

DESIGNING MONITORING AND EVALUATION SYSTEMS:
ISSUES AND OPPORTUNITIES

A.I.D. EVALUATION OCCASIONAL PAPER NO. 14
(Document Order No. PN-AAY-391)

by

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October 1987

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FOREWORD

This Occasional Paper on Designing Monitoring and Evaluation Systems: Issues and Opportunities was prepared for the seminar on Evaluation with participants from developing countries. The Seminar was sponsored by the Experts Group on Aid Evaluation of the Development Assistance Committee, Organization for Economic Cooperation and Development in Paris in March 1987. The seminar provided an opportunity for 80 evaluation experts and program managers from 37 developed and developing countries and international aid organizations to discuss the role and uses of evaluation in improving the quality of development programs. This paper was one of several background documents prepared for the seminar to facilitate the discussion of evaluation in development programs. It is being reproduced in the Center's Occasional Paper series for use by A.I.D. staff to help stimulate their thinking about the role and organization of monitoring and evaluation in development projects.

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1. INTRODUCTION

Donor agencies and aid-recipient countries generally agree that development assistance has contributed to improving economic and social conditions but that the effectiveness of this assistance has often fallen far short of expectations. Various factors may account for mediocre or poor performance of a particular project, but the most common of these can be categorized as follow:

1. Technological. The technology promoted by a project was inappropriate for the project's physical or sociocultural environment (e.g., crop varieties performed poorly because they were ill-suited to local soil conditions and predominant cultivation practices).

2. Sociocultural. The project failed to consider the social systems and cultural practices of those in the project area (e.g., failure to recognize major labor constraints due to

prevailing gender differences in performing labor).

3. Policy. Host country policies worked against accomplishing project objectives (e.g. price controls on major commodities subsidize urban consumers by setting low farmgate prices, hence constituting a disincentive to increased agricultural production).

These problems are largely associated with poor project planning, that is, a failure to recognize or anticipate factors that will interfere with project success. However, after initial project planning is completed, fundamental shortcomings in the development management process involving both the donor agency and the host country have also accounted for poor project performance. Management problems can occur at any time in the project cycle, from project design through implementation. Also, the scale of management problems varies, ranging from internal project management procedures (e.g., poor financial accounting) to broader institutional conditions (e.g., the incompatibility between donor management requirements and the host country's development management capabilities and indigenous organizational culture).

The three factors cited above and development management deficiencies can also have an interactive effect. For example, project deficiencies stemming from technological, sociocultural, and policy factors overlooked at the design stage should, in principle, be identified and addressed during implementation. However, poor management of such projects may result in discontinued implementation without correcting the deficiencies or, in extreme cases, without terminating the project.

That management continues to be a major problem in development projects is certainly not news to donor agencies or aid-recipient countries. Audits, evaluations, and reviews of donor programs, such as the World Bank's assessment of Bank projects over the past 10 years (World Bank 1984), provide ample documentation. Indeed, many donors and host countries currently support efforts to improve project management by giving greater attention to the management requirements of a project at the planning stage, by providing management training to host country project personnel, and by including funding for short- and long-term technical assistance from management specialists.

One area that is receiving greater attention by donors and host governments is project monitoring and evaluation. As with other aspects of development management, monitoring and evaluation have often been less useful than they ought to have been. (The problems donors and host countries have experienced with past monitoring and evaluation approaches are briefly summarized in Section 2.) A positive result of this experience, however, is that it is stimulating more careful thought about what is needed for effective information systems in development projects. In particular, management information systems are increasingly viewed as an important element in addressing development management problems. At the very least, if managers have adequate

information about project outputs and the short-term or intermediate effects of these outputs earlier in the implementation process, they should be able to make better informed decisions about improving the effectiveness of the project. Of course, this has long been the rationale for project monitoring and evaluation, which has frequently not corresponded to the reality of the situation.

