TRAINING COURSE IN KEY PERFORMANCE INDICATORS

General Budget Department Ministry of Finance of Jordan

INTRODUCTION

Initial Training Class Discussion

- What are the trainees' experiences with
 - Results Oriented Budgeting (ROB)?
 - the development and/or use of KPIs?
- What previous training have they had with these topics?
- How are ROB and KPIs used in Jordan?
- What strengths/weaknesses have they seen, regarding ROB and KPI development/use?

PURPOSES OF THIS TRAINING (1)

- Support contemporary, effective, sustainable ROB process – change the thinking!
- Link national policies and priorities, ministerial goals and programs to the budget process
- Build staff knowledge of KPI background and functioning – Train the Trainers
- Develop comprehensive and useful structure and set of KPIs
- Use KPIs throughout ROB: budget formulation/ execution, and plan, manage, and evaluate programs

PURPOSES OF THIS TRAINING (2)

 For discussion: what are the trainees additional expectations for the training?

STRUCTURE AND FOCUS OF THIS TRAINING

- Training consists of nine Parts:
 - Parts 1-5 provide information on the background and establishment of KPIs and their requirements
 - Part 6-7 provide case study for implementing
 Parts 1-5
 - Part 8 provide information about critical support processes for KPIs
 - Part 9 provides an overall summary

STRUCTURE AND FOCUS OF THIS TRAINING (2)

- 2 way to approach KPIs:
 - Strategic, "top-down" perspective, starting with setting the goals (goals structure)
 - "bottom-up", organizational or operating unit level goals
 - Best results from integrating both -- a more comprehensive understanding of goal setting and performance indicators

STRUCTURE AND FOCUS OF THIS TRAINING (3)

- Practical in nature.
- Builds on the existing knowledge and experience
 - GBD's annual budget instructions
 - Review of KPIs of some ministries

STRUCTURE AND FOCUS OF THIS TRAINING

- The end result of the training in the GBD should be:
 - Increased own understanding/support and to support the positive application of KPIs in line ministries
 - Increased capacity for the development and use of KPIs in Government-level policy development and strategic planning
 - Increased capacity for line ministries' KPI development/use in ministerial, programmatic, and inter-ministerial activities.
 - Increased transparency of governmental decisions and actions, greater accountability, more effective programs expenditures of public funds.

STRUCTURE AND FOCUS OF THIS TRAINING

- The end result of the training in the line ministries should be:
 - Increased capacity to develop and use KPIs in their programs
 - Better sense of managing the ministry and better coordination within line ministries' planning and budgeting activities
 - Greater cooperation with the GBD in developing and applying KPIs in ministerial, programmatic, and interministerial activities.
 - Increased transparency of governmental decisions and actions, greater accountability, more effective programs and effective expenditures of public funds.

PART 1. OVERALL BACKGROUND

KEY PERFORMANCE INDICATORS AS AN ASPECT OF STRATEGIC PLANNING AND OF RESULTS-ORIENTED BUDGETING

A. INTRODUCTION

WHAT ARE KEY PERFORMANCE INDICATORS? (KPIS)

- Various quantitative and qualitative ways to observe and measure
- Transparent, standardized, timely, replicable
- Uses
 - program planning and implementation (and M&E)
 - budget formulation and execution (including auditing)
 - legislative and regulatory development
- Ways to report, support transparency, <u>communicate</u> to the private sector and the public
- KPIs are tool for citizens and the private sector

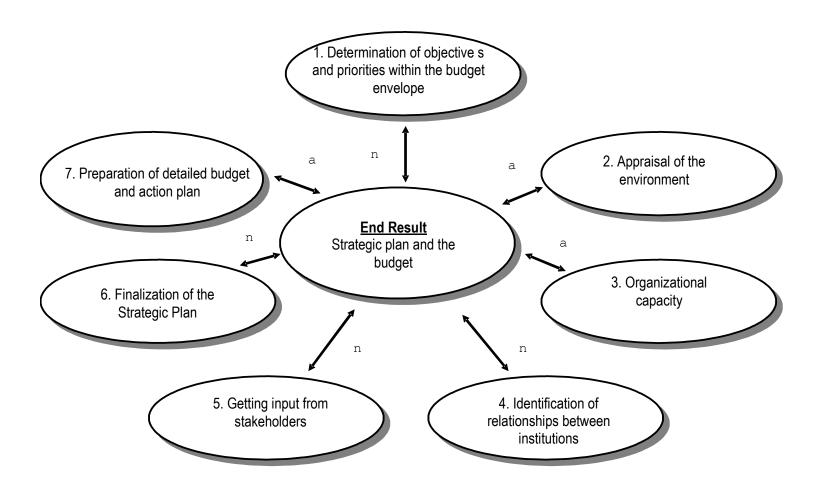
THE STRATEGIC PLANNING CONCEPT AND THE STRATEGIC PLANNING CYCLE

- Strategic planning integrates policy, planning, budgeting, management and review at different levels:
 - Within ministry
 - Between a ministry and its agencies
 - Between ministries
 - Between central and local government
 - Between a ministry and national Government policies and priorities

The Strategic Planning Cycle

- Strategic planning cycle, consistent with international practice, on the next slide.
- Illustrates the sequence and interdependence
- Some steps involve analytical processes (shown by "a") and some involve negotiations ("n")

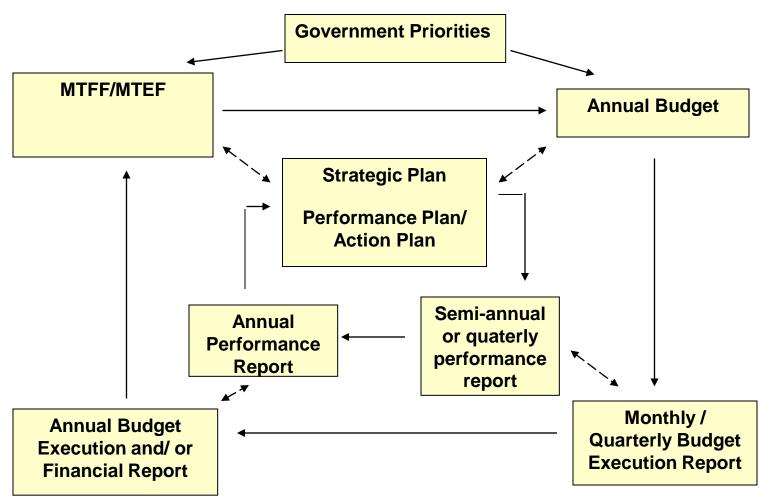
STRATEGIC PLANNING CYCLE



PROCESS FOR DEVELOPING KPIS FROM A STRATEGIC PLAN

- First, the Ministry must set the right goals
- Program structure derived from goals
- KPIs are related to goals
- Programs are the elements which have a price tag attached

GOVERNMENT WIDE PLANNING AND REPORTING



For Class Discussion

 Discuss the experience of a ministry with developing and implementing their first strategic plan and how it does (or does not) tie to ROB.

