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## ERRA/LGI TRAINING MATERIAL No. 3

# Performance Measurement

June 2002

**INFORMATION EXCHANGE AND PEER ASSISTANCE PROGRAM BETWEEN  
LOCAL GOVERNMENT OFFICIALS AND ENERGY REGULATORS**

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**THE ERRA/LGI Training Material 3: "Performance Measurement"** was prepared to support the training of public sector experts especially at sub-national levels along with four other training materials. In compiling the materials we have drawn on the Performance Measurement Manuel prepared by USAID/Urban Institute/Metropolitan Research Institute. Preparing the training materials we used the comments and advises of Robert Archer (United States Agency for International Development), Pál Lángfy (Hungarian Energy Office), and Gábor Péteri (Open Society Institute).

# 1. INTRODUCTION

Performance measurement, monitoring, reporting and evaluation are the main pillars of a management information system. In most of the cases, performance measurement is part of the monitoring system, but it can be applied separately as well. While the process of monitoring assumes a contractual arrangement (focusing on financial, performance and administrative aspects), performance measurement can be applied by any institution or organization and for every sector of the economy. A well-developed performance measurement system may contain evaluation and reporting stages as well, however, if performance measurement is part of monitoring, these steps should not be duplicated. In this training material we considered performance measurement as an independent and complex system, providing and explaining the main steps of developing such a system from planning till reporting.

# 2. DEFINITION OF PERFORMANCE MEASUREMENT

Performance measurement means the regular measurement and reporting, of the performance of public agency programs, organizations, or individuals. Performance measurement is based on two main principles. First, it concentrates on program outcomes, or actual results, rather than just on the quantity of service that an agency provides. Second, in defining outcomes, performance measurement focuses on the needs of the customers or citizens served.

Performance measurement, in the form of units of measurement called indicators, provides decision makers with better information. With this information they can make better decisions—and show why they made those decisions. Using performance measurement, local governments can demonstrate their commitment to providing quality service.

# 3. BENEFITS OF A PERFORMANCE MEASUREMENT SYSTEM

Performance measurement has four central benefits:

- Improving service quality and outcomes;
- Improving resource allocation and justifying agency budgets or service cuts;
- Making public agencies accountable for results to elected officials and the public; and
- Increasing the citizens' trust in the local government.

# 4. TYPES OF PERFORMANCE INDICATORS

Input, output, and efficiency indicators are relatively familiar to program managers. Governments regularly use them to track program expenditures and service provided. Indicators of outcomes are much rarer, even though they are more helpful in determining the consequences or results of the program. Categories of performance indicators are described below, and examples are shown in Box1. It is important for you to recognize the differences between the following categories of information:

- **Inputs.** Input data indicate the amount of resources you applied in delivering a service.
- **Outputs.** Output data show the quantity of work activity completed. A program's outputs are expected to lead to desired outcomes, but outputs do not by themselves tell you anything about the outcomes of the work done. To help identify outcomes that you should track, you should ask yourself what result you expect from a program's outputs.
- **Outcomes.** Outcomes do not indicate the quantity of services provided, but the results and accomplishments of these services. Outcomes provide information on events, occurrences, conditions, or changes in attitudes

and behavior that indicate progress toward the achievement of the goals and objectives of the program. Outcomes happen with respect to groups of customers or to other organizations affected by the program or the satisfaction of which the government wishes to attain.

- **Efficiency and Productivity.** These categories relate the amount of input to the amount of output (or outcomes). Traditionally, the ratio of the amount of input to the amount of output (or outcomes) is labeled "efficiency." The inverse, which is the ratio of the amount of output (or outcome) to the amount of input, is labeled "productivity." These are equivalent numbers.

