A Training Manual on Monitoring and Evaluation Concepts, Tools and Strategies for Social Sector Programmes

Tools Series II

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Preface

This training manual was developed as a reference document for an introductory training course in Monitoring and Evaluation Concepts, Tools and Strategies for Social Sector Programmes. It is intended that the course material covered will assist in building monitoring and evaluation capacity in the social sector, through the exposure of participants to five modules of training and the transfer of knowledge by these persons to others in their respective Ministries.

This publication is the second in a series of Tools being developed by the Monitoring and Evaluation Division of the Ministry of Social Development, with the support of the Evaluation Advisor seconded to the Ministry through The Commonwealth Fund for Technical Cooperation (C.F.T.C.).

Permanent Secretary
Ministry of Social Development
INTRODUCTION

Most of you must have heard of, or participated in, an evaluation exercise. You may even have initiated an evaluation by carrying it out using internal resources or by contracting a consultant to do it. As managers of social sector programmes, you will, in the course of your career, be called upon to make decisions about the viability of a particular programme, or to compare the relative benefits of various programmes. When this happens, you would be required to support whatever decision you make with concrete facts and you will realise that evaluation can be a useful tool to achieve your objective. If you are not too familiar with evaluation, you may begin to wonder why there is a need for it.

In their seminal book on evaluation, Peter Rossi et al, argued “limited resources for social programmes in every country, including the United States, make it critical that such investments yield demonstrable and proportionate social benefits”\(^1\)

Evaluation is also undertaken to strengthen governance and institutional development. Findings from evaluations help to ascertain the extent to which ongoing programmes are (i) achieving the objectives for which they were designed; (ii) responding to the actual needs of the beneficiaries; (iii) conforming to existing policies and procedures; and (iv) contributing to institutional learning and capacity development.

Evaluation has become a key component of results-based and performance-based management. Findings from evaluations are used to initiate policy and programme changes. Also, they can contribute to organisational learning through constant exchange of information among key stakeholders.

Other reasons for undertaking an evaluation are:

- to help in determining whether or not a programme should be continued, improved, expanded or discontinued;
- to assess the usefulness of a new initiative;
- to increase the effectiveness of programme management;
- to satisfy the accountability requirements of sponsors; and
- to contribute to knowledge in social science.\(^2\)

\(^2\) Ibid
What is the Purpose of the Training Workshop?

The immediate objective is to introduce participants to foundational notions of monitoring and evaluation. It is hoped that participants would, by the end of this training workshop, have enhanced their capacity to collect, analyse, and use data to make decisions/judgments about the effectiveness and appropriateness of social interventions.

The medium-term objective is to facilitate the development of an evaluation culture. By this it is implied that monitoring and evaluation would be seen as a key component in the delivery of social sector interventions and that there would be a formal process within Ministries to support the undertaking of evaluations on a regular basis. Above all, decisions concerning social interventions would be based on credible data.

What are the Expected Benefits?

At the end of the training workshop, it is anticipated that participants would have acquired a good understanding of Monitoring and Evaluation (M&E) concepts, tools and strategies. They would have acquired some basic knowledge about programme design, especially how to define SMART objectives and how to identify indicators that are appropriate. They would have had a good understanding of data collection methods, data analysis and preparation of final evaluation reports.

A good grasp of the M&E concepts and tools should enable programme managers to interact effectively with external consultants who are contracted to undertake evaluations. If consultants are recruited to undertake an evaluation, programme managers should be able to discuss on equal footing and be abreast of the issues to be evaluated. They should have a good grasp of the methods that the consultants propose to use for data collection and analysis. This is important for quality control of the final product. Also, it is anticipated that participants would appreciate the use of evaluation findings to foster organisational learning, transparency and accountability. Feedback from evaluations could be used to improve existing interventions or to design new ones. Evaluation findings can help to reposition a Ministry by using the information from evaluation to develop a new strategic plan or simply to bargain for additional resources.
The Training Programme

The training programme is based on a modular concept. There will be five main modules:

Module 1: Defining the Concepts of Monitoring and Evaluation
Module 2: Programme Planning and Design
Module 3: Planning a Useful Evaluation
Module 4: Evaluation Design
Module 5: Data Collection and Analysis
MODULE 1: DEFINING THE CONCEPTS OF MONITORING AND EVALUATION

It is important that we have a good understanding of the origins of monitoring and evaluation. This will enable us to appreciate the usefulness of the concept in the context of policy and decision-making and the effective management of social sector programmes.

Origins of Programme Evaluation

During the administration of Presidents Kennedy and Johnson, the United States Government allocated considerable resources to social programmes to combat poverty and to stem the social and economic marginalisation of minority groups, especially blacks. Also known as “war on poverty” and “great society programmes”, massive resources were made available to deal with unemployment, crime, urban decay, access to medical care, mental health treatment, and housing. Due to the size of the programmes, there was interest in finding out if their goals and objectives had been achieved. Social commentators, political activists and politicians wanted to know the overall benefits of these programmes in terms of what worked and what did not work.

Some of these programmes were hurriedly designed and implemented, and were often thought to be too expensive in relation to the outcomes and impact. The rise of fiscal conservatism in the 1970s; the reduction in federal expenditure in the 1980s; and the emphasis on results-based management in the 1990s, further reinforced the interest in evaluation.

What is Evaluation?

Evaluation is the use of social science methods to collect, analyse, interpret and communicate information about the effectiveness of social programmes, which are initiated to improve human conditions. However, it should be noted that the contexts of social programmes do not lend themselves to rigorous social science methods and standards. The key is for every evaluator to be adaptable as well as sensitive to the information needs of decision-makers who call for evaluations. It is important to remember that evaluation requires flexibility in approach and thought, which implies that its purpose and audience will influence the scope. It is imperative that stakeholders’ needs/questions be paramount when designing the evaluation. In other words, programme evaluation should focus on issues that are of importance to the stakeholders. Having said this, it behoves evaluators to ask appropriate questions and to use the highest possible standards. After all, the bottom line of programme evaluation is to use findings to improve social conditions.

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3 Ibid
4 Ibid
With increasing emphasis on results-based management, evaluation findings are being used as a management tool to determine if a programme should be continued, discontinued, improved, expanded or curtailed.

It should be noted that in addition to using evaluation findings to improve programmes, evaluations could be conducted to contribute to social science knowledge. This may necessitate the use of rigorous social science research methods such as experimental and quasi-experimental design.

Furthermore, evaluation findings can be used for public relations purposes. In this context, evaluation can be launched to justify a political decision or simply to promote the image of the organisation that initiates it.

**Need for Reliable Data**

Whatever the purpose, an evaluation should produce reliable data that can stand both internal and external scrutiny. Evaluation findings should guide programme managers and decision-makers to make decisions to improve ongoing/future interventions. A fundamental principle, when considering undertaking an evaluation, is to aim for quality in the design of the study so that the findings can stand the test of time. Also, evaluation must be **credible, impartial** and **cost-effective**.

- **Credibility**
  It is advised that the process for data collection be transparent. As indicated before, key stakeholders must be consulted and their views must be taken into account when determining the questions to focus on. Most importantly, the core competencies or the skills set of the evaluators must be sound.

- **Impartiality and Independence**
  Evaluators should remain impartial throughout the evaluation process. Above all, findings and conclusions should be free of personal biases. Judgements must be based on proven and reliable data that can withstand scrutiny.

