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CRITERIA OF PROGRESS AND IMPACTS OF TECHNICAL ASSISTANCE PROJECTS IN AGRICULTURE

by

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INTRODUCTION

This report, as part of the CIC-AID Rural Development Research Project, is an examination of the technical assistance programs of the various Land Grant universities in the United States and the Agency for International Development in terms of their contribution to the development of educational facilities in the host countries. Two things this report does not try to do are 1) detail each and every activity of these technical assistance programs and 2) evaluate them. (Another portion of the CIC-AID project has been concerned with evaluation policies.1/)

More specifically this report is divided into two major sections. The first section on "Criteria of Progress" attempts to provide an integrated basis for establishing goals and for assessing accomplishments in relationship to those goals. These projects have had goals toward which they have been working, of course, and there have been accountings of their work. This report stems primarily from an evolution in thinking about technical assistance programs in agriculture.2/

The second section of the report is concerned with the impacts that technical assistance projects have had on the host institutions. As noted above the focus is not on detailing all activities and impacts, but it is rather on those that provide examples of institution building activities.

In recent years the importance of developing educational institutions on a self-sustaining basis in developing nations has become increasingly apparent. This is not to deny the crucial importance of technological development. It simply recognizes the importance of creating the indigenous manpower and institutions so that developing nations may more fully meet their own development needs.3/ Any contribution this paper makes lies in the area of educational "institution building."

CRITERIA OF PROGRESS

Introduction: Objectives in Terms of CIC-AID RDRP

Given the assumption that technical assistance programs are undertaken for some utilitarian purpose, whether that is to fend off an impending food shortage from an international population explosion or to increase the self-sufficiency of various countries, such programs have more or less explicitly stated goals, and often additional implicit goals. A realistic statement of such goals is at best a thorny problem, especially in view of the relatively brief experience in such activities. However, even a cursory view indicates that such goals should not be so broad as to be impossible given the resources available nor so narrow as to be trivial. Furthermore, such goals must be consistent with the resources available to the various parties involved. As difficult as the delineation of goals may be, the problem of specifying criteria for assessing performance in relation to those goals may be even harder. The importance of specifying such criteria, however, is well stated in the Second Annual Program Report of this project.

> Differences among the several parties at interest as to what constitute appropriate criteria can but lead to a lessening of administrative unity, incongruous actions, and stresses on co-operative relations. Similarly, employment of inappropriate criteria leads almost inevitably to frustrated expectations.4/

I wish to acknowledge the considerable assistance from my many colleagues on the CIC-AID project, and in part of J.K. McDermott.

For the purposes of this research project the goals of the technical assistance projects being studied are taken as being in the general area of institution building. This concept, discussed in more detail later on, is concerned with the development of new or reconstituted organizations and their relationships with their social environment.

This paper, then, is concerned with what criteria may be used in assessing the nature and rate of development of institutions which have received technical assistance in agriculture from various U.S. universities. These foreign institutions, usually referred to as host institutions, most often have been colleges or universities. They include some ministry programs and some joint university-ministry programs.

Implications of the Concept "Progress"

What is "progress"? Critiques of this concept as being laden with Western values are well-known. However, as a concept used to refer to a change in conditions in the direction of stated goals, it does not necessarily suffer from such value-implications.

This would be true even when those goals were Western, or more explicitly, were goals of United States technical assistance programs. The important point here is the change in conditions toward stated goals. All persons or parties involved in U.S. technical assistance programs may not consider institution building to be a meaningful objective of such programs. They may in fact be working for competing goals. Although this may be undesirable from a program point of view it is not unique. In fact, it may produce desirable results in some circumstances as a consequence of competitive activities. Persons or organizations working for competing objectives are to be expected. Furthermore, it must be recognized that institution building in the context of the "land grant college" may mean de-institution building of a "traditional European university". The consequences of this may be reflected in statements that it is easier to develop a land grant type institution where no institution existed previously than where another type of institution has been for several years. It should be added that it would be naive to assume that no institutional arrangements existed for higher education in agriculture just because there were no formal organizations engaged in such work.

The objective here is not to enter into a discussion of the value-implications of the concept of progress, nor of the qualities of "land grant universities" compared with other types of universities. The purpose is to identify means for assessing changes in host institutions, and conditions associated with those changes, that are (and implicitly, are not) in the direction of building a land grant type institution.

Indicators of Progress: Problems of Measurement

There are two basic problems of measurement involved. In research methodology these would be called validity and reliability. In this paper they are termed consensus and observability, respectively. This terminology is preferred here because it emphasizes the operational problems involved.

Consensus essentially refers to agreement on (1) the goals or objectives and (2) the means or criteria for assessing progress toward those goals. Some authors maintain that evaluation criteria are established when project goals are defined.5/ When those goals have clear, specified and generally accepted criteria this seems to be a reasonable assertion. However, not all goals possess such characteristics. Some goals are relatively intangible. Warner and Havens argue that organizations with relatively intangible goals are prone to displace those goals with more tangible goals.6/ To a certain extent the difference between tangible and intangible goals seems to be largely a matter of the degree of consensus on what constitutes goal attainment.

A frequent goal of technical assistance projects with foreign agricultural universities is to improve the quality of education. To the extent that there is consensus that percent of staff with Ph.D. degrees is a measure of quality of education it is possible to obtain a measure of improvement. However, other persons will argue that percentage of Ph.D.'s is not a good indicator of quality of education, but that some other factor, such as applicability of subject matter or type of job that graduates take, is the best indicator.

Goals such as institution building, or improving the quality of education, are too complex to be measured adequately by a single indicator. Several different indicators are needed. However, this does not obviate the need for consensus on these indicators. This suggests the problem of the relationship between the different indicators. Are they of equal importance, or are some more important than others? At this stage in the development of indicators, and the quantification of at least some of them, this question cannot be completely answered.

The problem of the observability of criteria of progress refers to the probability of different persons being able to look at the same situation or information, see the same phenomena, and come to the same conclusions concerning them. Since each person has his own unique perceptions to contend with, criteria of progress need to be indicated as specifically and objectively as possible. Subjective criteria lack observability. The intent here is not to exclude such variables as attitudes, which are very important, but that such variables must be measured by an objective technique that produces results that are observable to different persons.

Some persons may consider this section a relatively academic discussion. However, the problems of consensus and observability, or validity and reliability, have serious consequences. It is all too apparent that declarations of the success or failure of some project could hinge more on these problems of measurement than on the actual activities of the project.

Objectives of Technical Assistance Programs in Agriculture

General objectives

A basic rationale of technical assistance programs is clearly stated in the first paragraph of The War on Hunger: Guidelines for Planning and Programming AID Assistance in Agriculture and Related Sectors:

> Recent worldwide population studies, and the clear revelation

> of statistical analysis showing that within a few years the demand for food will out-race the production of food unless there is a great increase in production, have brought into focus the urgency with which the food supply problem must be attacked. The basic U.S. objective is to help each developing country, as soon as possible, to gain enough economic strength either to produce the food it needs or to purchase it commercially.7/

In this preliminary report, we will simply recognize that increases in production are seen as being related to increases in knowledge, which is to be accomplished via education.

The objectives of specific technical assistance projects

A case can be made that each contract is different, that each host institution and each U.S. university is unique. There are, however, at the general level some relatively common objectives of these technical assistance projects. Table 1 shows that the majority of projects have been for developing teaching, research and extension. One of the major differentiating factors is whether the contract was with a foreign university or government ministry. Forty of the projects were with degree granting institutions, nineteen were with ministries, and nine were jointly with universities and ministries.

Contracts with universities generally emphasize the broad development of the university along the lines of the U.S. land grant model, incorporating the functions of teaching, research and extension. A rather typical set of objectives for a university contract follows:

"The Contractor shall provide assistance to the (state) and the (university) to:

1. Further the integration of teaching, research and extension in the pattern of the United States Land Grant College system; strengthen research and extension to serve the agricultural needs of the (state) and other nearby areas and build the professional competence of agricultural specialists.

2. Strengthen existing programs at (university) and with the State and to develop new programs of a more fundamental nature in the general field of agriculture and veterinary medicine.

3. Develop at (university) a graduate program in Agriculture and the Rural Social Sciences leading to a degree similar to the Master's Degree in the United States. This program will be a means of improving the qualifications of college professors, researchers and other technical personnel.

4. Assist the (university) in a program of increasing the number of undergraduate and graduate students enrolling annually from (state) and other areas in courses initiated in (date).

5. Strengthen the qualifications of the agricultural profession and provide training in the United States or elsewhere outside (country) for

Table 1

Project activities as specified by contract objectives at beginning date of contract.a/

Activity	Effective Date Of Contract			
	Prior to 1-1-55	1955-1960	1961-1966	Total
Teaching, research and extension	15	10	16	41
Research and extension	1	0	0	1
Teaching and research	3b/	2	5	10
Teaching and extension	0	0	3	3
Teaching	0	3	3	6
Research	1	0	0	1
Extension	0	0	1	1
Action program	1	0	4	5
TOTAL	21	15	32	68

a/ Some projects span the three time periods, and have had changes in objectives. Only the initial contract objectives have been used in this table.

b/ Teaching was vocational agriculture at the pre-college level at one of these two contracts.

(country's) professors and specialists from (state) and other states.

6. Assist in the planning and development of the new...agricultural experiment farm to be used for education and research as an integral part of the (university).

7. Assist the (university) in undertaking economic research to guide State and Federal Agencies and cooperatives, farmers, and other private enterprises in (state) and neighboring states.

8. Cooperate with the staff of the (university) in providing information and advisory assistance to private and public agencies in developing and carrying out effective economic development programs to increase agricultural production and improve processing and marketing practices".

It is not unusual to see such specific reference to the "United States Land Grant College" as in this set of objectives. This provides the basic underlying model from which many, if not all, of the other objectives come. It is the model the institution building contract attempts to follow. This is to be expected, given the fact the U.S. universities involved are land grant institutions and that the technical assistance personnel come from these institutions.

The objectives of contracts with ministries tend to be narrower in scope in the sense that they usually involve research, extension, or both, but not university level teaching. Secondary level teaching may also be involved, particularly in Africa. However, an important function of many of these contracts, at least implicitly, is training of agency personnel. This is frequently a necessary part of obtaining other objectives. The following statement of objectives from a ministry contract to establish a seed certification program is not atypical.

> "The objectives of this contract are to develop a corps of trained (country) seed technologists and seed certification specialists, and promote enactment and enforcement of effective legislation and organizational procedures which will make a significant contribution and stimulate private enterprise to consider developing a sound commercial certified seed industry in (country)."

As a point of information, the objectives of projects are spelled out further in contracts by the "Scope of Work", formerly called "Work Plan". In addition, the "Major contract provisions" give insight into the project objectives, particularly the technical specialities to be represented on the U.S. field staff.

It is the pervasiveness of the emphasis on developing institutions based on the "land grant college" model, incorporating the functions of teaching, research and extension, that leads to an examination of institution building in this framework.

Institution Building as the Objective

Project objectives indicate that many of these projects were concerned with the development of a "land grant" type institution. The basic functions

of the land grant universities in the United States have been resident teaching, research and extension (or adult education). The basic form has been an integration of these functions under the auspices of the university, with integration of activities carried down to the department level.

There is another aspect of the land grant institution which is equally important to its form and function. This is its integration with the surrounding society, or its social and cultural environment. This point has been emphasized by McDermott. "The essence of Land-Grant consists of a close interaction between the school and the public and a serious concern is helping solve important and relevant problems even though such problems may not have high scientific interest".8/ McDermott's point is important. The high degree of integration with society has been an important factor in land grant institutions' working on "practical" rather than "highly scientific" problems in many instances in the past. Such a high degree of integration may restrict an organization's activities along certain lines. But for a given stage of development of its clientele, and even of the society at large, this selection of topics may be highly important to its success.

This integration of university activities with the needs of its environment is seen as an important goal or objective for agricultural institutions in developing nations by Roskelley, who then develops five distinguishing characteristics of Land Grant institutions:

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...

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...

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 professionals within a Land Grant System...

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.

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...9/

Roskelley uses these distinguishing characteristics of Land Grant institutions as criteria for developing a measure of "institutional maturity". Although

there are a number of questions which can be raised about these characteristics, such as whether they are exclusively characteristic of Land Grant institutions and whether the applied versus basic research distinction is a viable one, they do provide a set of goals for institution building activities.

This kind of interrelationship between the institution and its environment is perhaps the central theme of institution building theory for a basic thesis is that the institution be responsive to the needs of the environment. The objective here is not to attempt to explore or develop a theory of institution building, but rather to attempt to relate the theory that does exist to the problem of agricultural technical assistance. It is advisable, for the sake of clarity, to note the definition given by Esman and Blaise.

> "Institution building may then be defined as the planning, structuring, and guidance of new or reconstituted organizations which (a) embody changes in values, functions, physical and/or social technologies, (b) establish, foster and protect normative relationship and action patterns, and (c) attain support and complementarity in the environment". 10/

Esman and Blaise suggest three tests or indicators of the degree of institutionalization: (a) the organization's ability to survive, (b) the extent to which it is considered to have intrinsic value by its environment, and (c) the degree to which specific relationship and action patterns of the organization have become normative for other organizations of the society. 11/

Institution building theory and the technical assistance projects come together in their concern for planned social change. Looking at the objectives of these technical assistance projects and the theory of institution building there appear to be seven types of indicators of institution building: (a) attitude and commitment, (b) organizational structure (c) program, (d) physical facilities (e) integration with society, (f) input and (g) output.

