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MEASURING INSTITUTIONAL MATURITY IN THE DEVELOPMENT OF  
INDIGENOUS AGRICULTURAL UNIVERSITIES

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INTRODUCTION

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

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

Several studies on institution building have been reported recently that are useful and relevant to the problem under consideration. We will use the concept of institutionalization as defined by Esman and Blaise (1): "the process by which through the instrument of organization new ideas and functions are integrated and fitted into developing societies, are accepted and acquire the capacity to sustain themselves and in turn influence the larger environment in which they function". Duncan and Pooler (2) suggest that there are three significant dimensions in understanding the process of institution building. The first are the institution variables themselves: leadership, doctrine, program and internal structure. The second are the linkages with the environment, and thirdly, the transactions

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by which the institution gains viability. Measurement of institutional maturity must necessarily take cognizance of these three dimensions.

#### SOME LESSONS LEARNED FROM PHASED OUT CONTRACTS

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

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

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

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

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

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

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

## PREVIOUS MEASURES OF MATURITY AND PROGRESS

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

1. What is the educational task of the institution?
2. Are the necessary resources available for that task (including faculty, library, financing, physical plant and internal evaluation activities)?
3. Is the institution organized adequately to carry out the task (does it have an adequate board of control, administrative leadership, faculty and student organization such as to foster a spirit of cooperation and mutual support among the various entities of the institution)?
4. Are the programs of instruction adequate in kind and quality?
5. Do institutional policies promote high morale among the faculty?
6. Is student life relevant to the educational task?
7. Is student achievement consistent with institutional goals?

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

Very little research effort has been made by A.I.D. Missions to derive reporting systems which would meaningfully indicate progress in institutional development. One rather comprehensive attempt in this respect, however, was made by USAID at the beginning of India's fourth five-year plan in 1965. They requested contract team leaders to estimate for their respective projects the stage of development required for self-sufficiency and the rate at which self-sufficiency was being achieved in each of the twenty-seven categories shown in Table 1. (4) These data were obtained for each of the seven Agricultural Universities in India which were being assisted by U. S. University contracts, and they provided quantitative estimates for many of the important features of an academic institution. The evaluations were felt to be inadequate however and little use was made of them for several reasons. In the first place the judgments

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

A - STATUS EXPECTED BY 1971

B - LEVEL OF SELF-DEVELOPMENT COMPETENCY

C - YEAR OF PHASE-OUT IN SUBJECT

UNIVERSITIES (STATES)	ADMINISTRATION									PHYSICAL FACILITIES														
	Laws, Statutes, Regulations % Effective			Board of Management % Effective			Key Admin & Academ Officers % of Needs			Professional Buildings % adequacy			No. Staff Houses			Hostel Capacity			Campus Develop % adequate			Local Equipment % adequacy		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	95	100	72	95	100	72	95	90	69	80	70	67	336	350	72	1800	1200	70	80	70	67	65	50	69
II	100	100	68	100	100	70	100	100	69	75	75	69	350	350	71	4000	3000	68	70	75	72	75	75	71
III	100	100	68	100	100	66	100	100	70	75	75	69	623	500	70	2600	2500	67	75	75	71	75	75	70
IV	100	100	71	100	100	71	100	100	71	65	75	74	400	500	72	2000	2000	71	60	75	76	50	75	76
V	100	100	69	100	95	72	100	94	72	60	75	72	400	450	73	3000	3000	71	75	75	71	75	75	70
VI	90	90	68	95	95	70	100	90	69	75	75	69	300	250	70	3600	3200	70	80	75	70	85	75	71
VII	100	100	69	100	100	70	100	100	70	75	75	69	300	300	71	1460	1260	70	75	75	71	70	70	71

UNIVERSITIES (STATES)	ACADEMIC PROGRAMS												EXTENSION ACTIVITIES																	
	Conversion to Modern Teaching % completed			No. of Teachers			No. of Students			No. Bachelor Degrees			No. Advanced Degrees			Ext. Training non-degree % of State			Ext. Coord Teach & Res % converted			State Coverage % with Univ.			No. Directors and Asst. Directors			No. Subject Matter Special.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	95	75	68	175	145	68	1500	1100	66	300	200	68	75	45	68	35	65	74	40	50	73	30	50	73	3	4	73	20	30	73
II	100	90	68	450	240	69	5000	1000	69	1000	600	69	100	180	76	60	75	73	50	75	73	35	50	76	8	7	70	180	200	72
III	100	100	67	257	257	68	2500	2500	71	450	450	71	200	200	70	40	75	74	50	65	76	60	60	71	5	5	70	107	107	63
IV	85	75	70	450	400	71	1800	1500	60	450	350	70	150	100	69	20	75	76	20	75	76	15	75	76	5	4	75	24	18	75
V	70	75	72	450	450	70	2800	2800	71	630	500	68	110	130	72	60	75	73	20	75	76	10	50	76	6	6	69	80	80	71
VI	90	80	69	400	365	68	3650	3130	69	680	470	67	175	145	70	50	75	74	50	75	74	40	60	76	15	30	76	130	260	75
VII	75	75	71	300	275	70	2000	1940	70	340	340	71	90	70	70	50	60	73	50	60	72	40	50	73	5	7	74	60	80	76