- **Cost-Effectiveness**
  The benefits of evaluation should outweigh the costs. The evaluation should be well tailored and focused to minimise costs. Under most circumstances, the total cost of an evaluation should not exceed 10% of the annual expenditure on the programme being assessed.
**Key Evaluation Issues**

Evaluation can focus on any of the following issues:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Question (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme relevance</td>
<td>Is the intervention still relevant in relation to the original problem? If yes how? And if not, why not?</td>
</tr>
<tr>
<td>Programme design and effectiveness</td>
<td>To what extent has the intervention met the stated objectives? What are the internal workings of the project?</td>
</tr>
<tr>
<td>Programme efficiency</td>
<td>How cost-effective were the various activities that were implemented? Could there be an alternative strategy to implement the intervention? If yes, how? And if not, why not?</td>
</tr>
<tr>
<td>Programme accountability</td>
<td>How well did the intervention adhere to established guidelines, procedures and policies during the implementation of the activities?</td>
</tr>
<tr>
<td>Programme impact</td>
<td>Did the intervention result in changing the circumstances of the beneficiary group in a substantial way? If yes, how? And if not, why not?</td>
</tr>
<tr>
<td>Catalytic effect</td>
<td>Did the programme result in changes that were not anticipated?</td>
</tr>
<tr>
<td>Programme sustainability</td>
<td>Can the intervention survive when funding ceases? If yes, how? If not why not? Does the community support the programme?</td>
</tr>
</tbody>
</table>

It should be noted that evaluation could cover any or all of the issues raised. When all of the issues are covered it is known as a comprehensive evaluation or an in-depth evaluation. The type of evaluation to be undertaken is invariably determined by the uses of the evaluation findings. Above all, whoever is requesting the evaluation could also influence the types of questions that could be asked. For instance, if the request comes from sponsors of the intervention such as the government, they may want to know whether the established policies and procedures are being followed as well as the ultimate effects of the intervention on the
beneficiary group. If it comes from those who are managing the intervention, they might be interested in finding out about the internal workings of the intervention in terms of the timeliness and cost effectiveness of the activities being implemented. These issues are discussed further in Module 3.

Remember this caveat: Keep the evaluation as focused and simple as possible. Too many questions could result in a superficial assessment and/or inefficient use of valuable time as well as human and financial resources.

**Evaluation versus Social Science Research**

Evaluation makes use of social science data collection methods and as mentioned earlier, every effort must be made to ensure that the data, which is collected during evaluation, is reliable and can stand any scrutiny. However, evaluation is more art than science because it is often tailored to meet the needs of decision-makers and programme implementers who may be impatient for the results. The nature of the request may not give the evaluator sufficient time to apply the most rigorous of methods.

Social science research is undertaken to produce knowledge about a given problem. The methods used tend to be more rigorous (for example: experimental design) than the tools used to design social interventions. The reason being that it may be unethical to withhold services from a segment of a population just for experimental purposes! It may even be politically unacceptable to do so.

One cannot possibly undertake a thorough evaluation if appropriate mechanisms have not been put in place to facilitate the monitoring of the intervention on a regular and systematic basis. Without a good monitoring system it would be difficult to compare pre-intervention and post-intervention conditions to ascertain if an intervention has indeed made a difference in the lives of the beneficiaries.

**What is Monitoring?**

Monitoring is used to determine how well a programme is carried out at different levels and at what cost. It tracks changes that occur over time in terms of resource inputs, production, and use of services. Above all, a monitoring system provides information on progress towards the achievement of stated objectives.

**Steps in a Monitoring Process**

For a monitoring system to work effectively, it requires the development of a management information system (MIS) for data capture, storage, retrieval and analysis. This could be based
on manual and/or electronic templates. It may be advisable to develop electronic templates for more complex monitoring requirements. For instance, to date, there are over 150 social interventions across Trinidad and Tobago aimed at improving the lives of the most marginalized segments of society. These interventions are carried out through several Government Agencies and reach thousands of beneficiaries. The data for such interventions should be available in electronic formats and stakeholders should be able to access the data at any point in time.

**Role of Performance Indicators in Monitoring**

Monitoring is relatively straight forward if right from the on-set of an intervention, thought is given to developing indicators for the defined objectives. The data collected should be based on the agreed indicators. The information derived could then be used to improve the activities (see Module 2 for additional discussion on objectives and indicators). In conclusion, it should be underlined that routine collection of intervention data is necessary. It helps to improve on programme management and performance and it enables us to know how well a programme is doing. If lapses are detected midstream, measures could be taken to streamline them. Moreover, it facilitates accountability in terms of determining if established policies and procedures are being adhered to.

**References:**

MODULE 2: PROGRAMME PLANNING AND DESIGN

This session focuses on programme initiation, planning and design. The underlying assumption is that evaluation should be a key consideration when programmes are being designed. It should form an integral part of the programme to facilitate the collection of appropriate data to inform decision-making. There will be emphasis on conceptual models, logical framework, writing of goals and objectives, identifying indicators, and defining activities. Also, participants will be introduced to programme theory, in particular how to identify programme assumptions and logic, including establishing causal relationships. This should help in having an understanding of how a programme works. This is because the underlying assumptions of a programme may or may not be valid. There is a need to review a programme theory in order to establish plausible explanations for what has worked and what has not worked.

Considerable thought must go into conceptualising and designing a programme. Programme theory or assumptions underlying a programme/project should be carefully considered. This module is predicated on the assumption that what goes into the initiation and preparation of a programme would go a long way in determining its ultimate success in terms of meeting the goals and objectives for which it was designed. In particular, if the programme is well designed, it becomes relatively straightforward to initiate formative and/or summative evaluations. The purpose of this module is to review the various pre implementation steps programme managers should follow before designing a programme.

Needs Assessment

Prior to designing a programme it is advisable that an attempt is made to review existing social and economic conditions and to determine how these impact on the proposed beneficiary group. Information gathered through a needs assessment can form the basis of project conceptualization and design. A needs assessment helps to probe and identify specific problems of a group or an entire community after which an appropriate intervention/strategy could be designed to respond to those challenges. Ideally, project implementation strategies should be based on the results of a needs assessment.

When is it appropriate to conduct a Needs Assessment?

In an ideal world, a needs assessment is undertaken prior to designing an intervention. However, it is possible that an organisation may have acquired considerable information and knowledge about the problem for which an intervention will be designed to solve. Under such circumstances, it may not be necessary to do a needs assessment. Alternatively, there may be other organisations that may have done extensive research on the subject matter. These findings could therefore form a basis for the design of the intervention; but should it become necessary to
do a needs assessment, consideration should be given to choosing the most appropriate methodology. Both quantitative and qualitative data can be gathered (See Module 5 for a description of the two approaches).

**Baseline Assessment**

This method is used to collect information on the focus beneficiaries of a proposed intervention. The findings from a baseline assessment should enable a comparison of change resulting from the intervention. The pre- and post – intervention data is compared to enable us to determine how and to what extent the intervention has had any tangible effects on the beneficiaries.

**Baseline data example**

A conceptual model is a theoretical construction of how the proposed intervention will achieve the desired results. It serves as the foundation of the project and it helps in defining objectives and indicators. Above all, the conceptual model should explain how the strategies to be employed during the intervention would result in a desired change. Information that is collected during a needs assessment could be useful when developing a conceptual model.

**Conceptual Model as an Integral Part of Programme Design**

A conceptual model is a theoretical construction of how the proposed intervention will achieve the desired results. It serves as the foundation of the project and it helps in defining objectives and indicators. Above all, the conceptual model should explain how the strategies to be employed during the intervention would result in a desired change. Information that is collected during a needs assessment could be useful when developing a conceptual model.