Although these indicators are terminologically different from the analytic concepts developed by Esman and Blaise, there is a great deal of similarity. These indicators are the ones that came to the fore during the present study as important factors in technical assistance projects.

A major strength of the institution building approach is the emphasis it places on the relationship between the institution 12/ and the society. An educational institution obtains its inputs of funds and students from the society, and returns its outputs of increased knowledge and graduates to that society. This interrelationship between the university and the society stresses the relevance of knowledge and activities to societal needs. However, it is also important to have the technical competence to effectively contribute to the solution of problems.

This point has a parallel in the McDermott-Rigney-Haws "Technical Assistance-Institution Building Model." 13/ McDermott et al are primarily concerned with the role of the technical assistance team. However, in their discussion of host institution-government relationships (Phase D) they consider the problem of demonstrating technical competence to the larger society. In the context of the present paper, technical competence must be demonstrated by both host institution staff and graduates.

The basic point of this discussion is that a concern for relationships with society alone will not do a good job of institution building. It will certainly not build an institution that will meet the test of survival. There is a very important second factor, which is the demonstrated competence or ability to get the job done. The emphasis is on demonstrated competence or performance, not unactivated ability. This is a basic element in Roskelley's distinguishing characteristics referred to earlier.

It is from a consideration of these factors that the seven types or classes of indicators stated above were derived. In the context of the present study these indicators can be understood more easily by putting them in three broad categories as shown in Figure 1.

Figure 1. Classes of indicators for institution building activities

Inputs	Facilitating Mechanisms	Outputs
Capital	Attitude & Commitment	Educated
Manpower	Organization Structure	Manpower
Commodities	Program	Services (via extension)
	Physical Facilities	Information (via research)
	Integration with Society	

If the objectives of the Land Grant institution are the provision of educated manpower, services and information, then much of the attention of institution building theory is addressed to those mechanisms which provide that output, and influence its quality. A re-examination of Esman and Blaise's definition of institution building shows that they have not ignored output as they refer to physical and/or social technologies. Elsewhere they state that:

> The introduction of new technologies takes place primarily in and through organizations...Institutions in this context are organizations which incorporate, foster and protect normative relationship and action patterns and perform functions and services which are valued in the environment.14/

Nor have they ignored the element of inputs, although it is less apparent in their definition. "If there is deliberate planning and guidance of institutional change concomitant with induced technological change, then this will lead to a more effective utilization of the societies resources."15/ They view the institution and its environment as parts of a system.

A similar position is taken by Gross in discussing performance elements in social systems accounting.

> The performance of any social system consists of activities (1) to satisfy the interests of various "interesteds" by (2) producing various kinds, qualities, and quantities of output, (3) investing in the system's capacity for future output, (4) using

> inputs efficiently, (5) acquiring inputs, and doing all the above in a manner that conforms with (6) various codes of behavior and (7) varying conceptions of technical and administrative (or guidance) rationality. 16/

Gross's performance elements 5, 3 and 2 are quite similar to the inputs, facilitating mechanisms, and outputs of Figure 1. Before pursuing this and related points, however, it is necessary to consider the concepts in Figure 1 in more detail.

Inputs

Inputs are those things the institution needs to operate that come from or are supplied by the society or environment in which it operates. For the host institutions that are receiving technical assistance this includes: (1) the budget or capital supplied by the host country, by the United States under the technical assistance contract, and any other funds from foundations, corporations, etc. The number of sources of funds may be an important indicator of the breadth of support the institution has in the society. A significant aspect of U.S. Land Grant institutions is the presence of the financial support they receive from private sources, even though they are public institutions. (2) A second input is manpower in the forms of staff and students; for technical assistance projects this includes the U.S. technical assistance personnel. Whereas capital varies in quantity only (it may have qualitative limitations in the uses to which it can be put) manpower varies in both quantity and quality. While quality may be a difficult phenomenon to measure there is little value in talking about it if some attempts are not made. The proportion of staff with advanced degrees, the number of offers they receive for employment elsewhere, the number of professional papers published, the offices held in professional organizations and the frequency of speaking engagements are examples of indicators of quality of performance. Likewise for students, secondary school and entrance examination performance are indicators of quality. There are others, obviously. Any one indicator by itself would not be an adequate criterion of quality, but a number of indicators whether combined in a complex index or viewed in profile can give an estimation of quality. Granted, the emphasis has been on performance rather than some metaphysical aspect of quality. If the Land Grant institution is the model, this seems to be a necessity. (3) The third type of input, commodities, is in a sense a special category of capital. However, in technical assistance projects some of the U.S. inputs may be via commodities rather than direct dollar inputs into the host institution.

Facilitating mechanisms

Facilitating mechanisms are those things which help the host institution perform more efficiently and/or effectively in providing outputs of manpower, services and information. These are not ends in themselves as far as the long-run activities of the institution are concerned. In the short-run, that is, in the institution building stage they are factors that are apt to receive the most attention. They are institutional variables that facilitate the production of outputs. (1)Attitude and commitment of the staff refers to the idea of professional commitment and the notion of service. It is implicit, if not explicit, in the McDermott-Rigney-Haws "Technical Assistance-Institution Building Process" 17/

model, and in Jones' concept of "Will".18/ It is explicit in the distinguishing characteristics of Land Grant institutions of Roskelley 19/ and in Esman and Blaise's variable of identification.20/ March and Simon have made an extensive analysis of identification as a factor in organizational performance.21/ Using a variety of research findings they conclude that an individual's identification with an organization is positively related to the (a) perceived prestige of the group, (b) extent to which goals are perceived as shared by group members, (c) the frequency of interaction with members, (d) the number of individual needs satisfied in the group, and (e) that it is negatively related to the amount of competition between group members.22/ Attitudes and commitment influence performance. The nature of attitudes and commitment of staff can be affected by recruitment policies, and by the rewards given for particular types of performance. (2) A second facilitating mechanism is organization structure, which refers to the various positions within the organization and the rules governing the activities of and inter-relationships between these positions. There are various models for organization structure ranging from the informal-traditional to the formal-bureaucratic model. And there have been numerous discussions of the advantages and disadvantages, the functions and dysfunctions, of the various models so they will not be pursued here.23/ Again, however, it is important to note that much of the discussion has centered on performance or the accomplishment of goals. In discussing characteristics of successful applied research laboratories, a type of organization similar in several respects to the Land Grant university, Brooks points out several pertinent features that influence performance:

> There are certain identifiable characteristics of successful mission-oriented laboratories that seem to be independent of whether they are located in Government, industry or universities. These characteristics are more related to the "sociology" or the communications pattern of the institution than to its formal organization...
> 1) Full awareness and general acceptance of the principal goals of the organization by its key people...
> 2) Willingness to consider and implement new ideas and initiatives on their own merits, regardless of the organizational level at which they originate, or whether they come from inside or outside the organization...
> 3) Mobility of people between the more fundamental and applied activities of the organization...
> 4) Quick recognition and funding of new ideas, at least to the point of ascertaining the desirability of a larger commitment...
> 5) Extensive freedom at each organizational level in the organization to reallocate the resources within the relevent area of responsibility...
> 6) Full communication through all stages of the research and development process from early research to ultimate user...
> 7) A good organizational memory for the enduring technological problems and themes related to the broad mission of the organization or laboratory...
> 8) A system of recognition and reward that assigns highest significance to technological contributions to the goals of the organization.24/

Of particular importance for organization structure to facilitate rather than hinder goal attainment are the factors of clarity of goals, communication, flexibility, continuity, rewards for performance and selection of personnel on the basis of ability. The last factor does not mean only technical ability in all cases; if interpersonal relations are an important aspect of accomplishing a task, then ability in interpersonal relations must be a factor in personnel selection. (3) The third facilitating mechanism is program, which here refers to the three related but rather separate activities of teaching, research and extension. There are, of course, various sub-divisions such as short-courses, adult education programs, field days, etc. which can take a variety of forms. While all three of these are typically a part of the Land Grant university in the United States, this is not always the case with the host institutions. If a goal of a technical assistance project is to establish a Land Grant institution in form, then the creation of these three functions within the administrative province of the university is apparently called for.25/ However, where other agencies already exist in the state or nation to provide one or more of these functions, serious consideration must be given to national needs and resources as to whether it is better to create additional facilities at the university, absorb the existing facility, establish working relationships with it, or for the university to minimize that function. The solution to this problem of other agencies performing particularly research and extension functions has considerable importance to the fifth facilitating mechanism of integration with society. (4) The fourth facilitating mechanism is physical facilities. This simply refers to those physical objects that are necessary to operate the institution, such as land, buildings, library, laboratories, etc. (5) The last facilitating mechanism is integration with the society within which the institution operates. This refers to the kinds of ties the institution has with other organizations, both formal and informal. Organization structure referred to the internal relationships of the institution. Here, the concern is with relationships with governments, foundations, corporations, private individuals, etc. Basically the question is whether or not the institution has established well-diffused lines of support throughout the society:

a. so that there is a feeling the institution is important and needed,
b. other organizations will look to it for help and assistance, and
c. other organizations will come to its aid in times of crisis.

This is really what the process of institutionalization is all about.26/ Eisenstadt refers to this "as a process of crystallization" in which the nature of and rules for exchange between people in different positions in society are established.27/

Outputs

Outputs are those things the host institution produces for the society. (1) One is skilled manpower in the form of university graduates, and certificates of short-term courses. (2) A second output is service in the form of technical advice, inspection programs, treatment services, etc. (3) The third output is information, particularly new technical information that results from research on how the society, or some segment of it, can operate more efficiently, more productively or more profitably.

Some General Problems

These three types of phenomena must be considered as inter-related parts of a social system. Theoretically, at least, an increase in inputs should lead to an increase in facilitating mechanisms and/or outputs, and as outputs increase that should increase the resources of the society which could allow a further increase in inputs. These increases may be in quantity and/or quality.

There are a number of questions which arise from this analysis, which cannot be answered here, but which can be further specified. To begin with, what should be the allocation of inputs between facilitating mechanisms and outputs? The objective of the institution is to produce outputs, not to expand its facilitating mechanisms, although this is a necessary and legitimate secondary goal. However, it is well established that institutional goals may be displaced, 28/ and according to Warner and Havens this is particularly apt to occur if the goals are relatively intangible.29/ While number of graduates, or new seed varieties are rather tangible outputs, an increase in quality of education is less so.

There is a pair of closely related problems. (1) What combination of inputs provides the greatest increase in outputs the most efficiently, i.e., at least cost not only of money but of other resources as well? (2) What combination of inputs provides the greatest increase in outputs in the least time? In technical assistance projects this means primarily what combination of money, host country personnel, U.S. technical assistance personnel and other resources can do the most institution building most efficiently and/or in the least time. It is important to recognize that dollar cost alone, or what has been termed "economic Philistinism,"30/ is not an adequate criterion for answering these questions.

How fast should the institution develop, how much money should be put into it, what should be the quality of its output? These are, in the broad sense, political questions that involve the society at large, of which the institution is a part.31/ It is important, however, to try to develop criteria and indicators by which to reach and evaluate the answers. The task is complicated by the fact that in Western society at least, education is an indeterminate goal.32/ That is, there is no finite end. Each increase in knowledge, each problem solved demands further inquiry.

Criteria and Indicators

It is the premise of this paper that if the goal of technical assistance projects is institution building, and if the outputs of those institutions are skilled manpower, services and information, then the three classes of indicators discussed above can serve as criteria for assessing the performance of technical assistance programs. By no means is any one indicator an adequate measure of performance. However, a number of indicators appropriate to the situation can in many cases give a rather accurate picture. Gross makes an important point concerning the validity of these indicators.

> ...some phenomena cannot be directly quantified. We cannot make direct measurements of human satisfactions or of the quantity of certain intangible services. But we can get quantitative measures

by using what I call "surrogates." These are indirect indicators that serve as quantitative substitutes for, or representatives of, the phenomena we want to measure.

Gross emphasizes the need for imagination in finding new "surrogates" to measure the phenomena we are interested in, but also to be cautious in their interpretation so as not to be mislead by them. Webb, et al, also make these points, and recommend the use of multiple indicators as suggested above as a solution to the inaccuracies of single indicators.34/

IMPACTS OF TECHNICAL ASSISTANCE PROJECTS ON THE HOST INSTITUTIONS

One of the objectives of the CIC-AID Rural Development Research Project was to examine the impacts of technical assistance projects on the host institutions. This is done in terms of the indicators developed in the preceeding section of this report.

Data for this analysis came primarily from three sources. First, a Senior Overseas Researcher, SOR, was sent to the Far East, the Near East-South Asia (NESA), Africa and Latin America. These four men had all had previous overseas experience, but not necessarily in the region where they worked. Each of the SOR's had some assistance from other project personnel. The SOR's were overseas from January, 1966 to September, 1967, except for stateside conferences on this study. During this time they interviewed host institution staff members and administrators, government officials, U.S. technical assistance team members, USAID/Mission personnel and other persons who were associated with the technical assistance effort. While complete coverage of persons is not claimed it was extensive.* A second source of data was host government and host institution reports. These, of course, did not exist in any systematic way for all projects, and their usefulness to this project varied as would be expected since they were not prepared specifically for this project. Nevertheless, many of them were a valuable additional source of data. The third source of data were the "files" or records that had been kept at each U.S. university of its technical assistance project. Again, since these materials had not been accumulated over the years with the CIC-AID study in mind, these were of varying applicability. Much valuable data did exist in these records. The three sets of data collectively provided a much sounder data base than would have any one of them alone. In many cases data were cross-checked from one source to another. The SOR's were also careful to report conflicting opinions and factual data, and in attempting to substantiate the information they reported. In addition there were many conferences during the course of this study at which project personnel had an opportunity to discuss the nature and meaning of the data.