## Box 1 Examples of Performance Indicators

Input	Number of positions required for a program Cost Supplies used Equipment needed
Output	Number of projects Number of people served Number of letters answered Number of applications processed Number of inspections made
Outcome	Number of main breaks Percentage of service interruptions cleared in a goal period of time Number of calls about interrupted services Number of days federal/state standards were not met
Efficiency	Cost per million gallons of drinking water delivered to customers (output based)

# 5. THE DIFFERENCE BETWEEN OUTPUTS AND OUTCOMES

An importance element of performance measurement is that it differentiates between outputs and outcomes. In measuring what government does, the traditional focus has been on tracking expenditures, number of employees, and sometimes their physical outputs. The outcome focus of performance measurement connects performance indicators with specific government objectives. For example, performance measurement is not concerned with the number of teachers employed, but with the reduction in the dropout rate in secondary schools. Of course, focusing on outcomes does not mean that you neglect outputs. Instead, a focus on outcomes provides a framework for you to analyze outputs in a meaningful way.

## Box 2. gives examples of the difference between output and outcome indicators.

Outputs	Outcomes
1. Number of clients served.	1. Clients whose situation improved.
2. Kilometers of new line constructed.	2. Percentage of line kilometers in good condition.
3. Number of breaks repaired.	3. Number of breaks repaired within x hours of notification.
4. Number of calls answered.	4. Number of calls that led to an adequate response.

## 6. DEVELOPING A PERFORMANCE MEASUREMENT SYSTEM

### 6.1. Organizing the System Development Process

The successful development of a performance measurement system requires the following preliminary steps:

**Determining the Program Scope.** Local officers should identify and select the scope of program coverage to be included in the performance measurement process. For example, it may be desirable for indicators to focus on certain key program activities. Usually, a performance measurement system is first initiated only in some segments of one program. For example, the pilot system might measure performance for some of the projects funded by the program; some of the locations that the program serves; only part of the year; or only indicators that are new or require substantial modifications to existing data collection procedures.

**Secure Top-level Office Support.** This support is needed to obtain an adequate commitment of time and resources for the performance measurement system. While the primary support and expenditure in developing a performance measurement process will probably come from the program staff, local government officials need outside support, specifically for data collection, tabulation, and analysis. The encouragement and support of the mayor is necessary to ensure that help is available.

**Support from Department Heads and Institutions.** Department heads and institutions play a key role in collecting data for, and implementing, the performance measurement system. This support can be obtained by emphasizing that performance measurement can be an important decision-making tool for them.

**Establishment of a Working Group to Oversee System Development.** The working group is a body of interested persons and representatives of groups that might be affected by or benefit from the performance measurement system. It is helpful but not crucial to have such a group. The core working group should consist of the following persons: the program manager or department head, who will act as facilitator; members of the department; members from related program areas in the department; and a representative from the budget or financial department. In addition, other people might be invited to meetings of the working group—individuals who may have competing visions and hence alleviate future conflict or who may give fresh insight into service needs. The working group should have no more than eight to twelve members, but for small programs the working group could have as few as four members.

The following steps detail the activities needed to be undertaken to implement a successful performance measurement system.

### 6.2. Identifying the Program's Goals, Objectives, and Customers

For each program a goal and several objectives should be specified. This states the purpose of the program, or the results that the program wants to achieve.

**Preparing a Statement of Goals and Objectives.** The statement of goals and objectives is the starting point for identifying the outcomes to be measured, and the specific performance indicators that are needed.

Goals represent the ends that the program wants to attain. Goals are typically general in nature and define the desired outcome. Objectives specify what is to be accomplished, for whom, and by what date. A goal can be achieved through several objectives.

**Identifying Categories of Customers.** The goal and objectives should identify the customers. The following questions can help in the not-so-obvious cases:

- Who benefits from the program?
- Who might be hurt by program activities?

The questions below may also help identify unintended negative effects of a program, which should be specified in the statement of goals and objectives.

- What persons that the program does not directly target could be significantly affected by the program?
- Which particular demographic group is especially affected by the program?
- Is the public-at-large likely to have a major interest in what the program accomplishes?

### 6.3. Deciding Which Outcomes Should Be Measured

The purpose of this step is to identify which outcomes or results should be measured. Sources that can help in deciding which outcomes are important include:

- Legislation and regulations;
- Community policy statements contained in budget documents;
- Strategic plans;
- Program descriptions and annual reports;
- Discussions with upper level officials and their staff;
- Discussions with legislators and their staff;
- Discussions or meetings with customers and service providers;
- Input from program personnel;
- Customer complaint information; and
- Goal statements by other governments for similar programs.