This paper concerns issues pertaining to the design of project information systems and monitoring and evaluation units. Section 3.1 presents several key lessons learned from experience that should guide current information planning. How those issues are addressed should, in turn, influence decisions concerning the organization of project monitoring and evaluation activities. Three alternative approaches to organizing monitoring and evaluation units are then described in Section 3.2.

2. SUMMARY OF PROBLEMS AFFECTING PAST MONITORING AND EVALUATION ACTIVITIES

In general, the experience of donors and host governments with project monitoring and evaluation is less than satisfactory. In too many cases, monitoring and evaluation activities have contributed little to project management. However, this experience does not question the underlying soundness of providing timely information to project managers. Rather, it reflects the weaknesses in the design and implementation of monitoring and evaluation systems.

A number of common failings have impaired project monitoring and evaluation activities. Poor project planning has often led to the collection of too much data or the wrong types of data. Reliance on overly sophisticated methods based on academic research standards for statistical accuracy or reliability has proven unworkable or impractical in the context of development projects. Such methods have also been too expensive; too complicated, given host country capabilities; and too slow to meet management's more immediate or urgent information needs. Conversely, too little attention has been given to more rapid, low-cost data collection techniques that could provide timely and adequate information for project management purposes (whose requirements for statistical representativeness are far less than for academic research purposes). Similarly, too much attention has been directed to data collection and too little to the analysis of that data in ways that provide information that is useful to managers.

In addition to these methodological problems, staffing and funding for monitoring and evaluation units have often been inadequate or insufficient. Technical advisers assigned monitoring and evaluation responsibilities have often lacked necessary skills or pertinent experience. Host country disinterest and the low priority assigned to the project information system by those responsible for implementation have also impeded effective monitoring and evaluation. Lastly, monitoring and evaluation

have suffered from the negative connotations of "passing judgment" on the performance of other project components. In some cases, this has been reinforced by placing the monitoring and evaluation unit outside the project management team. This type of organizational arrangement has complicated coordination between the monitoring and evaluation unit and project management, in effect isolating the unit from the rest of the project. {1}

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1 For a recent assessment of the World Bank's experience with project monitoring and evaluation, see "Built-in Project Monitoring and Evaluation: An Overview," World Bank Report No. 5781, June 28, 1985.

3. DRAWING ON EXPERIENCE: PLANNING MORE EFFECTIVE INFORMATION SYSTEMS

3.1 General Design Issues

In response to past problems with monitoring and evaluation, there has been a substantial effort to improve the utility of information systems as a management tool. Over the past several years, A.I.D. and the World Bank, for example, have produced practical guidance about monitoring and evaluation oriented to the needs of managers of development projects (see, for example, Casley and Laurie 1981; Norton and Benoliel 1987; A.I.D. 1987; and Casley and Kumar, forthcoming). Much of this guidance concerns the selection and use of data collection methods attuned to the information requirements of project managers. However, this guidance also includes several key lessons based on experience that should be considered when planning future monitoring and evaluation systems. These are briefly discussed below.

3.1.1 No Single Approach

If one lesson is clear from experience, it is that there is no single approach to or methodology for monitoring and evaluation that can be applied uniformly. For example, sample surveys may be appropriate for one project, but not in others, even when the projects are of similar type. The particular circumstances, budgets, staffing, local conditions, and so on, which differ among projects, require that information systems be designed on a case by case basis. In short, there are no blueprints or cookie cutters. Relying on a "standard formula" (i.e., the ubiquitous promise of baseline-follow-up surveys) does little more than ignore or postpone the important issue of developing an effective information system. Information planning has to be part of the design process, and the information system must be treated as an integral component of the project.

3.1.2 Information Users

The first step in developing an effective information system is identifying the various users of the information, specifically what they need to know, what the information will be used for, and how often the information has to be updated. Information requirements at the project level and for project managers are usually the most obvious. However, monitoring and evaluation systems should also incorporate information needs for program or sector-level purposes if possible and, in some cases, even broad strategic or policy-related issues. Planning a monitoring and evaluation system that meets the information requirements above the project level requires participation by senior managers. At the very least, senior managers must articulate their priority information requirements so that some effort can be made to obtain the necessary data.