Not all U.S. university-A.I.D. rural development projects have been included in this analysis. One of the early decisions of the CIC-AID study was generally not to gather data in the field on expired projects, except in the Far East where almost all projects were expired. This eliminated fifteen of the sixty-eight projects listed by this study. To begin to have some indication

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* Additional information on impacts using the SOR's evaluations is given in another section of this report entitled "An Analysis of Evaluations of Host Institutions' Programs and Facilities."

of impact, it was decided that a project must be at least two years old, or have started before January 1, 1965. This eliminated another nine projects. Finally, it was decided to include only the projects that were concerned with the development of a degree-granting host institution as a major portion of their activities. This excluded another thirteen projects that were strictly with government ministries. It did not exclude four projects that were jointly with degree-granting institutions and ministries. This left thirty-one projects. On four of these there was inadequate data for the impacts analysis. Two were expired projects at which a second project had begun, and therefore were not counted as separate projects. Thus, twenty-five projects form the basis of the impacts analysis. The relative size of these twenty-five projects is indicated by the facts that they involved about seventy percent of the AID funds for all sixty-eight projects, 35/ and their total duration was fifty-nine percent of the total duration of all projects started prior to 1965.

Because data were not always available in sufficient detail at the beginning of projects, data from more recent years had to be used in those cases. This precludes the use of data on absolute changes, but does allow the examination of trends. This says nothing about the changes between the beginning of the project and the date of the earliest data, of course.

Indicators of Institution Building

In the preceeding section of this paper the case is made for institution building as the general objective of many technical assistance projects in agriculture. The goals of institution building serve as criteria for assessing change, or the impacts associated with these projects. Three classes of indicators, inputs, facilitating mechanisms and outputs, are then developed as measures of impacts, or institution building activities. This is not to imply that all changes in the host institutions are directly, or indirectly, "caused" by the technical assistance projects. It does not seem unreasonable to think on a substantive basis that many of the changes would not have occurred without the assistance projects.

The indicators are discussed here as those that occur mainly within the institution, those that occur primarily within the society and those involving relationships between the institution and society.

Indicators within the institution

a. Program

A major function of the projects considered here has been to strengthen or develop programs in teaching, research and extension. A simple indicator is the creation of such programs, assessing quality is more difficult.

The importance of technical assistance projects to the overall development of institutions is indicated by the fact that three host institutions were essentially developed from scratch and ten involved extensive re-organization. The other twelve were oriented toward adding to or streamlining existing structures.

Since only university contracts are under consideration, they all had teaching as a part of their program at the beginning of any particular project. However, only eight host institutions offered graduate degrees at the beginning of their respective projects. By 1966 an additional five schools had started graduate programs and five were just getting underway or were planned for the near future. By 1966 all twenty-five of the institutions had research projects underway. At ten of the institutions these were initiated during the contract period. Of the fifteen universities with research programs underway at the beginning of contracts, five showed significant improvement in their selection of important problems according to the SOR's, five showed some improvement and five showed little or no change. Extension activities, not always formalized as programs, existed at ten host institutions at the beginning of projects, and had been initiated at fourteen others during the projects. This is particularly significant in view of the fact that there were other agencies providing extension services in the geographic locale of nine of the projects. Only one of these twenty-five universities did not have any extension activities underway in 1966.

This does not necessarily mean that competing agencies were created. In discussing criteria a distinction was made between the form and function of the Land Grant University. The functions of extension of providing education and service outside of the formal university setting can be carried out cooperatively with other agencies or on an informal, ad hoc basis. There are examples of such relationships.36/

In contrast to teaching which is traditionally a university function, research and extension are often the province of other agencies in developing countries. There have been some examples of what might be called "negative impacts" due to the university attempting to establish priority in these areas. Such conflicts may be normal when organizations are growing and attempting to expand their activities. They may appear to be outside the normal sphere of contract activities in the sense that they may involve national political issues. From the point of view of institution building, however, in addition to the form versus function distinction, a strong cooperative relationship with another agency may be of more value than simply extending the number of clientele.

One indicator of quality of program is quality of staff. On such a broad international basis it is very hard to make comparative statements of quality, but in this particular instance it seems justifiable to use the number of staff with advanced degrees as an indicator. This obviously cannot reflect on the quality of the entire staff as individuals, but it can reflect the basic point of concern, namely whether there has been any change during the project. Data were available for seventeen projects. Not too surprisingly all seventeen showed an increase in number of persons with advanced degrees, i.e., Master's or Ph.D. degrees as shown in Table 2. Although the largest numerical increase was in Master's degree holders, which increased at sixteen of the schools, the most impressive fact was that Ph.D.'s represented 29 percent of the increase. This was largely a result of the participant training program. Because data were not always available in sufficient detail at the beginning of projects the overall absolute increase is not known. This might be estimated using the data in Table 2. However, it would seem dubious that this would be an even increase over the duration of the project. When examining Table 2 it is important to keep in mind that some of the projects had existed for several years prior to

Table 2.

Increase in advanced degrees for specified periods

Increase in U.S. Ph.D.'s	Increase in all Ph.D.'s	Increase in M.S.'s	Total Increase in advanced degrees	Earlier Year[a]
0	0	5	5	65
4	4	13	17	58
**	19	27	46	65
18	25	124	149	61
**	5	12	17	56
5	6	52	58	64
4	52	9	61	62
34	102	285	387	62
6	8	32	40	55
6	15	40	55	56
9	14	50	64	63
**	1	18	19	57
16	21	56	77	62
22	30	65	95	52
**	5	6	11	65
0	0	4	4	64
2	19	b	5[b]	63
**	326	798	1110	--

[a] Although most of these years are relatively near the beginning dates of the respective projects, that is, plus 1 or 2 years, some are much more recent than the starting date.

[b] This project had a decrease in M.S. degrees of 14, which was more than offset by the increase of 19 Ph.D.'s

** Inadequate data.

Table 3.

Staff with Ph.D. degrees and any advanced degrees as percent of total staff, in 1966

% staff with Ph.D. degree	% staff with any advanced degree[a/]	Number of total staff
31	73	26
8	33	52
32	77	149
11	78	266
29	100	17
4	24	336
41	49	144
20	88	575
23	85	53
20	70	81
11	84	140
2	47	49
20	80	133
19	53	206
33	63	70
0	5	75
26	27	171

a/ Advanced degree is any degree beyond the bachelor's degree or its equivalent.

the date shown in column five, the beginning year from which the increase was calculated. This means that this is an under-representation of total increase in persons with advanced degrees.

The acquisition of advanced degrees can pose problems. A USAID/Mission report, which has been corroborated by an SOR, states that at one institution:

> The quality of teaching has shown continuous improvement since establishment of the University. With returning participants and greater staff experience the number of courses involving laboratory instruction has continued to increase year by year... The performance of the individual in contributing to the institution's program should become an important consideration in the system used to decide advance in rank and salary. The present system, based largely on degrees, seems to encourage faculty members to ignore their role and responsibilities in the educational program of the institution and devote their efforts to degree activities for personal benefit.

The SOR later reported that promotion on a merit basis had been partially initiated at this project. In contrast, at another university it was reported that the emphasis was primarily on teaching. According to the staff and the dean, about thirty-six staff had gone abroad for advanced education and had come back and taught an average of one new course apiece.

There are other data that support an increase in quality of teaching, at least in potential. For instance, the number of books and journals in libraries has increased at each of the sixteen institutions for which specific data were available. The evidence on library use was varied. In the Far East the SOR reported little use of the library generally, but specific data on number of users was available for many Latin America projects and they showed a consistent increase. At several institutions textbooks and teaching materials have been developed with the appropriate language and level of understanding. These factors, like the increase in physical facilities noted below do not guaramtee an improvement in quality of education, but they do facilitate it by providing the materials with which to do the job.

One of the reasons that increases in program or physical facilities is a valuable indicator is that it shows that someone did the job of making or acquiring that increase. Obviously, it doesn't show how many tried and failed, but it does show how many succeeded.37/

b. Attitude and commitment

In the context of building an agricultural institution attitude and commitment has several implications. One has to do with the relationship between the development of the institution and the development of the individual faculty member's career. There are relatively few institutions, or organizations, where an agricultural faculty member could pursue his career within many developing nations. Where that is the case, his career development is often tied to the development of a particular institution. In other words a part of his professional development must involve the development of the university.38/ This works both ways. The institution, that is, the administors, must recognize that to develop the

institution they must facilitate the development of individual professional careers. This requires a mutual or reciprocal relationship, or what Gouldner calls the "norm of reciprocity."39/ This occurs when one individual helps another thereby incurring an obligation to be re-paid at some future time; to not do so would be unjust.

There are several incidents reported by the SOR's where this occurs. A valuable faculty member at one institution received a good offer from another organization. The dean of the institution where he was gave a banquet honoring him for the work he had done, thereby incurring an obligation such that the faculty member then felt he could not leave. Such incidents cannot be taken out of context for there is the assumption that these are not singular occurrences, but part of a continuing relationship.

This leads to a second point, that of continuity of personnel. There are contrasting problems involved here. One aspect of the problem is lack of continuity of personnel, particularly of persons in positions of leadership. Although there are a few reports of relatively rapid turnover in some positions in the host institution, it appears that this may have been more of a problem within host country ministries, the U.S. university teams and USAID/Missions than in the host institutions. This is not intended to minimize the seriousness of the turnover problem where it has occurred in host institutions. The second aspect of this problem has to do with qualifications of persons in positions. This poses a serious problem for developing nations from a structural point of view. It is essentially a problem of technological obsolescence. This results from: (1) adequately qualified persons entering a position and not being able to advance their skill and/or knowledge level at the same rate it is advancing in other parts of the society. This is not necessarily the fault of the individual. The demands of his position may preclude him from the opportunity of improving his skills. This was rather well documented for some institutions that were seriously understaffed. (2) It may also result from a change in job description or role definition. There is evidence of this in institutions that are changing from the "traditional European" to the Land Grant model.

Much of the problem is a lack of fully-qualified personnel. To provide this manpower is, of course, a major objective of these technical assistance projects. Obviously there is more to be done. As Wayt notes:

> In some of the subject projects the quest for the host national to assume the top leadership position at the new institution had not yet been satisfactorily completed. In some countries the choices were indicated as being broadly limited to two categories: One--older men with maturity, some administrative experience and political capability, but lacking educational achievements and breadth of vision as to how the new institution could develop and contribute in the total economic development of the nation. Two--much younger men, possessing the formal education, vision and idealism, but lacking practical experience and administrative judgement.40/

A third implication of attitude and commitment within the host institution has to do with the way staff members see their role in the institution and society. A basic distinction here lies between the presentation of existing knowledge--the pure teacher role--and the creation of knowledge, whether basic or applied--

the researcher role. An interest and desire to create knowledge that will help solve the problems of the host country is perhaps the fundamental meaning of attitude and commitment, in the present context. It does not mean that a person must be a full-time researcher, nor does it mean research in a narrow context. The researcher role can also eliminate the problem of technological obsolescence.

An additional factor that effects commitment is salary, not only in the acquisition of qualified staff, but in having them as full-time personnel. At many of the institutions it was financially necessary for faculty to hold second jobs, not always related to their work at the university. This is bound to impair their commitment. There is evidence that this situation has changed with increased salaries and an increase in proportions of full-time staff, particularly at the longer projects. An interesting account of how this occurred at one project is given below in the discussion of inter-relationships with society.

This discussion has been limited to attitude and commitment of host institution personnel. The changes in the host institutions are influenced by the attitudes and commitments of persons in other organizations, as well. This point has been discussed in some detail, with data in a CIC-AID report by Rigney and McDermott.41/

c. Organizational structure

The internal organizational structure is a major factor in the ease with which individuals can perform their roles in a university. As the mission of the university and the roles within it change the structure must change also. These structural changes may be only an increase in positions at various levels in the organizational hierarchy, or they may be major re-organizations of positions, creating new ones and combining others. A major factor in organization changes is the allocation of authority. It is both a reason for the change and a factor in the efficient operation of the structure.

The majority of institutions did undergo some type of organizational change. Only four apparently had little or no change; three of these were projects of about four years duration, the other was a little longer, and they emphasized physical facilities and/or curriculum improvement.

The increase in programs involving the initiation of graduate education at ten institutions, research at ten and extension at fourteen institutions were significant factors in organizational change. In some cases changes were only an increase in number of departments and a few administrative positions. In others there was considerably greater change. An SOR reports:

> Formerly the colleges of the area were administered under the Minister of Agriculture and followed the European tradition. In 1963 the new university was founded from 3 of those and the "Land Grant university" orientation adopted.
>
> This gave great impetus to better teaching and attracted several outstanding administrators. The HI followed USU leads in becoming "highly visible" to Ministry of Agriculture and the latter is now encouraging HI to take on more research and extra responsibility.

