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Strategies in Technical Assistance

North Carolina Agricultural Experiment Station

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Strategies in Technical Assistance

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Preface

U. S. Universities have been participating in the agricultural technical assistance programs of the Federal Government since 1952. The participation was predicated on the assumptions that while the universities did not have experience in applying their expertise in foreign cultures, their experience in improving domestic agriculture would be of great value in making modern science and technology relevant to the agricultural development in the emerging nations. The involvement of U. S. Universities has been largely concerned with two major activities: a) the transfer of scientific and technological information, and b) the development of indigenous institutions which could adequately serve local agriculture.

The Agency for International Development (AID) found it desirable to examine the past fifteen years' experience to see what lessons have been learned in the process of providing technical assistance through university contracts. The study was assigned to the Committee for Institutional Cooperation (CIC), a consortium of the "Big-ten" universities in the midwest, which in turn enlisted the cooperation of nine Land-Grant institutions, including North Carolina State University.

The study was worldwide and involved the collection of data from all active projects overseas as well as on the U. S. University campuses. North Carolina State's responsibility in the project included the collection of data in the Near East-South Asia region and the preparation of reports on specific segments of the over-all study. Numerous reports, technical papers and books have been prepared by the entire project, and three of the closely related papers are presented together in this bulletin.

The first paper entitled "Role of Technical Personnel in the Technical Assistance-Institution Building Process" is a construct which identifies the various achievements which must be realized through the physical presence of technical personnel overseas and which cannot be done more efficiently some other way. It describes the changes which must be brought about and indicates to some extent the order in which these changes are most efficiently accomplished. The construct has a number of implications for improving the management and performance of technical assistance teams overseas.

The second paper entitled "Optimum Role for U. S. Overseas Advisors" attempts to operationalize many of the concepts in the first paper in developing a generalized role of an overseas advisor which is designed to a) increase his efficiency and acceptability in the early months after his arrival, b) to sharpen his efficiency in his major role of institution building, c) to enhance his professional capability while he is overseas, d) to make his participation more palatable to his home department, and, e) to capitalize on his experience by making him available for future participation.

The third paper entitled "Measuring Institutional Maturity in the Development of Indigenous Agricultural Universities" recognizes that the major focus of U. S. University participation in technical assistance involves the development of "Land-Grant type" institutions and addresses

the problem of measuring progress and maturity in this direction in contrast to development along classical European University lines. It also explores the implied changes in technical assistance needs as the host institutions gain maturity and technical competence.

Since these three papers deal directly with the strategies of providing technical assistance in the building of Land-Grant type institutions, and since they are all of primary concern to the practitioners and administrators of technical assistance in agriculture, they are presented together as a single publication.

—*J. A. Rigney*

Acknowledgment

This represents one segment of the work of CIC-AID Rural Development Research Project supported in part by the Agency for International Development through a research contract with Purdue Research Foundation. The project was sponsored by the Committee on Institutional Cooperation with the following universities as active participants: University of Illinois, Indiana University, University of Minnesota, University of Missouri, North Carolina State University, Ohio State University, Purdue University, Utah State University, and the University of Wisconsin

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Part I
Role of Technical Personnel in the Technical Assistance–Institution Building Process

By J. A. Rigney and J. K. McDermott [1]

Introduction

Technical assistance takes three primary forms in the process of institution building in the developing nations—participant training programs, capital inputs and technical personnel. The effectiveness of the whole process is in large part a function of the quality and magnitude of these three elements and of the skill with which they are managed and coordinated. The role which the participant training program and the capital inputs play in institutional development has appeared to be understood reasonably well by all concerned. There has been much confusion and difference of opinion, however, on what U. S. technical personnel are supposed to contribute and what they must accomplish by their physical presence that cannot be done more efficiently some other way.

Attempts to compare the effectiveness of different management strategies in technical assistance led to an examination in detail of the services rendered by the technical personnel input. The results are summarized in the form of a construct which describes the role of technical personnel as a small but critical segment of the total process of technical assistance in institution building. This paper presents the construct in the form that it emerged after considerable validation and revision efforts in the Near East-South Asia region.

Technical assistance in institution building includes planning and negotiating between two governments, contracting with a U. S. University, and implementation of the project. Other papers emanating from this study cover several of these elements but this construct deals only with that segment of the process which involves the technical assistance team and the host institution. While this ignores much of the total process, it concentrates on what is perhaps the most critical in terms of both project accomplishment and of difficulty of execution.

For the purposes of the construct the specific connotations of the terms "technical assistance", "institution" and "building" need to be sharply delineated.

"Technical assistance" carries the distinct implication that:

1) The change is to be facilitated by a group of foreign technicians for

[1] The authors gratefully acknowledge the assistance of Dr. Austin B. Haws, Campus Liaison for Utah State University, in the early formulation of the model.

the specific purpose of building or altering an indigenous institution.

2) The change process is to be deliberate, induced and rapid. The significance of this can be appreciated by observing that intercultural change is common in history and institutions are continually changing, even autonomously. The characteristic of technical assistance programs that make them unusual is that they specifically set out to telescope these long-time, autonomous processes into a short-run, deliberate procedure, largely under the volition of the changer.

"Institution" is used in the context of Esman and Bruhns[2] who define it as "an organization which incorporates, fosters and protects normative relationships and action patterns and performs functions and services valued by the environment". In this sense the organization will have a vital part in the formation or transformation of social attitudes and capabilities. Therefore individuals within the institutions will relate their activities, i.e., research, and classroom and extension teaching to a specific segment of the society in such a way as to be useful to that segment.

"Building" carries the connotation that present institutions are inadequate, that the relevant individuals do not behave in the "correct way", that "necessary" attitudes do not exist, and thus a significant change in behavior and attitude as well as in technical competence is needed. "Building" carries the further connotation for this particular construct of the direction of change. Since this study was concerned with U. S. University contracts *in agriculture*, the implied direction of change is toward the problem solving, service orientation of the Land-Grant type institution.

This construct aims at identifying the detailed components of the process by which a group of foreigners working within an indigenous group helps to bring about specific and deliberate changes in the attitudes, behaviors and technical capabilities of individuals and perfects an organization that will foster and maintain these attributes. If the identification is accurate, the construct will form the basis for developing a procedure that can make the process of institutional change more rapid, efficient and effective. The extent to which the construct can be applied beyond the Land-Grant type of organization is not resolved.

The construct is a generalization distilled from the experience of well over a decade of technical assistance in institutional building. This experience covers a variety of host institutions, different kinds of U. S. teams, and many of the major cultural areas of the world. Generalizing from such a range of concrete experience requires abstraction, so that one can not expect to see the process unfold in real life exactly as it is forced to do in this construct. Further, the attempt in this paper is to identify components of a process which tend to be autonomous in contrast to those components which are imposed or dictated from other elements in the technical assistance complex. It is not an attempt to spell out a procedure which tends to be orderly and sequential with each part in its proper place with respect to all other parts.

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[2] Milton J. Esman and Fred C. Bruhns. "Institution Building in National Development—An Approach to Social Change in Transitional Societies". A mimeograph published by Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pa. 1965.

The construct views the activity of U. S. personnel at four levels of host institution organization for the sake of convenience. Phase A focuses on the individual staff member level where the advisor is seeking individual acceptance and is relating largely with individuals of the host institution. Phase B is the department level, where the contacts are still individual-to-individual, but the groups they represent become more important. Phase C deals with top administration of the institution and the identification of the institution's role in society. Phase D involves the linkages between this institution and the other entities in society which are important to its development.

The four levels are conceptually distinct, and it is useful to view them so for analysis. Empirically, of course, they are not distinct, and members of the advisory team will have contact and influence at various levels simultaneously. Also, by their very nature some of the levels and stages must necessarily overlap, and each level interacts strongly with the others either to accelerate or impede progress.

The Model

PHASE A: INDIVIDUAL TECHNICAL RELATIONSHIPS

The individual technical relationships represent the level at which the principal development is an increase in the host individual's technical competence and the formation of productive attitudes toward his professional and public responsibility. This phase is both the foundation for the process of institution building and the ultimate justification for building the institution. Output of the institution occurs at this point, and all other phases exist only to facilitate activity and performance at this level. Effective performance at this level justifies allocation of increased resources and they in turn have the primary objective of increasing the individual's output.

STAGE 1: Rejection-Acquiescence

The presence of a foreign technical advisor implies two things: (a) inadequacy of the host institution (HI) individual, his organization, and even his country and (b) imminence of change. Both of these are threats, the first to a person's self-respect and security and the second to the security of the existing organization or the present system of personal relationships. Both of these threats tend to evoke defense mechanisms.

The normal defense mechanism for HI individuals is to reject the foreign element. With some, this rejection is of such magnitude that the development process never starts. With others, the rejection gives way to an acquiescence in the program. The acquiescence could result from force, persuasion, the need to know, or something else, but it is prerequisite to the succeeding stages.

STAGE 2: Personal Acceptance

Rejection is overcome by interpersonal compatibility and is manifest by the ease and eagerness with which the two members of the pair, the

advisor and the HI individual, associate with each other. Those actions and activities which normally promote better human relations will be equally effective here. While the crossing of the "personal acceptance" threshold is usually more apparent with the first arrivals of a project, it is nonethless real with later arrivals. The fact that rejection is dormant or latent in later arrivals to the project, does not mean it does not exist. Tolerance for personal incompatibility will increase as a function of the normal progress of the project, and other factors may compensate for incompatibility to some extent.

Personal acceptance will begin with individual bi-national pairs. In a group effort such as characterizes most institution building projects, there has to be a proliferation of pairs. After a certain proportion of the technical assistance group is involved in bi-national pairs, the *group* can be said to have achieved the state of personal acceptance.

STAGE 3: Technical Visibility

Rarely is professional reputation enough to give the HI person confidence in the technical capacity of the advisor. Technical ability in another environment is not directly and automatically transferable and some of the best technicians in the U. S. have been virtual failures in technical assistance efforts because they have not "proven themselves" locally. The HI technician perceives risk in too rapid acceptance of an outsider, part of which is objectively justified, and part of which results from the earlier mentioned threat to his own position. Technical visibility is tangible, visible evidence that the advisor can make contributions in the local environment which compensate for the negative effects of his presence. It consists of a demonstration of the technical capacity of the advisor in the HI environment.

Some visibility can be achieved by technical assistance team effort but it is the advisor's own individual technical ability that must be proved. Demonstration can be visible to many persons or only to the potential member of a bi-national pair. The visibility effort may be intrinsically productive, or have little lasting technical value. It may be consciously planned or it can "just happen". Visibility gives credit and prestige to the advisor, and it is the key that opens the door to technical acceptance.

An important feature of technical visibility is the impression given as to the motives of the advisor. Visibility for personal aggrandizement of the advisor will impair acceptance, whereas visibility for the purpose of improving the lot of the host national will enhance it.

STAGE 4: Technical Acceptance

Acceptance implies willingness to be identified with the advisor in a cooperative relationship, and a certain threshold of acceptance must be achieved as prerequisite to progress in subsequent stages. Both technical acceptance and personal acceptance occur in varying intensities and increase in normal progress of a program. The time and sequence relations between personal and technical acceptance are not absolute, and progress in one accelerates progress in the other. High and dramatic visibility

accelerates acceptance, i.e. it carries both technical and personal acceptance to a higher intensity in a shorter period of time, particularly if host persons participate in the activities.

STAGE 5: Initiation of Joint Short-Run Activities

The previous stages are essentially conditioning activities as far as the HI person is concerned, i.e. they are primarily concerned with developing his *will* to take full advantage of the presence of the foreigner. The conditions in the previous stages are aggravated by the fact that the decision to invite a team of foreign advisors is normally made at high government and institution levels and the individual members of the institution rarely participate in making the decision or are aware of its implications.

The next stage is to initiate some activity in which the two persons are involved as a pair, with individual success or failure dependent on pair success or failure. The main objective is success in a joint venture, and a short-run activity with a high probability of success is most effective. If this activity is productive, i.e. useful, the stimulation will be greater. But successful accomplishment is the essential element, and its purpose is to initiate a change of attitude from lethargy and pessimism to self-confidence, initiative and optimism on the part of the host member of the pair.

There will be a proliferation of activities, including other activities by this pair and activities by other pairs. The advisor will probably have to initiate most of these activities during this stage. While the first activity of the pair is designed to develop interpersonal relations, subsequent activities emphasize usefulness and purpose and begin to develop a sense of responsibility to society.

STAGE 6: Consolidation of Gains

New activities tend to initiate changes in attitude and thus lead toward the necessary personal and individual commitment—but actions are not enough. Permanence of the change depends on the degree to which the new experiences and insights are assimilated and integrated into the HI person's concept of his professional role. An important indication that this assimilation is being achieved is a manifest need for self-expression. Up to this time, the advisor has been dominant in the initiating role. In this phase, initiative passes to the HI individual. The main function of the advisor becomes less to initiate new ideas and more to encourage and nurture the flow of ideas from the HI individual. Continued initiation by the advisor will not develop the necessary self-confidence in the HI member. Instead, it will tend to make him dependent on the advisor or even resentful of him. An awareness of the abundance and the relevance of world literature to the topics at hand is deepened to a point that superficial duplication of activity is replaced by intelligent adaptation to local conditions. In this phase overt activities of persuasion and demonstration will decline, but they will not stop. There will be a consolidation and maturing of the new ideas and attitudes gained by the HI individual. The advisor

can turn to other useful activities, perhaps to the formation of new pairs with other HI persons, or to activities of his own professional interest.

STAGE 7: Formalizing Long-Run Activities

Activities up until now are *ad hoc* no matter how good they are. In this stage, which is intermediate between *ad hoc* and institutionalized, activities take on a certain formality, i.e. they become recognizable to others both within the institution and outside. They also acquire a certain persistence. Activities may evolve or be synthesized from the short-run efforts, or perhaps all activities of the former stages become formalized in this stage. The main criteria for projects to be formalized and continued in the long-run are *usefulness* and *relevance* to society. The HI member will have recognized the importance of these criteria as part of his institution's responsibility to the public. It is also in this stage that the pair begins to exhaust its potential for accomplishment without support from a higher echelon in the organization.

STAGE 8: Awareness of Personal and Technical Inadequacies

As self-confidence develops along with the realization that one can have a certain control over his destiny, so also does his ability to analyze himself realistically and objectively. An awareness of inadequacy perhaps always existed, but the HI person can now evaluate it objectively as a problem to be systematically solved, rather than subjectively as a threat to personal integrity and security against which defense must be mounted.

STAGE 9: Development of Institutional Perspective

By this time several things have happened to the HI technician as an individual. He has learned that individuals do have unused potential, even with severe resource limitations. He has increased his confidence in himself. He has seen that he can be useful and he sees possibility of support for useful activity. He will be strongly tempted to "go it alone" rather than fight institutional battles. He is led to see, however, that as an individual, without certain assists which require changes in his institution, he will soon be stymied. Thus he tends to develop an identity with his institution which involves both his responsibility to it and his dependence upon it, and both of these he sees as relating to the public interest. He develops a genuine sense of personal and professional commitment.