UNIVERSITIES (STATES)	RESEARCH ACTIVITIES															LIBRARY											
	State Research % by University			No. of Main Stations			No. of Regional Stations			Acres for Research (000)			No. Directors and Asst. Directors			No. of Research Specialists			Teachers doing Research % Staff			No. of Books & Journals (000)			No. Students per Sec.		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
I	30	50	75	3	2	68	2	2	70	1.2	2.0	76	3	5	75	12	20	75	40	40	71	60	40	68	30	13	71
II	80	80	71	2	2	66	4	3	66	4.0	4.0	71	8	7	69	200	200	68	70	50	68	20	40	76	16	10	73
III	75	80	72	2	2	67	0	0	71	4.0	4.0	71	12	12	71	230	230	71	40	50	74	40	30	68	14	11	72
IV	30	50	76	2	3	73	1	2	74	2.1	4.5	76	6	6	71	110	168	74	50	70	73	45	20	69	10	8	70
V	35	50	76	1	1	69	3	4	72	2.0	1.0	68	4	4	69	40	50	72	40	50	73	55	50	68	14	20	68
VI	65	65	71	6	6	67	6	6	71	2.7	2.7	70	10	10	71	170	191	70	40	40	71	60	45	68	9	6	74
VII	50	60	71	4	4	70	6	6	71	3.5	3.5	71	5	4	70	95	125	72	60	60	71	50	50	70	13	12	70

were quite subjective and lacked a basis for comparability between projects. More importantly, they did not document the "feel" of excitement, energy, and progress; or conversely, of despair, lethargy and traditionalism which characterize the institutions. They did not provide a basis for knowing whether the institution was moving philosophically and organizationally toward a problem solving, service oriented "Land-Grant" type or toward the classical European type; since the increases in numbers of Ph.D.'s, volumes in the library and numbers of classrooms could qualify for either. They did not provide the Indian and U. S. decision makers with an adequate basis for altering their strategies to increase the efficiency of technical assistance inputs.

In view of these deficiencies it was found necessary the following year to appoint a joint Indo-U. S. technical assistance study team to "assess the progress made by the agricultural universities". (5) This team accumulated in more objective terms much of the same data with respect to physical plant, library, equipment and faculty training. In addition they inquired further into the institutions' progress toward assuming State-wide responsibility for research and extension activity. This was accomplished by first sending out questionnaires to the seven universities and following them up with team visits. This second effort, however, again failed to document the extent to which the institutions were developing genuine potential for stimulating the agricultural development of the State they serve. Both the Indian and U. S. members of the team urged additional research effort in this aspect of measurement of maturity.

#### CRITERIA FOR MATURITY OF A LAND GRANT INSTITUTION

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

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

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

3. The motivation and incentive for individual staff members derives in large measure, from a sense of satisfaction of having served the rural people well. Therefore, acclaim from farmers and their families becomes an important feature in the set of values of the professionals within a Land-Grant System. Increasing agricultural income and production becomes the driving force, and publication of results in prestigious journals is relegated to the category of a useful by-product. New science and technology will be sought and developed as the developing agricultural society requires it for their continued advancement.

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

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

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

#### MEASUREMENT VARIABLES

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

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

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

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

#### A. Teaching

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

#### B. Research

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

#### C. Extension Education

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

#### D. Administrative Incentives

1. Stimulation of professional improvement
2. Recognition and reward for excellence

3. Delegation of authority
4. Sharing in making professional decisions
5. Effective use of controls
6. Development of public support

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

#### TEACHING

1. Teacher's attitude toward his major function

The common pattern found in the university classroom of the developing nations is one in which the professor appears before a class for a period of approximately one hour and reads from his personal notes a segment of the material to be covered by the course. There are no text books, no outside reading, no class discussion, and no other activities designed to stimulate the student to acquire more factual information or alternative insights into the topics covered than that which is given orally by the professor. Frequently, student performance is evaluated by external examiners whose only contact with the classroom experience is a syllabus which is formally registered with the administration. Under this system, the assumption is implicit that the teacher's function is the oral imparting of all of the factual information which the student will need for adequate coverage of the topics presented.

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

2. Teacher's relationships with students

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

The progress to be measured relates to the degree to which the relationship between teacher and student is more conducive to study, inquiry, and

thoughtful scholarship on the part of the student as opposed to an insistence on the professor as the sole and ultimate authority in the area.

### 3. Teacher's execution of his function

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

### 4. Methods to achieve objectives

It is not likely that the new perspectives in teaching can be achieved by following the old format in the classrooms. New methods of presentation, stimulation, examination, and certification are indicated. The best methods available to a particular institution will depend largely on its own resources. For example, it can only make outside assignments for reading and the preparation of term papers if there are reasonable library facilities available. The alternative is a very widespread use of a mimeograph machine and similar facilities. The relationship between teacher and librarian is of key importance in using to the fullest the limited library resources. The availability and use of audio visuals depends not only on the institution possessing a slide projector but also on the policies of servicing the equipment, of providing relevant material for projection and the integration of such material into the course work. Thus, in measuring progress in the introduction of methods to achieve objectives, it is necessary to inquire into the institutional attitude toward these methods, the initiative employed in making them useful and relevant as well as the actual success achieved in their introduction.

### 5. Relating subject matter content to country needs

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

## B. RESEARCH

### 1. Research productivity of individual staff members

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

### 2. Proportion of projects directed to high priority problems

If a country has limited human and financial resources for conducting research it must use a high proportion of these resources in introducing and adapting existing science and technology. The creation of new knowledge receives high priority only in areas which are demonstrated to be limiting to national agricultural development; therefore, there is a need to measure the degree to which the institution's research effort is directed to problems of high priority in the country's agricultural development. There is no clear indication of the optimum percentage for such projects, but it is assumed to be upwards of 75%. In the vernacular these are known as "Pay Dirt" projects.