From another region the SOR reports:

> Within the (institution), the results of the restructuring were the appointment of a full-time Director of Research and Graduate Studies and six Project Directors in each of the areas of graduate study. For the first time it became possible to channel funds to projects without the need to go through the long process of signatures by every official of the parent university. While it gave the (institution) somewhat greater autonomy, at the same time it linked it into the parent university through the new administrative structure.
>
> The total outcome of the new structure will allow greater flexibility for students and professors, and eliminate all of the previous duplication. In addition it allows graduate teaching and research and provides for a means of funding such programs. It has been a major step forward for both the (institution) and the parent university as now, for the first time, the collection of Faculties can be considered a true university rather than separate entities operating on their own.

The SOR's were not always so optimistic about the consequences of organizational change. In two cases it was stated that the changes had occurred "on paper" but had not been implemented, and there was some doubt about how rapidly they would occur. The following case is further evidence that changes in structure alone are not enough to change the operation and performance of a university.

> In the case of this project, it is very much open to question as to whether the recent restructuring into departments will have a meaningful impact on the institution. As of now, there are elected department heads, but they have little to do as the new structure is operating within the constraints of the old structure...
>
> This is thus another case of an institution adopting a new system without knowledge of the things that must accompany it in order to bring success. It does not mean that the utilization of imported systems cannot work, but rather that an imported structure is workable only with most or all of the intangibles that accompany it in its point of origin.

The overall impression is that changes in organizational structure have occurred with varying degrees of influence on institutional performance. And these changes in structure can be used as indicators of institution building. Specifically, there must be evidence not only of changes on paper, but also in role performance consistent with the new structure. This evidence can be interpreted most accurately in conjunction with other indicators, such as attitude and commitment.

d. Physical facilities

Adequate physical facilities are a prerequisite to a good program at any institution. An accomplishment of these technical assistance projects has been an increase in the quantity and quality of available facilities. Table 4 shows

the change in number of classrooms and laboratories for twenty-one of the institutions. (See the section on Evaluations for a discussion of quality). There were considerable increases at all institutions except for one where there was no change in number of classrooms and one where there was a decrease in number of labs. Increases in these facilities generally have been accompanied by increases in office space, staff housing, experimental farm land and equipment.

The need for facilities at the beginning of projects varied considerably. At some projects they were so inadequate as to be a major limiting factor, at others it was possible to do other work while planning new or improved facilities. 42/ It is in the context of a "limiting factor" that the importance of physical facilities must be weighed.

Table 4

Number of classrooms and laboratories for specified years

Number of Classrooms		Number of laboratories		Earlier Year
1966	Earlier Year	1966	Earlier Year	
"substantial improvement"		51	20	1958
16	9	17	8	1958
28	0	73	0	1961
"considerable increase"		"considerable increase"		----
5	0	9	0	1956
21	14	41	18	1962
45	15	18	6	1962
"much better"		"much better"		----
40	12	107	64	1962
"14 buildings for classrooms and labs		in 1966, 1 in 1955"		----
10	5	14	4	1956
16	16	12	4	1961
"substantial improvement"		"considerable increase"		----
14	8	22	12	1962
56	32	44	19	1952
48	15	194	50	1956
13	11	9	14	1964
"substantial increase"		"considerable increase"		----
"3 new classrooms"		8	5	1963
"increase"		17	12	1963
17	"increase"	18	0	1963

One situation in which physical facilities can serve as an indicator of institution building particularly well is when the host institution staff is able to get the necessary resources for the facilities within their own country.

Indicators within the society

The evidence of institution building within the society, the environment within which the institution exists, consists mainly of the demand for institutional output and the inputs to the institution from society. As discussed earlier, within the context of institution building a kind of circular relationship is posited between the institution, its outputs and inputs. As the outputs make a greater contribution to the society and contribute to its development, the flow of inputs will increase enabling the institution to expand its facilitating mechanisms and its outputs further. This is the rationale behind this examination of outputs and inputs, briefly stated.

a. Students

The enrollments at most of the twenty-five institutions have increased very rapidly during the projects as shown in Table 5. In fact, the average yearly increase in enrollment at five projects was greater than fifty percent, based on the "earlier year" shown in Table 5. An additional seven universities had increases from twenty-five to fifty percent a year. Only in two cases were there decreases, both of which were small enough to simply reflect variations in early enrollments. There were four other cases of increases of less than five percent per year. Enrollment data for five of the six projects cover long enough periods of time to suggest that expanded enrollment has not been a policy of these universities. Other information verifies this.

The number of persons receiving bachelor's degrees increased at two-thirds of the universities, but decreased at eight of them. Where graduate programs existed there was an increase in number of graduates. In a few cases where resources have been especially limited or there are larger numbers of foreign trained, particularly U.S. trained, persons there has been a leveling off or a decrease in enrollments and degrees. Looking across both the enrollment and undergraduate degrees data, at five of the institutions with decreases in number of undergraduate degrees, it appears that these decreases are only temporary since there have been large increases in enrollments. Another aspect of inputs of students is number of applications for admission. Data were available on applications for twelve institutions. All showed considerable increases, except one which decreased. At eight of the twelve institutions in 1966 the number of applicants was larger than the total enrollment. Probably the major factor in both enrollments and number of graduates is the number of government positions available. Although there is little specific data on jobs taken by graduates the universal response is that the majority are employed by the government. Estimates generally were that two-thirds to three-fourths, or more, of the graduates are employed by the governments, and that there has been little change over time. Apparently only from one institution were less than half of the graduates going into government work.

b. Staff

Increases in number and training of staff have been noted above. Since these institutions are supported by the host country governments these increases represent increases in governmental financial support.43/ They are also one of the places of employment of the newly graduated host national. Thus, increase

Table 5

Total enrollment, number of undergraduate and number of graduate degrees granted for specified years.

Total Enrollment		Undergrad. Degrees		Graduate Degrees		Earlier Year
1966	Earlier Year	1966	Earlier Year	1966	Earlier Year	
1293	682[b]	96	27	22	*	1959
194	154	58	17	*	*	1958
1083	250	576	1	135	*	1961
1497	611[c]	173	149	82	23	1962
130	135	27	0	*	*	1956
550	156	56	122	*	*	1958
1758	123[a]	181	0	*	*	1955
1605	588	471	615	*	*	1964
1133	424	202	312	208	66	1964
221	32	87	30	16	*	1955
967	246	146	41	**	*	1956
1040	885	217	156	55	21	1963
502[f]	386	38[f]	11	**	*	1957
987	492	0	0	**	*	1961
804	213	141	53	40	*	1952
1093	1153	224	330	96	13	1956
3496	1214[d]	241	300	50	12	1961
208	196[d]	159	180	41	2	1957
1344[f]	956	239[e]	216	***	***	1959
1612[f]	1116[a]	350[e]	257	***	***	1959
134	61	0	0	*	*	1964
480	188	70	31	**	*	1960
489	485	98	109	**	*	1964
274[g]	185	34[d]	45	*	*	1960
1101	343	152	73	10	*	1960

* No graduate program; ** Graduate program planned or just beginning
*** Inadequate data

[a]1958, [b]1960, [c]1961, [d]1962, [e]1963, [f]1964, [g]1965

in staff is an indicator of inputs of both capital and manpower, assuming salary levels do not actually decrease. Although salary levels are a problem at many institutions and result in some loss of staff, there are indications of improvement at others especially as the education level of staff has increased.

Wayt points out a problem in this regard that applies to the other regions as well as Africa.44/ What is the appropriate level of education for a faculty in a developing nation? A person with a Ph.D. degree is likely to be subject to the international job market. The opportunities to pursue his interests, and the monetary rewards, are apt to be greater elsewhere. And yet the research that the Ph.D. can do is an important aspect in development.

c. Extension

One of the outputs of the university is extension work in the forms of information and services. There is a great deal of diversity in the nature of programs, organization and activities. For the majority of countries the formal extension organization was under the Minister of Agriculture. At least twelve of the host universities had established extension organizations by 1966, sometimes in addition to the ministry program.

At these institutions where extension organizations did not exist, extension work might be providing advanced training for members of the extension staff which was part of the Ministry of Agriculture, or it might provide information and service to the agricultural community. For example, at one project where extension did not become formally organized within the university until 1965, farmers' weeks had been held annually since 1928. Also for several years prior to 1965 the university had been providing training for the staff of the state extension service. In contrast to this was the situation at another institution where the extension work that was informally beginning came to an end with the creation of another agency, with which there apparently have been no cooperative relationships.

Extension activities have consisted of field days, programs on campus, demonstrations, short courses, training programs, information services, etc. The data available indicate an increase in the number of these activities and the number of participants. There is undoubtedly some variation in what constituted and/or was reported as these different activities. If categorizing each activity were the objective this would be a serious problem, but since the objective is to acquire some indication of output and response to that output in fairly gross terms it is not as serious, particularly since the emphasis is on changes within institutions rather than comparisons between institutions. To do this extension activities at three projects are described. The first is a project at which there has been a great deal of extension work; the second is a more limited program, but it represents the early stages of development of the program; and the third is a project where extension was just moving out of the planning stage into the implementation stage at the university. The three projects are from different regions.

The first project described gives the most information on demand for extension output since it is the oldest and most extensive of the three programs. This extension service was located in the Ministry of Agriculture. It is

included here because this has been the most frequent location for extension except for new or recently transferred programs, and it has been part of the technical assistance project involving both the Ministry and a host university. Detailed data are presented for 1962, 1964 and 1966 for a number of activities in Table 6. They generally show a continuous increase over this time in participation in these activities. The only exception is in training courses which had an unusually large attendance in 1964. Although there was a decrease in the number of demonstrations, field days and training courses, the attendance increased considerably for the first two of these activities. One of the reasons for this change is that extension policy has changed from previously working with middle sized and large commercial farmers to middle-and small-sized farmers. The rationale for this was that the large commercial farmer had relatively little need for extension's help. Although there has been some resistance on the part of the small farmer, Table 6 indicates that the extension program seems to be reaching an increasing number of people, or else its frequency of contact with a specified number has greatly increased. Either of these explanations indicates a greater demand for extension output. Although the SOR was not able to verify it, it was reported that there were increases in demands among the small farmers for fertilizer and hybrid seeds. This extension service has done about 800 radio broadcasts a year since 1962, except in 1963 when they did twice that many. The annual output of leaflet-type materials has fluctuated from 114,000 to 154,000 with 1965 and 1966 being the largest years.

Table 6

Types of extension activity and participation for 1962, 1964 and 1966

Type of Activity and Participation	1966	1964	1962
Office visits by clientele	220,766	149,683	80,264
Demonstration of practices	10,969	8,538	16,693
Attendance	129,634	91,957	94,040
Meetings with farmers	7,447	6,681	6,420
Attendance	165,600	129,054	83,195
Meetings with housewives	2,481	807	713
Attendance	29,574	11,420	9,243
Field days	195	431	225
Attendance	14,774	7,453	5,586
Training courses	12	19	16[a]
Attendance	266	524	223[a]

[a] 1963 data

At the second project the extension service was created in 1962. 45/ A central office and four regional offices were created and a staff recruited. Considerable effort had to go into training the staff, with two persons going to the United States to obtain Master's degrees and two others taking courses in the host country. The main effort in this program has been the dissemination of information. There are regular radio programs in the country's largest city and over provincial stations. News releases are sent to three metropolitan and sixty-one provincial papers. A conservation circular was started and has a monthly circulation of over 2,000 copies, including public officials. In addition brochures, 4-H club materials, and special conferences have been organized by the extension staff. They have also served as resource persons for programs outside the college. While this is not yet a large program, there has been considerable work done in its short duration.

The third project is with a university that was created in 1964 from six institutions. The university consists of six campuses within the state, with one Director of Extension for the university. Each department at each campus has been asked to designate one or more extension specialists. Initially these men will work with one or two farm families near his campus. By 1966 such work was going on with thirty to forty families near each campus. The objective is to expand this work to the village or district level in the near future. In addition, refresher courses and farmers meetings have been started. In 1966 an information program based on leaflets, circulars and radio programs got underway. It is too early to expect any impact from this program, but indications are that it is getting underway even though there are problems, largely resulting from the newness of the re-organized university.

How typical are these projects? Roughly, there may be about two or three other projects comparable to each of these three types, or a total of nine to twelve projects. At the remaining projects there are fewer extension activities. The reasons for this, which are inter-related, are a greater emphasis on research, lack of adequate personnel and the organizational relationships with the ministry. There is further discussion of extension programs in the section of this report on SOR evaluations.

d. Research

Some research work was going on at all twenty-five projects by 1966, although there was some variation in organization as with extension. There is some evidence that more research projects are being undertaken, and that more of the faculty are engaging in research. This seems to be particularly true of returned participants. The primary concern here is with the output or results of research projects, and what impact they may have on the society. The results of research work at several institutions are described below. This is not a complete listing of institutions or research projects, but it does indicate the nature of results.

At this institution the technical assistance project had been in existance for about four years. During that time:

1. Five crop varieties had been approved and released for general cultivation;
2. Breeding and selection of new and improved varieties of maize, cotton, citrus and grapes were showing improved yields in experimental tests;

3. Analysis of soils irrigated by saline water revealed that highly saline water could be used in light soils with proper crop rotation without much fear of salinity hazard;
4. Soil fertility and crops research indicated the best rotations for increasing yields of several crops;
5. Equipment has been developed to take better advantage of available animal power;
6. Biochemical studies have shown the characteristics of different varieties of tea leaves.