3.1.3 Information for Management Versus Research

Current guidance on monitoring and evaluation calls attention to the differences between academic approaches to social research and the information requirements for project management. In general, management and research information requirements differ because of their respective time frames. Timeliness and expediency are key criteria for management purposes even if this need compromises data accuracy or comprehensiveness. For research purposes, the quality of data typically has a higher priority than expedience -- at least in comparison with management's information needs. However, this distinction should not be overdrawn -- the difference between information for management versus research is not a mutually exclusive dichotomy, but rather a continuum. In some projects, management may require the same types of data needed for research purposes; in other projects, information requirements for management and research may be quite different. The nature of the project should determine the types of information needed for monitoring and evaluation.

3.1.4 The Problem of Causality

Related to the distinction between information for management and for research is the problem of causality. Until recently, the design of monitoring and evaluation systems assumed, either explicitly or implicitly, not only that the causal effects of project interventions could be measured, but also that demonstrating this causality was essential for sound monitoring and evaluation. However, the "open systems" in which development projects are implemented make it virtually impossible to control for extraneous factors that interact with the effects of project interventions -- that is, is it the project or other external factors that account for the results? The response to the "open systems" problem has frequently been to use elaborate research designs to introduce statistical controls. But the major problem resulting from basing monitoring and evaluation on causal models is that it leads to overly sophisticated or complicated research designs and data collection methods. As

mentioned earlier, this has been one of the principal reasons many monitoring and evaluation systems have failed.

In response to experience with causal models guiding monitoring and evaluation, current thinking is heading toward a far "softer" approach to assessing the effects of project interventions. In general, greater emphasis is being placed on meeting the more limited information needs of project managers. The question of the effects of project interventions is dealt with indirectly or inferentially. For example, to assess whether an area development project is having a positive effect, it may not be necessary to try to measure production increases. Instead, it may be sufficient to use administrative records (to track the volume of inputs distributed by private suppliers or government agents and the volume of crop shipments to local and regional markets) and to interview village leaders about general production trends. Similar strategies would be used for other components in the overall project information system.

The point is that causal models need not guide the design of information systems for all projects. In certain experimental or pilot projects, for example, direct measurement of project effects may be necessary (and even feasible given the more limited geographic scope of such projects). But many (if not most) projects can be monitored and evaluated adequately using less rigorous but more practical techniques of data collection.

3.1.5 Multiple Methods and Multiple Data Sources

Monitoring and evaluation approaches in the past were often based on a single data collection method, such as annual sample surveys of residents in the project area. Information about progress toward project objectives and the effects of project interventions was largely dependent on the success of the main data collection instrument. Obviously, if the survey failed (for whatever reason, and there are many), project management was left high and dry.

In response to this problem, current thinking about project monitoring and evaluation encourages the use of multiple data collection approaches. This means that rather than investing most or all of the funds available for the project's information system in a major survey, funds are used to support several data collection activities. In turn, these activities tend to be smaller in scale and much more focused than standard household surveys. For example, a sample of clients might be drawn from health clinic records to estimate the distribution of services being provided. This might be combined with in-depth, open-ended interviews with a subsample of those selected from the clinic's administrative records. Randomly selected patients could be asked to complete a simple form concerning the adequacy or availability of the services they received. Additional funds may be set aside for special studies to examine issues or problems that could not be identified at the design stage but that surface during the course of implementation. In short, the idea

is to spread the project's investment in information across an interrelated set of data collection activities employing different methods. Thus if one of these activities fails, alternative sources of data are likely to be available to management.

3.1.6 Formal Versus Informal Information Collection

Consistent with the increased emphasis on management's information requirements, methodological standards appropriate for management purposes, and the use of multiple methods and multiple data sources, informal data collection activities in project information systems are receiving greater attention in monitoring and evaluation guidance. Informal methods use qualitative techniques of data collection -- for example, unstructured interviews of project participants, field observation, or discussions with individuals knowledgeable about the project and project area. This type of information is often the best that can be obtained given pressing time constraints or limited budgets. Admittedly, there is no way to determine how accurate or representative such data are, but they are often sufficient for management's purposes.