### 3. Capability of staff for documenting the relevance of projects to country needs

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

## C. EXTENSION EDUCATION

### 1. The concept of role and function of extension

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

## 2. Identification of priority activities with country needs

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

## 3. Coordination of activities with other public and private agencies

There are various activities for which a university is peculiarly equipped to undertake in extension education. These include the training of extension personnel and research in improved extension methodology. Other activities may well be undertaken if adequate resources remain at the disposition of the institution. There are many activities which are promoted by public and private agencies which can be improved considerably if there is intimate cooperation with the university activities. These include the development of agricultural credit programs, the production and distribution of fertilizers and pesticides, the organization and assistance in the processing and marketing of farm products, etc. An important measurement of maturity of the institution is the degree to which its extension activities are coordinated with such as those mentioned above, rather than being either competitive with them or unconcerned.

## 4. Efforts to accommodate the system to local environment.

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

## 5. Use of modern methods of communication and motivation

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

# D. ADMINISTRATIVE INCENTIVES

## 1. Stimulation of professional improvement

There seems to be no dearth of desire among faculty members for acquiring an additional degree which will serve the purpose of qualifying them for a higher rank. This additional training per se, however, does not guarantee that such persons will be interested in the development of new approaches or the adoption of different attitudes. Furthermore, those who are not eligible,

for whatever reason, for additional education abroad find little incentive for continued professional improvement at home. There is little incentive for experimentation with novel ideas at home. There is little to be gained but the scorn of his peers in the adoption of new teaching methods, new relationship with students, or attempts to change course content. One of the serious challenges to the administration of an institution is the stimulation of this type of professional improvement.

#### 2. Recognition and reward for excellence

Under the traditional European systems, there is little opportunity for rewarding staff members directly for excellent performance. Promotion in rank is generally available only when there is an opening at a higher rank and a general public invitation is issued for applications to the post. Salary levels are normally tied closely to academic rank and there is little latitude for using this as recognition for improved performance. Public acclaim for outstanding performance generally goes to the administrative staff of an institution rather than to the individual staff members who produce in an outstanding fashion. These constraints impose a serious limit on administrative capability for recognizing and rewarding excellence. An important measure of institutional maturity is found in the ability of administration to break through these traditional barriers.

#### 3. Delegation of authority

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

#### 4. Sharing in making professional decisions

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

#### 5. Effective use of controls

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

#### 6. Development of public support

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

#### SPECIFIC INSTRUMENTS USED IN THE NESA REGION

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

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

The instruments were modified and were then applied at the Indian Institution where the work was initiated. Here, the cooperation and participation of host nationals was enthusiastic and helpful but there was some reluctance on the part of the U. S. university team in having outsiders become involved in evaluating the project. Their major concern seemed to stem from the fact that they had exerted considerable effort in establishing rapport with the host institution and they were a bit fearful that the evaluation exercise would upset much of what they had accomplished in this area. This experience underscores the necessity of doing everything possible to make the measurement process an experience from which all parties

stand to benefit rather than allowing it be viewed as a device for criticism and censorship. Experience with the instruments at this university was extremely useful in rounding out the particular questions asked and in giving further insight into the types of information which can and cannot be obtained. The experience here and at the other institutions also indicated that the very process of measuring maturity can be very instructive for the institution involved and may very well document indicated changes in such a form that the institution will take initiative in implementing them without further outside interference.

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

#### NECESSARY PRECAUTIONS IN THE DEVELOPMENT AND APPLICATION OF THE INSTRUMENTS

In those projects where measurements are not part of project operations, great care should be taken by researchers to avoid the threats and handicaps of an "outside" investigation. This can be avoided by the development of dialogue in which all persons identified with the institution can learn to understand the values and the uses of "taking stock". If enough time is taken to help the host country nationals develop ideas and make suggestions on areas for study, also help develop the instruments to measure progress, the study then becomes meaningful to them.

There are many ways that the essential ideas of maturity can be structured and measured. If the professional personnel at the host institution can help discover some of these, they will experience significant growth that will contribute to institutional development. In short, no measurement should be attempted until the staff members of the host institution are vitally interested; also both can and will cooperate effectively. Considerable effort to achieve these objectives was experienced in developing and testing these instruments.

Three of the questionnaires can be filled out most effectively by individual staff members assembled on a departmental or a college basis. Experience suggests that the first questionnaire on teaching should be handed to individual staff members first. Have them filled out and returned to the researchers. The questionnaire dealing with project documentation in the research section should be handed out as the second questionnaire to be completed. They should be returned to the researcher upon completion. The questionnaire on administration should be handed out last. Staff members filling out the questionnaire are encouraged not to communicate with each other during the time that they are assembled and in the process of providing the data. All the remaining questionnaires should be filled out by small committees as given in the instructions or by the researchers following personal interviews with individuals.

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

### STRATEGY FOR MOVING INTO MATURITY PHASE

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

#### Technical Personnel

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

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

The limited experience of using short-term advisors in the NESAs region pointed up the necessity for carefully structuring and planning the short visits and in being flexible in following up unanticipated developments. They will be working with well trained host nationals and therefore their purpose is to lend technical stimulation and sophistication to the host

institution's activities, to bring them sharply into focus with their profession in the rest of the world, to refine their priorities and approaches, and to leave behind a feeling that the group had been brought into direct and intimate contact with the best minds in the world. There would be opened several avenues for expanded contact with the professional world - new literature references, acquaintance with the work of others active in the same subjects and who would welcome exchange of correspondence, new symposia or other professional convocations on matters of direct interest, etc. Such contacts inspire confidence and excitement, open channels of communication and give the host institution the opportunity and dignity of taking its place among the world community of scholars. This is a step which is vital to the process of closing the technological gap with the rest of the world.

### Participant Program

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

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

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

his area, and new teaching materials will be encountered. The ideal moment for making necessary investment in these materials is immediately upon his return while his enthusiasm is high - not after two or three years of frustrated efforts to get them financed.