The information from this research has been disseminated to farmers. The evolution of high yielding varieties has increased the demand for fertilizers and insecticides. Farmers now have become conscious of the need to use fertilizers, insecticides and water to best advantage.

The SOR reports from another project that has been going on for about five years that while it is clear that the institution has made no spectacular breakthroughs in their research work, the recent work in soils and agricultural economics is being put to good use by society. In soils, the service of soil testing as well as the promotion of fertilizer use is having and will in the future have a significant impact on farm production. Agricultural economics research presently being carried out will be used in formulating agricultural policy for the country. There are also other areas of research which, by their nature, will have an impact on the country's development. Among these is the brush control project which even now is producing a product of use to ranchers.

At one of the oldest projects a new tomato variety has been released which cuts marketing losses at least one-third. It has been distributed to other countries in the region. Important livestock work has been done on the feeding value of forages, forage production and mineral supplements for livestock, and early weaning of calves. Faculty members have worked with extension agents to demonstrate corn and bean fertilization and the use of a newly developed, low-cost corn storage program.46/

In describing the development of research at another of the oldest projects a recent study states:

> Agricultural research work by members of the staff of the Imperial Ethiopian College of Agriculture and Mechanical Arts started in 1952 simultaneously with the establishment of the Jimma Agricultural and Technical School. The first overall annual agricultural report consisting of what was believed to be the most important problem areas and the agricultural potential of the Empire was compiled and published by the college staff in January, 1954. This report covered basic information secured by country-wide surveys between the periods of August, 1952 and December, 1953. On the several trips, soil and grass samples were collected and most of the soil samples analyzed for PH, phosphorus, potassium and nitrates and many of the grass species have been identified...This type of annual publication was continued until 1965 when it was replaced by experiment station bulletins and miscellaneous experiment station publications on individual projects.47/

In addition to the soils work preliminary research has been successful in developing indigenous and adaptable foreign varieties of field crops, vegetables and forestry. Irrigation by pumping water has proven successful and profitable, and designs for new grain storage facilities have been put to use. Improvements in poultry and milk production have been made. Agricultural economists have been doing research on marketing, farm organizations, manpower utilization, land tenure and credit. While these studies have been profitable, there have been constraints due to lack of funds, facilities and adequately trained personnel. 48/

An SOR reports two particularly notable examples of research from a relatively new project, i.e., about three years old. The first example was the isolation of an organism that causes sterility in male sheep. This was accomplished by a U.S. university team member and his counterparts. So far a cure has not been developed, but it is possible to isolate infected sheep which has benefited the sheep growers in the country. The second example is work on soil fertility. Poor soil is a major factor inhibiting increased production in the area. The research has established information for the use of lime and fertilizer applications. This research is having a very definite impact on fertilizer and lime use, and is even affecting the credit conditions as bankers now realize that longer term loans are necessary.

At each of these projects the number of research publications had increased during the course of the technical assistance project. This was true at eleven other projects. Only at one of the seventeen projects from which data were available was there a decrease in publications. Although research was secondary to teaching at that institution the decrease in publications was slight. Somewhat over half of the projects have research programs more or less comparable in output to the five described above; of course, there is considerable variation in substantive content. An SOR's description of the research situation at a project about three years old fits many of the remaining institutions. He states that "until recently, research was virtually non-existent. And although the host institution records now show some fifty different research projects in progress, this is largely a 'hope list' recorded on paper. Few of the staff comprehend what research is and still fewer have the training and time necessary to carry out even elementary projects." From a realistic point of view many of these institutions have simply not had the resources to develop a research capability, and it often was not their mission to do so until the beginning of the technical assistance project.

Indicators based on relationships between the institution and society

The heart of institution building is establishing strong relationships or linkages with other organizations in the society. No attempt will be made here to categorize the relationships according to the different types of linkages, primarily because of the difficulty in doing so with data from such divergent situations. Instead, they will be discussed in a more general fashion.

Most of the institutions appear to have increased the number and strength of their relationships with the various segments of their societies. One of the most important relationships is with government agencies, particularly those that have a direct bearing on funding for the university. Whereas previously

many of the institutions may have had few links with such agencies other than graduating students, the increase in research and extension programs have facilitated new relationships. In several cases governmental agencies are now looking to the institutions for information and assistance. This has come about not only because of increased programs, but also because these agencies are gaining increased confidence in the ability of the institutions to perform their tasks competently.

A description of how this relationship between an institution and a government agency changed during the technical assistance project has been given by an SOR.

> A high percentage of the professors at the University are part-time teachers, half-time at best. The other part of their time they work with public agricultural agencies such as the State Secretary of Agriculture, the Federal Agricultural Ministry Branch Station, the Bank of (country) and one or two other institutions. Their job at the University is primarily teaching while their work elsewhere is generally research or administration. Thus, a typical professor will spend the morning at the University teaching one or two courses and the afternoon working at one of the experiment farms of the Secretary of Agriculture.
>
> USU's strategy was to initiate work with many of these individuals who held two or more jobs and help them in their work regardless of what institution they worked for. Thus, while it was almost impossible for a part-time professor to do research in the University, it made relatively little difference, since he could be assisted with research problems in his other job. After a time, through the equipment purchases of the AID contract, the University (in some cases) had better research facilities than other organizations. Several of the professors then switched to doing their research in the University labs, but continued to draw part of their pay from other sources. The Secretary of Agriculture, for example, was happy with such an arrangement since it provided their staff with better facilities and the University was content since it derived benefit through improved teaching. Thus, in several areas part-time people are spending full-time at the University but drawing part of their salary from other sources. The present situation is that an agreement has been signed between the University and the Secretary of Agriculture of the State. While it apparently has few "teeth," it does formalize the working arrangements between the University and the Secretary.

It is important to develop and institutionalize relationships with a number of agencies, and persons in these agencies. Since ministers of agriculture or education may have relatively short tenure in office, programs that are dependent on their personal support may end before they can really get off the ground. There is also the problem of demonstrating competence to each new minister when he comes into office. A broader base of support can help overcome these problems. An example of this is described in the final report of a project in the Philippines.

> Outside of the University, the College has strengthened its relationships with the Forest Products Research Institute, Bureau of Forestry,

> Reforestation Administration, Parks and Wildlife Office, the Commission on Agricultural Productivity, and the forest products industries of the Philippines. The College has entered into cooperative agreements with the Reforestation Administration for use of facilities and areas on the Makiling Forest, and with the Commission of Agricultural Productivity for development of 4-H Club forestry projects.
>
> The General Forestry Committee brought the heads of the forestry agencies together for better planning and coordination of programs, and the Joint Committee on Information and Education in Forestry produced outstanding cooperative work under the guidance of the chairman of the College's Department of Forestry Extension. Summer field trips and participation in association programs by faculty members has strengthened relationship with wood-raising industries, and aroused more interest in, and support for, the College on the part of these industries. These contacts, also, have opened new channels for service from the College.49/

Establishing and maintaining this kind of broad-based support can free the institution from being as dependent on a few individuals, because it is supplying needed services to a number of agencies.

Another indicator of inter-relationships between the institution and society is the number of advisory or consulting positions held by institution staff. While evidence on this was not available for the majority of projects, it apparently has increased at some. Quite specific information from one institution showed that it had increased from eight such positions in 1956 to twenty-six in 1961 to 157 in 1966. One hundred of the new positions from 1961 to 1966 were the result of an activity in which none of the staff had been engaged before.

There is evidence that the work of some institutions is receiving more news coverage by the press and radio. To a large extent this is the result of increased information activity by the university in preparing and distributing news releases and other materials to the news media. Although it is often hard to assess the exact consequences of such activities it does establish a linkage with the news media, as well as remind a larger audience of the existence of the institution. This can also serve to offset in the eyes of the public the situation reported from one institution that the only time they make news is when the students strike.

Not all inter-relationships with other host country organizations have been satisfactory or beneficial to these host institutions. The problems most often appear to center about the organizational location of research and/or extension work, i.e., whether it shall be located within the university, the ministry of agriculture or as a relatively separate entity. This problem has been discussed earlier in this paper as a matter of form versus function of the Land Grant college model. Some evidence has been presented to indicate that this is a useful distinction to keep in mind. However, it is not intended as a panacea for all problems. In situations where extension or research agencies already exist outside the university there may be a number of reasons why it is difficult to establish even cooperative relationships with such agencies, not the least of which are political. After all, the institution building approach is political in the broad sense. That is, it is aimed at establishing cooperative

relationships among people in organizations to accomplish an objective, planned social change.

Summary

This report on the impacts of technical assistance projects on host institutions has attempted to describe changes that have occurred within the institution building framework. Using this framework as a general criterion of progress, three classes of indicators were developed in the preceding section of this paper. These classes, inputs to the institution, facilitating mechanisms and outputs of the institution have been re-grouped in this analysis because it seemed to provide a greater logical consistency in the discussion of impacts. This re-grouping consisted of those indicators of institution building (1) within the institution, which were all the facilitating mechanisms except integration with society, (2) within the society, which were the inputs and outputs of the institution, and (3) relationships between the institution and society, which is simply the last facilitating mechanism of integration with society.

Using data from twenty-five projects the impacts are examined in terms of a number of indicators. No attempt has been made to make an overall ranking of the twenty-five projects, or to describe the total impact within any one project. (The rationale for this is disucssed in the final summary and conclusions). Instead, attention has been directed to changes that have and have not occurred.

Most of the indicators show changes that are consistent with the institution building approach at most of the institutions. The majority show increases in inputs of students and staff, and in outputs of number of graduates, extension and research work. There are exceptions to this, as noted. There also have been changes in facilitating mechanisms. Teaching, research and extension programs have increased either through the addition of programs or through increased relationships with other agencies, although there are cases where university staff members have little participation in research or extension work. Explanations for these changes can be found in the attitude and commitment of the faculty and administration to the conduct of research and extension, and in the location of these activities in the university or in the Ministry of Agriculture. There is evidence of improved relationships with other organizations in the society at many of the projects, which has facilitated in increase in outputs and program. The increase in physical facilities has also been beneficial in increasing outputs. However, in some areas at some institutions there have been relatively few changes; some are a long way from resembling a Land Grant institution.

AN ANALYSIS OF EVALUATIONS OF HOST INSTITUTIONS' PROGRAMS AND FACILITIES*

Introduction

The objective of this paper is to present the findings of world-wide Senior Overseas Researcher's, or SOR's, evaluations of impacts of U.S. technical assistance projects on host country institutions. These evaluations were designed to supplement the impacts data reported in the preceding section of this report. Evaluations were based on nine questions of the Purdue Inputs and Impacts Questionnaire of the CIC-AID study. In each case, each of the four SOR's was asked to evaluate the change in specified areas of an institution within the framework of a five-point index. In order to yield an indication of change the SOR was directed to make a comparison between two points in time, the one at the beginning of the project and the other at the time of data collection. For example, the SOR was asked to indicate whether the quality of education was much better, better, about the same, poorer, or much poorer now as compared to the beginning of the project. Similiarly constructed questions pertained to the quality of classrooms, laboratories, books and staffhouses, and the adequacy of classrooms, laboratories, books, and staffhouses. The one question which did not involve a comparison between two points in time pertained to the assessment of current ability of researchers to focus on useful and significant problems.

A Methodological Note

It is recognized that these evaluations present certain methodological difficulties in terms of validity and reliability. It cannot be known exactly what extraneous factors may have influenced the judgements of an SOR in making his evaluations, nor can it be known that there was complete consensus among the researchers even at the outset as to the relative importance of various criteria for assessing change in specified areas. Nevertheless, it is felt that the SOR's themselves were aware of such problems, and that, if interpreted with caution, their evaluations can be utilized to reveal the existence of institutional impacts. For example, note the attitude toward data collection expressed by one SOR:

> Admittedly, much of the materials presented represent only best judgements. Some biases have been caused by the desire not to embarass or highlight deficiencies. In addition, one is confronted with problems of misunderstanding and communication, especially when it involves contacts between persons of different cultures. Many things were done to obtain frank, candid discussions. There are many reasons to believe that, for the most part, a high level of objectivity was achieved during the interviews and rapport was established throughout the study.

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* The major portion of the work on this paper was done by Bernard E. Blakely, whose assistance is greatfully acknowledged.

The cases consisted of all projects of over two years duration at host institutions of higher education on which the SOR's had supplied evaluations. This included twenty-three host institutions from all four world regions on which the evaluations were made by SOR's during the period from January 1966 to September 1967. These twenty-three institutions were the objects of projects of varying duration, expenditure, goals and so on. Hence, there are limitations on the comparability of data because of differences in perspective between SOR's, changes in the perspectives of each SOR during the period of data compilation, in the length of projects, in the amount of human and dollar resources employed, in project goals, and in the implimentation of projects. Furthermore, the small number of cases limits the extent of analysis. Lastly as will be noted in the tables, SOR evaluations are incomplete; of the three hundred and thirty evaluations sought, thirty-four were not provided. In spite of these limitations, the evaluations that were obtained offer some opportunity for assessing the impacts on host country institutions provided by CIC-AID projects.

