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Result-based Management Guideline on Health Sector Programs

한국국제협력단

KOICA

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2013. 12

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KOICA 한국국제협력단
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The Korea International Cooperation Agency (KOICA) performs various types of evaluation in order to secure accountability and achieve better development results by learning.

KOICA conducts evaluations within different phases of projects and programs, such as ex-ante evaluations, interim evaluations, end-of-project evaluations, and ex-post evaluations. Moreover, sector evaluations, country program evaluations, thematic evaluations, and modality evaluations are also performed.

In order to ensure the independence of evaluation contents and results, a large amount of evaluation work is carried out by external evaluators. Also, the Evaluation Office directly reports evaluation results to the President of KOICA.

KOICA has a feedback system under which planning and project operation departments take evaluation findings into account in programming and implementation. Evaluation reports are widely disseminated to staffs and management within KOICA, as well as to stakeholders both in Korea and partner countries. All evaluation reports published by KOICA are posted on the KOICA website. (www.koica.go.kr)

This evaluation study was entrusted to ReDI by KOICA for the purpose of independent evaluation research. The views expressed in this report do not necessarily reflect KOICA's position.

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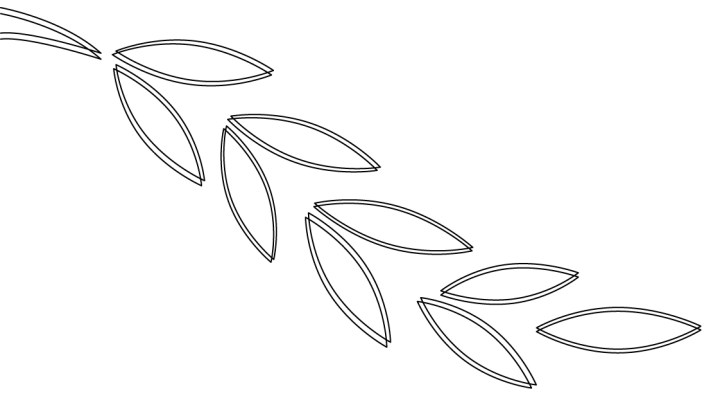
Abbreviations

Abbreviation	Official name
CPS	Country Partnership Strategy
DAC	Development Assistance Committee
DFID	Department for International Development (UK)
HQs	Head quarters
KOICA	Korea International Cooperation Agency (Korea)
LF	Logical Framework
MDGs	Millennium Development Goals
MfDR	Managing for Development Results
M&E	Monitoring and Evaluation
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PDM	Project Design Matrix
PMC	Project Management Consulting
PMP	Performance Monitoring and Reporting
RBM	Result-Based Management
RCD	Randomized Control Design
R/F	Result Framework
SO	Strategic Objective
UN	United Nations
UNDP	United Nations Development Programme
WB	World Bank
WHO	World Health Organization



Introduction

Introduction

■ Purpose of the RBM Guideline

The Results-Based Management (RBM) Guideline for the Korean International Cooperation Agency's (KOICA) health sector projects aims to provide practical information to set a management system according to a project cycle. The guideline is set to design the KOICA's health sector projects in accordance with the KOICA Health Sector Strategy (2011-2015) and to utilize results information which was collected, accumulated, gathered and analyzed during the project management process in future projects' planning and implementation.

■ Target audience of the RBM G\uideline

The target audience of the guideline is the officers and managers who design and coordinate KOICA's health sector projects and programs and Project Management Consulting (PMC) companies, the implementation bodies of the projects.

■ Contents of the RBM Guideline

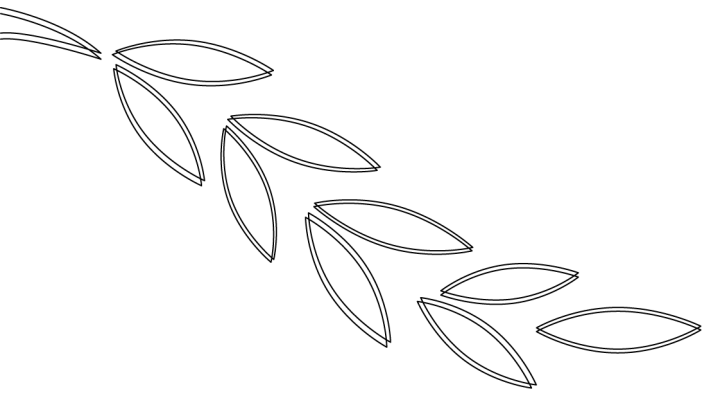
The Guideline consists of five chapters:

- Chapter 1. What is results-based management (RBM)?
- Chapter 2. RBM in the design stage
- Chapter 3. RBM in the implementation and monitoring stage
- Chapter 4. RBM in the evaluation stage
- Chapter 5. RBM framework for health sector strategies

■ Definition of results

The definition of results in this Guideline is as follows:

- Strategy-level results: Degree of achievement of strategic objectives
- Project-level results: Degree of achievement of goals, outcomes and outputs of each project



I. What is results-based management (RBM)?

1. Definitions and dimensions of results
2. Definitions, purposes and principles of RBM

Chapter

I What is results-based management(RBM)?

1. Definitions and dimensions of results

○ The Guideline focuses on providing practical instructions on how to build up the RBM system of KOICA`s health sector projects within the framework of the KOICA Health Sector Strategy (2011-2015)

○ "Results" in this Guideline is defined as: "change achieved by development activities and projects." In other words, results refer to changes in a state or condition caused by a cause-and-effect relationship. This does not mean short-term output directly derived from development activities but longer-term outcomes and impacts caused by those activities (Lee et al., 2013:32).

○ Results can be classified into the three levels of outputs, outcomes and goals according to the scope of results and the expected period of result achievements. This Guideline premises the definition and level of results as below.

- Outputs: Short-term changes of completed individual activities
- Outcomes: Mid-term changes in development conditions through the achievement of outputs
- Goals: Ultimate results intended to be improved by the development activities.

2. Definitions, purposes and principles of RBM

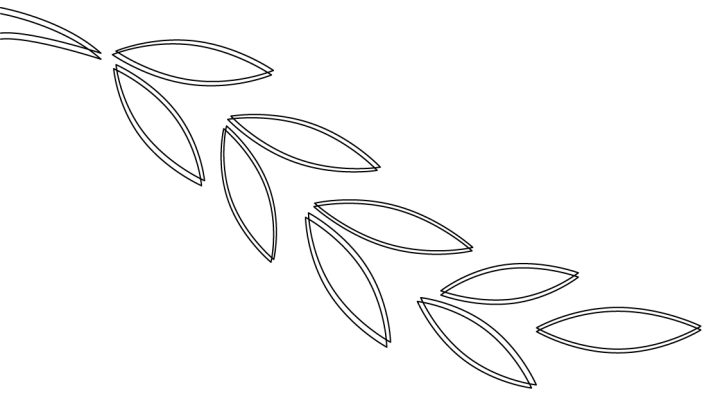
○ Academics and practitioners have interchangeably used diverse terminologies to indicate results management such as RBM, managing for development results (MfDR) and performance management (Kang, 2012:17). In general, RBM is a management strategy that aid agencies use in order to maximize results such as outputs, outcomes and goals intended by their projects (UNDG, 2011).

○ At the agency level, RBM aims to strategically design activities on the basis of learning and accountability to provide a consistent tool for project management. Furthermore, introduction of the RBM approach improves the accountability and effectiveness of project management by clearly defining expected outcomes, facilitating M&E and reflecting lessons learned in agencies' important decision-making and performance assessment processes. (UNDP, 2000)

○ The core principles of RBM are as follows:

1) Firstly, managing for results, not managing by results.
2) Secondly, RBM should be applied to all stages of a project cycle comprehensively from strategy development to project design, implementation, evaluation and feedback.
3) Thirdly, RBM is used to adjust all activities such as planning, monitoring and evaluation of projects in accordance with prearranged strategic objectives.
4) Fourthly, RBM is applied to facilitate the utilization of information and data gathered from the project management process to improve reporting and accountability, as well as improve institutional learning and decision-making processes.

