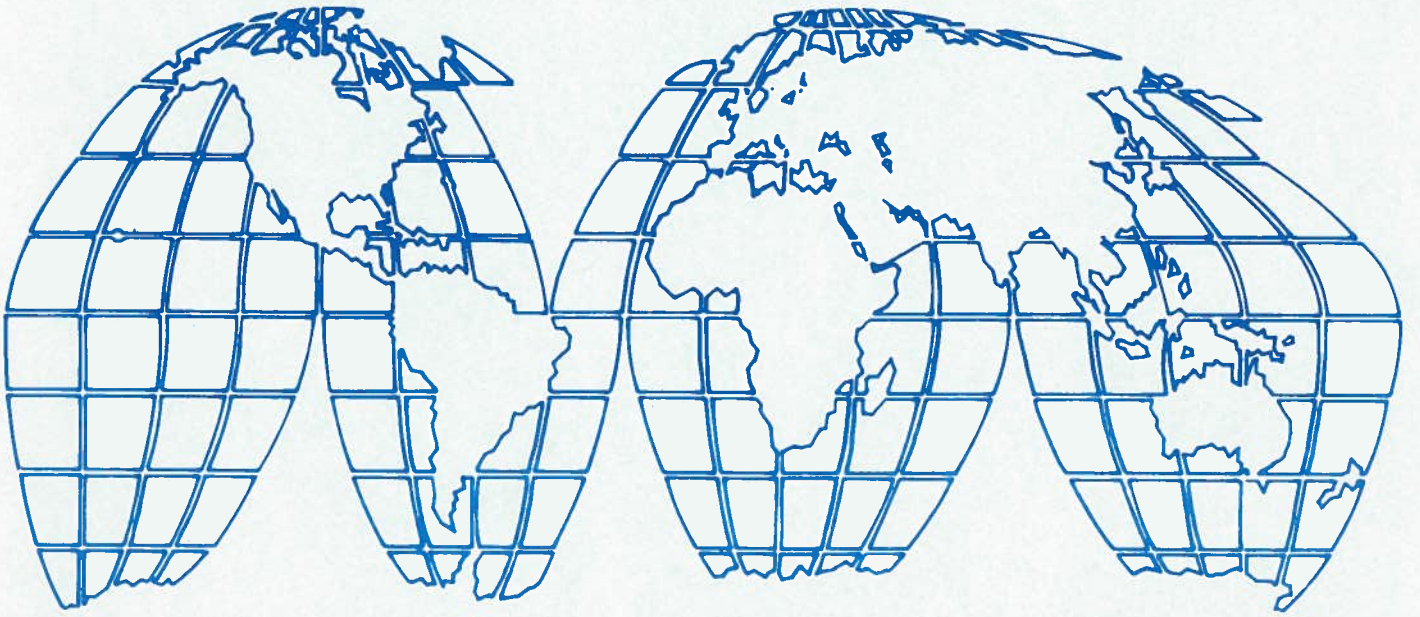
A.I.D. Program Evaluation Report No. 20

Beyond the Neoclassical University: Agricultural Higher Education in the Developing World—An Interpretive Essay



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The status of the agricultural universities in India and Brazil illustrates the effects of two different policy strategies on university-ministry linkages and on institutional vitality.

2.1.1 India

India has created separate state agricultural universities that remain outside the control of the Ministry of Education. In each state the Governor is the nominal head of the university and appoints a Vice Chancellor. A significant portion of the program budget, along with support in policy and technical matters, comes from the Federal Government through the Indian Council for Agricultural Research (ICAR). ICAR gives the universities a very strong bureaucratic constituency to lean on in times of need. Indeed, in states that have not given their universities sufficient financial support, particularly for agricultural research, ICAR has been able to fund the universities with its own resources.

Because the state agricultural universities have their own structure of governance, separate from the regular system of university education in India, they have not experienced the level of institutional turbulence and decline that has characterized university life in India. Faculty and student discipline and morale are still relatively high in the agricultural universities.

