

# **A STRATEGY FOR SUCCESSFUL EXTENSION AND DEVELOPMENT: A STEP-BY-STEP GUIDELINE TO A SIMPLE BUT SCIENTIFIC PROCEDURE TO EVALUATE EXTENSION PROGRAMS AND/OR PROJECTS**

S.E. Terblanché<sup>1</sup>

## **ABSTRACT**

*There is an increasing demand to answer the question, if an extension service is effective an justify a budget? What is needed is an ongoing and continuous process of evaluating extension programs/projects to determine their relevance, performance, efficiency and impact. The objective of the study is to identify through an intensive literature review the most important aspects to successfully evaluate programs/projects. The step-by-step guideline (consisting of 10 steps) is a simple but scientific evaluation procedure and therefore an extension tool to evaluate extension programs/projects effectively.*

## **1. INTRODUCTION**

There is today an increasing demand to answer the question: Is an extension service effective and justify a budget?

Extension staff is daily involved in the activities of a number of extension programs/projects and the continuous evaluation of progress or failures of the programs/projects are becoming more and more important. The once-off evaluation activity at the end of a program/project is not acceptable any more. What is needed is an ongoing and continuous process of evaluation to be able to timely make adjustments in the program/project if and when necessary (Solomon, 1984:355–357).

Evaluation is an action-oriented management instrument and process. It is used to improve present and future activities. Evaluation therefore can be defined as a periodic assessment of the relevance, performance, efficiency and impact of a project or activity in relation to its objectives that should be achieved (Düvel, 1998:30 and Düvel, 2002:2-2). The problem is that the majority of extension staff does not have sufficient time, experience or training to get involved in precise scientific evaluation. Extension staff needs

---

<sup>1</sup> Senior Lecturer, Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, Pretoria, South Africa.

information on the results of their programs/projects that is of sufficient value to justify the inputs to obtain it. They want information that will improve:

- Their accountability;
- Their programs/projects;
- Their understanding of the programs/projects and
- Their morale and satisfaction.

It is believed program/project participants (beneficiaries), donors and other role players involved in extension programs/projects are in need of the same information and for the same reasons (Bennett, 1980:2-3 and McKendrick, 1989:32). Information gathered in this process is analysed so that the relevance, effect and consequences of activities are determined as systematically and objectively as possible. Some evaluation will be done by researchers applying social science methods. However, most evaluation will be done by extension officers from whom simpler appropriate and less time consuming methodologies have to be developed. The extension officer often restrict him/herself to a systematic analysis of the observations he/she makes in the normal course of the work, although he/she sometimes will be able to collect additional information by questionnaire.

This step-by-step guideline is an effort to get extension staff at all levels (from grass root to top management level) committed and involved in a continuous process of evaluating extension programs/projects and all other day-to-day activities. Thereby justifying the existence of the extension officer in the process of helping people to help themselves.

## **2. THE STEP BY STEP GUIDELINE TO A SIMPLE BUT SCIENTIFIC EVALUATION PROCEDURE**

### **2.1 Step 1 – determine the interest in the results of the extension program/project**

Answer the following questions:

- i) Who needs what evidence on the results of program/projects?
- ii) Is it money well spend?
- iii) Are the programs/projects worth the effort?
- iii) Can programs/projects be improved if you don't know their outcomes (results)?

## 2.2 Step 2: Selecting a program/project to be evaluated

To account for the results of a particular program, use the following three factors (need, feasibility and persuasiveness) to select a program/project to evaluate:

i) *Need*

Which program/project is most in need of the evaluation of its progress and/or end results?

ii) *Feasibility*

Which program/project can be evaluated most feasibly?

iii) *Persuasiveness*

Which program/project is most likely to be adjusted or modified if an evaluation report shows the need for adjusting or modification? (See Appendix A – Method to select a program/project).