Graphics can be used to depict the relationships between the intervention, results and goals:

<table>
<thead>
<tr>
<th>Identification of a problem</th>
<th>Design of an intervention</th>
<th>Goals and objectives to be addressed</th>
<th>Results</th>
</tr>
</thead>
</table>

There are some key questions worth asking when designing a conceptual model. These are:

- What are the specific problems affecting the focus population?
- Which of these problems can the intervention realistically deal with?
• What changes must occur in the beneficiary population to reduce the problem?
• What activities should be carried out to bring about the change? etc.

**Conceptual Model for the Civilian Conservation Corps**

**Establishing a Programme Theory**

It is important that we understand the theory that underpins a programme. It may be that a programme or its underlying assumptions may not be sound, hence the need to review it. Such an exercise should help to establish plausible reasons for what has worked and what has not worked. A clear understanding of the programme theory requires a description of the concepts, assumptions and expectations that represent the programme as structured and operated. It also requires an analysis of key components including objectives, activities, and the target population. Note that programme theory establishes relationships between programme resources, programme activities, and programme outcomes.

**Developing a Logical Framework**

After developing a conceptual model, the next step is to develop a logical framework.

**What is a Logical Framework?**

It is a method for organising a project in a graphic form. A logical framework provides details of what the project will accomplish, how it will accomplish it and how one will know if it has been accomplished.
What are the key components of a Logical Framework?
The key components of a logical framework are as follows:
- The problem(s) the specific intervention is designed to solve (goal)
- What the intervention is designed to achieve (expected effects/impacts)
- How it will be done (activities)
- How the objectives have been or will be attained (results and process indicators)
- The means of verification of indicators (data sources)
- How often data will be collected (frequency)
- Who will collect the data? (person/department/organisation responsible)

Extracts from a Logical Framework:

<table>
<thead>
<tr>
<th>Project Title</th>
<th>One Caring Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Goal</td>
<td>To facilitate the partnering of an adult mentor with an ‘at risk youth’ in order to encourage the personal development and social integration of the mentee.</td>
</tr>
<tr>
<td>Objective 1</td>
<td>To provide a source of guidance and support for a minimum of 30 ‘at risk youth’ in yr 1.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Activities</th>
<th>Indicators</th>
<th>Means of Verification</th>
<th>Frequency</th>
<th>Person Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Advertise for mentors</td>
<td><em>Process:</em> No of mentor applications approved.</td>
<td>Admin. Records</td>
<td>Annual</td>
<td>J.Smith/M.Doe</td>
</tr>
<tr>
<td>1.2 Screen &amp; approve 30 mentors</td>
<td>No of groups providing beneficiary listings.</td>
<td>Admin. Records</td>
<td>Annual</td>
<td>J.Smith</td>
</tr>
<tr>
<td>1.3 Train Mentors</td>
<td>No of persons participating in mentor training.</td>
<td>Admin. Records</td>
<td>Annual</td>
<td>J.Smith / Consultant</td>
</tr>
<tr>
<td>1.4 Obtain list of names of possible beneficiaries from community groups, NGOs, probation, community police etc.</td>
<td><em>Results:</em> Percentage of mentees satisfied with mentor support system.</td>
<td>Post-intervention survey of mentees</td>
<td>Annual</td>
<td>J.Smith</td>
</tr>
<tr>
<td>1.5 Screen &amp; approve mentees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6 Match mentors &amp; mentees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Defining Goals and Objectives
These two concepts are often used interchangeably. Nonetheless their meanings are different.

What are Goals?
Goals represent long-term endeavours to bring about change or an improvement in the circumstances of the target beneficiaries, the time-frame is often 3-5 years or longer. For example: To eliminate abject poverty in Trinidad and Tobago by 2015, etc.
What are Objectives?
Objectives are more specific than goals. They are time-bound and are measurable. Here are few examples: (i) To reduce the number of vagrants in St Ann's by 10 per cent by 2005. (ii) To place 100 children in foster homes by the end of the 2003 financial year.

It is important that data is collected on each of the objectives to pin point if, and to what extent, the specific objectives have been fulfilled.

Impact Objectives
Impact objectives are objectives that focus on measurable outcomes. To determine if there has been a measurable change, it is preferable to use action verbs such as the following:

- Reduce
- Improve
- Strengthen
- Increase
- Decrease
- Enhance

These verbs can be used to denote interventions that are aimed at improving the general operations of an organisation. Some examples:

- To increase the number of foster homes by 50% by 2004.
- To reduce staff turn over in the Research Unit from 10% to 3% by 2005.

If the main preoccupation is to introduce an intervention that will lead to a change in the circumstances of the beneficiaries, then it is advisable to avoid inappropriate verbs such as the following:

- Train
- Provide
- Produce
- Establish
- Create
- Conduction

However these verbs can be considered if the intervention is geared towards the provision of services such as the following:

- To serve 500 clients in the 2003 financial year
- To train 300 peer educators by the end of the programme year.
Ultimately impact objectives are key since in practice most interventions aim to effect change in the circumstances of the beneficiary population. We should endeavour at all times to write “smart” objectives. SMART stands for:

- Specific – avoid differing interpretation
- Measurable – monitor and evaluate progress preferably in quantitative terms
- Appropriate – to the problem being addressed
- Realistic - achievable yet challenging
- Time-bound – within a specific timeframe

**Choosing Activities**

After identifying the objectives, the next step is to choose activities. Activities refer to specific tasks. They are what the organisation proposes to do to achieve the defined objectives. It is advisable to review available skills and expertise before identifying the activities. Examples of activities:

- Organise counselling sessions for teenage girls who could be at risk of getting pregnant.
- Conduct 10 hours of training for recipients of hampers under the SHARE programme.

**Identifying Indicators**

An indicator is a measure of a concept or behaviour. An indicator is used as a road map to assess how far and the extent to which specific project objectives have or have not been attained.

There are two types of indicators, namely process and results indicators.

**Process Indicators**

Process indicators provide information on the activities that are being implemented in terms of types of activities, the number, who the activities are directed at, etc. These indicators provide information that would enable us to determine if an intervention is moving in the right direction in order to achieve the stated objectives. This type of information is collected throughout the life of the intervention. Examples of process indicators are: (i) Number of people who have visited the San Juan Community Mediation Centre in the last quarter of 2002; (ii) Number of cases that have been successfully resolved at the San Juan Community Mediation Centre in the first quarter of 2003.

Process indicators are useful for monitoring. Data collected using process indicators help in determining the reasons for the success or failure of an intervention. For example: Number of participants at the M&E training programme organised by the Ministry of Social Development.
**Results Indicators**

These types of indicators are closely linked to the stated objectives of an intervention. They are meant to provide a framework for assessing whether or not as a result of the intervention there has been a visible change in the circumstances of the beneficiary population. The extent of change can be measured at the programme level or the population level. Results indicators are expressed as a percentage, ratio or proportion. It provides a basis for assessing the degree of change in relation to the beneficiaries and/or their environment. Although results indicators are meant to measure change, they should not be anticipative. For example: instead of “reduction in the number of teenage pregnancies” it is more appropriate to write “percentage of adolescent girls of 10-19 years old who have had babies in the last year”.

**Results Indicators and Objectives**

Since results indicators provide an indication of whether or not an objective has been achieved, it is advisable to include at least one result indicator when designing the intervention.

**Principles for selecting Results Indicators**

Indicators should be precise and clear. If indicators are written as percentages both the numerator and the denominator should be specified. For example: Percentage of beneficiaries of the SHARE programme who have successfully set up a micro enterprise.