2.1.2 Brazil

Brazil represents a sharp contrast to India. In Brazil the agricultural faculties are usually part of a larger multipurpose university, functioning under the authority of the Federal Ministry of Education. In 1963, an Agency for International Development (A.I.D.) program was initiated to strengthen the research capacity of these faculties. However, in 1972, the national Government took much of the research function away from the faculties and gave it over to its own newly created organization, EMBRAPA (Brazilian Corporation for Agricultural Research). Unlike ICAR, which allocates a significant portion of its research funds to the universities, EMBRAPA has few ties with the universities, financial or otherwise.

In part, the decision to reduce the agricultural research role of the universities came in response to the turbulence associated with the politicization of the universities. Some Government leaders simply lost confidence in the ability of university scientists to effectively undertake research under conditions of growing university unrest. This instability also led the national Government to federalize the universities, a measure that greatly reduced the universities' autonomy and control over their own governance. These measures have served to weaken the agricultural faculties and have left them poorly positioned politically--unlike their sister universities in India--and bereft of any outside strategic constituency like ICAR that can speak on their behalf.

The Brazil experience is typical of conditions in many developing countries. Without a bureaucratic constituency to support and advance its interests, the agricultural university is left stranded like a beached whale. In most cases there are no other constituencies sufficiently organized to speak on behalf of the university--no powerful farmer groups, no active agribusiness associations, or the like. Only in a few cases have the universities been able to organize their own constituencies as a base for support.

2.2 Autonomy

Autonomy is a critical policy issue because most agricultural universities are boxed in by multitiered centralized bureaucracies. With little control over their own affairs, many universities tend to become reactive and passive institutions. Three of the most salient areas of autonomy concern enrollment, programming, and finances.

2.2.1 Enrollment

Few agricultural universities have much influence over admission policies. These policies are usually controlled by outside government agencies, which frequently encourage rapid increases in enrollments without ensuring funding increases to accommodate expanding numbers. Where facilities and faculty

support are inadequate, the quality of education has suffered, in some instances quite dramatically.

Agricultural faculties are frequently unable to adapt their admission requirements for students who might warrant special attention. In particular, youth from rural areas are at a disadvantage when they compete with urban applicants for university admission. Rural youth frequently come from a lower socioeconomic stratum than urban students, and they generally do not have access to the kinds of well-equipped primary and secondary schools that are found in more affluent urban areas. Rigid admission standards favor students with a more privileged educational background. Consequently, a growing proportion of the student body in the agricultural faculties comes from urban middle-class families. Such students lack direct exposure to farming and rural conditions; and many of them choose agriculture as a profession only as a second or third choice after failing to gain admission into more preferred professional schools, such as law, medicine, or engineering.

The Bogor Institute of Agriculture, Indonesia's premier agricultural university, has taken steps to ensure that students from rural areas have a greater opportunity for gaining admission to their undergraduate programs. In 1972, it replaced the traditional admission system, based on a national entrance exam, with criteria based on secondary school performance and recommendations. Students in the top 10 percent of selected high schools, including schools in rural areas, now form the majority of new admissions.

2.2.2 Programming

A second area in which university discretion is very limited is in setting the content and direction of programs. This problem is most evident in curriculum design. In many cases, curriculum policy is under the control of a central outside agency, which leaves the university little if any latitude or incentive for undertaking curriculum innovation.

2.2.3 Financing

A third important autonomy issue is university financing. Most universities have very little discretion over the structure of their finances: the levels of student subsidies, fees, and faculty salaries are regulated by an outside agency. Budgetary flexibility is limited, and, normally, income earned by the university must be returned to the Government treasury.