In addition, local officials can obtain information on program results through informal meetings of customers (known as "focus groups"); meetings with program staff and local project staff; and meetings with other local government personnel.

The following questions should be answered before completing the identification of program results:

- Do the indicators cover each element identified in the statement of goals and objectives?
- What would be the positive and negative impact on customers if the program's budget were substantially cut or increased?
- Are there any negative effects that may arise from the program? You should minimize and monitor these. If you can track them on a regular basis, you should use them as indicators.
- What would customers consider as good or bad service of the program? You should include these characteristics in the list of indicators.

### 6.4. Selecting Performance Indicators

Operational and financial indicators can be very useful in assessing the performance of water and sanitation utilities in the course of project preparation and supervision.

Invariably, any indicator portrays an incomplete picture of a utility as it often excludes contributing factors of performance that are not readily captured or quantifiable. In addition, utilities face different political, social, economic and financial constraints. These factors need to be taken into account. It follows that indicators should not be used in a rigid perspective fashion. Therefore, judgement is required in setting "acceptable" and "desirable" targets.



Some valuable outcomes, like quality and reliability of service, are difficult to quantify. Others may require so much paper work and expense that they may not be worth quantifying. Still others, like morbidity of water-borne diseases, are quantifiable but no one can say for sure whether the water and/or sanitation program in question was responsible for producing them. For these reasons, it is important to combine quantitative measurement with qualitative evaluation.

Some indicators measure efficiency (i.e. cost of water or sanitation services delivered) while others measure effectiveness (i.e. service levels). Both types are important. The public wants efficient water and sanitation utilities, but most likely they want effective ones even more. People are pleased to have good quality of water in ample quantities, but if they have to wait in line for hours to get what they need they are not likely to be pleased for long.

Indicators are as good as the database from which they are derived. For instance, lack of metering of production and consumption casts doubts about the reliability of estimates on water consumption or unaccounted for water.

It is important to discuss with sector officials which indicators are important and relevant and to whom and how often they should be reported.

Indicators should be used selectively. The use of too many indicators is likely to dilute the power of all of them. Managers may become confused about priorities and burdened by paperwork and overwhelmed by detail. On the other hand, the use of too few indicators may not adequately describe the utility's performance and progress in reaching its goals.

Box 3 presents some criteria for selecting performance indicators. Each indicator should be rated according to these criteria.

#### **Box 3 Criteria for Selecting Performance Indicators**

- **Relevance.** Choose indicators that are relevant to the goals and objectives of the program and to what they are supposed to measure.
- **Importance.** Select indicators that provide useful information on the program and that are critical to the accomplishment of the department's or program's goals.
- **Availability.** Choose indicators for which data are accurate and readily available.
- **Ease of Implementation.** Use indicators for which measurement is easy to design, conduct, analyze, and report.
- **Validity.** Select indicators that address the aspect of concern and for which changes in the value can be easily interpreted as desirable or undesirable and directly attributed to the program.
- **Uniqueness.** Use indicators that provide information not duplicated or overlapped by other indicators.
- **Timeliness.** Choose indicators for which you can collect and analyze data in time to make decisions.
- **Ease of Understanding.** Select indicators that the citizens and government officials can easily understand.
- **Costs of Data Collection.** Choose indicators for which the costs of data collection are reasonable.
- **Privacy and Confidentiality.** Select indicators without privacy or confidentiality concerns that would prevent analysts from obtaining the required information.

The overriding criterion for the selection of performance indicators is that they should significantly contribute to the effectiveness and efficiency of a program.

## **6.5. Identifying Data Sources and Collecting the Data**

A major step is to identify data sources for each indicator and practical ways to collect the data. The major sources of data for performance indicators are:

- The government's own records;
- Information from other jurisdictions and organizations;
- Client applications and reports;
- Trained observer ratings; and
- Customer/citizen surveys.

The above sources and recommendations for their use are discussed below.