THE RESULTS-ORIENTED BUDGETING (ROB) CONCEPT – A WAVE OF THE FUTURE

- Overall ROB concept, history and purposes
- The additional transparency of ROB
- The additional accountability of ROB
- Strengths and weaknesses of ROB

Types of Results Oriented Budgeting

- Table cites 3 generic models of ROB
- Presentational budgets are "for show", have no link to actual practice
- Performance-informed budgets provide non-uniform or practical linkages
- Direct/formula budgets tie KPI information and budget levels/decisions closely

TYPES OF RESULT ORIENTED BUDGETING

Туре	Relationship between performance information and finding	Planned or actual performance	Main purpose in the budget process
Presentational	No link	Performance targets and/or performance results	Accountability
Performance- informed budgeting	Analysis-based link	Performance targets and/or performance results	Planning and/or accountability
Formula budgeting	Tight /inflexible link	Performance results	Resource allocation

Source: OECD

KPIS AND THE JORDANIAN BUDGET PROCESS (1)

- Current status and future goals -- next steps in Jordan
 - First attention to ROB in 2008, for the 2009 budget cycle
 - But current (2008) Organic Budget Law does not clearly mention/require ROB or KPIs
- GBD viewpoints and uses
 - In a realistic sense, ROB/KPIs are new for line ministries
 - Neither a large amount of KPI information nor a large amount of detail has been required, nor early enough in the budget cycle
 - GBD does not penalize ministries for poor performance or make budget recommendations based on KPI information
 - KPI use is a standard part of effective management in any organization, and thus ministries should already be using them
 - Plans to require more information and/or more detail for the 2013 budget process

KPIS AND THE JORDANIAN BUDGET PROCESS (2)

- Line ministries viewpoints and uses
 - All have provided KPIs in budget submissions
 - Quality and usefulness of ministry KPIs vary
 - Only some ministries link strategic plans and budgets
 - Some ministries have process/units to facilitate the process of integrating planning and budgeting
- Parliament's interest
 - New Parliament (late 2011), but Parliamentarians historically rarely asked questions of ministry budget requests based on KPIs

For Class Discussion

 Discuss with the participants what general possibilities they see, for applying ROB in their ministry

B. AVOIDING KPIS IN THE PUBLIC SECTOR

- Private sector uses KPIs in countless ways, critical to its successes.
- KPI use in most countries' public sector has not been popular.
- Public sector ignored KPIs because they seemed irrelevant to the decision-making process.
- Public sector programs are conducted because of laws, measuring them appears pointless.

B. WHY USE KPIS IN THE PUBLIC SECTOR

- Modern public sector organizations embrace KPIs:
 - public sector reforms/evolution;
 - demand for increased accountability;
 - increased interest from the public, donors, and others;
 - increased parliamentary oversight;
 - relaxed input controls in the budget;
 - shrinking budgets and a simultaneously increased need to use public funds as effectively and efficiently as possible.

B. KPIs as a Source of Management Information

- Effective organizations use KPIs to plan/ revise/add/cut programs and communicate results and resource needs.
- Modern processes make it essential to show links between performance results and funding
- KPIs help clarify/focus responsibility and accountability to the heads of organizations.

B. Usefulness of KPIs in the Public Sector (1)

- Won't replace political issues as main influence in decision-making processes.
- Can reinforce or change such decisionmaking, by communicating about program accomplishments and failures
- Can provide insight into changing needs, demands, trends.

B. Usefulness of KPIs in the Public Sector (2)

- Construct budget process based on KPIs and cost drivers (i.e., hospital funding based on diagnoses or treatment needs and results).
- May be less useful in holding managers responsible solely on the basis of KPIs if too many events occur beyond their control (i.e., diplomats and international events).
- Can show progress of what institutions accomplish or produce. An important aspect of monitoring and reporting on the operating environment (what needs to be accounted for to the government and Parliament).

B. Usefulness of KPIs in the Public Sector (3)

- Initiate/support focus on building organization capacities.
 - Lack previous pressure to systematically consider how to build capacity of organizations, what systematic reporting to do.
- Building KPI capacity and data systems form important ingredient in budget requests.
 - KPIs play important roles in addressing need for greater transparency and accountability.
- Clear relationship between performance management and greater flexibility in using resources.
 - Managerial freedom to choose mix of KPIs supports planning and managing activities which are the most relevant for attaining major organizational goals.

COMMUNICATION

For Class Discussion

 Discussion of successful/active and unsuccessful/passive KPI use in ministries in the past.

C. PRINCIPLES OF KPIS (1)

- All programs have some KPIs, but may not think of them as such and may not use them to best advantage
- Indicators and measurements used as tools and sources of insight, not as ends unto themselves
 - Information without a context, and which is produced for the sake of merely producing it, is rarely useful
- Not all information is important and useful (or not useful all of the time)
- Hierarchy of information different information is important at different levels of an organization, and at different times
 - i.e., technical staff need frequent/detailed information, policy staff generally need trend or strategic information, and only at certain points in the year

C. PRINCIPLES OF KPIS (2)

- KPIs used in context with other information:
 - Strategic planning, program oversight, priority-setting, legislative and regulation development, budget formulation and execution, auditing, public information, HRM, and related uses
- Should form <u>a</u> basis for decisions:
 - Priority-setting
 - Development of legislation and regulations
 - Resource allocation (funds, staff, equipment, etc)
 - Timing and scheduling
 - Coordination with other public sector or private sector organizations and activities
 - Reporting

C. PRINCIPLES OF KPIS (3)

- KPI information, as a part of larger and focused M&E activities can provide answers and insights in some topics
- Can also lead to other questions and decisions
- Especially true when results of one program are used as input for others (e.g., hospital diagnoses drive drug orders, student test results drive textbook orders)

D. MAIN APPLICATIONS OF KPIS

- a) Organizational management -decision-making and priority setting
 - When insufficient resources or time to provide for all program needs.
 - Supplement managerial experience/ judgment, legal or regulatory requirements.
 - Should <u>not</u> replace human involvement unless there is a direct relationship between KPI and required responses.

D. MAIN APPLICATIONS OF KPIS

 Used within a structured decision-making process, consider organizational and program goals, shortand longer-term implementation issues

- Used in internal management for organization development or human resource management (HRM) actions and decisions
 - Establish links between program performance results and personnel actions
- Should be reviewed in context, because of multiple interpretations and the different decisions or actions which could be taken on the basis of it

For Class Discussion

 Discuss examples of organizational management types of KPI application/use, from a line ministry's experience.

D. MAIN APPLICATIONS OF KPIS

<u>(3)</u>

- b) Monitoring and evaluation
 - Are different processes
 - Monitoring is passive, generally focused on gathering and recording information, and direct action is usually not taken
 - Evaluation is analytical, focused on determining what information means/what should be done, and actions are usually taken
 - They gather, use, and report on information in different ways
 - They provide the data that are used by KPIs
 - They do not always focus on the same KPIs and KPI data
 - They lead to other actions/decisions/activities
 - The results or product of one program may provide the basis or starting point for another program

For Class Discussion

 Discuss examples of using monitoring and evaluation, from a line ministry's experience.

