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# THE IMPACT OF PARTICIPANT TRAINING ON THE ATTAINMENT OF DEVELOPMENT GOALS

## Report No. 1 THE STUDY IN KOREA

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## PREFACE AND ACKNOWLEDGMENTS

This is a report on a study of the impact of participant training on the attainment of development goals in Korea. This study was part of a second phase in the development of a methodology useful for conducting impact assessments. The first phase was a feasibility study to determine whether techniques could be devised for measuring the effectiveness of participant training in terms of the impact of returned participants on the development of their countries. This second phase was designed to test the methodological design in live, operational settings. The study in Korea was conducted in the agriculture and economic planning sectors from 10 April to 8 May 1975. Companion studies were conducted in the Philippines and Brazil.

This report consists of the following:

Prologue which briefly reviews the Phase I research and summarizes the methodology resulting from that effort. It serves as a background to the activities described in the remainder of this report.

I. Introduction outlines the Phase II objectives and places the Korea study within the context of the entire project. It describes the preliminary activities prior to conducting the actual data collection.

II. Description of the Samples defines the criteria used both in selecting the sectors to be studied and the participants to be sampled. It also includes a profile which characterizes respondents in both the agriculture and the economic planning sectors.

III. Interview Procedures describes the criteria used to recruit and select local interviewers and discusses their role in the study. It also describes the approach used to conduct these interviews.

IV. The Impact of Participant Training in Agriculture presents the results of our findings in the agriculture sector and discusses the types of impact which returned participants have achieved in this area.

V. The Impact of Participants Trained in Economic Planning presents the results of the findings in economic planning and discusses the types of impact which returned participants have achieved in this area.

VI. Summary concludes with a description of what the findings revealed in terms of revising strategies and procedures for the subsequent country studies.

The study in Korea was made possible by the combined efforts of numerous people in both the United States and Korea. Dr. Philip I. Sperling, Office of International Training, continued his role as Technical Monitor for the early part of the project; he was instrumental in the initial developmental stages of this methodological research. Members of USAID/Korea supplied generous support in the time-consuming tasks of locating and contacting former participants to arrange schedules and conduct interviews. They also provided space in which to conduct the interviews. Without the assistance of Mr. Michael Adler, Mission Director, Mr. Dennis Barrett, Program Officer, and Mr. Kim Je Tai, Training Officer, and their staffs, we could not have completed this study.

We were also ably assisted by many Koreans. Dr. Shin Se Ho, Director, Office of Planning and Coordination, Korean Educational Development Institute and a former AID participant, contributed his personal time and energy to recruit candidates to serve on the local staff. The three local interviewers devoted long hours to interviewing former participants and completing their impact reports in a timely fashion. Their commitment to their tasks is worthy of commendation. Special thanks, of course, belong to each of the 80 former participants who so willingly consented to participate in this project by being interviewed. Many of them provided additional support by locating former participants and also gave release time to their staff in order for them to be interviewed. We are very grateful.

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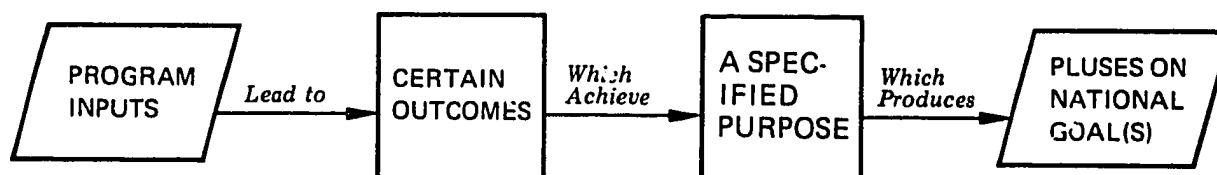
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## PROLOGUE: THE PHASE I FEASIBILITY STUDY

In March 1974, the American Institutes for Research submitted its report on Work Order No. 3 of Contract AID/csd-3377\*. The scope of Work Order 3 was essentially that of a feasibility study. The question which the study addressed was whether techniques could be devised for measuring effectiveness of participant training in terms of the impact produced by returned participants on the development of their countries. The answer was in the affirmative and took the form of a prototype methodology for carrying out such impact-oriented assessments. The course of the Phase I development will be recapitulated as a prologue to the work to be presented in this report.

### The Methodological Problem of Phase I

In AID's Logical Framework, the input-impact relationship is displayed as a sequence of four kinds of events, as follows:



The "rationale" of any type of technical assistance activity can be conveniently displayed in this manner as a guide to planning or impact assessment. In the case of participant training,

- the inputs might be defined as the learning experiences that are provided to the trainee;
- the outcomes as the new performance capabilities that he acquires;
- the purpose as the greater effectiveness of the operations to which the participant applies these new capabilities when he returns; and
- the increment in national goals as the ultimate payoffs of these more effective operations on the development targets that they directly affect.

\*Assessing the impact of participant training on the attainment of development goals. Phase I: Methodological Research. Final Report. Washington, D. C.: American Institutes for Research, March 1974.

In this way, the link between participant training and technical assistance objectives is made explicit.

For general analytic purposes, the simple schematic is sufficient. But, for the derivation of specific indicators of impact that one might use in an actual field assessment, it is too abbreviated a representation. One reason for this is that the flow from the achievement of the immediate outcomes to their eventual impact on national goals normally consists of a linked chain of many, many specific events. It is conceivable, perhaps, that a trainee in geology could come back to his country and promptly discover unknown oil deposits that change the economy overnight. But, more typically, an action he takes on the basis of his newly acquired skills will trigger a change in some procedure that will in turn have some modest effect that will in turn cause another person to change his behavior that will in turn . . . etc., etc., etc.

A second complexity that must be considered is that the participant is obviously not the only player who gets into the act. Other elements (people, laws, customs, etc.) interact with the things that he does or tries to do. And these other elements can transmit, increase, decrease, or block the impact of the participant's action.

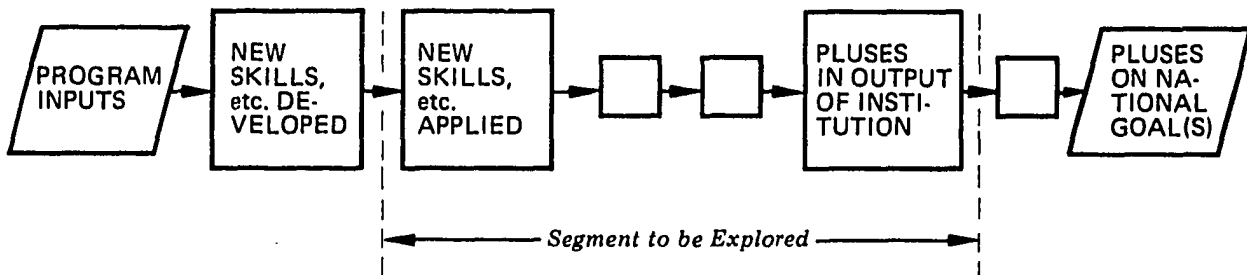
The upshot of these complexities is to create a tug-of-war between the two basic requirements that have to be met in impact assessment, of not only identifying the contributions that have been made to national goals, but of also attributing these contributions to a specified input, such as participant training.

If the checklist used for assessment counts an event such as "participant introduced an evaluation questionnaire into the courses that he is teaching of the type used in the training workshop that he attended" as an indicator of impact, for example, there is no problem in attributing this outcome to his training. But there is a real problem in claiming tangible impact in support of any national goal. If, on the other hand, the indicators are limited to such ultimate outcomes as "developed a new method of sericulture which doubled the amount of silk produced," there can be no

question concerning the importance of the contribution, but there may be great difficulty in attributing part or all of the change to a specifiable facet of the participant training.

The Approach Taken

The AIR approach was based on two strategic decisions. The first of these was that we would concentrate the search for suitable indicators within a fixed segment of the long chain of events that links the training inputs to the ultimate goal of national development gains. The earliest event that we would consider as a potential indicator for purposes of assessment would be an application of a skill or attribute the participant acquired in training to the actual operations of the institution to which he is presently assigned. The most distal event that we would consider as a potential indicator would be a visible change in the output of this institution, in terms of the quality of the services or products that it provides. In schematic form, the following segment would be the one on which we would focus our search:



Events to the right of this segment, we felt, would be too far removed from participant training to permit credible attribution, while events to the left would be too tentative to be counted as contributions. As a rock-bottom minimum, the returned participant would have at least to have applied the presumed training outcome to the improvement of internal job operations.

The second strategic decision was that we would look for indicators in this segment with a search process precisely opposite to that used in earlier participant follow-up studies. Instead of beginning with the outcomes of the training program and looking for their effects in or on the institution, we would begin with the identification of visible improvements or achievements, and then trace these "backward" to their antecedents, if



any, in the training experiences the participant had received. Our first cast of the net would try to surface any and all events that might prove serviceable as indicators for assessment, without reference to their relationships to participant training.

In accordance with these decisions, we proposed a three-step process for developing the indicators required. Step 1 would be to obtain from a sample of former participants and their supervisors, reports of specific improvements that have occurred in the output of the institution or in its operations since the participant's return. Step 2 would be to seek from the same respondents such evidence as they might be able to cite concerning the relationships, if any, of these achievements to experiences during participant training. Step 3 would be to deduce from these data the types of achievements that most effectively straddle the contribution-attribution dilemma, and to fashion these into prototype indicators for impact assessment.

The major product of Phase I was to be the master list of indicators; detailed procedures for applying them in operational assessments would be developed in a later phase, provided that the initial task could, in fact, be accomplished.

#### The Field Studies in Ghana and Thailand

In accordance with the basic study design, the first stage of the data collection process concentrated on the contribution part of the problem. The two major objectives of the survey in Ghana were:

1. To devise a data collection procedure that is efficient and effective in cataloging tangible improvements in the output or operations of the institutions to which returned participants have been assigned, and
2. To apply this procedure to a sufficiently large sample of participants and institutions to identify the kinds of improvements that are most likely to occur and be noted.