Findings

When the SOR evaluations are considered without controlling on any of the variables mentioned above, there are indications of progress on most criteria. For example, Table 7 shows that the quality of education was either better or much better in 14 of the 20 cases represented. The following two cases are quite typical of what was seen as improvement. At one institution where the SOR reported that the quality of education was greatly improved, he indicated that course offerings and examinations had been modernized, that four departments had been reorganized internally and that there had been a gradual conversion to a new attitude about how and what to teach. In another case in which the SOR indicated that the quality of teaching was better, the change was characterized as the dropping of traditional European approaches and adopting the "Land Grant University" orientation with increased emphasis on improvement of teaching methods. Table 7 further indicates that despite the problems attendant with attempts to change such things as teaching techniques, curriculum, and departmental organization, there was no case in which an overall decrease in the quality of education occurred.

Data on the quality of entering students are also presented in Table 7. While SOR's reported an improvement in the quality of entering students in 35 percent of the cases represented, 60 percent of the cases did not indicate an improvement, and at one institution the quality of students reportedly decreased. The relative lack of success in this area may in part be attributed to lack of change in the quality and/or quantity of secondary schools producing potential student inputs to host institutions of higher learning. In general, AID-university projects do not deal with vocational agricultural training or training of any variety at the secondary school level. Hence, there is limited opportunity for USU personnel to directly affect the quality of secondary school education given to potential university students. Furthermore, at many higher level institutions, the desire to accept students of high calibre must be reconciled with the desire to increase student enrollment. For example, in the one case in which the quality of entering students had declined, the host institution has just launched a massive campaign to increase enrollments in agriculture and had increased new enrollments in one year from about forty students

to two hundred. On the other hand, an SOR reported that at the one institution in which the quality of entering students was much better, that progressively more students had been seeking admission in agriculture and veterinary science over a four-year period, and that a gradual awareness of the importance of agricultural education had been developing in the country. Over roughly the same period that student enrollments at this host institution had doubled, from about 490 to 980 undergraduate students, over 7,000 additional secondary school teachers were employed and high school enrollments increased by over 250,000 students. In this case, not only does there seem to be an increased awareness of the importance of education in general, but as the SOR has pointed out, there is also increased awareness of the importance of agricultural education. There are increasing numbers of students applying for admission in agriculture and the host institution has been able to become more selective in admitting new students and at the same time to increase its enrollment. Thus, it can be seen in these two examples that varying priority has been given to the quality of entering students according to the varying ability of the two schools to attract adequate numbers of enrollees.

Table 7

SOR ratings of quality of education and quality of students at Host Institutions.

Rating	Quality of Education		Quality of Students	
	Number	Percent	Number	Percent
Much Better	7	35%	1	5%
Better	7	35%	6	30%
About the Same	6	30%	12	60%
Poorer	0	0%	1	5%
Much Poorer	0	0%	0	0%
Total	20	100%	20	100%

As the above suggests, it is difficult to make a straight forward interpretation of the SOR evaluations of the quality of students. It is beyond the scope of the present undertaking to determine host country needs at primary school levels, and therefore to determine to what extent these educational systems are the limiting factors in improving the quality of students entering host institutions of higher education. Certainly, however, in the long-run, improvement in the quality of enrollees is desired, and Table 7 indicates that this consideration has not been overlooked for the quality of enrolees has at least been maintained in 95 percent of the institutions studied.

This discussion has not ignored the logical question of whether the quality of students is not already satisfactory. However, it is the general impression

of the SOR's and others that the better students go into law and medicine, and only those who cannot gain entrance to law or medicine go into agriculture. This is well documented by the 1966 applications to one university in which agriculture was not the first choice of any student, and appeared as the second choice of 41 students out of several hundred applications.

The evaluations of practicality of extension are presented in Table 8. The data indicate that substantial improvement in extension services has been made. First of all, seven extension programs have been initiated at these institutions where none had formerly existed. Table 8 indicates that at the beginning of projects in all cases, extension activities either did not exist or were considered not very useful. However, extension programs now exist in over 90 percent of the cases and about half of these are currently judged as at least fairly useful. For instance, it was reported that in one year an extension program, which the SOR rated very useful, had in its employ over one hundred agents and trainees who made over 11,000 farm visits and conducted over 3,000 demonstrations. This extension program was also instrumental in organizing youth clubs boasting over 8,000 members, in transmitting the findings of research at the agricultural college to the farmer, in making the farmer's needs known to teachers and researchers at the agricultural college, in distributing thousands of pounds of improved seed varieties and thousands of domestic fowl and in otherwise providing aid to the farmer. By contrast, at a project in which the SOR rated the extension program as not very useful, there was little awareness of the need for college programs, giving in-service training or conducting conferences and workshops for farmers. Consequently, relations with the public were limited to two seminars per month and there was little or no communication between the university and the extension agency of the national government.

It is recognized that while a favorable interpretation of SOR evaluations of extension programs has generally been presented here, about 44 percent of the projects are still deemed as not very useful. In some of these cases, extension services have just begun and awareness of the potential role the university can serve in extension is only beginning. Achievement of this much success is often noteworthy, however, for in many cases the situation faced initially is similar to that described by an SOR at one project below:

> Some evidence was collected which suggests that the college... is still burdened with some images of itself that are outdated heritages from European and Asian universities. This orientation prompts the university personnel to look upon themselves as professional beings who, through lectures, share with students the accumulation of knowledge that teachers have. Their research programs are related to problems in which they are personally interested. With this point of view, the teacher or researcher does not identify himself with the rank and file of the common man, nor does he feel that he has any obligation to help the common man solve his problems. In a sense, the professor isolates himself from the world and lives in his own academic tower.

Thus, projects which have extension programs just getting underway and which are still not very useful, may yet be a reflection of considerable progress. For example, in one case, an SOR reports that at a project in which the extension

Table 8

SOR ratings of practicality of extension programs at Host Institutions

Rating	At the beginning of Assistance Project		At the present time	
	Number	Percent	Number	Percent
Very Useful	0	0%	3	13%
Useful	0	0%	5	22%
Fairly Useful	0	0%	3	13%
Not Very Useful	3	14%	10	43%
Not Useful At All	9	43%	0	0%
Non-Existant	9	43%	2	9%
Total	21	100%	23	100%

Table 9

SOR ratings of practicality of research at Host Institutions

Rating	At the Beginning of Assistance Project		At the Present Time	
	Number	Percent	Number	Percent
Very Useful	0	0%	2	9%
Useful	0	0%	5	23%
Fairly Useful	0	0%	5	23%
Not Very Useful	13	59%	8	36%
Not Useful At All	2	9%	1	5%
Non-Existant	7	32%	1	4%
Total	22	100%	22	100%

program was rated as not very useful an extension director had been established and each campus had responsibility for thirty or forty families nearby. At another project in which extension was rated as not very useful, field days had been started and there had been demonstrations in the use of fertilizers and in planting. While these efforts offer sharp contrast to the far-reaching extension program previously discussed, they are perhaps a base upon which more elaborate programs can be built.

Table 9 contains SOR ratings of the practicality of research. The pattern is here very similar to that of the extension programs. It is shown that at the beginning of projects in all cases research either did not exist or was not very useful. Presently, however, research is being conducted at over 95 percent of the institutions represented and 54 percent of the institutions are conducting research that is at least fairly useful. The more successful research programs have begun to orient research toward country needs, to increase research budgets, and to develop a measure of self-sufficiency in the conduct of research. For example, at one institution where there was practically no research at the beginning of the project, but which the SOR rates as currently having a very useful research program, over forty research projects were approved by the director of research at the college of agriculture in 1967. The criteria of approval included the relationship of the project to productivity and agricultural development, contribution to the economy, relationship to previous research, the perceived needs of farmers, and so on. The use of such criteria suggests in this case that research is not being conducted merely for the sake of publication but is being directed toward satisfying country needs. The SOR further reports that the USU staff has been highly instrumental in guiding selection of research projects and in helping to get them underway. The result has been a metamorphosis in the course of which publication of research was initially accomplished by only USU personnel, then by joint authorship of USU and host country personnel and, of late, by host country personnel on their own. At another project which the SOR rated as currently having a useful research program, in the course of three years research publications by the host institution staff increased from about 100 to over 360 publications per year. In four years, the research budget at the same institution was increased by over 700 percent.

In these projects the results of research are of value to host country farmers and industries, and moreover are being utilized by such groups. In one case, there has been improvement of the quality of livestock by selection, grading, and cross-breeding with European breeds, and 5000 to 7000 improved beef animals go to market annually. Paprika has been introduced and a spice-extracting company is making plans to erect a processing plant in the host country. A variety of wheat demonstrating superior yields was introduced and 45,000 pounds of the seed were distributed in 1966.

Such examples of the effects of research in programs considered useful by the SOR's are numerous and diverse, involving introduction of new or improved crop varieties and livestock, increased yields on present crop varieties and increased utilization of new techniques by the society. On the other hand, in many cases, progress has been slow in coming. The European image of the university often held by members of host institution staffs, inability to secure funds, the absence of basic empirical data, and difficulties in the procurement and transportation of research equipment among other factors have all retarded

progress in developing useful research programs. Consequently, 40 percent of the research programs are still not considered very useful. For instance, an SOR indicated that one research program which he rated as not very useful reflected an inability on the part of host institution staff to define national problems, to document the seriousness of such problems, and to obtain money from funding groups. Interviews conducted by the SOR with the dean of this institution further suggested that, for the most part, research either consisted of repetition or translation of previous studies, or was focused on inconsequential problems because researchers had no opportunity to learn the real needs of the farmer. At another institution with a similar rating by an SOR, research publications increased only slightly from thirty-one to thirty-five publications per year and the research budget actually decreased by over 30 percent. Moreover, the results of this research received little or no circulation in the host country beyond the academic community.

The contrast between research programs receiving high and low ratings on usefulness is also reflected in Table 10, which contains the rating on the ability of host institution personnel to focus on useful and significant problems. Table 10 indicates that in about 57 percent of the cases presented at least a fair sense of problem had evolved. However, a comparison of this distribution with ratings of current practicality of research presented in Table 9 offers some evidence of the continued role of USU personnel in guiding research activities. While about 31 percent of the ratings on current research activities in Table 9 are in the very useful or useful categories only about 14 percent of the ratings in Table 10 lie in the corresponding categories. In other words, in some cases where useful research activities are being conducted, the host institution staff has still not adequately developed the ability to select significant research problems on its own. This finding is consistent with the previous discussion of the metamorphosis of research activities, whereby in the early stages of projects, USU personnel were largely responsible for the initiation and publication of research, with host institution personnel developing some autonomy in these regards only in later stages. A further comparison of the not very useful and not at all useful categories for current research activities, Table 9 and the corresponding levels of Table 10, reflects a similar distribution of the nine cases falling at these levels in each table. In seven of these cases, the ratings refer to the same institutions in both tables, indicating that where a useful research program has not been developed, there is also a corresponding inability to inculcate even a fair sense of problem among members of the host institution staff. Such findings have a bearing upon the course of research activities after project phase out, in that they suggest the difficulties that may beset a host institution staff that is currently engaged in useful research programs which are still dependent upon the guidance of USU personnel, or the continued lack of useful research at institutions where such programs are not already underway.

An area which consistently yielded the highest ratings by the SOR's concerned the physical facilities at host institutions. Table 11 contains ratings of the quality of classrooms, labs, books and staffhouses. The quality of classrooms showed the least improvement, and still reflected improvement at about 70 percent of the institutions represented. On the average for all facilities, 77 percent of the SOR ratings are either better or much better, and there was no case where the quality of facilities declined. Table 12 presents a similar picture in terms of the adequacy of facilities, although there is one institu-

Table 10

SOR ratings of researchers' sense of problem at Host Institutions

Rating	Number	Percent
Very Good	1	5%
Good	2	9%
Fair	9	43%
Poor	7	33%
Very Poor	2	9%
Total	21	100%

Table 11

SOR ratings of the quality of physical facilities at Host Institutions

Rating	Classrooms		Labs		Books		Staff Houses	
	N	%	N	%	N	%	N	%
Much Better	8	47%	9	50%	11	61%	7	50%
Better	4	24%	6	33%	3	17%	4	29%
About the Same	5	29%	3	17%	4	22%	3	21%
Poorer	0	0	0	0	0	0	0	0
Much Poorer	0	0	0	0	0	0	0	0
Total	17	100%	18	100%	18	100%	14	100%

Table 12

SOR ratings of the adequacy of physical facilities at Host Institutions

Rating	Classrooms		Labs		Books		Staff Houses	
	N	%	N	%	N	%	N	%
Much Better	10	53%	10	53%	12	63%	8	44%
Better	5	26%	5	26%	3	16%	4	23%
About the Same	3	16%	4	16%	3	16%	5	28%
Poorer	1	5%	1	5%	1	5%	1	5%
Much Poorer	0	0	0	0	0	0	0	0
Total	19	100%	19	100%	19	100%	18	100%

tion where adequacy of all facilities declined. In each of the cases in which adequacy and quality of facilities was not improved, the question can be raised as to their quality or adequacy in the first place. Accordingly, in one case, the SOR indicated that most physical facilities were entirely adequate before the project started. Thus the lack of improvement in quality or adequacy of facilities may be as much due to an absence of need for improvement as to any shortcomings of projects. On the other hand, even in cases where there was significant improvement in the adequacy or quality of facilities, this does not mean that facilities are presently adequate or of the quality they should be. It is meant only to indicate to what extent changes in this area have occurred, rather than to determine the need for additional changes.