## 2.3 Step 3: Identifying who will use and implement the evaluation results

To produce an evaluation report is one thing, but getting it accepted and used by others is quite something else. Someone once said: **“you can lead a decision maker to information, but you can’t make him swallow it”**. What can the extension officer do to ensure that the evaluation report will influence people to support him/her when needed program/project changes must be implemented, including the supply of resources needed to do that?:-

a) *Identify reasons of different stakeholders for using the evidence on the results of the program/project.*

It could include some of the following:

- Whether to recommend or approve or disapprove resources.
- Whether to revise the program/project.
- Whether to adjust or modify the program/project.
- Whether to initiate other programs/projects.
- Whether to suspend a program/project (Solomon, 1984 quote by Lombard *et al*, 2003:268-269).

b) *Ensure that the evaluation report will be used*

Identify who might have an interest in the findings and involve them in the design, implementation and interpretation of the study. Remember:

*What a man hears he may doubt;*

*What he sees he may possible doubt;*

*But what he does himself he cannot doubt.*

To help with the identification of evaluation users and intended uses make use of Appendix B, the **“Pyramid of Evaluation Users and intended Uses”** (Düvel, 2002, adopted from Rivera, 1982).

c) *Recruiting an evaluation team*

Why an evaluation team?

- To increase the relevance, credibility and usefulness of the evaluation results, make it a team effort to share the responsibility for the purpose, method and completion of the evaluation.
- A team can also make the workload lighter and the job more enjoyable.
- Think serious about whom one would like to invite to work with in designing, interpreting and hopefully using the results.

Who should evaluate? Is it going to be in-house (internal) or outside (external) evaluators or a combination? (Anandajayaskerm, 1982 quoted by Düvel, 2002:3–8).

## **2.4 Step 4: Indicating and defining the scope for evaluation**

The next step is to set out hierarchical objectives and goals that can be used to develop indicators of progress towards desired outcomes. Several logical frameworks can be used to help plan the scope for evaluation. Bennett (1977) describes a chain of events assumed to characterized most programs in extension.

### **2.4.1 Bennett's evidence model**

It is important to note that the objectives of any program/project exist at different levels. These levels and possible evidence are, according to Bennett's

hierarchy (Bennett, 1977 as quoted by Warner & Mauer, 1984:6 and Warden & Neumair, 1987), the following:

**Table 1: Bennet's evidence model**

LEVEL	EVIDENCE
7. End results	Socio-economic environmental and individual consequences of the program/project
6. Practice change	Adoption of and application of knowledge, attitudes, skills and aspirations
5. KASA change	Knowledge - what do you know? Attitudes - how do you feel? Skills - what can you do? Aspirations - what would you desire?
4. Reactions	Degree of interest Like or dislike of activities Feelings toward program
3. People involvement	Number of people reached Characteristics of people Frequency and intensity of contact
2. Activities	Programs/projects carried out Educational methods and techniques used Subject matter taught
1. Inputs	Staff involved - time Volunteers involved - time Cost Resources used

According to the above structure: Extension staff (Level 1) invest a given amount of inputs in order to conduct specific activities (Level 2) intended to obtain people involvement (Level 3) in the activities. The levels off objectives concerning the outcomes of the program/project include participants immediate reactions (Level 4), participants KASA change (Level 5), changes in knowledge, attitudes, skills and aspirations, participants practice change (Level 6) and the end results (Level 7). Clear, specific and measurable objectives are a pre-requisite for evaluation. The evaluator must know what to look for and evaluate the following:

- The people concern

- The kind of change or behavioral change desired
- The time dimension

#### **2.4.2 Select the activities and program/project participants who will be involved in the evaluation**

Use the four program/project traits (methods, content, audience and time period) to define the scope of the evaluation:

##### *i) Methods*

- Identifying the delivery methods/techniques used to implement the program/project
- Include clientele-initiated activities

##### *ii) Content*

The content of a program/project includes:

- Psychological, economical and /or social processes and/or
- Physical, chemical and/or biological processes

##### *iii) Audience*

When identifying the audience for evaluation purposes be aware that there might be more than one audience involved, depending on their stage of involvement. Treat each audience separately.

##### *iv) Time period*

Evaluate events that took place less than three years ago. The scope of evaluation should:

- be applicable to the entire program/project
- deal with a number of activities
- deal with the main theme of the program/project

Be careful that the scope does not become too complex and broad and therefore becomes unmanageable (Bennett, 1984:6-7).

### **2.4.3 Identifying the possible results expected from the program/project**

Expected results are considered as those related to the levels of reactions, KASA change, practice change and end results. It is also called evaluation of the program/project products or outcome results. Three levels of program/project results are evaluated:

- i) changes in knowledge, attitudes, skills and aspiration ( KASA changes, Level 5)
- ii) practice results
  - clientele patterns of behavior
  - actions of performance ( Level 6).
- iii) end results
  - consequences or impacts off program/project induced educational and/or practice results (Level 7).