D. MAIN APPLICATIONS OF KPIS

<u>(4)</u>

c) Policy analysis

 Validate or refute research concepts, lead to further actions regarding the specific programs. New programs can begin or changes made in existing programs, but with more certainty.

d) Managerial flexibility

- Advantage to program managers, policy-makers and others involved in the budget process, give greater insight in planning and managing their activities.
- Compare and link program's inputs with its results, managers can use KPIs to strengthen the program and to achieve better results.

E. BENEFITS OF USING KPIS

- Facilitate management and analysis
- Measure results and progress in attaining program goals
- Help explain/<u>communicate</u> program purposes, goals, activities, and accomplishments
- Provide a transparent basis for decision-making
- Provide feedback for a wide variety of uses and users
- Can be used in HRM decisions, including workload management, staffing patterns, job creation, job descriptions, etc

For Class Discussion

 Give examples of the use of KPIs for policy analysis and managerial flexibility, from a line ministry's experience

PART 2.

TYPES OF INDICATORS

THE CONCEPT OF HIERARCHY AMONG INDICATORS (1)

- Different types of indicators are useful in different circumstances
- Developing them is an "art" and not a "science".
 Contexts and uses may depend on interpretation rather than clear and uniform standards.
- A generally-recognized hierarchy among types of KPIs which can be used for strategic planning, program monitoring and evaluation, budget formulation and execution, and other purposes. This is because:

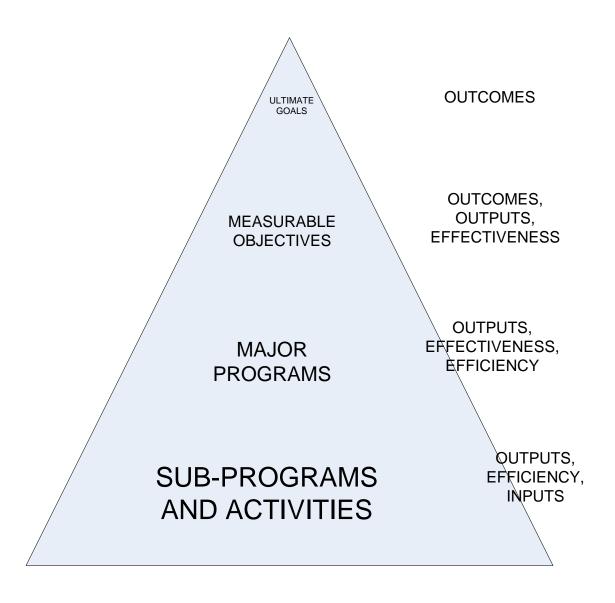
THE CONCEPT OF HIERARCHY AMONG INDICATORS (2)

- Some are more (or less) complex than others (e.g., student test scores vs. science results), and can be understood by reviewers and users with greater (or lesser) knowledge about the programs and issues
- Some have a broader (or narrower) context or meaning, and can be used in more (or fewer) situations (e.g., highway fatalities)
- Some have a long-term (or short-term) relevance (e.g., birth rate), and can be applied in decision-making situations with greater (or lesser) policy impacts
- Some are quantitative in nature and provide clear information, while some can only be described in qualitative/narrative terms (e.g., diplomatic progress), because quantitative information is either not relevant or non-existent (such as diplomatic programs, or defense programs in times of peace)

THE CONCEPT OF HIERARCHY AMONG INDICATORS (3)

- A hierarchy of uses among indicators as related to the organization's goal structure, as shown in the diagram below.
- The generally-recognized types of performance indicators, and their definitions, are described in slides which follow after the diagram.

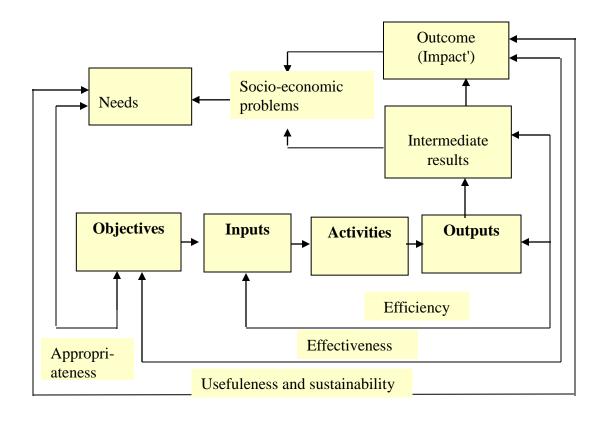
GENERAL RELATIONSHIPS BETWEEN GOAL STUCTURE AND TYPES OF PERFORMANCE INDICATORS



CONCEPTS FOR APPLYING THE HIERARCHY (1)

- Different users of KPIs receive/assess/use information in different ways, at different times, in different forms, based on their roles and responsibilities within the organization
- Hierarchy describes the usefulness of indicators for assessing program results against goals
- "Inputs" are the least useful for linking program results to specific goals, and "Outcomes" are the most useful.
- KPI development is an "art" and not a "science", so the vocabulary and nomenclature of KPIs may vary between countries, reviewers, and advisors/experts.

Input, Output, Outcome Model



CONCEPTS FOR APPLYING THE HIERARCHY (2)

- Hierarchy levels range from "lowest" (i.e., basic level of mostly technical information which is least useful for strategic analysis and higher-level applications), to the "highest" (i.e., information which is most useful for assessing the program's or the organization's attainment of its most important goals)
- Descriptions and examples are provided in the following slides
 - Inputs
 - Outputs
 - Outcomes
 - Efficiency
 - Effectiveness

INPUTS (1)

- <u>Inputs</u> are the resources used in order to produce Outputs.
 - Usually expressed as an amount of expenditure or of resources themselves (such as number of employee/days).
 - An Input into one activity may also be the Output of an earlier activity.
- Generally used to describe a basic level of service that exists or of resources that are used.
- Generally easiest to use, gather information about, understand, and report on.
 - Usually the first type of measures that are cited.
 - Provide information on size/scope of a program
 - Tie most directly to the budget process

INPUTS (2)

- Provide no information about effectiveness, efficiency, long-term results, or policy-level issues
 - Not highly useful for analytical or strategic purposes.
- Input measures answer the question: "How many were used?"
- Examples:
 - size of the budget
 - number of children enrolled in schools
 - number of teachers hired
 - number of immunization doses purchased.

OUTPUTS (1)

- Outputs are the products and services produced by an activity.
 - Closest ties to expenditures
 - Important for measuring work performance
 - Generally do not in themselves indicate the extent to which progress was made in achieving the program's purpose.
- Generally used in programs which are productionoriented or where the delivery of a single service is relevant.
- Generally easy to use because most programs collect and store information about quantitative results.
- Generally the most widely used and cited measures, because they state what the program or organization has produced.

OUTPUTS (2)

- Like Input measures, they provide no information about effectiveness, quality, longterm results, or policy-level issues.
- Outputs measures answer the question: "How many were produced?"
- Examples:
 - number of students who graduated from school
 - number of children who are immunized
 - number of kilometers of roads which are built.

EFFICIENCY (1)

- **Efficiency** is the relationship between production/delivery of goods, services, or other program results, and the resources that were used to produce them.
 - Efficient activities maximize the production of program results and/or minimize the unit cost for producing it. (Monitoring and evaluation show these relationships.)
- Often expresses as a percentage
- Often used regarding a specific benchmark level to improve from, or a specific target or standard to attain which is the main purpose of using a specific KPI.
- Efficiency is the first KPI in the hierarchy which can show a consistent and comparable level of improvement (or lack of progress)
 - May be possible to increase (or decrease) Efficiency by direct changes in resource levels.