○ Addressing the purposes and principles mentioned above, this RBM Guideline aims to provide practical instructions for KOICA staff members and implementing agencies to design projects according to the strategic objectives in the KOICA Health Sector Strategy (2011-2015), to systematically monitor and evaluate whether or not the objectives have been achieved, and to accumulate and utilize project results information in future project planning and strategy development efforts.

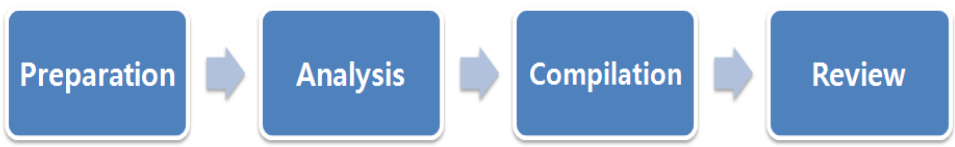


Ⅱ. RBM in the design stage

1. Preparation stage
2. Analysis stage
3. Compilation stage
4. Review stage

Chapter

Ⅱ RBM in the design stage



1. Preparation stage

1-1. Research on partner countries' health sector statuses and strategies

➢ Research on partner countries' health sector statuses

○ Purpose: The purpose of the research is to broadly understand current situations in a respective partner country's health sector and to grasp obtainable national-level health-related indicators.

○ Content: The research scope should cover the Millennium Development Goals (MDG), major socioeconomic indicators, mortality/morbidity rates, health-related sub-sector indicators, and health system-related indicators in order to comprehensively understand the health sector situation of a certain community or a country.

○ Method: Although there are various ways to understand the health status of a particular country, the quickest and easiest way is to use reliable statistical

data from international organizations such as the United Nations (UN), World Bank (WB), World Health Organization (WHO), and Organization for Economic Development and Co-operation (OECD).

<Table 1> Major data sources for health-related indicators

No.	Data	Organization	Sources
1	Global Observatory Data Repository	WHO	http://apps.who.int/gho/data/node.main
2	MDGs Progress Report	UN	http://unstats.un.org/unsd/mdg
3	Monitoring the Situation of Children and Women	UNICEF	http://www.childinfo.org/
4	International Household Survey Network	IHSN	http://www.ihsn.org
5	World Population Prospects	UN	http://www.un.org/en/development/desa/population
6	World Development Indicators	World Bank	http://data.worldbank.org/indicator
7	National health accounts	WHO	http://www.who.int/nha/en
8	OECD Stat Extracts	OECD	http://stats.oecd.org
9	System of Health Accounts	OECD WHO Eurostat	http://www.who.int/nha/sha_revision/en
10	Immunization surveillance, assessment and monitoring: Data, statistics and graphics	WHO	http://www.who.int/immunization_monitoring/en
11	Demographic and Health Surveys	USAID	http://www.measuredhs.com
12	World Contraceptive Use	UN	http://www.un.org/esa/population/publications/WCU2012/MainFrame.html
13	Basic Health Indicators (Pan American)	PAHO	http://www.paho.org

○ To examine the health status of a particular country, the main indicators to be consulted are as follows.

<Table 2> MDG-related health sector indicators

Goal	Indicator
Goal 1: Eradicate extreme poverty and hunger	1.8 Prevalence of underweight children under five years of age
	1.9 Proportion of population below minimum level of dietary energy consumption
Goal 4: Reduce child mortality	4.1 Under-5 mortality rate
	4.2 Infant mortality rate
	4.3 Proportion of 1-year-old children immunized against measles
Goal 5: Improve maternal health	5.1 Maternal mortality ratio
	5.2 Proportion of births attended by skilled health personnel
	5.3 Contraceptive prevalence rate
	5.4 Adolescent birth rate
	5.5 Antenatal care coverage (at least 1 visit and at least 4 visits)
	5.6 Unmet need for family planning
Goal 6: Combat HIV/AIDS, malaria and other diseases	6.1 HIV prevalence among pregnant women aged 15-24 years
	6.2 Condom use rate of the contraceptive prevalence rate
	6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS
	6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs
	6.6 Prevalence and death rates associated with malaria
	6.7 Proportion of children under 5 sleeping under insecticide-treated bed nets
	6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs
	6.9 Incidence, prevalence and death rates associated with tuberculosis
	6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course
Goal 7: Ensure environmental sustainability	7.8 Proportion of population using an improved drinking water source
	7.9 Proportion of population using an improved sanitation facility

<Table 3> National-level health-related indicators[1)]

Classification	Indicators
Population Dynamics	• Population, total (by sex and age)
	• Population growth (annual %)
	• Rural/urban population (% of total)
Mortality	• Life expectancy at birth, total (years) (sex-disaggregated data)
	• Mortality rate, infants (per 1,000 live births) (sex-disaggregated data)
	• Mortality rate, under age 5 (per 1,000) (sex-disaggregated data)
	• Maternal mortality ratio (per 100,000 live births)
Maternal Child Health	• Pregnant women who received 1+ and 4+ antenatal care visits (%)
	• Births attended by skilled health personnel (%)
	• Low-birth-weight newborns (%)
	• Postnatal care visit within 2 days of childbirth (%)
	• Prevalence of HIV, total (% of population aged 15-49, share of men and women)
Family Planning	• Fertility rate, total (births per woman)
	• Unmet need for family planning (%)
	• Contraceptive prevalence (% of women aged 15-49, % of men aged 15-49)
	• Adolescent fertility rate (over 1,000 girls aged 15-19 years)
Disease Control	• HIV prevalence among adults aged 15-49 years (%)
	• Antiretroviral therapy coverage among people with advanced HIV infection (%)
	• Number of reported malaria deaths
	• Number of reported confirmed cases of malaria
	• Children aged <5 years with fever who received treatment with any antimalarial (%)
	• Number of reported cases of tuberculosis
Immunization	• DPT3 immunization coverage
	• Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)
	• Measles (MCV) immunization coverage among 1-year-olds (%)
	• Children aged 6-59 months who received vitamin A supplementation (%)

1) KOICA Health ODA program: Country Health System Checklist (Modified by the authors)

Classification	Indicators
Health Financing	• Per capita total health expenditure, at average exchange rate (USD)
	• Private expenditure on health as % of total expenditure on health
	• Out-of-pocket expenditure as % of private expenditure on health
Health Service Delivery	• Number of hospital beds (per 10,000 population)
	• Number of primary care facilities in health system per 10,000 population
	• Percentage of primary care facilities that are adequately equipped
	• The ratio of health care professionals to the population
	• Percentage of people living within X kms of a health facility
	• Financial access (select an indicator based on available data)
	• Number of primary care or outpatient visits per person to health facilities per year
Human Resources	• The ratio of 5 cadres of health care professionals to the population
	• The distribution of health care professionals in urban and rural areas
	• HR data-presence of human resources data system
Drugs	• Total expenditure on pharmaceuticals (% total expenditure on health)
	• Total expenditure on pharmaceuticals (per capita average exchange rate)
	• Government expenditure on pharmaceuticals (per capita average exchange rate)
	• Private expenditure on pharmaceuticals (per capita average exchange rate)
Health Information	• Percentage of districts represented in reported information
	• Percentage of private health facility data included in reported data
	• Availability of clear standards and guidelines for data collection and reporting procedures
	• Number of reports a typical health facility submits monthly, quarterly or annually
	• Availability of a national summary report which contains HIS information, analysis, and interpretation (most recent year)
Governance (Description)	• Political stability
	• Government effectiveness
	• Regulatory quality
	• Control of corruption
Health Structure (Description)	• Top causes of mortality and morbidity (by sex, if different)
	• Structure of the main government and private organizations involved in the health care system
	• Service delivery organization
	• Health sector donor mapping (by region, by sub-sector)
	• Health sector donor coordination system

○ The purpose of reviewing and collecting a partner country's health sector indicators is to provide evidence for problem identification in each respective country during the project design stage. Reviewing these indicators enables us to logically think about and prioritize the strategic objectives to which the project is designed to contribute.

※ Note: In some cases, these existing indicators can be used as result indicators in a specific project. However, in order to use an existing indicator set as a result indicator for a newly-developing project, attainability of data for those indicators in target areas should be critically reviewed.

○ The reporting format of a partner country's health sector status (HP-1): The rationale for new projects may be found by selecting relevant indicators among the health status indicators suggested above. After selection, it is advised to enter the value of the chosen data or information in the reporting format provided below. This reporting format should be attached as a reference document when developing the Project Design Matrix (PDM).