Number of beneficiaries who have successfully set up micro enterprises ▶ Numerator
The total number of beneficiaries participating in the SHARE programme ▶ Denominator

**Criteria for Selecting Indicators**

There should be emphasis on the selection of indicators that are clear and concise. The following criteria must be considered when selecting indicators:

<table>
<thead>
<tr>
<th><strong>Criteria</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance</strong></td>
<td>There should be a clear relationship between the indicator and the objective being measured. Whatever information is collected must be useful to decision-making. More information is not necessarily more useful.</td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td>Relates to the stability of the measurement process. The same measurement process should produce the same findings even if the data analysis is repeated several times over.</td>
</tr>
</tbody>
</table>

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5 IPPF/WHR, Guided for Designing Results-Oriented Projects and Writing Successful Proposals, December 2000, p18

6 Ibid p18
• **Validity**
  The indicator must be consistent and should represent what is actually being measured. A host of factors can influence the validity of the data being measured including poor design of the data collection instrument, poorly trained data collection staff, measurement errors, poor sampling, transcription errors, etc.

• **Availability of information**
  There should be ready access to sources of data.

• **Ease in measuring**
  The indicator does not require sophisticated methods of measurement.

• **Easy to understand**
  The social planner/evaluator must clearly communicate what is being measured and the user must understand what is being measured.

• **Cost effectiveness**
  The cost of data collection in terms of both human and financial resources should be considered when choosing an indicator. It should not be too expensive to collect the data. The basic rule of thumb is that costs associated with evaluation should range between three and ten percent of the total cost of the intervention.

• **Robustness**
  The data that is generated must be reliable and replicable.

• **Timeliness in data collection**
  Data collection and analysis should take place within a well-defined timeframe in terms of the frequency of data collection and the currency of the data.

It may be prudent to select more than one indicator for an objective. This is because an objective may have different dimensions and complexity. In view of time constraints and in order to be cost effective, it is advisable to identify only a few indicators that are manageable.

**An example of a poor indicator:**
Increase in the percentage of youth using condoms during first sexual experience.

**An appropriate indicator:**
Percentage of sexually active youth (ages 15 to 24) participating in a sensitisation project that report-using condoms at last intercourse by age and sex.
References:


MODULE 3: PLANNING A USEFUL EVALUATION

Social interventions are designed to achieve government-wide goals in relation to solving social conditions or problems. Evaluations are initiated to determine the effectiveness of such interventions in terms of achieving the desired goals and objectives. Participants will be introduced to simple techniques for planning useful evaluations. Participants will be taken through the essential steps in initiating, planning and undertaking an evaluation, including the evaluation process, types of evaluations, evaluation assessment and scope of the evaluation.

The Evaluation Process

Determining what questions to select for evaluation is not easy, more so if there is no process in place to facilitate the choice of issues on which to focus. Ideally, there should be a mechanism to initiate the evaluation in terms of determining the issues, the preparation and approval of the scope of work, the undertaking of the evaluation, the submission of the final report to the initiator of the evaluation for approval, and the implementation of the recommendations.

In the specific context of Trinidad and Tobago, Parliament, the Prime Minister, the Cabinet, the Minister of Social Development, the Co-ordinating Committee on the Social Sector and Permanent Secretaries may initiate evaluations.

Types of Evaluation

An evaluation could focus on any of the following:

1. Projects
2. Programmes
3. Themes
4. Sectors
5. Country
6. Programme effectiveness
7. Programme efficiency
8. Programme impact
9. Programme sustainability
10. Overall programme evaluation and management audit

1. Project

This is a single intervention with defined goals and objectives, which can be implemented in a specific location or in several locations (towns, villages, communities, etc.) For example, an intervention designed to combat high incidence of teenage pregnancy in Morvant.
2. **Programme**
A programme consists of several activities or projects with defined goals and objectives that aim at improving the social and economic circumstance of the beneficiaries. An example is the SHARE programme.

Note that both projects and programmes can be subjected to mid-term and final evaluations. A mid-term evaluation is undertaken in order to determine the overall effectiveness, efficiency, and impact of a project or programme. Findings from a mid-term evaluation could result in making changes to the project/programme. A final evaluation or ex-post evaluation is an assessment of a project/programme after it has been completed.

3. **Thematic Evaluation**
This type of evaluation focuses on selected interventions within a sector that addresses specific priorities. For example: teenage mothers, drug addicts, and alcoholism.

4. **Sector Evaluation**
Sector evaluation focuses on a cluster of development interventions. For example: health, education, training, agriculture, micro-enterprise, etc.

5. **Country Evaluation**
This type of evaluation is common with donor-funded programmes/projects. A donor organisation can decide to evaluate its activities in a given country.

6. **Programme Effectiveness**
It is often assumed that once a policy/programme is initiated one can expect successful implementation. This is always not the case since the intervention may not have been effectively implemented. This could be due to poor design, inadequate inputs and a host of many reasons. This explains why a key component of evaluation is to focus on how well a programme has been implemented by looking at the inputs, processes, outputs and outcomes.

- **Inputs**
  This refers to resources (i.e. personnel, facilities, space, equipment and supplies) that make it possible for successful implementation of a project/programme.

- **Programme Processes**
  This refers to the use of inputs to undertake activities, which will lead to the realisation of the objectives that have been designed for the intervention. Programme processes range from management procedures to research and evaluation systems.
• **Programme Outputs**
These are the results obtained at the programme level through activities and use of inputs. Programme outputs can be classified into *functional outputs*, *service outputs* and *service utilisation*. Some examples of functional outputs are: the number of beneficiaries trained to set up their own business; the number of training sessions conducted; etc. Service outputs focus on access to services and quality of care, such as number of drug addicts who are currently being treated for addiction and number of those treated who are satisfied with the type of services being offered at the treatment centres. Service utilisation denotes the ability of a programme to retain repeat clients and more significantly to attract new clients, such as the number of new clients who have access to the SHARE programme.

• **Programme Outcomes**
These are results that occur after implementation of activities. Outcomes can be at the programme level or the population level and are medium term or long term in nature.

The relationship among the programme components can be illustrated as follows:

![Input, Process, Output, Outcome diagram]

In sum, evaluation that focuses on programme effectiveness/processes attempt to find out what works and what does not work when carrying out the implementation of activities. The following issues are often considered: How well is the programme functioning? To what extent are the services delivered as intended? Are the services being provided congruent with the needs of the target beneficiaries? What are the management capabilities of the implementers?\(^7\)

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\(^7\) Bertrand, Magnani and Tutenberg, Evaluating Family Planning Programmes. The Evaluation Project, September 1996
Example from the Adolescent Mothers Programme

Inputs
Teachers, social workers, child care trainers, skills trainers, centres/service delivery points, teenagers, financing etc.

Process
Provision of academic/skills/parenting & child care training, psycho-social support to pregnant teenagers and teenage mothers who attend the Centre 9am-3pm 5 days per week for 3 months.

Outputs
50 teenagers trained in skills, child care and parenting, more prepared for new responsibilities.

Outcome
• Reduction in birth rate in under 19 age group;
• Reduction in child morbidity (for children of trainees);
• Increase in awareness of risks of early child bearing
• Increase in awareness of benefits of child spacing etc.

7. Programme Efficiency
It is often said that knowledge of programme results is not sufficient enough to declare success in producing outputs and outcomes. Results must be measured against their costs. Due to competing demands on the resources of the government, it behoves programme managers to demonstrate that their programmes are not excessively expensive and that all things considered, their programmes are providing value for money. Programmes could be terminated or retained on the basis of their comparative costs. Of course in the realm of politics, it is not always feasible to kill a programme as a result of inefficiencies or cost over runs. Inefficient programmes may be kept purely for political expediency.

The following questions should be asked when conducting efficiency assessment:
• Is a programme producing sufficient results in relation to the overall costs/resources deployed?
• Which approach to providing the service results in the lower cost per unit in relation to the outcome?
There are two main techniques for assessing programme efficiency, namely **cost-benefit analysis** and **cost-effectiveness analysis**.