STAGE 10: Development of Career Plan

The final stage in this individual-to-individual phase is the development of a career plan and strategy. The HI person has a well developed idea of what he wants to accomplish, for personal reasons, to be sure, but also with a growing sense of responsibility, and he has a well developed idea of what he will have to do in the area of self-development to accomplish it.

He will also have made some progress in executing the plan, since it grows out of and is a continuation of all that he has been through. From this point, the bi-national pair continues on a peer basis even though professional growth of the HI person continues indefinitely. This is the culmination of accomplishment that must be expected from the advisor at this level; although he may continue to bring the HI person into wider contacts with his professional world long after his physical separation from HI.

Summary of Phase A

The above sequence of steps must be taken with each individual HI person who is directly affected by technical assistance. The time required to complete each of the steps will vary greatly depending on the HI person's background, the capability of the advisor, and the institutional environment within which the process takes place. The first four stages involving "acceptance" are normally accomplished in less than six months, and if a longer time is required some administrative action is usually indicated. Time requirements for short-run activities of Stages 5 and 6 depend upon the technical background of the HI individual and his motivations for serving the institution itself. Many of these activities however should be completed in an additional six months. Formalizing the long-run activities in Stage 7 is dependent on the development of other elements in the institutions and often must await the availability of additional finances. The development of personal and institutional commitment in Stages 8-10 will proceed parallel to Stage 7 and may even be completed ahead of it.

In the event that the advisor is changed before the completion of all of the stages in this phase, his replacement will have to repeat the first four stages before he can pick up where his successor left off.

There is an implied "effective pairing" at this level between advisor and host individuals which is not to be confused with a formal administrative, counterpart designation. There are situations where effective pairing does not exist because of the absence of appropriate host personnel, the individualistic nature of the advisor, the type of responsibility of a particular position, or whatever. Although such instances can make contributions to the total team effort or to the overall objectives of the project, the preponderance of permanent effectiveness at this level will be manifest through effective pairs.

The relationships in Phase A refer to those developed at the host institution and none of the Stages have an essential relationship with the participant training program.

PHASE B: DEPARTMENT-LEVEL RELATIONSHIPS

The term Department is used to denote any intermediate level in the institution's organization. This Phase involves *groups*, and inter-group relationships. However, the critical contacts are made by individuals, and therefore interpersonal relationships remain an important but not the only influence under consideration. Bi-national pairing continues but the members of the pairs do not act as individuals only; they also act as

representatives of groups, and their decisions, therefore, have wider implications. However, the critical contacts are those between the advisor and the Department Head. Supporting contacts of the advisor with other members of the Department can help to reinforce and enhance the development of departmental attitudes and in so doing tend to establish a departmental tradition, *which is the process of institutionalization.* In Phase C, pair members act almost completely as representatives of groups rather than as individuals. In Phase D, they work as *one group* in dealing with the HI environment.

STAGE 1: Rejection-Acquiescence

Since interpersonal relationships retain much of their importance at this level, the same rejection—acquiescence relationship exists between the Department Head and the advisor that was found in Phase A. Interference in the program of a Department or of a Faculty tends to evoke the same defense mechanism as described earlier. In many cases a single advisor will function simultaneously in Phase A and Phase B, and in these circumstances, there will be strong interaction between the activities in the two areas. Again, acquiescence is initiated as soon as the Department Head begins to see advantages which will outweigh the adverse influences which caused the rejection in the first place.

STAGE 2: Personal Acceptance

Personal acceptance here is quite similar to that in Phase A. However, it must be broader in scope—it involves more HI personnel, it involves a higher degree of institutional support, and therefore there is a higher risk in acceptance at this phase. Other aspects of this relationship are also important, namely: (a) the activities of the pair members are more visible than at the technical level, (b) the collaboration has deeper consequences since it involves administrative policy, (c) personal acceptance implicates various members of the department as well as the Department Head and (d) at this level the advisor is dealing even more with attitudes and interpersonal relationships than with technical substance. Therefore, he must win the confidence of HI personnel that he can receive and deal with sensitive information safely and discreetly.

STAGE 3: Program Leadership Visibility

The advisor's visibility to his HI colleagues in program leadership is perhaps more difficult to achieve in this Phase than it was in purely technical activity. The procedures for attaining visibility are certainly different, and must be achieved in more subtle ways. The transfer of technical information from one culture to another is regarded by host nationals as being easier than the transfer of management systems which involve people and their peculiar personalities. Furthermore, the basic objectives of U. S. management systems are often at variance with those of the existing HI management. Thus program leadership visibility involves actions, activities, ideas, conversations, and general demonstration of

understanding of local conditions which will tend to inspire confidence in the advisor's judgment and personal qualifications.

STAGE 4: Provisional Program Leadership Acceptance

Competence in the area of program leadership requires considerable time to demonstrate adequately, but there develops a "provisional technical acceptance" which is adequate for the Department Head to begin to assume a small risk in innovation. This occurs at the moment he decides to take some action. It may only be to approach top management with a request, but it implies a change in policy or philosophy on the part of the Department Head. Technical acceptance will occur when the innovation has proven viable, which admits of something less than complete success. Competence in a technical area does not ensure competence in development of department programs and administration, but it is helpful and may be a prerequisite to acceptance in program leadership. For this reason advisors who are attempting to exert influence at the middle management level often have an overt assignment in a technical area from which they can more easily become visible, and thereby accelerate provisional program leadership acceptance.

When successive advisors are involved with the same department, there is some transfer of progress from one advisor to the next. However, each of the above four stages must be repeated by every advisor, recognizing that the road may have been made easier or perhaps more difficult by his predecessor.

STAGE 5: Departmental Development Dialogue

The role of the Department is to develop facilitating organization to enhance the activities of the individuals within that unit. However, organization changes alone are seldom adequate, and more important are the attitudinal changes of the role of management in favor of sympathetic and stimulating leadership and away from authoritarian or dictatorial roles. Dialogue between bi-national pairs in this area can only be initiated after some degree of rapport and confidence has been achieved. After the initial activity, a sort of unstructured discussion is initiated with respect to the entire department, its future, its role, its needs, its growth, etc. Personal acceptance must increase in this stage, because the HI member will be discussing the qualifications of his personnel with the advisor. Serious discussion of this nature represents a major breakthrough and is indicative that effective rapport is established. This level of acceptance and rapport is non-transferable to the advisor's colleagues or to a successor. Furthermore a change in HI departmental leadership will require a repetition of these first 5 stages. At this stage small discrete departmental problems are solved effectively and a basis is established for a wider consideration of a total departmental plan.

STAGE 6: Initiation of Program Planning

The non-directed informal dialogue of Stage 5 must become directed, and aimed at specific decisions which will organize the department's exist-

ing human resources. It will lay a framework within which additional resources must fit and it will develop some priorities for future additional activities. An increase in departmental activity resulting from prior work and discussion will take account of the inefficiently used human resources and will begin to find ways in which they can be put to effective production. The development of a department's structure, philosophy, and posture within the overall institution will reflect the Department Head's personality, aspirations, and background, including the changes in these characteristics that have occurred due to the advisor's influences. Program planning for the Department may very well include the future inputs from technical assistance and the Department Head begins to share responsibility for deciding what these shall be. The modification of attitude and basic philosophy will be the most important input at this level, and those ideas which will be most productive for the department will perhaps require the greatest degree of statesmanship on the part of the HI individual. Therefore, progress in this area will be particularly slow in older individuals who are steeped in the traditions of the existing bureaucracy and who are constrained by a larger number of personal ties. Organizational changes can come faster, but they will contribute much less to the building of an institution in the absence of basic changes in outlook.

STAGE 7: Acceptance in Program Leadership

At some point in the evolution the Department Head accepts the advisor as competent in dealing with the department's program. Such acceptance does not imply immediate implementation of all the advisor's ideas, but it does suggest that the consequences and alternatives of each idea will be carefully weighed. Relationships have become stable and the advisor has achieved a status for making maximum impact on the department's organization and program. This is distinct from provisional acceptance although manifestations of this Stage are not clear. It is a crucial stage, however, because of its potential for accomplishment, and failure to appreciate it adequately results in loss of opportunities to capitalize on the advisor's acceptance.

STAGE 8: Awareness of HC Needs and Program Requirement

Planning now begins in earnest. The Department Head is able to see the role his department can play in the development of his institution and his country. This will result partly from his growing sense of responsibility to his institution and his country and partly from increases in prestige and satisfaction which he has experienced from new activities undertaken by the bi-national pair. This stage is characterized by articulation of departmental role and the translation of this role into specific activities. It will begin to be reflected in the minds and activities of the more innovative and progressive members of the department.

STAGE 9: Development of a Departmental Plan

Phase B will be completed when the Department Head has enthusiastically participated in the development of a realistic overall plan for his department and has achieved a substantial degree of understanding and acceptance by the department staff of the new attitudes, approaches, and perspectives of the Department Head. The plan will be one which puts resource requirements opposite the program as conceived during Stage 8, and which establishes some priorities on programs and resource needs. It will also include some kind of time table for accomplishments. The new attitudes will encompass a strong service and problem-solving orientation typified by "Land-Grant" institutions. The approaches contemplated will be those which enhance the productivity of individual staff members. This stage of development is necessary for the planning of the careers of individuals within the department to satisfy departmental needs, which in turn will require close cooperation with top management.

The execution of the departmental plan will involve the training of individual department members, the development of research projects, of individual courses and curricula, and identification with the institution and with the agricultural community. This will all take considerable time, and the appearance of an unusual amount of activity in any one facet will not necessarily indicate the attainment of departmental maturity. In fact, individual opportunism on the part of one or two individuals within the department may momentarily deflect the departmental energies away from the long range plans. On the other hand a cautious development within the department may manifest little activity although considerable progress may be underway in terms of institution building criteria.

A change in Department Heads may require a repetition of the above stages in whole or in part if such occurs before departmental traditions are sufficiently strong to propagate themselves under new management.

PHASE C: TOP MANAGEMENT—ORGANIZATION RELATIONSHIPS

The Team Leader will be the primary contact with top management, and he will carry the major responsibility for progress at this level through the various stages.

The sequence of personal relationship stages which occur at the individual and departmental levels also occur at the top management level.

STAGE 1: Personal and Technical Acceptance of Team Leader

A team leader must achieve personal and technical acceptance much as other individuals on his team, even though these stages will not be as apparent because of the modifying effects of the team's performance and the political sensitivity of the position. In addition, he has to accomplish a higher level of personal and technical acceptance for effectiveness.

Although his efforts have to be adequately supported by the team's continued performance, and individuals can help out in specific tasks, responsibility for the project's progress in this phase is almost completely that of the team leader. Success of the project is impossible without a high level of performance on his part. The prestige accorded the position reflects the respect for the team, and this will give an initial impetus. Beyond that, however, he must win acceptance, which in turn actually increases the team's effectiveness. To this extent he "carries" the team.

STAGE 2: Contact and Rapport with Host Institution Leaders

This stage will be marked by close contact with the top administrator of the host institution and others in the power structure. Contacts will be both formal and informal. They will be continuous. The team leader has to know what is going on in the institution, which means sufficient informal contact has to be maintained with the decision making group to gain their confidence and retain rapport. This stage is also marked by the team and team leader identifying with the host institution to the point that the latter is convinced that its problems are of genuine concern to the team leader and the team. The host institution will inevitably begin to regard US team as somewhat distinct from other technical assistance entities and will increasingly consider the team as a component of the HI. The relevant bi-national pairings here will involve the team leader with the influential leaders of the institution

STAGE 3: Initiation of Institutional Development Dialogue

Initiation of institutional development dialogue can be from either member of the pair This dialogue will begin to structure the many random discussions held previously. It will build upon similar dialogue by individual staff members and Department Heads at their respective levels. This dialogue will develop concern for longer range plans, discussion of problems and opportunities, alternative approaches to problems and their consequences, views of host country needs and how HI can fit into them, HI capacity to meet its responsibility, deployment of present HI resources, and the needs for new resources. It will begin to expose some of the political and personal affiliations and ambitions both inside and outside the institution which will have to be dealt with.

STAGE 4: Perception of Country Needs and Definition of HI Role

In this stage the dialogue becomes translated into some concrete ideas as to HI's role in the national economic development. These ideas emerge as a function of the country's existing situation and needs, the host institution's special competencies and the aspirations of competing institutions. This stage is marked by the concept of HI producing something the economy needs, and which in turn will merit the support of the economy. There is a consensus developing in the departments of HI, but the top management focuses and articulates this role and gives the

departments leadership and stimulation. The entire advisory team contributes to this development, and a realistic appraisal of the potential of the HI is developed jointly. Morale is generally high as advisors and HI form stronger in-group ties with respect to their external relations. Contributions of the team are expected to become more sophisticated as this time is approached.

STAGE 5: Development of Strategy by HI for Accomplishing its Function

Strategy development involves understanding the forces and agencies that are competing with HI as well as those collaborating with it. There is a recognition of the need for positive cooperative action, rather than a passive competitive attitude. There is recognition of need to concentrate on ways to serve society rather than on ways to compete with other agencies. There is recognition that the development of competence must precede bids for additional responsibility. Contracts are made with the host government and efforts are initiated to understand how government leaders analyze country needs and HI role. There is recognition that public acclaim for services rendered is always heard in political circles, even in underdeveloped nations. There is the discovery that even in countries with strongly socialistic governments, private business is interested in HI development and is influential in government circles. Internal analysis reveals weaknesses, usually in the form of influential but incompetent people, which must be accommodated and strengthened. It also points up sharply the priorities which must be given the various programs underway or contemplated. It underscores the areas for which technical assistance is to be sought and accepted and those areas in which such help must unfortunately be deferred. Evolving strategy may not be articulated in this stage, but there is a marked change in attitude and behavior of HI personnel and something of a common orientation for this behavior.

STAGE 6: Execution of Strategy

Rational positive action in relating to the host country and its needs is almost always a new element in HI thinking. This stage requires considerable leadership and coaching from the advisory group and it involves risks of the advisors receiving credit rather than HI. However, in general, the advisors and HI personnel act to a considerable degree as representatives of a single entity. Emphasis is shifting to country needs, and increasing attention is given to the internal functioning of HI to bring a higher proportion of its activities to bear on functions deemed important by the host government and society at large. Execution of HI strategy in effect involves the entire Phase D. Inherent in this stage is the HI attitude that HI can and must be the prime mover in creating favorable relations with government, business and the general public.

Changes in top management of institutions in developing nations occur with high frequency and the likelihood of completion of the above stages under a single administration is low. In the event of change in HI leadership many of the above stages will have to be repeated until they become institutionalized.

PHASE D: RELATIONSHIPS WITH GOVERNMENT AND THE PUBLIC

Just as action at each higher level within the HI is necessary to enhance and protect gains at subordinate levels, so gains of the HI must be secured by action at the broader society level. Government is the management entity of that society, but it is not the only element that is susceptible of productive influences. The business and commercial interests utilize the products and services of HI along with the agricultural community and they in turn affect government policy.