The universities' inability to exercise greater control over their own financing reduces their ability to support and reward those among their faculty and leadership who might foster institutional entrepreneurship, growth, and innovation. Institutional entrepreneurship, which occurs when faculty members invest their time in improving the university, must be distinguished from individual entrepreneurship, or investments in advancing an individual's own personal or professional interests. In many universities, individual entrepreneurship is common, as individual faculty members supplement their incomes with outside part-time employment and consulting. The diversion of faculty time and talents to outside pursuits exacts a pernicious toll on the university as a learning community: as faculty members become overextended, the quality of their own teaching and research declines, and they frequently relegate much of the undergraduate teaching to inexperienced junior faculty. In some of the state agricultural universities in India, over half the faculty positions in the animal science and veterinary departments remain vacant because university salaries in specific fields cannot be selectively adjusted upwards to compete with salaries in the private market.

If a university could begin to exercise some control over its financial condition, it might act more imaginatively to build a stronger economic base with which to keep the faculty engaged in the service of university goals rather than gravitating to outside interests. It should not be considered outlandish to suggest that universities ought to be able to establish profit centers where overhead, service fees, or remunerations on product sales could be retained and reinvested to support university programs.

From the start of its operations in 1968, Morocco's national agricultural university, the Institute of Agronomic and Veterinary Sciences, had a formal mandate that provided for a large

degree of autonomy in daily operations and long-term planning. The Institute's leadership has managed to preserve and enlarge this autonomy by using networks of supporters and contacts to defend the university's budget and prerogatives, and faculty members have shown a high degree of skill and aggressiveness in identifying and obtaining important resources from outside sources.

2.3 Accountability

The other side of the autonomy issue is accountability. In many agricultural faculties, the institutional mechanisms for asserting accountability are weak. For example, few agricultural universities have a board of governors that functions in a strong policy guidance role. Policy guidance is further weakened in many universities by procedures for appointment to and tenure in faculty leadership positions (such as department heads and deanships) that seem designed to ensure that these leaders function more as caretakers of the status quo than as sources of inspiration and innovation. Many such positions are filled for short terms by all department members in turn. The next in line frequently occupy the positions with a reluctant sense of duty, serve out their time, and eagerly return to their previous work.

This system provides a strong incentive for the incumbents not to make waves so that, once out of office, they can return to their former niche without a subsequent backlash as a result of unpopular decisions they might have made while in office. The desire to ensure that one is accepted back into the good graces of one's colleagues is particularly heightened where institutional inbreeding is high, as it is at many universities.

Even if leaders had longer and more secure tenures and were interested in exercising an assertive role, there are few mechanisms by which to hold the faculty accountable to new directives or performance standards. Formal incentive systems and criteria for promotions are frequently based on time in service and have little leeway for granting rewards based on performance. In this sense, a certain level of civil service bureaucratization has seeped into university governance.

Leadership and accountability are further weakened by faculty recruitment and appointment systems that informally favor

noncompetitive selections of in-house candidates over qualified outside candidates. Closed and informal appointment practices favor inbreeding and a patron-client system, under which the appointee is more indebted to a patron and former mentor than to institutional authority figures. Patron-client ties also reduce the possibility that younger faculty might challenge the status quo.

In some universities, the level of inbreeding is so great that from 60 to 90 percent of the faculty are serving in the same university in which they received their undergraduate and advanced training. The problem has become particularly acute in Brazil and India, where there is little faculty mobility between universities.

2.4 Policy Conservatism

A final policy issue concerns the conservative views that policymakers hold about the role of the agricultural university. Most view the university primarily as a teaching institution in the narrowest sense of the term; that is, they view the faculty as a repository of technical knowledge that is passed on to students. They may also view the university as an instrument for research and development of agricultural technologies; but, again, they tend to define technologies very narrowly as those that bear primarily on the biological and physical properties of crop and animal production.

The circumscribed view of the agricultural university held by top government policymakers has led to a contraction of the playing field upon which the university might otherwise display its potential talent for innovation. Thus, many important research and extension roles, originally vested within the universities, have been removed from their control and transferred to government line agencies. The loss of these functions has deprived the universities of an outlet for pioneering new strategies in agricultural and rural development and thereby nullified their potential for exercising a leadership role in policymaking forums. The conservatism that pervades the senior levels of government management, added to the centralized control over university affairs, has discouraged the necessary constant reevaluation of the mission of the university in the context of changes within the rural sector.