One hundred people, at levels at or above senior officer, were interviewed.\*

\*Several data collection approaches were used, but we will be concerned here only with the one which proved most effective; the details are available in the cited Phase I report.

Each participant was asked to report and describe events in which he or she participated (or observed) which were illustrative of his or her major achievements. Reports that did not describe a specific event or that did not meet the minimum criterion of representing a tangible improvement were dropped from the data base. This left a total of 292 usable reports as the major outcome of the study in Ghana. Except for such information as the interviewees volunteered about training antecedents, nothing was learned about the attribution characteristics of the potential indicators that had been assembled.

Overall, the Ghana study demonstrated that returned participants effect a variety of improvements in the output or operations of their institutions, that these impacts can be cataloged by a simple interviewing technique, and that the kinds of impacts that emerge from these data occur with sufficient frequency to be potentially useful indicators for impact assessment. The outcomes, in brief, demonstrated the feasibility of the basic idea.

The design of the Thailand research was based directly on the findings in Ghana. Its two major objectives were:

1. To assemble additional reports of participant achievements, so as to amplify and enrich the set of potential indicators developed in Ghana, and to check the generalizability of these indicators to other cultural settings, and
2. To assemble the best possible information about the antecedents of the achievements reported, to determine which of them reasonably could be attributed to participant training.

In view of the limited information that had at that stage been assembled about the attribution problem, the latter was the crucial objective.

Three types of questions were asked each interviewee. The first was totally unstructured questions about specific achievements since returning from training. The second set of questions asked for achievements, if any, in a number of specified areas that reflected the kinds of impacts most often reported in Ghana. The third set of questions asked for attribution comments on each of the achievements the participant had reported.

A total of 200 additional reports of specific participant achievements was assembled from 34 interviewees. This was approximately double the rate of reports per interviewee that had been achieved in Ghana, and was no doubt attributable to the additional "triggers" to recall that the structured questions derived from the Ghana findings provided.

The kinds of impacts reported confirmed both the comprehensiveness and the generalizability of the catalog of potential indicators developed in Ghana. The Thailand reports produced no indicators that did not fit within one of the categories derived from the Ghana data, and all but one of the Ghana categories reappeared in the Thailand sample. This suggested that the catalog was reasonably complete and that further data collection was not likely to expand it.

Adding the Thailand reports to those collected in Ghana did much to sharpen the categorization, however. With a combined sample of 500 reports, the nature of the potential indicators could be delineated much more precisely, and the initial catalog was modified in a number of important respects. The information on attribution collected in Thailand represented a significant addition to the data base. For, unlike the fragmentary attribution comments assembled in Ghana, each of the achievements reported in Thailand was accompanied by an explicit statement of its probable antecedents.

Overall, the Thailand research confirmed the generalizability of the data collected in Ghana, permitted a more precise definition of the indicators that can be applied in assessments, and established the linkages between achieved impacts and experiences during participant training. In conjunction with the Ghana findings, they provided the raw data for the development of prototype assessment procedures.

#### The Catalog of Participant Achievements

Each of the 492 reports collected in Ghana and Thailand described a certain segment of the impact sequence that was described earlier as a chain of discrete, successive events. Some focused on outcomes at or near the point of impact on national goals. Some reported more intermediate

accomplishments in improving the output, capacity, or operations of the institution in which the former participant works. Some were reasonably broad segments, extending from the point of impact all the way back to participant training; some revealed only a few links of the chain. Each showed a slice of one of the sequences whereby impacts occur, and the main task in the analysis of the data was to sort these slices in accordance with the sequence from which each was snipped, and then to fit the pieces together.

As a first step, we sorted the reports on the basis of the nature of the impact that was the end product of the participant's input or action. In each report we identified the final event of the segment described, and then we grouped the reports that ended in similar types of achievements. We obtained 20 separate groupings, as shown below.

#### IMPACT ON DEVELOPMENT TARGETS

1. Influenced development strategies or emphases, or a specific investment decision
2. Introduced a new agricultural, industrial, or commercial enterprise in the country
3. Developed a local capability for an activity formerly dependent on external resources
4. Discovered a solution or a more promising approach to a significant development problem
5. Stimulated the more widespread adoption of a preferred practice or other desired public response

#### IMPACT ON INSTITUTIONAL OUTPUTS

6. Initiated a new service or program
7. Raised standards of products or services provided
8. Changed rules or procedures to be more responsive to needs of clients
9. Avoid disruption of service by timely action, despite difficulties or risk
10. Performed task that required special effort or skill

11. Improved or expanded dissemination programs, techniques

#### IMPACT ON OUTSIDE SUPPORTS

12. Expanded institution's authority, status, or charter
13. Developed more effective working relationships with local agencies or sources of external aid

#### IMPACT ON INTERNAL OPERATIONS

14. Introduced or expanded the use of analytic, data-based management aids
15. Introduced cost- or time-saving measures, ideas
16. Imposed tighter structure or controls on staff or vendor performance
17. Improved the allocation or organization of responsibilities and functions
18. Upgraded the caliber, capabilities, or morale of the staff
19. Upgraded physical facilities or equipment
20. Improved record-keeping or information retrieval systems

These twenty categories (defined and illustrated in the Phase I report) range from highly dramatic impacts to achievements that do no more than set the stage for impact. But the data suggest that these latter events should not be discounted as indicators of tangible development gains. For impact is a sequence of events and an adequate assessment procedure must tap in at varying places in the chain.

These twenty categories constituted the project's answer to the contribution half of the contribution-attribution problem. But, as end-points of the reported segments, they provide no information about their antecedents, and consequently establish no links to participant training.

### The Impact-Producing Characteristics

To identify the various paths the participants took to bring about these 20 kinds of achievements, we reexamined the reports from this point of view. We found that 464 of them specified the path as well as the result, and from each of these extracted the "impact-producing characteristic," which we defined as the specific skill, attitude, or other resource that the participant brought to the situation to effect the impact reported. Then we categorized the reports a second time, in accordance with these characteristics, and obtained fourteen groupings, listed below.

- A. Technical capabilities, sophistication
- B. Awareness of other possibilities, approaches
- C. Appreciation of nature and magnitude of inputs required
- D. Acceptance of new or expanded objectives
- E. Commitment to principles, convictions
- F. Willingness to take responsibility, act
- G. Data orientation
- H. Goal orientation
- I. Efficiency orientation
- J. Skill in human relations
- K. Familiarity with equipment
- L. Familiarity with workable operating routines
- M. Access to external sources of information or help
- N. Credibility and credentials

If each of these fourteen characteristics could produce each of the 20 types of achievements, there would be a total of 280 separate sequences for which indicators could be developed. But many of these theoretically conceivable sequences are too remote or improbable to be useful for impact assessment. In the existing data base, 111 of the 280 possible sequences were reported, 70 of them two times or more. These 70 sequences were prime

candidates as appropriate foci for impact assessment. But one final question had to be answered: Which of them typically are initiated by an experience provided by participant training?

#### Attributions to Participant Training

Three hundred and fifty-four (354) reports contained sufficient information to permit attribution decisions. On the basis of the attribution information contained in the reports, they were classified into five groups, representing decreasing attributability to participant training. The resulting classification is shown below.

##### I. Reasonably clear-cut links to training

- (a) Specific technique or theory applied
- (b) Specific practice or model adopted
- (c) U. S. source or product applied
- (d) Practical job experience cited
- (e) Incidental skill learned
- (f) Credentials applied
- (g) Before-after changes observed

##### II. Probable links to training

- (a) Technical background cited
- (b) U. S. work style cited
- (c) Timing of the event
- (d) Requirement for technical knowledge
- (e) Conformity of approach to U. S. standard

##### III. Possible links to training

- (a) Claim of increased self-assurance
- (b) Claim of attitude change

##### IV. Doubtful links to training

- (a) Personal characteristics
- (b) Clever ideas

##### V. No links to training

In the data base of 354 reports, nearly 80 percent were classified in Categories I and II.

This analysis added a third dimension to the classification of the reports. At this stage each had been allocated to:

- a. one of twenty categories of achievements,
- b. one of fourteen categories of impact-producing characteristics, and
- c. one of five categories of attributability,

representing three "points" of the impact sequence that it described. An example of a report and its classification is given below.

ILLUSTRATIVE REPORT

Solved problems of cotton spoilage by setting up research study that identified six fungicides as effective cures for the causal disease. Three of these fungicides are now being used and are giving good results.

Credits U. S. journals for information on the specific fungicides that it would be most promising to try.

Classification:

Impact Category	4: Discovered solution to significant problem
Characteristic	M: Access to external sources of information
Attribution	Clear-cut; use of U. S. sources

Reports of this type, classified along three dimensions, were the basis for the development of prototype indicators.

Prototype Indicators for Impact Assessment

Table I summarizes the impact sequences which were most frequently attributable to participant training. There were 36 clear-cut sequences (indicated by X in Table 1) and six which appeared promising (indicated by ? in Table 1). From this analysis, 39 prototype questions were derived, such as

- (7) Have you had any success in encouraging your country's farmers (or other client groups) to invest more time or energy in a particular operation, by convincing them that this is important?

and

- (13) Have you had occasion to detect a technical error or shortcoming that no one else caught, and that you had to take special steps to correct?