In this phase the role of the various elements of the country's technical assistance program must be distinguished. The U. S. University (USU) contractor is distinguished from USAID in that its contacts with host government are normally not as representatives of the U. S. government, but rather as intimate professional associates of HI. Thus USU and HI function as a single group, with the USU identifying almost completely with HI and with HI almost completely accepting the USU group as bona fide members of the family in their external relationships.

The USU team leader and members necessarily come in frequent contact with business and community leaders as well as with members of the host government in assisting HI to its fullest development. The normal role of USU in host government relations is a function of USU's identification with HI. To restrict or circumscribe this role is to deprive USU of its full potential. However, when USU represents USAID in any other context in its relations with HG, this role must be clearly and specifically identified.

STAGE 1: Evaluation of Previous HI Relationships with Host Government and the Public

The team leader recognizes that typical U. S. relationships between government and public and private agencies do not prevail in the host country, and therefore development formulas based on U. S. conditions are of limited usefulness. On the other hand, HI leadership has been tradition bound in its relations with government and other host country institutions, and rapid changes that run contrary to these deep seated traditions cause tensions, frictions and problems. This necessitates, then, a rational evaluation and understanding of the present and historic situation as a basis for developing palatable as well as effective relationships. Such an evaluation reveals problem areas and opportunity areas.

STAGE 2: Establish Multi-Level Contact with Government and Public Entities

Mutual understanding, respect and confidence develop at several levels between HI and government and public entities as a prerequisite to effective coordinated planning and action. This is for the HI what much of Stage 3 of Phase A is for technicians. It is a process in which the HI becomes visible and demonstrates competence and usefulness in areas that government and the public consider relevant. Top management contact and relationships develop, but they have little chance for continuing success

unless undergirded with functioning relationships at middle management and the production level. The contacts at all levels must be in sufficient number and quality to make an impact on government and the public.

STAGE 3: Public Realization of HI Usefulness

Effective and productive relationships at working levels between HI and the government and the public are specifically designed to develop confidence in HI. Specific contacts are made to demonstrate an attitude of cooperation and service instead of a competitive threat to the other agencies. Activities designed to upgrade the competence and enhance the image of government and business technicians develop an atmosphere in which they regard HI as useful to the entire agricultural development process. Widespread contacts with farmers generate public support potential for both HI and government agencies.

STAGE 4: HI and Government Consensus Regarding HI Role and Responsibility

After demonstrations of HI usefulness and contacts which call this usefulness to public attention, there develops a consensus between HI and government regarding their mutual relationships and respective roles. This may not be articulated or formalized, but each has a viewpoint and an appreciation of the other's viewpoint, and these two viewpoints are accommodated. However, relationships are not simply between the two entities. Other agencies may be involved and the risk of jurisdictional disputes is high. Therefore these relationships are not only bilateral but multilateral in many cases.

STAGE 5: Maintain Contact and Rapport

HI officials may establish good rapport with government and the public at one point in time, but the high rate of turn-over and the rapid change in the political scene will require a constant and continuing effort in this area. As officials in government change, all has to be re-established; thus indicating the importance of the multi-level productive contacts and adequate relationships with other entities. This rapport not only enables HI to know and influence what is happening, but also what is likely to happen, what government wants to happen, and what HI can reasonably expect from government. HI has the task here of identifying with government as distinct from the party in power, giving government and the public the impression that HI recognizes that its major function is to be useful to society as represented and managed by government. The team leader and team members can be involved on a continuing basis to the extent that they are identified with the HI and are regarded by government and the public as a significant part of HI.

STAGE 6: Publicity Support for HI and Government

Government is the management entity for the public, and thus must make an accounting to the public. Likewise the HI is an instrument of the

public and must account for itself even though it be regarded as autonomous. If HI is useful and necessary to the public, it is the responsibility of HI's administration to secure adequate funds for HI's continuance. Similarly, if government supports the HI, it is to HI's advantage to make this support widely known to the public. An adequate appreciation of the political nature of a public supported institution and the development of public information and public relations programs compatible with this nature is a definite stage in institutional development.

STAGE 7: Planning and Execution of Specific Strategy

This stage is marked by consensus between HI and government on a fairly broad front concerning (a) what HI can do in the public supported agrarian program and (b) what authority, responsibility and resources government can delegate to HI. This will require some painful decisions, because government has severely limited resources, and by nature it has a set of criteria for evaluating alternatives that are very different from that of HI. HI (and its advisors) responsibility here is to educate itself (HI) as well as government on cost, consequences, alternatives, timing, etc. as a basis for public policy. These considerations may be affected directly by team members but they can be strongly assisted by making it possible for the decision makers to visit viable, productive institutions in other countries or by bringing in especially competent executives for this purpose. This stage is never finished. Both conditions and personnel will change. When this stage of the process can continue through changes in government, even at considerable discomfort for HI, one of the necessary criteria of institutionalization will have been fulfilled.

Summary

The role of the technical advisor is the least understood of the various elements involved in the technical assistance-institution building process. A construct is presented here which describes in generalized terms what the advisor does and what he must accomplish by his physical presence that cannot be done better some other way. This is recognized as a small part of the total technical assistance complex but it is a key part of the national economic development of the host countries. The construct is divided into four phases of host institutional relationships for convenience of presentation; namely, the individual technician's relationship, department level relationship, top management-organization relationships, and relationships with government and the public. The model describes the rapport which must be established between advisors and host institutions within each phase. It also indicates the line along which development must occur if progress is to be made in the direction of the formation of a Land-Grant type institution.

Since the relationships are presented in the form of a generalized model, they do not represent any single project in its entirety. Furthermore, the relationships cannot be operationalized directly from the construct although there are many implications for the development of an optimum strategy in particular projects.

Part II
Optimum Role For U. S. Overseas Advisors

By J. A. Rigney

Introduction

Participation in a technical activity overseas for an extended period of time has many disadvantages which tend to discourage the bright, imaginative and energetic scientists in the U. S. from engaging in such activities. The nature of the difficulties has been well documented in previous studies [1, 7, 9], but few attempts have been made to set forth the organizational and administrative configurations which might prove attractive and productive under such circumstances. This paper will briefly review the source of frustrations reported in earlier studies as well as those encountered in the present study and will examine potential alternative administrative procedures with a view to "optimizing" the role for U. S. professionals in technical assistance activities.

The Dilemma

There is considerable evidence from the CIC-AID Study as well as in previous reports that many persons recruited for technical assistance activities overseas could not accurately visualize the type of activity in which they would be engaged and, therefore, their decision to participate in such activities had to be based more on a desire to travel or to "do good" than it was on more professional grounds [9]. Upon arrival at the host institution these individuals found themselves confronted with an inadequately described job to be performed, with a set of conflicting impressions and expectations being displayed by host national and American colleagues, and with no experience and no guidelines for deciding the most effective routes to be followed [2]. Furthermore, such persons found themselves in such unfamiliar professional environment that it became difficult to think clearly about the specific role which they should and could play in the relatively short time (normally two years) available to them. There was on the one hand such a feeling of uncertainty as to which way to turn and where to begin that the impulse to delay any major activity until the environment became a little more familiar was almost irresistible. On the other hand, there was the realization that two years can pass very quickly; particularly if any sort of program must be conceived, explained, approved, and finally executed within that period of time. Hence, there was the tendency to grasp at a few activities which could be performed even in unfamiliar surroundings with a reasonable degree of assurance of success and minimum reliance on cooperation from other sources. Such a decision was often made with little regard to the contribution to basic institution building which the activities might make.

Once such *ad hoc* activities were initiated, however, the time was consumed in seeing them through and there remained an even shorter time for serious institution building activities.

Under these conditions of vague understanding of his role in institution building, the advisor is all too often ineffective or inefficient in accomplishing his major purpose. This breeds frustration not only on the part of the advisor but for his administrators and colleagues as well.

If he has been relatively ineffective overseas he returns home to face the consequences of this two-year interlude in his professional activities. He is able to report to his many friends that he had a wonderfully exotic experience, and he became acquainted with and perhaps even developed a fondness for a new culture and a different people. Professionally, however, he must be vague in describing accomplishments. He finds it difficult to document the short run progress in the development of an institution. He did not quite know what was supposed to happen before he went, and he had little opportunity to develop a strategy during his tour of duty for accomplishing certain objectives. The important elements of institution building in which he was supposed to be involved became clear to him shortly before he returned home, if at all. In this uncertainty, he had no opportunity to pursue his own particular professional interests, and he had no facilities or plans for doing so. Therefore, he returned home without having advanced materially in his own profession and generally without having maintained contact with the literature and developments in his profession.

Upon his return home, the advisor is requested to write a terminal report. This is usually composed of general descriptions of the institution with which he worked, the cultural characteristics of the people he found there, details of the trips he made, persons he worked closely with, and finally a long list of problems and frustrations which he encountered. Typically, this is "a report to the administration" and the quality of writing is seldom professionally sophisticated. He is neither required nor given time to prepare a professionally analytical report on the institution building process in which he was engaged, nor an evaluation of the principles upon which the total operation is proceeding. If he were requested to prepare such a paper to be published in a professional journal so that his observations could be judged by his colleagues in his profession, it would indeed be a frightening prospect.

Thus the advisor is recruited for a vague and uncertain role, is maintained in this role almost "incommunicado" from a professional point of view, and finally is returned home without the privilege or the necessity of reporting to his peers and colleagues in a professionally disciplined vein. It is for these reasons that participation in technical assistance is so frequently referred to as a two-year interlude in one's professional development.

The question to be examined here is whether this must necessarily be so, and if not, what are the administrative, organizational, and conceptual changes required to give it a higher professional potential? What would be the "optimum characteristics" of such an assignment, and would these "optimum characteristics" satisfy all parties in the venture? In the next section the nature of the different criteria which must be optimized will be examined.

Criteria To Be Optimized

The activities of a technical assistance advisor may very well appear to be "optimum" to certain interests or at certain times while serving little utility from other standpoints. Therefore, it will be useful to examine the demands of the individual criteria to be satisfied before attempting to derive an overall "optimum role". There are at least five of these which seem to require individual and collective consideration.

A. EARLY VISIBILITY AND ACCEPTABILITY

The model in which Rigney and McDermott [See Part I] describe what the technical advisor is supposed to accomplish by his physical presence in a foreign country hypothesizes that professional or technical acceptance must be achieved as a prerequisite to efficient progress in other activities. This idea was strongly reaffirmed in the project interviews conducted in this project. For example, many host nationals contended that U. S. advisors tend to make suggestions with little knowledge of their applicability to local conditions, that they are guilty of the same errors for which they accuse host nationals in making judgments and recommendations without sufficient firsthand experience on which to base them. Perhaps most damaging of all, they contend that U. S. advisors lack the professional energy and insights required for significant progress under the peculiar political and cultural environment of the host institution.

These arguments would favor the adoption of a role desiged to give the U. S. advisor high professional visibility and accreditation as early as possible after his arrival at the host institution. The accreditation should not only establish the fact that the U. S. advisor is competent in his particular discipline, but that he can bring that competence to bear on the solution of the important problems in the local environment. It should inspire cooperation and incentive to undertake new activities on the part of host nationals. It should open doors for joint activities that would otherwise remain inaccessible to the institutional development process. Therefore, in order to make the advisor's tour of duty most productive, the criteria for an optimum role must include initial activities which get his program off to an early start.

B. EFFECTIVENESS IN INSTITUTION BUILDING

There are many activities performed by an advisor which may be useful in themselves or which may serve additional purposes but which do not contribute directly to the specific major objectives of building a viable, effective indigenous institution. As important as the extra-curricular activities may be, they cannot be allowed to obscure nor detract from the institutional building objectives. The primary elements to be affected in the institution building process according to Esman and Blaise [4] are the leadership, the technical personnel, the organizational structure, the program content, the physical and fiscal resources, and the institutional tradition or attitude. Given adequate development of these elements, the institution can produce research results, trained personnel, and the other

public services expected of it. Furthermore, it should eventually produce these products for its own society more efficiently than could be done by outsiders. Thus, the primary objective of U. S. advisors is to help build the capability rather than the end product.

A major criterion in optimizing the role of the U. S. advisor must be to insure that his total effort has maximum impact on institutional development. Other criteria may be ancillary to this or they may serve additional subordinate purposes, but it is difficult to conceive of an optimum role which did not hold this as the major thrust.

C. ENHANCED PROFESSIONAL CAPABILITY AND STATURE

One of the greatest difficulties encountered in the operation of technical assistance programs is recruiting competent staff. University contracts have been plagued by inability to find competent, imaginative and energetic faculty members who are interested in serving overseas. The major reason for this difficulty lies in the fact that the role of the advisor has not been of such nature that the faculty member is *professionally* enriched by the experience. Practically every study of the problem has documented the fact that the advisor loses ground within his own profession if he is absent from his normal University duties for more than a year [2, 7, 9]. University contractors recognize this fact and seldom urge their most active and productive staff members to accept an overseas assignment in preference to domestic responsibilities. There is a feeling that the overseas assignment represents an "interlude in professional growth" which must be compensated for by intensive "retreading and refreshing" upon the staff member's return. Seventy per cent of department heads report it takes up to six months for a staff member to become readjusted and 30 per cent indicated that it takes even longer [10]. The better staff members generally feel they cannot afford the professional price that must be paid for participation in overseas programs. They appreciate the University's willingness to do all it can to recognize their overseas activities in terms of promotion and salary. However, as Storm and Finkle [9] point out, "the academic professional looks to his peers in the same field for evaluation of his contributions, his competency, and for awarding of prestige". It is with this segment of his profession that he has lost ground.

There are those who insist, however, that it is not necessary for a professional to lose so much ground in his overseas activity. They argue that by proper administrative provisions the overseas experience could be turned into a positive opportunity for pursuing his professional interests on a broadened ecological base. In fact, it is for this reason that some of the Foundations are able to recruit highly competent scientists who maintain an aura of professional contact and progress that is the envy of their more sedentary academic colleagues at home.

The criteria for the optimum role of the advisor, therefore, must include activities which will make the assignment more attractive professionally. The optimizing process must seek elements in the role which add to the productiveness of the advisor in institution building at the same time that it provides for enhancing his own professional competence and stature

as judged by his professional peers. This will require not only an improvement in his professional capability but also a means for bringing his accomplishments to the attention of his professional peers.

D. RE-ENTRY INTO U. S. PROFESSIONAL STREAM

The relatively small number of highly qualified professionals who have served overseas and have returned to their home institution have generally been disappointed in the difficulty of combining that experience with their continued professional activity at home. The excitement of performing activities on a broader scale is not lightly abandoned, and returnees experience a lingering interest in the broader applications of his profession that the home institution finds frustrating and difficult to accommodate. Most of the difficulty seems to arise from the fact that the advisor's overseas experience was not directly related to his home activities. In general, he was an "advisor" who gave out professional information but who had little opportunity to extend his own technical competence. This left him with little that his department head could find useful to incorporate and extend at home, except for an occasional travelogue with colored slides. Most department heads welcome the opportunity for one of their staff members to spend a year on a Fulbright appointment with the genuine expectation that such experience would enhance his usefulness at home. Most department heads would gladly make facilities in their organization available to a visiting professional who had spent several years overseas in the anticipation that his broadened experience would open new vistas for his own faculty. Why shouldn't he be able to expect the same stimulation from a staff member returning from an "advisors" role?

