

**FINAL REPORT OF AN
R & D INSTITUTE EVALUATION WORKSHOP**

**Presented to
Lembaga Ilmu Pengetahuan Indonesia
(Indonesian Institute of Sciences)**

**By the
Denver Research Institute**

**LEMBAGA ILMU PENGETAHUAN INDONESIA
Jakarta, January 1981**

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The Workshop Received Support from the Government of
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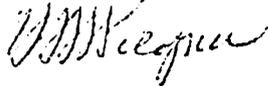
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Written by

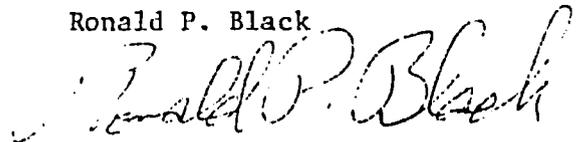
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Approved by

Ronald P. Black



September 30, 1980

Foreword

What follows is a "Final Report" of the purposes, parts and products of a management workshop on "R&D Institute Evaluation" sponsored by the Lembaga Ilmu Pengetahuan Indonesia (LIPI), and conducted by the Denver Research Institute. It transpired for the first 10 days of September, 1980 in a comfortable resort in Java.

This Final Report is written by the Denver Research Institute. It is comprehensive and, we hope, objective. Any biases which have crept into it reflect only the points of view of its authors.

They designed and delivered the Workshop. They also enjoyed the whole process, not the least because of the generosity, curiosity and sincerity of the Indonesian hosts. In particular they wish to thank Mrs. Achie Luhulima, Special Assistant to the Chairman of LIPI, for her professional prowess and personal warmth.

Hugh Russell
Hale Wagner
September, 1980

TABLE OF CONTENTS

Chapter I - Introduction	
Comments of the Chairman of LIPI	2
Background and Purpose of the Workshop	3
Sponsor of the Workshop	3
Workshop Participants	3
Background on Indonesian R&D Institutes	4
Chapter II - Workshop Design	
Eight Technical Areas	6
Adaptation Model and Brainstorming	6
Workbook	8
Facilities	9
Evaluation Through Adaptation and Follow-Up	10
Chapter III - Workshop Contents	
Evaluation of R&D Institutes	13
Evaluation of Financial Administration	16
Evaluation of Programs Needs and Opportunities for Diversification	18
Evaluation of Institute Facilities	20
Evaluation of General Administration	21
Evaluation of Technical Activities Administration	23
Evaluation of Staff Capabilities and Personnel Administration	24
Evaluation of Technical Productivity	25
Integrating Evaluation	27
Chapter IV - Workshop Results	
Participant Involvement	30
Participants' Reactions	32
Participants' Adaptation of Evaluation	36
Workshop Follow-Up	37
Chapter V - Lecturers' Reactions and Recommendations	42
APPENDIX A - List of Workshop Participants	
APPENDIX B - Participant Reaction Form	
APPENDIX C - Workshop Agenda	
APPENDIX D - Adaptation of Financial Administration Evaluation Guidelines	
APPENDIX E - Adaptation of Guidelines for Assessing Program Needs and Areas for Diversification	
APPENDIX F - Adaptation of Facilities Evaluation Guidelines	

- APPENDIX G - Adaptation of General Administration Evaluation
Guidelines
- APPENDIX H - Adaptation of Guidelines for Evaluating Technical
Activities Administration
- APPENDIX I - Adaptation of Guidelines for Evaluation Staff
Capabilities Assessment and Personnel Administration
Techniques
- APPENDIX J - Adaptation of Guidelines for Evaluating Technical
Productivity
- APPENDIX K - Adaptation of Guidelines for Integrating Evaluation
- APPENDIX L - Make-Up of Groups for Discussion of Evaluation
Adaptation
- APPENDIX M - Glossary of Evaluation Terminology

Chapter I

INTRODUCTION

Comments of the Chairman of LIPI

Background and Purpose of the Workshop

Sponsor of the Workshop

Workshop Participants

Background on Indonesian R&D Institutes

INTRODUCTION

Comments of the Chairman of LIPI

Professor Bachtiar Rifai, Chairman of the Indonesian Institute of Sciences (Lembaga Ilmu Pengetahuan Indonesia -- LIPI) formally opened the Workshop on R & D Institute Evaluation on the 1st of September 1980. In his opening speech he emphasized the importance of mastering the techniques and methodologies of evaluation, because evaluation - as one of the basic elements in the process of management - is usually rather weak.

In Indonesia, there are certain basic criteria which should always be used in evaluation. First, is the Basic Policy of the Nation, known as GBHN. Second, is the Five Year Development Plan known as REPELITA. Third, is the Plan of Action of the agency or institution concerned.

Professor Bachtiar Rifai also formally closed the Workshop on the 10th of September 1980.

Background and Purpose of the Workshop

During the days of 1-10 September 1980, the Denver Research Institute (DRI) delivered an in-depth R&D Institute Evaluation Workshop to 28 of Indonesia's science and technology leaders. The Workshop was designed to increase the capabilities of participants to build modern evaluation principles and guidelines into their own management practices.

The Workshop was one in a series of management training and consultation events provided by DRI to the Government of Indonesia through a contract with the United States Agency for International Development. An earlier seminar on evaluation was presented in 1978. It dealt with the philosophy, history and principles of program and project evaluation. The 1980 Workshop provided working guidelines for R&D institute evaluation through reliance on Indonesian presentations and small group efforts to create and adapt techniques to individual environments.

Sponsor of the Workshop

The Workshop was sponsored by LIPI as part of its continuing effort to further scientific and technical development in Indonesia. The Workshop was made possible by a loan agreement between the Government of Indonesia and the United States Agency for International Development. DRI, as principal contractor for the Workshop, was responsible for determining the Indonesians' specific needs for training and evaluation, planning and coordinating all aspects of the Workshop with LIPI, administering the Workshop and drafting the Final Report. Portions of the workshop design, materials development and delivery were subcontracted to Michael Tucker and Associates, a Colorado-based firm which specializes in international education, training and research. Portions of the Workshop principles and guidelines, workbook, lectures, special exercises, small group discussion problems, and stand-up delivery were handled by Evaluation Associates, a Michigan-based consulting firm which specializes in evaluation.

Workshop Participants

Workshop participants were invited from Indonesia's leading R&D institutes. They included directors, assistant directors, senior researchers, research workers and staff assistants. Their technical specialties ranged widely. They included systems analysis, nuclear engineering, radiation

chemistry, medicine, fisheries, public health administration, physics, pharmacy, international relations, electrical engineering, political science, documentation and information technology, instrumentation and standardization, financial management, social psychology, organic chemistry, planktonology and remote sensing.

The participants ranged in age from approximately 25 to 55 years, and professional experience in R&D institute management ranged from 2-30 years. The extreme diversity in rank, age, experience and technical specialization generated some difficulties in gearing the Workshop to all participants' needs. However, those few difficulties were overshadowed by the enrichment offered by these same factors. Since the Workshop was designed for maximum Indonesian participation, the diversity of experiences and interests stimulated new relationships among Workshop participants, challenging discussions and creative ideas for improving R&D institute management. The participants are listed in APPENDIX A.

Background on Indonesian R&D Institutes

Indonesian R&D institutes are principal instruments for scientific and technical development in the country. Almost every Ministry of Government has R&D institutes associated with it. And there are also a number of "non-ministerial agency" which coordinate special areas of science and technology throughout the Government. Most of the R&D institutes represented by Workshop participants depend largely on heavy Government support. Very few of them work on projects funded by contracts or grants from outside the Government of Indonesia.

Therefore, the R&D institutes represented by participants did have a number of characteristics in common: (1) they all function in support of the country's long-range development plans; (2) they all use similar program planning methods; (3) they all adhere to standardized Government guidelines for budgeting and accounting; and (4) they all operate with the same system for personal and staff mobility.

Chapter II

WORKSHOP DESIGN

Eight Technical Areas

Adaptation Model and Brainstorming

Workbook

Facilities

Evaluation Through Adaptation and Follow-Up

Eight Technical Areas

Eight technical areas were chosen to comprise the breadth of the Institute evaluation. These, chosen from the United Nations Publication "Guidelines for Evaluation" are as follows:

- Financial Administration and Accounting Systems,
- Technical Productivity,
- Staff Capability,
- Facilities,
- General Administration,
- Program Needs and Opportunities for diversification,
- Technical Activities Administration,
- Personnel Administration.

UN

The/ppublication was provided to each participant as a basic text.

The Workshop focussed sessions on each of these areas. Time limitations required that staff capabilities and personnel administration be combined in a single session.

The discussions of institute evaluation in each of these technical areas was preceded by an introduction to the general evaluation process. The last session of the Workshop also afforded opportunity to bring the separate discussions of eight technical areas together in a discussion called "integrating evaluation."

Adaptation Model and Brainstorming

The Workshop was designed to be participative in nature, using four basic training processes for each technical area. The design of the four basic elements was as follows:

- Technical Area Review and Evaluation Principles. A review of the technical area and establishment of the elements of the evaluation processes that would be applicable to that area.
- Guidelines Development. This aspect introduced various techniques, variables, criteria, and instruments which could be used to assess the vital components of the technical area under discussion.

- Indonesian History and Needs. A presentation of the Indonesian methods of management and needs for evaluation for each technical area. The history and evaluation experience were to be reviewed and operational peculiarities of the Indonesian management environment discussed. These presentations were made by Indonesian faculty and participants.
- R&D Institute Adaptation. An opportunity for the Workshop participants, special Indonesian faculty and the instructors to work together in adapting the management questions, the evaluation of objectives, the criteria and instruments for the participants' Institute evaluation needs. In this session, the participants prepared specific evaluation models and a set of evaluation tools as well as a plan for implementation for each technical area.

This "adaptation model" provided participants the opportunity to acquire basic evaluation principles and guidelines for each technical area provided by the Workshop lectures. It then afforded them the opportunity to assess their own experiences and needs for evaluation in each technical area, led by a senior R&D institute manager. Finally it permitted them to adapt the principles of guidelines for a working evaluation plan which related to their specific institute requirements.

The model cycled completely each day of the Workshop. In morning sessions participants learned new evaluation principles and guidelines for a technical area of institute management. In the afternoon they assessed their own experiences and evaluation needs for the technical area. They closed the day with a small-group exercise to develop an adapted evaluation plan for their own institutes, in the pertinent technical area. Daily repetition of the model provided an important continuity to the overall Workshop process. It also gave participants practice with the basic evaluation process; viz., state the management problem, determine its primary components, develop criteria for assessing them, design the instruments, and plan the evaluation.

The lecturers reviewed small-group work overnight and orchestrated a summary and criticism of the previous day's work at the start of each day. Sometimes this led to re-writing by the small groups. But eventually, a team of typists prepared the output of each adaptation session for general

distribution to all participants. This output yielded the main products of the Workshop and as such, the primary mechanism for assessing Workshop effectiveness in stimulating participants to adapt evaluation principles and guidelines to their own needs.

The participants were coached and practiced in the mechanisms of "brainstorming" for both general sessions as well as small-group adaptation sessions. The technique was very important not only as a tool for generating new and useful ideas, but also as a mechanism for breaking down barriers to open discussion.

Workbook

Two versions of a Workbook were designed to guide the Workshop through all phases of the program. They contained sections for the introductory material, the final summary and integrating material in each technical area. Each technical area section provided a sample set of evaluation questions about the technical area and the Workshop objectives for the session. Lecture keyword outlines, diagrams and sample criteria and evaluation instruments were also provided. They were duplicated for Lecturer's Workbooks, Participants' Workbooks and overhead projection. The Lecturer's Workbooks contained additional material on lecture topics as well as special guides for participants' discussion.

Each technical section concluded with a form designed to stimulate the participants in their daily small-group adaptation exercise. It provided spaces for recording their adapted criteria, instrument and evaluation plan, adapted for their institute, for each technical area.

Finally, the last section of the Workbook provided instructions and spaces for completing an integrated evaluation plan for the entire institute. It was printed on watermelon colored paper in order to permit differentiation from the exercises at the conclusion of each technical area.

The agenda, background information on the instructors, and an introductory statement about the purpose of the Workshop were presented at the front of each Workbook.

Facilities

The facilities for this Workshop were excellent. It was staged at Evergreen Resort, in the mountains of Puncak (Tugu) above Bogor in Java. The Resort is comprised of a restaurant, numerous recreation areas, meeting halls and small cottages or bungalows for guests. All Workshop participants, faculty and lecturers were housed in comfortable bungalows. Breakfasts and dinners were catered to the bungalows by restaurant staff. The Workshop people ate lunch together on the verandah of their meeting hall.

The meeting hall, Sunshine Palace (Surya Sentana), was a large one-story hall with offices and service facilities located on one side. A large verandah fronted the hall and provided space for relaxed conversation and catered lunches. The hall itself was large enough to seat all participants for plenary sessions as well as provide five break-out spaces for small-group adaptation sessions.

Participants were seated behind two rows of tables arranged in V-shapes. The lecturers' tables, white boards and overhead projection equipment spanned the base of the V. All tables were equipped with microphones and name plates for the participants. A spotlight illuminated the white boards. Each break-out area was equipped with a conference table, chairs and a black board or white board. These facilities provided all the flexibility and adaptability of space and equipment that is needed for a workshop like this one.

The Workshop was supported by a team (six people) of LIPI workers who supervised all arrangements, daily cleaning and preparation of the hall, nightly typing and reproduction of the day's deliberations, and guided tours of the resort and environs for participants and lecturers who occasionally felt the need to exercise muscles as well as brains. Additionally, the Workshop Coordinator changed the seating arrangements of the participants so that each day presented the opportunity for establishing new relationships among them.

Finally a LIPI automobile and driver was available for official use of all Workshop people. The net result was a very efficient Workshop--at least where facilities were concerned. Further, the closeted atmosphere of the mountain resort helped put everyone on equal footing with increased group intracommunication. It also increased attention span and concentration on the Workshop materials and assignments.

Evaluation Through Adaptation and Follow-Up

Evaluation and follow-up are two of the most important phases of a management development program. Therefore, two evaluations of this Workshop were conducted. A third is recommended. These evaluations exist at three levels:

- the reactive level
- the learning level
- the behavior level

To evaluate the Workshop on the reaction level, the evaluation form in APPENDIX B was designed. Results are summarized in a later segment of this Final Report. It is recognized that this kind of evaluation is subjective in nature and cannot be taken as an absolute measure of the success or failure of the Workshop. However, it has potential utility for guidance of future workshops.

Since the Workshop sessions were highly participatory in nature, individual evaluations of each technical area were not conducted. However, the results of each small-group adaptation session were utilized in a learning-level evaluation. The results of this evaluation are summarized in the discussion of the eight technical areas as well as the Workshop Results section of this Final Report. They are shown in APPENDICES D-K.

The behavioral level of evaluation is based on the changes that may occur in the conduct of each participant to the Workshop in the long-range future. Their immediate reactions have been evaluated. Intermediate and long term evaluation can only be accomplished by follow-up methods. It is therefore recommended that a follow-up evaluation be conducted.

The Workshop participants should be polled at least twice in the next two years to determine:

- how they are using evaluation in their R&D Institutes;
- what aspects of the Workshop were most and least useful;
- what kinds of evaluation assistance they would like to obtain in the future.