Table I

Combinations Most Frequently Attributable to Participant Training

	A : Tech, Soph.	B : Possibilities	C : Requirements	D : New Goals	E : Convictions	F : Take Resp.	G : Data Orient.	H : Goal Orient.	I : Efficiency	J : Hum. Rel.	K : Equipment	L : Routines	M : Sources	N : Credentials
1: Development Decisions				X										
2: New Enterprises		X												
3: Local Capabilities		X												
4: Discoveries/Solutions	X												X	
5: Public Adoption	X	X	X									X		
6: New Programs	X	X	X											X
7: Higher Standards	X		X								X		X	
8: Client Needs				X										
9: Timely Actions						?		?						
10: Demanding Tasks	X												X	
11: More Dissemination	X	X											X	X
12: Institutional Charter														
13: Outside Relations														
14: Data-Based Aids							X							
15: Cost Savings												X		
16: Tighter Controls	X		X				X					X		
17: Organiz. Structure												X		
18: Better Staff	X		X							?		X	X	
19: Equipment											X			
20: Record-Keeping	?		?								?			

These 39 questions formed the master list; it was suggested that actual assessments would use a subset composed of those most appropriate for the sector being assessed. It was also suggested that further development of the procedures might be accomplished in the context of actual assessments; the central objective of the feasibility study had been accomplished.

## I. INTRODUCTION

### Objectives of Phase II

The Phase II scope of work included the following activities:

1. Select two fields or sectors that contain a sizable participant training component on which detailed, diagnostic feedback data would be of special interest to AID and a host country;
2. Prepare, for each of these two training activities, a step-by-step field assessment procedure, based on the prototype methods developed during Phase I;
3. Apply these procedures in one developing country to generate follow-up data on a sample of fifty former participants in each of the two fields selected;
4. Introduce procedural modifications as necessary during the conduct of the assessment and in the subsequent analysis of the results and prepare revised second-generation procedures;
5. Apply these revised procedures in two additional developing countries on samples of former participants comparable to the above;
6. Analyze the results in terms both of their action implications for the conduct of participant training in these fields, and of their further methodological implications; and
7. Prepare diagnostic evaluation reports on the two participant training activities, and a final methodological report that includes materials and instructions for the conduct of regular field assessments.

The first country visited in Phase II would be used to meet the first four of the above targets; this turned out to be the Republic of Korea. This report will describe the Korea study and its outcomes; companion reports will describe the subsequent studies in Brazil and the Philippines.

The field work in Korea was conducted from 10 April 1975 to 8 May 1975. The AIR team responsible for conducting this effort consisted

of Dr. Robert E. Krug, Vice-President of AIR and Washington Office Director, who had been an active participant in Phase I; Dr. Jane G. Schubert, Evaluation Generalist, who had participated in a variety of on-site program evaluations both domestically and internationally, the latter for AID; Dr. Scott A. Bass, Evaluation Generalist, whose professional experience also included program development and evaluation. These team members, in consultation with Project Technical Monitor, Dr. Philip I. Sperling of AID, prepared a preliminary work plan which would, if necessary, be modified to meet field specific conditions. The work plan comprised the following activities:

1. Sector selection. The Phase I findings suggested that regulatory agencies, such as economic planning, and agencies that conducted development-related research, such as agriculture, were very fertile data sources. Since the Phase II study was hopefully to be useful for planning future training by AID, it was desirable to select fields which have planned continued training components. A third requirement, of course, was for a sizable pool of former participants. And, finally, it would ultimately be up to the host governments to approve or disapprove the sectors, so that some estimate of host country interest was made. A review of the Participant Training Directory for Korea (1972) produced a preliminary list of four fields which appeared potentially strong from both a substantive and methodological view. These four fields, containing the highest number of participants, were:

<u>Fields</u>	<u>Number of Participants</u>
Industry	667
Public Administration	637
Education	556
Agriculture	540

Each of these fields included subcategories covering more specialized areas of expertise. Based on the criteria outlined above, our initial decision was to recommend that the agricultural and public administration sectors be selected.

2. Development of assessment procedures. As previously discussed, the Phase I research produced 39 impact sequences which were frequently

attributable to participant training. Prototype interview questions for collecting data on these 39 sequences were developed during Phase I. In preparation for the field assessment in Korea, two subsets of these 39 indicators which appeared to be most appropriate for each field were chosen as a basis for construction of interview questions. It was intended that the specific format and phrasings would be developed in Korea, based on the knowledge available there concerning the functions and positions held by former participants.

Open-ended questions which could elicit any type of impact were developed to learn whether the set of 39 original indicators fairly represented various types of training programs. A set of broader, more panoramic questions directed to all interviewees were designed to collect reports on aspects of the "American experience" which influenced participants upon return to their own countries. Other open-ended questions for all former participants attempted to learn how the participant viewed himself within the context of his total organization and to determine what the individual thought he had contributed to helping his organization achieve its goals.

Alternative interview protocols were assembled so that all appropriate questions could be tried out without requiring any one individual to respond to all questions. By building protocols containing about ten questions each, interviews of reasonable length could be scheduled; by rotating protocols, some data would be obtained for all questions.

A final meeting with the Project Monitor was held on 1 April to review the tentative work plan prior to the AIR team's departure for Korea.

#### Arrangements in Korea

Logistic arrangements were made in a series of meetings with U. S. and ROK officials. The principal contacts were:

1. AID/Korea. Meetings were held with Mr. Michael Adler, Mission Director; Mr. Dennis Barrett, Program Officer; Mr. Kim Ji Tae, Training Officer; Mr. Glenn Lehmann, Economic Advisor; Dr. Mary Neville, Education Advisor; and Mr. Francis Jones, Agriculture Officer.

These individuals briefed the staff on current activities in their areas, established host country contacts to assist the teams in scheduling interviews, and arranged for office space at USAID to conduct interviews, and to provide an operational base for AIR during the field assessment.

2. Ministry of Science and Technology (MOST).  
Mr. Kim Yang Se also described activities in various sectors and, in so doing, guided the final selection of the two substantive fields and the sample selection of the returned participants. He discussed the importance and critical nature of economic planning in Korea; a program-oriented analysis of participant training impact from this sector would be appreciated by MOST because of the concentration of energies devoted to planning national development. Agriculture was a dynamic and active field which received substantial support from the national government in developmental activities. MOST's recommendation to conduct the impact assessment in the agricultural and economic planning sectors was congruent with our inclinations, and the selection was agreed to by all parties.
3. Dr. Shin Se Ho, Director, Office of Planning & Coordination, Korean Educational Development Institute, former AID participant. For the actual assessment, local personnel were required for two reasons. First, the AIR team would benefit from their knowledge of the Korean setting and would thereby avoid the use of inappropriate question formats and other pitfalls. Second, by using local interviewers, we could test the appropriateness of the assessment procedures for use by individuals who did not participate in the methodological design. Dr. Shin, who is familiar with the fundamental technical approach used in the assessment of participant impact, assumed responsibility for recruiting candidates to join the AIR project staff.

Following these meetings, several tasks were begun:

1. A subset of the 39 indicators, one set for each field, was prepared for use during the interviews. The open-ended questions designed to elicit responses which could be additional indicators were added to each subset.
2. Criteria for local personnel selection were more precisely defined, and recruitment procedures were initiated. Materials to be used for

orientation and training were prepared, such as documents which described the technical approach, its application, and potential utilitarian value of the findings.

3. A thorough review of the latest version of the Korean Participant Directory (1972) produced a first cut at sample selection for each area. The AID Training Officer assisted in establishing contact with key personnel within various agencies.
4. A tentative interview schedule was arranged which provided for 100 interviews, each approximately 1 - 1½ hours in length, during the planned three-week study.
5. Data collection instruments were finalized.

With the completion of these tasks, the assessment was launched on 14 April.

## II. DESCRIPTION OF THE SAMPLES

Samples within each of the substantive areas were drawn from the most recently published Participant Directory, Republic of Korea (1972), and the updated lists on file in the USAID Training Office, ROK. Criteria for the sample selection were:

1. Length of training. We tried to select participants with a minimum of six months' training overseas. Training tours of less than six months frequently consisted of observations at various sites, requiring extensive travel with little opportunity to become acquainted with a place or with trainers. Six months overseas residence seemed a minimum time for an individual to be able to take advantage of available resources and to gain experience independent of the more formal course of study.
2. Location. Although it appeared highly desirable to interview respondents living and working in both urban and rural settings, constraints of time and money suggested that travel be restricted to sites located within a few hours of Seoul. Most of the activity in economic planning was located in Seoul. Agricultural experimental stations, where much of the developmental research occurred, were established in and around Suwon, about one hour's drive from Seoul. Two all-day trips were made to Suwon by four interviewers. One all-day trip was made by four interviewers to Taejon, a two-hour drive from Seoul. The high concentration of energy in and around Seoul provided a reasonable sample of respondents.
3. Job level. The samples were drawn from all job levels; the spread ranged from Directors of Ministries to administrative assistants and from Bureau Chiefs to junior researchers.
4. Time of training. The sample included participants who received training any time from the late 1950's and early 1960's through 1974. Close coordination with the Training Office provided an opportunity to expand the data base; updated records of participants who returned to Korea after 1972 increased the number of potential respondents from which to draw a sample.

Tables II-1 and II-2 describe the actual samples interviewed in terms of two of the above criteria: length of training and time of training.



Table II-1. Length of Training as a Participant  
for the Korean Samples

	<u>Agriculture</u>	<u>Economic Planning</u>
Less than 6 months	3	1
6 to 11 months	14	10
12 to 23 months	17	19
24 to 35 months	5	0
36 to 47 months	0	1
Unknown	5	5
Total	<u>44</u>	<u>36</u>

Table II-2. Time of Training as a Participant  
for the Korean Samples

	<u>Agriculture</u>	<u>Economic Planning</u>
Year training began		
1951-55	1	0
1956-60	1	5
1961-65	6	3
1966-67	3	5
1968-69	8	2
1970-71	11	10
1972-73	8	4
1974	1	0
Unknown	5	7
Total	<u>44</u>	<u>36</u>

The target was to obtain 1,000 usable incidents; for planning purposes, 10 incidents per interview was projected and, therefore, 50 interviews per sector was scheduled. As shown in the preceding tables, actual interviews numbered 44 and 36 for the two sectors. However, the number of usable incidents exceeded the targeted 1,000; these data are shown in Table II-3. The average number of usable incidents per interview was 14.4, which produced 1,157 total reported events, which is a quite adequate data base. Several factors contributed to our inability to conduct 100 interviews. Among these were: outdated addresses and inability to obtain current correct address; conflicting commitments which precluded scheduling an interview; job and occupational changes which removed the participant from the sector being studied; the usual miscellany of death, illness, unexpected travel, etc.

