Evaluation of education is commonly approached by examining the differences that our efforts have made in those who take part in our programs. But this is an overly simplistic view of both the process of evaluation and its purpose. Evaluation involves a systematic collection of information about the activities, characteristics, and outcomes of programs, personnel, and products for use by specific people to reduce uncertainties, improve effectiveness, and make decisions with regard to what those programs or products are doing and affecting (Patton, 1982). It is the process of comparing evidence with criteria in order to assess the value of a program, activity, or product.

### Purpose of Educational Program Evaluation
Evaluating educational programming can target a number of important purposes, including:
- assisting in planning and setting program objectives;
- assessing program procedures and tasks as they occur;
- assessing specific program short-term effects; and
- assessing long-range goals.

Each of these purposes actually relies on different types of evaluation, especially in the techniques used.

### Common Types of Evaluation
Perhaps the most overlooked aspect of evaluation is how it fits into program planning. Evaluation often addresses critical questions about accountability, effectiveness, and efficiency. But in developing the criteria by which programs are measured we also collect information about what a program can and/or should be.

### Formative Evaluation Techniques
These evaluations are aimed at providing information for program planning, improvement, modification, and management. Formative evaluations often focus on identifying audience needs and/or issues, problems, behaviors, etc., that a program should address. When done at the beginning of a project, they form the basis for why and how the project proceeds. They also provide a baseline of information from which changes can be monitored.

### Program Monitoring Techniques
These evaluations vary widely from periodic checks of compliance with policy to routine tracking of service delivered to counting the number of clients. These evaluations most often include post-workshop and post-field day questionnaires and program participant surveys that focus on who attended and how they felt about the program they attended.

### Summative Evaluation Techniques
These evaluations are aimed at determining program results and effectiveness, especially for the purpose of making major decisions about program continuation, expansion, redirection, and/or funding. This type of evaluation often focuses on what happened as a result of the program. Such evaluation usually requires data from multiple points in time so that changes can be measured. As the title suggests, summative evaluations are done at the end of a project and focus on impacts. In many instances, summative evaluations should be based on earlier data collection efforts. They may incorporate formative evaluation principles as part of a comprehensive evaluation plan.

### Planning Your Evaluation
Evaluation should not be an afterthought. It is an essential component of a program and should be carefully integrated into a project from the very beginning. As you begin the task of determining how to evaluate, try walking through the following five steps:

**Step #1.** Begin with a basic review of the project's overall purpose, its objectives, the topics or issues addressed by the project, and its target audience.

**Step #2.** Consider that evaluation can have one or more specific purposes; it is important that your evaluation strategy flows directly from those purposes. For example, an evaluation may:
- show changes in knowledge or awareness of an issue;
- provide information to specific audiences;
- show changes in attitudes;
- show changes in behavior;
document practice adoption;
· ascertain monetary impacts on farmers who adopt specific practices; or
· show changes in the condition of natural resources.

Step #3. In order to make the results of the final report useful, consider who holds a stake in the project and its outcomes. This illustrates the importance of identifying specific information that stakeholders want or need.

Step #4. Take stock of the information you already have and what you need to collect. An evaluation of a project rarely relies on a single data source or single collection strategy.

Step #5. Select the appropriate evaluation method and/or methods after you address:
· program purpose;
· evaluation purpose;
· stakeholders and their needs; and
· the information you have in hand versus what you need to collect.

Too often the methods for evaluation are determined before those points are addressed.

Deciding what to measure or observe is perhaps the most critical question that the evaluation planning process must address. It is important that evaluation planning not jump to "what and how to measure" too quickly. There is a range of program characteristics that are commonly considered as items to measure. These include: the setting or context in which the program occurs, program participant reactions, the process of implementation, program outcomes or reaching specific program goals, or even measuring program costs and/or savings to program participants (Herman, Morris, and Fitz-Gibbon, 1987).

As the evaluation is planned it is helpful to ask additional program stakeholders about the impacts they are most interested in. Impact-focused evaluations require more than just recording participation numbers or participant reactions through workshop questionnaire (Mohr, 1995). Impact-focused evaluations consider what happened after participants left the workshop or demonstration and implemented what they learned.

A Suggested Planning Process
Before setting out to evaluate an educational program, try writing down some evaluation goals and objectives. This should actually be done early in the program design process, before implementation and during the actual program planning process. This important step will not only clarify the purpose of the evaluation, but it will help explain your intentions to administrators, staff, and even program participants. This goal-setting also leads to a staff commitment to action and a feeling that evaluation is not an afterthought but part of program design.