In terms of assessing changes in this area, by means of the SOR ratings, an additional problem occurs in cases where projects have expired. In one case where no improvement in the adequacy of facilities was indicated by the SOR, there had actually been a significant improvement in equipment and laboratory facilities during the contract period, but the adequacy of these facilities subsequently declined because of lack of funds for the purchase of additional equipment after project termination. In other words, in this case the ratings do not disclose the extent that there has been a loss of previous gains.

Overall, only about 25 percent of the projects did not reflect a gain in quality and adequacy of nearly all physical facilities. Further indications are that of these 25 percent, some did not reflect gains because facilities were already adequate and others because of lack of continued growth after projects were terminated. It is therefore suggested that in terms of producing change in physical facilities examined that considerable success was attained. However, it should be pointed out that the extent to which host institutions now have sufficiently adequate, high-quality facilities as a result of these changes is not revealed by the SOR ratings.

Up to this point the length of projects as a factor in their success has not been systematically incorporated into the analyses. This factor will now be taken into account by comparing SOR ratings of projects that have been in existence eight years or longer with those for shorter term projects. This latter grouping of shorter term projects includes projects of two, three and four years duration; there were no five, six or seven year projects for which data were available on this point. The longer term projects ranged from eight to fourteen years duration.

Tables 13 and 14 indicate that in general there was more improvement in the quality of education and the quality of students at the longer-term projects than at the shorter-term projects. It should be noted, however, that the ratings on quality of education and of entering students in these tables do not disclose whether or not differences existed between short and long-term projects at the beginning of projects or exist at the present time. The ratings, therefore, do not necessarily suggest that the quality of education or of entering students at the longer-term projects is presently closer to the attainment of some absolute standard, but only that more change was effected in these areas by the longer-term projects. The differences between the longer-term and shorter-term projects are more pronounced for quality of education than for the quality of entering students. This finding is basically consistent with the previous discussion of the lack of influence of the USU personnel over the education

offered in secondary schools, of conflicting goals of increasing enrollments and quality of students, and of the desire of students to enter other fields. The data do suggest, however, that at least some of these factors are overcome by projects when given enough time.

Tables 15 and 17 do not suggest that substantial differences existed between the shorter-term and longer-term projects for practicality of extension or research at the beginning of projects. Nevertheless, Table 16 indicates that a difference between the shorter and longer-term projects in current practicality of extension does exist. Six of the longer-term projects are currently rated as useful or very useful while only one of the shorter-term projects is currently rated as useful. The trend is not wholly conclusive, however. Seven of the longer-term projects are still not rated as being useful compared to only four of the shorter-term projects which also include three cases at the fairly useful level. The ratings therefore suggest the importance of time in developing far-reaching extension programs, but also point to other factors, such as strategies and execution as responsible for the variability in achieving success in this area. For example, it is possible to contrast one project in which the extension program improved from a "not very useful" rating to a "useful" rating in three years with another project in which the extension program did not improve its "not very useful" rating in over ten years.

Ratings on the current usefulness of research produce much the same picture. Table 18 suggests that the longer-term projects have been somewhat more successful than the shorter-term projects in producing useful research programs. Eight longer-term projects are rated at least fairly useful as compared to four shorter-term projects. However, again the trend is not wholly consistent. There are still five of the longer-term cases which are rated less than fairly useful which is comparable to the four cases similarly rated among the shorter-term projects. Moreover, there are four longer-term projects that were rated as not very useful or not useful at all which did not progress from their respective ratings in over ten years. By contrast, in two cases where research was virtually non-existant at the beginning of projects, in approximately three years their respective ratings had each progressed to the "useful" level.

The picture is further confused when ratings of sense of problem in Table 19 are taken into account. The ratings on sense of problem are somewhat higher for the shorter-term projects than the longer-term projects. For the shorter-term projects, 63 percent of the cases are rated at least fair, in contrast to 53 percent of the longer-term projects. Furthermore, one short-term project was rated very good and two long-term projects were rated very poor.

The ratings for quality and adequacy of physical facilities for the longer and shorter-term projects are presented in Tables 20 and 21. Since the pattern was essentially the same for classrooms, labs, books, and staff houses, they are collapsed into a cumulative rating of facilities. The ratings on quality of facilities reveal little difference between the longer and shorter-term projects. Although ratings on the quality of facilities for the longer-term projects yield higher percentages for the "better" and the "about the same" ratings, this is offset by the greater percentage of "much better" ratings for the shorter-term projects. The ratings on adequacy of facilities similarly reveal little difference between the longer and shorter-term projects. Only in this case is there a higher percentage of "better" and "poorer" ratings for

the shorter-term projects which is offset by a higher percentage of "much better" and "about the same" ratings for the longer-term projects.

Overall, the SOR ratings for the shorter and longer-term projects present inconclusive results. While it could be argued that time alone is never sufficient to effect positive changes, a look at other variables indicates that the longer-term projects are also the ones which involve the largest expenditure of AID funds and manpower. The longer-term projects consistently involve AID expenditures of two to five million dollars. By contrast, the shorter term projects consistently represent expenditures of less than a million dollars. As nearly as can be determined, the largest shorter-term project in terms of AID expenditure is about 1.2 million dollars and the smallest is about 200 thousand dollars. On the other hand, the smallest longer-term project in terms of AID expenditure is about 1.9 million dollars and the largest is over 11 million dollars.

It is interesting to compare one of the longer and larger projects in terms of expenditure with one of the shorter projects and smaller in terms of expenditure. The longer project is about twelve years old compared to about four years for the shorter one. Although the expenditure at the former is over fourteen times as great as the latter and has been in existence about eight years longer, there are ostensibly not great differences in achievement between the two. In both cases, the quality of entering students was not improved. In the longer project, the quality of education was rated as better compared to a rating of about the same for the shorter project. Usefulness of extension improved from a rating of poor to a rating of useful at the longer project and from non-existant to fairly useful at the shorter project. Usefulness of research improved from a rating of poor to a rating of useful at the longer project and from non-existant to a rating of useful at the shorter project. Sense of problem was only fairly developed at the longer project and was rated as very good at the shorter project. Hence, on these criteria few differences are seen, considering the vast differentials in dollars and in time. In fact, for sense of problem the shorter project has a much higher rating than the longer project. It can thus be seen that these two projects go somewhat against a trend of continued improvement as more time and dollars are expended. Yet, these institutions were selected on the basis of time and expenditure criteria, and not because a poignant example of inconsistencies in the trend to improve over time was sought.

It could be argued that these projects are set into different institutions, that perhaps the longer project had less of a base upon which to work. However, extension and research had already begun at the longer project and was non-existant at the shorter project in the beginning. One could then argue further that these projects are cast into different cultural milieux and that there were different strategies employed and differential execution of strategies. Here there is no counter-argument. However, the needed translation of such factors into terms of progress is beyond the scope of the present undertaking. Moreover, it is realized that an analysis of the relationships between dollar and time expenditures on the one hand, and limited indices of progress on the other, is less than adequate to the complexities of the situations involved. Nevertheless, in offering empirical evidence of the general tendency of projects to improve with increased expenditures of time and dollars, and also of the somewhat tenuous nature of this tendency, such an analysis may prove a useful guide to an understanding of broader realities.

Table 13

SOR ratings of quality of students for longer-term and shorter-term assistance projects at Host Institutions.

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Much Better	1	8%	0	0
Better	4	33%	1	14%
About the Same	6	50%	6	86%
Poorer	1	9%	0	0%
Much Poorer	0	0%	0	0%
Total	12	100%	7	100%

Table 14

SOR ratings of quality of education for longer-term and shorter-term assistance projects at Host Institutions.

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Much Better	6	50%	1	14%
Better	3	25%	3	43%
About the Same	3	25%	3	43%
Poorer	0	0%	0	0%
Much Poorer	0	0%	0	0%
Total	12	100%	7	100%

Table 15

SOR ratings of practicality of extension at the beginning of longer-term and shorter-term assistance projects at Host Institutions

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Useful	0	0%	0	0%
Useful	0	0%	0	0%
Fairly Useful	0	0%	0	0%
Not Very Useful	2	15%	2	22%
Not Useful At All	6	46%	3	33%
Non-Existant	5	39%	4	45%
Total	13	100%	9	100%

Table 16

SOR ratings of practicality of extension at the present for longer-term and shorter-term assistance projects at Host institutions

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Useful	3	21%	0	0%
Useful	3	22%	1	11%
Fairly Useful	0	0%	3	33%
Not Very Useful	6	43%	4	45%
Not Useful At All	1	7%	0	0%
Non-Existant	1	7%	1	11%
Total	14	100%	9	100%

Table 17

SOR ratings or practicality of research at the beginning of longer-term and shorter-term assistance projects at Host Institutions

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Useful	0	0%	0	0%
Useful	0	0%	0	0%
Fairly Useful	0	0%	0	0%
Not Very Useful	7	54%	6	67%
Not Very Useful At All	2	15%	0	0%
Non-Existant	4	31%	3	33%
Total	13	100%	9	100%

Table 18

SOR ratings of practicality of research at the present for longer-term and shorter-term assistance projects at Host Institutions.

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Useful	1	8%	1	11%
Useful	4	30%	2	22%
Fairly Useful	3	23%	1	11%
Not Very Useful	4	31%	4	45%
Not Useful At All	1	8%	0	0%
Non-Existant	0	0%	1	11%
Total	13	100%	9	100%

Table 19

SOR ratings of researcher's sense of problem for longer-term and shorter-term assistance projects at Host Institutions.

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Good	0	0%	1	13%
Good	2	15%	1	12%
Fair	5	39%	3	38%
Poor	4	31%	3	37%
Very Poor	2	15%	0	0%
Total	13	100%	8	100%

Table 20

Accumulated SOR ratings of quality of physical facilities at longer-term and shorter-term assistance projects at Host Institutions*

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Much Better	18	47%	17	55%
Better	11	29%	4	13%
About the Same	9	24%	10	32%
Poor	0	0%	0	0%
Very Poor	0	0%	0	0%
Total	38	100%	31	100%

Table 21

Accumulated SOR ratings of the adequacy of physical facilities for longer-term and shorter-term assistance projects at Host Institutions.*

Ratings	Longer-term Projects		Shorter-term Projects	
	Number	Percent	Number	Percent
Very Good	29	57%	10	41%
Good	6	12%	9	38%
Fair	16	31%	1	4%
Poor	0	0%	4	17%
Very Poor	0	0%	0	0%
Total	51	100%	24	100%

*Ratings for classrooms, labs, books, and staff houses yielded similar distributions, and were therefore combined to form a single index of the adequacy of physical facilities.

Summary

The present analysis was intended to present the findings of SOR evaluations of impacts. Generally, the SOR's indicated improvement on most criteria, although the quality of entering students and sense of problems by host institution personnel seemed especially resistant to improvement. There was also a high percentage of projects where extension and research were rated as currently being not very useful. High ratings on improvement of quality and adequacy of physical facilities suggest that material changes were most easily achieved. Ratings on projects that have been in existence eight years or longer were compared with ratings on shorter-term projects. This also represented a comparison of projects with larger and smaller expenditures of AID funds and USU manpower. To some extent, the ratings on longer-term projects reflect greater progress than the shorter-term projects on most criteria, but there are exceptions. As might be expected, ratings on the quality and adequacy of physical facilities reflect only slight differences between the longer-term and shorter-term projects which seems to indicate that this is one of the first and easiest changes to make. Ratings on extension and research show some improvement in practicality for longer-term projects over shorter-term projects, but many longer-term projects retain low ratings. Ratings on sense of problem indicate paradoxically that this is better developed in shorter-term projects than longer-term projects. Quality of entering students seems to have improved more for the longer-term projects. Quality of education seems to present the most consistent evidence of greater improvement at longer-term projects. These findings suggest the importance of other factors not considered here, such as strategies and execution as accounting for those cases where there is little difference in terms of progress and considerable differences involved in years, dollars, and personnel. Moreover, the SOR evaluations only hint at patterns of change manifested in linkages between the host institution and the host government and society, and do not generally suggest explanations for such changes. This was outside of the objectives of the SOR evaluations. Rather than getting deeply immersed in such issues, the present task was confined to reporting SOR evaluations of impacts, to giving an indication of the situations represented by the ratings, and offering some explanations for the distributions of SOR ratings on the various criteria.

The data indicate the importance of time in the institution building process. On four criteria, quality of students, quality of education, practicality of extension and practicality of research, the longer-term projects were rated higher than the shorter-term projects. It takes time for the relationships between the institution and other segments of society to be initiated, stabilized and crystalized. This suggests that short term projects should be limited to solving specific technical problems or providing physical facilities, but that institution building requires long-term commitments.

SUMMARY AND CONCLUSIONS

The task of assessing progress toward the accomplishment of goals is difficult when there is a lack of clarity concerning the criteria and measures to be used. Such lack of clarity has existed in many technical assistance projects. This has been necessary, however, due to the lack of experience by all parties concerned in terms of what would be reasonable expectations. In add-

ition it is necessary to state project objectives broadly enough to allow operational flexibility for the team in the field. These necessities of inexperience and flexibility have done much to create the problems involved with measuring accomplishments.