The interviews conducted exhausted the population of ex-participants who met the criteria and who were available during the period the team was in Korea.

Table II-3. Distribution of Interviews and Incidents by Sector

	<u>Number</u>
Agriculture	
Interviews	44
Incidents collected	805
Incidents used	693
Average usable incidents per interview	15.75
Economic Planning	
Interviews	36
Incidents collected	478
Incidents used	464
Average usable incident per interview	12.89
Total number of interviews	80
Total number of incidents collected	1,283
Total number of incidents used	1,157

Table II-4 shows the organizational location of the agricultural sample. In addition to these purely descriptive data, a general characterization of the sample would be somewhat as follows.

Most of the respondents would be considered middle management or staff personnel. They did not have upper level decision-making positions; about 40 percent represented the Office of Rural Development, located outside Seoul. The participants frequently held research positions in the experimental stations; their developmental work was laborious and time-consuming. The outcomes were less certain than the inputs; results of their efforts usually filtered up through a chain of command before the effects became known. In those cases where a respondent headed a bureau or division which carried some administrative responsibilities, the principal role was still that of a technical expert in some specific field, such as special crops, livestock breeding, soil chemistry, or fisheries. Administrative

Table II-4. Distribution of Interviews by Agency:  
Agriculture

<u>Agency</u>	<u>Number of Interviews</u>
Office of Rural Development <sup>1</sup>	18
Ministry of Agriculture and Fisheries <sup>2</sup>	6
National Agriculture Cooperative Federation <sup>3</sup>	7
Office of Fisheries	4
National Agriculture Economics Research Institute	2
Ku Il Industry	1
Joang Ang Development Corporation	1
Industrial Site and Water Resources Development Corporation	5
	<u>44</u>
<p><sup>1</sup> Office of Rural Development includes the Livestock Experimental Station, Crop Experimental Station, Institute of Agricultural Sciences, Soil Chemistry Division, Special Crops Division, the Information Center, the Division of Machinery, Evaluation, and Adaptation, Comprehensive Rural Development, Agricultural Engineering, Construction Management Division, and the Horticulture Experimental Station.</p> <p><sup>2</sup> Ministry of Agriculture and Fisheries includes the Agricultural Statistics Office, the Accounting Division, and the Special Regional Development Division.</p> <p><sup>3</sup> National Agricultural Cooperative Federation includes the Foreign Exchange Department, Direct Tax Division, Economic Planning Department, and the Education Department. Although an organizational part of the Ministry of Finance, the respondents are classified within the agricultural sector because of their actual training and functions.</p>	

responsibilities were not assigned to a nontechnically trained individual. Most of the agricultural respondents had limited interaction with other agencies, divisions, or bureaus. The nature of their work and the organizational setting resulted in an encapsulated activity with little outreach.

The training received by the majority of agriculture people lasted at least one year -- long enough to receive a degree, whether B.A. or M.A. Many held Ph.D.'s. Observation tours of agricultural projects were often a component of the degree program or, alternatively, a second overseas trip. As expected, the time when training was received and the level of current

job responsibility correlated highly. A division chief probably received training ten years ago; a junior researcher, perhaps two years ago.

Table II-5 shows the distribution of agencies within the economic planning sector and the number of respondents interviewed in each agency. A profile of the sample follows.

Table II-5. Distribution of Interviews by Agency:  
Economic Planning

<u>Agency</u>	<u>Number of Interviews</u>
Economic Planning Board	13
Ministry of Finance <sup>1</sup>	11
Ministry of Commerce and Industry	2
Other Economic Institutions <sup>2</sup>	8
Korea Investment Corporation	2
	<u>36</u>

<sup>1</sup> Ministry of Finance includes Securities Division, International Tax Appeals Division, and the Financial Stabilization Division.

<sup>2</sup> Other economic institutions include the Bank of Korea, the Korean Trust Bank, the Medium Industry Bank, the Central National Bank, and the Korea Development Bank.

The spread of job functions, responsibilities, relationship to other agencies, and visibility was greater among the economic planners than the agriculturalists. There was a concentration of activity close to the central offices of government. Some of the people we interviewed had direct access to the President, were Ministry heads who established public policies, wrote tax laws, or controlled and directed large banking institutions. Others served as administrative assistants whose decision-making authority was more limited, but who prepared synopses of data for their section chiefs, wrote drafts of policy memoranda, recorded minutes of a meeting, or calculated interest rates.

The Economic Planning Board is headed by a Deputy Prime Minister; it plans on a macro basis and holds the responsibility for the design of

multi-year national development plans. It is established as a supra-ministry. The Ministry of Finance corresponds to the U. S. Treasury Department. Two thirds of our interviews were conducted in these two agencies.

In general, the same high correlation existed between period of training and level of office. Early participants usually held very high government positions; they were decision-makers. Recently returned participants just joined the ranks and did not always return to their former positions. The economic planners interacted with external bureaus and agencies, at almost every level. Many served on committees which were composed of a variety of divisions, within the Ministry of Finance, for example. The mechanism of approval/disapproval for a deputy chief was a complex network involving many people, contrasted to an agricultural researcher.

### III. INTERVIEW PROCEDURES

In Chapter I we described how local personnel would be utilized in conducting the field assessment. In Korea, Dr. Shin Se Ho recruited local staff, on the basis of the following criteria:

1. Education. A Bachelor's Degree in the field of psychology or equivalent work experience. Graduate work would be a bonus, but not essential.
2. Work experience. Interviewing experience would be very desirable; in the absence of such experience, evidence that the individual would be able to think and respond quickly during an interview. Although trigger questions existed, an interviewer needed to follow through with appropriate questions to collect complete data on each reported event.
3. Language. Knowledge and use of written and oral English was critical for communication with the project staff and for completion of the data cards.

Three Koreans were selected to join the field assessment team: Mrs. Yun Jeh Young Choi; Mr. Kim Mahn Kee, and Mrs. Park In Yong. They served as interviewers, assisted in establishing agency contacts and scheduling appointments, and applied the classification scheme to the reports they collected. Prior to using the methodology, the local interviewers received orientation regarding the basic technological approach, read specific resource materials on the "critical incident" technique, and practiced conducting interviews using the protocol designs.

Orientation for local personnel lasted approximately two days. Following the briefings and practice sessions, the entire staff began to interview former participants. Early interviews were conducted as a group; AIR staff conducted the interview while the local interviewers observed and recorded data.

Discussions following the interviews focused on the type of information obtained, the kind of questions asked to acquire the information, the number of impacts mentioned, the reasons why the impacts occurred, and what

proportion of the impacts could be attributed to training. The next set of interviews was conducted by an AIR staff member with one local staff member present who asked a few of the questions. Debriefings were held following each interview; at the conclusion of this set of three or four interviews, an AIR staff member observed one or more interview sessions being conducted by a Korean staff member. The Korean team members then conducted interviews independently; occasionally they joined one AIR staff member on an as-needed basis. All data collected and classified by local interviewers received a critique by an AIR staff member. Necessary changes were discussed with the interviewer; corrective action was taken on-site. Training, therefore, continued throughout the entire field assessment.

All interviews were conducted from 15 April through 3 May 1975. The interviewers chose the location of the interview, either at their respective offices or at the USAID Training Office. Most of the weekday interviews took place at USAID. Saturday interviews generally took place in the interviewer's office. Each interview lasted between one and two hours, with most lasting about one and one-half hours. Data from the interview were recorded on 5 x 8 cards; each card contained: (1) the name of the interviewee, (2) the agency, (3) one incident, (4) the trigger question, (5) the report; and (6) space for three-tiered classification data. The average interview, therefore, occupied about 15 such cards.

While each interview was unique, the general format was not. Each interview began with general introductory remarks explaining the purpose and focus of the interview; these remarks emphasized our interest in job performance and made minimal reference to the participant training experience. Next came the open-ended, unstructured questions which gave the respondent complete freedom to report any type of job behavior which he viewed as being important. Following these, the specific trigger questions for the protocol being used were asked. It was the interviewer's task to follow-up all items which appeared as potential impact statements, with probes designed to elicit the missing parts of the total sequence.

Two other techniques were used to begin some interviews. One simple technique was to ask the respondent to describe briefly his job; as tasks were identified, the interviewer picked up cues which then led to a trigger

question and subsequently to collection of an entire report or event. The second technique was to ask each respondent to examine a page which listed areas in which he might have taken specific action, such as,

- Have you tried to introduce a new commercial venture in your country?

The respondent was asked to place a checkmark preceding any area which described something he had done. In so doing, the respondent suggested the areas of impact in which he was involved; the interviewer then asked trigger questions for that area to collect impact data. The list of impact areas closely corresponded to the original set of participant achievements from Phase I.

The lessons learned from using these techniques, construction of trigger questions, appropriate use of local personnel, recording and analyzing data, and interviewer training are discussed more fully in the report on methodology.

In the following chapters, we turn to the substantive outcomes of the interviews; Chapter IV reports the results for agriculture, Chapter V for economic planning.



#### IV. THE IMPACT OF PARTICIPANTS TRAINED IN AGRICULTURE

In the Prologue, impact was conceptualized as a linked sequence of events which culminates in some measurable improvement in the attainment of a national goal. Our data, which consist of specific examples of achievements reported by former participants, represent a sample of points along such chains. Some reports document an ultimate impact, such as a new variety of peanut which increases yield by 30 percent. Others describe events which occur very early in a chain which may or may not ultimately produce a measurable gain. But if enough of these preconditions for impact occur, as, for example, many mechanisms are developed to disseminate research results, we can be certain that some of these will lead to real improvement, and that each one has such potential.