Polling could be done by a number of methods: mail or telephone interviews with highly structured questionnaires; telephone or personal inter-

views with semi-structured questionnaires; or in-depth personal interviews and case write-ups by on-site visits. We recommend the latter approach because it provides the most comprehensive kinds of information; it allows for the most individual variation in participant reaction to the Workshop; and it permits the most thorough assessment of needs for more evaluation in other forms of management assistance.

The evaluation should be completed in two phases, at 8 and 18 months after the Workshop. Personnel of LIPI or perhaps an ad hoc committee of Workshop participants themselves could complete this evaluation. However, DRI should participate in its design and direction, if not implementation. It would also be desirable to have the evaluation directed, on-site, by the Workshop lecturers.

Workshop participants were encouraged to think of evaluation as a tool for improving R&D Institute performance--not just a mechanism for measuring final performance. By the same token, evaluation of this Workshop should be keyed to Workshop follow-up activities. Follow-up was a major topic of discussion during the last session of the Workshop. Results are discussed later. But let us go on record herein that the impact of this Workshop will be greater if it is considered only the first step in many attempts to improve evaluation implementation in Indonesia's R&D institutes. Therefore, one evaluative criterion will have to be the amount of follow-up activity generated by LIPI and participants in the coming months.

The entire Agenda for the Workshop is shown in APPENDIX C.

CHAPTER III

WORKSHOP CONTENTS

Evaluation of R&D Institutes

Evaluation of Financial Administration

Evaluation of Program Needs and Opportunities for
Diversification

Evaluation of Institute Facilities

Evaluation of General Administration

Evaluation of Technical Activities Administration

Evaluation of Staff Capabilities and Personnel Administration

Evaluation of Technical Productivity

Integrating Evaluation

EVALUATION OF R&D INSTITUTES: PRINCIPLES AND GUIDELINES

The Evaluation Process

What is R&D Institute Evaluation? A management tool for making judgements about the success or failure of an R&D Institute, or any part of the Institute's programs and operations, on the basis of specified questions, criteria, instruments, data and interpretation.

This definition provided a basis for discussion of the principles of evaluation in general. The lectures emphasized that evaluation is only a tool for managers, much as personnel procedures and accounting are management tools.

The purpose of evaluation is to help managers make their decisions, or judgements, more reliably and validly. But they must still make the final judgements. Evaluation cannot do it for them.

A manager commences the evaluation process by converting a management problem into evaluable questions. For example, a manager faced with financial problems may want to ask such questions as:

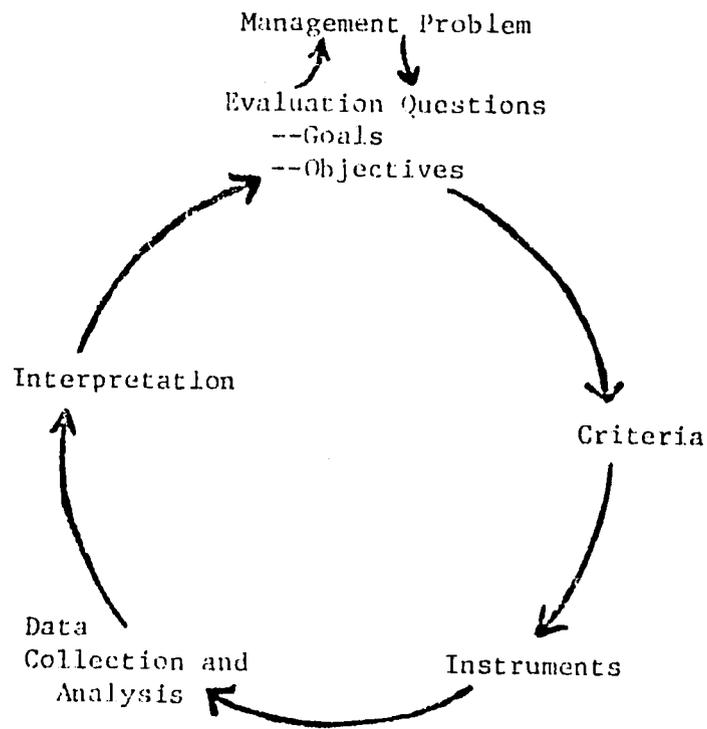
- How have my gross income and costs changed in recent years?
- How much money should I seek for my development budget next fiscal year?

Criteria which provide a factual basis for answering these questions must be specified. For example, the two questions asked above may be evaluated if data are collected for the following criteria: gross income, development income; routine income; gross expenditures; costs per project; costs per program sector; and other financial statistics.

Data for each criterion must be collected. The means of collecting and recording them is known as the evaluation instrument. For example, an accountant's balance sheet could be considered an instrument if it contains the desired information. Many times a special instrument must be designed by the evaluator.

Data collection is followed by analysis; and many times a special statistic may be designed to help understand the meaning of the data. For example, the financial evaluation may be aided by a graphical extrapolation of trend data on costs and income.

Interpretation of the evaluation results is the last step in the evaluation cycle. Quite obviously, it must relate to the original evaluation questions or the job has not been well done. The entire evaluation cycle may be visualized as follows:



Why Are Evaluations Done

Evaluations are done for many different reasons at many levels of the Institute hierarchy. For example, the Director General of the Institute may be concerned about whether the Institute facilitated the achievement of national goals as reflected in the country's long-range development guidelines-- Garis-Garis Besar Haluan Negara (GBHN).

The Institute Chairman may be concerned with annual achievement of Institute objectives. Administrative executives may wish to assess the efficiency and effectiveness of Institute operations procedures. Project directors may wish to assess whether they have fulfilled project goals and objectives.

The Workshop participants developed a number of purposes for evaluation including the following general ones:

- Institute Impact on national goals
- Resource allocation--including manpower, finances and materials

- Program sector priorities
- Program, and/or project, planning priorities
- Project progress and effectiveness
- Management operations effectiveness

A Few Critical Evaluation Principles

Judging quality of any project, program component or administrative process is most often difficult because:

- qualitative criteria which can be specified in quantitative and measurable terms are hard to find; and,
- it is often difficult to obtain agreement among all parties about the most appropriate qualitative criteria.

Measuring quantity is easier if the criteria are agreed upon. If they are not, then it can be as difficult as qualitative judgments.

Valid observations are essential. This means that the evaluators are actually able to measure what they set out to measure.

Reliable observations are also essential. These are accomplished when the criteria and instruments are so specific that they direct evaluators to precisely the same observations every time.

Using evaluation results is difficult for the evaluators to guarantee. But one technique for increasing the probability that evaluation results will be used is to build the ultimate users into the evaluation process at as many places as possible.

Internal or external evaluators is a question faced by many organizations. The participants were encouraged to use internal evaluators. This is because:

- the ultimate users are internal;
- internal evaluators will have a better understanding of the program being evaluated;
- external evaluators bring academic evaluation techniques which remain untempered by the vicissitudes of the Institute environment in which they are used.

Objectivity in evaluation is obtained, many experts think, by the use of external evaluators. The participants were encouraged to question that assumption. Objectivity in evaluation comes primarily from sound evaluation methods, not the people who do the work. No person, whether from inside or outside the institute, is objective. But both insiders and outsiders may use evaluation techniques which ensure objective results.

EVALUATION OF FINANCIAL ADMINISTRATION: PRINCIPLES AND GUIDELINES

Introduction

This was the first technical area treated in the Workshop. It appeared first on the agenda because we were fortunate to have the assistance of Mr. Moeljono, Head, Bureau of Finance LIPI who could not be available at any other time. His participation was critical to the success of this segment because he helped both the participants and lecturers bridge the technical differences between financial administration in Indonesia--where the evaluation guidelines are to be applied--and the United States--where the guidelines were developed.

Objectives of this Segment

The objectives of this segment of the evaluation were:

- I. To introduce the five major elements of financial administration.
- II. To demonstrate the evaluation of financial income.
- III. To demonstrate the evaluation of financial expenditures in relation to income.
- IV. To introduce the financial management tools of budgeting and accounting--and provide guidelines for evaluating them.

Five Elements of Financial Administration

Five major elements of financial administration were specified:

- Gross income
- Support income
- Earned income
- Direct costs
- Indirect costs

The participants, with the help of Mr. Moeljono, equated "support income" with the Institutes' "Routine Budget," and "earned income" with their "Development Budget". All were discussed in detail.

Evaluation of Financial Income

Income can be used to evaluate growth of an Institute. Income growth should be calculated as a percentage of the previous year's gross. Separate calculations for gross, support and earned income were provided in the form of the following ratios:

$$\frac{\text{Growth in support income}}{\text{Growth in gross income}}$$

$$\frac{\text{Growth in earned income}}{\text{Growth in gross income}}$$

$$\frac{\text{Growth in earned income}}{\text{Growth in support income}}$$

Participants were also coached in the process of setting up program categories of income.

Evaluation of Financial Expenditures

Categories of expenditure must also be established. It is particularly helpful if they can be the same as those established for the analysis of income. The participants were given specific suggestions and guidelines for this process.

Direct costs were introduced as those which are directly attributable to specific output of the Institute. Indirect costs are those of general administration or other activities which cannot be directly attributed to the specific output but which can be allocated to the product to obtain total output cost. The participants discussed methods for anticipating and planning costs based on historical data. They also discussed useful income and cost comparisons.

Evaluation of Budgeting and Accounting Systems

Budgeting and accounting systems are essential elements of financial administration. The budget should reflect financial allocations which correlate with Institute program priorities and national technological development goals. The budget anticipates income and expenditures.

The accounting system is the method of recording income and expenditures. It is an instrument for the collection of financial information. As such it can be used as an instrument for evaluation of the financial status of the institute. But it must also be evaluated as a system. Guidelines for the evaluation of both budgeting and accounting systems were provided.

Participants' Adaptation of the Principles and the Guidelines

The participants had the most difficulty adapting this material to their own institute needs because of the significant differences between United States and Indonesian financial administration concepts and procedures.

That notwithstanding, all accepted some adaptive language in the presented evaluation material and proceeded to adapt the evaluation process to their own needs. The net result may be seen in APPENDIX D, Adaptation of Financial Administration Evaluation Guidelines.

EVALUATION OF PROGRAM NEEDS AND OPPORTUNITIES FOR DIVERSIFICATION: PRINCIPLES AND GUIDELINES

Introduction

This segment is the best starting place for a discussion of evaluation of R&D institutes because these principles and guidelines are designed to help managers select:

- program areas (sectors) in which the institute might expand or reduce its work;
- program areas into which the institute might diversify.

Objective of this Segment

The objectives of this segment of the Workshop were:

- I. To demonstrate that the decision to enter a program area must be based on assessments of national priorities, sector capabilities and institute capabilities.
- II. To provide guidelines for assessing all three.

III. To demonstrate how to integrate assessments of all three factors and interpret the results.

Three Kinds of Assessment

The selection of a sector for institute program reduction, expansion or diversification is based upon assessments of national R&D priorities, sector capabilities and institute capabilities. The first one is obvious. An institute must develop programs of the highest national priority (especially if it is dependent on government funds--which all of the participants' institutes are). Therefore, it becomes necessary for the institute to evaluate its work in relation to national priorities. Sources of this kind of information are the government's development plans and priorities (GBHN and REPELITAS).

Sector capabilities refers to the need for assessing the economic health of the sector. If the economic health of the sector is not good, the chances for carrying out a successful project in that sector are not good. Sector capability includes criteria of growth rate, economic return, state of technology and ease of entry.

Institute capabilities refers to assessments of the institute's ability to work in the proposed sectors. They include assessments of the institute's: management, client development, technical capabilities, facilities and equipment, growth potential of present programs, and financial resources for new areas.

The participants were given guidelines for assessing all three criteria. APPENDIX E, Adaptation of Guidelines for Assessing Program Needs and Areas for Diversification, shows that the participants added a number of new and important criteria to the guidelines.

Integrating and Interpreting all Three Assessments

All three types of assessment should be made separately. However, the results should be arranged on a single form so that managers may interpret them in juxtaposition and may examine the inevitable trade-offs. Guidelines for this were provided.

EVALUATION OF INSTITUTE FACILITIES: PRINCIPLES AND GUIDELINES

Introduction

All institute managers constantly face questions about their facilities. Project directors frequently ask for new equipment and workspace. Staff occasionally complain of particular facilities' inconveniences. Anticipated program expansions or diversifications frequently require assessments of the adequacy of buildings and laboratories, equipment, communications and information systems, as well as other support systems.

Objectives of this Segment

The objectives of this segment of the Workshop were:

- I. To establish that the criteria for evaluating the adequacy of facilities lie in current and planned work of the institute.
- II. To provide guidelines for evaluating elements of R&D institute facilities.
- III. To recommend a facilities evaluation process.

Work of the Institute

Facilities refers to: buildings and workspace; equipment including all the special tools of the research and development process; communications and information systems like telephones, intercoms, and libraries; and special services like stores, maintenance, housekeeping and secretarial services.

The criteria for evaluating all facilities must be based on the actual or planned work requirements of institute staff. This is because of the large costs of facilities development and maintenance. It is important that those costs be justified by increased efficiency and effectiveness of institute operations.

Evaluating the Facilities

Criteria for evaluating buildings, equipment, communications and information systems and special services were provided along with model evaluation instruments. The participants elaborated the preferred cri-

teria significantly, as may be seen in APPENDIX F, Adaptation of Facilities Evaluation Guidelines.

The Evaluation Process

The evaluation of an institute's facilities must include the judgments of all those workers who use, or will use, them. It must also include the wisdom of administrative executives who are responsible for supporting all facilities, and senior managers who track the institute's program and financial priorities.

Therefore, a team approach is proposed, drawing on the perspectives of all these people. They will supervise the evaluation process. Their first task is to identify what facilities are to be evaluated and develop evaluation questions. Their next task is to establish evaluation criteria through consultation with the facilities' users and others. Then they develop the instruments, collect and analyze data, and recommend results to senior management.

EVALUATION OF GENERAL ADMINISTRATION: PRINCIPLES AND GUIDELINES

Introduction

Administration refers to a special set of documents, people and processes which make the research and development work possible. Without them, no one would be doing research and development projects. But, by the same token, none of them are directly involved in research and development activities. They include the following elements:

- Institute charter
- Institute objectives and plans
- Administrative functions, roles, authorities
- Institute governing body
- Institute director
- Administrative executives
- Meetings

Objectives of this Segment

The objectives of this segment of the Workshop were:

- I. To enumerate all elements of R&D institute administration.
- II. To develop criteria and guidelines for evaluating all elements of institute administration.
- III. To recommend an administration evaluation process.

Elements of Administration

The elements of general administration include all those enumerated in the Introduction of this summary. This list was accepted as complete by the Workshop participants. Criteria, on the other hand, were significantly expanded and adapted by the participants as APPENDIX G, Adaptation of General Administration Evaluation Guidelines, shows.

Criteria and Guidelines

Administrative functions, roles, authorities and responsibilities are contained in an administrative manual. This manual may actually comprise a number of documents, each of which is under the care and maintenance of a different administrative unit in the institute. Criteria for evaluating each section of the manual must be developed through consultation with those who maintain it as well as those who are affected by it.

Scores of criteria for evaluating each aspect of general administration were offered to the participants. During subsequent small group discussions, they significantly expanded and adapted the criteria.

Administration Evaluation Process

General administration should be evaluated at least once per year. It may be desirable to evaluate certain elements of it more often if problems arise or opportunities for changes in administration occur.