For extensionists to successfully evaluate a program/project it will be necessary to identify the independent, intervening and dependent variables. The relationship between these variables and the influence of the independent variables (personal and environmental) and the intervening variables (need, perception and knowledge), on the adoption behavior and production efficiency (dependent variables), of farmers/beneficiaries, can then be determined.

### **2.5 Step 5: Identifying respondents (beneficiaries) participating in the program/project**

The aim of any evaluation is to obtain information on certain characteristics of the population (audience) as a whole. This can be done by studying or interviewing every element (participant) from the population or by selecting a number of elements from the population. Such a subset of elements is generally known as a sample (Neuman, 2000:195-220).

*Remember:*

- If there are fewer than 40 participants in the program/project, interview them all.
- If there are more than 40, you need to select participants from name lists or other resources that are available.

## **2.6 Step 6: Constructing questions and questionnaires**

The one question that is normally asked about a program/project results is, to what extent did they met the objectives? Clear, specific and measurable objectives are however a prerequisite for evaluation (Düvel, 2002:6-2). Program/project objectives are only one basis for questions regarding the program/project results. It is therefore necessary to try and include those levels of evidence that correspond to a significant degree with the program/project objectives.

### **2.6.1 Consider the kinds of questions users might ask regarding the seven levels**

**Level 1** - Inputs: what kinds of personnel and other resources, and how many did extension expend on the program/project?

**Level 2** - Activities: what kinds of information and methods of delivery were used to interact with participants?

**Level 3** - People involvement: who has participated and number of participants. What have the participants done in the learning situations?

**Level 4** - Reactions: to what extent did the activities appealed to the participants?

**Level 5** - KASA change:

- Knowledge change – to what extent have participants changed the awareness, understanding and ability to solve problems?
- Attitude change – to what extent have participants interests changed regarding the ideas or practices presented?
- Skill change – to what extent have participants changed in terms off their verbal or physical abilities?
- Aspiration change – to what extent have participants selected to get involved in future actions?

**Level 6** - Practice change: did participants, and to what extent, applied their KASA change to their personal and working lives?



**Level 7** - End results: To what extent have participants and others been helped hindered or harmed by results of changes in KASA and other practices? (Bennett, 1984:9).

**2.6.2 Designing the questionnaire and types of questions**

Two basic question formats are used in survey research namely:

- The open question (also called, free response or unstructured question) and
- The closed question(also called, the structured question).

In an open question the respondent is encourage to formulate and express his response freely. By a closed question format it is meant a question that contains specific, mutually exclusive categories of response, from which the respondent selects the one category that best suits his/her response. An open question can always be used to follow up all closed questions. The following open questions can be used to follow up a closed question:

- Could you please explain your answer?
- Would you give an example of what you mean?

**2.6.3 Now to construct the questionnaire**

The next step is the construction of questions at the different levels of evidence on program/project results. An example of a question at Level 4 – KASA change could be formulated as follows:

“Think back to the activities in which you were involved. To what extent (use the Lickert scale below) did you learn more about?”

Activity – 1: land preparation	<b>1 2 3 4 5 6</b>
Activity - 2: fertilization	<b>1 2 3 4 5 6</b>
Activity - 3: disease and insect management	<b>1 2 3 4 5 6</b>

Scale:

- 6 - to a great extent
- 5 - to a slight extent
- 4 - to a poor extent
- 3 - not at all
- 2 - don't know/don't recall
- 1 -other (specify ).....

“Could you briefly explain your answer for each activity”!

There are different types of scales that can be used. The main objective in using a scale is to measure abstract concepts or attitudes, for obtaining information on sensitive matters, to obtain a single measurement for a series of related concerns and to obtain a higher level of measurement (Neuman, 2000:182–184 and Düvel, 2002,10:14-17).

#### **2.6.4 Other items and procedures**

Do not forget to identify the independent (personal and environmental), intervening (need, perception and knowledge) and dependent variables (adoption behavior and production efficiency) when constructing the questionnaire (Neuman, 2000:127).

#### **2.6.5 Field-testing the questionnaire**

After the draft questionnaire has been constructed, it is of the utmost importance to test and refine it (Belson, 1986), summarized by Düvel, 2002, 10:21-31). Field-testing consist of two possible steps:

- i) Informal testing – ask colleagues and others who are familiar with the program/project to criticize the questionnaire.
- ii) Formal testing – field-tested the questionnaire with two or three program/project participants.