**Cost-Benefit Analysis**

Cost-benefit analysis focuses on the relationship between programme costs and outcomes with both cost and outcomes expressed in monetary terms:

<table>
<thead>
<tr>
<th>Hospital Care</th>
<th>Community Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>Food</td>
</tr>
<tr>
<td>Overheads</td>
<td>Rent</td>
</tr>
<tr>
<td>Food</td>
<td>Training</td>
</tr>
<tr>
<td>Utilities</td>
<td>Service delivery, etc.</td>
</tr>
<tr>
<td>Hospital bed, etc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total cost</th>
<th>Estimated Benefits</th>
<th>Net Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,500</td>
<td>$20,500</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total cost</th>
<th>Estimated Benefits</th>
<th>Net Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15,500</td>
<td>$30,500</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

To over simplify, the benefits derived from a programme should outweigh the cost of providing it. This method could be applied to a single programme, two programmes with the same goals competing for the same funds, or two programmes with different goals competing for the same funds.

Generally speaking, cost-benefit analysis is difficult to do because it requires making assumptions about the monetary value of programme benefits.

**Cost-Effectiveness**

Cost-effectiveness analysis examines the relationship between programme costs and outcomes, in terms of the cost per unit of outcomes achieved. This method compares two programmes which both aim to achieve a comparable outcome. For example, the unit cost of rehabilitating one drug addict could be $100,000 per year in Programme X but $80,000 per year in Programme Y, making Programme Y more cost effective. Cost effectiveness could also be considered from more than one point of view, for instance, the cost-effectiveness of two dispute resolution options (i) to the client or (ii) to the state.
## Resolution of dispute X via the Mediation Centre

<table>
<thead>
<tr>
<th>Cost to the Client:</th>
<th>Resolution of dispute X via the Court system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>Cost of Lawyer</td>
</tr>
<tr>
<td>Cost of working hours lost, etc.</td>
<td>Cost of working hours lost, etc.</td>
</tr>
<tr>
<td>Total cost $800</td>
<td>Total cost $7,500</td>
</tr>
</tbody>
</table>

## Resolution of dispute X via the Court system

<table>
<thead>
<tr>
<th>Cost to the State:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>Salaries</td>
</tr>
<tr>
<td>Salaries</td>
<td>Cost of Legal Aid</td>
</tr>
<tr>
<td>Professional Fees, etc.</td>
<td>Utilities, etc.</td>
</tr>
<tr>
<td>Total cost $3,500</td>
<td>Total cost $10,000</td>
</tr>
</tbody>
</table>

### Comparing the two Concepts

As indicated earlier, in cost-benefit analysis, programme outcomes are expressed in monetary terms. For example, a cost-benefit analysis to reduce the high incidence of HIV/AIDS infection could focus on the difference between the money spent on sensitisation campaigns and the savings made by government in providing anti-retroviral drugs to persons living with AIDS (PLWAs). In cost-effectiveness analysis, outcomes are expressed in substantive terms, for example, the money spent per person on various sensitisation programmes to encourage people to have fewer sexual partners. In doing cost-benefit and cost-effectiveness analyses, the following must be kept in mind:

- Analysis is undertaken to determine whether or not the net effects justify the cost of the intervention.
- Estimates of costs relative to benefits could be based on tangible and intangible factors.
- The cost of undertaking an intervention can be direct or indirect.

Above all, it should be noted that it is not always easy or possible to assign monetary value to social programmes.⁸

### 8. Programme Impact Assessment

According to Peter H. Rossi et al, the central premise of any social programme is that the services it delivers to the beneficiary group should induce some change that improves social conditions⁹.

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⁸ Peter H. Rossi et al, pp 365-391
⁹ Ibid, p 102
Impact assessment determines the extent to which a programme delivers on the intended objectives in such a way that it results in improvements in the social conditions of the target beneficiaries. Some questions to consider when doing an impact assessment:

- To what extent could programme outcomes be attributed to the intervention?
- To what extent did the programme succeed in producing change in the social conditions of the beneficiaries?
- To what extent can one attribute changes that have occurred to the specific interventions? These questions seek to establish a cause and effect relationship. The bottom line is to establish the net effect of an intervention. In order to do so, it is useful to define outcome variables. It may be possible to use classic experimental design (treatment and control group-subjects with the same characteristics randomly selected.) This type of design is useful for a pilot project-See Module 4.

Programme objectives designed for impact assessment:

- Changing behaviour e.g. sexual behaviour to avoid contracting sexually transmitted diseases
- Lowering functional illiteracy
- Reducing homelessness
- Minimising teenage pregnancies
- Reducing incest
- Reducing child abuse
- Reducing unemployment among the youth

A Diagram Depicting Impact Theory/Assumptions:
9. **Programme Sustainability**  
It denotes the extent to which an intervention can continue to be viable and produce benefits after the completion or closure of the intervention.

10. **Overall Programme Evaluation and Management Audit (OPE/MA)**  
An OPE/MA is an evaluation that covers all facets of programme evaluation components such as those described above.

**Evaluation Assessment**  
Evaluation assessment studies are undertaken to ensure that resources designated for evaluation are judiciously used to answer the right questions in an appropriate and credible manner. It may be noted that evaluation assessment is not a substitute for the actual evaluation. It is meant to underscore the importance of creating demand and a buy-in of the findings. The ultimate objective is that the findings will be accepted and used.

What is the rationale for undertaking evaluation assessment?

The following are the underlying reasons for initiating an evaluation assessment:

- To understand the intervention and the environment in which it operates
- To define the purpose of the evaluation
- To identify the users of the evaluation findings (stakeholders)
- To define key evaluation issues and related questions
- To identify key evaluation methods and strategies which would be utilized to determine the availability of data and quality of data which is available (if any)
- To estimate the cost and resources required for data collection, data analysis and producing the report
- To define the timeframe
- To formulate options in terms of the questions and methods to be used to collect data
- To formulate recommendations.

**The Intervention and its Context**  
It is important to have a good understanding of the intervention in terms of its goals, objectives, targets, the activities, the reach and the expected outcomes. It may be useful to establish plausible relationships among the activities. Discuss the origins of the intervention by reviewing legislative instruments, Acts of Parliament, etc. and assess whether or not the intervention is
doing what is it was set up to do. Review the appropriateness of the underlying assumptions, the programme reach and determine if the expected outcomes are still realistic. An example of a programme profile is presented in the box below:

**Profile of an Intervention**

Typically an intervention should have the following core profile:

**Goal:** Establish the overarching goal of the programme - what the intervention is supposed to focus on in relation to the reach/beneficiaries and expected outcomes.

**Description:** Outline the background to the intervention, such as the legal or other authority under which it operates; the historical context and the theory that underpins the intervention.

**Objectives:** Describe what the intervention is designed to achieve and how it can change the lives or circumstances of the beneficiaries.

**Target Group:** Identify who are the intended beneficiaries of the intervention.

**Activities:** Describe the activities that will be undertaken to achieve the stated objectives.

**Expected Outcomes:** Describe the medium to long term benefits to be achieved.

**Budget:** Give a breakdown of the cost of the resources to be utilized for the intervention (i.e. human, financial, infrastructure, etc.)

**Stakeholder Analysis**

Assess the main actors of the intervention such as programme managers, programme staff, policy makers and beneficiaries. Indicate how the evaluation will be of immediate benefit to them.

