, the research and the research product are African and can be claimed by the African institution that participated in its conduct. Further, once the research has been exploited by being published in some journal somewhere, the only other way to collect on it is within the country where it was accomplished - if it has any relevance there.

Finally, where the graduate degree is conferred by the African institution, as was the case of ABU PhD's in vet medicine, there is established, de facto, a graduate program.

- Implications To Donor Funding Strategies and International Aagencies

Our analysis and recommendations for the funding of research programs within African colleges of agriculture as a strategy to enhance their vitality may appear to be in conflict with the funding of international agricultural research centers and national research systems. We believe there is much potential for increased performance from collaboration between the national/international research structures and the African

agricultural colleges. Such might be the case when a separate institute is funded to assist in developing a graduate research program within an agricultural college that currently has a very limited research capability.

Our analysis suggests a caution about the long term vitality of international or multinational institutions. Because there is no body politic that transcends national borders it is unlikely that they will ever enjoy any grass roots support. In fact the basis of continued Third World support for such institutions will be a strong, nationally-based constituency of researchers and scholars within national research organizations and colleges who individually and collectively benefit from the international and multinational efforts.

This is not an argument against continued donor support for the international efforts but rather an argument for getting on with institutionalizing the capacity to generate locally relevant agricultural science within the nations of Africa.

- Implications For Investments in Other Rural Institutions

In examining the evidence on the development and status of some of the most important colleges of agriculture in Africa one is struck with the degree to which they are inadequate to address the pressing problems of their respective countries. This is true despite the fact that are staffed by many dedicated, well trained, and hard working people who have reasonably good insights into what needs to be done. It is our view that this is just one more part of the overall problem of making all of the institutions that serve agriculture more effective. In that regard the role that rural and farming interests played in the institutionalization of the American Land-Grant university is highly suggestive. We wonder if greater political pressure from African farmers would not help to make agricultural institutions, including colleges of agriculture, more effective.

In this context then, the role of farmer level economic institutions such as cooperatives and farmer associations, may be an important issue to examine as strategies are developed to improve the productivity of African agricultural research and of agricultural colleges' capacity to contribute to that research. Relationships with agricultural commodity groups certainly represent one of the major activities of the dean and senior administrators of U.S. Land-Grant institutions for identical reasons.

CONCLUSIONS

Institution building takes a long time as evidenced by the 52 years that it took American agricultural interests to craft the US Land-Grant colleges within their own society. It is also hard work and is only accomplished when the institutional arrangement has been woven into the fabric of the society - something that foreigners cannot do. Most of the African agricultural colleges of our study are not even half that age. However, there is evidence that current program directions of these colleges mean that they are and will likely be only teaching institutions - something quite different than what was envisioned by those Americans who worked on their early development.

The image of what was envisioned for these colleges by Americans and other donors is embodied in the US Land-Grant model. The discrepancy is explained in the following ways, all of which are likely valid: 1) the structural form of the model was inappropriate in the first place; 2) there was not a clear understanding of the important features of the model; 3) national institutional and cultural traditions preclude implementing the model; and 4) the model is of a mature agricultural college and none of the African colleges are sufficiently mature to make a comparison.

Despite the insufficiency of the current programs of African agricultural colleges to contribute significantly to solving the scientific problems of Africa's agriculture, we believe it is important for both the development of the colleges themselves and for the nations and peoples whom they serve, that they become more involved in the production and dissemination of new technology for the farmers of their country. However, we do not believe that these institutions will or should be the primary source or focus of agricultural research in their respective nations.

Finally, because of the great variety of agronomic conditions, cultural and institutional heritages, and levels of development across Africa, the appropriate roles for colleges of agriculture and the nature of their linkages to other institutions must be assessed for each unique national environment.

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