BEYOND THE NEOCLASSICAL UNIVERSITY: AGRICULTURAL HIGHER EDUCATION IN THE DEVELOPING WORLD AN INTERPRETIVE ESSAY

A.I.D. PROGRAM EVALUATION REPORT NO. 20

by

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The views and interpretations expressed in this report are those of the author and should not be attributed to the Agency for International Development.

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PREFACE

Since the mid-1950s, the Agency for International Development (A.I.D.) has been the leading donor providing assistance in the development of agricultural colleges and universities in the developing world. In all of these activities, A.I.D. has used a contracting arrangement under which the host country university was paired with a U.S. land-grant university to receive assistance. Over the past three decades, almost all of the major U.S. land grant universities have been active in one or more of the 40 developing countries where A.I.D. has provided assistance to agricultural universities.

A.I.D. still has a significant number of university development projects under way in the developing world. Many of these projects are of a "first generation" character, with the emphasis on developing basic university capacities in education and research. This usually involves sending host country faculty to the United States for advanced degree training and assigning long- and short-term U.S. faculty to the host country university to assist in curriculum design and in the establishment of core research programs.

A new wave of projects, of a "second generation" character, appears to be emerging. In these projects, A.I.D. is returning to developing country universities that it formerly assisted and establishing a new round of project assistance. This second generation of assistance is likely to be of different order, with the focus less on institutional pairing than on revitalizing the host country university through collaboration with faculty and networks from a wide range of universities in both developed and developing countries.

Institutional revitalization is increasingly being recognized as a critical issue for agricultural universities in the developing world. Concern about this issue prompted A.I.D's Center for Development Information and Evaluation to undertake a study of agricultural universities in 10 countries: India, Indonesia, Thailand, Brazil, Dominican Republic, Mexico, Ethiopia, Morocco, Nigeria, and Malawi. This report synthesizes the major issues that arose from the individual country studies. It is also an interpretive essay in that it discusses the significance of the studies' findings with the intent of provoking debate and dialogue on the future of agricultural higher education.

The report is intended for use by those who are involved in policy discussions about the role of the agricultural university and for those who are engaged in designing and conducting programs and projects to assist in university development.

1. THE PROBLEM

It is generally recognized that initiating and sustaining a process of national development, in the larger social and economic sense, involves investing in the development of human capital and building institutional systems that effectively utilize this capital. How does one go about ensuring that institutions are effective in utilizing human as well as financial capital? In the private sector, market mechanisms, if left unfettered by government interference, are supposed to spur the firm to provide a good or service that meets a consumer preference. Failure to heed market signals can lead to a decline in market share and profitability, and perhaps eventually to the demise of the firm itself.

Public sector institutions are not subject to the kind of market forces that govern the life of a firm. This fact is particularly true of agricultural universities, most of which are public institutions. In the absence of conventional market pressures, what might serve to ensure that the university will address important social needs innovatively and responsively? Or, put in a more crudely negative sense, how does the university avoid stagnating and becoming irrelevant?

Many university leaders are concerned to thwart processes of decay and to generate and sustain institutional vitality. This is particularly the case in the developing world, where the agricultural universities are increasingly plagued by internal inertia and, externally, by marginal or declining political and budgetary support.

The absence of an environment that encourages vigorous university leadership and innovation can be attributed to several variables: the policy conditions that govern the broad outlines of the university mandate, the roles and mission that the university defines for itself, the way it is organized to pursue these goals, and the philosophy of education that informs the educational experience for faculty and students. Each of these variables is discussed below.

2. THE POLICY ENVIRONMENT

It is clear that three policy factors may affect an agricultural university's effectiveness as a significant actor in rural and agricultural development. These factors are the university's relationship with the ministry of agriculture, the degrees of

autonomy and accountability that undergird the university mandate, and policymakers' vision of the role of the university.