Informal methods have long been the basic source of information for many project managers. Incorporating such informal methods of data collection into project monitoring and evaluation in combination with other methods, rather than concentrating only on statistically based data collection techniques, should improve the overall effectiveness of the information system.

3.1.7 Host Country Support and Collaboration

A major lesson from past monitoring and evaluation activities is that acceptance of the information system as an integral part of the project by the host country is important to the project's success. Moreover, an important objective for an information system is to also serve as a vehicle for strengthening host country institutional capabilities for data collection and analysis. To be effective in this regard, the information system and the monitoring and evaluation it supports should be treated as a collaborative effort by the donor agency and the host country.

In many cases, aid-recipient countries are reluctant to support project monitoring and evaluation activities because of budget constraints, limited local expertise, and rejection of the general principle of the need for information for management purposes. A common "sticking point" with host countries is the use of loan funds for monitoring and evaluation activities. The connection between information and tangible improvements (e.g., increases in agricultural production) is often difficult to make. From the borrower's point of view, using borrowed money to collect information may appear to be a bad investment.

Overcoming or modifying such resistance to project information systems is very important. The results of monitoring and

evaluation often produce recommendations for actions required by the host country or for necessary modifications to the project that require host country approval. Such actions are far more likely to be taken or approved if the host country views the information used for recommending such changes as legitimate. One approach to overcoming host country resistance to project information systems has been for the donor to use grant funds for such efforts. The importance of adequate information for project management can also be reinforced by specifying host country support of project monitoring and evaluation activities as a condition precedent in the project agreement between the donor agency and the host country.

However, there are very definite costs associated with emphasizing institution building as an important objective for a project's information system. Data quality and the overall operation of the information system can be compromised, sometimes significantly, as a result of host country inexperience or minimal skills in data collection and analysis. Ideally, the situation improves with training as staff acquire the experience and skills needed. Assigning a technical adviser to support monitoring and evaluation activities during the initial years of the project is often necessary to ensure that the minimum information requirements of the project are met.

In short, monitoring and evaluation as a collaborative activity lends credence to information about the performance of the project. The collaborative approach also strengthens host country capabilities for data collection and analysis and, equally important, encourages the use of information for decision-making and development management. However, the costs of emphasizing institution-building objectives must be anticipated and compensated for by providing necessary technical assistance and by using data collection and analysis methods that are within the capabilities of host country project staff.

3.2 Organizational Arrangements for Monitoring and Evaluation Units

The issues raised by A.I.D.'s experience with monitoring and evaluation are important in planning information systems for new projects. Moreover, experience suggests that the organization of monitoring and evaluation systems can significantly affect the utility of information for management purposes. However, current guidance focuses primarily on the methodological aspects of information systems and offers little regarding organizational issues and options.

Perhaps the organization of monitoring and evaluation activities has received limited attention because decisions on organization are largely determined by the overall management structure of the project and the locus of responsibility for implementation. Clearly, organization of an information system should be consistent with other administrative arrangements if it is to serve management's needs. For example, in a project implemented by a

single lead agency, the information system will typically be the responsibility of that agency's monitoring and evaluation unit. If the agency lacks a monitoring and evaluation unit, then the project can support its establishment. However, it is increasingly rare that monitoring and evaluation systems are created anew with each project. More often, project information systems are directed through existing organizations responsible for monitoring and evaluation. On the one hand, project support can strengthen the capabilities of such units. On the other hand, poorly functioning or poorly organized units can unduly burden a project with problems that are not of its making. Identifying and correcting these problems will be a necessary first step when dealing with existing monitoring and evaluation units.