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

#### Commodity Purchases

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

#### Exchange of Personnel

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

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

from other environments to the campus to capitalize on their experience and background. Thus the maturing phase of the host institution is in a sense matched by the U. S. institution's maturity in using technical assistance as a means of acquiring an expanded international perspective.

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

#### Technical Interchange

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

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

The record of performance does not, however, correspond to this expectation. In the process of looking for evidence of "commitment" on the part of the host institution and the U. S. University, one question was widely asked of both U. S. and indigenous personnel: "What contact do you have with the corresponding Department in the U. S. University outside of correspondence

directly concerned with a resident U. S. advisor?" Answers from host nationals were almost entirely negative, including individuals who had taken an advanced degree in that U. S. department. U. S. advisors had generated only a little correspondence with their home Department except for correspondence with personal friends in the Department, usually on non-professional matters.

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

#### Optimum Timing in Shifting Phases

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

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

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

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

A fourth principle which summarizes some of the earlier points is that the transition should be smooth and gradual rather than precipitous. The change in role from learner to decision-maker carries a number of implications and if experience can be gained on these implications gradually the desired initiative and self confidence are strengthened. There is the psychological urge to gain personal credit for certain activities quite in advance of being prepared to assume responsibility for success or failure.

The real problems of transferring responsibility are associated with the optimum timing of these two drives, and professional maturity is achieved as they become so blended as to be almost inseparable in the mind of the individual professional.

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

#### WHAT OUR EXPERIENCE HAS TAUGHT US ABOUT INSTITUTION BUILDING IN TERMS OF THE LAND GRANT MODEL

1. By use of the Liming techniques, also the Roskelley-Rigney instruments, it was possible to measure institutional maturity effectively in terms of the Land Grant Model.
2. The Liming technique identifies criteria for institutional development in 27 specific areas. Lacking in different criteria used by Liming are the unique identifying features of the Land Grant System (problem solving, service oriented, community related, "heart and soul")
3. Our task was to identify, develop and test measuring devices, measure the essential features of an institution identified above, and recognize the internal organization (variables) transaction and linkage dimensions unique to the Land Grant Model.
4. Our main emphasis was to discover the presence or absence of operating practices and principles which reflected the dimensions identified above.
5. In the world-wide study, the overseas research workers learned about many "once upon a time" successful projects that are now buried. Those buried were those which were oftentimes successfully developed by very capable technicians who did not realize nor recognize those related variables that must be developed and become mature in order to institutionalize an idea or a practice.
6. Changes in the quality and quantity of the input and strategy of project operations over time should be made in terms of the maturity which is achieved.
7. If institutional maturity in project activities is to be achieved more successfully in the future than it has been in the past:

First, it must be given more attention and be spelled out more clearly in the pre-contract planning phase.

Second, be certain that all the activities necessary to help achieve the defined objectives of maturity find their niche and contributions in project development.

Third, professional American personnel representing universities abroad in the institutional building activities must become professionally more competent in the art and science of institutional development if they are to make expected maximum contributions.

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

TEACHING QUESTIONNAIRE FOR TEACHERS

Department \_\_\_\_\_

(To be filled out by principal teaching staff)

1. Check the one statement below which you feel represents your most important function as a teacher.
  - \_\_\_\_\_ Provide through lectures all the relevant information in the course.
  - \_\_\_\_\_ Give the information on the course through lectures and give tests to determine how much the student has learned.
  - \_\_\_\_\_ Give the lectures, administer tests and develop within the student the capacity to apply what he has learned in helping others.
  - \_\_\_\_\_ Give the lectures, administer tests, develop applied uses for that which is learned and create a curiosity that will prompt the student to want to learn more.
  
2. Place a check by each practice used by you regularly during any quarter in the process of teaching a class at the undergraduate level.
  - \_\_\_\_\_ (1) Encourage student to question, in the class the information of ideas presented by the teacher.
  - \_\_\_\_\_ (2) Organize small discussion groups within the class and allow time each week for such discussion groups to function as a part of the instructional program.
  - \_\_\_\_\_ (3) Appoint committees to develop material and work out answers on some specific topic and present material orally to the class.
  - \_\_\_\_\_ (4) Hold informal discussion groups with students outside of class.
  - \_\_\_\_\_ (5) Schedule regular and frequent office hours and encourage students to come in and discuss problems of mutual interest.
  
3. Is there a program of student evaluation of teachers in your department?  
(Check one) Yes \_\_\_\_\_ No \_\_\_\_\_
  
4. If yes, what is your evaluation of the system of rating?  
(Check one)
  - \_\_\_\_\_ Very good
  - \_\_\_\_\_ Good
  - \_\_\_\_\_ Poor
  - \_\_\_\_\_ Very poor

TEACHING METHODS--(COVER SHEET)

The attached questionnaire was developed to try and determine the teaching methods used by any teacher in the process of helping students understand and become acquainted with the subject matter in any course given at the under graduate level.

Use Of This Evaluation Instrument

The following steps are suggested in using this instrument of measurement:

First Appoint a committee for each department to do the evaluation by using the questionnaire. The committee should consist of the Chairman of the Department, Dean of the College, (or some one representing him), The Team Leader of the American University on the campus or another American acquainted with the Land Grant concept of teaching. Individual members of each committee may be interested in reading a good text book on "Teaching Methods" before he attempts to function as an evaluator.