2.1 Relationship to the Ministry of Agriculture

Agricultural universities are more effective when they function in close partnership with a ministry of agriculture. This might seem to be an obvious conclusion, since the ministry of agriculture is one of the primary employers of university graduates in agriculture and may also be a primary source of financial support for university programs. What is obvious, however, is not commonplace: most agricultural universities do not function in a close partnership with the ministry of agriculture.

The lack of strong linkages between the university and the ministry of agriculture can be attributed to the fact that most of the universities operate under the authority of a ministry of education. Thus, the university's budget and the rules and regulations that govern the university emanate from the ministry of education. The ministry of agriculture, which has little or no authority over the agricultural university, has little inclination to use its funds to support university programs.

The lack of interest by the ministry of agriculture deprives the agricultural university of its only important bureaucratic ally. The ministry of education is not a major source of support because its mandate is to meet and balance the competing needs of the entire system of higher and lower education. In addition, few among the senior management in the ministry of education are likely to have a professional background in the agricultural sciences that might predispose them to favor agricultural education. Thus it is very easy for agricultural education to be shortchanged.

Having no ties to the agricultural university, the ministry of agriculture frequently builds its own research and education institutions, many of which duplicate existing university resources and dissipate scarce financial resources. Then, in times of fiscal retrenchment, none of the agricultural institutions is able to meet its recurrent costs, except for minimal salary support. Unfortunately, this has happened in many countries, and it means that scarce human and institutional resources must operate at marginal levels of effectiveness and efficiency.

sacred calling distinguished from the profane pursuits of the outside world. Eventually, the liberal arts flourished in the classical universities. In many countries, these institutions became finishing schools for the sons of the aristocracy, who, trained in the values of civility and noblesse oblige, went on to assume their destined roles as leaders in government and commerce.

In the 18th and 19th centuries the neoclassical university emerged in its early form in Germany. These universities evolved into major institutions for the advancement of science and technology as we know it today. With a primary emphasis on research, they sought to advance the boundaries of scientific knowledge. Their success in this endeavor contributed to Germany's rapid industrialization.

At the beginning of the 20th century, the German research university model was much admired among many leaders of American universities. Many Americans pursued graduate studies at German universities and, upon their return to the United States, sought to emulate in their own universities what they had seen and experienced in Germany. Thus the evolution of the large U.S. research university was greatly influenced by the German model.

However, some U.S. research universities are also rooted in a uniquely American experience--the land-grant tradition. A distinguishing hallmark of the land-grant concept is its underlying populist ideology: the university was viewed as an instrument for advancing the larger public interest. Its educational facilities were made easily accessible to qualified aspirants, whatever their socioeconomic background, and its research, in basic and applied fields, was intended, at least in theory, to reflect and serve the needs of all farm households, small and large.

Prior to World War II, the land-grant university, although still in the neoclassical mold, was somewhat of a hybrid, with a strong infusion of the populist ethos. After 1945, some critics would contend, many land-grant universities moved away from the populist vision and assumed the predominantly neoclassical features associated with an emphasis on science and disciplinary specialization. Whatever position one might take in this debate, it was in the post-World War II era that the U.S. land-grant universities assumed a major role in the development of agricultural colleges in the developing world; and in their basic

mission and structure most of the latter universities bear a neoclassical imprint.

Is the neoclassical model adequate for addressing the challenges that developing country universities face? Do we now need to pass into a post-neoclassical era? If so, what will be the attributes of the post-neoclassical university? The intent of this essay is to suggest that, at a minimum, such questions should now be front and center in the debate and discussion on the future role of the agricultural university in the developing world.

The neoclassical model does not provide answers to how to sustain the university as a vital, innovative, and socially relevant institution. As a consequence, many university leaders find it difficult to cope with academic drift and declining political support from the external environment. Concepts and methods derived from the organizational and cognitive sciences could help in dealing with issues of institutional decline. Although these concepts and methods are not yet part of the repertoire of practices found in most agricultural universities, they are now being adapted by some universities to help redefine their role in society. It is in this emerging base of experience that we begin to see the first glimmerings of the post-neoclassical era.