### **The Government's Own Records**

The advantages of using government records as data sources are availability, low costs, and familiar procedures for program personnel. The disadvantages of agency records are:

- Local officials may need to modify existing record collection processes to obtain performance data. For example, they may have to modify the collection of response time data for some programs. This will involve recording the time of receipt of a request for service; defining when "completion" of the response has occurred; recording the time of completion of the response; establishing procedures to calculate and record the time between these two events; and establishing data processing procedures for aggregating the data on individual requests.
- Records alone may not provide sufficient information on program quality and outcomes.
- Sometimes local officials may have difficulty in obtaining information from the records of other programs or agencies.

**Information from Other Local Government Units.** Local officials can use information from other local government units as a benchmark or target for certain performance indicators. They can usually make useful comparisons between two local governments that are similar in size and demographics, and where one is achieving performance results that the other is trying to obtain.

**Client Applications and Reports.** Client applications for a service can be a source of data on the need for a program, which can be used in developing indicators. For example, local officials can use the number of applications for a housing allowance or social subsidy program as a data source for an outcome indicator—a decrease in the number of applicants for a social subsidy program (by increasing employment opportunities). The applications will also provide explanatory data on demographics and income.

**Trained Observer Ratings.** The objective of this method is for different observers to rate a condition at different times. This can be a highly accurate and reliable procedure if the local government has a clearly-defined rating system, adequate training of the observers, adequate supervision of the rating process, and a procedure for periodically checking the quality of the ratings.

### **The advantages of trained observer ratings are:**

- They provide reliable, reasonably accurate ratings of conditions that are otherwise difficult to measure;
- If ratings are done several times a year, local officials can adjust allocation of program resources throughout the year;
- Ratings can be presented in an easy-to-understand format to public officials and citizens.

### **The disadvantages of trained observer ratings are:**

- They are sometimes a "labor intensive" method that requires time and training of observers;
- It is necessary to check ratings periodically to ensure that the observers are adhering to procedures;
- Program personnel may not feel comfortable with the procedures for trained observer ratings because they do not use them often.

**Customer Surveys** Customer surveys are an important source of information for performance indicators. Local governments usually get survey data on customers only from agencies providing a service or directly from persons affected by a service.

Customer surveys are different from opinion polls in the following ways:

- Surveys measure the specific objectives of the local government.
- Surveys are repeated in the future.
- Surveys focus on outcome indicators.

Box 4 lists the various types of information that can be obtained from customer surveys.

#### **Box 4 Information Obtainable from Customer Surveys**

- Ratings of overall satisfaction with a service and of the results achieved,
- Ratings of specific service quality characteristics,
- Data on actual customer experiences and results of those experiences,
- Data on customer actions/behavior sought by the program's service,
- Extent of service use,
- Extent of awareness of services,
- Reasons for dissatisfaction with or non-use of services,
- Demographic information about customers,
- Suggestions for improving the service.

The advantages of customer surveys are that they provide information not available from other sources and that they obtain information directly from a program's customers. The disadvantages of customer surveys are:

- They are unfamiliar to agency personnel and require special expertise or training;
- They can be costly;
- They are based on respondents' perceptions and memory and are therefore subjective.

## **6.6. Organizing the Data**

Once collected, the data should be transformed into useful indicators. This can be done using the following approaches:

- Breakouts (grouping) of the data for each indicator;
- Comparisons of the program's data to other benchmark data;
- Explanations of the resulting indicators; and
- Clear presentation of the indicators in understandable, useful formats.

## **6.7. Comparing Findings to Benchmarks**

Once performance indicators for a particular time period are available, it is important to decide if the level of performance is good or bad. Therefore, comparing current data with a baseline (benchmark) is highly useful. The major types of benchmarks that performance measurement systems can take advantage of are as follows:

- **Previous performance.** Compare current performance to that of previous reporting periods. This is useful in order to be able to see the improvement of the performance over time. As much as possible, report indicator performance data in a frequent and timely manner. For some agencies annual reports may be sufficient; however, others may need semiannual or quarterly reports.

- **Performance of similar organizational units in other local government units.** This involves comparisons between programs that provide essentially the same service to approximately the same type of customers. For meaningful comparisons, the goals of the programs should also be similar, and the best performing program should be used as a benchmark.