Three general organizational models summarize the approaches used to carry out project monitoring and evaluation functions: (1) working through an existing, permanent monitoring and evaluation unit located in a central ministry or other implementing government agency; (2) establishing a monitoring and evaluation unit as part of project management; and (3) assigning monitoring and evaluation responsibilities to the project management team without forming a special unit. The comparative strengths and weaknesses of these approaches are discussed below.

3.2.1 Monitoring and Evaluation Units Within Implementing Agencies

For many projects, the implementing agency is responsible for the data collection and analysis needed for project monitoring and evaluation. As noted earlier, this typically involves an existing monitoring and evaluation unit or statistics office within the implementing agency. Because the capabilities of these units are usually quite limited, training and technical assistance is often necessary to ensure that project information needs are met. (Less frequently, projects establish new monitoring and evaluation units in implementing agencies.)

A major advantage of this approach is that it provides an excellent opportunity to support institution-building objectives and to address a critical development-management need. Developing a capacity for data collection and analysis benefits the host country through the transfer or expansion of a useful management technology. At the very least, developing such a capacity encourages better use of information for decision-making, not only for the project but also for other development activities in the sector, such as other ongoing projects or future projects implemented by the host country agency. This approach also maximizes donor agency and host country collaboration on monitoring and evaluation activities.

A major disadvantage of using existing units is that institution building is typically a long, slow process that can jeopardize the quality and timeliness of information produced. Moreover, in cases where an existing monitoring and evaluation unit is known to be weak and ineffective, the information it produces

may lack credibility with host country managers. Altering this perception can pose a difficult problem for the project. For example, the project may have very little control over agency staffing of the unit, or major organizational and budgetary problems may impede the operation of the unit. Working through existing units with limited capacity for data collection and analysis is also problematic for projects that have substantial information needs, such as highly experimental projects or those that might produce serious negative effects. In projects for which high-quality, timely information is of high priority, working through existing units may not be the best option. Finally, locating monitoring and evaluation functions in one ministry may pose special problems for projects that involve more than one host country agency, such as area development projects. The arrangement may not be acceptable to the other implementing agencies, and the information the unit produces might be ignored.

3.2.2 Monitoring and Evaluation Units Within the Project Management System

Establishing project management units outside the direct administrative control of existing ministries or agencies is a common implementation approach. In these cases, a monitoring and evaluation unit is often established within the project management system.

A major advantage of this approach is that the project does not have to cope with the problems involved in working through an existing monitoring and evaluation unit. The approach also enables the information unit to concentrate exclusively on the needs of the project and to escape the outside demands for information that are placed on monitoring and evaluation units within government agencies. In short, establishing a project information unit increases the probability of obtaining data of acceptable quality on a timely basis. This approach is also useful in projects involving several implementing agencies.

A major disadvantage of this approach is that it reduces the opportunity for strengthening host country capabilities for data collection and analysis. In some cases, establishment of a monitoring and evaluation unit outside of host country agencies appears to have weakened institutional capabilities. Competent staff have been hired away from their government jobs, which pay considerably less than donor-funded projects. Moreover, the work environment and other fringe benefits available from project employment, compared with government work conditions, can also be a strong incentive to leave government service.

A second problem with this approach has resulted from placing monitoring and evaluation units beyond the direct control of project management. In these cases, the monitoring and evaluation system has often failed because it is placed in an adversarial position relative to the rest of the management team and is viewed as passing judgment on the performance of project

staff. As a result, the monitoring and evaluation unit becomes isolated from the project, reducing its utility to management.

These problems can be minimized. First, institution building objectives can be supported by temporarily transferring host government staff to the project information unit on a short- or long-term basis. These government staff are not hired by the project; they remain government employees. The project provides the resources, training, and technical assistance for data collection and analysis activities of mutual utility to the project and to the staff member's agency. When staff members return to their permanent position, they will have acquired or improved skills useful to their job responsibilities. Institutional capabilities are thereby strengthened, though perhaps not to the same degree as when a project works directly with an existing monitoring and evaluation unit.