EFFICIENCY (2)

- Weaknesses of Efficiency measures:
 - No automatic information about quality of the results, only how efficiently the results were attained.
 - Difficult to understand Efficiency ratings unless they described in the context of benchmarks and goals or targets
- Efficiency measures answer the question: "How well did we operate our programs relative to our resources?"
- Examples:
 - rate of immunizing children who are eligible for the immunization
 - rate of constructing more kilometers of highway within a certain time
 - rate of delivering schoolbooks to children at the start of the school year.

EFFECTIVENESS (1)

- **Effectiveness** describes the extent to which a program is accomplishing its objectives.
 - First measurement in the hierarchy to provide insight and information regarding the quality of a program's results
- Like Efficiency, Effectiveness information is usually expressed as a percentage.
 - When possible, Efficiency and Effectiveness information can be provided together, to give a fuller understanding of a program's results and for balancing these two factors.
- Effectiveness information answers the question: "How fully did we reach our targeted level?"

EFFECTIVENESS (2)

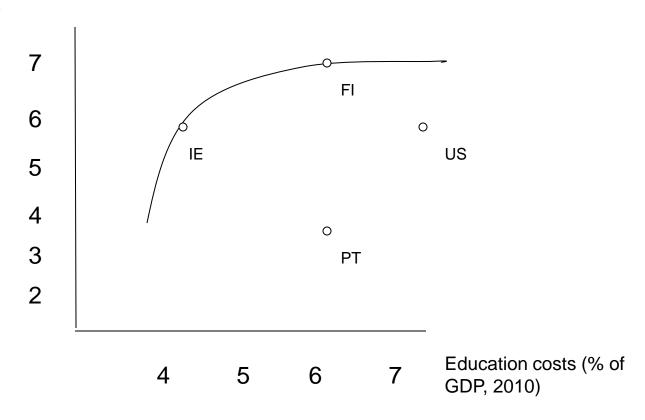
- Are limited if considered on their own, because they provide no insight into the level of resources which was necessary in attaining the results.
 - Program could be quite "effective" by attaining a high score, but if the cost for attaining that score exceeds the value of doing so, the program would not be considered successful.
 - If the program attains a low level of Effectiveness despite a low level of resources being used, it also would not be considered successful.

Examples:

- effectiveness in reducing a disease down to a certain level
- effectiveness at reducing traffic congestion down to a certain level
- effectiveness of increasing literacy rates up to a certain level.

EFFECTIVENESS OF THE EDUCATION SYSTEM

Achievement



OUTCOME (1)

- Outcome measures describe a program's ultimate achievements (generally, over a longer period) regarding the attainment of the program's or the organization's highest goals. This makes Outcomes quite distinct from Outputs, which relate to more direct or immediate objectives.
- Because a program's or an organization's highest level goals are difficult to attain (and by definition, they almost always require a long time to attain), and because they are broad and thus often difficult to measure, Outcome information is generally considered the rarest type of performance measure information
- Outcome information may also have to be combined with other information, or it may depend on other information, in order to be most useful.

OUTCOME (2)

- Outcome information is the highest level in the hierarchy and is the most valuable for analyzing programs and strategies at a high level
- Common for evaluations to be postponed and management decisions to not be made, because necessary Outcome information is not available.
- Examples include reductions in traffic fatalities or increases in long-term employment

MORE TYPES OF KPIS

- Quality of public service delivery (access, reliability, timeliness – response of police/ambulance to an emergency call, compliance of public transportation with the schedule, waiting time for a surgery, etc)
- Quality of public services content (customer satisfaction

 number of complaints, results of a client satisfaction survey, involvement of clients in the design of service delivery processes, etc)
- Work process measures how work is done in producing the outputs at a given level of resources (e.g. 95% of fishing licences issued in two days).

For Group Work and Class Discussion

- Review Handouts listing various KPIs
- Discuss examples of each type, from ministry experience.

PART 3.

USERS OF KEY PERFORMANCE INDICATORS -- HIERARCHY

USERS OF KPIS AND THEIR FUNCTIONS (1)

- Various users need various information for various purposes in various forms and various levels of detail and at various times and various frequencies.
- A progression or hierarchy of users of KPI information (and of the information itself):
 - lower (technical) levels of an organization, need/use more information (and more detailed information) more frequently
 - mid levels have less need for detailed information and/or need detailed information on fewer things than at the lower levels.
 - higher (policy) levels need even less detailed information (except for technical issues with clear policy implications), but more policy data and data related to program results (Outcomes).

HIERARCHY OF USERS AND TYPES OF PERFORMANCE INFORMATION

IHE	OUTCOMES, OUTPUTS, EFFECTIVENESS,
PUBLIC	INPUTS
THE PRESS, NGOS, PRIVATE SECTOR	OUTCOMES, MAIN OUTPUTS, MAIN EFFECTIVENESS, MAIN EFFICIENCY, MAIN INPUTS
PARLIAMENT AND CABINET	OUTCOMES, MAIN OUTPUTS, MAIN EFFECTIVENESS, MAIN EFFICIENCY, MAIN INPUTS
MINISTERS	OUTCOMES, MAIN OUTPUTS, MAIN EFFECTIVENESS, MAIN EFFICIENCY, MAIN INPUTS
STATE SECRETARIES	OUTCOMES, OUTPUTS, MAIN EFFECTIVENESS, MAIN EFFICIENCY, MAIN INPUTS
AUDITORS	FULL RANGE OF DETAILED INFORMATION AND ALL TYPES
DEPARTMENT HEADS AND SENIOR STAFF	OUTCOMES, OUTPUTS, MAIN EFFECTIVENESSM, MAIN EFFICIENCY, INPUTS
PROGRAM MANAGERS	FULL RANGE OF DETAILED INFORMATION AND ALL TYPES
PROGRAM ANALYSTS AND TECHNICAL STAFF FULL RANGE OF DETAILED INFORMATION AND ALL TYPES	

USERS OF KPIS AND THEIR FUNCTIONS (2)

- Program analyst (line ministry and central organization)
 - Full range of detailed information on relevant programs in own ministry and on related programs in other ministries
 - Information on a regular/constant basis for program management, monitoring and evaluating, reporting, costing, and planning
 - Share own information with staff in related programs
- Program manager (line ministry and central organization)
 - Less detailed (or less amount of) information regarding relevant programs in own ministry and for related programs in other ministries
 - Information on a regular (but not necessarily constant) basis for management, monitoring and evaluating, planning, budgeting, and reporting
 - Share own information with staff in related programs and throughout own organization

USERS OF KPIS AND THEIR FUNCTIONS (3)

- Department head (line ministry and central organization)
 - Highlight information (especially regarding programs with high costs, high visibility, or a volatile nature), for resource utilization, oversight, monitoring and reporting etc
 - Periodic technical reports about major program activities, conducts main reporting functions
 - Information for oversight, management, and strategic planning
 - Share own information with staff in related programs, throughout executive levels of own organization, and with relevant outside groups