The evaluation of general administration is, by nature, a subjective process which depends on the best judgment of people who are in a position to know something about it. Since general administration is designed to help technical staff conduct their projects, a certain number of them should be involved in the evaluation process.

A team approach is best--involving a core of evaluation supervisors like the Institute director, an administrative executive, a technical division head, a technical researcher and a secretary. Their tasks are to plan and execute the general administration evaluation. They draw on all other Institute personnel for criteria and data collection. Their interpretations of evaluation data are recommended to the Institute secretary.

EVALUATION OF TECHNICAL ACTIVITIES ADMINISTRATION: PRINCIPLES AND GUIDELINES

Introduction

Some units of the institute, e.g., that which is responsible for instrumentation and calibration, exist solely to support the technical work of institute projects. Institute management needs to ascertain that all such support units have planned sufficiently for the needs of all technical projects. They must be certain that all technical work is sufficiently monitored and controlled.

Objectives of this Segment

Objectives of this segment of the Workshop were:

- I. To demonstrate that a project outline and work plan is key to satisfactory project organization, monitoring and control.
- II. To demonstrate the importance of reporting and communications for technical activities administration.

The Institute Project Work Plan

Project work plans are the basis for planning other support administrative activities. Their contents were developed and the participants discussed their numerous applications to all aspects of Institute planning and scheduling.

A work plan outline was provided and participants were encouraged to further develop a model for use by their research workers. It is also useful for formative evaluation (monitoring) and summative assessments of project objective accomplishment. For monitoring project progress it can be used to track: cumulative expenditure of effort; budgetary performance; adherence to schedule; and, adherence to objectives. Sample criteria for evaluation of work plans were provided.

Communications and Reporting

Communications and reporting were discussed in the context of their impact on staff cohesiveness and project administration. They include a number of mechanisms, e.g., staff meetings, activities reports, interdisciplinary teams, seminars, courses and free-time discussion groups.

External communications also impact the project and institute as a whole. They include personal visits, interim reports, letters, memoranda, telephone calls and third-party messages. Regardless of their form, participants were encouraged to develop staff training, outlines, models and practice for them. APPENDIX H, Adaptation of Guidelines for Evaluating Technical Activities Administration, shows the participants' adaptation and development of numerous criteria which are appropriate for the Indonesian context.

EVALUATION OF STAFF CAPABILITIES AND PERSONNEL ADMINISTRATION: PRINCIPLES AND GUIDELINES

Introduction

These really comprise two of the eight technical areas treated for institute evaluation. They were combined for presentation the same day because of time constraints on the Workshop and because an expert on the Indonesian system for evaluating the performance of research personnel was available only on this day (Mr. Roestamsjah, a member of the LIPI Evaluation Committee).

Objectives of this Segment

Objectives for the evaluation of staff capabilities were:

- I. To demonstrate how to assess the staff and skill requirements of a research and development institute.
- II. To show the vital link between an individual staff member's job description and a sound evaluation of their job performance.
- III. To show how the institute can plan for future staff and skill requirements.

Objectives for evaluation of personnel administration techniques were:

- I. To provide guidelines for recruiting, orienting and managing institute personnel.
- II. To provide guidelines for offering financial, technical and management incentives for institute staff.
- III. To provide guidelines for evaluating the institute's management of all personnel.

Staff Capabilities Assessment

Workshop participants developed a comprehensive list of sources of input to an assessment of the numbers and types of manpower an institute requires to fulfill its goals and objectives. They were provided with a sample instrument for recording appropriate data on the question.

The relationship between staff capabilities assessment and personnel performance evaluation was developed. Participants also discussed the relationship between performance evaluation and individual job descriptions.

Finally, participants discussed the value of in-service and on-the-job training for upgrading the skills of current staff.

Personnel Administration Techniques

Personnel administration was presented in terms of processes for staff recruitment, orientation to the institute and the job, general personnel management and opportunities for career upgrading. The participant developed detailed criteria for evaluating an institute's approach to both staff capability assessment and personnel administration (APPENDIX I, Adaptation of Guidelines for Evaluating Staff Capabilities Assessment and Personnel Administration Techniques).

EVALUATION OF TECHNICAL PRODUCTIVITY: PRINCIPLES AND GUIDELINES

Introduction

The last technical area related to evaluation of the output of an R&D institute. It was of most interest to the participants because they need the capability to summarize the work of the institutes. This was also the area with which they had the most difficulty determining criteria for productivity. The discussion led to some innovations in the meaning of institute output evaluation.

Objectives of this Segment

- I. To define R&D institute productivity in terms of two factors: the volume of institute output; and the quality of institute output.

- II. To establish a context for discussion of R&D institute productivity in terms of two factors: government, user community and institute leadership priorities for R&D programs; and institute product utilization by government, and/or agriculture.
- III. To demonstrate methods for measuring the volume and quality of institute output.
- IV. To exemplify the role of institute users in evaluating technical productivity.

The Volume and Quality of Institute Output

Volume was introduced as the number of projects completed in a given period of time. Participants quickly recognized that this was an insufficient criterion since projects are not comparable in scope, purpose, or level of effort.

Quality criteria were also suggested. They stem from the institute's purpose as characterized by its charter, policy as expressed by its governing board, and assessed needs of its users.

In order to permit comparisons of productivity originating from particular projects, participants were encouraged to group their projects into categories which represent similar kinds of output. A model scheme was provided. Finally, criteria for evaluating the qualities of institute output were proposed in five categories: (1) technical criteria; (2) production criteria; (3) financial criteria; (4) marketing criteria; and (5) management criteria.

Problems with Definition

Participants had major difficulties with the preferred definition of productivity, i.e. the quantity and quality of institute output.

Through brainstorming techniques they developed another approach based upon the goals and objectives of the institute, or the projects and programs which comprise its output. This work is reflected in APPENDIX J, Adaptation of Guidelines for Evaluating Technical Productivity.

INTEGRATING EVALUATION: PRINCIPLES AND GUIDELINES

Introduction

Up to this point Workshop principles and guidelines focussed upon specific technical areas of institute management, like financial administration and personnel administration. This segment was designed to help participants combine the separate evaluation adaptations into an integrated evaluation plan for their institutes.

Objectives of this Segment

The objectives of this segment of the Workshop were:

- I. To show the relationship between evaluation and the management of institute resources (inputs), programs (processes) and products (outputs).
- II. To show the origins of all evaluation activities in the plans for institute input, processes and outputs.
- III. To demonstrate how to integrate the eight areas of technical evaluation into a comprehensive evaluation plan for the institute.

Input, Process and Output Evaluation

Participants helped classify all previously discussed areas of technical evaluation into evaluation of institute input, processes or outputs. They included:

<u>Input Evaluation</u>	<u>Process Evaluation</u>	<u>Output Evaluation</u>
Program Areas	General Administration	Technical Productivity
Staff Capabilities	Personnel Administration	and Effectiveness
Facilities	Technical Administration	
Financial (Budget)	Financial (Accounting)	

Input evaluation is designed to help assess the needs and futures of the institute. Process evaluation helps determine if the institute uses effective and efficient methods of operation. Output evaluation is primarily designed to help institutes evaluate goal and objective accomplishment.

Roots of Evaluation are in Planning

Participants discussed the general relationship between evaluation and planning, viz., evaluation is an attempt to determine if plans have been fulfilled.

They then brainstormed the types of plans associated with each of the previously discussed technical areas for evaluation. They were encouraged to put evaluative calipers on each form of planning.

Integrated Evaluation

Institute evaluation is integrated when all aspects of planning (input, process and output) are systematically assessed. This is best accomplished by putting evaluation tools in the hands of all institute managers. Participants were encouraged to also integrate evaluation in the institute by providing in-service guidance to their key managers so that evaluation becomes a general tool for all.

Participants had too little time to adapt the contents of this segment to their own institutes. Therefore, some more explanations and demonstrations were provided in a second session on the topic. Two of the participants, in particular, demonstrated their grasp of the concept as may be seen in APPENDIX K, Adaptation of Guidelines for Integrating Evaluation.

CHAPTER IV

WORKSHOP RESULTS

Participant Involvement

Participants' Reactions

Participants' Adaptation of Evaluation

Workshop Follow-Up

PARTICIPANT INVOLVEMENT

Introduction

The Workshop was designed to stimulate participant involvement in all lecture presentations. It also focussed each day's activities on the last session of the day. This session required participants to adapt what they had been learning to their own institute needs and opportunities.

Lecture Presentation

New evaluation topics were introduced in an informal lecture format during which participants were encouraged to participate through questions-and-answers, problem-solving and brainstorming. Throughout the Workshop most of the participants contributed during the presentation of new material. A few participants contributed significantly more than others. Further, a few hardly participated during these periods at all. English language was difficult for most of the participants, most of the time. It was an unassailable obstacle for a very few of them, particularly during the lecture periods.

Indonesian Experience and Needs

Participants were also asked to contemplate the Indonesian context for the new evaluation ideas during the third session of each day. At that time one participant presented a statement of the Indonesian experience with, and needs for, the kind of technical evaluation introduced during the first two sessions of the day.

These sessions were helpful in drawing out participants who did not contribute much during the lecture presentations of new material. Often these presentations of the Indonesian experience were accompanied by lengthy and involved discussions with the majority of the participants. Occasionally the participants used the Indonesian language to facilitate useful dialogue.

Adaptation Sessions

At the end of each day the participants were organized into five small discussion groups to develop guidelines for adapting the evaluation

principles and guidelines to the Indonesian experience and needs for such evaluation.

These sessions were chaired by Indonesians. The lecturers circulated among the groups and provided guidance when asked. Most of these discussions ensued in Indonesian.

The results of the adaptation sessions are represented by the exhibits arranged in APPENDICES D-K. They represent the collaboration of all participants. Opening sessions on the morning of each day were relegated to review and presentation of the previous afternoon's adaptation sessions. These were conducted by Indonesians.

Participation

Generally speaking, participation by the Indonesians was very high. All attended all sessions diligently and worked late into each night to assimilate new material. Most participated in discussion during lectures; most were very involved in the Indonesian experience and needs sessions; and, all shared responsibilities for adaptation work in the small group sessions.

English language was definitely a barrier to participation. But it was the only barrier detected by the lecturers. The participants had considerable interest in the topics and motivation to get the most out of the Workshop. For these reasons, plus the participatory design of the Workshop, lecturers feel that language barriers were largely overcome.

Finally, about three-fourths of the participants sought the lecturers' individualized assistance during evening hours and break periods in the Workshop. This reinforced the observation that they were genuinely involved and interested in the material. All these participatory events served to weld a cohesive force among all the Workshop people--Steering Committee and staff, participants and lecturers. Close and helpful bonds were forged among all, leading to a warm and spontaneous celebration of the new bonds during a shared meal the night before the Workshop closed.

PARTICIPANTS' REACTIONS

Introduction

One third of the Workshop evaluation process involved asking participants for immediate feedback on five components of the whole Workshop:

- Workshop Objectives
- Workbook
- Instructor Presentation
- Participant Involvement
- Facilities

A number of criteria were used to judge each of these components. Evaluative ratings on each criteria were based on a five-step qualitative scale which also provided the capability for numerical scoring and statistical analysis. The scale and score values were:

- Excellent (5)
- Good (4)
- Fair (3)
- Poor (2)
- Very Poor (1)

The instrument, criteria and rating scales may be seen in APPENDIX B.

Reactions to the Workshop Objectives

Participants were asked to evaluate whether the Workshop objectives were achieved. The objectives were stated as follows:

- I. To establish a model of the evaluation process for presentation to Workshop participants.
- II. To relate the evaluation model to eight technical areas of R&D institute management.
- III. To provide a sample set of evaluation guidelines for each of the eight technical areas, and a means to integrate them into a comprehensive evaluation plan for institute evaluation.
- IV. To adapt the evaluation guidelines for eight technical areas to the Indonesian R&D institute environment.

The participants were also asked to rate the degree to which these objectives met their needs for the Workshop.

Participants' evaluation of the objective achievement and needs fulfillment received the highest mean value of all five Workshop components which were evaluated. On the scale of 1-5, they achieved a mean rating of 4.06.

The participants indicated that the first objective--evaluation model development--was most relevant to their needs and was best achieved. The last objective--adaptation to the Indonesian experience--was least achieved. That notwithstanding, no objective achieved a mean rating lower than 3.50 on the five-step evaluative score.

In other words, all objectives were largely achieved. The Workshop would have benefited from more time to exercise the adaptation process, however.

Reactions to the Workbook

The Workshop Workbook was assessed on five criteria:

- Organization
- Clarity
- Comprehensiveness
- Ease of Understanding
- Usefulness

It achieved a mean rating of 3.76 on the five-step evaluative scale. Participants thought its greatest merits were its usefulness, comprehensiveness and organization. Clarity and ease of understanding received slightly lower ratings.

The latter two criteria probably reflect the problems of language which impacted all aspects of the Workshop.

Reactions to Instructor Presentations

Instructor presentations were evaluated on five criteria:

- Organization
- Clarity
- Comprehensiveness

- Ease of Understanding
- Usefulness

All five criteria consistently received ratings around 4.00. The overall mean for In-structor presentations was 3.91, second only to ob-jective achievement.

As with the Workbook, clarity and ease of understanding received the lowest ratings among these five criteria. This is most likely attributable to difficulties with language.

Reactions to Participant Involvement

Participant involvement was assessed on four criteria:

- Amount of involvement
- Helpfulness in understanding the principles of evaluation
- Helpfulness in understanding the guidelines of evaluation
- Helpfulness in adapting the evaluation guidelines

The mean rating for all four criteria was 3.73 on the five-step scale. This was the lowest mean rating achieved by any of the five Workshop com-ponents which were assessed.

The single criteria which seemed to depress the overall mean for parti-cipant involvement was "amount of involvement." Participants felt that In-donesian faculty who presented the "Indonesian experience and needs" for each technical area should have participated more in the discussion of eval-uation principles and guidelines as well as the adaptation sessions.

Reactions to Workshop Facilities

The facilities were assessed in nine categories:

- Sleeping quarters
- Meals
- Sound system
- Seating arrangements
- Break periods
- Schedule
- White boards
- Slide projections
- Small tables for group work

The overall mean rating for facilities was 3.75 on the five-step scale. Highest ratings were given for seating, schedule and break periods.

Additionally, a number of participants added comments that the lighting was poor. A few also objected to the lack of telephone facilities.

From the instructors' point of view, lighting could have been improved, although the problem was by no means serious. Further, they disagree with the participants' sentiments about telephones. Not having telephones reduced distraction for the participants. That was a very important factor for the instructors since the technical material was particularly difficult for the participants--to say nothing of language problems. Lack of telephones or other distractions increased participants' level of concentration and attention span.

General Comments and Suggestions

The participants were invited to volunteer any other evaluative comments about the Workshop. Aside from comments about lighting and telephones, participants most consistently requested further expansion of Workbook materials along the lines of the three highest priorities for Workshop follow-up presented in the next section of this report. They also requested a glossary of evaluation terminology. That is provided as APPENDIX M of this report.

Summary of Reactions

A statistical summary of the evaluative ratings on all five components of the Workshop are provided below.