**Define Key Issues/Questions**

There is a need to take into consideration the information requirements or needs of the stakeholders, namely decision-makers, programme managers and beneficiaries. Try to tailor the evaluation questions to answer the issues that are of importance to them. In other words, the concerns of the stakeholders must be translated into specific questions. The questions will form the basis of data collection. It is advised that the list of questions should be shared with programme managers and policy makers for their input. Below are samples of questions:
**Programme Rationale:**
- Is the intervention still relevant?
- Is it meeting the purpose for which it was designed?
- To what extent are the activities and outputs consistent with the stated goals?

**Objectives Achievement:**
- Did the intervention achieve the stated objectives?
- How realistic were the objectives?
- To what extent were the targets achieved?
- Were the objectives in line with the needs of the beneficiary population?

**Outcomes and Effects:**
- Did the intervention lead to a change in the circumstances of the beneficiary population?
- Were there any unintended effects?
- Were there any catalytic effects?

**Programme Efficiency:**
- To what extent were the resources (i.e. financial, human, equipment, etc) appropriately utilized?
- Were any savings made?
- Is there an alternative way of achieving the stated objectives in a cost-effective manner?

**Define Evaluation Methods/Strategies**
The evaluation must describe the evaluation approaches that will be used to answer the defined questions. The methods selected should be time-tested/rigorous to facilitate the collection of appropriate information to meet the needs of the client(s). The methods should be consistent enough to allow for both internal and external validity.

**Identify Tools for Data Collection**
Data collection tools must be rigorous. However it is to be noted that evaluation is not a longitudinal research to produce knowledge or definitive statements. It is a tool for providing timely information that is appropriate for policy and decision-making. Here are a few examples of data collection tools: *rapid assessment, focus group discussions, case studies, time series analysis* to detect changes over time, *pre- and post-intervention surveys*, etc. If the size of the beneficiary population is too large, it may be useful to use some sampling techniques. There are two types of sampling techniques: *non-probability sampling* (i.e. purposive samples and quota samples) and *probability sampling* (i.e. random samples, stratified samples and cluster samples). See Module 4 for further discussion on sampling.
Data can be obtained through interviews, survey questionnaire, direct observation, review of documents and records, etc. It is advisable to use several sources of information to minimize personal biases (i.e. data triangulation).

**Estimation of Cost and other Resources**
Estimate the total cost of the proposed evaluation, including other resources. Describe the team composition and the competencies/skills required to undertake the evaluation. Do an implementation plan with specific time lines/benchmarks.

**How long does it take to do an Evaluation Assessment?**
Depending on the scope and complexity of the intervention, an evaluation assessment may take up to a month to complete.

**Conclusions and Recommendations**
The conclusion should entail a recommendation regarding the specific evaluation questions that could be covered during the actual evaluation. Options should be given with regard to possible evaluation approaches and the related costs of each approach.

**Scope of the Evaluation**
Once a decision is reached to undertake an evaluation, the next step is to prepare the scope of the evaluation to clarify the programme context, what issues to focus on, who will do what, when it will be done and the resources required for undertaking the evaluation.

- **Step 1:** Define the programme context. Define the goals and objectives of the programme including the conceptual framework that maps out the linkages between inputs, processes, outputs, and outcomes.

- **Step 2:** Define key issues to be addressed during the evaluation.

- **Step 3:** Define the methodological approach in terms of how you intend to carry out the evaluation (i.e. study design, indicators and data sources).

- **Step 4:** Describe the implementation plan in terms of the main deliverables, who (individuals and institutions that will be responsible for aspects of the evaluation), when (time table for carrying out specific activities) and with what funds (budget).

- **Step 5:** Define format for presentation of findings and dissemination and utilization of results.
References:


See Appendix I for Tips on How to Plan a Useful Evaluation
MODULE 4: EVALUATION DESIGN

It is important that evaluations produce information that is authoritative and can stand external scrutiny. Consequently, appropriate methods and tools for evaluation must be utilised to ensure credibility of results. This module focuses on selected evaluation designs such as experimental design, quasi-experimental design and sampling techniques.

**Experimental Design**

In experimental design, the subjects, namely the experimental group and the control group, are randomly selected from a single population. This is otherwise known as random assignment of cases (RA). The experimental group and the control group are subjected to an initial observation (O: the pre-tests $O_1$ and $O_3$). The experimental group then receives the intervention (X). However, the control group does not receive this intervention. Subsequently, a second set of measurement observations is made ($O_2$ and $O_4$). It is assumed that since the experimental group received the intervention (X) and the control group did not, $O_2$ would be greater than $O_4$.

\[
\begin{array}{ccc}
\text{(Experimental Group)} & \text{Time} \\
O_1 \ X & \rightarrow & O_2 \\
\text{Pre-test} & \rightarrow & \text{Post-test} \\
O_3 & \rightarrow & O_4 \\
\text{(Control Group)} & \\
\end{array}
\]

It should be noted that since cases for both the experimental group and the control group were randomly selected, $O_1$ would be equal to $O_3$ on such key variables as age, sex, parity and education.

This is a true experimental design. It enables a good control of validity. However in practice, for ethical, programmatic and political reasons, it may be difficult to deny programme interventions to one group while offering them to another. This type of design is more appropriate for pilot testing a programme for eventual replication elsewhere.

**Non–Experimental Design**

Post-test Only Design

\[
\begin{array}{ccc}
\text{(Experimental Group)} & \text{Time} \\
X & \rightarrow & O_1 \\
\end{array}
\]
Intervention (X) is introduced and sometime after the introduction, an attempt is made to undertake some measurement (O₁). Considering that there is no control group, it is not possible to make a comparison. O₁ provides descriptive information and other data that could be useful for planning an intervention. It is used for conducting diagnostic studies to determine why a problem exists.

**Pre – Test and Post – Test Design**

(Experimental Group) Time

\[ \begin{array}{c|c|c}
O_1 & X & O_2 \\
\end{array} \]

There is no control group for this type of design. However, there is an earlier measurement observation (O₁) that makes it possible for the evaluator to assess changes overtime after an intervention (O₂). If there is a significant change in the circumstances of the beneficiaries then one could attribute those to the intervention. The findings could be influenced by threats to validity, history, maturation, etc.

**Static Group Comparison**

(Experimental Group) Time (Control Group)

\[ \begin{array}{c|c|c}
X & O_1 & O_2 \\
\end{array} \]

In this design, the experimental group receives an intervention (X) followed by observation (O₁). This measurement observation is compared against a second observation (O₂) from a control group that did not receive the intervention. The design is not based on random sampling, which means that there are differences between the two groups (not equal) and hence strong threats to validity.

**Quasi – Experimental Design**

We had indicated earlier on that due to ethical, programmatic and political considerations, it might not always be possible to implement a true experimental design. Nonetheless, a similar design could be applied to obtain almost identical results by using quasi – experimental design such as time series design.

**Time Series Design**

Time series design is similar to the non-experimental, pre-test | post-test design, except that it has the advantage of repeated measurement observations before and after programme intervention (X).
We may initially find that there is no difference between \( O_1 \) and \( O_2 \). Then it is observed that there has been a sudden improvement in the circumstances of the beneficiary group, which is observed by \( O_3 \) and \( O_4 \). The increase is subsequently maintained in \( O_5 \) and \( O_6 \). Therefore, it can be concluded with some degree of confidence that the increases were probably due to the effects of the intervention (\( X \)). This design is often used to perform trend analysis in terms of what pertained before and after the intervention.

It would be interesting to apply this approach to assessing changes brought about by any of the existing social sector programmes. For example to determine if, as a result of the distribution of hampers under the SHARE Programme, the nutritional intake of the beneficiaries has indeed improved.

**Issues to Consider when Selecting an Evaluation Design**

The following should be taken into consideration when selecting a design.