Second Have the committee do the following things:

- (a) Follow the steps outlined on Section A of the suggested Instrument for Evaluation of Teaching Methods.
- (b) Set up some criteria for rating teaching methods and materials as presented by each teacher before rating the teaching methods.
- (c) Fill in the suggested scoring sheet as given on item B of the attached instruments.
- (d) As a minimum, rate the teaching methods used by each teacher for at least one course.
- (e) Encourage teachers to meet with the committee, by appointment, to explain or clarify the teaching methods they use in classes.

TEACHING METHODSA. Evaluation of teaching methods by a committee:

Have each teacher present to the Chairman of his department for review by a committee the following materials used in teaching a given class.

1. Syallabus, course outline or lecture notes.
2. Visual aids or illustrative material used.
3. Library assignments.
4. Outline or instructions for term paper requirements.
5. Brief description of visits or trips made for learning purposed as a part of class work.

## B. Suggestive Scoring sheet:

		Rating on Teaching Method					
		Very good	Good	Fair	Poor	Very poor	None
Syllabus or equivalent	_____						
Visual aids used	_____						
Library assignments	_____						
Term paper requirements	_____						
Trips or visits	_____						

TEACHING CONTENT-(COVER SHEET)

The attached questionnaire was developed to examine two things.

First determine the extent of which the subject matter of the general service course taught at a college or university cover the basic essentials that they should in terms of the accepted standards of the discipline.

Second learn to what extent the contents of the course helps students identify some important agricultural problems as well as acquire insight and understanding about their solution.

Use of This Evaluation Instrument

The following steps are suggested in using this instrument for measurement.

First Have the committee do the following things:

- (a) Follow the steps outlined on the suggested instrument for evaluating "Teaching Content".
- (b) Establish some criteria for evaluating the teaching content of a course before rating the course.
- (c) Develop a program to rate as many of the general service courses as possible in order to help make certain that any conclusion drawn will be based upon an adequate sample.
- (d) Use the chart provided as a basis of scoring by placing a check in the appropriate column and row.

RATIONALE

Most of the students forget most of the material taught to them within a short time after they are exposed to it. Relating subject matter to the vital issues of life not only creates an intellectual atmosphere in which the student learns more. It also helps him make sense out of the subject matter content by learning its possible use for the solution of vital problems. The process also helps create an appetite and curiosity which become the basis of continued learning after the course work is completed.

## TEACHING CONTENT

(Evaluation by a committee)

1. Allow the committee to choose one general service course from each of the academic discipline of the College or University and request the instructor(s) to present to the chairman of the department for review by the committee the syllabus or course outline that had been developed and was in use by the instructor in teaching the course.
2. Have the committee determine the extent to which the syllabus or course outline cover the essential points that are generally agreed should be covered in such a basic course.
3. Have the committee determine the extent to which the teacher defines local problems in the community or state that are related to the contents of the course.
4. Have the committee evaluate the extent to which the teacher applies the principles developed in the course to suggest solution of the problems as defined.

Suggested Chart for Evaluation of Syllabus:

Areas of Evaluation of Syllabus	Rating of Contents					
	Very good	Good	Fair	Poor	Very poor	None
Covers Essential Subject matter						
Defines problems in state related to the course content						
Applies principles developed in the course to solve problems						

TEACHING PRACTICES--(COVER SHEET)

This instrument is about the same format as that shown earlier. The respondents earlier were individual staff members. On this instrument a committee representing a department fills out the questionnaire by entering the number of teachers in a given department whose actual teaching practice is best described by one or another of the statements listed.

Use of The Evaluation Instrument

The same committee that was chosen to evaluate the work of instructors on teaching methods and course content should provide the evaluation asked for on this instrument by filling in the information as suggested.

TEACHING

Department \_\_\_\_\_

(To be filled out by a committee)

Write in the number of teachers whose actual teaching practices are best described by the appropriate statement below:

- \_\_\_\_\_ Provide through lectures all the relevant information in the course.
- \_\_\_\_\_ Give the information on the course through lectures and give tests to determine how much the student has learned.
- \_\_\_\_\_ Give the lectures, administer tests and develop within the student the capacity to apply what he has learned in helping others.
- \_\_\_\_\_ Give the lectures, administer tests, develop applied uses for that which is learned and create a curiosity that will prompt the student to want to learn more.

RATIONALE IN DEVELOPING THE ACCOMPANYING  
QUESTIONNAIRES ON RESEARCH

Creative, problem solving, farmer oriented research has been one of the distinguishing characteristics of the "Land Grant" type University. This has been in contrast to much research at many institutions of higher learning that have stressed research, but it was not of necessity farmer oriented and sometimes not problem solving.

The attached instruments attempt to measure selected and most meaningful aspects of institutional maturity in the research field four criterias.

- First     The research productivity of each staff member.
- Second    Contribution to general knowledge that each staff member has made through research.
- Third     The number of "pay dirt" projects each staff member has developed. "Pay Dirt" is defined as those having a direct effect upon increasing productivity, creating wealth or has been valuable and made great contributions in other ways.
- Fourth    Project documentation.

A review of the research program and the staff of the better "Land Grant" type institutions in America would suggest that a very favorable rating would be made on each of these instruments.

The first of the two instruments is relatively simple, still it has proved to be a valuable tool. Question No. 3 on the first questionnaire is a very discriminating index of research maturity. The instrument on Project Documentation has been used in several countries of South East Asia and has proven to be a very adequate instrument to measure research maturity of professional personnel at Universities in terms of the "Land Grant" concept.

RESEARCH PRODUCTIVITY--(COVER SHEET)

This instrument attempts to measure research maturity at an institution as defined in the first three areas listed on the previous page.