- **Pre-selected targets.** It is important to set performance targets for each indicator at the beginning of the year, later local officials should report the actual values compared to the targets. If possible, targets should be set for each reporting period during the year, and there should also be long-term targets—perhaps for five years into the future. These can be linked to targets stated in the strategic plan and annual budget.

- **Different service delivery practices.** Programs periodically consider new, alternative methods of delivering services. Using performance indicators is important to assess the results of the new practices. For example, local governments could introduce new operating procedures, technologies, staffing arrangements, policies, amounts/levels of service provided to individual customers, or providers (such as private contractors). New practice can be introduced for an entire program, or for only part of the program. Then performance data can be used to track changes in results before and after the introduction of the new practice.

## **6.8. Finishing the Analysis and Reporting Indicators**

Analysis of performance information starts by choosing breakouts and making comparisons. The analysis should result in indicators that show that the program has done better or worse than anticipated. Local officials should then attempt to explain why this has occurred. Sometimes the reasons for performance shortfall or better-than-anticipated results will be fairly obvious, and sometimes not. In either case the following can be done:

- Discussion of the findings with key personnel in the program, agency, and field;
- Suggestion of corrective methods;
- Undertaking of an evaluation to identify causes and corrections needed to be made; and
- Waiting for a while to determine whether the problem is temporary or represents a trend.

**Reporting.** Local officials should select only a short list of indicators for external reporting, even though they may track a relatively large number of indicators for internal program use. A number of formats can be constructed for performance reports, depending on the special needs of the program.

**In addition to tables, performance information can be presented using:**

- **Graphs.** These can be used for individual outcome indicators, to show the values of the indicator plotted against time, and are useful for showing trend results.
- **Bar Charts.**
- **Maps.** This is a dramatic way to present geographic data.

**Provision of Explanatory Information** Explanatory information should also be provided with each indicator report. This enables local officials to explain significant program outcomes, such as indicator values that were worse than expected. Some suggestions concerning explanatory information are as follows:

- Providing qualitative or quantitative information, or a combination of the two.
- Providing explanatory information when comparisons show unexpected differences from the target or among operating units, categories of customers, or other workload units.
- Consideration of both internal and external explanatory factors.
- Summary and highlighting of important performance information so that readers can focus on these findings.
- Examination of responses from customer surveys where respondents explain their poor ratings of specific

- characteristics. (This is explanatory information).
- Providing explanatory information from recent program evaluations.
- Keeping explanatory information brief and to the point.

**Dissemination the Outcome Reports.** Local officials should disseminate the indicator report—including data, explanatory information, and highlights or summaries—to all program personnel as well as some officials outside the program. It should also be provided to customers and private organizations participating in the delivery of services. Breakout data by unit/project are likely to be of major interest to customers and private organizations, encouraging them to focus on future performance improvements.

**Documentation of the Performance Measurement Process.** It is important to prepare a description of each indicator for program personnel and others outside the program. It is also useful to list the performance indicators grouped by data source (such as customer surveys or trained observer ratings).

Documentation of key procedures is useful for future collection of performance data. It helps to institutionalize the measurement process and enables local officials to train new program personnel in the procedures. Documentation will also increase the credibility of the data with persons outside the program who want assurance that the local government is using stable, systematic procedures.

## 6.9. Refining the Pilot Procedures

Before full implementation of the new performance measurement system, the procedures should be tested to eliminate bugs. The working group should work with program and project personnel to identify and correct any problems discovered during the test period. The team responsible for the testing should look for the following problems:

- Definitions that personnel collecting the information consider unclear.
- Missing data. For example, if the list of persons qualifying for a specific welfare subsidy is incomplete the persons missing from the list cannot be surveyed.

Resolving the above problems may involve deciding to delete a specific performance indicator or accepting less accuracy than hoped.