<Table 4> Reporting format of a partner country's health sector status (HP-1) (Sample)

Classification of health status indicators		Check (Y/N)	Figure(Year)
Mortality	1. Life expectancy at birth, total (years) (sex-disaggregated data)	N	
	2. Mortality rate, infant (per 1,000 live births) (sex-disaggregated data)	Y	53 (2012)
Disease Control	3. HIV prevalence among adults aged 15-49 years (%)	Y	18(2008)
…	…	…	…

※ Note: In countries where the government conducts national health status surveys every five years, the recent data and values from those surveys may be used.

➢ Partner country's health sector strategy review

○ The purpose of the health sector strategy review is to understand the objectives of the health sector development plan of a partner country and identify relevant indicators. By reviewing strategy documents, useful information can be obtained to create a results framework for newly-developing projects.

○ Major documents to be reviewed (document types and content may vary according to country) :
- National Development Plan
- National Health Policy Strategy and Plan
- National Health System
- National Health Budget and Grant
- Health System Strengthening Plan
- Human Resources for Health Plan
- Reproductive Health Plan
- Maternal Health Plan
- Newborn and Child Health Plan
- Multi-Year Plan (cYMP) for Immunization
- Malaria Plan
- Tuberculosis Plan
- HIV/AIDS Plan
- Country Assistance Framework

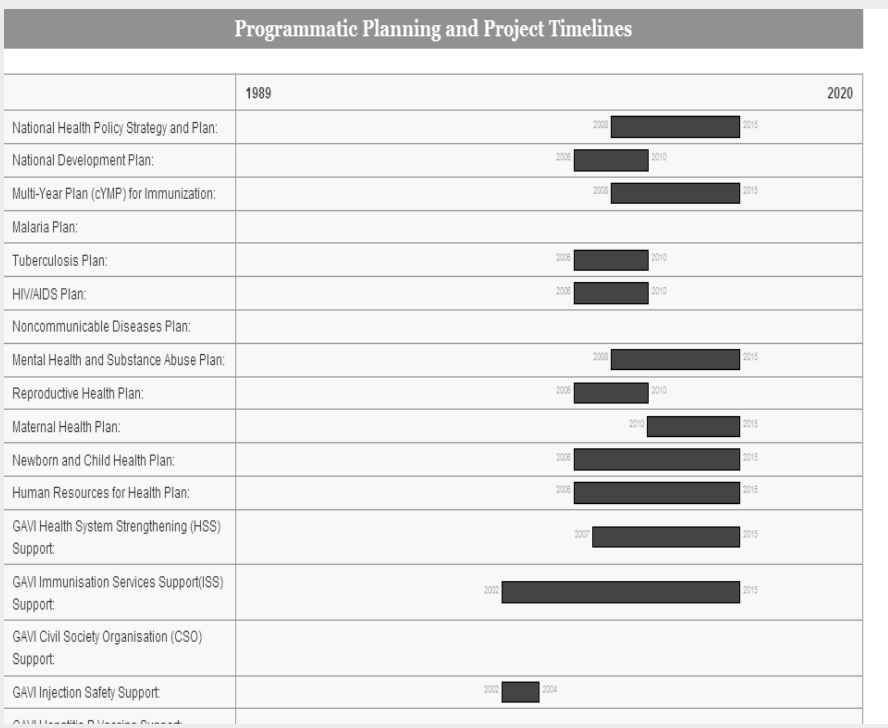
○ Data Sources
- Websites of the ministry of health of a partner country
- KOICA field office of a partner country
- WHO Country Data: http://www.who.int/countries
- Country Planning Cycle Database: http://nationalplanningcycles.org
- OECD Country Data: http://www.oecd.org

<Box 1> Finding strategy documents on health in a partner country

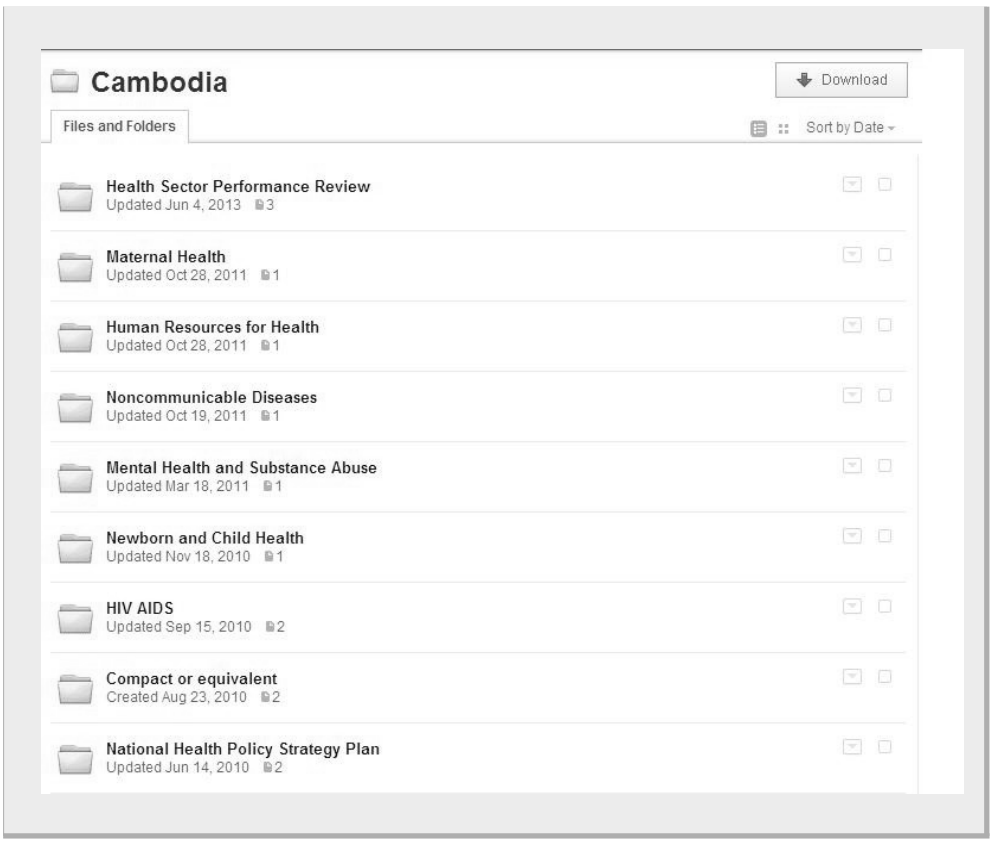
Utilizing Country Planning Cycle Database
(http://www.nationalplanningcycles.org/planning-cycle)

Sample Search

- Select country : Cambodia
- Select Main Planning Cycle and File Repository
- Main Planning Cycle
  - Find major health-related government documents: health sector strategy, policy, evaluation reports, etc.
  - Check duration of the strategy (eg. 20xx~20xx)



- File repository → Current repository
  - You can download strategy documents of partner countries



○ How to review the health sector strategy documents of a partner country

- Review papers and evaluation reports on health sector: Key existing issues/challenges of the health sector will be identified by reading review papers or evaluation reports.
- Health sector strategy: The overall direction and strategic objectives (results framework) and current status of the health sector will be checked by reviewing the sector strategy.
- Sub-sector strategies: The strategic direction and strategic objectives of sub-sectors (results framework), and the current status of each sub-sector will be checked by reviewing each sub-sector strategy.
- It is advised to check and extract strategic objectives and indicators relevant to newly-developing projects.

○ Reporting the format of a partner country's health sector strategy review (HP-2) : In this reporting format, you can fill in the official title and duration of the health sector strategy document of a partner country, key issues analyzed in the sector strategy, and key indicators of the results framework (if any).

The information derived from the health sector strategy's results framework can be used practically when creating the results statement and indicators for a new project. This reporting format should be attached as a reference when developing the Project Design Matrix (PDM).