- **Ethical issues** – Try to avoid a design that could lead to the application of unethical procedures, a violation of people’s rights and dignity, or a denial of services that would otherwise be available.
- The ideal situation is the use of experimental design with randomly selected subjects based on a single population. If this is not possible, find a comparison group that is nearly equivalent to the experimental group.
- If a randomly assigned control group is not available or there is no similar comparison group, you may consider using a time series design that can provide information on trends before and after the programme intervention.
- If it is not possible to use a times series design, try to obtain baseline (pre-test) information that can be compared against post intervention information (pre-test post-test design = \( O_1 X O_2 \)).
- The issue of validity should be considered at all times by asking such questions as: How true are the measurements? Are there possible threats to validity? etc.
- Another principle to bear in mind is that a good design does not stop the provision of services.
- Always use multiple data sources to obtain information, this is also known as data triangulation.
Other Evaluation Tools and Methods

Rapid Appraisal Methods
Rapid Appraisal is a relatively quick and low-cost strategy to gather data from beneficiaries and other stakeholders to feed into an evaluation report, in response to the information needs of programme managers.

This method is flexible and easy to apply. However, the information gathered is largely qualitative and it cannot be extrapolated. It is less valid and reliable than data collected from a formal survey.

Here are some rapid appraisal methods:
- Key informant interviews- a series of opened-ended questions posed to individuals who have specific knowledge and experience of a topic/programme. Interviews are semi-structured and in-depth.
- Focus group discussion- a facilitated discussion with a carefully selected group. Participants should not be more than 12.
- Community group interview- a facilitated discussion based on a series of questions opened to all community members.
- Direct observation- often useful for collection data on the quality of service provision.
- Mini-survey- a structured questionnaire that has a number of close-ended questions. This mini-survey could be administered to 50-75 people. The selection of the interviewees may be random or purposive (e.g. interviewing clients of a family planning clinic about the quality of service provision).

Participatory Methods
This approach enables those who are directly affected by a programme, or have a stake in it, to participate directly in assessing it. It enables them to have a sense of ownership of the Monitoring and Evaluation findings and recommendations.

This method also allows the stakeholders to give their perspectives and impressions about the usefulness or otherwise of the intervention.

The following are the most commonly used participatory tools:
- Stakeholder analysis- useful for establishing key power brokers and relationships.
- Participatory rural appraisal- it enables programme managers and local people to work collaboratively on an intervention.
• Beneficiary assessment - it involves regular consultation of beneficiaries and other stakeholders.
• Participatory monitoring and evaluation - it involves stakeholders in the planning and implementation of an evaluation in all its phases such as identifying the problem, collecting and analysing the information, and generating recommendations.

Sampling
A distinction must first be made between a total population and a sample of that population. A population contains elements, each of which is a potential case. If an evaluation involves a small population, all the elements can be studied. For example evaluating the health status of 50 people living with HIV in a hospice in Arima. Since 50 people is a relatively small population, there is no need to draw a sample, the entire population can be evaluated. On the other hand, it would be costly and time consuming to evaluate the health status of the entire population of 50,000 people living with HIV in Trinidad and Tobago. One may need to draw up a sample of elements/cases within the 50,000 population to study.

Usually, the practice is to concentrate on a select few or a representative sub-set to interview. If the sample were truly representative, the information obtained would be similar to the information that would be obtained from the entire population.

There are two basic types of samples. These are probability samples and non-probability samples.

The Probability Sample
The essence of probability sampling is that each element of the larger population (couple, young, old, male, female, etc) has a known probability of being selected. If each element has an equal chance of being selected, it is known as self-weighting and the findings can be extrapolated to the general population. The findings resulting from probability sampling are considered to be truly representative.

There are several methods for drawing probability samples. The most common ones are as follows:

Simple Random Sampling
In this sampling method, each element of the larger population is given a number and a table of random numbers or a lottery technique is used to select elements, one at a time, until the desired sample size is reached. This approach can be tedious. A list of all elements is called the sample frame.
**Systematic Sampling**

This is a modification of simple random sampling which is less tedious and less time consuming. The estimated number of elements in the larger population is divided by the desired sample size, yielding a sampling interval. Let us call it “n”. Using a sample frame with the population elements listed in an arbitrary order and selecting every nth case, starting with a randomly selected number between one and “n”, the sample size is drawn.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Systematic drawn cases are 1 5 9 13 and 17

**Stratified Sampling**

Stratification can be used for either simple random sampling or systematic sampling to ensure the desired representation of specific sub groups. For example, elements in the larger population can be arranged by age, education, income, location, profession, political affiliation, etc.

**Cluster Sampling**

This method is used to simplify sampling by selecting clusters of elements, using simple random, systematic, or stratified sampling techniques and then proceeding to study all the elements in each of the sampled clusters. Usually the clusters are geographic units such as provinces, districts, towns, villages, units or organisational units such as centres, clinics, or training groups.

**Non–Probability Sample**

This is also known as convenience sampling. It refers to the selection of cases that are not based on known probabilities. The selection could be accidental (choosing from whatever case that is available) or purposive (selection from specific type cases). This type of sampling is not representative of the larger population since there can be over selection or under selection of cases. If it is too expensive to use probability-sampling technique, then non-probability sampling may be the most appropriate method to use.

**Sample Size**

The size of the sample is determined by two main things, namely the availability of resources and the proposed plan of analysis. For example, if you intend to analyse cross-tabulations of variables, take into consideration that each category of an independent variable included in cross-tabulation must contain at least 50 cases.
Confidence Level

In practice it is recommended that a study should aim at obtaining a 95% confidence level that has a + or - 5% interval/error.

<table>
<thead>
<tr>
<th>Population = 500</th>
<th>Population = 8,000</th>
<th>Population = 500,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>+/-5%</td>
<td>99%</td>
</tr>
<tr>
<td>217</td>
<td>286</td>
<td>367</td>
</tr>
</tbody>
</table>

References:

Decisions affecting programmes and development of policies must be informed by the availability and use of credible data. The basic rule of thumb is that evaluation should be based on empirical evidence; therefore, there should be a well-laid plan for gathering and analysing data.

There are various approaches that facilitate the collection of appropriate data. This module focuses on strategies for collecting quantitative and qualitative data. In broad terms, quantitative data tends to be precise and qualitative data tends to provide descriptive information.

**Quantitative Data**

Findings from quantitative data tend to have numerical values. Data collection instruments can be based on any of the following approaches:

1. Sample surveys which can be based on interviews, using a standard questionnaire. All respondents are asked the same set of questions.
2. Direct observation using service statistics and other programme documents.
3. Self-administered questionnaire – Not ideal for a less educated population and tends to have a low response rate.
4. Secondary data sources (official records, census, official statistics, etc).

**Advantages**

Quantitative data tends to be flexible, reliable and allows for international comparisons. The most commonly used software to analyse data are SAS, SPSS and Epi Info.

When using a quantitative approach, keep the following in mind:

- Use a simple language so that respondents will be able to answer the questions without any difficulty.
- Train interviewers and field supervisors prior to administering the questionnaire.
- Pre code the responses to facilitate transfer of information and analysis.
- Avoid embarrassing questions.
- Pre–test the questionnaire before administering it.
- Ask respondents the same questions that have been tested.
- Add information from qualitative interviews.

**Qualitative Data**

Qualitative data can be collected using the following key approaches:
1. In depth Interviews - Usually there is a guide or a set of questions to facilitate collection of information from respondents. The guide helps to standardise the questions being asked so that there is uniformity in analysing the responses.

2. Focus Group Discussions – Respondents are brought together for open discussions on a set of issues prepared in advance. There is a facilitator who helps to guide the discussions as well as a rapporteur who takes notes. It is recommended that focus group discussions involve 8-10 participants, however, at the outer limits there should be no less than 5 and no more than 12.