*Finally*

Remember a questionnaire must satisfy three objectives:

- i) it should meet the aims of the research
- ii) it should reflect accurate information on the topic of the study
- iii) it should be practicable given the available time and resources

### **2.7 Step 7: Interviewing program/project participants**

It is now time to determine and plan the survey itself. Who will do the interviewing and do they need training? The interviewer has a decidedly important part in the successful completion of the questionnaires.

### **2.7.1 Selecting interviewers**

When choosing a team of interviewers, consider the following:

- Will the survey data be more credible to users of the study, if the interviewers are not responsible for conducting the program/project?
- How many interviewers are available?
- Is there a need to train interviewers?
- Does the persons have the confidence to contact people and pose questions to them?

### **2.7.2 Training the interviewers**

Regardless of experience all interviewers require a certain amount of training.

The training program can be divided into two parts:

- i) orientation (purpose, background and techniques).
- ii) practice (experience in filling and editing the forms and in asking the questions).

### **2.7.3 Methods of collecting data**

The person conducting the evaluation needs to decide what is the most practical and appropriate way to collect the data. The method of collecting data should never determine what is collected. Take the following into consideration:

- i) objectives of the study
- ii) the type of advice that might be used to obtain evidence
- iii) the respondents from whom data is needed
  - where and how can they be reached?
  - will they represent a sample of the total population?
- iv) the resources available
  - time
  - funds
- v) the advantages/disadvantages of each method.

### **2.7.4. The interviewing of respondents**

The proper collection of data by means of interviews is a very important tool, and the three major kinds of interviewing that can be used in extension are:

- i) Face-to-face interview
- ii) Telephone interview
- iii) Group interview

### **2.7.5 Responsibility of the interviewer**

The interviewer plays a very important role and is responsible for actually contacting the respondent and collecting the data. The following are personal and professional responsibilities of the interviewers:

- i) Maintain a neat and personal appearance.
- ii) Be considerate and honest with the respondents.
- iii) Understand the purpose of the study.
- iv) Be thoroughly familiar with the instrument.
- v) Follow sampling instructions.
- vi) Ask questions exactly as written.
- vii) Check for completeness (editing).

### **2.7.6 Making and completing an interview**

There are four main stages to making and completing an interview:

- i) Gaining entrance, making the approach and establishing rapport. Creating a feeling of trust and confidence.
- ii) Securing and recording information;
- iii) Closing the interview, leave the respondent with a feeling of having being helpful and the cooperation has been appreciated
- iv) Editing, be sure all identifying information is entered!

## **2.8 Step 8: Analysis and interpreting of the data**

When reading a research report based on collected data, one will find it has charts, graphs and tables full of numbers. This information allow you to see the evidence collected. It is a way to organize and manipulate the data to reveal things of interest (Neuman, 2000: 313). Before starting to analyse the data, consider the following:

- i) Explore whether the interview data can be computer analysed. If yes: remember to implement the coding of the data
- ii) The statistical analysis of the data to test hypothesis and answer research questions, need expert planning and possible the support of a statistician.

- iii) No evaluation is possible without analyzing and interpreting the information obtained.
- iv) If the evaluation was a team effort, use the team to analyse and interpret the data. The team can also be used to determine conclusions, make recommendations and to nominate one individual to write the report.
- v) If the extension officer is however responsible for the evaluation, it will be his/her responsibility to analyse, interpret the data, come to conclusions and make recommendations.
- vi) To draw conclusions about the program/project results requires interpreting the findings. Findings have little meaning of their own. Conclusions should be general statements about the results. Taken into account the conclusions, evaluations as well as informal evidence, will enable one to make recommendations.

## **2.9 Step 9: Report writing**

A report is a written document that communicates the methods and findings of a program/project that has been evaluated, to others. It tells others what was discovered and it is a way of disseminating knowledge.

A more scientific structure consists of the following sections and is hereby recommended as the format for report writing:

- Title.
- Acknowledgements.
- Executive summary or Abstract (scientific report).
- Table of contents.
- List of illustrations, tables, graphs, etc.

Now follows the report divided into the following chapters:

1. INTRODUCTION
  2. LITERATURE REVIEW
  3. METHODOLOGY
  4. FINDINGS OR RESULTS
  5. DISCUSSIONS (could form part of 4)
  6. CONCLUSIONS AND RECOMMENDATIONS
  7. SUMMARY (could form part of 6)
- REFERENCES  
ANNEXURE

In some cases organizations have their own report instructions and guidelines that need to be followed.