How to Use This Evaluation Instrument

First     Appoint a committee for each department to do the evaluation by using the questionnaire. The committee should consist of the Chairman of the Department, The Director of Research and some person representing the American Universities who knows "Land Grant" research procedures

Second    Have the committee in each department evaluate the research productivity of each member of the department who is responsible for doing research by answering the questions on the questionnaire for each staff member.

RESEARCH PRODUCTIVITY OF INDIVIDUAL STAFF MEMBERS

NAME OF DEPARTMENT \_\_\_\_\_

NAME OF STAFF MEMBER \_\_\_\_\_

(Information to be provided by a committee)

Suggested membership: Chairman of Department, Director of Research, Team Leader representing American University, and/or other Americans acquainted with the staff and is himself a capable research scientist.

1. Please estimate the research productivity of the staff member whose name is given above by checking the word or phrase below that most nearly describes his research work at the University.

\_\_\_\_\_ Unproductive  
\_\_\_\_\_ Below Average  
\_\_\_\_\_ Moderately Productive  
\_\_\_\_\_ Very Productive

2. To what extent has the person whose name appears above contributed valuable information to his subject matter field through research. (check one)

\_\_\_\_\_ None  
\_\_\_\_\_ Very Little  
\_\_\_\_\_ Little  
\_\_\_\_\_ Moderate  
\_\_\_\_\_ Much  
\_\_\_\_\_ Very Much

3. Number of projects that have been recognized as having a direct effect upon increased productivity or created wealth.

\_\_\_\_\_

PROJECT DOCUMENTATION QUESTIONNAIRE FOR ALL TEACHERS--(COVER SHEET)

This questionnaire was prepared to acquire information from each staff member of the institution who has a responsibility for preparing research proposals and conducting research.

The instrument is divided into three sections:

The First inquires about the presence or absence of significant and well defined research problems.

The Second general section seeks information concerning the nature and the extent of defining and outlining the scope of the problems, the elements necessary to solve it and the likely returns if the solutions are found.

The Third deals with the general problems centering around the breadth of involvement of other persons and institutions in defining the research problems, their reactions to the research proposal and problems of funding.

Suggested Administration Of This Questionnaire

It is suggested that the instrument be handed out to members of the faculty that are assembled as a body on at least a college basis. This questionnaire can be filled out by staff members at the same time they fill out the questionnaire on teaching and the one on administration.

Pre-test experience has shown that it is not advisable to hand out these instruments for discussion or for question periods prior to their administration.

Encourage the staff members to study the question carefully before answering them.

The committee administering the instrument should take steps to insure a maximum amount of validity and reliability, perhaps to check the same. This could be done by suggesting that in those cases where individuals do answer that they have well defined problems properly documented, the committee would be pleased to examine the project documentations that are in existence, even talk with the researcher about it. This second step of requesting to review and examine copies of problems that are documented is a "must step" in checking the validity and the reliability of the answers given by staff members.

## PROJECT DOCUMENTATION

(Should be filled out by each person responsible for doing research)

NAME OF PERSON \_\_\_\_\_

NAME OF DEPARTMENT \_\_\_\_\_

1. Do you have in your office a list of two or more serious problems in your academic field that restricts production or destroys food and/or fiber that are needed to meet national goals and on which research is needed to find possible solutions?

Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_

2. If yes:

- (1) Have you reviewed a significant amount of the more important literature published throughout the world on the problems or areas related to them? Yes \_\_\_\_\_ No \_\_\_\_\_
- (2) Do the written reports of others confirm your thinking that the problems defined by you are really significant? Yes \_\_\_\_\_ No \_\_\_\_\_
- (3) Do you have in your possession a significant compilation of valid data on each problem that proves the seriousness of the problem as defined, that is are there figures, statistics, economic or other estimates of losses that are sustained each year because answers are not now known but in your best judgement could be found through research at the College of Agriculture? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (4) Is there in this compilation a reasonably accurate estimate of the research resources needed (manpower, finance and others) to find solutions to each problem? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (5) Has there been an estimate made of the number of years needed to conduct the research? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (6) Is there an estimate of the increased net national income that could likely be realized if answers to each problem were found through research? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_

3. Were these problems defined and agreed upon by:

- (1) The scientist alone? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (2) The scientist and his colleagues? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (3) The scientist, Chairman & Dean? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (4) College personnel and representatives of agricultural groups? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (a) Reaction of representatives of agricultural groups:  
Very Favorable \_\_\_\_\_ Favorable \_\_\_\_\_ Undecided \_\_\_\_\_ Opposed \_\_\_\_\_ Strongly Opposed \_\_\_\_\_
- (b) Were funds requested: Yes \_\_\_\_\_ No \_\_\_\_\_  
Amount requested? \_\_\_\_\_  
Amount received? \_\_\_\_\_

- (5) College personnel and representatives  
of industrial groups? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (a) Reaction of representatives of industrial groups:  
Very \_\_\_\_\_ Strongly \_\_\_\_\_  
Favorable \_\_\_\_\_ Favorable \_\_\_\_\_ Undecided \_\_\_\_\_ Opposed \_\_\_\_\_ Opposed \_\_\_\_\_
- (b) Were funds requested? Yes \_\_\_\_\_ No \_\_\_\_\_  
Amount requested? \_\_\_\_\_  
Amount received? \_\_\_\_\_
- (6) College and personnel from National  
Planning or Funding Groups? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (a) Reaction of the National Planning or Funding Groups:  
Very \_\_\_\_\_ Strongly \_\_\_\_\_  
Favorable \_\_\_\_\_ Favorable \_\_\_\_\_ Undecided \_\_\_\_\_ Opposed \_\_\_\_\_ Opposed \_\_\_\_\_
- (b) Were funds requested? Yes \_\_\_\_\_ No \_\_\_\_\_  
Amount requested? \_\_\_\_\_  
Amount received? \_\_\_\_\_
- (7) College personnel and representatives  
from private foundations? Yes \_\_\_\_\_ No \_\_\_\_\_ Not Sure \_\_\_\_\_
- (a) Reaction of the private foundations:  
Very \_\_\_\_\_ Strongly \_\_\_\_\_  
Favorable \_\_\_\_\_ Favorable \_\_\_\_\_ Undecided \_\_\_\_\_ Opposed \_\_\_\_\_ Opposed \_\_\_\_\_
- (b) Were funds requested? Yes \_\_\_\_\_ No \_\_\_\_\_  
Amount requested \_\_\_\_\_  
Amount received \_\_\_\_\_