<Table 5> Reporting format of a partner country's health sector strategy review (HP-2)

Health strategy document	Duration	Key issues	Results framework (Y/N)	Results statement	Results indicators	Baseline	Target

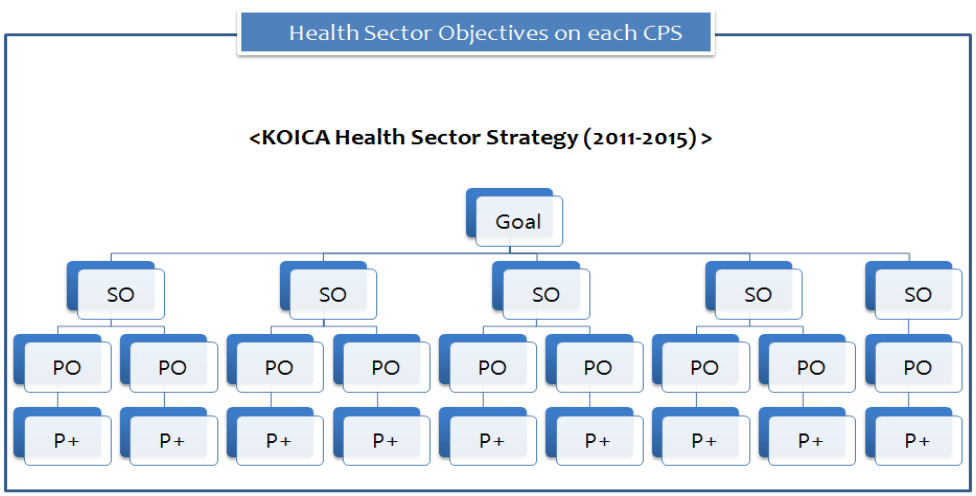
※ Note : If the strategy document contains a results framework, relevant information must be added to the table.

1-2. Reviewing KOICA's Health Strategies

○ The purpose of reviewing KOICA's health strategies is to secure the logical relationship between the strategic objectives of KOICA Health Sector Strategy (2011-2015) and each individual project. In other words, it is to set up a results framework for individual projects in accordance with a broader sector strategy direction.

○ The Country Partnership Strategy (CPS) and KOICA Health Sector Strategy (2011-2015): In cases where the health sector is one of the focus areas of a CPS, there are sector-level results objectives in the CPS. However, since those objectives are not only for KOICA but also for the other governmental bodies providing aid, it is not appropriate to substitute these for KOICA`s strategic objectives themselves. Rather, KOICA`s own sectoral strategic objective should be set up within the direction and dimensions of the CPS`s sectoral objectives. Then, each project's results framework (PDM) must be aligned with KOICA Health Sector Strategy (2011-2015) and its strategic objectives.

<Figure 1> Map of KOICA's health sector strategic objectives



Goal: Goal of KOICA health strategy
SO : KOICA's health strategic Objective
PO : Project Outcome
P+ : Project and other activities

➢ Strategic objectives of KOICA Health Sector Strategy (2011-2015)

<Table 6> Strategic Objectives of *KOICA Health Sector Strategy (2011-2015)*

Objectives	Improvement of Maternal and Child Health	
Strategic Objectives	SO 1	• Meeting the demand on family planning and preventable reproductive health
Strategic Objectives	SO 2	• Promoting the use of good quality services for safe pregnancy and delivery (antenatal, delivery, postpartum period)
Strategic Objectives	SO 3	• Reducing the burden of diseases (diarrhea, pneumonia, neonatal diseases, etc.) that are the main causes of child and infant mortality
Strategic Objectives	SO 4	• Increasing the vaccination rate of mandatory immunization for children
Strategic Objectives	SO 5	• Improving the nutritional status of children and women
Strategic Objectives	SO 6	• Reducing the burden of main communicable diseases (HIV/AIDS, malaria, tuberculosis, NTD, etc.) that affect health of children and women
Strategic Objectives	SO 7	• Strengthening health system that has impacts on children's and women's health.

➢ Core indicators for the strategic objectives of KOICA Health Sector Strategy (2011-2015)

○ The purpose of setting core indicators responsive to the strategic objectives of the KOICA Health Sector Strategy (2011-2015) is to measure the degree of strategic objective achievement through consolidating the result data of individual projects disaggregated by a selected set of core indicators.

○ In order to measure the achievements of the strategic objectives, it is required to select core indicators responsive to each strategic objective and to collect and compile project-level results data according to the selected core indicators. A set of core indicators by each strategic objective is presented in <Table 7>.

○ The scope of the strategic-objective-level indicators is designed so that one can select suitable indicators depending on the scale and coverage of the projects as well as the local context (of a partner country). The core indicators corresponding to each strategic objective are presented in order from high-level indicators to low-level indicators. When you develop a project contributing to Strategic Objective 1 "Meeting the demand on family planning and preventable reproductive health," it may be possible to choose "total fertility rate" (A-1), a high-level result indicator if the scope of the project is large and comprehensive enough to induce the intended result. If the scope of the project is too limited to achieve high-level results, you may move down to find the result indicator level best suited to your project within the given time frame and resources. If the project scope is very limited, you may select the lowest-level result indicator, "couple year protection" (A-5), as a core indicator. In sum, the core indicator may be selected on the basis of your projection of the achievability of the results based on the scope, characteristics and components of the project.

○ In many cases, since health projects are short-term and project contents are not comprehensive, it is realistic to select low-level indicators as a project objective, rather than selecting high-level indicators which require a more complex and holistic intervention approach. However, high-level strategic objective indicators can be set up in the case of long-term and big-scale projects or health sector-wide approaches. In this case, some of the strategic objective indicators can be included as outcome indicators.

<Table 7> Core indicators of strategic objectives for KOICA Health Sector Strategy (2011-2015)

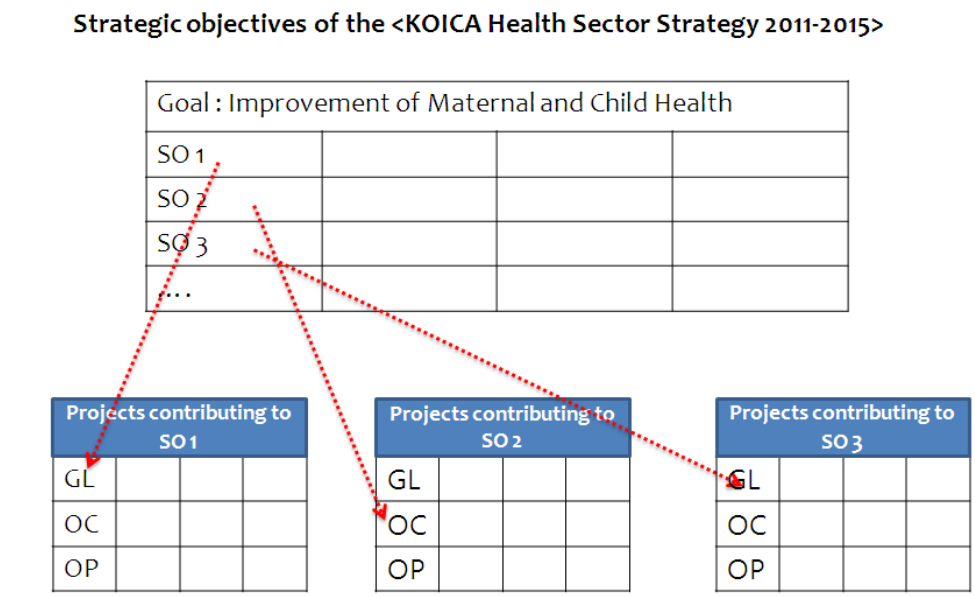
Strategic objectives	Indicator Code	Indicators
SO 1	A-1	Total fertility rate (%)
	A-2	Adolescent fertility rate (%)
	A-3	Unmet need for family planning (%)
	A-4	Modern contraceptive prevalence rate (%)
	A-5	Couple years protection
SO 2	B-1	Maternal mortality ratio (%)
	B-2	Births attended by skilled health personnel (%)
	B-3	Antenatal care coverage - at least one visit (%)
	B-4	Antenatal care coverage - at least four visit (%)
	B-5	Postnatal care visit rate within two days of childbirth (%)
SO 3	C-1	Under-five mortality rate (%)
	C-2	Infant mortality rate (%)
	C-3	Neonatal mortality rate (%)
	C-4	Pneumonia care-seeking among children aged under 5 years (%)
	C-5	Children aged under 5 with diarrhea receiving oral rehydration therapy (%)
	C-6	Antibiotic treatment for neonatal sepsis (%)
SO 4	D-1	Under-five mortality rate of vaccine-preventable diseases (%)
	D-2	Measles immunization coverage among 1-year-olds (%)
	D-3	DPT3 immunization coverage among 1-year-olds (%)
	D-4	HiB3 immunization coverage among 1-year-olds (%)
SO 5	E-1	Underweight prevalence among children aged under 5 years (%)
	E-2	Stunting prevalence among children aged under 5 years (%)
	E-3	Wasting prevalence among children aged under 5 years (%)
	E-4	Prevalence of Body Mass Index (BMI) among fertile women aged 15-49 years (%)
	E-5	Exclusive breastfeeding under 6 months
	E-6	Breastfeeding plus complementary food among children aged 6-9 months (%)