Auditors

- Receive all data
- Ensure that performance indicators are relevant to the program's goals
- Ensure that KPI information is accurate, valid, verifiable, and collected in appropriate, replicable, and documented ways

USERS OF KPIS AND THEIR FUNCTIONS (4)

- Director General (line ministry and central organization)
 - Highlight information (especially regarding programs with high costs, high visibility, or a volatile nature), for oversight, M&E, reporting, etc
 - Concerned about resource management and oversight
 - Share own information with staff in related programs, throughout the executive levels of own organization, and with relevant outside groups
 - Uses information for strategic planning, priority-setting, ministerial management, development and/or revisions to legislation and regulations, and related purposes
 - Serves as the highest level of programmatic or technical accountability in the ministry

USERS OF KPIS AND THEIR FUNCTIONS (5)

- Minister (own ministry and related ministries)
 - Information about own ministry's main program accomplishments and resource utilization
 - Gives and receives main information regarding related programs from other ministries, Parliament, Prime Minister and Cabinet, other countries, donors, outside groups (including the press), etc
 - Political aspects, legislative aspects, and main programmatic issues
 - Information for strategic planning, priority-setting, ministerial management, development and/or revisions to legislation and regulations, and related purposes

USERS OF KPIS AND THEIR FUNCTIONS (6)

Cabinet

- Political aspects, main government-wide and international issues
- Information on parliamentary oversight of the Executive Branch
- Main information from all ministries
- Information for management, priority-setting and resource allocation, strategic planning at the national level

Parliament

- Political aspects and main programmatic issues
- Gives/receives main information from all ministries
- Information for Executive Branch oversight, legislative development and analysis, management, priority-setting and resource allocation
- Information on budget increases/decreases, proposed new programs, legislative development and changes, etc

USERS OF KPIS AND THEIR FUNCTIONS (2)

Public

- Officially distributed ministry and government information and reports, information and reports based on individual requests
- Form own opinions and interact with government agencies and private organizations

Press

- Officially distributed ministry and government information and reports, information and reports based on individual requests
- Uses information to inform the public and shape public opinions
- NGOs, universities, etc
 - Officially distributed ministry and government information and reports, information and reports based on individual requests
 - Information to conduct own research/analysis, form own opinions, develop/implement own policies and programs, interact with government agencies and private organizations, and seek to influence government activities and decisions

For Class Discussion

 Examples of each type of user, from ministry experience. Are their functions as described above?

PART 4.

STEPS IN DEVELOPING A SYSTEM OF KPIS

WHEN, HOW, AND WHY TO START GATHERING PERFORMANCE INFORMATION (1)

- "Start where you are" begin implementation process from whatever basis is available, rather than spending excessive preparatory time and reduce amount of interest and support within the organization.
- Realize that every program has some information about itself, and this information can serve as foundation for the overall effort (even if revised later)
- Outcome information may be lacking, and linkages between strategic plans (and their goals/objectives) and program activities and results may not be well developed

WHEN, HOW, AND WHY TO START GATHERING PERFORMANCE INFORMATION (2)

- KPIs can/should be changed/refined over time, to make them as relevant and focused as possible.
- Users should look at "The vital few" a limited number of measures which are most important to their level of responsibility and which are useful in reinforcing or maintaining progress in their program.
- Program managers should decide pragmatically why to engage in performance measurement – because of legal or regulatory requirements, management interest, political decisions, donor pressure, etc -- to determine the KPI implementation strategy.
- Top management of the organization should publically commit to using KPIs often and transparently in decisionmaking.

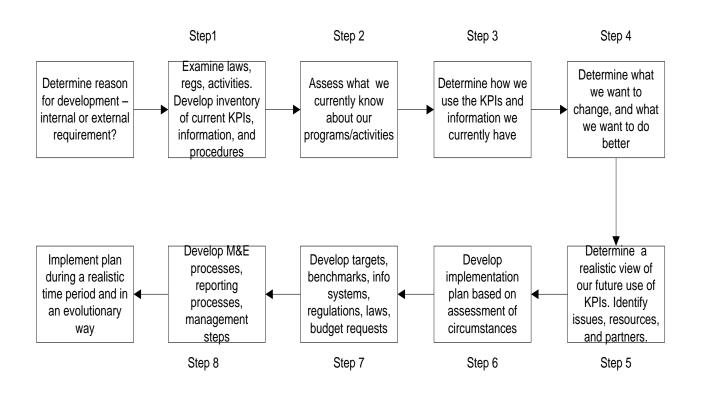
IMPLEMENTATION STEPS AND STAGES (1)

- KPI implementation can be a complex and political process requiring time and resources to implement/manage effectively, but which will make deep and lasting changes in the organization's functions.
 - Organizations with committed leaders will apply, utilize, and support the process with very different degrees of interest and at very different levels of activity, and will have very different levels of success and satisfaction with the process.
- The following steps can be followed in preparing for an effective KPI process, they are relevant to both large organizations and specific programs.

IMPLEMENTATION STEPS AND PHASES (2)

- Steps should generally be implemented in sequence, through 3 phases: Background, Analysis, and Implementation
 - The Background phase (Steps 0-3) collects and assesses basic information about current activities
 - The Analysis phase (Steps 4-6) requires realistic decisions about how KPI will be used
 - The Implementation phase (Step 7- onward) develops and uses KPIs, and analysis and reporting are conducted.

IMPLEMENTING A SYSTEM OF KEY PERFORMANCE INDICATORS



STEP 1: WHAT DO WE CURRENTLY DO – WHAT ARE OUR CURRENT PROCEDURES?

- Organizations assess what they currently do and use, regarding performance information.
 - Produce an inventory of KPIs, information sources and systems, etc., to use as a consensus foundation upon which to build.
- Programs/organizations which believe they do not have a
 performance indicator system and/or that they do not use
 performance indicators, actually do have and use these things, but
 they may not be recognized as such or organized or used in a
 structured way.
- Program staff and managers should always be aware of/use at least a core of KPIs regarding their programs. In under-developed information environments, the information might not be relevant, accurate, timely, complete, appropriate, or in a useful format.
- Responsibility for attaining goals and target at different levels, and subsequent performance monitoring, should be assigned.

STEP 2: WHAT DO WE CURRENTLY KNOW ABOUT OUR PROGRAMS?

- Organizations assess what they currently know about programs' results, including resource utilization.
- Distinguish between "data" (raw and basic statistics produced), "information" (systematized data), and "knowledge" (understandings that the program managers and staff have, following the analysis of information).
- Focus on the program's or the organization's knowledge, to serve as a companion to the information inventory which was conducted in the previous step.
 - Assessment is important in order to establish overall plan for KPI utilization, because it can produce an effective level of current knowledge to both serve as the consensus basis for going forward and as a way for eliminating the risk of duplication with new information-gathering strategies.

STEP 3: HOW DO WE CURRENTLY USE WHAT WE HAVE?

- After assessing the current KPI environment (even with ad-hoc or un-structured activities), the organization determines the framework of a KPI system.
 - Basis for an eventual and effective KPI strategy, produces insight in order to move onto the next step.
- Honest appraisal of the current formal and adhoc approach to KPIs and information (and information systems)
- Create a cumulative starting point for improving the orientation to program results.