RATIONALE FOR DEVELOPING THE ATTACHED QUESTIONNAIRES  
ON AGRICULTURAL EXTENSION

The results of productive research become most meaningful when it is used to help rural people solve their problems and enjoy creative living. The "Land Grant" University in America developed the Agricultural Extension Service as the vehicle by which the answers of problem solving research of the agricultural university were shared with the rural population. This off campus teaching program developed through trial and error. But in time it emerged as a relatively stable institution and was characterized by given concepts as well as stabilized patterns and principles of working relationships.

In the series of questionnaires that follow an effort is made to measure the maturity of the Agricultural Extension phase of the University by probing into the six following areas. They are thought to be much of the "heart and soul" of the "Land Grant" concept of Extension.

<u>First</u>	Definition of Extension Function by the University
<u>Second</u>	Identification of Priority Activities with country needs.
<u>Third</u>	Coordination with other agencies
<u>Fourth</u>	Improvement of System (Organizational Self Improvement Activities)
<u>Fifth</u>	Use of Group Dynamics, Local Leadership and Community Organizations
<u>Sixth</u>	Focus on Best Technology

AGRICULTURE EXTENSION SERVICE EVALUATION

By A COMMITTEE-(COVER SHEET)

A number of pages of the attached questionnaire are to be filled out by a committee composed of the Director of Extension, The American Extension Advisor, The American Team Leader, and at least one other person selected to represent the University.

Areas of Inquiry And Suggested Steps In Filling Out Questionnaires

On the next page the committee is asked to make a serious appraisal of the number and training of the Agriculture staff now working and the number needed to implement a reasonably effective Extension Program as the committee defines it.

The information called for on the following pages seem self explanatory and proper entries can be made with a little study of the information requested.

The material to be collected, based upon the questions and from the different sources as listed on the last few pages should be collected by some person specifically assigned to carry out this phase of the research on institutional maturity.

1. Number and Training of Agricultural Extension Staff to Implement A Reasonably  
Effective Program

(To be filled in by a Committee)

		Educational Level					
		No.	high school	some college	BS	MS	Ph.D
Functional Staff Positions:	Have						
	Needed						
Administrators:	Have						
	Needed						
Teachers:	Have						
	Needed						
Specialists:	Have						
	Needed						
Block Development Officer:	Have						
	Needed						
A. E. O.:	Have						
	Needed						
Village Level Workers:	Have						
	Needed						
TOTAL	Have						
	Needed						



3. Extent to Which Resources to Overcome Obstacles and Solve Problems are Available within The University System  
(Answered by a Committee)

To what extent is there the necessary combination of resources within the University system to solve the problems of the Extension sector?  
(check one)

- Less than 10% \_\_\_\_\_ 11 to 20% \_\_\_\_\_  
 21 to 40% \_\_\_\_\_ 41 to 60% \_\_\_\_\_  
 61 to 80% \_\_\_\_\_ 81% and above \_\_\_\_\_

4. Money Budgeted For Research to Solve Extension Problems Listed Above:  
 How much money has been budgeted and made available during the current year to conduct research as a means of finding solutions to the Extension problems?  
 R. \_\_\_\_\_

How much could have been spent productively? R. \_\_\_\_\_

5. Experimental Problem Solving Processes in Operation:

List the procedures and special operational practices with which you are currently experimenting in order to find solution to problems.	Evaluation		
	Of Questionable value	Some value	Very valuable
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			





EXTENSION SPECIALISTS PROGRAM

(As Understood By Key People, Interviews)

Steps:

1. List the name and discipline a given subject matter Specialist interviewed earlier.

Name \_\_\_\_\_

Discipline \_\_\_\_\_

2. Have a small committee, name 6-10 persons representing Government, Semi-Government, and private sectors, who because of their position should understand programs of specialists listed above.
3. Interview those named and determined.

Name of Person to be interviewed: \_\_\_\_\_

Position \_\_\_\_\_

Ask to what extent do you and others within your organization, understand the Extension program in the field of:

(1) \_\_\_\_\_

(2) Extent of understanding:

_____	Very Much	_____	Much
_____	Moderate	_____	Little
_____	Very Little	_____	None

(3) How great do you feel the contribution of this Extension program will be in the general area in which you have an interest?

_____	Very Great	_____	Great
_____	Moderate	_____	Little
_____	Very Little	_____	None

EVALUATION OF IN SERVICE TRAINING PROGRAMS

(By Interviews with Recipients)

Steps:

1. Get the names and addresses of some persons who were participants in the subjects listed above.
2. Interview 6 to 8 persons in each of three different representative causes and determine:
  - A. How valuable was the Agricultural subject matter presented from a practicable, useable point of view.

_____ NONE	_____ VERY POOR
_____ POOR	_____ AVERAGE
_____ GOOD	_____ VERY GOOD

- B. How valuable was the material given which was to help you understand people and work with them more effectively in developing the subject matter?