The Korean participants in the agricultural sector reported 693 events, representing achievements in 19 of the 20 impact categories. Overall, it is fair to say that the support of this training by USAID has made a significant contribution to the impressive gains in agricultural production. In the following sections we will describe (a) the nature of this impact, (b) the impact-producing characteristics, and (c) the extent to which these impacts can fairly be attributed to the participant training experience.

As example of the relationship among these three classes, one of the 693 reports was:

##### Report

Conducted study of marketing conditions of 20 farm products to support recommendation for the establishment of Cooperative Marketing Scheme.

Participant was aware of importance of evidence to substantiate such a recommendation.

He learned about the Cooperative Marketing Act of the U. S. while studying at Michigan State University.

##### Discussion

This was coded as an example of Impact Category 14: Use of data-based management aids

This is an instance of Enabling Characteristic G: Data Orientation

This is an example of Attribution Category 1b: Adoption of a specific U. S. model

### The Nature of Impact

Table IV-1 shows the distribution of reports by impact category. For a more complete description of each category, refer to the Prologue of this document or the Phase I Final Report cited earlier.

Impact on institutional outputs. The largest number of reported achievements was in this subset. Forty-three percent of all events was concerned with improving the quality of institutional products or services, and improved outreach to client populations. Many of the activities require a special effort or skill; sometimes the returned participant is the only qualified person in an office who can perform a certain task. In agriculture, special technical skills are reflected in such activities as:

- Performing an analysis of livestock food composition;
- Designing computer programs for data analyses;
- Designing and constructing special equipment for research on soil erosion;
- Designing research studies to improve the quality of pasture land; and
- Developing a formula to construct an infiltration gallery which catches water for irrigation channels.

Fifteen percent of all the agriculture events show a participant offering skills which were acquired through special training in a specific field.

The improved or expanded dissemination category is even more frequent, accounting for one-fifth of all the reported events. The agriculturists make a major effort to inform people at all levels about what research is doing. Numerous outlets have been created for disseminating the results of their efforts:

- Agriculture extension workers distribute written information to farmers that describes new machinery;
- Extension workers use the information from a recently produced manual to suggest ways in which farmers can supplement their income;
- The ORD Information Center uses the broadcasting system for instructional purposes to provide

Table IV-1  
Distribution of Reports by Impact Category: Agriculture

<u>Categories</u>	<u>No. of Reports</u>	<u>Percentages</u>
<b>IMPACT ON DEVELOPMENT TARGETS</b>		
1. Influenced development strategies...	9	.013
2. Introduced a new enterprise...	6	.008
3. Developed a local capability...	1	.001
4. Discovered a solution...	26	.037
5. Stimulated the widespread adoption...	<u>27</u>	<u>.038</u>
	69	.097
<b>IMPACT ON INSTITUTIONAL OUTPUTS</b>		
6. Initiated a new service...	22	.031
7. Raised standards of products...	21	.030
8. Changed procedures to increase responses to client needs...	12	.017
9. Avoid disruption of service by timely action...	0	0
10. Used special effort or skill...	107	<.154
11. Improved dissemination programs...	<u>136</u>	<u>.196</u>
	298	.428
<b>IMPACT ON OUTSIDE SUPPORTS</b>		
12. Expanded institutional status...	22	.032
13. Developed working relationships with local or external agencies...	<u>59</u>	<u>.085</u>
	81	.117
<b>IMPACT ON INTERNAL OPERATIONS</b>		
14. Introduced data-based management aids...	58	.084
15. Introduced cost/or time-saving measures...	8	.011
16. Imposed tighter staff controls...	17	.024
17. Improved organization of responsibilities and functions...	10	.014
18. Upgraded staff morale...	99	.143
19. Upgraded physical facilities/equipment...	26	.037
20. Improved recordkeeping/information retrieval...	<u>27</u>	<u>.039</u>
	245	.352
<b>Totals</b>	693	.994

lectures on a specific topic, as well as question and answer programs that respond to needs identified by the farmers; and

- Technical reports are published in professional journals or presented at seminars and workshops.

Although the total percentage of events in categories 6, 7, and 8 is fairly low, former participants were responsible for initiating important activities which deserve attention because they substantially altered some established patterns:

- An Economic Analysis Manual is now used by the National Agricultural Cooperative Federation;
- The Earth Resources Technology Satellite Data has been adopted by MOST;
- The design and construction of greenhouses has been improved to grow three rather than one crop per year which is an improvement over the industry standard;
- Regulations were changed to increase credit loans to farmers;
- Public disclosure of the market value of agricultural products was initiated; and
- A formula was developed to determine the amount received by farmers who pool their crops.

Impact on internal operations. Thirty-five percent of the agricultural events are scattered among the seven categories in this subset, which includes events that range from raising staff morale to the purchase of heavy-duty farm machinery. Most events fall into two categories: introducing or expanding the use of data-based management aids and upgrading the caliber, capabilities, or morale of the staff. The five remaining categories in this subset contain fewer reported events: three categories describe activities which reflect administrative concerns; while a research orientation characterizes the other two. An example of the latter set is:

- Purchased equipment that tests the strength of gluten in dough, which, in turn, facilitates the selection of a harder strain of wheat.

Events in the administrative area include:

- Creation of a new filing system to ease the use of files by staff and auditors; and
- Introduction of a daily log to record observations in a fish hatchery. The change to daily observations

rather than weekly observations raised the quality of fish because dead or sick fish were quickly removed from tanks.

Upgrading staff caliber and morale accounted for 15 percent of the total number of incidents. This indicates the multiplier effect of training; the returned participants emphasize training in their own agencies, which results in two kinds of ultimate gains for their institutions. Staff capabilities increase faster as more in-country training occurs, and the reliance on non-Korean sources for technical assistance diminishes. This is a sign of growth for any developing country. Training activities cited by respondents include:

- Teaching data collectors newly acquired interview techniques;
- Assigning specific readings in recently published journals as basis for discussion of new developments in soil science;
- Designing training program for agriculture equipment specialists to introduce new equipment;
- Developing an English composition course for interested department members; and
- Teaching use of computer for analyzing data.

The events, 8 percent of the total in the data-based management category, demonstrate an awareness of the importance of using empirical, objective data in making management decisions. Reported events include such things as:

- Calculation of power rates;
- Surveys of farm households;
- Collection of pre-project baseline data;
- Analyzing data on soil salinity against mathematical models to learn how to alter soil composition in an effort to increase crop production;
- Conducting studies on the current status of livestock feed resources to determine where to focus attention in order to improve the quality of livestock; and
- Adopting a computerized method of solving hydro-project problems.

Impact on outside supports. Returned participants contribute to institutional expansion by interacting with other agencies within the Republic of Korea, as well as external agencies affiliated with foreign governments. Such expansion increases the potential of the institution, thereby providing a broader base upon which to improve services and expand operations. Twelve percent of the reported events fall within this subset. Of the two categories in this subset, developing relationships with other agencies is more frequently represented in the data. Events include:

- Negotiating for an external loan to support research to upgrade the quality of wheat;
- Devising construction plans for supplying fishing boats by cooperating with the Ministry of Commerce and Industry and the Economic Planning Board; and
- Establishing a communication link between the Central Fisheries Cooperative and the Office of Fisheries which initiated both formal and informal contacts for exchanging technical information.

Impact on development targets. This subset of events clearly demonstrates direct impact on national development goals, and contains 10 percent of the reported achievements. The events within the five categories of this subset are more dramatic than those which fall into other categories because they reach beyond institutional activities to national developmental ones. Although only one-tenth of all reported incidents compose this group, their potential consequences and the implications for Korea deserve attention.

Of these five categories, three contain the majority of the events reported. Category 1, influenced the development strategies or emphases, includes such events as:

- Planning a water resources development scheme, including the construction of one of the largest dams in the Orient;
- Implementation of a new peanut variety which greatly increased yield; and
- Revision of policies pertaining to the distribution and production of seeds in an effort to update Korea's seed industries.

Some industrial developments imply expansive changes in Korean growth; new investments reported were:

- The development of an agricultural chemistry manufacturing company;
- The organization of private institutes for sericulture research; and
- Planning the operations of the first supermarket in Korea.

The largest concentration of events in the first subset occurs in categories 4, the discovery of a solution or more promising approach to a significant development problem, and 5, stimulated the more widespread adoption of a preferred practice. The reported events demonstrate achievement in agricultural innovations, such as:

- Developing a peanut variety with an increased yield of 30 percent;
- The development of a new pesticide; and
- The development of a new principle on the movement of salt in the soil which leads to the possibility of removing salt more quickly so as to increase arable land.

Participants as "agents-of-change" report achievements in rural locations, particularly through the agriculture cooperatives and the extension workers:

- Teaching farmers who raise garlic how to cut the bulb from the plant when harvesting and leave the root in the soil in order to minimize space requirements when shipping the product and thereby raising the farmers' income; and
- Encouraging farmers to sell collectively in order to increase bargaining power.

The primary technique used to effect change is teaching and demonstration, most often achieved through the extension worker.

Describing the nature of the impact identifies the end product of a participant's action and tells what he contributed to date. In addition, it suggests something about the potential future impact because, presumably, the participant continues to function, perhaps gaining in responsibilities and capabilities.

We now turn to an examination of the segments of the impact sequence that precede the impact, in order to provide information on "how" the achievements occurred.

### The Impact-Producing Characteristics

Table IV-2 shows the distribution of reports by characteristic. More complete descriptions of these categories can be found in the Phase I Final Report previously cited.