STEP 4: HOW WOULD WE LIKE TO CHANGE WHAT WE DO AND KNOW – WHAT DO WE WANT AND NEED TO DO BETTER?

- Build on current procedures and knowledge, focus on goal of being more results-oriented through the application of KPIs.
 - Assess current capacities, determine what the organization wants to be able to accomplish through a KPI system.
- An intense step, requiring:
 - comprehensive review of the organization <u>and</u> the circumstances in which it operates
 - development of a vision that is desired to be reached
 - comparison of current information and capacities with relevant existing standards that the organization seeks to meet.
- If specific standards do not exist, then describe the level of performance which is desired, including types of standards and ways of measuring them
- Use benchmarking, international comparisons, historical research, etc. (This process is discussed later.)

STEP 5: WHAT IS A REALISTIC VIEW OF OUR FUTURE USE OF KPIS? (1)

- Steps 5 and 4 require pragmatic description of near- and long-term use of KPIs.
 - Effective KPI processes require time, effort, and resources for implementation, and the organization must accept this.
- Accomplishments of any KPI system will be constrained without this realistic appraisal.
- Leaders of the organization must establish a visible and sustained commitment to using and acknowledging the merit of the KPI concept.

STEP 5: WHAT IS A REALISTIC VIEW OF OUR FUTURE USE OF KPIS? (2)

- Organization compares the desired vision of itself (Step 4) with its realistic short- and medium term constraints.
- Constraints include:
 - legislative and regulatory issues
 - resource issues involving funds, personnel, IT systems, specialized supplies and equipment, infrastructure items, etc
 - capital issues, such as buildings, specialized production facilities, etc.
 - lack of information about the topic as a whole
 - lack of relevant KPIs in the case of Jordan

STEP 6: DEVELOP AND IMPLEMENT THE PROCESS (1)

- Synthesize the preceding steps, develop feasible plan for reaching its goal of using KPIs.
- Plan should have:
 - short-term dimension (based on the constraints listed above)
 - longer-term dimension (developed only after the organization has an effective base of experience and increased capacity)
 - feasible method for attaining the necessary additional information flows, staffing, and other resources for a more comprehensive KPI system
- Organization should use this step as the opportunity for addressing operational issues which are described below.

STEP 6: DEVELOP AND IMPLEMENT THE PROCESS (2)

- What should be measured on what basis?
 - Laws and by-laws
 - International standards, international agreements
 - Program requirements and priorities (professional knowledge)
 - Budget requirements
 - Political priorities
 - Public interest
 - Other organizations (and donors)
 - COMMUNICATION

STEP 7: ISSUES OF SETTING KPI BENCHMARKS, STANDARDS, AND TARGETS (1)

- Effective KPIs are based on specific agreed-upon starting point(s), reference point(s), and/or standard(s) from which to begin or from which to measure progress (or the lack of it). This is a "benchmark".
- Establishing agreed-upon benchmarks is a crucial step for organizations committed to the development and use of a KPI system.
- Lacking a valid and useful set of benchmarks, programs cannot prepare for/implement progress because they have no valid starting points.
- Example: current rate of infant mortality

STEP 7: ISSUES OF SETTING KPI **BENCHMARKS**, STANDARDS, AND TARGETS (2)

• **Benchmarks** can be determined through:

- Organizations already collecting KPI information and operating at a satisfactory level can use current levels of performance as a benchmark.
- Organizations not operating at a satisfactory level can use current levels of performance to determine where to improve from.
- Other organizations examine and then adapt international experience and/or technical professionally-set standards in setting benchmarks

STEP 7: ISSUES OF SETTING KPI BENCHMARKS, **STANDARDS**, AND TARGETS (3)

- Standards are specific performance levels
 which are generally set and/or widely accepted
 regarding a specific program or activity.
- Generally technical in nature
- Generally set by professional bodies which are international and/or non-political in nature (medical standards or engineering specifications).
- Example: accepted ratios of students to teachers

STEP 7: ISSUES OF SETTING KPI BENCHMARKS, **STANDARDS**, AND TARGETS (4)

- Useful in the early stages of KPI development, establish framework within which the necessary levels of program funding and performance are set.
 - Generally set by non-political expert bodies, generally accepted as valid.
- May present a challenge to new/under-funded organizations, because meeting standards may require more resources than the organization can provide.
- Some programs have no standards (or no consensus standards), and so setting/selecting them for the first time require searching, testing, and analysis.

STEP 7: ISSUES OF SETTING KPI BENCHMARKS, STANDARDS, AND **TARGETS** (5)

- <u>Targets</u> should be set, to have measurable objectives against which to assess the attainment of program results.
- Realistic and attainable, considering resource and technology capacities and limitations.
- Time needed for attaining the Target should be considered
- Also important in strategic ways, to be used in budget justifications, MTFF/MTEF documentation, development of legislation and regulations, public information, strategic planning, to help describe the program's current and desired future states.
- KPI information should always be auditable:
 - gathered and analyzed in transparent and replicable ways
 - valid and verifiable
 - data gathering process should be replicable and documented.

STEP 8: M&E, REPORTING, AND MANAGEMENT

Monitoring and evaluation

- Already discussed (slide 39) as key aspect of KPI process and the management cycle
- Organizations must have an M&E process
- To repeat: monitoring is the passive gathering of information
- Evaluation is the analysis of information, implies the taking of actions based on evaluation

Reporting

- Vital for sharing information
- Relates to hierarchies (slides 48 & 67)
- Need balance avoid both surplus of information and oversimplification
- Key aspect of management cycle

BEYOND THE 8 STEPS: IMPLEMENTING THE PLAN IN A REALISTIC AND EVOLUTIONARY WAY

- Be realistic -- take all challenges and drawbacks into consideration
- Implement as a core function of successful ongoing programs, rather than as:
 - series of unconnected one-time-only annual reviews
 - separate from ongoing management cycle
 - separate from the core of budget formulation/ execution functions
- Evolve organization to the position of focusing on program results along with expenditures
- Use KPI topics/results as the framework for future development of program activities

FREQUENCY OF MEASUREMENT

- Constant process -- ongoing collection/analysis of KPI information, not only for annual budget requests.
 - Most programs operate on established/ongoing basis year-round
 - M&E and reporting are routine aspects of management and thus should be conducted on an ongoing annual basis as well.
- Some programs produce information sporadically (recurrent census programs, disaster recovery activities).
 - Routine ongoing reporting is not possible.
 - Reporting must be developed in accordance with the unique nature of the program.
- Some programs produce so much data so constantly that management decisions must be made regarding appropriate reporting intervals.
 - Danger that excessive data will cause confusion or will obscure the main points of program results
 - Ministries of Health have this problem especially.

For Class Discussion

 Ministry activities taken so far, to conduct similar processes.

PART 5.