### **2.10 Step 10: Communicating the outcomes of the evaluation**

One wonders how many evaluation reports have been filed, landed on a bookshelf and was never read. Study findings, conclusions, appraisals and recommendations should be shared with decision makers in a way that will facilitate their decision- making.

Identify the audience and generally there are two audiences namely the stakeholders and the general audience. With both of these groups the objective will be the same: to encourage them to understand and use the findings! Stakeholders and the general audience should be given the information to which they are entitled in the form that best suits their purposes and best encourages learning and changes.

Evaluation is a process of individual and collective learning. We learn from successes, but especially from failures.

## **3. CONCLUSION AND SUMMARY**

The major purpose of evaluation is to assist in program/project decisions. Formal evaluations are worth doing only if they have a change of effecting such decisions. Extension staff, program/project participants and donors are in need of information that will improve:

- Their accountability
- Their programs/projects
- Their morale and satisfaction

This step-by-step guideline is an effort to support extension staff to get involved in a continuous process of evaluating programs/projects and by doing so justify their service.

## **REFERENCES**

BELSON, W.A., 1986. *Validity in survey research*. England. Gower.

BENNETT, C.F., 1977. *Analyzing impacts of extension programs*. Washington DC. Extension Service. USDA.

BENNETT, C.F., 1980. *An approach to studying clientele-perceived results of cooperative extension programs*. Cornell University, Ithaca, NY Media Services.

BENNETT, C.F., 1984. *Reflective appraisal of programs*. Extension Service, U S Department of Agriculture. Washington, D C.

DÜVEL, G.H., 1998. Monitoring extension: A cognition oriented approach towards extension. *S. Afr. J. Agric. Ext.*, 27.

DÜVEL, G.H., 2002. *Evaluation and research of extension. Course material AGV 725*. University of Pretoria, Unpublished.

LOMBARD, A., WEYERS, M.L. & SCHOEMAN, J.H., 2003. *Community work and community development – perspectives on social development*. HAUM – Tertiary. Pretoria.

McKENDRICK, A., 1989. *Welfare programming: The process of measuring intervention outcome*. *The Social Work Practitioner-Researcher*, June, pp. (32–35).

NEUMAN, W.L., 2000. *Social research methods – qualitative and quantitative approaches*. A Pearson Education Company. Needam Heights, MA 02494.

SOLOMON, D.H., 1984. *Evaluating community programs*. In Cox, F.M., Erlich, J.L., Rothman, J. and Trapman, J.E. (Eds.) (q.v.).

WARNER, P.D. & MAURER, R.C., 1984. *Methods of program evaluation*. Kentucky Cooperative Extension Service, University of Kentucky. Unpublished.

WARDEN, P.E. & NEUMAIER, P., 1987. *A source book of program evaluation and accountability*. Colorado State Cooperative Extension and Colorado State University. Unpublished.

APPENDIX A

TO HELP SELECTING A PROGRAM/PROJECT TO EVALUATES. COMPLETE THE FOLLOWING TABLE USING THE 10-POINT SCALE FOR EACH PROGRAM/PROJECT AS INDICATED IN THE TABLE.