**Uses for Program Performance Information.** The primary objectives of performance information are to provide regular feedback to program personnel and citizens and encourage improvements in program performance. Performance information can be used to help:

- Motivate employees to continuously improve services and their outcomes;
- Track whether actions taken in the past have led to improved outcomes;
- Identify where problems exist and where action is needed to improve performance;
- Communicate with and inform customers and citizens about the effectiveness of community services;
- Support annual and long-term planning;
- Prepare budgets and justify resource allocation;
- Set annual performance targets;
- Identify needs for technical assistance and training for program personnel;
- Determine a program's future evaluation schedule; and
- Use performance contracting, whereby grants or contracts must meet performance targets.

## 7. SUMMARY OF KEY POINTS

- Performance measurement means the regular measurement and reporting of the performance of public agency programs.
- Performance measurement has four central benefits. It improves service quality and outcomes, improves resource allocation decisions and justifies agency budgets or service cuts, increases accountability of public agencies, and increases the trust of the public in their government.
- Performance indicators can provide information on how well the program or organizational unit has met or will meet its objectives.
- There are four main types of performance indicators: input, output, outcome, and efficiency.
- Output indicators focus on the quantity of service provided, while outcome indicators show the results of the service.

*The steps in developing a performance measurement system are as follows:*

- Organizing the system development process.
- Identifying the program's goals, objectives, and customers.
- Deciding which outcomes to measure.
- Selecting performance indicators.
- Identifying data sources and collecting the data.
- Organizing the data.
- Comparing findings to benchmarks.
- Finishing the analysis and reporting indicators.
- Refining the pilot procedures.

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## 9. APPENDIX 1.

### Recommended Indicators for Drinking Water

<i>Indicator</i>	<i>Rationale for Selecting Indicator</i>
<b>Inputs:</b>	
Total cost of operations Cost per household or type of service	To allow comparison of cost with other departments and water entities
Km of pipeline Number and capacity of treatment plants	To indicate the size of the operations for which the entity is responsible
Number of employee hours	To indicate time spent on providing the service
<b>Outputs:</b>	
Km of water lines maintained, repaired, and inspected (by geographic area)	To indicate amount of infrastructure
Km of new line constructed Number of new services connected, by customer type	To indicate the increase in the infrastructure to meet the needs of industry and the community in general
Number of breaks, leaks, etc. repaired (by geographic area)	To indicate the level of work performed on existing system beyond general maintenance
Total m <sup>3</sup> pumped, metered and treated	To disclose how many m <sup>3</sup> were pumped, metered and treated
Percentage of total water quantity pumped by user category: Residential Commercial Industrial Used by department Unaccounted for	To disclose the client mix and the amount of unaccounted-for-water
<b>Outcomes:</b>	
Percentage of total water amount pumped that was metered	
Number of calls about interrupted	To determine how well the infrastructure is maintained
Number of main breaks Number of breaks, leaks, etc. per 100 km of pipeline per year (by geographic area, by severity, and type of pipeline)	To indicate the condition of the infrastructure water lines
Percentage of service interruptions cleared in a goal period of time Percentage of breaks repaired within x hours of notification	To indicate the ability of the service group to clear service calls within goal time
Number of complaints: Water pressure Water taste Water odor Water color Other	To indicate the quality of the water and the service delivery from the customer's perspective

Number of days did not meet federal/state standards primary (health related) secondary (aesthetic)	Indication of quality of water
Efficiency:	
Cost per million gallons pumped: Treatment Distribution Containment Other	To indicate the cost of providing the service and the breakdown of the cost
Explanatory:	
Type of source of water supply and distance to source	The cost of water is affected by the type (above or below ground) and distance to the source and the difficulty in obtaining and bringing the water to the treatment facility
Quality of water at intake and treatments	The quality of source water is an important determinant of treatment cost
Average daily demand (by month)	To indicate the current demands on the system and to show how demand has changed over time
Billing rates: Residential Commercial Industrial	To determine the different billing rates
Total revenue from customer billing/total	To determine how much the city is
Population served Square km served	To allow the reader to understand the size and demographics of the system
Maximum daily demand/system capacity	To indicate the level of excess capacity in
Treatment, -plant capacity	To indicate the general flow capacity
Holding, -tank capacity	To indicate storage capacity in the
Debt service coverage ratio	To show ability to pay debt
Projection of water demand in 5 years/current capacity	To indicate the need for future expansion and funding



## NOTES