Table IV-2  
Distribution of Reports by Characteristic: Agriculture

	<u>No. of Reports</u>	<u>Percent</u>
A. Technical capabilities	188	.271
B. Awareness of other possibilities, approaches	79	.114
C. Appreciation of nature and magnitude of inputs required	42	.061
D. Acceptance of new or expanded objectives	30	.043
E. Commitment to principles, convictions	3	.004
F. Willingness to take responsibility, act	26	.037
G. Data orientation	69	.099
H. Goal orientation	26	.037
I. Efficiency orientation	27	.039
J. Skill in human relations	49	.071
K. Familiarity with equipment	31	.045
L. Familiarity with workable operating routines	5	.007
M. Access to external sources of information or help	85	.123
N. Credibility and credentials	<u>33</u>	<u>.048</u>
Totals	693	.999

This second major classification traces the path the participant used to achieve the specific impact. These fourteen distinct paths refer to the skill, attitude, or other resource which the participant employed as a tool; they are the impact-producing characteristics.

The table reveals a fairly wide spread of characteristics which contributed to impact. The dominant characteristic is the participants' demonstration of technical capabilities and sophistication, which accounts for 27 percent of the reported characteristics. A participant who cited his technical competence as the way in which he achieved impact referred to knowledge of specific principles or theories, ability to design and conduct research projects, or unique skill in a field of specialization. More often than not, the technical ability was the result of formal education. The characteristic next most frequently identified accounts for 12 percent of



the reports, access to external sources of information or assistance. Eleven percent of the returned participants learned new ways of reaching desired goals and used this information in handling situations. A reliance on empirical data accounts for 10 percent of the reports.

### The Principal Sequences

Table IV-3 combines the distribution of impact categories and the impact-producing characteristics to show part of the impact sequence reported by returned participants. The most dominant sequences are circled; they reveal the most frequent combinations of categories and characteristics. Not surprisingly, of the incidents in Category 10, which required use of a special skill, many were achieved because the participant possessed a technical capability (A). The other frequently cited characteristic was the knowledge and use of empirical data (G). In agricultural research, one should expect a heavy reliance on a well-developed area of expertise and use of data. In Category 11, technical skill (A) was again cited as the tool used to achieve the impact plus the participant's credibility in his field. Individuals used their position and status (N) to reach wide audiences through new and expanded dissemination techniques. Another logical combination emerges between Category 13 and characteristic M; it follows that individuals who develop working relationships with other agencies would be dependent on their knowledge of sources of information for assistance. The next combination also corresponds with what might be expected; participants whose management (14) decisions are based on empirical data cite technical sophistication (A) and an appreciation of the utility of solid data (G) as the key enablers. Those participants who reported incidents of upgrading staff capability and morale (18) credited the knowledge of technical information (A) and skill in human relations (J).

All in all, the impact-characteristic sequences provide a coherent and credible picture of participants' impact in the agricultural sector. The reasonableness of the sequences which were most frequently found suggest that the data base provides an accurate description. The final concern then turns to the extent to which these sequences can be attributed to the training received.

Table IV-3  
 Combinations of Impact Categories and Impact-Producing Characteristics:  
 Agriculture

	A: Tech. Soph.	B: Possibilities	C: Requirements	D: New Goals	E: Convictions	F: Take Resp.	G: Data Orient.	H: Goal Orient.	I: Efficiency	J: Human Relat.	K: Equipment	L: Routines	M: Sources	N: Credentials	Totals
1. Development Decisions	5						1	1					2		9
2. New Enterprises	1	4		1											6
3. Local Capabilities	1														1
4. Discoveries/Solutions	13	4		6		1							2		26
5. Public Adoption	5	8					2	2	2	2	1		5		27
6. New Programs	10	5	1	1			1		1		1		2		22
7. Higher Standards	9	3	3	1		1	2		1		1				21
8. Client Needs	3		1	1			1	1	2	2		1			12
9. Timely Actions															0
10. Demanding Tasks	(32)	(14)	3	3			(23)	2	1	5	3	1	(18)	2	107
11. More Dissemination	(59)	11	8	7		2	4	6	1	3	5		9	(21)	136
12. Institutional Charter			5	5	2	2	2	4	1				1		22
13. Outside Relations	10	6	3	1		1	5	3		8	1		(17)	4	59
14. Data-Based Aids	(16)	7	3				(19)	3	2	2		1	5		58
15. Cost Savings	1	2				1		1			3				8
16. Tighter Controls	1			3		2	4		1	4	2				17
17. Organiz. Structure		2				2	1		4			1			10
18. Better Staff	(20)	10	11	1	1	11	2	2	1	(23)	2		9	6	99
19. Equipment	1	1	4			3		1	2		12		2		26
20. Record-Keeping	1	2					2		8			1	13		27
<b>Totals</b>	<b>188</b>	<b>79</b>	<b>42</b>	<b>30</b>	<b>3</b>	<b>26</b>	<b>69</b>	<b>26</b>	<b>27</b>	<b>49</b>	<b>31</b>	<b>5</b>	<b>85</b>	<b>33</b>	<b>693</b>

Attribution to Training

Table IV-4 shows the distribution of reports by attribution. The combined total of the first two headings credits 52 percent of the reported impacts with a link to experiences during participant training. This is not a bad record considering the gap between the time of training and time of reported impact for some participants. Thirty-five percent of all reports show clear-cut attributability to participant training. The emphasis within this class is on the application of a specific theory or fact which was probably learned in a formal classroom experience, or on the adoption of a specific practice or model. In the latter case, the practice may have been learned in a specific course, or it may have been observed outside the educational setting. In either case, a clear-cut link to the U.S. experience was included in the report.

Table IV-4

Distribution of Reports by Attribution: Agriculture

	<u>No. of Reports</u>	<u>Percentage</u>	
I: Reasonably <u>clear-cut</u> links to training			
(a) Specific technique or theory applied	66	.095	
(b) Specific practice or model adopted	85	.123	
(c) U. S. source or product applied	47	.068	
(d) Practical job experience cited	15	.022	
(e) Incidental skill learned	20	.029	
(f) Credentials applied	5	.007	
(g) Before-after changes observed	7	.010	
	245		.354
II: <u>Probable</u> links to training			
(a) Technical background cited	30	.043	
(b) U. S. work style cited	20	.029	
(c) Timing of the event	12	.017	
(d) Requirement for technical knowledge	49	.071	
(e) Conformity of approach to U. S. standard	3	.004	
	114		.164
III: <u>Possible</u> links to training			
(a) Claim of increased self-assurance	17	.024	
(b) Claim of attitude change	5	.007	
	22		.031
IV: <u>Doubtful</u> links to training			
(a) Personal characteristics	12	.017	
(b) Clever ideas	16	.023	
(c) General education experience	67	.097	
	95		.137
V. <u>No</u> links to training	217		.313
Totals	<u>693</u>		.999

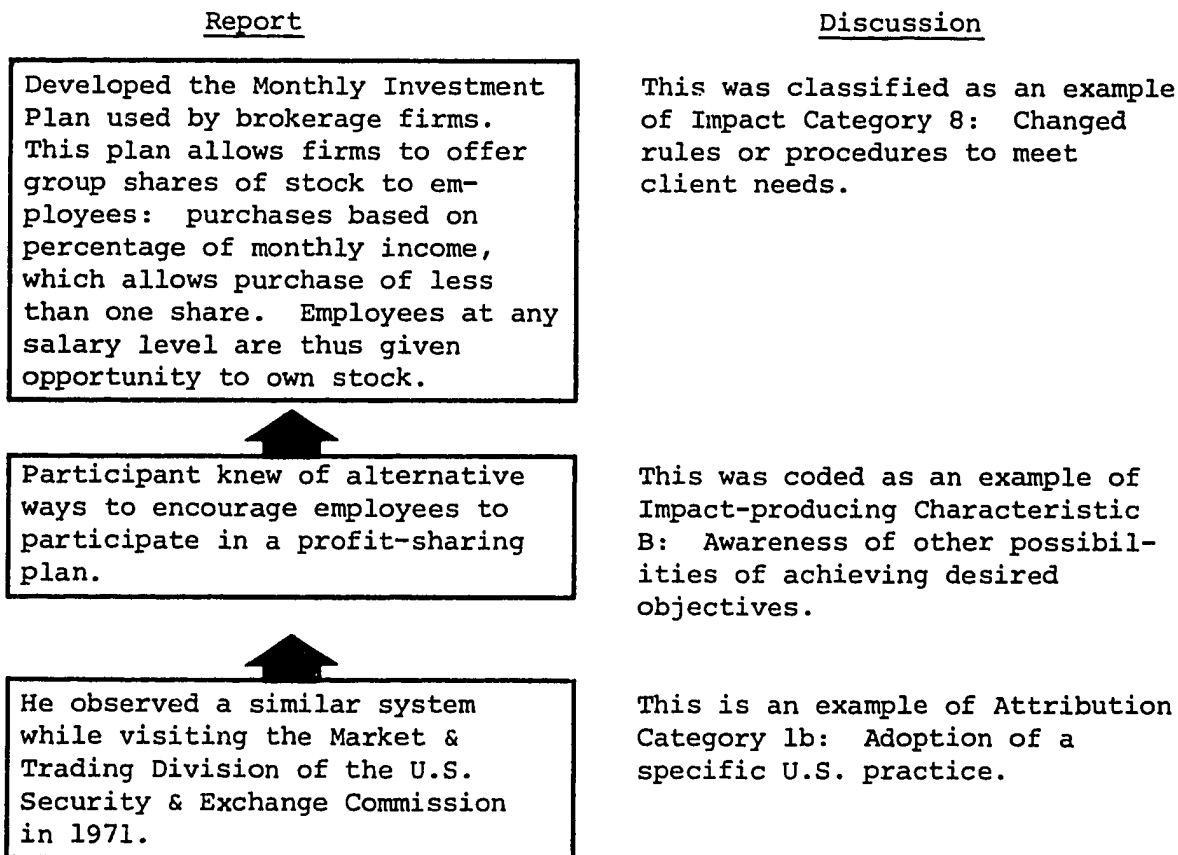
Sixteen percent of the reports are classified as showing probable links to training. The most frequently applied category was the class of events where the achievement itself indicated that an advanced technique had been applied and where the technique was almost certain to have been covered in the individual's participant training.