The easiest things to count are tangible accomplishments, new buildings, experimental farms, new varieties of crops, books in the library, etc. These have been unsatisfactory criteria of progress. The feeling seems to be that somehow they do not represent what was intended to be done, nor do they account for all that was accomplished. One explanation for this dissatisfaction with tangible measures is that the various entities involved in the technical assistance project expected certain intangible accomplishments to occur. When tangible measures are substituted as project goals, the intangible phenomena are lost.

The first section of this report proposes a solution to this problem. Essentially, it is to conceptualize the objectives of projects at the more general level of institution building. By expanding on the definition and description of institution building a series of indicators can be enumerated. Some of these indicators are tangible measures, others are relatively intangible. The important distinctions between this and the above approach are (1) these indicators are not the project goals but indicators of them, and (2) the institution building approach provides an integrated basis for examining a series of indicators. In addition, institution building theory emphasizes the relationship between the institution and its environment, which has come to be recognized to be crucial for the development of the host institutions.

The indicators developed in the first section are then utilized to describe the impacts of technical assistance projects in the second section of the report. Data were from twenty-five projects where the host institution was an agricultural university. No attempt has been made to make an overall ranking of the twenty-five projects, or to describe the total impact within any one project. There are a number of reasons for this. First, given the present stage in the development of indicators, and the availability of data over time, there would be too much measurement error to make such statements meaningfully accurate. Second, there is tremendous diversity not only in region, project duration, etc., but in accomplishments. Some institutions which have undergone considerable change in some program areas have changed little in others. Again, at this time it is hard to know how to assess these different changes. It seems advisable to look specifically at the changes that have and have not occurred. Third, while there would be some advantages to looking at projects or institutions as a whole the CIC-AID Rural Development Research Project specifically did not take a case study approach. This allowed a focus on the institution building approach, and provided an attempt to delineate institution building indicators.

Important Impacts and Problems

From the point of view of describing impacts this report would be incomplete without a statement of what seemed to be the most significant changes in the host institutions. Based on the variety of reports from which data were drawn, and conferences held during the CIC-AID project, there were three factors which seemed to be particularly important in host institution change.

One of these was the role played by the returned participant trainee. This was mentioned several times during the discussion of impacts. The participant has usually had a chance to see the Land Grant college in operation in the United States. This gives him a better understanding of the organization and program of the Land Grant model. It also gives him an understanding of the nature of research and its relationship to the needs of the society. These are all factors in addition to the quality of education he receives. A number of well-educated participants adds greatly to the indigenous staff that the host institution must have to continue to develop after the technical assistance project ends.

Another important factor in host institution change was the development of a research program. At some institutions there were no research funds because these went to other agencies, at others the staff lacked the time or the training to pursue research. Generally the SOR's did not feel these universities were progressing as rapidly in institution building as those with research programs. While this may represent a particular bias, it is a bias of the Land Grant model. Research has a number of functions. It creates an output from the university that can be useful to the society. This demonstrates the value of the university to the society and can help establish ties with a variety of organizations. It also builds greater competence in the teacher.

A third important factor that distinguished many of the institutions that showed greater change from those that showed less was the nature and extent of relationships with organizations outside of the university. Those institutions that showed greater progress toward the Land Grant model had established more cooperative relationships with other agricultural organizations, and in turn were looked to to provide information and services via research, training programs, etc. This gave the university greater responsibility and opportunity.

There were two problems which existed at many projects, even some of the ones that showed the greatest changes. The first of these was continuity of leadership, often not only in the university but in the U.S. technical assistance team and the Ministry of Agriculture. In many countries ministers' tenure of office is only one to two years. U.S. university personnel serve two-year tours, with some serving a second tour and a few more than that. Often this means that the minister or U.S. personnel are really just getting acquainted with the university, its needs and its potential when they move on. The second problem is duration of the technical assistance project. Many projects have been phased out. At some of the longer projects there has been discussion of phase-out, at least by AID, for some time. What is the appropriate duration for a project? While this study does not attempt to answer that question directly, it discusses some relevant issues. Clarification of implicit and explicit objectives in terms of the institution building framework should help provide better criteria for assessing project performance. Institution building does take time. However, it may not require the same kinds of inputs in the middle and later stages as at the beginning. The McDermott-Rigney-Haws conceptualization certainly indicates this. This suggests that a series of project objectives might be established, and different indicators used at different stages of the project.

These two problems, continuity of leadership in other organizations and project duration, are things the host institution may be able to do little about.

Yet they will clearly have a bearing on project operations and accomplishments. Other portions of the CIC-AID project look at these and other problems from other points of view.

Limitations of this Report

There are a number of factors which should be taken into account in assessing this report. A basic consideration is the study design. It was a descriptive survey of institutions that have received technical assistance. No comparisons have been made with institutions that did not receive assistance. Given the time constraints, that would have been an impossible task.

How much of the changes that have occurred in the host institutions is directly attributable to the assistance project? No attempt has been made to answer that; given the study design it is impossible to do so. Clearly, many of the impacts are directly due to the projects, for example, the participant programs or work done by the U.S. team. Other changes were underway when the projects began. But the big payoff presumably will come in the future as the institutions progress on their own; that is the objective of institution building.

Probably the most serious question in the minds of many is the comparison of institutions in such diverse cultural settings. Wayt discusses some of these differences, and some of the similarities, in his report.50/ This diversity has not been ignored in the CIC-AID project.51/ From an empirical point of view there are important reasons to delineate concepts and measures that have cross-cultural applicability.

This is also important from the point of view of managing technical assistance programs. Decisions will be made, with or without empirical information.

Footnotes

1/ This is being done by William N. Thompson at the University of Illinois.

2/ See, for example, Richardson, John M. Jr., An Analysis of AID-University Relations 1950-1965 (With Special Reference to Rural Development Contracts), A Report from the Center for Comparative Political Analysis, Department of Political Science, University of Minnesota, Minneapolis, Minnesota, 1967.

3/ See, for example, Millikan, Max F., and Hapgood, David; No Easy Harvest, The Dilemma of Agriculture in Underdeveloped Countries, Little, Brown, and Company, Boston, 1967, pp.67-77; and A. H. Moseman, "Progress in International Development," a paper presented at the 95th Annual Meeting of the American Public Health Association, Miami Beach, Florida, October 27, 1967.

4/ Second Annual Program Report, CIC-AID Rural Development Research Project, August, 1967, p.25, A brief statement of this problem with reference to AID projects is given in Richardson, op.cit., pp. 280-282. A more general statement for development projects is given in Samuel P. Hayes, Evaluating Development Projects, UNESCO, Paris, 1966. Two important recent works not in development are: Bauer, Raymond A. ed, Social Indicators, MIT Press, 1966, and Applied Science and Technological Progress, A Report to the Committee on Science and Astronautics, U.S. House of Representatives, by the National Academy of Sciences, U.S. Government Printing Office, 1967.

5/ Community Resource Development, A Report Prepared by a Special Task Force for the Subcommittee on Community and Resource Development and Public Affairs of the Extension Committee on Organization and Policy, 1966, p. 25.

6/ Warner, W. Keith and Havens, A. Eugene, "Goal Displacement and the Intangibility of Organizational Goals", A mimeographed revision of a paper presented at the annual meetings of the American Sociological Association at Miami Beach, Florida, 1966; see also Richardson, op.cit., pp. 267-280.

7/ The War on Hunger: Guidelines for Planning and Programming A.I.D. Assistance in Agriculture and Related Sectors, Agency for International Development, Washington, 1966, p.2.

8/ McDermott, J.K., "Propagation of the Land-Grant College, The Purdue-Vicosa Experience", mimeographed paper prepared for Midwest Council of Latin American Studies Association, Michigan State University, 1966, p.4.

9/ Roskelly, R. W., "Evaluating Institutional Maturity", mimeograph of preliminary report for CIC-AID Rural Development Research Project, 1967.

10/ Esman, Milton J. and Blaise, Hans C., "Institution Building Research: The Guiding Concepts", Inter-University Research Program In Institution Building, University of Pittsburgh, Graduate School of Public and International Affairs, Pittsburgh, Pennsylvania, 1966, p.2.

11/ Ibid, pp. 5-7.

12/ The author would prefer the term organization to institution, but for the sake of consistency with the cited body of literature we will not use it here.

13/ McDermott, J.K., "Administrative Procedures and Strategies of the Technical Assistance Complex in Institution Building Contracts", one portion of the Final Report of the CIC-AID Rural Development Research Project, Purdue University, Lafayette, Indiana, 1968, pp. 30-31.

14/ Esman and Blaise, op.cit., p. 1

15/ Ibid.

16/ Gross, Bertram M., "The State of the Nation: Social Systems Accounting", in Social Indicators, Raymond A. Bauer, ed., MIT Press, Cambridge, Mass., 1966, p. 184.

17/ McDermott, Administrative Procedures, op.cit.

18/ Jones, Ronald W., "Some Further Implications of Overall Concepts to Research Design Planning Process", in the Annual Program Report, Phase II, CIC-AID Rural Development Research Project, May 23, 1966, pp. 5-8.

19/ op. cit.

20/ op. cit., p. 12

21/ March, James G., and Simon, Herbert A., Organizations, John Wiley & Sons, Inc., New York, 1958.

22/ Ibid., pp. 65-66.

23/ See for example: From Max Weber: Essays in Sociology, translated and edited by H.H. Gerth and C. Wright Mills, Oxford University Press, New York, 1958, pp. 196-244; Williams, Robin M., Jr, American Society: A Sociological Interpretation, Second Edition, Revised, Alfred A. Knopf, Inc., New York, 1961, pp. 190-199; and Merton, Robert K., Social Theory and Social Structure, The Free Press, Glencoe, Illinois, 1957, pp. 195-224.

24/ Brooks, Harvey, "Applied Research Definitions, Concepts, Themes", in Applied Science and Technological Progress, op.cit., pp. 47-50.

25/ McDermott, Propagation of the Land Grant College, op.cit., p. 1

26/ Esman and Blaise, op. cit., p.1

27/ Eisenstadt, S.N., Essays on Comparative Institutions, John Wiley & Sons, Inc. New York, 1966, p. 22.

28/ Blau, Peter M., The Dynamics of Bureaucracy, A study of Interpersonal Relations in Two Government Agencies, University of Chicago Press, Chicago, 1955, p. 46; Merton, op.cit.

29/ Warner and Havens, op.cit.

30/ Gross, op.cit., pp. 166-168

31/ Brooks, op.cit., p. 41 and p. 53

32/ Essentially the same point is made by Coser in discussing conflict in Coser, Lewis A., Continuities In the Study of Social Conflict, The Free Press, New York, 1967, pp. 40-51.

33/ Gross, op.cit., p. 267.

34/ Webb, Eugene J.; Campbell, Donald T.; Schwartz, Richard D.; and Sechrest, Lee, Unobtrusive Measures: Nonreactive Research In the Social Sciences, Rand McNally & Company, Chicago, Illinois, 1966, pp. 3-5.

35/ Total AID budget data was not available on one of the twenty-five projects included, and on three of the remaining projects. The data available indicated that the twenty-four projects involved 73.8 percent of funds, which is probably two to three percent high.

36/ McDermott, Propagation of the Land-Grant College, op.cit.

37/ Some additional information on program quality was obtained from a brief questionnaire completed by host institution staff members at ten institutions. At all ten the majority of respondents felt the quality had improved over the last few years; at nine the majority felt the present quality was above average, at the other one the majority felt the quality was average or above At two institutions the questionnaire was completed by all the staff, but at the others completeness varied from thirteen to sixty-four percent.

38/ I am indebted to William Wayt for specifying this point.

39/ Gouldner, Alvin W., "The Norm of Reciprocity: A Preliminary Statement", American Sociological Review, April, 1960, pp. 161-178.

40/ Wayt, William A., AID, Agriculture, and Africa: A Perspective on University Contract Projects, CIC-AID Rural Development Research Project, Preliminary draft, Ohio State University, mimeograph, February, 1968, p. 34.

41/ Rigney, J.A. and McDermott, J.K., Role of Technical Personnel in the Technical Assistance-Institution Building Process, a report prepared under the CIC-AID Rural Development Research Project, North Carolina State University, 1968.

42/ For a dramatic description of the need for improved facilities at the beginning of a project see the Final Report on the Assistance Contract between the U.S. Agency for International Development, the State University of New York, and the University of the Philippines College of Forestry, 1960-1965, State University College of Forestry at Syracuse University, Syracuse, New York, July, 1966, pp. 40-43.

43/ Although some information was available on the total budgets of 14 institutions, all but one of which showed an increase, it is very difficult to interpret accurately due to exchange rates, inflation, variations from year to year within institutions in reporting procedures, and whether the data reported were amounts spent, available or proposed.

44/ Wayt, op.cit., pp.57-58

45/ These data were obtained from the Final Report, State University of New York, op.cit., pp. 37-40.

46/ McDermott, Propagation of the Land Grant College, op.cit., p. 7.

47/ Dembel Balcha, Agricultural Research in Ethiopia: Its Organization and Administration and Its Potential Contribution to Economic Growth and Development, Unpublished MBA thesis, Ohio State University, 1968, p. 65.

48/ Ibid., pp. 71-75 and p. 92.

49/ Final Report, the State University of New York, op.cit., p. 46

50/ Wayt, op.cit., pp. 3-39

51/ See particularly the report on "country needs" prepared by David Derge and Donald Souder of Indiana University.