Strategic objectives	Indicator Code	Indicators
	E-7	Vitamin A supplementation coverage among children aged 6-59 months (%)
SO 6	F-1	Malaria mortality in children aged 6-59 months
	F-2	Percentage of infants born to HIV-infected mothers who are infected (%)
	F-3	Prevalence of Tuberculosis (%)
	F-4	Prevalence of Neglected Tropical Diseases (%)
	F-5	Intermittent preventive treatment for malaria among pregnant women (%)
	F-6	Insecticide-treated net coverage (%)
	F-7	Under-5 children who slept under Insecticide-treated nets (ITN) at the previous night
	F-8	Antimalarial treatment among children aged under 5 years with fever during last 2 weeks (%)
	F-8	HIV test among pregnant women (%)
	F-9	Antiretroviral therapy coverage among pregnant women with HIV to prevent Mother-To-Child Transmission (MTCT) (%)
	F-10	Drug coverage of preventive chemotherapy of Neglected Tropical Diseases (%)
SO 7	Cross-cutting issues should be simultaneously considered to achieve each strategic objective.	

➢ A linkage between SOs and project goals

○ When designing a new project, strategic objectives (SOs) of the KOICA Health Sector Strategy (2011-2015) should become a high-level goal of each project. However, the SO can be set as outcomes of projects depending on the nature of the projects and each partner country's circumstances. Importantly, the individual projects' results information should be compiled into health-sector-strategy-level results, by designating SO indicators to individual projects' goal-level or outcome-level result indicators.

<Figure 2> Linkage between SOs and project results



SO : Strategic Objective
GL : Project Goal
OC : Project Outcomes
OP : Project Output

○ Creating a project profile: All health projects should be aligned with at least one of KOICA's health sector strategic objectives to which projects made contributions. You are advised to indicate the priority SO to which your project aims to contribute in the SO column of the project profile format, <Table 8>. Sorting out projects by each SO enables KOICA to clarify how many projects fall into each category of strategic objectives.

<Table 8> KOICA Health Projects Profile (HS-2)

No.	SO	Region	Country	Title	Duration	Budget	Type
1	SO 1						
2	SO 1						
3	SO 2						
4	SO 2						
5	SO 3						
...	...						

※ Note : When you fill in the SO column, you may choose the top priority objective of your project.

2. Analysis stage

2-1. Setting results objectives

➢ Goal of projects

○ The goal of the project is to be aligned with one of the seven SOs (if possible).

➢ Outcome of projects

○ "Outcome" indicates the successful achievement of a desired condition that a project intended to change.

○ Setting the outcomes is the first step to establishing a RBM system. Through this, outputs, activities and inputs of a project are decided.

➢ Considerations in setting an outcome

○ Clarifying attainable range: Outcomes should be set at an achievable range considering the duration of a project and the capacity of the implementing agency.

○ Outcomes refer to the range of results that an implementing agency is responsible for achieving to assess the success or failure of a project's objective achievement. Since implementing agencies have control over a project's inputs, resources, and scope, they are obligated to explain why the project was able or unable to achieve its intended outcomes. In many cases, project outcomes are significantly affected by implementing agencies' decisions regarding project scope and resource allocations.

○ Simply expected effects (a ripple effect) should not be considered outcomes, and should not be listed when setting the outcomes of projects. It is strongly recommended to distinguish between national-level expected effects and individual-project level outcomes.

○ It is also advised to avoid using general outcome indicators, which can be applied to any country's context.

○ Outcomes should be drawn after analyzing the problems and issues based on the specific context of a partner country or region.

○

※ Note: For more detailed information on outcome setting processes and procedures, see Project Planning, Monitoring and Evaluation Handbook(KOICA, 2009)

<Box 2> Setting project outcomes at an achievable level

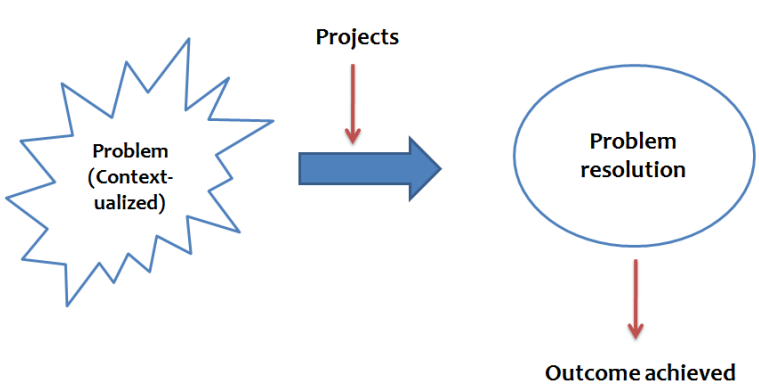
- You should consider the following factors to set an outcome at an achievable level.
- Program history: In cases where the programs have been implemented for a long time, higher-level results and greater sustainability are expected.
- Problem severity: The level of set outcomes depends on the magnitude and severity of the problem.
- Project time frame: Outcomes should be realistically set in order to be achieved within the project duration.
- Project resources: The level of set outcomes depends on the scale and range of invested resources.

➢ Tips for outcome statement

○ When developing an outcome statement, you should describe the situation in detail after resolving the problem.

Good Example	Bad Example
Antenatal care for pregnant women at least once. (After resolution)	Pregnant women cannot receive antenatal care. (Problem situation)
Decline of the underweight rate among children under the age of 5. (After resolution)	High rate of malnutrition among children aged under the age of 5. (Problem situation)

<Figure 3> Logics for outcome statement



Source: WB (2004)

○ You should focus on only one aspect of the problem resolution for each outcome statement; if there are multiple focuses in one outcome statement, it will be difficult to set up indicators and collect data according to these indicators.

Good Example	Bad Example
Outcome 1. Quality improvement of medical services in a certain region. Outcome 2. Increased access to medical service in a certain region.	Quality improvement of medical services and increased access to medical services in a certain region.

○ The results of an activity may be emphasized, but not the activity itself

Good Example	Bad Example
Population drinking boiled water in a certain region increased.	Providing sanitation training for waterborne diseases in a certain region .

○ The outcome statement should be clear and measurable.

Good Example	Bad Example
Use of HIV/AIDS diagnostic equipment in a certain hospital in a certain region increased.	Diagnosis capacity in a certain hospital in a certain region improved.

○ You may indicate the specific target areas, time frame and targets of a project. It helps to check the feasibility and reality of outcome achievements.

Good Example
Decrease of the infection rate of Schistosomiasis up to 30% by 2015 in a certain village in a certain region.

➢ Drawing outputs

○ Outputs mean immediate changes that are necessary to achieve outcomes. When setting outputs, the scope of all activities utilizing human and financial resources should be considered.

2-2. Selecting result indicators

○ The purpose of selecting result indicators is to identify whether we are heading in the right direction to realize our objectives. Result indicators are tools enabling us to answer the question, "How can we know the project's successes and achievements?"

➢ Converting results objectives into result indicators

○ A result objective needs one or more indicators to measure the aspects of its achievement. When selecting indicators, both quantitative and qualitative aspects of the objective may be considered.

○ It is desirable to select a minimum number of indicators. This is because the burden of data collection corresponding to the selected indicators becomes heavier when a larger number of indicators are selected. In order to choose the minimum number of the most relevant indicators, it can be useful to check pre-existing indicators, such as the indicators of partner countries' health sector statuses, indicators in the health sector strategy's results framework, and core indicators of KOICA's health sector strategy, and to identify whether a pool of those avaliable indicators can be further developed. Then, the below question routes will help you discover the most suitable indicators that can show the success of your project.