If U. S. Universities are to supply an appreciable number of their high quality staff for technical assistance, they must be able to foresee some genuine benefits to their own institutions, particularly in the form of improved faculty competence. Furthermore, the additional competence must be compatible with the ongoing programs of the University rather than antagonistic or competitive to them. Most U. S. Universities are seeking ways to make their own programs more international or universal in scope, and there was an earlier hope that this might be achieved in part by allowing their faculty to participate in technical assistance programs overseas. This hope has been poorly realized in the experience of the past dozen years, and much of the reason lies in the inadequate role in which the advisor found himself.

In optimizing the role of the advisor, therefore, it is important to insure that his activities make him more valuable and useful to his home institution upon his return. It is particularly important that he be more useful in his own particular professional field not just a more widely traveled faculty member with vague impressions of exotic cultures.

E. AVAILABILITY FOR FURTHER TECHNICAL ASSISTANCE ACTIVITY

Host nationals uniformly complain that an advisor normally returns home just as he has acquired sufficient background and rapport to begin

to be productive. This feeling is shared by many advisors and by administrators of technical assistance programs. Much of the first two years of service in technical assistance is devoted to learning the new role of "institution builder". There are many elements of this role which must be learned from experience, but once learned they have rather general application. These facts argue for a longer tour than two years or for repeated tours for competent advisors. Unfortunately, about 75 percent of U. S. University staff members who participate in technical assistance do so as a "single shot" [10]. Those who do return for a second tour find their earlier experience most useful in coming to grips more quickly and efficiently with the important activities in their assignment. However, if they go on a second assignment, their University generally regards them as "hooked' and no longer useful for serious contributions at home.

The average cost of placing an advisor overseas is approximately $30,000 per year [10]. This is a very expensive operation. The cost is more meaningful if compared with an alternative use of the same funds in training host nationals in this country. They cost approximately $6,000 per man year. Thus, as an alternative to a single two-year tour of an advisor, the host institution might receive two Ph.D.'s and one M.S. degree for its own staff. Clearly an advisor's role must be made highly productive if it competes on these terms.

This issue was brought out repeatedly in interviews held in the NESA region. When host nationals were asked to rank the importance of participant training, commodity purchases and technical advisors, they *always* gave them in this order. Many even went so far as to suggest reducing total U. S. input by eliminating most of the advisor positions and converting the rest into participant training. This suggests that an increase in efficiency of the advisor's role appears important not only from the standpoint of wise use of U. S. funds, but also from the standpoint of acceptibility by host institutions.

Some advisors have estimated that a competent professional could double his efficiency in institution building activities in a second overseas assignment. However, this involves the University's willingness or ability to spare him from his commitments at home for additional tours. To date, second-round participation has almost certainly been a signal for separation from the U. S. University. And yet, it is this very anchor and involvement in the U. S. institution that keeps him professionally sharp, productive and attractive overseas. This point was recognized in the rationale for the ill-fated, Section 211(d) of the Technical Assistance Act of 1966 and the International Education Act of 1967.

A final criterion to be optimized in defining the advisor's role, therefore, is a provision for keeping him in the midstream of his profession to such an extent that he can continue to contribute to it technically while away on assignment, and thereby be able to move quickly back into a productive role at home upon his return. Only under such circumstances can the U. S. University allow him to undertake repeated assignments.

Experimental Approach

The initial ideas for formulating an optimum role for an advisor began with efforts to build a construct [See Part I] which would describe what

an advisor does and what he must do in the successful participation in institution building.

The construct was validated through an extensive set of interviews at five U. S. University contract projects in the Near East-South Asia region. These interviews were also used to gain additional insight into the necessary elements for an "optimum role". Subsequently a more structured analytic-induction approach was followed in deriving the parameters for the first three optimum role criteria described above. The procedure which was followed, in general, was:

a) At the first project visited, a proposed "optimum role" was described to several host nationals and Americans in separate interviews as part of a larger data gathering exercise. Their reactions and suggestions for modification were analyzed and the model was revised to incorporate those which seemed to have merit. The revised version was then used in subsequent interviews. This process encountered uniformly keen interest on the part of all respondents and, therefore, it was used as an "icebreaker" in obtaining data for the other parts of the study.

b) After a few modifications, some of which were rather drastic, the model acquired a reasonable degree of acceptability *at that project.*

c) The final version of the model developed at one project was used as a starting point at the next project visited, following the same procedure. The model tended to stabilize after two or three projects.

d) It was not possible to explore elements in more than one or two of the optimizing criteria in a single interview. Therefore, as one line of inquiry began to stabilize, another was added to the picture at subsequent project visits.

Following the above sequential process the interviews covered eleven projects, five A.I.D. Missions and the Rockefeller Foundation Project in India. The order in which specific types of individuals were interviewed was essentially random with respect to the particular stage in the development of the three criteria. That is, this line of inquiry was "tacked on" to the major data gathering responsibility and, therefore, the latter considerations dictated the order of visiting projects and people within projects.

Interviews with personnel of the Rockefeller Foundation in India were undertaken for the specific purpose of discovering whether the unusual success which their efforts seemed to enjoy was attributable to factors beyond the reach of University contracts. The interviews proved to be extremely valuable and provided the basis for many of the elements included in the final model reported here.

The elements included in the last two criteria were derived from a study of the recent literature [1, 7, 11] and from an examination of data collected in other parts of this project, especially the data relating to "the commitment of team members" and "commitment of U. S. Universities" [10]. The proposed elements in the "optimum role" relating to these two criteria, therefore, have not had the benefit of the "cut-fit-test" approach used in the first three criteria.

An Optimum Role

In developing an over-all optimum role the advisor's role is first "optimized" separately with respect to each of the five criteria described above. The characteristics so derived are then combined into a composite role which retains as many of the features of the separate roles as possible. While this cannot be done mathematically, it is conceptually similar to the process of maximization of a function with respect to several variables jointly.

A. OPTIMIZING EARLY VISIBILITY AND ACCEPTABILITY

The advisor is confronted with a variety of problems immediately upon arrival at the host institution. His coming has been announced as an important event in the institution's development and there is an unavoidable expectation that early changes will be forthcoming. He arrives with little background and understanding of the cultural and political environment of the institution. He suffers from cultural shock and the agonies of getting his family safely established. He is confronted with the big decision of whether to take a little time to get his bearings or to plunge in and demonstrate his usefulness.

Social scientists have deplored the blunderings of newly arrived advisors in their unwitting affronts to local customs and mores through ignorance and inexperience, and they strongly urge a period of seasoning first. Host nationals on the other hand insist that the advisor can be carefully and sympathetically guided by them in these matters if he is engaged in activities of great interest and importance to them. If he is to follow the latter course, the advisor will find some activity of high interest to the host institution that could be initiated almost upon arrival.

The Rigney-McDermott model [See Part I] indicates that personal and professional acceptance is prerequisite to the advisor's effectiveness in the other institution building efforts. Therefore, his first order of business is to engage in activities which will take him across these thresholds.

The optimum role which was derived from the series of interviews is as follows:

The earliest activity of the advisor should be to engage immediately in the type of activity which he does best and which is closely related to the area in which he will continue to work. This could be to teach a special class, to engage in some type of research or to begin to set up some type of demonstration of a new technology or a new approach which has high probability for being useful in the area. If the advisor is a good teacher, he could be extremely useful in demonstrating various ways that a teacher might be effective in the classroom in some role other than the classical European style authoritarian lecturer. Most host universities would warmly welcome such an exercise if it were offered on an experimental basis in which both students and faculty were given an opportunity to concurrently seminar on the procedures as well as the content during the course. If the initial activity is in research, it should involve some new technique or new approach which could have wide appeal in resolving problems in the area. This would require the advisor to have available immediately upon his

arrival the necessary facilities for getting such activity underway. The tone and atmosphere in which the research is done should be more of the nature of demonstrating to a number of host nationals the potential for some research technique rather than depending initially upon the outcome yielding important research information which could be immediately put into practice.

The optimum role in the early stages would, therefore, require the advisor to *do* something which would provide the necessary "early visibility" and the concomitant "technical acceptability". It would have the advantage of giving the host institution some concrete development to which it could point in strengthening its relationships with the public. To the extent that it attracted and involved host nationals it would provide the advisor with an opportunity to get acquainted with local custom and the host national people with whom he would be working, and to appraise the real needs and opportunities in the institutional building exercise.

The implementation of this kind of initial role would require considerable leadership and support from the team leader, who must work closely with the home Department and the prospective advisor in identifying the particular initial activity and in ensuring the availability of necessary materials. The anticipation and receptivity of the host institution is vital and must also be prepared by the team leader. The timing of the advisor's arrival with respect to season of the year and the host institution's calendar of events is important in deciding what he will do initially. All of these matters, however, can be worked out satisfactorily by a team leader who has the confidence and support of the host institution and of his home university.

B. OPTIMIZING THE INSTITUTION BUILDING PROCESS

It was pointed out above that there are six primary elements to be affected in the institution building process; namely, the leadership, the technical personnel, the organizational structure, the program content, the physical and fiscal resources and the institutional tradition or attitude. All of these may be affected to some degree by the efforts of an advisor who is physically present at the institutional project. In order to optimize his contributions, however, it is important to examine which of these are most susceptible to improvement through his efforts and which can be done better some other way.

1. The Leadership of the Institution

The top leadership in institutions in the developing nations is normally found to be in the hands of a mature person with considerable administrative experience. His experience has not necessarily been in the particular kind of institution which he now administers, but it has placed him in high esteem among the relevant power structure. It is not customary among the developing nations to place young and inexperienced persons at the head of major institutions. The second and third echelons of the administrative structure, however, are much more likely to be held by younger persons with much less administrative experience. The contribution to be made here in strengthening institutional leadership according to the Rigney and McDermott model [See Part I], is to provide an environment

in which various alternatives of administrative procedure can be examined in dialogue and discussion without the embarrassing public exposure of administrative uncertainty. The very fact that the top administrator is quite likely to be a senior, experienced person underscores the urgency for providing a medium in which alternatives can be examined without publicly disclosing the fact that he does not have all of the answers "ready made". The political implications of any innovations which he would care to try are considerable and, therefore, it is quite likely that he will wish to see some experimentation in them at an informal level before making a formal commitment of institutional policy. The implications for the role of an advisor are that the latter must establish himself as having some competence not only in being able to conceive better ways of doing things or better policies to be followed, but he must also be expert in exploring objectively and dispassionately the relative merits of several alternatives.

In interviews with top administrators and with second echelon leaders it was very common to find a high regard for individuals who could discuss the pros and cons of various approaches and who could generate a substantial amount of documentation and evidence on the several views. Conversely, there was almost uniform antipathy for those suggestions which are made in the form of dogmatic recommendations based largely on the rationale that "this is the way we did it at home". Thus, the optimum role of the advisor in affecting the leadership of an institution must be aimed at the exposure of principles upon which policies and procedures should be based. Unfortunately, such activities can seldom be performed in public forum or seminars but instead they are usually conducted in private, privileged conversation.

In order for a U. S. technician to be effective in this role, he will be required to reflect, perhaps for the first time in his life, on the history of the development of his own and other institutions and to critically evaluate the influences which were operative in their development. This is a role which will be new for most of the U. S. personnel involved in technical assistance overseas.

2. *The Technical Personnel*

The development of technical capability an[illegible] the personnel of the host institution is normally done through the p[illegible]ant training program. The contribution which is made by the presen[illegible] of an advisor is to lend perspective to the technical background, to orient the technical capability toward the important problems of the host country, and to develop an attitude or philosophy concerning the institution's role and responsibility in that particular area. Most of these influences are somewhat subtle in nature and are best camouflaged under the aegis of other activities. The most effective camouflage in this instance is the assumption of personal responsibility for a technical or professional activity performed in the midst of those to be influenced. If these activities are performed in cooperation with host nationals, the ideal medium is established for influencing attitude, ideals, and perspective. Thus, the rounding out of the technical capability of host nationals in the most efficient manner will generally require the U. S. advisor to be engaged in a professional

responsibility within the host institution.

One of the most successful University contracts in the NESA region insists that each of its advisors be appointed as a visiting professor, and that they serve on the academic council, be members of the board of studies, and be represented on the catalog and statutes committees. Furthermore, all advisors have their own research projects. This level of involvement of the U. S. advisors seemed to be nearly optimum.

3. The Organizational Structure

A U. S. advisor rarely has the opportunity to be involved in the development of an organizational structure *de novo*. There is nearly always some type of organization in existence, and while the advisor may prefer an alternative organizational arrangement, it is usually found that any reorganization which only reshuffles the same people seldom achieves a marked increase in the institution's efficiency. This fact argues strongly for leaving the existing organizational structure alone until the advisor has thoroughly understood the capability of the existing arrangement *for existing personnel*. Most organizational changes which are suggested on first sight are normally conceived as means of getting around bottlenecks caused by existing personnel. The point which is seldom appreciated by a newly arrived advisor is that others before him have recognized this bottleneck, and they may well have rearranged the organization just to get rid of this particular person only to find that he is a member of the local power structure and, therefore, cannot actually be "organized out of the picture". In considering the optimum role, therefore, this aspect of building the institution could be deferred until others which are more critical have been taken care of.

4. The Program Content

The program content is another area which must be approached with care and deliberation. It must be carefully tailored to the host country's needs, to the role which the host institution is to play in the nations' development, and to the resources (human, fiscal, and physical) which are realistically anticipated for the institution [8]. The optimum role of the U. S. advisor in influencing this element in building an institution must include activities which will give him perspective and an understanding of these constraints. Here again, there has been a strong temptation for U. S. advisors to urge the adoption of program elements based more on the fact that they worked well at home than upon a realistic appraisal of the host country's needs

The optimum role of the advisor in influencing program content must include activities which give him a genuine understanding of the restraints of the local custom and culture in the operation of the institution, and it must also give him a fairly wide contact with the area to be served by the institution and to enhance his understanding of the country's needs. It is not anticipated that every advisor will generate a set of "country needs" for his own private use. It would be reasonable for him to expect that these will have been developed for the team and the institution in general. However, his capacity to interpret these needs in terms of his own particular discipline or field of influence will be greatly conditioned by

his acquaintance with the country and its people. This would argue that the advisor should travel within the country as widely as possible early after his arrival, and he should develop the capability of communicating with the people of the host country. One of the obvious ways of doing this, of course, is to travel in the company of his counterpart colleagues and to use such travel as a basis for discussions on the institution's role in society.

5. The Physical and Fiscal Resources

It is very uncommon for the institutions in a developing nation to think of augmenting their resources through the development of a "grass roots" level of public support. They are quite sure that the basic decisions for support are made among a relatively small number of influential people and, therefore, the normal procedure is to go directly to these with any appeal for increased support. The concept of an institution being supported in proportion to the service it renders to society is quite novel and unfamiliar.

The activities in which an advisor should engage for maximum impact on support for the fiscal and physical resources of the institution rarely include those which will make a favorable impression directly upon persons in high places. The most effective role which can be played in this area is to lead the institution into the development of a general public support for its activities.