Summary of Mean Ratings for Workshop Components:	
Component	Mean Rating (1-5)
1. Workshop Objectives	4.06
2. Workbook	3.76
3. Instructor Presentations	3.91
4. Participant Involvement	3.73
5. Facilities	3.75

PARTICIPANTS' ADAPTATION OF EVALUATION

Introduction

The Workshop was designed to introduce evaluation principles and guidelines which would be adapted for Indonesian application by the Workshop participants. Therefore, one measure of the effectiveness of the Workshop lies in the results of the adaptation sessions. APPENDIX K, Make-up of Groups for Discussion of Evaluation Adaptation, shows the organization of the five discussion groups which developed the adaptation materials.

Learning to Use the Evaluation Model

The exhibits in APPENDICES D-K represent the work of participants in adapting principles and guidelines for evaluation to their own needs. Most of them reflect the participants' increasing capability for applying the general evaluation model as the Workshop ensued. They demonstrate the capabilities to:

1. state management problems in terms of evaluation questions;
2. isolate evaluation criteria which must be used to answer each question;
3. specify data sources and design instruments for measuring the criteria; and,
4. planning the personnel and timing evaluation.

By the end of the Workshop each participant had the opportunity to work through that model ten times.

Development of Appropriate Indonesian Criteria

The exhibits in APPENDICES C-J also show the considerable detail to participants' adaptation of evaluation guidelines. Lecture materials and the Workbook provided examples of the kinds of criteria which are needed for institute evaluations. But in many cases these guidelines were inappropriate for the Indonesian context. For example, the UNIDO material is biased toward R&D institutes which depend in large part on income earned from contracted projects. This means that evaluation criteria were, in many cases, based on marketing and other entrepreneurial tech-

niques which are not currently necessary for Indonesia's largely government supported Institutes.

In almost every case the Workshop participants used the presented guidelines as models of evaluation processes; they then proceeded to develop their own evaluation guidelines, criteria, instruments and plans. The net result is a comprehensive set of evaluation guidelines which provide more detail and greater relevance to the Indonesian R&D Institute environment. Without exception the lecturers felt that the adaptation sessions and follow-up reviews and discussions were the single most effective mechanism for influencing participant assimilation of the evaluation principles and guidelines. Further repetition in use of the basic evaluation process model in every adaptation session afforded greater facility with the "evaluator's way of thinking."

WORKSHOP FOLLOW-UP

Introduction

One of the basic principles of evaluation, as presented to Workshop participants, is that it can be as useful for helping ensure institute effectiveness, as it is for assessing effectiveness, after the fact. Formative evaluation is used to help make decisions about inputs and processes so that the effectiveness of outputs is maximized.

Workshop participants therefore accepted the notion that follow-up of the Workshop with steps to further encourage implementation of evaluation in Indonesian R&D institutes was at least as important as an impact evaluation of the Workshop, at some later date.

They brainstormed the kinds of Workshop which would be most helpful for furthering implementation of evaluation principles and guidelines.

Indonesian R&D Institute Evaluation Handbook: Priority One

As a first priority the participants expressed the need for a new document which incorporates the contents of Workshop lectures with the results of adaptation exercises. They also indicated additional material in three related areas:

- Evaluation measurement and instrumentation
- Evaluation data analysis and presentation
- Evaluation proposal writing

The majority of the participants suggested that the new handbook take the form of a "cookbook." That is, it should be organized according to the kinds of R&D institute problems evaluation can help solve. Then each problem section should provide a step-wise progression of evaluation exercises to resolve the problem.

The lecturers agree with the desirability of this handbook and the level of priority given it by the Workshop participants.

One of the follow-up mechanisms achieved highest priority status. The Workshop participants would like to have periodic get-togethers to share evaluation experiences and learn about new techniques. An alumni association of sorts was proposed. The lecturers support the concept of as much continued contact and idea-sharing as possible among all participants, lecturers and Steering Committee.

Tools for Evaluating Indonesian R&D Institutes: Priority Two

The participants recognized the need to receive, and/or develop, some vital tools for implementing evaluation in R&D Institutes.

The first, and highest priority tool, is policy guidance and support from the highest levels of Indonesian Government management. The participants anticipate that their implementation will require the understanding and support of Institute Chairmen and Ministers.

Participants also requested development of a collection of "tools" which could be adapted for use in their institutes. They would be collected in a single, loose-leaf volume. It would include a variety of models in at least seven areas:

- Evaluation proposals
- Evaluation plans
- Evaluation designs
- Evaluation instruments
- Evaluation criteria lists
- Evaluation data presentations
- Evaluation results reports.

Another useful tool for the participants would be some model designs and materials for in-service evaluation training for their own staffs and senior managers. The participants agreed that institute executives will work harder to implement evaluation techniques if they are provided at least a minimum orientation to the subject. They felt that they might be able to accomplish that through in-service trainings if they were provided with sufficient technical and support materials.

Finally, the participants recognized the value of a book exchange program which would make it possible for them to share technical materials on evaluation and institute management subjects. The system would have to include:

- A bibliography
- Method of announcing new materials
- Retrieval system
- Borrowing policies and procedures

It might even be able to include a minimum program of new acquisitions.

Indonesian or Other R&D Institute Evaluation Cases: Priority Three

At a third level of priority, the participants indicated their desire to have a volume of "case histories" of R&D institute evaluation experiences. The volume should draw as much as possible, but not be limited to, the Indonesian experience. To the extent that it draws on the evaluation experiences of institutes elsewhere in the world, they should be selected for their similarity and relevance to Indonesian needs and resources.

The participants indicated that each case should provide insight on different technical areas of institute management in which evaluation was attempted. They should show the evaluation proposals, design and plan. They should report results, interpretations and use of the evaluation outcomes. They should also present a critical analysis of the evaluation processes used in each case.

The first three priorities of the participants for Workshop follow-up reflect the greatest need for materials which are directly relevant to the Indonesian experience and can be used for implementation of evaluation principles and guidelines. The Workshop provided an excellent foundation

for this effort because of the opportunity provided to adapt principles and guidelines to the Indonesian experience and needs. The three required documents are:

- An Institute Evaluation Handbook (based on the Workshop products)
- Evaluation Model Tools
- Evaluation Case Histories

Participant Interaction: Priority Four

The participants felt the greatest need to continue communicating about their evaluation experiences and needs. They suggested periodic meetings to foster such sharing.

They also recommended development of an R&D Institute Evaluation bulletin which would circulate periodically with reports of implementation experiences, evaluation techniques, specific recommendations and special technical and management resources for evaluation.

They encouraged development of a less formal network so that they may consult with each other as needs arise. In this vein they also encouraged consultation with evaluation experts. Finally, they recommended special reports to the entire group any time they had specific experiences with evaluation implementation.

The lecturers encouraged development of mutual support and assistance networks like all those proposed. Often they play a role that is more important than expert consultation.

Evaluation Training: Priority Five

Finally, the participants indicated that further training opportunities would be desirable, but of lowest priority. They recommended a follow-up workshop or perhaps opportunities for individual study of evaluation in a university setting.

All participants seemed to recognize that while more training should be acquired whenever possible, priorities were for real evaluation tools and learning through direct experience with implementation.

CHAPTER V

LECTURERS' REACTIONS AND RECOMMENDATIONS

DRI LECTURERS' REACTIONS AND RECOMMENDATIONS

Introduction

This section of the Final Report reflects the considered opinions of the DRI lecturers. They should not be construed to represent the stated or implied impressions of the Workshop Steering Committee, Indonesian faculty, Workshop participants, representatives of the U.S. Agency for International Development, or any other organization, group or individual.

General Reactions

Generally the lecturers were very satisfied with the Workshop in all its component and complexities. A difficult subject was extremely well received and assimilated by the participants.

The adaptation design was the strongest aspect of the Workshop design because it permitted the material and ideas brought into Indonesia by the lecturers to be molded into principles and guidelines which are particularly appropriate for Indonesian application.

The lecturers recommend that an impact assessment of this Workshop be conducted by LIPI (with or without the help of DRI) at some later date.

However, an even higher priority should be placed on providing all participants with sufficient follow-up to assist them in continuing to learn about and apply evaluation to institute management. The first three priorities for follow-up work discussed earlier in this Final Report should be implemented as soon as possible.

Other Recommendations and Reactions

1. The mix of technical knowledge, institutes represented and levels of management experience and skill provided an enriching quality to the Workshop.
2. Differences in the English language capability created problems in deciding the level of language difficulty in which to provide the Workshop material. This problem was partially overcome by the occasional use of Indonesian.

3. Future Workshops or textual materials should include sections on:
 - Problem solving in Institute Management
 - Role of Planning in Institute Management
 - Evaluation Proposal Writing
 - Instrument Design and Measurement
 - Data Analysis and Presentation
 - Evaluation Report Writing
4. The order of presentation of technical areas for evaluation should commence with Program Area Needs and General Administration since these deal with institute purposes, goals and charters. Then the sequence should switch to process techniques like finances and personnel. It should end with the discussion of productivity.
5. Copies of the lecturers' notes should be distributed to all participants.
6. Copies of the Workshop Final Report should be distributed to all participants.

APPENDIX A

LIST OF WORKSHOP PARTICIPANTS

D A F T A R P E S E R T A
 WIDYAKARYA-PENATARAN PENGELOLAAN PENELITIAN DAN PENGEMBANGAN
 TEKNIK EVALUASI LEMBAGA LITBANG
 PARTICIPANTS OF WORKSHOP ON R & D INSTITUTE EVALUATION

Tugu, Bogor, 1 - 10 September 1980

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1	2	3	4
23.	G.H.B. Tjiptadi, M.Sc.	-Physis Chemistry	Kepala Balai Penelitian Kinia Semarang, Badan Litbang Industri, Departemen Perindustrian. Head, Chemical Research Institute Semarang, Department of Industry. Jl. Ki Mangunsarkoro 6, Semarang.
23.	Soewadji Hardjohoetomo, Drs.apth. <u>DEPARTEMEN PERTANIAN</u> Department of Agriculture	-Pharmacy	Kepala Dinas Penelitian, Balai Penelitian Kinia Semarang, Departemen Perindustrian. Chief, Research Division, Chemical Research Institute Semarang, Department of Industry. Jl. Ki Mangunsarkoro 6, Semarang.
24.	Sofyan Ilyas, Ir. <u>PERUM LISTRIK NEGARA</u> State Electricity Corporation	-Fish Utilization Technology	Direktur, Lembaga Penelitian Teknologi Perikanan, Badan Litbang Pertanian, Departemen Pertanian. Director, Research Institute for Fish Technology, Agency for Agriculture Research and Development, Department of Agriculture. Jl. Karel Satsuit Tubun, P.O. Box. 30/ Palmerah Jakarta.
24.	Imam Surendi, Ir.	-Electrical Engineering	Kepala Bagian Perencanaan, Pusat Penyelidikan Masalah Kelistrikan, Perusahaan Listrik Negara (PLN) Head, Planning Division, Electric Power Research Centre, State Electricity Corporation (PLN). Jl. Listrik Negara, Duren Tiga P.O. Box. 1/KBYT, Jakarta.

1	2	3	4
26.	<p><u>SEKRETARIAT ASEAN</u> ASEAN Secretariat</p> <p>E. Zambrano Poluakan, dr</p>	<p>Medical doctor</p>	<p>Assistant to the Bureau Director Science and Technology, ASEAN Secretariat. Jl. Taman Pejambon 6, Jakarta.</p>

1	2	3	4
2	<p><u>BADAN TENAGA ATOM NASIONAL</u> National Atomic Energy Agency</p>	- Nuclear Engineering	<p>Direktur Pusat Penelitian Teknik Nuklir, Badan Tenaga Atom Nasional. Director Research Centre for Nuclear Techniques, National Atomic Energy Agency. Jl. Tamansari 71, Bandung.</p>
1.	<p><u>STEERING COMMITTEE</u> A.S. Luhulima, SH. (Mrs)</p>		<p>Staf Ahli Ketua LIPI Urusan Pengembangan R & D Management, LIPI. Special Staff to the Chairman of LIPI for R & D Management, Indonesian Institute of Sciences. Jl. Jenderal Gatot Subroto P.O.Box 3065 Jakarta.</p>
2.	Gatoet Sudomo, Ir.		<p>Peneliti pada Badan Penelitian dan Pe - ngembangan Industri, Departemen Perin - dustrian. Researcher, Industrial Research and Development Agency, Department of Industry. Jl. Proklamasi 56, Jakarta.</p>
3.	Erwin, M.A.		<p>Kepala Pusat Penelitian dan Pengembangan Lembaga Administrasi Negara. Head, Research and Development Centre, National Institute of Public Administra - tion. Jl. Veteran 10, Jakarta.</p>
4.	Niti A. Gunawi, SH. (Mrs)		<p>Kepala Biro Hukum & Paten, LIPI. Head, Bureau of Legal Affair, Indonesian Institute of Sciences. Jl. Jend. Gatot Subroto, P.O.Box 3065 Jakarta.</p>

APPENDIX B

PARTICIPANT REACTION FORM

R & D INSTITUTE EVALUATION WORKSHOP
Evaluation of the Workshop

Goal of the Workshop

The goal of this Workshop was to increase the ability of Indonesian R & D managers (.at all levels) to build modern evaluation principles and guidelines into their own management practices.

Objectives of the Workshop

- I. To establish a model of the evaluation process for presentation to Workshop Participants.
- II. To relate the evaluation model to eight technical areas of R + D Institute management.
- III. To provide a sample set of evaluation guidelines for each of the eight technical areas, and a means to integrate them into a comprehensive evaluation plan for Institute evaluation.
- IV. To adapt the evaluation guidelines for eight technical areas to the Indonesian R & D Institute environment.

Evaluation of the Workshop

Please read the instructions on the following evaluation instrument and complete your own assessment on the rating scale. Add any comments you would like to make on the back of the pages. Thank you.

R & D INSTITUTE EVALUATION WORKSHOP

Workshop Participant Reaction

Instruction : Please look at the following five areas for evaluation of this Workshop. Then rate each criterion in each area on the rating scale provide in the eight. Please comment on these or any other criteria on the back of this form. Thank you.