- Is this indicator absolutely required to measure the progress of result achievement?
- Will this indicator create an additional burden to the data collectors and/or the respondents?
- How will be the data collected be helpful for monitoring, evaluation, and overall project management?

○ Criteria for selecting available strategic indicators are as follows.

- SMART (Specific, Measurable, Achievable, Relevant, Time-bound)
- CREAM (Clear, Relevant, Economic, Adequate, Monitorable)

<Box 3> CREAM (WB's criteria for the selection of indicators)

Clear	**Precise and unambiguous** Lack of specificity in an indicator definition can make it impossible to trust the data that are collected.
Relevant	**Appropriate to the subject at hand**
Economic	**Available at a reasonable cost** The economic cost of setting indicators should be taken into consideration. This means that indicators should be set with an understanding of the likely expense of collecting and analyzing the data.
Adequate	**Provide a sufficient basis to assess performance** Indicators ought to be adequate. They should not be too indirect, too much of a proxy, or so abstract that assessing performance becomes complicated and problematic.
Monitorable	**Amenable to independent validation** Indicators should be monitorable, meaning that they can be independently validated or verified. Indicators should be reliable and valid to ensure that what is being measured at one time is what is measured again at a later time—and that they measure what was intended to be measured.

Source: WB (2004:21)

○ Result indicators can measure both quantitative and qualitative aspects of result objectives. The differences between quantitative indicators and qualitative indicators are as below.

- Quantitative indicators: Quantitative indicators represent information that can be reported in numbers or percentages (or both). However, it is important to remember that a number or a percentage in itself does not necessarily represent the degree of a project's success or failure. In the beginning stage of RBM, using simple quantitative indicators is easier to manage and utilize than using complicated qualitative indicators.
- Qualitative indicators: Qualitative indicators are designed to measure changes regarding to institutional processes, individual attitudes, beliefs, motivation and behavior. Even though qualitative indicators are necessary to measure the degree of achievement in some specific cases, data collection and analysis for these indicators require more time. In addition, it can be difficult to verify the objectivity of the data because these indicators always some degree of subjective judgment on the part of the data collectors. Thus, qualitative indicators should be used with discretion.

○ Proxy indicators can be used in the following situations. When considering using proxy indicators, however, these indicators should be selected based on a cautious judgment that they can provide appropriate evidence to prove the achievement of a project objective.

- In cases where existing indicators cannot directly represent project objectives
- In cases where significant expenses are needed for data collection
- In cases where it is impossible to regularly collect data for existing indicators

➢ Result Indicator Pool for KOICA Health Sector Projects

○ This Guideline includes a result indicator pool for KOICA's health sector projects (see Appendix 2). This indicator pool classifies project results into

three levels: the output level, the outcome level and the goal level. However, you may change the level of result indicators using your own discretion according to the elements, scale, and range of a particular project, as well as the local context of a partner country's health sector. For example, goal-level indicators from the pool can be used as outcome-level indicators in your actual project design. Also, outcome-level indicators from the pool can be used as outcome-level indicator in your actual project design according to the project's characteristics and circumstances. Furthermore, you should keep in mind that these indicators do not reflect each partner country's specific context. Therefore, indicators should be reviewed and selected from the pool with careful consideration.

2-3. Setting baselines and targets

○ Setting targets and collecting baselines make it possible to trace changes from the current status toward an intended future status.

➢ Baseline

○ ■ The role of the baseline: Baseline data collection provides grounds for progress checks against intended results.

○ Methods of collecting baseline data: There should be consistency between the data collection methods for the baseline and continuous follow-up monitoring during the project implementation process. Hence, it is desirable that baseline data collection methods and tools should be developed and pre-tested in advance.

○ ■ Pre-assessment for baseline data collection: An assessment of the existing data system of the partner`s country is to be carried out in advance. The following are the key questions for conducting an assessment.

- Which types of data collection and processing system exist now?
- Which types of data have been produced so far?
- Is there enough capacity to extend the range or depth of the data collection and analysis?

○ ■ Reporting format of data system assessment (HP-3): In order to examine the possibility of attaining data in accordance with the result indicators selected earlier, the national-level and community-level data systems of a partner country should be identified. The availability of utilizing these indicators should be judged comprehensively.

<Table 9> Reporting format of data system assessment (HP-3)

Contents	Findings	Synthetic judgment
Outcome indicators 1:		
Is there an existing system for collecting and reporting data corresponding to the indicator in this country? (Y/N)		It is possible to secure the collected data of partner country at the local level. Baseline: xx (2013)
Which organization can provide national-level data?		
Is it possible to attain local-level data (province, district, village) of a project area? (Y/N)		
Where can you attain the local-level data in a project area?		
When and how often can you attain the local-level data in a project area?		
What is the latest data value of the indicator?		
Outcome indicators 2:		
Is there a existing system for collecting and reporting data corresponding to the indicators in this country? (Y/N)		It is impossible to secure the collected data of partner country at the local level. Primary data collection is necessary before initiating a project.
Which organization can provide national-level data?		
Is it possible to attain the local-level data (province, district, village) of a project area? (Y/N)		
Where can you attain the local-level data in a project area?		
When and how often can you attain the local-level data in a project area?		
What is the latest data value of each indicator?		

○ Baseline confirmation: The availability of data at the local level through existing data systems in the partner country determines the baseline data confirmation process.

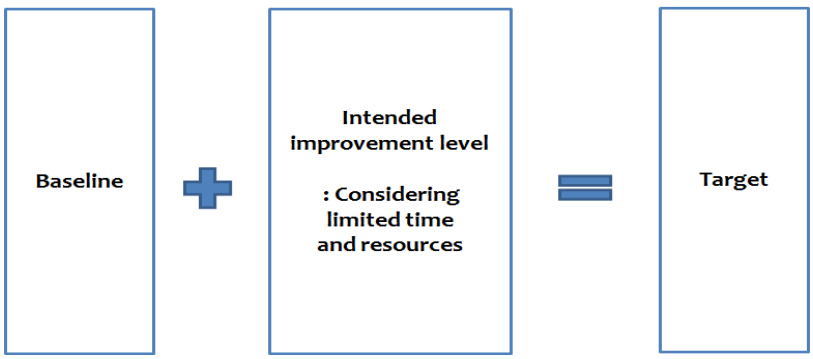
- In the case where collected data is available for use in a project area: The latest data value can be used as a baseline.
- In the case where collected data is not available for use in a project area: Primary data collection should be planned and conducted. The plan should include who, when, and how to collect the baseline data based on the analysis of the expected costs and possible challenges for primary data production. In this case, it is realistic to make your first monitoring results your baseline data collection.

➢ Target

○ After completing baseline data collection, targets should be set up. A target indicates a certain quantifiable level of achievable objectives considering the limited time and resources of a certain project.

○ A target can present a result that a particular project intends to achieve at the completion of the project in annual or quarterly terms. Setting a realistic target is more important than the time frame of the target achievement.

<Figure 4> Targets and baselines



Source: WB (2004:91)

○ Information to check when setting targets are as follows.

- Historical trends
- Expert judgements
- Research findings
- Stakeholder expectations
- Achievement of similar programs

○ Considerations for setting targets are as follows.

- Targets should be established on the basis of baselines.
- Targets should be set realistically, with careful consideration of expected budgets, time frames, human resources, capacities of current staff/organizations and facilities.
- In most cases, targets are long-term objectives and recognized as being significantly affected by complex external factors. Thus, when interim targets are necessary, you may establish milestones that correspond to expected results at periodic intervals.
- If an indicator is being newly developed for the first time, there must be a significant level of flexibility. In this case, targets can be set as a range rather than a specific figure.
- The establishment of a target demonstrates that an aid agency feels responsibility and accepts accountability for meeting it. Therefore, it is not advised that agencies set excessively high or low targets.

2-4. Planning data collection

○ The purpose of planning data collection is to concretely establish a monitoring plan and to develop a practical project design matrix (PDM). Through this, you may decide how to collect and report result data that correspond to established indicators and targets.

➢ Identifying data sources

○ The first step of data collection is to figure out who provides us with relevant data (data source). Identifying data sources is helpful when deciding data collection methods.