_____ NONE	_____ VERY POOR
_____ POOR	_____ AVERAGE
_____ GOOD	_____ VERY GOOD

- C. How valuable was the material given that were to help you understand more effective ways and means of developing the program.

_____ NONE	_____ VERY POOR
_____ POOR	_____ AVERAGE
_____ GOOD	_____ VERY GOOD

EVALUATION OF IN SERVICE TRAINING PROGRAMS

By SUBJECT MATTER CONTENT AND METHODS

(By Committee)

Steps:

1. Get copies of course outlines, lesson plans or syllabus for four or five in-service training programs for farmers, village level workers, and agricultural Extension officers.  
Suggested areas:
 

(1) Corn	(2) Wheat
(3) Rice	(4) Farm Management
(5) Other	
2. Evaluate the subject matter in terms of its value to field worker i.e..
 

% Highly technical material	Vs.
%	Down to earth functional material that can become the basis of a practical operational program at the village level.
3. Evaluate suggestions given as to ways and means to implement programs.

RATIONALE FOR DEVELOPING THE  
ATTACHED QUESTIONNAIRE ON ADMINISTRATION

In the introductory statement on "Goals and Objectives For Agricultural Institutions In Developing Nations", it was suggested that the justification for institutions existence was to be found in its production of useful people and information. This means that administration has only one major objective, namely creating a most favorable environment in which these objectives can be achieved.

The Administrative Questionnaire was developed around what is thought to be some of the major administrative incentives necessary for the greatest achievements in teaching and research activities by the staff. A careful examination of the instrument will reveal that the questions deal with six major areas of Administrative incentives.

These areas are:

1. Stimulation of Professional Improvement
2. Recognition and Reward for Excellence
3. Delegation of Authority
4. Sharing in making Professional Decisions
5. Controls
6. Development of Public Support

Scattered throughout the instrument there are several questions about each of these variables.

Suggestions On The Use Of The Questionnaire

Experience in pre-testing this questionnaire indicates that it should not be distributed among staff members for general discussion before it is administered. It can be handed out to staff members who are assembled to fill out the questionnaires on teaching and research documentations that were discussed earlier.

Staff members are encouraged not to ask questions publicly or discuss the questions during the period that they are being filled out. If persons have questions they should be discussed in private with the individuals administering the instruments.

Experience in administering the questionnaires in teaching, research and administration to all staff members indicates that the best results are obtained by distributing the three different instruments in the following order.

- First Hand out the one on teaching, ask the assembled staff to fill it out and return it.
- Second Give staff members the questions on project documentation, have them filled out and handed in.
- Third Repeat the process on administration.

ADMINISTRATION

1. Do very excellent teachers or research workers at the institution receive a salary equal to or greater in amount than the administrators? (Please check one) Yes \_\_\_\_\_ No \_\_\_\_\_
2. Should very excellent teachers or research workers at the institution receive a salary equal to or greater in amount than the administrators? (Please check One) Yes \_\_\_\_\_ No \_\_\_\_\_
3. Do students pay as much respect to the very capable teachers and research workers as they do to the good administrators? (Please check one) Yes \_\_\_\_\_ No \_\_\_\_\_
4. A teacher announces at the 10 o'clock class on Tuesday that at the 10 o'clock scheduled class on Thursday he will summarize the work covered to date in the course. An administrator on Wednesday calls a meeting for all students for 10 o'clock on Thursday. Where should the students go? (Please check one) To class \_\_\_\_\_ to the meeting called by the administrator \_\_\_\_\_
5. To what extent are staff members encouraged to exercise initiative in securing opportunities to participate in professional improvement activities such as (1) Engage in a short term assignments or meetings sponsored by F.A.O. or private foundation, (2) Read paper at a professional meeting, (3) Attend a summer institute or seminar? (Check one)
 

_____ Very little	_____ Little
_____ Moderately	_____ Very much
6. How successful has your institution been in eliminating difficulty and red tape in attempting to purchase material for which funds have been budgeted? (Check one)
 

_____ Very little success	_____ Little success
_____ Much success	_____ Very much success
7. Staff members on the campus are given recognition on the basis of contributions made and services rendered regardless of rank. (Check one) Yes \_\_\_\_\_ No \_\_\_\_\_
8. To your knowledge has the administration been attractive to the excellent scientist, teachers and scholars to remain at this institution in the last 5 years? (Check one) Yes \_\_\_\_\_ No \_\_\_\_\_
9. Are you aware of any cases in which problems of administration have been a contributing factor in causing some excellent scientists, teachers and administrators to not accept possible appointments to this institution in the last 5 years? (Check one) Yes \_\_\_\_\_ No \_\_\_\_\_
10. Check the figure which most nearly describes the percentage of persons in your department who are frustrated by the manner administrative authority is exercised? (Check one) Less than 10% \_\_\_\_\_, 11 to 20% \_\_\_\_\_, 21 to 40% \_\_\_\_\_, 41 to 60% \_\_\_\_\_, 61 to 80% \_\_\_\_\_, 81 and above \_\_\_\_\_.





20. To what extent is the University Administrative Staff (Vice Chancellor, your Dean or Director and your Department Head) thinking and planning four to five years in the future in order to assure the greatest growth at the University and minimize the development of problems in the future.

	Vice Chancellor	Dean or Director	Dept. Head
Very Little			
Little			
Considerable			
Much			
Very Much			

21. To what extent would you feel secure going to the office of each of the following administrators to discuss a personal problem or an institutional problem.

	Vice Chancellor		Dean or Director		Dept. Head	
	Personal Problem	Instit. Problem	Personal Problem	Instit. Problem	Personal Problem	Instit. Problem
Very Insecure						
Quite Insecure						
Fairly Secure						
Very Secure						