Evaluation Areas and Criteria	Rating scale					Score
	Exc.	Good	Fair	Poor	Very Poor	
<u>Workshop Objectives</u> (see the <u>previous page</u>)						
1. Degree of objective achievement						
a. Objective I	--	--	--	--	--	
b. Objective II	--	--	--	--	--	
c. Objective III	--	--	--	--	--	
d. Objective IV	--	--	--	--	--	
2. Extent to which the objectives met your needs.	--	--	--	--	--	
<u>Workbook</u>						
3. Organization	--	--	--	--	--	
4. Clarity	--	--	--	--	--	
5. Comprehensiveness	--	--	--	--	--	
6. Ease of Understanding	--	--	--	--	--	
7. Usefulness	--	--	--	--	--	
<u>Instructor Presentations</u>						
8. Organization	--	--	--	--	--	
9. Clarity	--	--	--	--	--	
10. Comprehensiveness	--	--	--	--	--	
11. Ease	--	--	--	--	--	
12. '	--	--	--	--	--	

<u>Participant Involvement</u>						
13. Amount of involvement	---	---	---	---	---	
14. Helpfulness in understanding the principles of evaluation	---	---	---	---	---	
15. Helpfulness in understanding the evaluation guidelines	---	---	---	---	---	
16. Helpfulness in adapting the evaluation guidelines	---	---	---	---	---	
<u>Facilities</u>						
17. Sleeping quarters	---	---	---	---	---	
18. Meals	---	---	---	---	---	
19. Sound system	---	---	---	---	---	
20. Seating arrangements	---	---	---	---	---	
21. Break periods	---	---	---	---	---	
22. Schedule	---	---	---	---	---	
23. White boards	---	---	---	---	---	
24. Slide projection	---	---	---	---	---	
25. Small tables for group work	---	---	---	---	---	

APPENDIX C

WORKSHOP AGENDA

Agenda
Workshop on R & D Institute Evaluation
Tugur, 1 - 10 September 1980

Monday, 1 September

- 09.00 - 10.00 : Opening of Workshop
- 10.00 - 11.00 : Introduction of Participants
- 11.00 - 12.00 : Introduction to Workshop
- 12.00 - 13.00 : Introduction to Evaluation
- 13.00 - 14.00 : L u n c h
- 14.00 - 15.30 : Introduction to Evaluation
(continued)
- 15.30 - 16.00 : B r e a k
- 16.00 - 17.30 : Indonesian need and history

Tuesday, 2 September

- 08.30 - 09.30 : Summary of previous sessions
- 09.30 - 11.00 : Financial Administration and
Evaluation Principles
- 11.00 - 11.30 : B r e a k
- 11.30 - 13.00 : Financial Administration and
Evaluation Principles : The Indonesian
Experience
- 13.00 - 14.00 : L u n c h
- 14.00 - 15.30 : Financial Administration Evaluation
Guidelines
- 15.30 - 16.00 : B r e a k
- 16.00 - 17.30 : Adaptation of Financial Evaluation
Guidelines

Wednesday, 3 September

- 08.30 - 09.30 : Summary of previous sessions
- 09.30 - 11.00 : Institute Program Needs and Opportunity
for Diversification
- 11.00 - 11.30 : B r e a k
- 11.30 - 13.00 : Guidelines
- 13.00 - 14.00 : L u n c h
- 14.00 - 15.30 : Indonesian Experience and Needs

15.30 - 16.00 : B r e a k
16.00 - 17.30 : Institute Adaptation

Thursday, 4 September

08.30 - 09.30 : Summary of previous sessions
09.30 - 11.00 : Facilities Evaluation
11.00 - 11.30 : B r e a k
11.30 - 13.00 : Guidelines
13.00 - 14.00 : L u n c h
14.00 - 15.30 : Indonesian Experience
15.30 - 16.00 : B r e a k
16.00 - 17.30 : Institute Adaptation

Friday, 5 September

08.30 - 09.30 : Summary of previous sessions
09.30 - 11.30 : General Administration Evaluation and
Guidelines
11.30 - 13.00 : Free Period
13.00 - 14.00 : L u n c h
14.00 - 15.30 : Indonesian Experience
15.30 - 16.00 : B r e a k
16.00 - 17.30 : Institute Adaptation

Saturday, 6 September

08.30 - 09.30 : Summary of previous sessions
09.30 - 11.00 : Technical Activities Evaluation
11.00 - 11.30 : B r e a k
11.30 - 13.00 : Guidelines
13.00 - 14.00 : L u n c h
14.00 - 15.30 : Indonesian Experience
15.30 - 16.00 : B r e a k
16.00 - 17.30 : Institute Adaptation

Monday, 8 September

08.30 - 09.30 : Summary of previous sessions
09.30 - 11.00 : Staff Capabilities and Personnel
Administration Evaluation

11.00 - 11.30 : Break
11.30 - 13.00 : Guidelines
13.00 - 14.00 : Lunch
14.00 - 15.30 : Indonesian Experience
15.30 - 16.00 : Break
16.00 - 17.30 : Institute Adaptation

Tuesday, 9 September

08.30 - 09.30 : Summary of previous sessions
09.30 - 11.00 : Technical Productivity Evaluation
11.00 - 11.30 : Break
11.30 - 13.00 : Guidelines
13.00 - 14.00 : Lunch
14.00 - 15.00 : Indonesian Experience
15.00 - 15.30 : Break
15.30 - 17.00 : Institute Adaptation
17.00 - 17.30 : Late evening Evaluation

Wednesday, 10 September

08.30 - 10.30 : Discussion on Integrated Evaluation
10.30 - 11.00 : Break
11.00 - 12.30 : - Workshop Evaluation
- Follow-up Activities
12.30 - : Closing
13.00 : Lunch

APPENDIX D

ADAPTATION OF FINANCIAL ADMINISTRATION EVALUATION GUIDELINES

EVALUATION WORKSHOP

INDONESIAN R&D ADAPTATION SESSION

FINANCIAL ADMINISTRATION

The initial technical area covered in the Workshop was one of financial administration. Each of the five groups prepared sets of evaluation questions and suggested criteria for the questions. Since this was a very complex subject, and the definitions of earned and support income versus the Indonesian system of Routine, Development, and Special Sources budgets not yet completely made, the small group returns were not in a complete model format. Each group presented their output, and after discussions, two sample management problems were selected. A complete evaluation model was prepared on the problems from criteria developed by the groups. These are appended along with a listing of other problems that could be considered.

R & D INSTITUTE EVALUATION WORKSHOP

EVALUATION OF FINANCIAL ADMINISTRATION

The following pages present the results of workshop participant adaptation of principles and guidelines for evaluation of financial administration in Indonesian Institutes. They are presented in form of :

- Management Problem
- Evaluation Questions
- Evaluation Criteria
- Evaluation Instruments
- Evaluation Plan
- Interpretation of Evaluation Results

Three management problems are presented.

The last pages list the other management questions which participant developed. All of them could be turned into evaluations just like the first three examples we have provided.

MANAGEMENT PROBLEM I

What is the financial status of the institutes ?

EVALUATION QUESTIONS

1. How has the cost of institute projects changed for the institute over recent years ?
2. How has the cost of running the institute changed over recent years ?
3. How have the total costs of the institute changed over recent years ?
4. How will all these costs change in the near future ?

EVALUATION CRITERIA

1. Growth of gross income over recent past years.
2. Growth of earned income over recent past years.
3. Amount of gross income this year.
4. Amount of earned income this year.
5. Growth and amount of support income.

EVALUATION INSTRUMENTS

1. Increase of DIK and DIP over the past years.
2. Graphic depiction of gross and earned income growth over last few years.
3. Graphic depiction of gross and support income growth over last few years.
4. Graphic depiction of support and earned income growth over last few years.

EVALUATION PLAN

1. Doer : a. Could be done by financial bureau
b. Could be done by planning bureau
2. User : a. The institute chairman
b. The institute planner
c. The agency or government department which sponsors the institute.
3. Schedule : a. Could be done quarterly if necessary
b. Should be done at least annually.

INTERPRETATION OF EVALUATION RESULTS

1. The growth of DIK and DIP will help the institute evaluate :
 - a. What average growth rate has been;
 - b. What average growth in government approval has been; and,
 - c. How accurate the institute has been in predicting government budget approvals.
2. Trends in growth and earned income over the last few years will show you :
 - a. How the total income has grown;
 - b. How much of that growth is attributable to new project work; and,
 - c. How income for new projects has grown.
3. Trends in growth of support income over the last few years will show you :
 - a. How the costs of running the institute have grown;
 - b. What proportion of total income growth is required for running the institute; and,
 - c. How running costs will grow in the near future.

MANAGEMENT PROBLEM # 2

D/4

How effective is the institute's financial planning?

EVALUATION QUESTIONS

1. What is the relationship between proposed and approved institute budgets?
2. What is the institute's capacity to absorb routine and development budgets?

EVALUATION CRITERIA

1. DUF and DIP values for current and recent past years.
2. Trends in carry-over for recent past years.
3. Financial values of project adjustments made to absorb carry-over in recent past years.

EVALUATION INSTRUMENTS

1. Proposed and approved budgets for the institute in the last five years.
2. Actual amounts of development budget carry-over for recent past years.
3. Project budgets and workplans for last few yrs.

INTERPRETATION OF EVALUATION RESULTS

1. Trends in the differences between DUF and DIP values over the last few years will show changes in the institute's accuracy in planning at a level acceptable to the government.
2. Trends in carry-over in recent years will show how much residual money the institute could not absorb. The higher this value, the less successful the institute's financial planning.
3. Financial values of project adjustments to absorb carry-over will provide a total financial value and cost for the institute's inaccurate financial planning.

MANAGEMENT PROBLEM # 3

Do the project leaders plan project finances accurately ?

EVALUATION QUESTIONS

1. What are the scheduled income and expenditures for each project ?
2. What is the financial value of all project adjustments which are made to absorb unanticipated problems with income expenditures or cash flow ?
3. Which project leaders plan project costs most accurately ?

EVALUATION CRITERIA

1. Project phases, costs and income for each phase.
2. Proportion of total project income, or expenditures which had to be rescheduled.
3. Cost and income accounts for each project leader.

EVALUATION INSTRUMENTS

1. Workplan for each project showing schedules of all tasks as well as income deposits and expenditure payments.
2. Accounts for all projects showing changes in scheduled income or payments made to absorb unplanned needs.
3. Separate accounting of cost over-runs or carry-over between each phase of the project, for each project manager.

INTERPRETATION OF EVALUATION RESULTS

1. The workplan must show a schedule of project tasks. But it is equally important for it to show the planned schedule of income and expenditures. The first analysis is to see if the real income and expenditures occurred as planned.
2. If they did not occur as planned, what proportion of the income or expenditures had to be rescheduled ? This tells the proportion of a project's financial plan which is accurate.
3. Comparing the proportions of rescheduled income or expenditures between project managers will show which ones have the lowest required adjustments.

INVENTORY OF MANAGEMENT PROBLEMS RELATED TO FINANCIAL ADMINISTRATION

1. Are our expenditures planned according to scheduled income in order to guarantee satisfactory cash flow ("cash flow" means availability of money so that the necessary expenditures can be made) ?
2. Is the institute growing financially ?
3. How reliable are our sources of income ("reliability" means whether the sources provide the income they say they will, and whether we can count on them to do so in the foreseeable future) ?
4. Are our financial resources sufficient for our program needs ?
5. Do our financial allocations coincide with our institute program priorities
6. What has been our annual carry over for the past few years ?
Why did it exist and what was it used for ?
7. What is the absorption capacity of each project in the institute ?
8. What proportions of our gross income go for each institute project ?
9. Are our financial controls in accordance with existing government accounting regulations ?
10. Is the amount of money allocated to each project worth the output of the project ?
11. How does project carry-over relate to project technical output ?
12. What has been the influence of inflation on our project budgets over the last few years ?
13. How will inflation influence project budgets in the foreseeable future ?
14. How well are project finances planned ?
15. How has our gross income changed in the last few years ?
16. Do all projects have the same budgeting and accounting systems ?
17. How can new earned income be incorporated into our current budget ?
18. Is a substantial increase in gross support income required next year ?

APPENDIX E

ADAPTATION OF GUIDELINES FOR ASSESSING PROGRAM NEEDS AND AREAS
FOR DIVERSIFICATION

ANSWER SHEET FOR R & D INSTITUTE
EVALUATION WORKSHOP
ADAPTATION SESSIONS

DAY AND DATE : WEDNESDAY, 3 SEPTEMBER, 1980
SESSION NUMBER AND TIME : IV , 15.30 - 17.30
EVALUATION TOPIC : PROGRAM NEEDS AND OPPORTUNITIES FOR DIVERSIFICATION
NAME OF PARTICIPANT : I M A M S U G A N D I
I N S T I T U T E : ELECTRIC POWER RESEARCH CENTRE
S E C T O R : ELECTRIC POWER SUPPLY

Step 1 : Evaluation questions

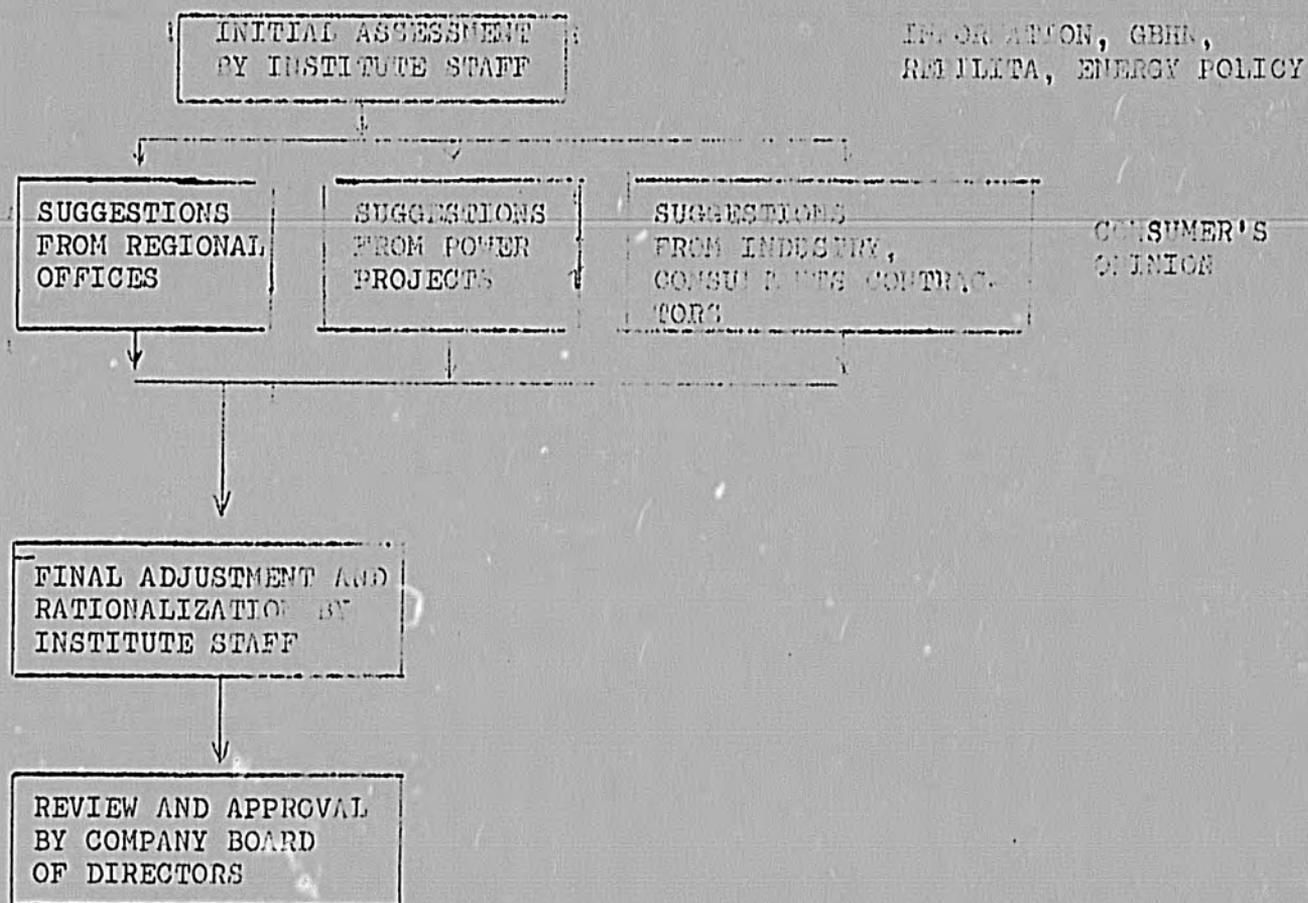
- Q - 1. Is the institute currently engaged in appropriate program areas ?
- Q - 2. In what program areas should the institute expand or reduce its programs ?
- Q - 3. In what new program areas should the institute diversify ?