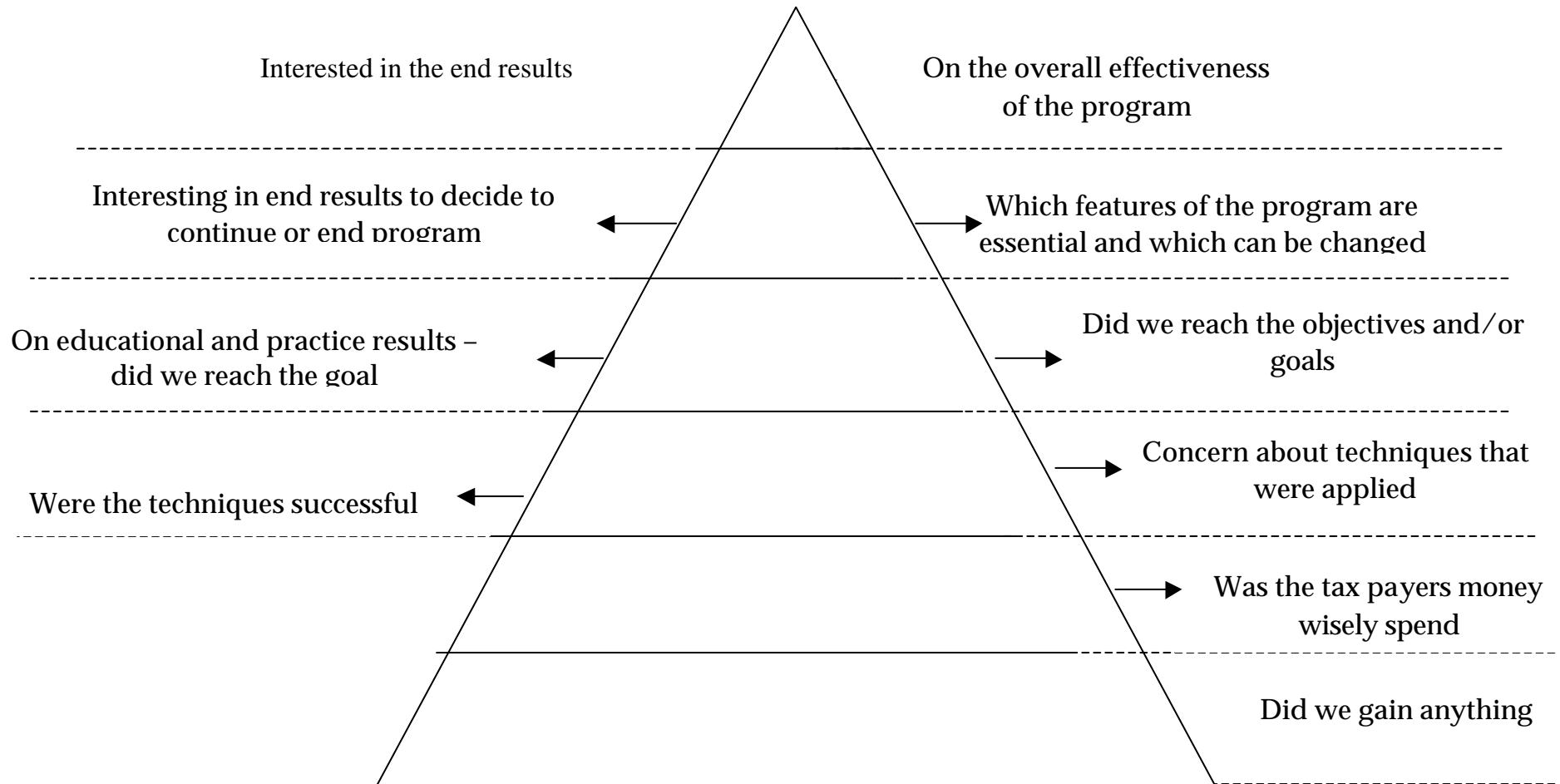
PROGRAM/ PROJECT	NEED	FEASIBILITY	PERSUASIVENESS
<p><b>Total for program/project 1:</b> <b>(80) = _____</b></p>	<p>i) Effectiveness <b>Scale: 1 - 10</b> 1 = ineffective 10 = highly effective</p> <p>ii) Gain <b>Scale: 1 - 10</b> 1 = will not gain anything 10 = gain maximum</p> <p>iii) Risks <b>Scale: 1 - 10</b> 1 = very risky 10 = no risk</p> <p><b>(30) = _____</b></p>	<p>i) Easy/difficult to distinguish from other programs/projects <b>Scale: 1 - 10</b> 1 = not easy 10 = easy to distinguish</p> <p>ii) Collection of data from clientele <b>Scale: 1 - 10</b> 1 = difficult to collect 10 = easy to collect</p> <p>iii) Clear criteria <b>Scale: 1 - 10</b> 1 = un clear criteria 10= very clear criteria</p> <p>iv) Possibility of disruption <b>Scale: 1 - 10</b> 1 = will disrupt 10 = no possibility of disruption</p> <p><b>(40) = _____</b></p>	<p>To adjust the program <b>Scale: 1 - 10</b></p> <p>1 = will play no role 10 = evidence will persuade people to adjust program</p>
<p><b>2. Name of program/project</b></p>			
<p><b>3. Name of program/project</b></p>			



**APPENDIX B**

**EVIDENCE NEEDED:**

**INFORMATION NEEDED:**



**PYRAMID OF EVALUATION USES AND INTENDED USERS**