Second, the problem of monitoring and evaluation units becoming isolated from the project can be avoided by making the unit a support service under the control and direction of project management. The unit collects and processes data needed by managers for internal monitoring and evaluation. Interim evaluations of the project are an external process involving nonproject staff using data provided by the information unit.

3.2.3 Monitoring and Evaluation Assigned to Project Management

A third approach frequently used is to assign monitoring and evaluation activities to the project management team without establishing a special unit or working through a host country ministry. Under this arrangement, project staff have limited responsibility for primary data collection and analysis. The most that can be expected is that project staff will track implementation progress toward project objectives -- that is, they will gather primarily data on outputs and possibly some limited data on short-term effects. More extensive data collection and analysis is performed by nonproject, short-term staff, as are interim and final evaluations. Project staff may participate, but their primary responsibility is overall management of these activities.

This approach is advantageous when a full-time information specialist is not necessary for the project's monitoring and evaluation. Rather, specialized expertise for these activities is obtained as it is needed to assist project personnel. Moreover, the institution-building objective of improving host country capability in data collection and analysis is not well suited to all projects. If it were, the monitoring and evaluation units in many countries would quickly be overwhelmed. Bringing in an information specialist as needed offers a viable option for many projects. Lastly, project costs are lower without a formal monitoring and evaluation unit, which is especially important for smaller projects for which the costs of a built-in monitoring and evaluation unit would be excessive.

The major disadvantage of this approach is that the information requirements of the project are likely to be assigned a lower priority by project staff. Meeting schedules and keeping expenditures moving become the predominant concern in many projects, and issues about overall performance and development effects can easily get lost in the crush of implementation. Project staff may also lack the appropriate skills or interest required for maintaining even a simple project information system. Another disadvantage of this approach is its potential for underestimating the information requirements for sound management. As problems arise and outside specialists are brought in, initial cost savings can quickly disappear.

4. CONCLUSION: NO MAGIC BULLETS

The point of this paper has been to draw attention to key issues in planning project information systems for monitoring and evaluation. How these issues are addressed will vary from project to project. Experience with monitoring and evaluation clearly indicates that there is no single or uniform solution for obtaining the types of information needed for sound project management. But awareness of the options and of past pitfalls should lead to better planning and, possibly, more practical and effective information systems.

Clearly, there is considerable room for improvement over the current state-of-the-art in planning project information systems. An important element in this development could be far greater donor coordination. At this time, coordination among development projects that have overlapping or complementary information requirements is woefully inadequate. Granted each project has its specific information requirements, but some thought about how project-generated data could be pooled for analyses of important development constraints within a sector is certainly possible and highly desirable.

One step in this direction could be coordination among donors concerning a general strategy for supporting monitoring and evaluation within a country. Instead of each donor setting its own course, a general agreement among donors on which level of government or level of management should be the principal channel for certain types of monitoring and evaluation information could be very productive. For example, in discussing experience with monitoring and evaluation, Dennis Casley of the World Bank and Robert Berg of the Overseas Development Council each raised the possibility of dividing monitoring and evaluation functions among three general levels of administration. Monitoring of implementation outputs and progress would be restricted to the project level. Periodic evaluation of project effectiveness would in general be the responsibility of sector-level agencies (e.g., the evaluation unit within a ministry). Cross cutting or multisectoral studies and information requirements involving the use of several types of data, such as for national policy analysis, would be a function of a central analytic

office located in the planning ministry or attached to the office of the head of state.

Such a division of labor offers important gains. First, it would extricate development agencies from activities for which they are ill-suited or understaffed. Second, by establishing general areas of responsibility for certain types of data and information, the corresponding expertise for that work is built-up at the appropriate level of development management. Third, resources for information collection and evaluation would be used more effectively. At the very least, the redundancy resulting from the establishment of yet another data collection unit and the unnecessary competition among development projects for host country staff, resources, time, and so on would be reduced. Although the same model might not work in every country, there are alternatives. But a general strategy for greater coordination of this sort is certainly much needed.

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