The model suggests that support must be developed at various levels of the governmental bureaucracy in addition to the wider public appeal. This is predicated on the fact that the legislative bodies in the developing nations normally allocate support for an agricultural institution to the Ministry of Agriculture or the Ministry of Education, and this agency has considerable power and discretion in the disbursement of appropriated funds. Therefore, it is important to establish the usefulness of the host institution to the entire bureaucracy in agriculture and education. Fortunately, the type of activities which generate public support normally have great appeal also to Ministry personnel if the service to be supported is complementary to Ministry activities rather than competitive with them.

The optimum role, therefore, of the U. S. advisor in developing support for increased physical and fiscal resources would include activities which make the institution highly visible and attractive to the general public, which bring them continuously in close contact with the public, and which is overly generous in sharing credit with various levels within the governmental bureaucracy. Furthermore, these activities must be designed to instill in the minds of the host nationals the advantages of this particular approach as a continuing activity.

6. The Institutional Tradition and Attitude

One of the greatest difficulties in offering advice on attitude and philosophy is that the advice which is proffered is often based on a different set of values than those held by the host nationals. To the extent that the recipients question the advisor's set of values, or more particularly, to the extent that they question his understanding of their own values, they are inclined to discount his advice. One of the few ways

in which confidence can be established in the advisor's ability to properly weigh the values of the host nationals is for the advisor to engage in professional activity jointly with those he seeks to influence. Conversations in the field, the lab, or the classroom are generally more palatable and productive than the more formal conversations in the office or conference room. Under these circumstances conversations relating to attitude and philosophy are much less suspect and can be viewed more objectively than if they are presented in a more formal fashion. The optimum role of the advisor, therefore, in influencing attitude and philosophy is one which engages the advisor in activity and responsibility which is highly attractive to the host nationals for joint participation.

The foregoing review of ways of influencing the six primary elements in institution building indicates that in almost all of them the most efficient approach includes a direct involvement of the advisor in professional activities and responsibilities in the institution he is attempting to help.

The general activities which appear to be optimum for effectiveness in institution building, therefore, include a large measure of "do-it-yourself" activities but *with a special precaution to insure that the primary objective of institution building is not lost sight of in the process.* One reason that U. S. personnel tend to incline less strongly toward direct involvement in professional activities is that many cases are recorded in which the professional activity became the primary focus and institution building was either totally forgotten or badly underemphasized. In these circumstances, the professional activity died with the departure of the advisor and little remained in the way of permanent contribution. It is interesting that these cases are recalled more vividly by Americans than by host nationals.

The optimum role of the U. S. advisor with respect to institution building effectiveness requires that he walk a narrow line between engaging in professional activities with sufficient vigor to insure their success but never losing sight of the fact that these activities are primarily for the purpose of providing a medium within which host nationals can be influenced and trained. Observations in the NESA region suggest that one of the reasons that this role has not been adhered to more frequently is due to the difficulty of maintaining the proper balance between these two objectives.

C. ENHANCED PROFESSIONAL CAPABILITY AND STATURE

Increased professional capability comes largely from exerting ones energies to the fullest in professional activities which challenge or extend commonly held views and practices within the profession. The opportunity of gaining experience and insights in the application of these concepts in the exotic environment of an overseas assignment could be highly prized if there is provision for allocation of an adequate proportion of one's time and project resources. This would require the anticipation of such an assignment early enough to permit the necessary bibliographic search and arrangement for resources prior to departure. It would also involve concurrence by the team leader and perhaps the host institution as to the

nature of the activity and the allocation of resources. The activity would be particularly productive if graduate student participation at both the home institution and the host institution could be made an integral part of the total effort. This would sow the seeds for continued interchange after completion of the overseas assignment as well as strengthen the total professional output.

The nature of the activities which will be most productive will vary depending on the individual's interest and the compatibility with his overseas assignment. The maximum amount of time which could be dedicated to this activity will depend, again, on his other responsibilities, but it should not be less than one quarter of his total productive effort.

The opportunity and the obligation to report results of these activities to his peers in international or national circles is an essential element in such a plan. The excitement and challenge of the exchange of professional information and experience is a strong motivating force among technical personnel and it would be highly efficient to capitalize on this source of stimulation in planning the role for an overseas assignment.

Thus, the optimum role with respect to enhancing the professional capability and stature of the individual involved would include a strong element of participation in his own professional activities in addition to the "advising" or other institution building activities in which he was engaged.

D. OPTIMUM RELATIONS WITH THE HOME UNIVERSITY

The rationale of a university president or the dean of the College of Agriculture in deciding that his institution should participate in technical assistance overseas seldom corresponds with those elements in a department head's decision as to which faculty member shall be involved. The department head is judged professionally by the strength of the staff in his department and the quality of programs in which they engage. Therefore, his decision in supplying staff for an overseas commitment is influenced by the extent to which such experience would enhance the professional capability of the staff member. There has been a lot of loose talk about the broadening experience of participating in a technical assistance project, but department heads are continually confronted with the prospect of a six month "retreading" or refresher period before his returned staff member can become as useful as he was the day he left [10]. He is confronted with two types of changes in the returned staff member. On the one hand, he has been out of contact with his profession for an extended period. The other type of change is that the staff member normally is involved in a much broader concern for his particular profession than he was at home, and upon his return, he finds it difficult to compress his interest and concern back into the narrow mold which is required for deep penetration in any particular topic. Thus, the department head is confronted with the dilemma of having a staff member absent from productive duty at home for an extended period during which time many developments in his area are postponed or handled by junior personnel pending his return. Upon the staff member's arrival, there is general disenchantment on both sides due not only to the staff member's loss of contact but also

to what appears to be a disaffection with the type of activity in which he was formerly engaged.

If the department head wishes to capitalize upon the experience gained by the staff member overseas he must now find ways to change his own domestic program so that the foreign experience can fit in usefully. While top administrators in U. S. Universities have looked forward to this type of involvement as a means for expanding the horizons of their own institutions, it has been difficult, if not impossible, to find ways of accommodating this expanded view at the departmental level [10]. Thus, if the role of the U. S. advisor is to be optimized with respect to his usefulness to his home institution upon return, it must take account of these problems and expectations.

1. The Short-Run Needs

The departmental interests represent the level at which the home institution relationships must be optimized in the short run. This is the level at which decisions are made as to who may go on overseas assignments, what their reception will be upon their return, and what their future will hold in professional development at the home institution. In optimizing the role of the U. S. advisor with respect to this relationship, the activities which appear most important are those which enhance the advisor's concept of principles in his profession as applied in wider ecological settings and the implications of his profession for economic and social development in general. If the advisor is to strengthen his competence in these areas during his overseas assignment, there must be some well conceived plans for doing so. These plans are best made jointly by the department head and the advisor prior to his departure, and in cooperation with the team leader. Two important elements must be underscored in designing activities that are mutually useful to the team leader and the department head. In the first place, this must be an activity in which the advisor is fully aware that his department head will be expecting professional development. This gives a high degree of purpose and direction to his professional activities which should greatly economize on the time required for the advisor to determine what he would undertake once he got to the project site. The second aspect which is important is that both the advisor and his department will be expecting a formal reporting on this aspect of his experience, and therefore these activities will receive more formalized attention, both in their execution and upon his return to his home campus. This approach will provide opportunity for the advisor's professional growth and also a basis for professional recognition.

2. The Long-Run Needs

The long run benefits which a U. S. institution expects from having its faculty participate in technical assistance relate to the institution's general capacity to broaden its horizons of concern and application. U. S. Universities have become painfully aware of their parochialism in their general course offerings and research activities. As leaders of thought among their constituency, U. S. Universities are confronted with the necessity of broadening the background and experience of their own faculty

members. Therefore, top administrators of the U. S. Universities have more of a long-run view of the benefits and expectations to be derived from faculty participation in technical assistance. In optimizing the advisor's role with respect to his relationships with his own university, this aspect of his development must also be taken into consideration.

The activities which will broaden his understanding and experience in world affairs and the implications for his profession will be those which require him to give serious consideration to these points while he is in residence overseas. A quarterly report to his department, for example, relating his observations and experience and the implications for future development within the U. S., would exert pressure on him to extend his own thinking in this dimension to the fullest. The actual thoughts recorded in such a report would not be as important as the discipline it would impose on him and the professional dialogue it generated. Therefore, this could not be a one-way street if it is to achieve its purpose. There must be institutional response, challenge and criticism, which suggests that the home institution must put forth effort also in improving its own capability.

E. OPTIMUM AVAILABILITY FOR FUTURE ACTIVITIES IN TECHNICAL ASSISTANCE

An advisor's availability for future assignments in technical assistance depends on a large number of small factors, most of which are not related directly to the type of activities in which he engaged in his previous assignment. Rather, they will pertain to such personal matters as the status of his children in school, the health of the elder members of his family, ownership of home, etc. On the professional side, however, his availability depends on the impact of his last encounter on his professional life, the type of activities in which he has been engaged since his return to the campus, and the nature of the responsibilities which have fallen on his shoulders for the home institution's program.

There is likely to be a strong desire on the part of the advisor as well as his department chairman to return to an overseas experience sometime in the future if his previous experience has successfully opened new vistas, new responsibilities, and new opportunities within his profession [9]. These need not be professional activities which are peculiarly associated with foreign programs. In fact, department chairmen are sensitive to becoming supersaturated with personnel whose major concern is with foreign programs to the exclusion of the domestic responsibilities. The kind of overseas activity which will make both the advisor and his department chairman look kindly on other opportunities are those which have so broadened his understanding of his own profession and have strengthened his capability in applying this understanding in new and different ways on the domestic scene that it has attracted widespread professional acclaim [9]. If the advisor is successful in permeating the entire department with a new perspective, there will be great enthusiasm among his colleagues for maintaining this type of contact with the outside world. The format which is most likely to produce these results is one in which the entire department is aware of the type of professional insights which the advisor is expected to gain before he leaves and perhaps have some

hand in formulating specific questions to which they would like him give some attention while he is away. This would give an air of total departmental concern in the venture and provide an environment in which most departmental members had a vested interest in the success of the advisor. Under these circumstances, various members of the department would feel constrained to make a number of professional inputs into the advisor's experience with the expectation of reaping certain professional returns themselves.

If an advisor is to be most useful to his department upon his return home, he must be capable of quickly picking up his reasonable load of responsibility within the department. It is conceivable that he might move in and out of teaching responsibilities with a minimum of disruption, but in research and service activities the flexibility is much less. The constituency of most institutions demands that their own needs come ahead of the institutions' commitments elsewhere and, therefore, there is great reluctance to see programs stopped or delayed because the project leader is continually involved in overseas assignments. This imposes something of a minimum time which the advisor must spend at home in order to minimize the deleterious effects on the domestic programs. The minimum will vary depending on the nature of the responsibility in which he is involved, but it will also depend strongly on the degree of "retreading" that is required when he returns from overseas. Certain of the other optimizing proposals will have the effect of reducing this re-entry time.

It was pointed out earlier that one of the important factors in retaining a university base is to provide the opportunity of remaining professionally sharp and up-to-date. It is not likely that this could be done over an extended number of years if the rate of participation as an advisor is too great. Furthermore, it is unlikely that meaningful research could be conceived, executed, and published if the advisor is not located in one place for a reasonable period of years. The mental and professional distractions involved in uprooting and moving from one place of business into a completely different environment with a new set of colleagues are such as to exact a fair toll in efficiency at best. An advisor could not suffer these inefficiencies with a high frequency and still enjoy an overall professionally efficient life. Putting these considerations together it seems unlikely that an advisor could remain highly competent and productive if he returned overseas in less than three years after his previous experience. It is possible, however, that he could be exceedingly productive and useful on a few interim short-term assignments, either to his previous location or in new configurations after he has acquired a reasonable amount of experience as an advisor. From the department's point of view, however, it does not seem likely that they could accommodate repeated overseas assignments more frequently than every three or four years after the advisor's return to the campus without restricting his capacity for assuming major responsibilities at home.

Perhaps the greatest opportunity for increased efficiency in exploiting the returned advisor's experience is in continuing his contacts with the institution he served overseas. Upon his return home he discovers many ideas that would have been useful but which didn't occur to him earlier. His ability to bring his counterpart professionals into a continued contact

with the outside world is desperately needed in the process of putting them on their own. This can be done with minimum cost in funds or professional time, but experience has shown that it will not prosper unless it is specifically made a part of the advisor's continued responsibility.

Optimizing the advisor's role with respect to his availability for future participation in technical assistance suggests intervals of two to three years overseas and three to four years at home would be an acceptable balance. This would allow him to spend a maximum of 35 percent to 50 percent of his professional life in overseas assignments and still retain a productive university base.

Generalized Optimum Role

The role of the advisor has been optimized for each of several criteria in turn. It is now required to put these together in a single role which would jointly optimize all of the criteria considered. The characteristics of the role are given in the chronological order in which they would have a bearing on the advisor's activities.

The advisor will anticipate his tour by developing plans for an initial set of activities jointly with the team leader and his Department. These activities will be chosen to attract the attention of his prospective colleagues, and they would be something he could do well without extensive background in local needs, customs, or restrictive environment. The major purpose of this set of activities would be to establish the advisor among the host nationals as an active, effective and cooperative professional, to demonstrate his ability to do things in the local environment, and to bring him both personally and professionally into early communication with the host institution. This will give him an immediate platform from which to be useful in developing ideas, attitudes, and habits of thought. It would place him in a sympathetic environment for learning local custom, country and institutional orientation and requirements.

The advisor will also anticipate his tour by determining jointly with his departmental colleagues activities which might advance his own profession in the exotic environment to which he is going. These will be chosen to be as closely related to his principal assignment as possible, to be of interest to the departmental colleagues, to extend the advisor's professional capabilities and to add to the advancement of the profession. These activities should be conceived to require no more than 50 percent of the advisor's time, and they must be capable of performance without an undue financial investment. The principal function of these activities is to ensure that the advisor is professionally upgraded during his tour and to give his peers a basis for appraising his performance.

The advisor will normally receive some pre-departure orientation with respect to the country to which he is going, or alternatively, he will receive such instruction upon arrival in the host country. Since little of this will be concerned with the history of institutional development and the principles upon which it turned, he must arm himself with literature in this area.

Upon arrival at the host institution he will plunge immediately into

the "early visibility" activity which had been planned in advance. He will guard against allowing this activity to lose its proper role by becoming an end in itself. He will begin to explore ways to initiate his own professional activities and to synchronize them with the local departmental functions. In all of these he will seek cooperation and guidance from his counterparts, especially in understanding the appropriateness to local conditions. This is designed specifically to make the advisor appear attractive professionally and to encourage objective dialogue from the beginning.

In the first six months several types of activity must be initiated. His specific institution building responsibility is identified and a plan established for its implementation. The host institutional role and the particular departmental perspective are identified and dialogue is underway on plans for their realization. He will have traveled a little in the country of his host colleagues for the overt purpose of learning of the country's needs and the institution's role. The advisor's own professional activity is underway, and a first attempt has been made to write the home department an informative and analytic report—this in contrast to the usual frustrated and complaining description of the inadequacies of everything in sight.