3. Direct Observation – This is often used to assess service delivery points to determine quality of service provision. It requires highly skilled observers and analysts such as ethnographers.

4. Case Studies – these normally concentrate on a small number of cases, which are examined in depth. Case studies can examine one moment in time and one event or processes that evolve over long periods of time.

5. Content Analysis of written materials - this is useful for analysing training materials.


Advantages of Quantitative and Qualitative Data:

<table>
<thead>
<tr>
<th>Quantitative</th>
<th>Qualitative</th>
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<tbody>
<tr>
<td>• Data is consistent and provides a basis for national and international comparisons</td>
<td>• It makes it possible to collect information from respondents whose views are based on gut feelings</td>
</tr>
<tr>
<td>• It is cost effective for collecting data from a large population</td>
<td>• Helps to probe social and cultural attitudes</td>
</tr>
<tr>
<td>• Provides standardised responses</td>
<td>• Allows for probing for unintended results</td>
</tr>
<tr>
<td>• Suitable for collecting data from people who are less educated</td>
<td>• Allows assessment of goals that are not amenable to quantitative analysis. For example: empowerment, self-esteem, negotiation skills, etc.</td>
</tr>
<tr>
<td>• It is ideal for a large sample size</td>
<td></td>
</tr>
<tr>
<td>• It is less time consuming</td>
<td></td>
</tr>
</tbody>
</table>

Tips for Quantitative and Qualitative Data

To ensure high quality of data, prepare written guidelines for data collection. The guideline will ensure some degree of standardization in the data collection process. Also, pilot-testing should not be done in an area where the questionnaire will be administered.
Coding

It may be useful to develop a codebook as part of designing a questionnaire. A numerical or symbolic code may be assigned. For example, to find out the level of education of respondents, the responses may be coded as follows:

(1) None   (2) Primary   (3) Secondary   (4) Tertiary

Data Analysis

Once data is collected, either qualitative or quantitative, the next step is analysing it. There are various techniques for analysing both qualitative and quantitative data.

Analysing Qualitative Data

Qualitative data is often presented in a narrative form. It is not always feasible to assign a code or even a numerical character to qualitative data. Instead qualitative data can be coded as categories (thematic coding) and presented as a narrative.

The following shows how qualitative data can be categorised and presented:

1. Case Studies – Based on narratives or interpretations of respondents’ understanding of the workings and benefits of an intervention.
4. A decision Tree Model – This graphically outlines the realm of choices and priorities that go into decision-making.
5. Taxonomy – A visual representation/diagram showing respondents relate categories of language and meaning.

Analysing Quantitative Data

This usually involves mathematical calculations through the application of statistics. The most commonly used statistics are descriptive and inferential statistics.

Descriptive Statistics

Descriptive statistics is the first step in quantitative analysis. Descriptive statistics are used to describe the general characteristics of a set of data. Descriptive statistics include frequencies, counts, averages and percentages.

This method is used to analyse data from monitoring, process evaluation and outcome /impact evaluation.

- Frequencies

A frequency denotes a univariate (single variable) number of observations or occurrences. For example, when you say that 100 out of 200 homeless people have been given shelter you are
stating a frequency. When the frequencies related to a single variable (homeless people) are listed together, it is known as a frequency distribution. For example, of the 300 people listed as homeless, 100 were given shelter, 105 were sent for a medical check up, 95 received training in basic skills, etc. Data for a single variable (homeless people) can be further disaggregated such as of the 100 homeless people who were given shelter, 50 were females and 50 males. Of the 100 homeless, 10 were young people of between 10-18 years of age. This is known as bivariate and multivariate.

Bivariate and multivariate frequencies can be classified and presented in a table format. This display of labelled rows and columns is known as cross tabulation (See example below).

<table>
<thead>
<tr>
<th>District</th>
<th>Number of Children by Disability Type</th>
<th>Hearing</th>
<th>Learning</th>
<th>Other</th>
<th>Physical</th>
<th>Visual</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caroni Educational District</td>
<td></td>
<td>225</td>
<td>1,210</td>
<td>29</td>
<td>82</td>
<td>418</td>
<td>1,964</td>
</tr>
<tr>
<td>North Eastern Educational District</td>
<td></td>
<td>7</td>
<td>47</td>
<td>16</td>
<td>2</td>
<td>32</td>
<td>104</td>
</tr>
<tr>
<td>Port of Spain Educational District</td>
<td></td>
<td>80</td>
<td>2,054</td>
<td>65</td>
<td>52</td>
<td>172</td>
<td>2,423</td>
</tr>
<tr>
<td>South Eastern Educational District</td>
<td></td>
<td>86</td>
<td>620</td>
<td>84</td>
<td>97</td>
<td>318</td>
<td>1,205</td>
</tr>
<tr>
<td>St George East Educational District</td>
<td></td>
<td>165</td>
<td>1,853</td>
<td>174</td>
<td>68</td>
<td>257</td>
<td>2,517</td>
</tr>
<tr>
<td>St Patrick's Educational District</td>
<td></td>
<td>123</td>
<td>665</td>
<td>94</td>
<td>90</td>
<td>332</td>
<td>1,304</td>
</tr>
<tr>
<td>Tobago Educational District</td>
<td></td>
<td>10</td>
<td>400</td>
<td>5</td>
<td>5</td>
<td>15</td>
<td>435</td>
</tr>
<tr>
<td>Victoria Educational District</td>
<td></td>
<td>54</td>
<td>275</td>
<td>4</td>
<td>4</td>
<td>63</td>
<td>400</td>
</tr>
<tr>
<td>All Districts</td>
<td></td>
<td>750</td>
<td>7,124</td>
<td>471</td>
<td>400</td>
<td>1,607</td>
<td>10,352</td>
</tr>
</tbody>
</table>

- **Percentages**
  Percentages are calculated by dividing the frequency in one category by the total number of observations then multiplying by 100:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelter</td>
<td>100</td>
<td>33.3</td>
</tr>
<tr>
<td>Medical Check Up</td>
<td>100</td>
<td>33.3</td>
</tr>
<tr>
<td>Males</td>
<td>50</td>
<td>16.7</td>
</tr>
<tr>
<td>Females</td>
<td>50</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100</td>
</tr>
</tbody>
</table>
**Inferential Statistics**

Inferential statistics allow the evaluator to make inferences about the population from which the sample was drawn, based on probabilities or stratified sampling. Testing for statistical significance helps to ensure the differences observed in data, however small or large, were not due to chance.

**Preparing an Evaluation Report**

See Step Nine of Appendix I.

**Developing a Solutions Framework**

**Sample of a Solutions Framework (Rapid Assessment of the Mediation Centres):**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Priority Level</th>
<th>Time Frame</th>
<th>Person/Organization Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. The Community Mediation Act should be revisited and amended to enable the Centres to discharge their roles and social responsibilities with legitimacy.</td>
<td>High</td>
<td>Aug-Oct 2003</td>
<td>Office of the Attorney General</td>
</tr>
<tr>
<td>ii. The Intake forms should be standardised across Centres and reviewed to include broad ranges for age and income which would facilitate a higher response rate.</td>
<td>High</td>
<td>Sep-Oct 2003</td>
<td>Directors – Mediation Centres</td>
</tr>
<tr>
<td>iii. The Evaluation forms which have been developed should be used by all Centres and all clients using the mediation service should be encouraged to complete them as fully as possible.</td>
<td>Medium</td>
<td>Sep-Oct 2003</td>
<td>Directors - Mediation Centres</td>
</tr>
</tbody>
</table>

**References:**