The institute is involved in R & D services for the electric power supply sector, so diversification is limited within this sector, particularly in the following sub-sectors (program areas) :

1. Power economics
2. Electric power systems
3. Electric power equipment
4. Hydro power generation
5. Thermal power generation
6. Nuclear power generation
7. Geothermal power generation
8. Unconventional energy
9. Ecology of power plants

STEP 3 : EVALUATION INSTRUMENTS

Evaluation instruments selected : Option 1 with the following adjustments :



Criteria for FACILITIES CAPABILITYFacilities

Equipment
Money
Buildings
Information Services
Instrumentation
Documentation
Library
Laboratories
Workshops
Installations
Supplies/Materials

Manpower

Technical Assistance
Skills
Communications
Organization
Management
Applications
Discipline
Training

Support

Money
Prestige
Political Connections
Market
Public Relations
Social Support
Industrial Support
Government Authorization

Software

Publications
Copyrights
Patents
Regulations
Standards
Systems/Methods

Programs

R&D
Research into Operation
Testing
Analysis
Quality Control
Marketing
Technology Transfer
Forecasting
Training

Criteria for SECTOR CAPABILITIESGrowth Rate

Water supply
 Reliability of all supplies
 Present production
 Raw materials
 Energy supply
 Local skills
 Food production
 Housing
 Heavy demand
 Technological breakthrough
 Favorable international situation
 Supply and demand
 Fashion
 Laws and regulations
 Public use
 Regional facilities
 Population increase
 Infrastructure
 Consumption per year
 Banking support
 Social participation
 Local content
 Skill profile
 Productivity

Economic Return

Hinterland support
 Poverty
 Licensing
 Mismanagement
 Corruption
 Bribery
 Law enforcement
 Administrative efficiency
 Risks
 Benefits
 Big Boom
 Favorable International situat
 Opportunity
 Demand and supply
 Government protection
 Subsidies
 Population increase
 Infrastructure
 Consumption per year
 Banking support
 Social benefit
 Local content
 Productivity

Base of Entry

Information
 Social dynamics
 Reliability of supplies
 Poverty
 Licensing
 Law enforcement
 Raw materials
 Energy supply
 Local skills
 Social and Cultural impact
 Administrative efficiency
 Ecology
 Laws and regulations
 Regional facilities
 Government protection
 Subsidies
 Infrastructure
 Pollution
 Waste management
 Banking support
 Geographical features
 Regional involvement
 Social acceptance
 Social participation
 Social values
 Social benefits
 Local content
 Skill profile
 Legal aspects

State of Technology

Information
 Energy supply
 Ecology
 Food production
 Housing
 Safety
 Local content
 Skill profile
 Appropriate technology
 Consultancy
 Fashion
 Transfer of technology
 Infrastructure
 Waste management
 Social acceptance
 Social values

Criteria for NATIONAL PRIORITY

Industrial Development Criteria

DSP
Employment opportunities
Labor intensity
Foreign Exchange earnings
Geographical conditions
Natural resources
Human resources
Small scale industry
Political connections

Agricultural Development Criteria

Food distribution
Food storage
Food production
Employment opportunity
Labor intensity
Foreign Exchange earnings
Geographical conditions
Natural resources
Human resources
Political connections

Social Development Criteria

Public need
Social security
Identification of human resources
Family planning
Demography
Education
Health
Political connections

National Security

Energy policy
Geographic conditions
Political connections
Communications

APPENDIX F

ADAPTATION OF FACILITIES EVALUATION GUIDELINES

EVALUATION WORKSHOP

ADAPTATION OF GUIDELINES FOR EVALUATING INSTITUTE FACILITIES

Four of the five workshop teams were assigned different areas of facility evaluations. The goal of these groups was to develop evaluation criteria and instruments to be utilized in the Indonesian environment to evaluate the existing condition of the facilities. These four instruments in the form of checklists are attached.

The fifth group developed some evaluation questions aligned to prediction of future needs. A table of growth history of the Nuclear Research Institute was investigated to attempt to discover relationship that could be used in prediction of future needs and in evaluation of future plans. The table and objectives are included in the attachments. Graphical comparisons were also made to indicate various trends.

The group noted that the trends were helpful for future predictions but that with growth as rapid as the Nuclear Institute, more references to the basic planning documents were necessary. The trends also indicated potential problems of overextension by the geometric progression of the data.

EVALUATION WO
FACILITIE
INDONESIAN R&D ADAPTATION SES

Evaluation Questions:

1. How much facility space will the institute need to provide in the next and future years?
2. How many new people will be added in the next and future years?
3. How many projects will be conducted by the institute in the next and future years?
4. How has the total budget per project changed over the years?
5. How many square meters of space has been provided per project unit of cost?

Graphic presentations

1. growth vs. gross income
2. growth vs. routine income
3. growth vs. development income

CHART OF NUCLEAR RESEARCH INSTITUTE TREND DATA

Year	73	74	75	76	77	78	79	80
Manpower	30	40	75	110	200	240	400	525
Building sq. meters	100	1000	2030	5000	7000	12000	165000	20000
Major Equipment	3	3	4	5	6	7	8	14
Projects	1	1	2	2	2	2	4	4
Routine Budget*	5	15	50	75	100	150	320	500
Development Budget*	17	97	230	550	900	1200	1700	3000

EVALUATOR :
EVALUATION OF EQUIPMENT :

CRITERIA	EXCEL. (5)	GOOD (4)	FAIR (3)	POOR (2)	VERY POOR (1)	SCORE
1. <u>MAINTENANCE REQUIREMENT</u>						
- AVAILABILITY OF SPARE PARTS						
- AVAILABILITY OF RIGHT MAINTENANCE SERVICES						
- EASE OF MAINTENANCE						
- FREQUENCY OF MAINTENANCE						
- COST OF MAINTENANCE						
2. <u>EASE OF OPERATING :</u>						
- SKILLS REQUIRED OF OPERATOR						
- NUMBER OF OPERATOR						
- CLARITY OF MANUAL AND INDICATOR						
- SENSITIVITY TO POWER AND OTHER INPUT						
- SENSITIVITY TO ENVIRONMENT (TROPICAL CONDITION)						
3. <u>EASE OF OPERATING</u>						
- FLEXIBILITY OF ENERGY SUPPLY						
4. <u>COST OF OPERATING</u>						
- ENERGY CONSUMPTION						
- MATERIAL CONSUMPTION (WASTE)						
- SPECIAL MATERIAL						
- MATERIAL & SUPPLY REQUIREMENT						
- AVAILABILITY OF MATERIALS & SUPPLIES						
5. <u>SAFETY</u>						
- STABILITY						
- ELECTRICAL HAZARDS						
- PHYSICAL HAZARDS						
- MECHANICAL HAZARDS						
- GAS HAZARDS						
- RADIATION HAZARDS						
- EXPLOSIVE HAZARDS						

6. <u>RELIABILITY</u> - ACCURACY - CALIBRATION REQUIRE- MENT (FREQUENCY AND AVAILABILITY)						
7. <u>FREQUENCY OF USE</u> - LIFE TIME - LOAD/DEMAND DURATION & FREQUENCY						
8. <u>VARIETY OF PROJECTS FOR WHICH IT SUITED</u>						
9. <u>OBSOLESCENCE</u> - RATE OF TECHNOLOGY DEVELOPMENT - RATE OF DEMAND						
10. <u>SUITABILITY (EFFECTIVE- NESS)</u> - RANGE OF UTILIZATION - VARIETY OF UTILIZATION - SPECIAL FEATURES - POSSIBILITY OF ADDI- TIONAL FUNCTIONS						
11. <u>PRICE</u> - INVESTMENT - SALVAGE VALUE						

SUM OF SCORE : 11 = MEAN SCORE FOR EQUIPMENT FACTILITY :

EVALUATION OF
COMMUNICATI

C R I T E R I A	Excel. (5)	Good (4)	Fair (3)	Poor (2)	Very Poor (1)	Score
<u>Libraries & Documentation Services</u> <u>Collection</u>						
1. Scientific & Technical Books						
2. Reference Books						
3. Journals						
4. Reports						
5. Patent Specifications						
6. Standards Specifications						
7. Microfilm Systems						
8. Microfiche Systems						
<u>Service</u>						
9. Loan Services						
10. Inter Library Loans Services						
11. Catalog and Retrieval Services						
12. Current Awareness Services/ Selective dissemination of information.						
13. Indexing and Abstracting Services (including clippings)						
14. Literature Search Services						
15. Translation Services						
16. Referral Services						
17. Reference Service						
<u>Others</u>						
18. Copiers						
19. Terminal						
20. Library Maintenance						

	(5)	(4)	(3)	(2)	(1)
21. Acquisition System					
22. Standardization in Libraries & Communication					
23. Storage System					
<u>Communication</u>					
24. Telephones					
25. Intercoms					
26. Paging System					
27. Messengers					
28. Circulating Reports					
29. T e l e x					
<u>Facilities</u>					
30. Reading Room					

SUM OF SCORES : 30 = MEAN SCORE FOR INFORMATION/COMMUNICATION FACILITIES

DATE :

GROUP : III

EVALUATION OF SUPPORT SERVICES FACILITIES

SESSION :

No.	CRITERIA	EXCEL (5)	GOOD (4)	FAIR (3)	POOR (2)	VERY POOR (1)	SCORE
I.	<u>Stores</u>						
	1. Classification/ sorting out/ grading						
	2. Floor space and Dimensions						
	3. Personnel Capabilities						
	4. Retrieving						
	5. Maintaining Inventory						
	6. Ventilation						
	7. Safety						
	8. Storing Management						
II.	<u>Building & Grounds</u>						
	9. Servicing & Supplying						
	10. Utility						
	11. Maintaining						
	12. Cleaning						
	13. Health & Safety						
	14. Lay-out						
	15. Landscaping						
	16. Lighting						
	17. Color & Appearance						
	18. Interior Decoration						
	19. Furniture						
20. Location							

(CONTINUED)

No.	CRITERIA	EXCEL (5)	GOOD (4)	FAIR (3)	POOR (2)	VERY POOR (1)	SCORE
III.	<u>Secretarial</u>						
	21. Speed						
	22. Efficiency						
	23. Appearance of Product						
	24. Filing System						
	25. Copying/Reproduction						
	26. Typing						
	27. Reception						
	28. Communication						
	29. Management						
	30. Office Layout						
	31. Public Relations						
	32. Personnel						
	33. Hospitality						
	34. Discipline						
	35. Transportation						
	36. Conference Facilities						
	37. Show Room/Display						

SUM OF SCORE : = MEAN SCORE

SUPPORT SERVICES FACILITIES

EVALUATION FORM

3/10

BUILDINGS

DATE :

NAME OF EVALUATOR : Group IV

No.	CRITERIA	EXCEL (5)	GOOD (4)	FAIR (3)	POOR (2)	VERY POOR (1)	SCORE
1.	Size of work space						
2.	Arrangement of work spaces						
3.	Appearances						
4.	Cleanlines						
5.	Lighting						
6.	Laboratory Furniture						
7.	Office Furniture						
8.	Safety Features						
9.	Acces to storerooms						
10.	Availability of Conference Space						
11.	Meal Facilities						
12.	Restroom						
13.	Shop Facilities						
14.	Acces to Transportation						
15.	Acces to Parking						
16.	Waste Disposal						
17.	Utility						
18.	Recreation room						
19.	Waiting room						
20.	Operation room						
21.	Show room						
22.	Landscaping						
23.	Sewerage						
24.	Garage						

No.	CRITERIA	(5)	(4)	(3)	(2)	(1)	SCORE
25.	Policlinic						
26.	Pollution abatement Control						
27.	Lightning rod						
28.	Worship Facilities						
29.	Escalator/elevator						
30.	Connecting Corridor						
31.	Darkroom						
32.	Reception building						
33.	Incinerator						
34.	Fire escape						
35.	Fire station						
36.	Power building						
37.	Damper						
38.	Flag pole						
39.	Fence						

SUM OF SCORE : 39 = MEAN SCORE FOR BUILDING FACILITIES

APPENDIX G

ADAPTATION OF GENERAL ADMINISTRATION EVALUATION GUIDELINES

DAY & DATE : FRIDAY, 5 - 9

EVALUATOR : GROUP I

CHARTER OBJECTIVES & PLANS

Evaluation Questions

- Q. 1. Are the Objectives & Plans, within the scope of the charter.
- Q. 2. Are the Objectives & Plans based on the national priority, sector capabilities, and Institute capabilities ?
- Q. 3. Are the Objectives & Plans clearly explained and understood by the people who are involved in the planning process

Improved & Adapted Criteria

- C. 1. a. Specification of the scope
 b. Specification of the objectives
 c. Specification of the operational plans
 d. Impact of achievements
- C. 2. a. Specification of the national priorities
 b. Evaluation of sectors capabilities
 c. Evaluation of institutes capabilities
- C. 3. a. Availability of the administration manual
 b. Capabilities of planners
 c. Clarity of objectives
 d. Clarity of plans
 e. Involvement of all levels

Instrument

- I. 1. a. Charter & Master Plan
 b. Plan
 c. Plan
 d. Document, Survey and Evaluation
 (check list)

- I. 2. a. GBHN & REPBLITA
- b. Evaluation Result/Report
- c. Evaluation Result/Report
 (check list)

- I. 3. a. Administration manual
- b. Experience, Education/Training (Expertise)
- c. Document : objectives
- d. Plan
- e. Document : sources of data
 (check list)

Interpretation of Results

Institute A

C R I T E R I A	Excel (4)	Good (3)	Poor (2)	Very Poor (1)	SCORE
1. Specification of scope					
2. Specification of objectives					
3. Specification of plans					
4. Impact of achievement					

Interpretation

PLAN :

- Who do it : 1. Director/Ass. Director
 2. Planning Division
 3. Users (2)
- When : Annually
- For who : For the Institute Director

R & D INSTITUTE EVALUATION WORKSHOP
Adaptation of Guidelines for Evalu-
ating the Administrative Manual

GROUP II

Evaluation Questions

- Q.1. Is the administrative manual comprehensive in its coverage of all administrative subjects?
- Q.2. Is the administrative manual valid for the present state of activities in the Institute ?.

Evaluation Criteria

- Q.1. All desirable components of an administrative manual.

- | | |
|-------------------------------|------------------------------|
| - Institute policies | - Personnel policies |
| - Technical objectives | - Personnel procedures |
| - Organizational structure | - Personnel policy execution |
| - Planning | - Public relations policy |
| - Project formulation | - Public relations execution |
| - Project execution | - Financial Policy |
| - Contract policies | - Financial Procedures |
| - Executive / client contacts | - Financial controls |
| - Worker / client contacts | |

Q.2. Appropriateness to current needs

Ease of understanding

Clarity

Ease of implementation

Revision annually

Evaluation Instrument

Q.1. Components of an administrative manual prepared in a checklist which can be used to assess if all parts exist in the Institute's administrative manual

Q.2. A questionnaire about the validity of the administrative manual.

Submitted to those who use various sections of the manual.

Evaluation Plan

Q.1. and Q.2. Assessed annually by an administrative executive for his use and that of the administrative staff.