During the remainder of his tour the advisor will serve effectively as a "visiting professor", or "researcher", or "extension specialist" within the appropriate unit. He will encourage the proper use of institutional service as a means of increasing public support. He will discuss the principles of administration and organization as vehicles for facilitating individual performance. He will demonstrate that science and technology that is put to work is as highly regarded as the more esoteric pursuits. He will pursue his own professional interest and will make it an integral part of his total effort. In short, he will lead an active, productive professional life in the best "Land-Grant" tradition.

The advisor will anticipate the termination of his tour by making a careful analysis of the institution building process in which he has been engaged, the factors which have accelerated the process and those which have impeded it. He will seminar on these issues with his colleagues and will summarize in open discussion an objective appraisal of institutional direction and progress. He will also assess his own professional accomplishments and initiate a reporting of them. He will arrange for continued professional contact and communication with colleagues at the host institution.

Upon his return home the advisor must complete the professional obligations of his tour. There is an analytic reporting to the Department on the institution building implications of his activities and their application at home. He must report in adequate form the professional accomplishments during his absence and their relevance to the Department's interest. He must maintain professional contact and interchange with his erstwhile colleagues. This latter activity is designed to place them in wider contact with their profession in the world and to facilitate their closing the technological gap.

If the above steps are completed with a high level of competence, it can confidently be expected that a returning staff member will have a favorable impact on his own institution for many years.

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Part III

Measuring Institutional Maturity in the Development of Indigenous Agricultural Universities

By R. W. Roskelley and J. A. Rigney

Introduction

The broad spectrum of the technical assistance program of U. S. A.I.D. includes institution building in many fields. The greatest emphasis in terms of funds, professional manpower, technical equipment, and U. S. institutional involvement has been in the development of agricultural universities. The total effort in agriculture has involved 54 projects in 36 countries and the collaboration of 34 U. S. Universities. The objective in most instances has been to assist in the development of institutions that are capable of serving their country in a manner comparable to the services rendered by the Land-Grant University system of the U. S.

One of the major difficulties in the operation of such projects is the problem of measuring progress in terms that are meaningful to the administration of the host institution and the technical assistance agencies. The problem becomes increasingly important as the project matures and decisions must be made as to whether to radically alter the type of input of technical assistance or to phase out the project. This paper reports efforts at developing measurements of maturity of indigenous institutions which are receiving technical assistance.

Several studies on institution building have been reported recently that are useful and relevant to the problem under consideration. We will use the concept of institutionalization as defined by Esman and Blaise (1): "the process by which through the instrument of organization new ideas and functions are integrated and fitted into developing societies, are accepted and acquire the capacity to sustain themselves and in turn influence the larger environment in which they function". Duncan and Pooley (2) suggest that there are three significant dimensions in understanding the process of institution building. The first are the institutional variables themselves: leadership, direction, programs and internal structure. The second are the linkages with the environment, and finally, the transaction by which the institution gains stability. Measurement of institutional maturity must necessarily take cognizance of these three dimensions.

Some Lessons Learned From Phased Out Contracts

A.I.D. Missions and U. S. University contractors are continually required to examine their projects with a view to determining the degree

to which initial objectives have been achieved and they must estimate a probable date when the project can be closed out. In a number of instances in the past, particularly in the Far East, such evaluations have resulted in a decision to terminate the project on the grounds that the institution had arrived at a sufficient level of maturity to accomplish the purpose for which the project was initiated. A review of the terminated projects in agriculture in the Far East Region was made for the purpose of determining in retrospect whether the criteria used were adequate. The results are reported in a separate paper (3), but a summary of the findings is as follows.

First, even though progress has been made in some aspects of institutional development, none of the institutions had achieved the kind of overall maturity that was essential for them to sustain a dynamic, self-generative level of performance. It was questionable whether they would be able to make meaningful contributions to the economic, social and political growth of the country in which they were located.

Second, the criteria used to determine institutional maturity were clearly inadequate. The decisions to terminate projects were made on the basis of achievement in physical characteristics such as numbers of buildings, faculty and students, but they did not take into account the spirit, tradition and institutional role which had been established.

Third, each of the institutions experienced a traumatic interlude after the assistance contract was terminated that was characterized by periods of retrogression and loss of competence rather than continued growth.

Fourth, there was much evidence that neither the U. S. nor the host country would realize the potentially significant dividends from the investments of money, manpower and professional skills which was spent in the institution building program unless additional inputs could be made in key areas where little growth had occurred.

Fifth, there were many valid reasons which suggested that it was not in the best interest of the U. S. to terminate the contracts at a time when many aspects of the institution were still in the early stages of maturity. In most cases, this left a residue of bitterness and disappointment rather than the desired attitudes of appreciation and confident internal initiative.

Experience in these projects as well as in several which are currently approaching maturity have added a high degree of urgency for additional insights into the relevant characteristics which must be observed in judging institutional progress.

Previous Measures of Maturity and Progress

Much experience has been gained by U. S. Universities in assessing their own progress and stage of development. In fact, there are six regional associations which perform this function for the purpose of accreditation of U. S. colleges and universities. While the details of evaluation vary from one region to another, they generally attempt to answer the following questions.

1. What is the educational task of the institution?

2. Are the necessary resources available for that task (including faculty, library, financing, physical plant and internal evaluation activities)?

3. Is the institution organized adequately to carry out the task (does it have an adequate board of control, administrative leadership, faculty and student organization such as to foster a spirit of cooperation and mutual support among the various entities of the institution)?

4. Are the programs of instruction adequate in kind and quality?

5. Do institutional policies promote high morale among the faculty?

6. Is student life relevant to the educational task?

7. Is student achievement consistent with institutional goals?

It is important to note that while the criteria used for evaluating institutional development vary according to the specific type of institution involved, there are many features common to all of them. Thus, it is possible to draw upon this experience in establishing criteria for measuring maturity of agricultural institutions in the developing nations. One major deficiency must be recognized in this respect however; namely, none of the accreditation approaches provides a sharp distinction between progress along "Land-Grant institution" lines as contrasted to progress toward a classical European type institution, and this lies at the very heart of the problem in developing nations.

Very little research effort has been made by A.I.D. Missions to derive reporting systems which would meaningfully indicate progress in institutional development. One rather comprehensive attempt in this respect, however, was made by USAID at the beginning of India's fourth five-year plan in 1965. They requested contract team leaders to estimate for their respective projects the stage of development required for self-sufficiency and the rate at which self-sufficiency was being achieved in each of the twenty-seven criteria shown in Table 1. (4) These data were obtained for each of the seven Agricultural Universities in India which were being assisted by U. S. University contracts, and they provided quantitative estimates for many of the important features of an academic institution. The evaluations were felt to be inadequate however and little use was made of them for several reasons. In the first place the judgments were quite subjective and lacked a basis for comparability between projects. More importantly, they did not document the "feel" of excitement, energy, and progress; or conversely, of despair, lethargy and traditionalism which characterize the institutions. They did not provide a basis for knowing whether the institution was moving philosophically and organizationally toward a problem-solving, service oriented "Land-Grant" type or toward the classical European type; since the increases in numbers of Ph.D.'s, volumes in the library and numbers of classrooms could qualify for either. They did not provide the Indian and U. S. decision makers with an adequate basis for altering their strategies to increase the efficiency of technical assistance inputs.

In view of these deficiencies it was found necessary the following year to appoint a joint Indo-U. S. technical assistance study team to "assess the progress made by the agricultural universities". (5) This team accumulated in more objective terms much of the same data with respect to physical plant, library, equipment and faculty training. In addition they inquired further into the institutions' progress toward assuming

TABLE 1. AGRICULTURAL UNIVERSITIES: COMPREHENSIVE ANALYSES & PROJECTIONS TO SELF-DEVELOPMENT COMPETENCY IN VARIOUS SUBJECTS

A - STATUS EXPECTED BY 1971 B - LEVEL OF SELF-DEVELOPMENT COMPETENCY C - YEAR OF PHASE-OUT IN SUBJECT

UNIVERSITIES (STATES)	ADMINISTRATION: Laws, Statutes, Regulations % Effective			Board of Management % Effective			Fev Admin & Academ Officers % of Needs			PHYSICAL FACILITIES: Professional Buildings % Adequate			Staff Houses			Hostel Capacity			Campus Roads % Adequate			Local Equipment % Adequacy		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	95	100	72	95	100	72	95	90	69	85	75	62	400	400	72	1800	1200	71	90	70	67	65	50	69
II	100	100	68	100	100	70	100	100	69	75	75	64	500	400	71	2000	1600	65	70	75	72	75	75	71
III	100	100	65	100	100	66	100	100	[illegible]	[illegible]	75	67	600	500	70	2000	1500	67	75	75	71	75	75	70
IV	100	100	71	100	100	71	100	100	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2000	2000	71	75	75	74	50	75	76
V	100	100	69	100	95	72	100	95	72	85	[illegible]	[illegible]	400	400	71	2000	1500	71	75	75	72	75	75	70
VI	60	50	68	95	95	72	100	90	69	75	[illegible]	65	500	[illegible]	70	1600	1600	70	75	75	71	75	75	71
VII	100	100	70	100	100	72	100	100	72	75	[illegible]	65	400	400	72	1500	1500	72	75	75	71	70	70	71

UNIVERSITIES (STATES)	ACADEMIC PROGRAMS: Conversion to Modern Teaching % Completed			Salt Teachers			Salt Students			Sci. Bachelor Degrees			Sci. Advanced Degrees			EXTENSION ACTIVITIES: Per Training Home Center Salt St. %			Extension Teach & Res % converted			State Coverage & with Univ.			Welfare Serv and Asst. Direct rs			Sci. Subject Matter Special.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	68	[illegible]	[illegible]	[illegible]	900	500	68	[illegible]	[illegible]	68	[illegible]	[illegible]	[illegible]	60	50	71	35	50	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	73
II	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	69	[illegible]	[illegible]	[illegible]	[illegible]	600	[illegible]	100	150	[illegible]	[illegible]	[illegible]	[illegible]	50	[illegible]	73	35	50	76	[illegible]	[illegible]	[illegible]	[illegible]	200	72
III	100	[illegible]	[illegible]	[illegible]	[illegible]	68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	60	[illegible]	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63
IV	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	69	[illegible]	[illegible]	[illegible]	70	[illegible]	[illegible]	[illegible]	[illegible]	76	[illegible]	75	76	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	75
V	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71
VI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	75
VII	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76

UNIVERSITIES (STATES)	RESEARCH ACTIVITIES: State Research % by University			No. of Main Stations			No. of Sectional Stations			Area of Research (000)			No. Directors and Asst. Directors			No. of Research Specialists			Members Dir. Research % Staff			LIBRARY: No. of Books & Journals (000)			No. Bk. sets per Sec.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71	[illegible]	[illegible]	75	[illegible]	20	75	40	40	71	60	50	68	30	33	71
II	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	66	[illegible]	[illegible]	66	[illegible]	[illegible]	71	[illegible]	[illegible]	69	200	200	68	70	50	68	70	50	70	10	10	73
III	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67	[illegible]	[illegible]	71	[illegible]	[illegible]	71	[illegible]	[illegible]	71	200	200	71	40	50	74	40	50	68	14	14	72
IV	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76	[illegible]	[illegible]	71	110	100	74	50	70	73	55	50	69	10	5	70
V	35	50	76	[illegible]	[illegible]	69	[illegible]	[illegible]	72	[illegible]	1.0	68	[illegible]	[illegible]	69	40	50	72	40	50	73	55	70	68	[illegible]	20	68
VI	65	65	71	[illegible]	[illegible]	62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	70	10	10	71	170	190	70	40	40	71	60	45	64	9	6	74
VII	50	60	71	[illegible]	[illegible]	70	[illegible]	[illegible]	71	3.5	3.5	71	[illegible]	[illegible]	70	95	125	72	60	60	71	50	50	70	13	12	[illegible]

State-wide responsibility for research and extension activity. This was accomplished by first sending out questionnaires to the seven universities and following them up with team visits. This second effort, however, again failed to document the extent to which the institutions were developing genuine potential for stimulating the agricultural development of the State they serve. Both the Indian and U. S. members of the team urged additional research effort in this aspect of measurement of maturity.

Criteria For Maturity of a Land-Grant Institution

The criteria used for measurement of progress and maturity in the development of an institution must conform to the role that is visualized for that institution. It is presumed that each developing nation will visualize its institutional needs in terms of its own cultural, economic and educational stage of development and various criteria will need to be established against these objectives. In addition, there is a common thread in all of the institution building projects in agriculture that are supported by A.I.D. which imply or specifically state the objectives to be the building of a "Land-Grant Type" institution. The criteria for progress in this dimension can be stated in terms of the important, distinguishing characteristics of such an institution as follows.

1. The institution conceives its role in society as one of serving the rural community. It will be specifically organized, to educate youth coming from the rural areas, and will train them specifically to deal with the problems of rural people. It will engage in research which is problem oriented, with high priority being given to the most urgent agricultural problems of the region it serves. Its faculty will feel a keen sense of purpose and dedication to resolving the problems of the rural area, and to communicating the solutions back to the agricultural community. Thus, they will conceive their professional purpose in life, to be primarily that of serving the rural people.

2. The service orientation, the devotion to the solution of important agricultural problems and the keen desire to train students in the philosophy and capability, automatically generates a bond of common purpose between professor and student that concentrates on this service orientation and dedication to the solution of problems. This results in a style of teaching, which develops capacity among the students to identify important problems and to proceed confidently in their solution. The teaching program tends to incline much more toward practical problem solving, and an understanding of theoretical and basic sciences is given this purposeful orientation. Typically, the teaching programs involve the students in considerable field work, where they physically come in contact with problems and their solutions and where they learn by doing.

3. The motivation and incentive for individual staff members derives in large measure from a sense of satisfaction of having served the rural people well. Therefore, acclaim from farmers and their families becomes an important feature in the set of values of the professional within a

Land-Grant System. Increasing agricultural income and production becomes the driving force, and publication of results in prestigious journals is relegated to the category of a useful by-product. New science and technology will be sought and developed as the developing agricultural society requires it for their continued advancement.

4. To the extent that the service orientation of a Land-Grant Institution makes it a program for the rural people, they in turn generate public support for the institution commensurate with its public service. Thus the Land-Grant Institution becomes supported from public sources because it is providing service, and not just because it is a mark of cultural distinction.

5. Since the institution's existence is justified on the basis of its production of useful people and useful information, the internal administrative attitudes and relationships reflect this purpose. Thus the institution's administration understands its role to be that of facilitating productivity of the staff members, instead of regarding the staff members as existing for the purpose of enhancing the prestige and of serving the administrators.

Insofar as the above characteristics are developed within an institution, it can properly be said to be patterned after the Land-Grant model. To the extent that they are perfected and find expression in normative behavior patterns and operating principles they become the criteria that can be used to evaluate maturity in this dimension.