○ The most important issue when you try to identify data sources is to check whether you can collect the same data set the next month, quarter, or year by utilizing the exact same collection methods. The reliability of monitoring data declines if it is not possible to gather the same set of data by using the same methods.

○ Data sources can be classified into primary data and the secondary data.

- Primary data: Primary data is the data that organizations produce directly, including organizational reports containing information regarding administration, budget, personnel, household surveys, interviews and direct observation results. Producing primary data is usually costly and time-consuming, and budgets and resources should be allocated accordingly.
- Secondary data: Secondary data is data which has been already collected by other organizations. Despite its cost effectiveness, secondary data may not reflect the intended results of your project because it was collected for other purposes by others. Therefore, secondary data can only be used when collecting primary data is impossible or when primary data collection requires large-scale efforts and expenses.

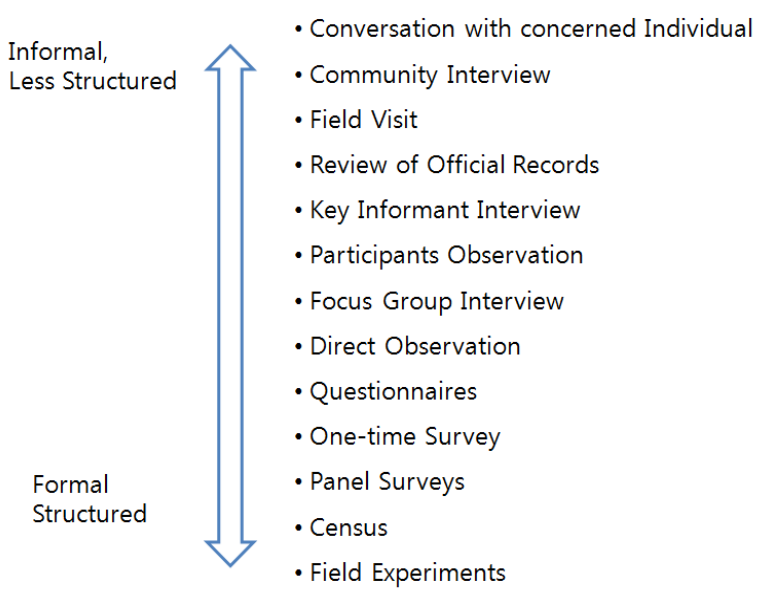
○ Data sources should be recorded as specifically as possible (see "Reporting format of data system assessment (HP-3)"). When conducting data system assessment, it is recommended to determine whether primary data production is necessary or secondary data is available for use. This information is essential for building a results-based M&E system.

➢ Data Collection Methods

○ Data collection frequency and methods

- If data is needed frequently and regularly: Cost-effective, less-structured and less-detailed data collection methods are appropriate.
- If detailed and more in-depth data is needed: Structured and systematic data collection methods are recommended.

<Figure 5> Characteristics of data collection methods



Sources: WB (2004)

<Table 10> Comparisons of data collection methods

	Review of project records	Self- administered questionnaire	Interview	Rating by skilled observer
Cost	Low	Moderate	Moderate to high	Depends on availability of low-cost observers
Amount of training required for data collectors	Some	None to some	Moderate to high	Moderate to high
Completion time	Depends on amount of data needed	Moderate	Moderate	Short to high
Response rate	High, if records contain needed data	Depends on how distributed	Generally moderate to high	High

Source: WB (2004: 87)

➢ Responsible party and schedule for data collection

○ Responsible party: To select the main agent of data collection, stakeholder analysis should be conducted in advance.

※ Note: For more details on the process for stakeholder analysis, see KOICA's Project Planning, Monitoring and Evaluation Handbook(2009).

○ Data collection schedule: To decide when and for how long you will collect data, you should consider the project's type and its characteristics, as well as the approximate time needed for data production.

2-5. Assumption and risk analysis

○ The purpose of assumption and risk analysis is to regularly monitor the external factors affecting project objective achievement. Risk factors among other various external factors that undermine project result achievement should be continuously monitored and managed.

➢ Analyzing risk factors and planning risk management

○ Risk factor analysis: First, external conditions(assumptions) necessary to achieve a higher level of results in the results hierarchy should be identified. Second, the likelihood that these conditions will not occur, and the degree of the negative consequences to be expected should be analyzed.

<Table 11> Risk factor analysis matrix

Results Hierarchy	Necessary external conditions	Risk analysis	
		Likelihood that risk occurs (High/medium/low)	Consequences affecting result achievement (High/medium/low)
Activity ⇨ Output			
Output ⇨ Outcome			
Outcome ⇨ Goal			

○ Risk management plan: Risk management methods and plans should be established, focusing on external conditions that have a high possibility of occurrence and a high potential to negatively influence result achievement.

3. Compilation stage

○ After completing the analysis stage, you may move on to develop 1) a project proposal (PDM included), 2) a result monitoring plan and 3) a risk monitoring plan, compiling and/or arranging analyzed contents. These are basic documents for project-level RBM.

➢ Developing Project Design Matrix

<Table 12> Project design matrix (HP-4)

Version 1*					
Results chain	Result indicators	Baselines	Targets	Means of Verification	External conditions
Goal: (See 1-2.)	(See Figure 2)	(See Figure 3)	(See Figure 3)	(See Figure 4)	(See Figure 5)
Outcome: (See 2-1.)	(See Figure 2)			(See Figure 4)	(See Figure 5)
Output:					

※ Note: Version 1* - PDM should be continuously updated during the project cycle. Thus, it is required to mention the version of the PDM.

➢ Result monitoring planning

<Table 13> Result monitoring plan (HP-5)

Result levels	Result Indicators	Definition of Result indicators		Unit of measure-ment	Base-lines	Targets	Data sources	Data collection methods	Responsible Party	Data collection Schedule
		Core indicator code*	Definition							
							(See Figure 4)	(See Figure 4)	(See Figure 4)	(See Figure 4)

※ Core indicator code *: In the case of choosing core SO indicators (as a project goal and/or outcome indicator), the code of the corresponding indicator should be inserted in this table.

➢ Risk monitoring plan

<Table 14> Risk analysis and monitoring plan (HP-6)

Result Hierarc-hy	Necessary external condition	Risk analysis		Risk monitoring methods	Responsible party	Risk monitoring schedule	Risk managemen t plan
		Likelihood that risk occurs (High/medium/low)	Consequences affecting result achievement (High/medium/low)				
Results→ Goals		(See Figure 5)	(See Figure 5)	(See Figure 5)	(See Figure 5)	(See Figure 5)	(See Figure 5)
Outputs→ Results							
Actions→ Outputs							

4. Review stage

○ Purpose: The adequacy of project planning should be checked again, reviewing whether PDM, result and risk monitoring plans are appropriately developed.

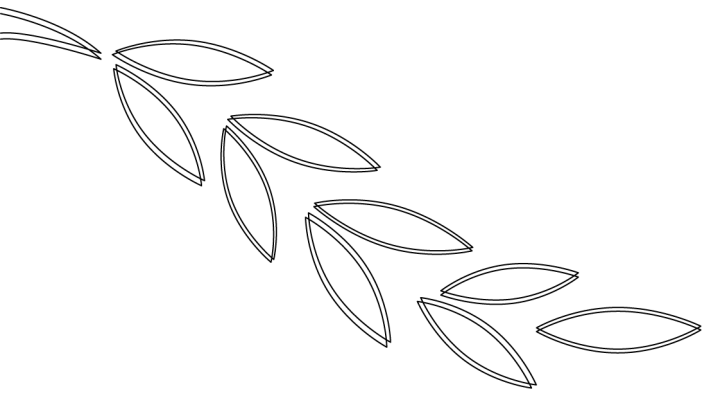
➢ Checklist for basic documents for RBM at the project level

○ The following should be checked, reviewing the PDM (HP-4), result monitoring plan (HP-5), and risk analysis and monitoring plan (HP-6). Any of the statements checked "No" must be properly revised.