R & D INSTITUTE EVALUATION WORKSHOP

Adaptation of Guidelines for Evaluating General
Administrations : Functional Responsibilities
Job Descriptions and Organization Chart.

Group III

Evaluation Questions

- Q.1. How effective are the Institute's allocations of functional responsibilities for general administrations ?
- Q.2. How comprehensive are job descriptions ?
- Q.3. How satisfactory is the organization chart ?

Evaluation Criteria

- Q.1. A. All kinds of responsibilities :
- Primary
 - Delegated
 - Approval
 - Participation
 - Information
 - None
- B. All kinds of administrative positions :
- Governing board
 - Director
 - Deputy directors
 - Section heads
 - Project leaders
 - Technical staff
 - Administrative executives
 - Administrative staff
- C. All kinds of functions :
- Institutional policies
 - Technical objectives
 - Organizational structure
 - Planning
 - Project formulation
 - Project execution
 - Policies on client contacts
 - Executive client contacts
 - Worker client contacts
 - Personnel policies
 - Personnel procedures
 - Personal policy execution
 - Public relations policy
 - Public relations execution
 - Financial policy
 - Financial procedures
 - Financial controls

Q.2. A. All parts of a job description

- Role and responsibilities of job holder
- Resources available to the job
- Reporting requirements
- Criteria for job performance
- Performance evaluation process
- Qualifications for the job
- Remuneration and benefits
- Staff improvement and advancement opportunities
- Special relationships
- Special characteristics and limitations of the job

B. Job description for each position in the Institute

Q.3. A. Existence of an organization chart.

B. Includes all levels of the Institute personnel

- Governing Body - Section Heads
- Chairman - Project Leaders
- Deputy Chairman - Project Workers

C. Show lines of responsibility among all levels

- Line positions (vertical lines)
- Staff positions (horizontal lines)
- Coordinating positions (broken lines)

D. Accuracy in reflecting the way the Institute really works.

EVALUATION INSTRUMENTS

Q.1. A. Two-way matrix with functions as row headings and administrative positions as column headings. Levels of responsibility are indicated in the cells of the matrix

B. A questionnaire

- Are all of the Institute's administrators accounted for in the matrix? Yes _____, No _____
- Are all of the Institute's functional responsibilities accounted for in the matrix? Yes _____, No _____.
- ± Does the stated allocation of functional responsibilities reflect the real activities of the general administration? Yes _____, No _____
- Does every general administrator have a copy of the statement of functional responsibilities? Yes _____, No _____.

- Do all general administrators have opportunity to suggest changes in the allocation of functional responsibilities, at least once per year ? Yes -----; No. -----.

Q.2. A. Checklist of the parts of a job description. Each job description is evaluated on this checklist to be sure it has all the required parts.

B. An inventory is completed to see if all personnel have a job description.

Q.3. A. A checklist of all levels of people in the Institute is used to assess whether the organization chart addresses all levels.

B. Line, staff and coordination relationship are examined to see if the chart accurately reflects the manner in which all levels of the Institute personnel actually relate to each other.

Evaluation Plan

Q.1. Evaluated annually by an administrative executive and personnel specialist.

Results and recommendations are forwarded to the Institute director.

Q.2. Individual job descriptions can be evaluated for comprehensiveness at the time of the annual performance evaluation.

Each supervisor should be responsible for the quality of job descriptions controlled by his office. Therefore guidelines for comprehensive job descriptions should be available to them as mechanisms for evaluating the descriptions for their staff.

Additionally, an annual summary of the status of job descriptions should be prepared for review by the personnel head and Institute director.

Q.3. Assessed annually by a personnel executive for the guidance of the Institute director

EVALUATION

- Governing Body
 - Institute Director
 - Administrative Executives
-

Day and date : 5 Sept. 1980

Name of evaluator: Group IV

I. Evaluation Questions

1. Does the Governing Body function effectively
2. Does the Institute Director manage the Institute well ?
3. Do the Administrative Executives function properly ?

II. Improved and Adapted Criteria

See attachment

III. Instrument

See attachment

IV. Interpretation of result

Based upon the performance

V. Evaluation Plan

Governing body : - Who do it ? - Self evaluation by the members of the body

- When - annually
- For whom - Government

Institute's Director : Who do it ? - the body in combination with self-evaluation

- When - annually
- For whom - the body

Administrative Executives : Who do it ? - the Director for the Head of the Administrative Executive

- the Head of the Administrative Executive for his subordinates

- When - annually
- For whom • the Director

EVALUATION OF THE GOVERNING BOARD

Day and date :

Name and evaluator :

CRITERIA	SATISFACTORY (3)	POOR (2)	UNSATISFACTORY (1)	SCORE
<u>COMPOSITION</u> 1. Degree of interest in the affairs of the Institute 2. Stature of the members 3. Size conducive to efficient operation 4. Expertise with broad perspective 5. Democratic 6. Capability 7. Adaptive				
<u>OPERATIONS</u> 8. Frequency of deliberation on Institute business 9. Efficiency of deliberation on Institute business 10. Use of executive Committee where advisable 11. Use of standing Committee where advisable 12. Functional relationship				
<u>BASIC RESPONSIBILITIES</u> 13. Financial stability of the Institute 14. Methods of reviewing Directors recommendations 15. Method of reviewing Directors performance 16. Ability to direct 17. Procedural Additional				

CRITERIA	SATISFACTORY (3)	POOR (2)	UNSATISFACTORY (1)	SCORE
<u>Additional activities</u> 18. Assistance in selecting growth areas 19. Aid in promoting contracts 20. Stimulation of income sources 21. Improvement of internal morale by visits 22. Assistance in public relations				

SUM OF SCORE : 22 = MEAN SCORE OF INSTITUTES DIRECTOR PERFORMANCE

EVALUATION OF THE INSTITUTE DIRECTOR

Day and date :

Name of evaluator :

CRITERIA	SATISFACTORY (3)	POOR (2)	UNSATISFACTORY (1)	SCORE
<u>RELATIONSHIP</u>				
1. Leadership				
2. Public image				
3. Relations with Governing Body and Financial Executives				
4. Relation with Industry Government and Financial Executives				
5. Professional and morale conduct				
6. Appereance				
7. Dynamics				
<u>ADMINISTRATION</u>				
8. Policies and procedures Director established				
9. Planning and evaluation				
10. Personnel selection				
11. Morale building				
12. Openness to others points of view				
13. Creation of opportunities for staff development				
14. Discipline				
15. Authority				
16. Self-confidence				
17. Expertise				
18. Managerial skill				
19. Broad perspective				
20. Creativity				
21. Rational				
<u>MISCELLANEOUS</u>				

CRITERIA	SATISFACTORY (3)	POOR (2)	UNSATISFACTORY (1)	SCORE
<u>MISCELLANIOUS</u> 22. Sociable 23. Responsive 24. Motivation 25. Dedication 26. Energetic 27. Responsible 28. Honest 29. Functional Secrecy 30. Monogamy				

SUM OF SCORE : 30 = PER N SCORE OF GOVERNING BOARD PERFORMANCE

EVALUATION OF ADMINISTRATIVE EXECUTIVES

Day and date :

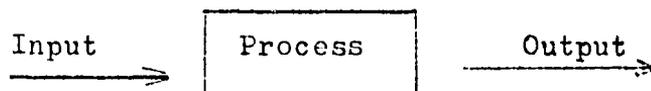
Name of evaluator :

C R I T E R I A	SATISFACTORY (3)	POOR (2)	UNSATISFACTORY (1)	SCORE
1. Description of the units responsibility and relationship to all other units of the Institute				
2. Allocation of resources to the unit in proportion to its importance to the rest of the Institute				
3. Delegation of responsibilities and authorities within the unit				
4. Impact of the units policies and procedures on the technical performance of the Institute				
5. Impact of units policies and procedures on morale of technical staff				
6. Familiar to sub ordinates				
7. Managerial skill				
8. Responsive				
9. Responsible				
10. Discipline				
11. Professional and morale conduct				
12. Appearance				
13. Creative				
14. Rational				
15. Motivation				
16. Energetic				
17. Honest				
18. Functional Secrecy				

SUM OF SCORE : 18 = MEAN SCORE OF ADMINISTRATIVE BY PERFORMANCE

EVALUATION QUESTIONS OF INSTITUTION MEETINGS1. Approach

A Meeting is a process



Basic question :

- Effectiveness : $\frac{\text{Actual output}}{\text{Planned output}}$
- Efficiency : $\frac{\text{Output (actual)}}{\text{Input}}$

INPUT : - Man hours

- Facilities

- Administrative services
support

materials ---- how to -
minimize

- Ideas

- Data/
Information

- Meeting process

non-materials --- how to maximize
(Quality of output)

2. Questions :

1. How do we make our meetings more effective ?

2. How do we make our meetings more efficient ?

DATE : _____

EVALUATOR : _____

EVALUATION OF INSTITUTION MEETINGS

CRITERIA	Satisfactory (3)	Poor (2)	Unsatisfactory (1)	Score
1. Clarity of the objectives 2. Notice of meetings in advance a. Time b. Place c. Attenders d. Duration e. Subjects f. Objectives 3. Agenda prepared in advance a. Order of topics b. Presenters c. Length of presentation d. Opportunities for discussion e. Supplementary material 4. Procedure 5. Facilities and services 6. Prompt call to order 7. Adherence to Agenda 8. Adjournment on schedule 9. Minutes Recorded Distributed 10. Follow-up of Decision Reached & Actions Pending				

Sum of Scores : 19 = Mean score for Meetings

III. Instrument of Evaluation of Institutional Meetings

Instruments :

1. All invitations
 2. All minutes of meetings
 3. Attendance list
 4. Cost of meetings
 5. Financial Records
 6. Questionnaire to the attenders
- } For the whole period
(one year)

IV . Evaluation Plan

1. Evaluation is led by the Research Centre Secretary
2. No evaluation team is required
3. A senior staff member responsible for the compilation of the data/information from the evaluation instruments
4. The R.C. Secretary assisted by the senior staff member evaluates the data/information and reports to the Director.

APPENDIX H

ADAPTATION OF GUIDELINES FOR EVALUATING TECHNICAL ACTIVITIES ADMINISTRATION

R & D Institute Evaluation Workshop
 Indonesian Adaptation Session

TECHNICAL ACTIVITIES ADMINISTRATIVE EVALUATION

Evaluation Questions

1. Are all the project planned ?
2. Do all plan contain the correct parts ?
3. Are all projects plans integrated ?
4. Are project reporting requirements specified and followed ?

Evaluation Criteria

Background, Goals & Objectives of projects

1. Relevance to charter
2. Relevance to user and sponsor
3. Relevance to institute capability
4. Conference to laws
5. Economic feasibility
6. Technical feasibility
7. Comprehensiveness
8. Evaluability

Manpower, Special Relationship and Reporting

1. Distribution of workload
2. Functional responsibilities
3. Manpower allocation
4. Job descriptions
5. Technical performance criteria
6. Institutional manpower loading
7. Institutional facilities scheduling

Scheduling

1. Time limitations pertask
2. Benchmarks of progress and funds
3. Sequence of activities
4. Schedule component
 - manpower
 - facilities
 - funds
 - tasks
 - material
 - equipment
 - reports
 - construction

Report Content

1. Format
2. Guidelines
3. Peer Review
4. References
5. Style
6. Conclusion
7. Scope
8. Organization
9. Recommendations
10. Summary
11. Data
12. Appendix
13. Index
14. Table of Contents
15. Special Problems
16. Special Features
17. Acknowledgements
18. Background
19. Purpose
20. Flow sheet/diagram
21. Glossary

Evaluation Instruments

Checklists of criteria with evaluative scales of :

Excellent

Good

Average

Poor

Very poor

Evaluation Plan

Who accomplishes: Project Director
Institute Director
Sponsor
Administrative Planner

When accomplished : At beginning of project with
reviews periodically through
project performance

APPENDIX I

ADAPTATION OF GUIDELINES FOR EVALUATING STAFF CAPABILITIES ASSESSMENT
AND PERSONNEL ADMINISTRATION TECHNIQUES

Day and date : Monday, 8/9/1980

Evaluator : Group I

QUALITY OF JOB DESCRIPTION

(REVISED)

EVALUATION QUESTIONS

- Q. 1. What is the quality of the Job Description ?
- Q. 2. Is the Job Description being used by all levels ?
- Q. 3. Is the Job Description applicable to all the jobs available in the Institutes ?

EVALUATION CRITERIA

C R I T E R I A	EXCEL (3)	GOOD (2)	POOR (1)	SCORE
C.1. 1. Specification of roles and Responsibilities of the staff personnel in his position				
2. Specification of the resources available				
3. Frequency of reporting (how often, contents, format, to whom)				
4. Specification of criteria for evaluation of job performance				
5. Process of performance review opportunities for the modification				
6. Required qualification for any position				
7. Specification of remuneration and benefit				
8. Specification for staff advancement				
9. Specification of special characteristic and limitation				
10. Specification of special relationship				

SUM OF SCORE ; 10 = MEAN SCORE FOR QUALITY OF
JOB DESCRIPTION

C.2.	EXCEL. (3)	GOOD (2)	POOR (1)	SCORE
1. Relevance to charter				
2. Useful for recruitment				
3. Useful for task implementation				
4. Useful for performance evaluation				
5. Useful for achievement evaluation				
SUM OF SCORE : 5 = MEAN SCORE FOR THE JOB DESCRIPTION APPLICABILITY				

C.3.	EXCEL (3)	GOOD (2)	POOR (1)	SCORE
1. Comprehensiveness				
2. The Job Description standard format				
SUM OF SCORE : 2 = MEAN SCORE FOR THE USEFULNESS OF THE JOB DESCRIPTION				

INSTRUMENT

- I.1.4. Job Description
 2. Charter
 3. Work Plan
 4. Administration Manual
 5. Government Regulation
 6. Internal Decree
 - I.2.1. Charter
 2. Numbers of applicant : numbers of the recruited
 3. Task implementation report
 4. Performance evaluation report
 5. Achievement evaluation report
 - I.3.1. Instrument Job Description & Report
- FLAN : - Who do it ? - Personnel office
 - Interviewer Team
 - Head of Units
 - When ? - Annually
 - According to the needs
 - For whom ? - Institute Director.

GROUP II

CRITERIA FOR RECRUITMENT OPERATION

STEPS

1.

DEFINE NUMBER & QUALIFICATION
OF PERSONNEL REQUIRED

2.

ESTABLISH RECRUITING
COMMITTEE

3.

ADVERTISEMENT

← Medical health
certification.

4.

SELECTION PROCESS

5.

FORMULATION OF RECOMENDATION
TO DIRECTOR

DECISION OF DIRECTOR

7.

NOTIFICATION TO PERSONS RECRUITED

8.

APPOINTMENT AS TEMPORARY EMPL. - ONE YEAR

← Probation
period (3 Mos)

9.

MEDICAL TEST

Director

10.

PERMANENT EMPLOYEE

EVALUATION FOR RECRUITMENT OPERATION

Q.1. How effective is the recruitment operation system of the Institute ?

- C.1. : 1. Are job qualifications clearly explained ?
 2. Is the TOR⁺) of the Recruiting Committee clear enough ?
 3. Is the job opportunity widely advertized ?
 4. How many steps are made in the selection process ?
 5. How long are applicants tested ?
 6. What is the % of responding applicants to the Institute's notification ?
 7. How long does it take for the Director to decide ?