Measurement Variables

The specific variables to be measured will differ somewhat with the criteria established for the particualr institution. In general, however, it appears that agricultural universities in the developing nations could be adequately evaluated from measurement of the variables shown in Table 1 *plus* additional variables specifically chosen to reflect the degree of institutionalization of the Land-Grant characteristics outlined above.

The variables listed in Table 1 may be measured by objective methods with little difficulty, and a summary quickly reveals the salient points requiring attention. They are measured by specific counts and estimates. Instructions for collecting these data in India, for example, were: "Indicate (1) the stage of development in various areas you consider necessary from where the Indian University would continue to develop without U. S. assistance. This would be the activity targets of the contractor and not in most cases be the long term goals of the Indian University. (2) An estimate of where you believe the university will be in each area by October 1971. If in your judgment, development in certain areas will not have progressed sufficiently by 1971 to permit continuation without U. S. assistance, this should be indicated with appropriate detailed explanation and projection."

It is again emphasized that these variables are important in institutional development, but their assessment is not complicated and requires no further documentation here. The variables which are peculiar to the Land-Grant Model, on the other hand, are much more subtle in their measurement and the remainder of this paper is devoted to their identi-

fication and measurement.

The important variables that need to be added in measuring progress on the Land-Grant Model are:

A. **Teaching**
   1. Teacher's attitude toward his major function
   2. Teacher's relationships with students
   3. Teacher's execution of function
   4. Teaching methods employed to achieve objectives
   5. Relationship of subject matter content to country needs

B. **Research**
   1. Volume and productivity of research
   2. Proportion of projects directed to high priority problems
   3. Capability of staff for documenting the relevance to country needs

C. **Extension Education**
   1. Definition of Extension Function by the University
   2. Identification of Priority Activities with country needs
   3. Coordination with other agencies
   4. Improvement of System (Organizational Self Improvement Activities).
   5. Use of such principles and processes as: Group Dynamics, Local Leadership, and Community Organizations
   6. Focus on Best Technology

D. **Administrative Incentives**
   1. Stimulation of professional improvement
   2. Recognition and reward for excellence
   3. Delegation of authority
   4. Sharing in making professional decisions
   5. Effective use of controls
   6. Development of public support

The development of questionnaires or instruments for the measurement of progress within each of the above topics may vary from one project to another depending on the specific emphasis with which the project has been concerned. There is, however, a set of basic rationale which should be considered in the development of specific instruments. The following rationale was used as a basis for the preparation of the specific instruments which were tested in the NESA region and which seemed to have merit for wider use.

A. TEACHING

1. Teacher's Attitude Toward his Major Function

The common pattern found in the university classroom of the developing nations is one in which the professor appears before a class for a period of approximately one hour and reads from his personal notes a segment of the material to be covered by the course. There are no text books, no outside reading, no class discussion, and no other activities designed to stimulate the student to acquire more factual information or alternative insights into the topics covered than that which is given orally by the professor. Frequently, student performance is evaluated by external

examiners whose only contact with the classroom experience is a syllabu which is formally registered with the administration. Under this system the assumption is implicit that the teacher's function is the oral impartin of the factual information which the student will need for adequat coverage of the topics presented.

An alternative view of the function of the teacher that is widely held ir the U. S. is that the teacher is the stimulator, the guide, and the interprete in covering the topics under consideration. He may cover a reasonably large portion of the material under consideration, but he seldom considers his own presentations as more than a small fraction of the total material that is brought to the attention of the students. These two extreme points of view represent the continuum along which progress is to be measured.

2. *Teacher's Relationships with Students*

The prevailing relationship in the developing nations is characterized by a rigid and formal attitude which is imposed by the professor. He poses as the authority in his field and does not permit questioning, amendment or deviation from his points of view. Therefore, class discussion is allowed only for clarification of a point presented and not for the purpose of critically examining alternatives or as a process of stimulating thought among the students. This authoritarian approach is designed to maintain order and discipline, but it is frequently used as well to protect the inadequacies of the teacher.

The progress to be measured relates to the degree to which the relationship between teacher and student is more conducive to study, inquiry, and thoughtful scholarship on the part of the student as opposed to an insistence on the professor as the sole and ultimate authority in the area.

3. *Teacher's Execution of His Function*

It is difficult for a teacher to break with tradition in establishing a new relationship with students. This is one of the points at which traditionalism lays its strongest claim, and it is generally broken first by the younger and more innovative teachers. Institutional maturity is not achieved, however, until a significant number of departments within the university have succeeded in establishing a new tradition in these respects. The level of achievement necessary before the institution can be regarded as sufficiently mature to proceed under its own internal resources is debatable but certain minimum guidelines can be considered. Most of the institutions operate on a semi-democratic basis in establishing or reorienting internal policies in order to protect itself from reactionary voting. This would suggest that at least 50 percent of the departments must share the "modern" view before the "critical mass" level has been achieved. Alternatively, it might be regarded as sufficient when the important decision makers within the university have achieved this status.

4. *Methods to Achieve Objectives*

It is not likely that the new perspectives in teaching can be achieved by following the old format in the classrooms. New methods of presentation, stimulation, examination, and certification are indicated. The best methods available to a particular institution will depend largely on its own resources. For example, it can only make outside assignments for reading

and the preparation of term papers if there are reasonable library facilities available. The alternative is a very widespread use of a mimeograph machine and similar facilities. The relationship between teacher and librarian is of key importance in using to the fullest the limited library resources. The availability and use of audio visuals depends not only on the institution possessing a slide projector but also on the policies of servicing the equipment, of providing relevant material for projection and the integration of such material into the course work. Thus, in measuring progress in the introduction of methods to achieve objectives, it is necessary to inquire into the institutional attitude toward these methods, the initiative employed in making them useful and relevant as well as the actual success achieved in their introduction.

5. Relating Subject Matter Content to Country Needs

There is an assumption in the Land-Grant model that the basic sciences are taught for the specific purpose of increasing the student's capability for coping with important problems of the country. It, therefore, becomes important for teachers of these courses to continually relate their subject matter to important problems; although in courses such as chemistry, physics, and biology, this may be only in an illustrative fashion. In the more applied courses, however, a fairly broad coverage of the major issues in that particular field is indicated. Measurement of progress in this area must inquire into the degree to which subject matter in the individual courses is related to country needs.

B. RESEARCH

1. Research Productivity of Individual Staff Members

The Land-Grant model suggests that individual staff members of the institution are possessed with a drive to obtain as much information in their field as possible and to find ways to bring this to bear in resolving the problems of the rural areas. To the extent that a staff member is so motivated, he will be engaged in activities designed to acquire more information and to relate that information to the solution of problems; therefore, a measurement of the research energy and activity of individual staff members provides a clue to the progress toward the Land-Grant model. Research activity in this category can be interpreted rather broadly so long as it gets at the exhibition of an inquiring and dedicated mind.

It could extend the full range from purely bibliographic study, through adaptive type of experiments, to more basic types of research.

2. Proportion of Projects Directed to High Priority Problems

If a country has limited human and financial resources for conducting research it must use a high proportion of these resources in introducing and adapting existing science and technology. The creation of new knowledge receives high priority only in areas which are demonstrated to be limiting to national agricultural development; therefore, there is a need to measure the degree to which the institution's research effort is directed to problems of high priority in the country's agricultural development.

There is no clear indication of the optimum percentage for such projects, but it is assumed to be upwards of 75 percent. In the vernacular these are known as "Pay Dirt" projects.

3. Capability of Staff for Documenting the Relevance of Projects to Country Needs

It is not reasonable to expect that young, newly trained professionals will automatically have a clear understanding of the major problems confronting the nation's agriculture; therefore, they would not be able to write a project which is effectively oriented in this respect. There are, however, numerous sources of assistance in this respect, such as the Director of Research, various persons within the national Ministry of Agriculture, and other individuals representing private business or external agencies. An important measure of institutional maturity would be the degree to which the views of those outside the institution are taken into account in the commitment of research resources.

C. EXTENSION EDUCATION

1. The Concept of Role and Function of Extension

The development of an institutional concept of its role and function in extension in the developing nations almost universally has involved a power struggle between the emerging university and the vested interests in the Ministry of Agriculture. Ideally, these two institutions should engage in sufficient dialogue to develop a concensus on the role which each should play in the area of extension education. One measure of maturity must encompass the degree to which the institution has worked out these concepts for itself as well as the degree to which this has been resolved with the Ministry of Agriculture.

2. Identification of Priority Activities with Country Needs

It is not possible for a developing nation to mount sufficient resources in extension education to adequately cover all of the ideas which are advanced from within or outside the institution; therefore, serious choices must be exercised in the commitment of extension resources to those activities which deal directly with the high priority problems of the country. Failure to do this will result in inefficient utilization of the other public resources of the country.

3. Coordination of Activities with Other Public and Private Agencies

There are various activities for which a university is peculiarly equipped to undertake in extension education. These include the training of extension personnel and research in improved extension methodology. Other activities may well be undertaken if adequate resources remain at the disposition of the institution. There are many activities which are promoted by public and private agencies which can be improved considerably if there is intimate cooperation with the university activities. These include the development of agricultural credit programs, the production and distribution of fertilizers and pesticides, the organization and assistance in the processing and marketing of farm products, etc. An important measure-

ment of maturity of the institution is the degree to which its extension activities are coordinated with such as those mentioned above, rather than being either competitive with them or unconcerned.

4. Efforts to Accommodate the System to Local Environment

Every culture and every political system imposes restraints on the type of extension education program which can be most effectively implemented. There is ample documentation of the fact that the direct transplantation of the U. S. extension model without modification cannot be expected to survive. The capacity of the institution to look simultaneously at the country needs and the currently employed extension practices and to explore imaginatively alternative systems for accomplishing the desired objectives is an essential measure of institutional maturity in the developing nations.

5. Use of Modern Methods of Communication and Motivation

Again, it has been demonstrated that the direct transplanting of such concepts as community development and of major reliance on mass media have not produced satisfactory results. However, the basic concepts of group dynamics, local leadership, and community organization are relevant to the communication of new ideas and the motivation to their adoption. These concepts represent a departure from the classical authoritarian relationships which have existed in the developing nations and, thereby, hold great promise in the development of new systems for the individual countries involved.

D. ADMINISTRATIVE INCENTIVES

1. Stimulation of Professional Improvement

There seems to be no dearth of desire among faculty members for acquiring an additional academic degree which will serve the purpose of qualifying them for a higher rank. This additional training *per se*, however, does not guarantee that such persons will be interested in the development of new approaches or the adoption of different attitudes. Furthermore, those who are not eligible, for whatever reason, for additional education abroad find little incentive for continued professional improvement at home. There is little incentive for experimentation with novel ideas at home. There is little to be gained but the scorn of his peers in the adoption of new teaching methods, new relationships with students, or attempts to change course content. One of the serious challenges to the administration of an institution is the stimulation of this type of professional improvement.

2. Recognition and Reward for Excellence

Under the traditional European systems, there is little opportunity for rewarding staff members directly for excellent performance. Promotion in rank is generally available only when there is an opening at a higher rank and a general public invitation is issued for applications to the post. Salary levels are normally tied closely to academic rank and there is little latitude for using this as recognition for improved performance. Public

acclaim for outstanding performance generally goes to the administrative staff of an institution rather than to the individual staff members who produce in an outstanding fashion. These constraints impose a serious limit of administrative capability for recognizing and rewarding excellence. An important measure of institutional maturity is found in the ability of administration to break through these traditional barriers.

3. Delegation of Authority

Authoritarianism is the common rule in virtually all developing nations. This extends throughout public life. It seriously stands in the way of an institution's ability to stimulate a broader base for decision making among its personnel. However, the number of ideas that are generated and implemented within an institution is almost directly proportional to the number of persons who feel a responsibility for these activities. Therefore, to the extent that an institution can delegate authority throughout its ranks, it holds the promise of a more imaginative type of operation.

4. Sharing in Making Professional Decisions

It is a common practice to participate in a departmental meeting which has been called to discuss a particular issue and find that no one in the department dares to utter an opinion until the department head has made his position clear. This stems from the fact that challenging the opinion of those in authority is a dangerous and even fool-hardy activity on the part of an ordinary staff member. It is difficult to remove this concept in an authoritarian type of society. Again, it is pointed out, however, that the flow of new ideas and the imaginative inquiry into unknown fields is dependent upon staff members being freed from fear of exercising their own initiatives.

5. Effective Use of Controls

Order and discipline are necessary within an institution if it is to proceed effectively. However, controls which are authorized to insure order, discipline, the efficient use of public resources and the protection of public property are also often turned toward the aggrandizement of personalities, the unreasonably restrictive use of libraries or equipment, and the prevention of experimentation with new methods of teaching. Therefore, a measurement of how wisely controls are used is a good indication of institutional maturity.

6. Development of Public Support

The Land Grant criteria indicate that an institution is supported by the public to the extent that it provides services which the public holds in high esteem. It is the responsibility of the administration to insure that public response to services provided is properly channeled. This response is not entirely automatic and it seldom finds efficient ways to express itself without some direction. If a Land Grant type institution is to prosper, these activities must be called to the attention of public officials who are responsible for institutional support; and this becomes an important measure of institutional maturity.

Specific Instruments Used in the NESA Region

The development of specific instruments for measuring the variables peculiar to the Land-Grant System was undertaken in the Near East-South Asia Region. An initial set of instruments was prepared and used as a basis of discussion with U. S. and host national staff members at one of the outstanding Indian Agricultural Universities. The purpose of the discussion was to gain additional insights and ideas on variables that were specific to that institution and which should be measured and to get reactions to the proposed lines of inquiry This opportunity was also used to generate enthusiasm on the part of the host institution for experimentation with the instruments on their campus. Several successive visits led to the formulation of a set of questionnaires which would ultimately be experimentally administered at that university.

The instruments were then tested at an institution in a different country where the technical assistance project had terminated a couple of years earlier. The experience gained here was very informative from several points of view. In the first place, there was considerable skepticism on the part of top administrators and department chairmen because of fear of exposing inadequacies in their own performance. It became clear, however, that without enthusiastic participation and support at this level, it would not be possible to achieve the objectivity required in such an exercise. Secondly, it became clear that several features of the instruments required alteration either for clarity or for objectivity of reporting. For example, it was obvious that many persons knew *what the answers were supposed to be* and tended to give these rather than reporting actual situations. Finally, an examination of the results also indicated deficiencies in providing complete coverage on the desired variables.

The instruments were modified and were then applied at the Indian Institution where the work was initiated. Here, the cooperation and participation of host nationals was enthusiastic and helpful but there was some reluctance on the part of the U. S. University team in having outsiders become involved in evaluating the project. Their major concern seemed to stem from the fact that they had exerted considerable effort in establishing rapport with the host institution and they were a bit fearful that the evaluation exercise would upset much of what they had accomplished in this area This experience underscores the necessity of doing everything possible to make the measurement process an experience from which all parties stand to benefit rather than allowing it to be viewed as a device for criticism and censorship. Experience with the instruments at this university was extremely useful in rounding out the particular questions asked and in giving further insight into the types of information which can and cannot be obtained. The experience here and at

the other institutions also indicated that the very process of measuring maturity can be very instructive for the institution involved and may very well document indicated changes in such a form that the institution will take initiative in implementing them without further outside interference.