What might be the attributes of the new-order university? First, the purpose of the university will be truly reflected in its mission. Most agricultural universities are by charter supposed to enhance the well-being of rural inhabitants. The neoclassical universities have translated this to mean improvements in crop and animal production. The post-neoclassical university will recognize that enhancing rural well-being includes much more than just crop production. Issues of employment, income, equity, education, access to services, debt-bondage, security of tenure, contracting rights, poverty, and rural inhabitants' control over decisions affecting their welfare will assume priority in the concerns and mission of the university.

Second, the role of the university will be seen as one of learning and innovation with respect to devising and testing strategies for achieving its mission, as broadly defined above. In order to be a springboard for strategy innovation, the university will have to assume a much more programmatic and activist orientation in its education and research efforts. In particular, rural areas will become learning laboratories where

university faculty and students will work together with rural inhabitants to test strategies for addressing major problems and issues.

Third, the educational experience, particularly at the undergraduate level, will be dramatically different from what it is today in most universities. Rather than simply transferring knowledge to passive students, the teacher will become a facilitator who assists students in learning how to learn about concepts and their practical applications. Thus, students and faculty working together will from the first day of the educational process be challenged by the strategic problems of rural and agricultural development, with the faculty member guiding students in the use of learning resources and experiences that develop skills in analyzing and managing change to improve rural livelihood.

Fourth, the structure of the university will become a matrix of interconnected task groups clustered around major programmatic themes. The programmatic themes will be defined by large problem areas and will cut across the entire university. Disciplinary departments, if they exist, will function in a subordinate position in servicing the program themes.

These four elements would result in a more robust and proactive university, thereby legitimating demands that the university be allowed to become a center for innovation and experimentation. They would also lay the foundations for entitling the university to the higher degree of institutional autonomy necessary for building a stronger and more diversified portfolio of financial and political support.

Some universities or their component parts have sought to redefine their identity and mission along the more progressive lines described above. However, many of these efforts have not taken permanent root within the university. Started by a handful of innovative faculty, the programs remain a sideshow, frequently resisted or ignored by the rest of the neoclassical university. A major problem with many of these unsustained innovations is that they never really evolved from a strategic dialogue within the central university leadership. Because these innovations are not part of a larger process of policy and institutional transformation of the university mission itself, their base of support will always remain tenuous and their continuation doubtful.

3. THE UNIVERSITY MISSION

Most of the universities that A.I.D. assisted were established with the primary mission of increasing agricultural production. In particular, farming practices were to be modernized through applied innovations in the biology and chemistry of crop cultivation and animal husbandry. In general, assistance to the social sciences was given a much lower priority.

The legacy of these early approaches to university development is evident today, as the disciplines that dominate in status, faculty numbers, and budgetary resources are still the plant and animal sciences. The social sciences occupy a much weaker position and generally function on the margins of the university arena.

It is a major thesis of this paper that the emphasis on technology generation and diffusion, construed as the primary domain of the physical sciences, has kept the university from enhancing its role in society and seriously weakened its ability to establish a strong political base from which to derive sustenance and support. The evidence for this assertion can be demonstrated on a number of fronts.

First, the absence of a strong social science dimension has deprived the university of broader and more diverse views on its potential role as an actor in the development process. In particular, universities have neglected the important policy and institutional variables that set the course and define the parameters of rural change. Universities have been slow to explore how different rural strategies might enhance the generation and distribution of employment and income; strengthen the income-earning capacities of resource-poor households; improve the management of soil, water, agroforestry, and common property resources; and increase efficiencies as well as equity in product and credit markets.

Second, the emphasis on technology to the near exclusion of other concerns helps explain why the university learning experience seldom extends beyond the confines of the college farm or experiment station. Only in a very few cases has the university stepped beyond these boundaries to explore field- and village-based experimental strategies for influencing social and economic change in the rural sector. And even these efforts have rarely

achieved much beyond the project site because little effort has been devoted to understanding how these learning experiences could be translated into larger rural development strategies.