CHALLENGES AND OPPORTUNITIES IN THE USE OF KPIS

DRAWBACKS AND CAUTIONS IN THE USE OF KPIS (1)

- Some are incompletely developed, or address only part of what needs to be understood
 - cover only part of the program's activities
 - cover only part of the year (or other relevant period), etc.
- Some can be interpreted in more than 1 way
 - indicators and information are produced as "raw" data
 - no proper set of expectations or a frame of reference
 - different observers can come to different conclusions regarding the data.
 - Example: program error rates
- KPI data to supplement other decision-making tools, not be used on its own, unless there are no other sources of program information.
- Essential to ensure that the most complete and balanced understanding about the program is produced.

DRAWBACKS AND CAUTIONS IN THE USE OF KPIS (2)

- Must be representative of the program's activities
 - part of the cycles of strategic planning, program management
- Relevant, appropriate, accurate, timely, transparent, auditable, and verifiable.
 - ensures that indicators and targets can be relied upon as critical support in program management and planning.
- Should not necessarily be used for automatic decisionmaking
 - budget increases/decreases, resource allocation, job performance ratings, etc. should not automatically be made without consideration of larger/outside information, unless the nature of the program relates to such actions on a direct basis.

DRAWBACKS AND CAUTIONS IN THE USE OF KPIS (3)

- Major lessons: KPIs cannot replace
 - professional judgment and analytical review of knowledgeable experts.
 - human understanding of what the information means.
- Professional analysis can determine what action to take, and when to take it, but unprocessed information cannot.

POLITICAL ISSUES (1)

- Specific funding levels, visibility, coverage, or other program characteristics become part of the political environment
 - ministry loses partial control over the decision-making process regarding these programs.
- Decisions about program growth and other changes become political decisions, not only ministry or technical decisions.

POLITICAL ISSUES (2)

- Ideally, political decisions should be based on ministry or technical decisions
- Realistically, political reasons for not gathering/using KPI information:
 - don't show positive picture of the program, organization or government, from the political perspective
 - don't show what political appointees want to be shown -- program realities are not in harmony with political decisions
 - political appointees want to show results for things that are not being measured, or for Outcome measures for which data are not yet available

PROBLEMS OF INFORMATION ACCESS AND AVAILABILITY (1)

- Barriers to collecting and using information:
 - Changing established methods of collecting information
 - Collecting more/different information, and/or on different schedule, and/or in different ways
 - Data exist but are difficult to collect because of time, physical, system, geographic, legal reasons.
 - data available only at remote locations
 - need special technical approach or bureaucratic or legal permission to gather each time it is collected.

PROBLEMS OF INFORMATION ACCESS AND AVAILABILITY (2)

- Multiple organizations may be involved jointly in a larger activity, usually a ministry-wide, inter-ministerial, or government-wide initiative (e.g., environmental protection)
- Each may legitimately claim a role in producing results
 - difficult to attribute specific results to specific programs within the overall initiative.
- Even more difficult when not all organizations gather performance information in same way, an incomplete picture of overall performance

PROBLEMS OF INFORMATION ACCESS AND AVAILABILITY (3)

- Expensive to gather, require extensive or highly specialized resources for gathering (e.g., household surveys).
- Necessary information gathering/storing/ analysis systems may not exist (e.g., weather forecasts).
- Budget or other constraints prevent necessary level of information gathering or analysis

PROBLEMS OF INFORMATION ACCESS AND AVAILABILITY (4)

- Data exist, but available infrequently and/or on a schedule inconsistent with budget cycle.
 - programs are cyclical or have only annual (or less frequent results).
- Data exist, but generated or presented in ways inconsistent with the analytical needs of the organization or the budget process.
 - information is highly technical or is produced in ways that can be interpreted only by experts

WEAK LINK BETWEEN STRATEGY AND REALITY

- Weak or artificial links between formal strategies and actual program operations.
 - planning and budget processes must be closely related, "top-down" policy-making and priority-setting should integrate with "bottom-up" budget development.
- Programs cited as "high priority" may lack practical evidence of that label, and resources (especially for measuring performance) are not assigned to these programs
 - performance indicator information may not be gathered or used.
- Result:
 - priorities may be cited in specific policy documents, but are separated from operational realities
 - no tangible advantage to "priority" programs (and no special disadvantage to programs which are not designated as "priority")

DIFFICULT TO TIE TO SPECIFIC PROGRAMS OR TO ESTABLISH DIRECT CAUSALITY

- In a complex program delivery environment (multiple programs involved in combined or sequential ways), difficult for all of the results to be:
 - analyzed clearly or directly
 - broken down into discrete elements and measured separately
 - example: environmental protection.
- Each program has role in producing results, but hard to attribute specific results to specific participants.
 - For example, an improvement in environmental quality may be the result of changing consumer habits or of industrial production methods.
- Thus may be necessary to gather additional information or to conduct additional analyses.

INFORMATION INTERPRETATION MAY BE DIFFICULT (1)

- Generally clear when a KPI increased (or decreased) level is positive or negative.
- Interpretation in some situations is difficult.
 - changes in levels of performance or results, from reporting period to reporting period, can vary for a number of reasons.

INFORMATION INTERPRETATION MAY BE DIFFICULT (2)

- An apparently small increase (or decrease) in a KPI level may be meaningful based on program circumstances or on outside influences.
 - small increase in unit costs for delivery of a service, in the face of a very large increase in cost elements, can be positive event
 - small decrease in a measurement of the public's health, in the face of larger deterioration in the public's health, can be a relatively positive event.
- Some additional interpretation of performance indicator information may be necessary.

INFORMATION INTERPRETATION MAY BE DIFFICULT (3)

- Standard measurement processes are not relevant to all programs.
- How to measure the success of a ministry of defense, if there is no war, or to measure diplomatic progress of a ministry of foreign affairs?
 - There is international experience in all of these difficult areas, but they require interpretation and customization in order to be adapted to each country's unique circumstances.
- There are programs for which quantifiable data may not exist or may not be relevant.
 - according to international experience, is appropriate to provide a narrative description (rather than a quantitative indicator) to portray program results.

EXCESSIVE AMOUNT OF INFORMATION, AND EXCESSIVE AMOUNT OF DETAIL (1)

- New KPI systems often develop too much information (or too detailed information) because
 - they can produce it
 - they are not sure what the organization's strategy or executives will require.
- New executives (especially non-experts in programs for which they are now responsible) may not know what KPIs to use or ask for
- They may request/receive excessive amount of information, assuming that anything important will come to their attention.

EXCESSIVE AMOUNT OF INFORMATION, AND EXCESSIVE AMOUNT OF DETAIL (2)

- Reduce problem through comparisons with similar programs in other ministries or other governments having longer KPI experience
- Effective organizations reduce the number of indicators over time, focusing more on important things to measure/report on.

For Class Discussion

 Presentation and discussion of ministryspecific problems.

PART 6.

PREPARATION FOR HOMEWORK/GROUP EXERCISE

PURPOSES OF THIS PART (1)

- Preceding Parts provided practical information about KPI background, purposes, types, users, and realistic implementation issues, to:
 - provide broad/strong foundation in establishing/using KPIs and program information
 - ensure individuals developing/using KPIs are familiar with practical implementation issues based on international experience
 - prepare these individuals to identify/develop KPIs based on this training.