Certain portions of the instruments were tested informally at two other institutions in the region and those experiences put the final touches on the instruments.

Necessary Precautions in the Development and Application of the Instruments

In those projects where measurements are not part of project operations, great care should be taken by researchers to avoid the threats and handicaps of an "outside" investigation. This can be avoided by the development of dialogue in which all persons identified with the institution come to understand the values and the uses of "taking stock". If enough time is taken to allow host nationals to develop ideas and make suggestions on areas for study and to participate in developing the instruments of measurement, the study becomes meaningful to them. There are many ways that the essential ideas of maturity can be structured and measured. If the professional personnel at the host institution can help discover some of these, they will experience significant growth that will contribute to institutional development. In short, no measurement should be attempted until the staff members of the host institution are vitally interested and are prepared to cooperate effectively.

Interviewers are encouraged to be constantly on the alert for ways and means of validating the data obtained. Limited experience in the use of the measuring devices suggests that the ability and the ease with which administrators and staff members can and do participate in meaningful dialogues and go through the exercise of evaluation by the use of these or similar instruments are in themselves good indications of maturity in terms of the Land Grant Model.

Strategy For Moving Into Maturity Phase

As a host institution approaches maturity it is necessary to inquire whether a change in type of inputs from technical assistance would be more effective. Are the same types of advisors needed, are the same formats for participant training the most efficient, are the bases for commodity and program support the same? There is considerable evidence to suggest that the requirements of a maturing institution change markedly and these should be reflected in the technical assistance activities.

Technical Personnel

The type of personnel needed and the optimal length of service changes from the initiation of a project to its maturity. In the early phases, the advisors are deeply concerned with establishing attitudes, demonstrating alternative approaches, instilling professional discipline, and encouraging discussion of alternative systems and their probable consequences. These activities result in the establishment of institutional traditions which in turn guide the actions and attitudes of individual staff members in later years. These activities require the establishment of personal rapport and technical acceptance of the U. S. "advisors". Once the "advisor" has won the confidence of the host nationals, it is a most efficient use of U. S. resources to exploit that relationship to the fullest by keeping him in this position over a long period of time. Later, however, as institutional traditions are established, as the host personnel become more sophisticated, these qualities and relationships become "old hat", and the once highly respected "advisor" may come to be regarded as second rate and anachronistic. There is now a thirst for new and exciting contacts with the best minds in the profession and a desire to communicate with colleagues at a much deeper professional level. Rather than sympathetic, fatherly guidance in matters which require great tact and skill, the quality sought at this later stage is technical perspective and stimulation. Administrative personnel have captured the vision of how their institution could serve society more meaningfully and they now see their own responsibility in making their staff more productive. At this point they, too, need to have stimulating, short term contacts with imaginative and energetic department heads and other experienced administrators. This can be supplied best in short, frequent doses by a parade of different people, each of whom would continue informal but mutually productive professional exchange long after his tour.

The experience from interviews in projects in the NESA region strongly documented the fact that different skills and different length of assignment were indicated at different stages of maturity. Host nationals at the recipient institutions tended to regard U. S. advisors highly and affectionately where the institution was "immature". In the more mature host institutions where the same type of advisor was used the attitude ranged from polite tolerance to restive impatience. These studies strongly point to long term, experienced generalists as the optimum input early in a project, and short term, highly articulate specialists as the most productive in the later stages. Unfortunately, the format of the U. S. input in this respect did not change with institutional maturity in any systematic pattern.

The limited experience of using short-term advisors in the NESA region pointed up the necessity for carefully structuring and planning the short visits and in being flexible in following up unanticipated developments. They will be working with well trained host nationals and therefore their purpose is to lend technical stimulation and sophistication to the host institution's activities, to bring them sharply into focus with their profession in the rest of the world, to refine their priorities and approaches, and to leave behind a feeling that the group had been brought into direct and intimate contact with the best minds in the world. There would be

opened several avenues for expanded contact with the professional world—new literature references, acquaintance with the work of others active in the same subjects and who would welcome exchange of correspondence, new symposia or other professional convocations on matters of direct interest, etc. Such contacts inspire confidence and excitement, open channels of communication and give the host institution the opportunity and dignity of taking its place among the world community of scholars. This is a step which is vital to the process of closing the technological gap with the rest of the world.

Participant Program

The early stages of institution building are concerned with a participant program for the development of staff members who possess technical competence and who have sufficient documentation (advanced degrees) to prove it to their immediate superiors. The normal process of graduate study does not, however, include training in institution building *per se*. Soon after returning to their posts from a program of advanced study the typical trainee finds himself in an administrative position where he is expected to help guide the formation or renovation of his institution. As the institution matures, it will normally develop its own capacity for providing much of the formal advanced training required for new staff members. However, administrative personnel, from Department Chairman up to the Vice Chancellor or Rector, need to travel abroad again to "study the machine that produced them." They need to examine a wide variety of administrative structures and procedures, to develop administrative philosophy and outlook that can lead their institution into the modern world, and to make wide contact with institutions and agencies with which they need to communicate in the coming years.

Professionals who completed their graduate programs five years earlier find themselves in serious need of visiting laboratories, classrooms and field operations to see how programs are efficiently organized, and to "retread" themselves professionally. They will want to visit agri-business firms to get new ideas of how to relate their teaching, research, and extension activities to the practical world. They will be interested in interagency relationships and the principles upon which they flourish. These are the leaders of the younger staff members in a department, and through them the professional contact with the outside world must be generated.

Under these circumstances, the participant training program takes on a completely new character. There must be qualified help and sympathetic interest on the cooperating U. S. University campus to organize and guide such experiences. There must be flexibility of operation and the opportunity of coordinating closely some commodity inputs upon his return home. There is a strong likelihood that in such travel the participant would encounter one or two scientists who could make great technical contributions by visiting his institution. This sows the seeds of the necessary widened professional contact for the institution and should be accommodated wherever possible. New books, journals of great relevance, bulletins and periodicals useful to his area, and new teaching materials will be

encountered. The ideal moment for making necessary investment in these materials is immediately upon his return while his enthusiasm is high—not after two or three years of frustrated efforts to get them financed.

Thus, while the participant program early in the project is properly quite rigid in form, concentrating heavily on advanced degree programs, the later stages must be highly flexible and responsive to opportunities that arise and concentrate on bringing the institutional leadership into wide and meaningful contact with the scientific and technical world. When formal outside assistance is terminated the institution leaders will have the enormous chore of finding internal funds for continued travel and communication. They cannot be expected to maintain the necessary momentum if at the same time they must make the initial contacts outside as well.

Commodity Purchases

The expenditures of commodity funds in the early stages is normally directed toward equipping entire labs or acquiring rather large pieces of equipment which will serve the general institution. Such expenditures do not require a high degree of specificity with respect to the direction or speed with which the institution is moving. It can safely be assumed that such items will be needed in any case. The later stages of maturity, however, find the institution's programs more sharply focused, their plans well articulated and documented, their priorities evaluated and established. At this stage, the institution is in a position to engage in programs that have high probability for early significant contribution to agricultural development. If the institution succeeds at this stage, it will attract the support of local society, which in turn attracts international attention and opens communication channels, and it solidifies the confidence of the institutional leadership who up to now have been sustained by faith alone. This is the time then when additional inputs of commodity and program operation funds can achieve the highest benefit/cost ratio.

Exchange of Personnel

Many writers and administrators have enthused over the possibility of exchange professorships as a means of cross-cultural intercourse. In theory it is defended well, but in practice to date, it has largely been a one-way street. It has been difficult for U. S. institutions to find adequate justification for spending their own resources in bringing visiting professors from underdeveloped countries to broaden their course offerings or to enrich their research. It has been hard enough to justify the absence of top professors to go overseas for a couple of years, even though their costs are not directly borne by the institution.

This exchange of personnel, however, is highly important to the continuing development of the host institution in its efforts to close the scientific and technological gap. The more U. S. professionals engage in overseas activities designed for their own personal improvement, the more likely they are to return home with a broadened dimension in their own field. For these people, it becomes increasingly attractive to bring professionals from other environments to the campus to capitalize on their experience and background. Thus the maturing phase of the host insti-

tution is in a sense matched by the U. S. institution's maturity in using technical assistance as a means of acquiring an expanded international perspective.

Research in many fields is greatly enhanced by testing ideas in a wider environmental context. New relationships or responses appear that are not easily discernable in the narrower ecological base. Once this fact is experienced by a U. S. scientist, he begins to seek actively for ways to take advantage of these possibilities. At this point, flexibility in the interchange of U. S. and foreign colleagues becomes very useful. A little "seed money" available to get such interchanges started can provide a format and a demonstration of potential that will encourage continuation and expansion of such activities in the future through the use of more conventional funding.

Technical Interchange

One of the strongest channels of interchange of technical information and ideas that would be expected in a U. S. University contract operation would be between a returning staff member and his "counterpart" overseas. The relation would be expected to persist long beyond the formal contact. Experience shows, however, that this actually happens with only a small proportion of the U. S. professionals, and it tends to die out with time rather than increase. The next level in the communication channel that might be expected to develop is between a U. S. University department and a "counterpart department" overseas with which it has enjoyed several contacts. At this level, the overseas department might be put on a regular mailing list for bulletins, news items and thought provoking informal papers and discussions. The various members of the overseas department would want to expose their research ideas or preliminary writings to the U. S. department for sympathetic and constructive criticism. Members of both departments would be actively seeking opportunities for greater personal contact with members of the other department. Even student clubs might initiate exchange activities which could later be expanded to broader intercultural contacts.

One of the most difficult problems for professionals in the under-developed nations is to achieve professional visibility and recognition outside their own limited national circle. The international publication media have been virtually inaccessible to any but the most renowned authors in the developing nations. There are many devices which the assisting U. S. department can use to introduce foreign professionals to the scientific world, including joint authorship, use of widely circulated mimeograph reports, and the widespread listing of good papers published in more obscure media. These are services normally accorded our own graduate students, and they can be equally beneficial to scientists in the developing nations.

The record of performance does not, however, correspond to this expectation. In the process of looking for evidence of "commitment" on the part of the host institution and the U. S. University, one question was widely asked of both U. S. and indigenous personnel: "What contact do you have with the corresponding Department in the U. S. University outside of correspondence directly concerned with a resident U. S. advisor?" Answers from host nationals were almost entirely negative, including individuals who had

taken an advanced degree in that U. S. department. U. S. advisors had generated only a little correspondence with their home Department except for correspondence with personal friends in the Department, usually on non-professional matters.

Here again, the emerging institution in an underdeveloped society must establish such professional exchange with the outside world if it is to close the technological gap, and it logically starts at the departmental level in the assisting University. Therefore, this must be a specific part of the strategy of shifting into the mature phase.

Optimum Timing In Shifting Phases

The maturation process of a scientist and of an institution has many of the same psychological characteristics as the maturation of a young man. There is a strong desire to employ newly acquired skills and to demonstrate newly acquired knowledge. There is a strong urge to demonstrate independence from the guiding hand and to achieve recognition for performance in his own rights. This "teenage complex" in young professionals and in emerging institutions is at once a promising sign of development and a despairing and frustrating period of guidance.

Several important principles must be observed if the relationship between the young professional and his advisor are to continue in a productive and amicable fashion. In the first place, the young professional must be given overt responsibility as rapidly as he is capable of discharging it, and hopefully while the advisor is still around to guide him. This is a critical decision because responsibility which is given too early results in failure and discredit in the eyes of his peers. Responsibility which is withheld too long engenders impatience and frustration on the part of the young professional which often strains the personal relationships between him and the technical assistance effort.

A second principle which should be observed is that the young professional will learn as much or more from his mistakes as he will from his successes. It becomes important, therefore, for him to be allowed to make mistakes which are not very costly, and such experiences must be used sympathetically as a further means of learning and maturing.

A third important principle is that maintaining rapport and sympathetic contact during this stage is highly important since it would permit objective examination of experiences as a basis for improvement rather than criticism.

A fourth principle which summarizes some of the earlier points is that the transition should be smooth and gradual rather than precipitous. The change in role from learner to decision-maker carries a number of implications and if experience can be gained on these implications gradually the desired initiative and self confidence are strengthened. There is the psychological urge to *gain personal credit* for certain activities quite in advance of being prepared to *assume responsibility* for success or failure. The real problems of transferring responsibility are associated with the optimum timing of these two drives, and professional maturity is achieved as they become so blended as to be almost inseparable in the mind of the individual professional.

Observations in the projects in the NESA region indicated that far too little attention has been given to the phasing over of responsibility. It is

either "dumped on them" or it is withheld until the U. S. advisor is ready to return home. In one project, host nationals were extremely impatient because the U. S. advisor had held the responsibility of Department Head for seven years and was still not quite convinced that anyone else was ready to take it over. In other cases, host nationals were fearful that U. S. advisors were about to return home and the host national had not yet been given an opportunity to try certain activities on his own under the watchful eye of the U. S. advisor. While both of these extremes might be expected to occur on rare occasions, it is clear that their rate of incidence would be greatly diminished if there were a specific team strategy which exercised pressure in the direction of an optimum and preplanned rate of withdrawal rather than leaving this to the caprice of personal relationship.

Summary and Recommendations

1. A study of expired projects which were designed to build indigenous agricultural institutions indicated that the criteria used for assessing project maturity were inadequate. Furthermore, even the best evaluating approaches in current use fail to provide information on the degree to which assisted institutions are approaching the "Land-Grant type" traditions which have proven so productive in this country.
2. This study was directed toward the identification of the unique characteristics of a Land-Grant institution, the development and validation of instruments for measuring the stage of maturity of these unique features and the exploration of the implied changes in technical assistance inputs that are required in the later stages of project maturity.
3. The characteristics of the Land-Grant model are identified and instruments for measurement of the "institutionalization" of these characteristics were developed and tested for the specific activities of teaching, research, extension and institutional administration.
4. It is clear that the type of technical personnel and other inputs required in the early stages of this type of project are much less productive as the institution matures. The later stages require more highly specialized type of personnel and their inputs can be achieved more efficiently by much shorter visits.
5. Participation in the development of measurement instruments appropriate for a particular institution can be a very meaningful experience for the staff members of that institution and it will enhance the ultimate use of the results.
6. It is recommended that the technical assistance agencies make periodic evaluations of the progress and maturity of the indigenous institutions which they are assisting, that this exercise be accomplished in an atmosphere of mutual interest and concern, and that the results of the evaluation be considered as the basis for determining the optimum combination of technical assistance inputs as well as the areas requiring concentration of host institution resources during the ensuing period.
7. It is recommended that the measurement of the variables measured by Liming (Table 1) be supplemented with the measurement of the other characteristics outlined in this paper.
8. It is further recommended that both the technical assistance agencies and the host institution use this experience as a means of establishing and re-examining the basic role and objectives of the host institution within the society which it serves.

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One of the better statements found in print about the essential philosophy, features and operational principles of the Land Grant Model is a 52 page booklet written by Hannah, H. W. entitled *Blueprint for a Rural University in India.* New Delhi, India. Indian Council for Agricultural Research, 1956.

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