Third, the absence of a strong interest in the institutional and policy dynamics of rural development and a concomitant capacity for envisaging new strategic approaches to developmental issues has kept the university from gaining access to and exercising influence on important public policy forums. Its self-concept as a university of which the one and only birthright is the command of a narrow band of the science and technology spectrum has both in its own eyes and in those of public officials weakened its claim to a seat in policy forums.

Lacking the institutional mechanisms for establishing firm roots in policy circles or rural communities, most agricultural universities are forced to function without a strong political base to support their growth and development. Neither the university nor other actors who might work on its behalf are in a position to fashion a coalition of political interests favorable to university interests.

Underlying all of the above issues--the general passivity of the university, its neglect of strategic issues, and its inability to cultivate constituencies to act on its behalf--is a concept of the university that serves its interests poorly. According to this concept, the university is a scientific and technological resource with the primary mission of producing and disseminating knowledge. Such a definition of the university mission leaves unaddressed a host of critical questions. For example:

-- Should the responsibility of the university extend beyond disseminating knowledge to addressing the larger social and economic context that ensures that knowledge is actually translated into beneficial rural change?

-- Should the university assume some responsibility for identifying issues of economic equity and social injustice and perhaps establish a role for itself in addressing the needs of the most vulnerable and unprotected segments of rural society?

-- Should the university assume an advocacy position with respect to influencing the debate and direction of

public policy on issues of vital importance in rural development? How can the pursuit of advocacy roles be reconciled with the need for maintaining public perceptions of university objectivity?

The absence of an in-house university dialogue on these questions and others like them may help account for the phenomenal lack of diversity and innovation in the goals and structures of the agricultural university. There are only a few cases in which a university has sought to redefine its mission in order to address some of the questions posed above and thereby to open the door to new forms of learning and involvement with rural society.

By virtue of necessity and comparative advantage, the smaller agricultural universities should be the most likely candidates for pioneering new visions of the university role in society. Because of their smaller size they are more able to overcome the conservative forces that inhibit innovation. More important, because they do not have the resources to imitate the larger multipurpose universities, they must establish their own unique identity and rationale to effectively compete for resources. However, there is little evidence that most small agricultural colleges are doing anything more than duplicating on a micro scale what they see at the macro level in the larger multipurpose universities.

In summary, how the mission of the agricultural university is defined will say much about the capacity of that university to learn from its environment and to build effective working relationships with clients and constituents. Unfortunately, the prevailing view of the university mission has stifled the development of these capacities, thereby leaving many universities relatively isolated from their environment and bereft of the sources of experience and support that are needed to maintain institutional vitality.

4. ORGANIZATIONAL STRUCTURE

The way an organization is structured usually betrays its principal mission. In the case of the agricultural universities, almost without exception, the scientific disciplines constitute the primary basis of the organizational structure, as formalized in discipline-based departments. Inherent within the discipline-

based organizational structure is a goal or mission that emphasizes advancing the frontiers of knowledge, within the boundaries of the particular discipline, through basic and applied research.

Organization by discipline-based departments may be inappropriate for enabling the larger university to pursue its avowed goal of improving rural livelihood. Departments have a tendency to turn in on themselves and to define standards of relevance and priorities in research and education that may not be directly responsive to larger university goals.

The involutional tendencies of the discipline-based departments might be thwarted if there were strong extension services and other well-organized external constituencies that could exert pressure on the university to remain attuned to their needs. In most instances, however, such groups are organizationally weak, and therefore the only recourse is to create compensating cross-disciplinary organizational structures internal to the university, which can act as a counterweight to insularity-prone disciplinary departments.