Q.2. Is there a need to improve the system ?

- C.2. : 1. What is the % of staff recruited to the original plan/need ?
 2. How many of the new personnel matched the Institute's need ?

- I.1 : 1. Charter
 2. Work Plan
 3. Government regulations
 4. Work record/report

I.2 : Committee's final report.

CRITERIA : Recruitment

Step : EVALUATION QUESTIONS

1. - How big is the number of new persons to be recruited ?
 Media for advertisement (Excl, Good, Poor)
 - Is the qualification specific enough ? (related to job description)
2. - Is the TOR⁺) of the Recruiting Committee clear enough ?
 - Is the composition of the Recruiting Committee sufficient ?
3. - Is the advertisement wide enough ?
 (Media : - Newspapers
 - Bulletin Board at Universities
 - Professional Journals
 - Radio/T.V.)
4. - How is the selection process ?
 - Written test
 - Psycho test
 - Interview.

⁺) Terms of reference.

- How long is the selection test ? - long/short ?
 - How expensive is it ?
 - 5. - What is the format of recommendation to the Director ?
 - Does the Director need to meet the applicants ?
 - 6. - How fast is the Director's decision ?
 - 7. - Are all selected personnel responding to the notification of the Institute ?
 - 8. - Is a probation period of 3 months needed beside the one year temporary appointment.
- A. The evaluation is done by :
- Director
 - Recruiting Committee
 - Personnel Manager
- B. Is it done following a process of recruitment.
- C. Result of evaluation will be used by the Director and the Personnel Manager.

Group III

A N S W E R S H E E T
EVALUATING PERSONNEL MANAGEMENT

Step 1. Evaluation question

Q.1. What are implemented in Institute's orientation Program ?

Step 2. Evaluation criteria

1. Introduction to Institute staffs
2. Description of the Institute's History and Purposes
3. Administrative Manual
4. Organization Chart
5. Charter
6. National Priorities
7. Sector Capabilities
8. Institute Capabilities
9. Institute Programs and Projects
10. Specific areas of activities.

Step 1 : Evaluation Question

Q. 2. How effective is the Institute's orientation program ?

Step 2 : Evaluation Criteria

1. Duration of orientation period
2. Comprehensiveness of the orientation program to all units
3. Personnels separated
4. Personnels dismissed
5. Reporting
6. Involvement of supervisor

Step 3 : Evaluation Instruments

	Excel (5)	Good (4)	Fair (3)	Poor (2)	Very Poor (1)	Score
1. Completeness of implementation of the orientation program						
2. Comprehensiveness of the orientation program to all units						
3. Acceptability of the job to candidates hired (excellent, good, fair) ≠ personnel moves to other unit : poor ≠ personnel leaves the job: very poor)						
4. Quality of report prepared by candidates.						
5. Involvement of Supervisor in handling the orientation program.						

SUM OF SCORE : 5 = MEAN SCORE FOR EFFECTIVENESS OF ORIENTATION PROGRAM.

Step 4. Evaluation Plan

Who do it ? - Director, Supervisor, Personnel Manager.
 When ? - After orientation period
 - 6 to 12 months after orientation period
 For who ? - Director, Personnel Manager, Supervisor.

Step 3. Evaluation Instruments

	<u>YES</u>	<u>NO</u>
1. Introduction to Institute's staff		
# <u>Does it include :</u>		
2. Description of the Institute's History and Purposes		
3. Administrative Manual		
4. Organizational Chart		
5. Charter		
6. Institute's Programs and Projects		
7. Institute's Capabilities		
8. Sector Capabilities		
9. National Priorities		
10. Specific Areas of Activities		

NUMBER OF YES : 10 = SCORE FOR ORIENTATION PROGRAM.

Step 4. Evaluation Plan

Who do it : Director, Supervisor, Personnel Manager
 When ? : Annually
 For who : New Candidates

GROUP IV.

DAY AND DATE : Monday, 16 September 1980

SUBJECT :: Develop the criteria for evaluation of staff capability needs and increasing staff opportunities.

- Evaluation question :

- How do we provide staff capability needs and increasing staff opportunities ?

- Criteria : See the following pages- Instrument :

- Check list
- Master plan
- Development program
- Administrative manual

- Plan

Who do it : - Personnel manager
 - Administration managers

When : - At the beginning of fiscal year

How often : - Annually ; anytime required

Who : - Director

EVALUATING PERSONNEL MANAGEMENT

Staff capability needs and increasing
Staff opportunities

C R I T E R I A	Number of ^o)				
	Post graduate	Graduate	Under graduate	High School	Others
1. How many persons have scheduled opportunities for systematic wage or salary increases ?					
2. How many persons have opportunities to qualify for some form of technical skill or managerial training					
3. How many persons have been projected for advancement to higher functional rank ?					
4. How many persons have been scheduled to follow training program in the special field ?					
5. How many persons have opportunities to practice the systemic ideas in the laboratories and fields ?					
6. How many persons have been given greater responsibilities for career advancement					
7. How many persons have been given opportunities to widen their horizon ?					
8. How many persons have been encouraged to join professional organizations?					
9. How many persons have been given opportunities to participate in committees ?					
10. How many persons have been included in the involvement of consultation ?					
11. How many persons have been assigned to present working papers ?					
12. How many persons have been encouraged to write scientific papers					

C R I T E R I A	Number of				
	Post graduate	Graduate	Under graduate	High School	Others
13. How many persons have been given opportunities to attend higher formal education ?					
14. How many persons have been informed on the Institutes development plan ?					

+) Calculated as a percentage to the total

APPENDIX J

ADAPTATION OF GUIDELINES FOR EVALUATING TECHNICAL PRODUCTIVITY

ADAPTATION OF GUIDELINES FOR EVALUATING TECHNICAL PRODUCTIVITY

Workshop participants brainstormed an entirely new approach to evaluating institute technical productivity. To start with, they developed new definitions for assessing institute output.

Institute Effectiveness is a measure of the degree to which an institute's outputs (products) achieve the goals and objectives they were intended to achieve.

Institute Productivity is a measure of the efficiency of institute output. That is, it is a measure of effectiveness per unit of resource input (like manpower or funds or time).

The participants decided that criteria for evaluating institute effectiveness cannot be absolute for all projects within a single institute, much less for all institutes. But they did identify that criteria for evaluating institute effectiveness all come from two sources:

- Objectives of the output being evaluated
- User-based criteria like ease of application, usefulness, user costs, etc.

Finally, the participants stressed the importance of establishing agreement on the criteria for evaluating institute effectiveness and productivity each time an output evaluation is undertaken.

APPENDIX K

ADAPTATION OF GUIDELINES FOR INTEGRATING EVALUATION

Goal 1: To evaluate the status of input, in terms of methodology, money facilities, manpower.

Objective 1: To evaluate the periodical status of program implementation in terms of budget, workplans, job descriptions, administrative manual, skills assessment.

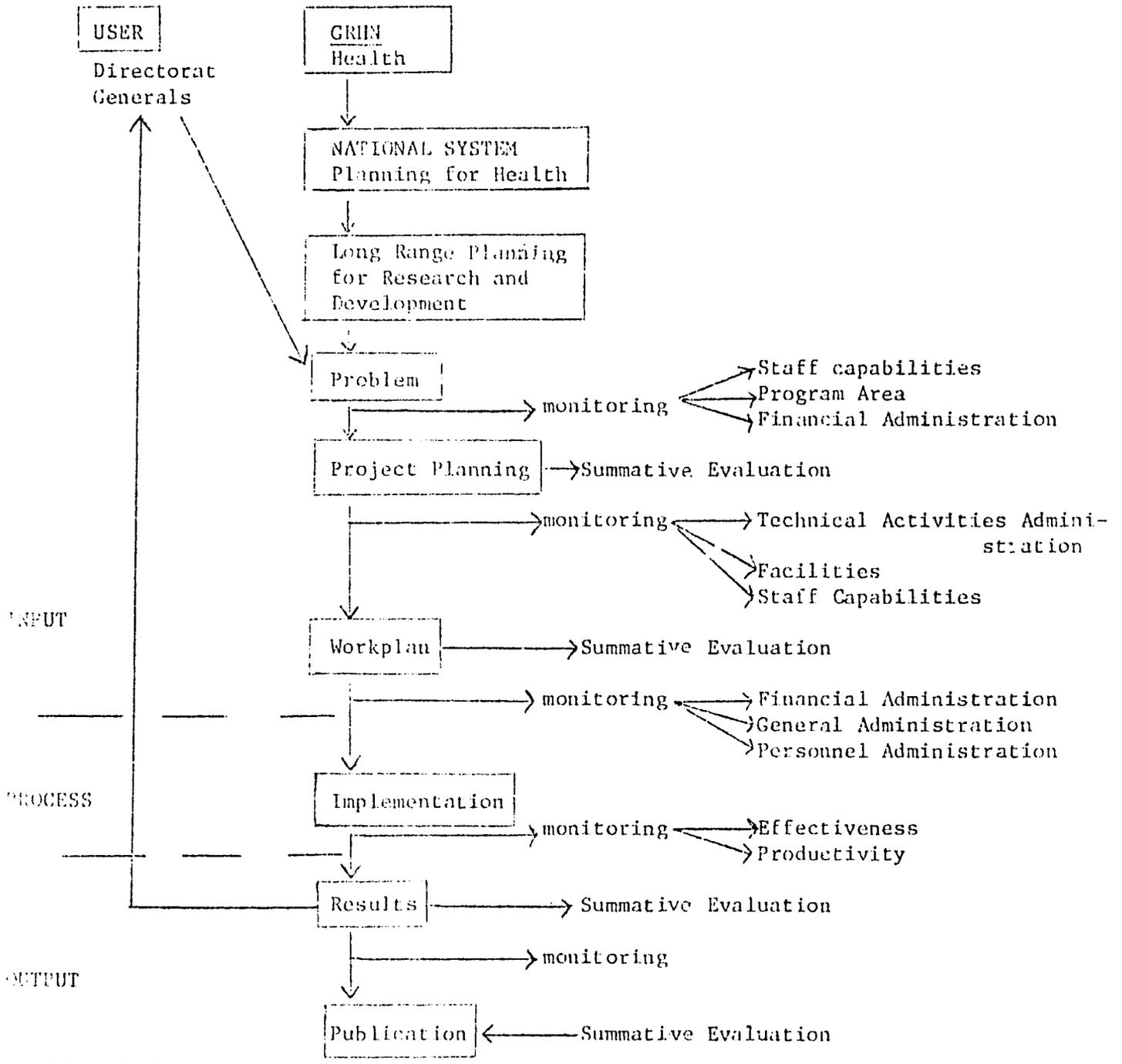
Objective 2: To identify annual status of financial administration, staff performance, facilities and productivity.

G₁O₁T₁: To provide formative evaluations concerning budget, work plan, job description, administrative manual, skill assessment.

G ₁ O ₁ T ₁ P	Planning Division	monthly	? /Assess Reports
	Financial Division	annually	
	Personnel Division		

ADAPTATION OF GUIDELINES FOR INTEGRATING INSTITUTE EVALUATION

by Nazazi Subagio



APPENDIX L

MAKE-UP OF GROUPS FOR DISCUSSION OF EVALUATION ADAPTATION

3 September 1980

Group I

- | | |
|--------------------|-----------|
| 1. Alfred Sitinjak | Chairman |
| 2. Sumengen | Secretary |
| 3. Sumini A.S. | |
| 4. Pudjohapsoro | |
| 5. Zultanawar | |

Group II

- | | |
|-----------------------|-----------|
| 1. Haryono Arumbinang | Chairman |
| 2. Djoko Prawoto | Secretary |
| 3. Kersanah | |
| 4. Zambrano Poluakan | |
| 5. Mangontan | |

Group III

- | | |
|-----------------------|-----------|
| 1. Sofyan Ilyas | Chairman |
| 2. Soemardi | Secretary |
| 3. Sri Wardhani S. | |
| 4. Abdul Halim | |
| 5. Suhud Hadmosuprobo | |

Group IV

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|--------------------------|-----------|
| 1. Ardjoeno Brodjonegoro | Chairman |
| 2. Nazazi Subagio | Secretary |
| 3. Tjiptadi | |
| 4. Afadlal | |
| 5. Chr. Furwadhi | |

Group V

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|--------------------------|-----------|
| 1. Imam Soegandi | Chairman |
| 2. Dipo Alam | Secretary |
| 3. Kusbandia Soero | |
| 4. Kusno Pranoto | |
| 5. Soewadji Hardjohutomo | |
| 6. August Belesky | |
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APPENDIX M

GLOSSARY OF EVALUATION TERMINOLOGY

GLOSSARY

1. Accountability--The ability to provide evaluation data and analyses which justify a management decision.
2. Criteria--The values (quantitative or qualitative) which are used to judge the relative merits of a management decision, resource inputs, administrative processes or institute outputs.
3. Data--Systematically gathered information about an institute resource, process or product.
4. Discrimination--The ability to reliably differentiate between qualities of an institute resource, process or product.
5. Effects--The impact of results of an institute resource, process or product.
6. Evaluation (Institute)--A management tool for making judgements about the success or failure of an R&D institute, or any part of the institute's programs and operations, on the basis of specified questions, criteria, instruments, data and interpretation.
7. Extrapolation--A process for graphically predicting future values of some criterion on the basis of trends in past values for the same criterion.
8. Feedback--The process of observing the results of institute inputs, processes or outputs in order to assess whether they achieve desired results.
9. Formative Evaluation--Using evaluation to test the effects of a resource allocation or technical process in order to ensure that the most desired results can be achieved.
10. Goals--Very general statements about the desired outcomes of evaluation or institute inputs, processes or outputs.
11. Impact Evaluation--Testing the long-range effects of a resource, process or output.
12. Input Evaluation--Evaluating the probable, or real, effects of a resource allocation (manpower, funds, materials) to an institute.
13. Instruments--The tools which permit systematic collection and recording of evaluation data.
14. Integrated Evaluation--Evaluation methods which are added to every aspect of institute management; and are used as management tools by all levels of management.

15. Judgment--The process of deciding on the relative merits of a resource, process or product.
16. Matrix--A tabular presentation of data.
17. Monitoring--The process of systematically observing and evaluating the effects of a resource, process or product.
18. Objectives--Specific statements about the desired outcomes of evaluation or Institute inputs, processes or outputs.
19. Output Evaluation--Evaluating the real effects and/or efficiency of an institute program or project.
20. Plan--A document which details the goals, objectives, tasks, resources and methods of a particular effort.
21. Process Evaluation--Evaluating the expected or real effects or efficiency of an institute management process.
22. Qualitative Criteria--The quantitative values which are used to judge the relative merits of a management decision, resource inputs, administrative processes or institute outputs.
23. Quantitative Criteria--Numerically significant values which are used to judge the relative merits of a management decision, resource inputs, administrative processes or institute outputs.
24. Reliability--The ability to make the same observations about a resource, process or product repeatedly--with the same results.
25. Representations--The degree to which selected observations about a resource, process or product actually reflect the qualities of all the observations which could be made.
26. Summative Evaluation--Using evaluation to assess the effects which are actually achieved from a completed resource allocation, administrative process or institute product.
27. Tasks--The specific operations which must be completed to realize the objectives or evaluation.
28. Validity--The property of an observation which ensures that it accurately reflects the qualities that are desired.