More specifically, planning an evaluation should focus on:
· what information is important to collect over the life of the project (i.e., knowledge, skills, attitudes, and/or behaviors);
· how the information should be collected (i.e., surveys, focus groups, interviews, meeting questionnaires, etc.);
· who will collect the information (i.e., project staff or an external professional);
· the time frame for data collection (i.e., weeks, months, is it a one- or time-two comparison); and
· how the results will be communicated (i.e., report, newsletter, news releases, memos, personal discussions, etc.).

Programs or projects with external advisory committees may be able to take advantage of such a group for evaluation planning. Evaluation is important for accountability purposes, and those who establish the terms of accountability should take part in determining the what and how of information collection regarding the successes and obstacles of the program. This group will likely want to know what the program accomplished, and therefore should have opinions about what are or are not important measures of program performance.

Overcoming Specific Barriers
As you approach the evaluation of a project there are a number of common issues that should be addressed by those responsible for planning the evaluation. Many of these issues need to be addressed at the program delivery level, or directly by staff conducting the evaluation. Some of the most common barriers to evaluation include:
· Lack of familiarity with the project being evaluated.
· Limited evaluation skills in those conducting the evaluation.
· Inability to write for lay audiences and translate evaluation findings.
· Limited design/desktop publishing support for summarizing findings into reports.
· The investigative skills of those conducting the evaluation being too narrowly focused.
· Lack of familiarity with both evaluation processes and the subject being evaluated (e.g., a specific aspect of farm management).
· Inattention to detail in collecting information.
· Lack of commitment to working with project partners to determine collaborative impacts.
· Failure to plan funding for the evaluation in the gen-
eral implementation budget.

- Staff turnover - by evaluation time, those responsible for implementing the education program may have moved on to other programs.

Finally, one of the most pervasive and difficult problems to address is when those in charge of a program see evaluation as a threat (Van den Ban and Hawkins, 1996). This can be a serious problem, especially in agency cultures where criticism might cause loss of face and is not seen as a positive way to help staff improve their work. The issue of perceived threat must be addressed by administrators and organization leaders. The feedback system of an agency or institution must be supportive and encouraging - rather than responding negatively to evaluation results.

**Unique Evaluation Challenges**

During the past decade, evaluation measures associated with educational programs have become more challenging and sophisticated. For example, in the 1980s and early 1990s, the United States Department of Agriculture required cooperative state extension service staff to record program participant or attendance numbers and report them annually. While such numbers are still required in certain program areas, the type of educational programs and the issues that extension staff address cannot be adequately judged solely on participation rates. Some of the most challenging impact measures associated with state extension service programs require in-depth evaluation techniques and special data collection efforts.

**Evaluating Practice Adoption.** It may be insufficient merely to count who attended a meeting or received information. The focus must be on the application of program ideas and the extent to which those ideas are used. For example, farmers may be instructed on the virtues of nutrient management planning on the farm. The number of farmers attending the educational program, although an important piece of information, is of limited use. More difficult to obtain but also more useful would be data on the extent to which farmers with nutrient management plans actually followed those plans.

**Collaborative Program Efforts.** Many educational programs are not conducted in isolation from other social programs. For example, water resources protection programs often include multi-agency efforts, with several agencies assuming roles for delivering information to target audiences. Evaluating the effectiveness of educational efforts aimed at getting private well owners to annually test their water supplies may need the combined efforts of local county extension agents, local health departments, and/or state environmental agencies (i.e., department of natural resources or environmental quality). These other stakeholders should be part of program planning and evaluation design so that different aspects of audience change will be considered.

**Volunteer Contributions.** Educational programs often involve tapping the expertise, time, and knowledge of local volunteers. In environmental cleanup programs, such as adopt-a-highway or adopt-a-watershed, volunteers give their time and sometimes even money to help. Because they are outside the agency, these volunteer resources are often overlooked. However, in the present agency world of focusing on program efficiency, volunteer contributions are important to show the leveraging local expertise.

**Policy Development.** This area often requires specialized evaluation tools and may include a number of different techniques to evaluate policy comprehensively. However, in the 1990s, many government agencies placed increased emphasis on opening policy discussion and development to local citizens and stakeholders. The result is a participatory management philosophy where policy development and implementation occur locally (i.e., the development of manure storage ordinances, construction site erosion control ordinances, and land use/zoning policy). This type of evaluation may require qualitative skills that rely on case studies and local data collection.

**Finding Assistance and Help**

Evaluation should be part of program design. It is just as important as actual program implementation and needs to be considered as early as possible in the development of educational programs. As evaluation issues arise, those who are responsible for evaluation may want to enlist the assistance of evaluation professionals. Local land-grant institutions are often a source for such help. Many have research centers, institutes, or laboratories. Private-sector consultants are sometimes available, but their services are often focused only on specific topics or types of evaluations.

**Literature Cited**