In many developing country universities, disciplinary and subdisciplinary departments have proliferated without a corresponding increase in cross-disciplinary program structures to ensure that research and education are integrated around a set of common themes and agendas. Under such circumstances, the university becomes a highly fragmented arena in which a multitude of discrete projects are undertaken without much management oversight. In one university, for example, the veterinary college had fragmented into 28 departments. Without a larger program structure that transcends discipline boundaries, it becomes impossible for university leaders to exercise strong and vigorous management over the direction and substance of university education and research.

It may seem presumptuous to expect the agricultural university to eschew an organizational structure based on disciplines and invent new organizational forms that are more supportive of the university mission. Still, this is exactly what small agricultural colleges should be considering, because they do not have the depth and breadth of resources to support a conventional departmental structure with its attendant emphasis on leading edge scientific research. Their comparative advantage would seem to lie on the leading edge of the other end of the spectrum,

where learning occurs in the application of knowledge to problem-solving situations.

The emphasis on a knowledge application role would require new types of organizational structures to support a more activist orientation toward agricultural development. Unfortunately, only a few small colleges have pursued the more innovative paths of organizational design; most continue to emulate the multidepartmental structures of their big brother universities.

Among large universities, there is only one in which an effort has been made to create fundamentally new types of organizational modalities for enhancing university learning and problem-solving capacity. The Postgraduate College at Chapingo, Mexico, established the Center of Teaching, Research, and Training for Regional Agricultural Development to allow the college to become more directly involved in rural and agricultural development programs. Interdisciplinary teams, composed of staff and students at the center, design and carry out district-level research, training, and service activities directly with rural producers and institutions. In effect, the districts become learning laboratories in which the university can test and replicate rural development strategies.

5. STUDENT AND FACULTY DEVELOPMENT

Students and faculty should be considered together in any discussion of the philosophy and pedagogy of education. Faculty are former students, and some students will eventually become faculty at universities, in extension, or in other teaching roles. Each is an extension of the other, because the way the students are taught by the teacher is the manner in which they go on to teach others.

Almost without exception, the education philosophy of agricultural universities is based on the assumption that learning is the transfer of knowledge to students through a lecture. Thus, students spend long hours in the classroom, where they take notes on what the teacher conveys in the lecture. The students are then tested on what they have "learned" by repeating back the knowledge memorized in the classroom. Students are exposed to some laboratory and fieldwork, but even then they may be limited

to observing instructor demonstrations rather than having an opportunity for hands-on exploration of complex issues.

In part, the highly didactic mode of education practiced in most developing country universities is a reflection of the dearth of learning materials available to students and faculty. Library materials and textbooks are frequently out of date or simply unavailable. Similarly, audiovisual equipment, if it is available, is often in disrepair. However, it is unlikely that an increase in supply of these learning aids would change existing educational practices. The traditional approach to education is deeply ingrained.

Some students and faculty express deep frustration with the traditional approach to education. The students, in particular, bemoan the lack of intellectual challenge and the passive role that is forced upon them. Others endure, simply assuming that this is the price they must pay to secure a college degree. Little change is likely to occur in this area until universities embrace new theories and methodologies for curriculum design.

6. BEYOND THE NEOCLASSICAL UNIVERSITY

This essay started out with the question of how the university, in the absence of the kind of conventional market pressures that surround a commercial firm, could remain innovative and responsive to its environment and to the needs of its intended clientele. The essay then identified a number of themes, or hypotheses, concerning bureaucratic and policy orientations, issues of autonomy and accountability, the mission of the university, and prevailing philosophies of education that seem to account for variability in university responsiveness. Added together, the themes suggest that the agricultural universities are laboring under a considerable number of disadvantages, some self-inflicted and others emanating from a less than benign environment. It is the final assertion of this essay that a new concept of the university is needed to transcend these limitations.

The original classical university evolved in medieval Europe. Inward-looking, the university became the bastion of scholastic thought, where theology and philosophy were the queen sciences and where the codification of knowledge was seen as a

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Dominican Republic: The Superior Institute of Agriculture--Development of a Private Institution of Higher Agricultural Education, March 1988, No. 67 (PN-AAL-201).

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