PURPOSES OF THIS PART (2)

- This Part focuses on establishing KPIs and solving the problems involved in doing this, through a concrete example.
 - Starting point of this Part (and of the example) will be the goal and KPI information that was developed by a Ministry on the basis of the GBD's budget instructions. The goals structure and KPIs are provided as handouts.
 - This Part provides a review and discussion of the goals structure and KPIs, and identifies ways to strengthen them.

PURPOSES OF THIS PART (3)

- This Part contains a practical exercise regarding ways in which a ministry's KPIs could be developed.
- Training assumes there will be an integrated process for setting goals and KPIs, example will suggest ways to revise goals to make them more measurable.
- Although one specific ministry is used in the example, the processes that are described and the steps that are recommended to be taken can readily be used by any ministry

Group Exercise/Homework Assignment

- A ministry strategic plan is provided, and hopefully it is:
 - Realistic, specific, and contains a complete and logical set of goals and objectives
 - Tied to the budget process through a common set of goals, objectives, program activities, and KPIs
- However, since the ROB process in Jordan continues to evolve, the strategic plan may still be improved
- The training exercise provides for a review of the strategic plan and KPIs (with specific attention on answering series of questions)

Group Exercise/Homework Assignment

- Main questions on goals structure
 - Do the goals tie to National Strategy? To other relevant national/international statements?
 - Does the body of goals cover the full organization, and are all parts of the organization visible in the body of goals?
 - Are the goals focused on strategic (rather then operational) issues?
 - Is there a manageable and logical number of goals?
 - In any other ways, are the goals stated in accordance with GBD instructions?

Group Exercise/Homework Assignment

- Main questions on KPIs
 - Cover main parts of the organization and programs?
 - Both Output and Outcome measures?
 - Linkages between KPIs and goals?
 - Clear and unambiguous?
 - Tied to specific observable activities?
 - Based on benchmarks?
 - Consistent with standards?
 - Focused on targets?
 - In any other ways, stated in accordance with GBD instructions?

Group Exercise/Homework Assignment (4)

 Review the Handout containing instructions for the Group Exercise or Homework

PART 7.

DISCUSSION OF THE RESULTS OF THE HOMEWORK

For Class Discussion

- Discussion of the Ministry's context for goal-setting in strategic planning.
- Discussion of the choices of KPIs, relevance and usefulness.
- Discussion of specific alternatives.
- Discussion of data sources for the current and alternative KPIs.

PART 8.

INFORMATION SYSTEMS AND REPORTING ISSUES

INFORMATION SYSTEMS FOR KEY PERFORMANCE INDICATORS (1)

- Core concept of performance measurement: perform it on a regular and routine basis.
- Some systematic process should be used to generate, gather, store, analyze, and report on KPI information.
 - Although systematic processes usually require the use of IT, the term "system" does not automatically refer to or require the use of IT systems.
 - Such systems may not always be available and/or the program information may not be compatible with it (and/or might not require it).

INFORMATION SYSTEMS FOR KEY PERFORMANCE INDICATORS (2)

- Developing KPIs requires identifying appropriate methods for gathering/storing information.
 - Some KPI data (student test scores, court case outcomes) will be extensive and it certainly will require IT system applications
 - KPIs involving a smaller number of results will not necessarily require specific IT applications

NECESSARY ATTRIBUTES OF INFORMATION SYSTEMS (1)

- Characteristics of useful KPI data: relevant, accurate, timely, reliable, accessible, auditable, and cost-effective.
- Information systems must have the capacity to support the gathering, storing, analyzing, and reporting on KPI information which is consistent with these characteristics
- GFMIS can be useful in the KPI process
- Information that is not consistent with the characteristics:
 - diverts attention and resources away from more useful information
 - weakens the program's or the organization's capacities regarding valid KPIs.

NECESSARY ATTRIBUTES OF INFORMATION SYSTEMS (2)

- Programs rarely have information systems with all characteristics when they seek to begin using KPIs in systematic and effective ways.
- In order to improve their analytical and reporting capacities, organizations should:
 - determine their information shortcomings
 - prepare budget requests (as needed) for resources necessary for building/procuring necessary systems
 - include these requests as priorities for near-term funding through the budget justification process.

WHAT REPORTS AND AT WHICH LEVEL?

- Budget execution report
- Balance sheet, cash report
- Performance report

- Government
- Ministry
- Agency

WHAT KINDS OF DATA FOR PERFORMANCE REPORTING?

- What are the users' needs (slide 67)
 - Relate to roles/responsibilities
 - Appropriate format/detail/frequency
- Show policy effectiveness -- ROB
 - Effectiveness of policy processes
 - Policy and budget linkages
- Operational performance -- ROB
 - Outputs, outcomes, quality
 - Operational efficiency/effectiveness
 - Human resources

For Class Discussion

 What kind of performance reporting system is suitable for Jordan?

PART 9.

SUMMARY OF SETTING UP KPIS AND CONCLUDING THOUGHTS

SUMMARY OF PROCESS FOR DEVELOPING PERFORMANCE INDICATORS (1)

- The development of a sound goals structure, based on a successful strategic planning process, will identify numerous KPIs almost automatically. These will come from:
 - the basic legislation which established this Ministry
 - the subsequent legislation and regulations which establish the Ministry's programs
 - relevant international agreements in which Jordan participates

SUMMARY OF PROCESS FOR DEVELOPING PERFORMANCE INDICATORS (2)

- First stage in reviewing and validating the KPIs to be used
 - review the preceding sources to determine the specific requirements and the specific things that must be measured.
 - these become KPIs which are to be included under the relevant Goals.
- Also provides the "top-down" aspect of developing KPIs from the perspective of the policy level of the strategic planning process.
- "Bottom-up" steps discussed in detail should be taken in parallel with the "top-down" process, to provide a consistent/integrated plan, goals structure, and relevant and comprehensive KPIs.

SUMMARY OF PROCESS FOR DEVELOPING PERFORMANCE INDICATORS (3)

- Part 4 described the Steps to take in developing a set of KPIs.
- Steps are part of an integrated process and they flow from one to the next
 - results of one Step provide starting point for the next.
- To provide for movement and progress, one Step need not necessarily be fully completed before the next logical step is undertaken
 - end result of the process is more important than any one Step (assuming all steps are essentially followed).

SUMMARY OF PROCESS FOR DEVELOPING PERFORMANCE INDICATORS (4)

- The Steps require the Ministry to:
 - Assess current procedures regarding performance information
 - Assess current knowledge about programs
 - Assess current use of performance information
 - Determine what is desirable to change, what is desirable to accomplish
 - Establish a realistic picture of the future use of KPIs
 - Develop and implement a KPI process (including the establishment of benchmarks and targets)

FURTHER IMPLEMENTATION ISSUES

- International experience: several years are required for all of the relevant standards, benchmarks, and targets to be established for the KPIs which are being used.
- Programs may conduct research, collect several years' program results information, and/or calibrate results and develop relevant/feasible targets.
- Several years for programs to gather sufficient information/equipment/staff in order to establish valid standards, benchmarks, and targets.
- Changing the government's/ministry's/program's framework for budgeting and debating/setting policies and priorities, away from traditional methods and toward ROB, will take time – ROB and KPI limitations have been discussed here, and the processes remain political ones

For Class Discussion

Closing discussion from participants