Thirty-one percent of reported impact showed no link to participant training. This must not be interpreted as casting doubt on the value of the program. To the contrary, it is a surprisingly small percentage, given the nature of Korea and the particular sample studied. Some of the interviewees were very senior people whose participant training occurred many years ago. These senior officials, quite naturally and quite correctly, attribute their recent achievements to the sequence of on-the-job experiences which led to their present position. For many of these reports, there is a link to the early training, but to establish retrospectively the many intervening elements would be an exercise of purely academic interest. If routine follow-up of participants were conducted within one or two years following training, a very small percentage of impacts would be unattributable. A second class of events which are classified as no link to training are those specifically attributed to training in a Korean institution before or after the participant phase. Seoul National University was the undergraduate institution for many of the samples, and many impacts were attributed to specific courses there. In summary, it seems remarkable to find over 50 percent of all impacts attributable to an overseas training program of comparatively brief duration.

## V. THE IMPACT OF PARTICIPANTS TRAINED IN ECONOMIC PLANNING

This chapter presents a discussion of the impacts achieved by former participants in economic planning. Thirty-six Korean participants in economic planning reported 464 events, representing achievements in all 20 impact categories. As in the preceding chapter, the results are described according to (a) the nature of the impact category, (b) the impact-producing characteristics, and (c) the extent to which these impacts can fairly be attributed to the participant training experience.

The following illustration, which is one of the 464 events, shows the relationship among these three classes:



The impacts in economic planning achieved by former participants are impressive. The participants reported events, such as writing international tax agreements, designing a national energy program, creating incentives to encourage private taxpayers to file income tax returns accurately, and initiating the use of a Korean stock price index. The resources used by the participants to achieve these impacts were numerous; they range from a

heavy application of technical capabilities and an awareness of new approaches to reach desired goals, to a reliance on their credentials as a way of meeting objectives. Many links exist between the impacts and knowledge gained as a result of participant training. Interviewees cited a variety of examples of specific models learned in the U. S. which have been adopted to meet Korean situations. Participants often identify special theories or techniques studied in U. S. classrooms which have been applied to Korean settings. A description of the nature of these impacts and their antecedents follows.

#### The Nature of Impact.

Table V-1 shows the distribution of reports by impact category. The categories are described more completely in the Prologue of this report. Participants reported the largest number of impacts within the subset, internal operations, the second highest number within the subset, institutional output.

Impact on internal operations. Forty-four percent of all reported achievements fall within these seven categories; of these, 28 percent represent impacts in the domains of upgrading staff morale and capabilities, and introducing data-based management aids. Participants who cite staff improvement mentioned such activities as:

- Gave lectures to staff members on techniques of market research as one device to instruct staff on proper data analysis;
- Conducted staff seminars on use of regression analysis;
- Established a suggestion box for staff ideas; rewarded staff member whose ideas were accepted;
- Initiated idea of inviting outside experts to lecture staff as part of in-house training; and
- Recommended salary increase for staff so civil service jobs would be competitive with private industry to reduce attrition rate and retain participants in jobs for which they received special training.

The use of empirical, objective data in making decisions about various management actions is reflected in such achievements as:

Table V-1

## Distribution of Reports by Impact Category: Economic Planning

<u>Categories</u>	<u>No. of Reports</u>	<u>Percentage</u>
IMPACT ON DEVELOPMENT TARGETS		
1. Influenced development strategies. . .	34	.073
2. Introduced a new enterprise. . .	9	.019
3. Developed a local capability. . .	1	.002
4. Discovered a solution. . .	5	.011
5. Stimulated the widespread adoption. . .	14	.030
	63	.136
IMPACT ON INSTITUTIONAL OUTPUTS		
6. Initiated a new service. . .	8	.017
7. Raised standards of products. . .	4	.008
8. Changed procedures to be more responsive to client needs. . .	24	.052
9. Avoided disruption of service by timely action. . .	3	.006
10. Used special effort or skill. . .	54	.116
11. Improved dissemination program. . .	36	.077
	129	.278
IMPACT ON OUTSIDE SUPPORTS		
12. Expanded institutional status. . .	13	.028
13. Developed working relations with local or external agencies. . .	54	.116
	67	.144
IMPACT ON INTERNAL OPERATIONS		
14. Introduced data-based management aids. . .	59	.127
15. Introduced cost/or time-saving measures. . .	15	.032
16. Imposed tighter staff controls. . .	24	.052
17. Improved organization of responsibilities and functions. . .	11	.024
18. Upgraded staff morale. . .	69	.149
19. Upgraded physical facilities/equipment	6	.013
20. Improved recordkeeping/information retrieval. . .	21	.045
	205	.442
Totals	464	100.0

- Used an economic rate of return analysis to evaluate granting of bank loans; reduces subjectivity of loan approvals;
- Proposed a floating interest system for foreign exchange loans based on a study of current Korean loan conditions, international and local interest rates. Compared merits of fixed versus floating rates;
- Supplied small-sized business industrialists with marketing analysis information needed prior to starting new businesses so new investments have higher probability of success; and
- Developed guidelines based on Budget & Accounts Law which are used to examine agency budgets prior to recommending adoption by National Assembly.

Impact on institutional outputs. This subset demonstrates improvements in the quality of an institution's products or services, and in their delivery to client populations. The six categories represent fairly ultimate impacts in the sequence from participant training to national development goals. Twenty-eight percent of the reported achievements are included in this subset; of these, achievements requiring the use of a special skill and improving dissemination programs account for approximately 20 percent of the events. Participants who described tasks that required a special effort or skill stated that they:

- Provided technical assistance in constructing a sample design for the Korean National Wealth Survey, 1969-70, and the Wage Structure Survey, 1970;
- Developed a price structure model at EPB to forecast price trends, both short- and long-term; and
- Used a cost-benefit analysis to determine which of three major Korean industries returned the greatest profit with the least investment.

Numerous activities which resulted in an expansion of dissemination programs include:

- Wrote a book entitled "Guide to Foreign Capital Inducement in Korea," which is used by government officials and businessmen as a reference on foreign loan investment;



- Prepared a 100-page booklet, "Outline of Korea Taxes," which is distributed to foreign investors; it outlines tax provisions and exemptions; first of its kind;
- Prepared government notices describing rules and regulations of direct tax law which are forwarded to the Office of National Tax Administration. These notices become the decrees issued by the Ministry of Finance; and
- Prepared pamphlets describing customer services of a private bank to familiarize people with specific banking services.

Impact on outside supports. Fourteen percent of the reported achievements increased the potential of the institution by drawing on other agencies for additional support or resources. In one category, achievements reflect government agreement to upgrade the institutional status of an activity or to create a separate division. A higher number of achievements, however, was reported in activities which involved interaction with external assistance agencies or other local agencies. The following illustrations represent some of the 12 percent of the reported events in this category:

- Coordinated requests among various ministries who seek support from external donors in order to maximize the use of donor support;
- Initiated "open door" policy for foreign investors who have questions about tax provisions to promote foreign investment in Korea by operating an efficient and responsive tax administration; and
- Supplied data to World Bank on Korean production of power tillers so the Bank would consider purchase of such farm equipment from local manufacturers rather than international open bidding.

Impact on development targets. Events classified in this subset represent activities whose ultimate development gain is immediately apparent; they are closer to reaching national goals than any other activities. The 14 percent of the total number of reported achievements included in this subset are the most dramatic of all the events; the most numerous achievements involve policy decisions and account for 7 percent of the events:

- Formulated the International Revenue and Expenditure Finance and Banking Plan, a prerequisite to implementing economic development plans;

- Drafted a regulation for the establishment of a commercial paper company (short-term financing) in order to encourage an increased revenue flow;
- Changed the budget planning system at EPB from three months to twelve months prior to adoption of the budget to allow more rational allocation and planning of government expenditures; and
- Wrote auto taxation law, incorporated under the National Tax Law, that tripled the tax on private cars and reduced the tax on mass transit vehicles. This was done to encourage provision of more transportation facilities to the public.

Describing the nature of the impact identifies the end product of a participant's action and tells what he has contributed to date. In addition, it suggests something about the potential impact which a participant possesses because, presumably, he continues to function in the future as he has in the past.

The antecedents to the achievement provide information on "how" the impact occurred and identify the existing links to participant training. We now turn to the impact-producing characteristics.

#### The Impact-Producing Characteristics

Table V-2 shows the distribution of reports by impact-producing characteristics. A more complete description of these categories is found in the Phase I Final Report previously cited. These 14 distinct paths refer to the skill, attitude, or other resources which the participant used to achieve an impact.

This table reveals a wide spread of characteristics which contributed to impact. The dominant response is the participants' mention of technical capabilities as the resource used to achieve impact; 20 percent of the events are classified in this category. An individual who cited technical competence referred to knowledge of specific principles or theories necessary to perform certain actions. More often than not, the technical ability was the result of experience gained in a formal education program.

Table V-2

## Distribution of Reports by Characteristic: Economic Planning

	<u>No. of Reports</u>	<u>Percent</u>
A. Technical capabilities, sophistication	94	.202
B. Awareness of other possibilities, approaches	62	.134
C. Appreciation of nature and magnitude of inputs required	18	.039
D. Acceptance of new or expanded objectives	19	.041
E. Commitment to principles, convictions	7	.015
F. Willingness to take responsibility, act	19	.041
G. Data orientation	58	.125
H. Goal orientation	20	.043
I. Efficiency orientation	28	.060
J. Skill in human relations	38	.082
K. Familiarity with equipment	12	.026
L. Familiarity with workable operating routines	12	.026
M. Access to external sources of information or help	61	.131
N. Credibility and credentials	<u>16</u>	<u>.034</u>
Totals	464	.999

Approximately 39 percent of the characteristics which produced impact were reported in three categories: awareness of other possibilities or approaches, orientation toward the use of empirical data, and access to external sources of information or help. Each of these three seems compatible with the reliance on technical abilities. If an individual knows about new avenues or ways of reaching desired outcomes, it is plausible that this is part of an expanded technical base. Using data as a basis for planning and decisions seems reasonable if one has developed a specific area of expertise. For former participants to continue to refer to texts or other materials acquired outside their agency and maintain contacts is also consistent.

Table V-3 shows the joint distribution of impact categories and impact-producing characteristics. The most dominant combinations are circled; they show what resources participants used to achieve the highest number of impacts.

Overall, the combinations reveal a heavy emphasis on technical sophistication and data orientation. The following combinations emerge:

Table V-3

Combinations of Impact Categories and Impact-Producing Characteristics:  
Economic Planning

	A:Tech.Soph.	B:Possibilities	C:Requirements	D:New Goals	E:Convictions	F:Fake Resp.	G:Data Orient.	H:Goal Orient.	I:Efficiency	J:Hum.Rel.	K:Equipment	L:Routines	M:Sources	N:Credentials
1:Development Decisions	8	4		5		1	12	1					3	
2:New Enterprises	2	5	1							1			1	
3:Local Capabilities														
4:Discoveries/Solutions		4										1		
5:Public Adoption	3	2		1	1	1	1	1				2	2	
6:New Programs	1	1	1	2					2			1		
7:Higher Standards	1		1				2							
8:Client Needs	4	5	3	2	1	1	1	2	2	1	1		1	
9:Timely Actions			1		2									
10:Demanding Tasks	23	4	1	2	1		11			1	1	1	8	1
11:More Dissemination	16	6			1			1					5	7
12:Institutional Charter	1		2	3		4		3						
13:Outside Relations	15	4	1	1		1	2	8	1	9			8	4
14:Data-Based Aids	7	7					22	3	5		2		12	1
15:Cost Savings	1	5					1		4		4			
16:Tighter Controls	2	4	2		2	2	3	1	1	2	1	3	1	
17:Organiz. Structure		2				3			6					
18:Better Staff	7	8	4	2		6	1	1	1	24	1	3	8	3
19:Equipment	1	1	1								1		2	
20:Record-Keeping	2						2		5		1	1	10	
TOTALS	94	62	18	18	8	19	58	21	27	38	12	12	61	16

1. 1.G., 10 A. & G. These suggest that participants rely on an empirical basis for decision making; investment decisions are supported by rationales.
2. 11.A. This suggests something about the nature of the dissemination effort; technical expertise is applied to reaching a broader clientele. Increased visibility for the economic community has resulted from publication of pamphlets and brochures that convey services now available to the public.
3. 13.A. Participants often rely on their technical skills during conferences and negotiations with agencies, such as the World Bank, or in planning interagency projects.
4. 14.G., & M. The participants rely on various types of data for planning or decision-making. Resources often used include materials from other countries, especially when introducing new policies and procedures.
5. 18.J. This combination implies that participants depend on their human relations skills to upgrade staff morale and, to some extent, their capabilities. An understanding of rewards and incentives which promote effective performance is one aspect.

We now have some understanding of the kind of impact for which former participants are responsible and how the participants achieve these impacts. The question which is now addressed is: Which of these impacts have been initiated by an experience linked to participant training?

#### Attribution to Training

Table V-4 shows the distribution of reports by attribution. A five-point scale of attributability was used for this classification, ranging from the clear-cut links to participant training to no link at all.

Of the total of 464 reported achievements, 38 percent can with confidence be attributed to participant training; 43 percent reveal no possible attribution. It should be noted that while the attribution information included in the first two categories leaves no doubt that the participant used knowledge or skills gained during the training experience, the reports included in the fifth group do not suggest that these kinds of impacts could never be the result of participant training. It is simply that for these particular reports, the antecedents lay elsewhere.

Table V-4

## Distribution of Reports by Attribution: Economic Planning

	No. of Reports	Percentage	
I. Reasonably clear-cut links to training			
a. Specific technique or theory applied	21	.045	
b. Specific practice or model adopted	44	.095	
c. U.S. source or product applied	23	.049	
d. Practical job experience cited	3	.006	
e. Incidental skill learned	6	.013	
f. Credentials applied	1	.002	
g. Before-after changes observed	6	.013	.223
II. Probable links to training			
a. Technical background cited	17	.037	
b. U.S. work style cited	8	.017	
c. Timing of the event	5	.011	
d. Requirement for technical knowledge	32	.069	
e. Conformity of approach to U.S. standard	10	.021	.155
III. Possible links to training			
a. Claim of increased self-assurance	10	.021	
b. Claim of attitude change	3	.006	
c. Additional training other than U.S.	0	0	.027
IV. Doubtful links to training			
a. Personal characteristics	10	.021	
b. Clever ideas	9	.019	
c. Other educational experiences	57	.123	.163
V. No links to training			
		<u>199</u>	<u>.429</u>
Totals	464		.997

Within the 38 percent of the impacts attributable to participant training, 22 percent demonstrate clear-cut attributability. In this group, impacts were credited to the application of a specific technique, theory, or fact that was learned in a formal classroom setting. Frequently, participants cited the name of the course where the technique was learned; almost always the particular institution was credited. Ten percent of the participants identified a practice observed in the United States which served as a model for stimulating a change resulting in impact. Often the adoption of a specific practice stemmed from something a participant saw during an observation tour in the U. S. Another obvious link to participant training was made if sources of information or products from the U. S., which the participant learned about during training, were used in achieving impact.

Approximately 16 percent of the impacts attributable to participant training were grouped as having probable links. If a participant did not refer to a specific course where he received training, but rather to a

general technical background which was traced to the U.S. experience, one can reasonably assume the existence of a link between the impact and training. Similarly, if the nature of the achievement suggested that an advanced skill or technique was applied, and if the technique would normally be included in the training, it was classified within this group.

Forty-three percent of the reported impacts reveal no direct link to participant training. Caution should be exercised in judging the program by this number. It is possible that many of these impacts could be the result of participant training; we simply have information which suggests that they are not so attributed. Almost 50 percent of the former participants in economic planning received their training prior to 1970; many of these senior people attribute their reported events to their professional experience. Quite possibly, a link exists between their present impact and their early training, but for a variety of reasons, those links were not established. As in the agricultural sector, many attribution statements credit in-country training experience with impact achievement.

## VI. THE STUDY IN KOREA: A SUMMARY

The study in Korea provided important information which was useful in making revisions prior to conducting the remaining two field assessments. Our conclusions, based on this information, are summarized below:

Using local interviewers. The study demonstrated the feasibility of using local interviewers to collect and classify data. The three Korean interviewers collected a total of 419 reports, of which approximately 85 percent were usable. This is a commendable achievement, considering that the interviewers had no prior familiarity with the methodology and were allowed a very short time to learn about it. The AIR staff conducted an orientation for local staff on the assessment procedures; however, AIR inputs were required throughout the entire study to monitor and provide feedback to the local team on the type of data needed for each report and on the use of the classification scheme. The necessity for such input suggested that the form and structure of the orientation phase should be revised for the remaining two studies in order to reduce the need for AIR monitoring. The goal would be to design an orientation which would permit the local interviewers to operate independently. The revisions which were made resulted in a more structured orientation to the overall assessment procedures. The materials which were developed included an introduction to the purpose of the study, a detailed description of an incident report that begins with the statement of impact and proceeds step by step to show what an impact-producing characteristic is and what information demonstrates attribution. In addition to the detailed description, examples were provided for each component of the incident report, as well as exercises which allow the interviewer practice in recognizing the appropriate information. The orientation package also contained practice interviews and instructions for completing the event reports and for classifying each report on the three dimensions.

Interview procedures. One interview technique was revised. The list of 21 areas given to each interviewee, and on which a participant checked those in which he had taken some specific action, was rewritten and condensed to 14 areas. The respondents had difficulty with the initial version and the revised form was designed to eliminate these problems. The rest of the interview strategies, described in Chapter III, remained unchanged.



Assessing impact by studying sectors. Selecting sectors that have a sizable participant training component provided detailed data which appears to be more meaningful than that provided by a random sampling of former participants. The data permit some fairly confident statements about the type and magnitude of the impact that has been achieved by former participants in attaining Korea's development goals in agriculture and economic planning.

The results of the study reveal that the contribution of USAID toward the achievement of these development goals is considerable. Despite the span between the time of participant training, and the span is considerable for some, almost 50 percent of the reported impacts can be attributed to the participant training experience. It is important to note that when participants cite achievements they have accomplished, they are supplying useful indicators of potential impact, as well as a documented account of impact already achieved.

The findings disclose some interesting outcomes in terms of the achievements in each sector. Participants in both sectors reported the highest number of achievements in the same impact categories: (1) building staff capabilities and morale, (2) using data-based management aids, (3) performing a task that required a special skill, (4) expanding dissemination programs, and (5) developing more effective working relationships with both local and external agencies. Participants in both sectors also credited the same skills or resources when citing the impact-producing characteristics: (1) technical skills, (2) awareness of other alternatives, (3) use of external resources, and (4) use of empirical data. The two sets provide a capsule description of the products of participant training and the processes used to produce them.

\* \* \* \* \*

This report is one of five separate reports resulting from Phase II. The companion reports on the country studies conducted in Brazil and the Philippines have also been prepared. A fourth report presents an analysis of the two sectors, independent of the findings peculiar to each country. It represents an attempt to synthesize what was learned about two sectors in three countries. This report also contains detailed tabular data showing the distribution of reports by achievement, attribution, and impact-producing characteristics. The Final Report assembles documents and instruments to be used by local interviewers and comprises the evaluation kit that can be used to conduct field assessments in the future.