<Table 15> Checklist for basic documents for RBM at project level

Classification	Checklist	Yes	No
Results statements	1. Results statements describe a condition in which problems are resolved.		
	2. Result statements have a single focus.		
	3. Results statements indicate results induced by activities, not activities themselves.		
	4. Results statements are clear and specific.		
Vertical logic	5. PDM's result hierarchy is based on a cause-and-effect relationship.		
	6. Once outcomes are achieved, they will practically contribute to accomplishing set goals.		
	7. Outputs are sufficient to achieve outcomes.		
	8. Inputs and activities are sufficient to produce outputs.		
Result indicators	9. Result indicators reflect project objectives as directly as possible.		
	10. Selected indicators are specific enough to be actually measured.		

	11. Selected indicators enable the most realistic and cost-effective data collection possible.		
	12. Indicators are linked to changes in results and are relatively less affected by other factors.		
	13. Baselines are presented or baseline collection planning is clearly prepared.		
	14. Targets are set to be reasonably achievable within the given time frame and resources.		
Means and methods for verification	15. Data sources are clear.		
	16. The roles and responsibilities of the data collector are clearly indicated.		
	17. The data collection schedule is appropriate to measure results achievement.		
	18. The methods of data collection are realistic and cost-effective.		
Assumptions and risks	19. Major external factors affecting higher-level results are listed in the assumptions and risks section.		
	20. Potential risk factors to be monitored are clear and specific.		
	21. Plans for risk monitoring are realistic and implementable.		
	22. Risk management methods and plans are appropriate.		

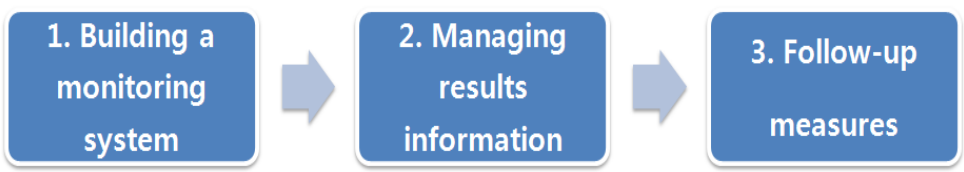


Ⅲ. RBM in the implementing and monitoring stage

1. Building a monitoring system
2. Managing results information
3. Follow-up measures

Chapter

Ⅲ RBM in the implementing and monitoring stage



1. Building a monitoring system

1-1. Results-based monitoring

➢ Results-based monitoring system

○ The results-based monitoring system indicates a system that continuously measures, accumulates and analyzes a project's performance against the targets set in advance. While implementation monitoring only checks whether planned activities are actually carried out, results-based monitoring emphasizes result tracing. When only an implementation monitoring system exists, you cannot identify how the planned project activities are linked to higher-level results. Thus, it is difficult to understand which results are caused by those planned activities.

○ Building a results-based monitoring system means carrying out implementation monitoring and results monitoring at the same time. However. the primary focus is on tracking results, not the implementation of planned activities.

➢ Conditions for successful results-based monitoring system

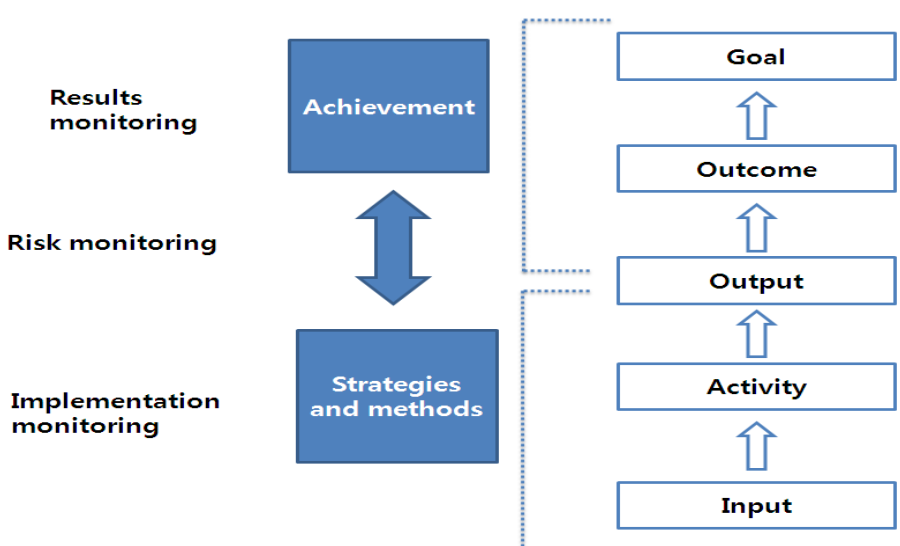
- Information to be monitored should be clear.
- Clear and specific plans for collecting, consolidation, analyzing and reporting data should be developed.
- The division of labor among stakeholders who collect, gather, analyze, and use monitoring information should be clarified.
- Monitoring information should be both horizontally and vertically delivered to inside and outside of your organization.

1-2. Building a results-based monitoring system

➢ Monitoring framework : Monitoring for results, risk factors and implementation status are interlinked.

○ Monitoring targets include implementation of activities, risk factors and results. Agents, schedule, and methods of monitoring should refer to plans (HP-4, HP-6) which were developed in the planning stage.

<Figure 6> Monitoring framework



<Table 16> Monitoring planning forms to be used within the monitoring framework

Implementation monitoring	Risk monitoring	result monitoring
⇩	⇩	⇩
• PDM (HP-4) • Project schedule and budget execution rate	• PDM (HP-4) • Risk analysis and monitoring plan (HP-6)	• PDM (HP-4) • Result monitoring plan (HP-5)

➢ Roles and responsibilities in reporting mechanism

○ The monitoring plan suggests who, when, and how often to collect monitoring data with what instruments. However, it does not include information on what to do after data collection. Therefore, there is a need to build up a reporting mechanism of the collected and analyzed data.

○ The most important considerations in building a reporting mechanism are “who needs the data," and “what is the purpose of getting the data (utilization of data)." These questions ensure an efficient data flow system by distinguishing between necessary/unnecessary or useful/useless information.

<Table 17> Considerations when establishing a reporting mechanism

Classification	Who needs the data?	What is the purpose?
Implementation monitoring	PMC, KOICA regional office	Project management
Risk monitoring	PMC, KOICA regional office	Project management
Result monitoring	KOICA regional office, HQ	Results report

<Table 18> Roles and responsibilities in reporting mechanism (HP-7)

Classifi -cation	Sub-classi -fication	Data collector	Data consolidator and analyst	Share with	Report to
Implement -ation monitoring	Inputs	PMC	PMC		KOICA regional office
	Activities	PMC	PMC		KOICA regional office
	Outputs	PMC	PMC		KOICA regional office
Risk monitoring	Activities→ Outputs	(See HP-6)			
	Outputs → Results	(See HP-6)			
	Results → Goals	(See HP-6)			
Result monitoring	Outputs /Outcomes	(See HP-5)			
	Goals	(See HP-5)			

○ An example of the data flows in reporting mechanism of a health project

Partner organizations in a project area		Health authorities in a project area		PMC		KOICA regional office
• Primary data collection and submission	⇨	• Primary and secondary data provision	⇨	• Provided data Consolidation • Data quality Verification • Data analysis and reporting	⇨	• Data review and accumulation • Report to HQ

※ Note: When primary data collection is needed, it is desirable that the PMC delivers the following information and methods to data collectors in order for them to collect data properly.

- Collection and analysis units (e.g., hospitals, villages, communities, cities, provinces, countries, etc.)

- Sample size and sampling methods (e.g., random, purposive, etc.)
- Data collection instruments (e.g., monitoring forms, checklists, etc.)

➢ Partner country stakeholders' opinion reflection and adjustment

○ The following are basic documents for the results-based management of a project. Thus, these should be confirmed through partner country stakeholder consultation before starting a project. You should receive and reflect the diverse stakeholders' opinions and revise these documents accordingly.

- HP-4 Project design matrix (PDM)
- HP-5 Result monitoring plan
- HP-6 Risk analysis and monitoring plan
- HP-7 Roles and responsibilities in reporting mechanism

○ If certain contents of these documents need to be modified during the project implementation period, you may update the contents after proper consultation with major stakeholders. Further project management should be based on the newly updated document.

<Box 4> PMC's role in results-based monitoring system

- Stakeholder consultation and confirmation on basic documents (HP-4 to HP-7)
- Data collection, consolidation, dissemination and reporting according to the monitoring framework.
- If necessary, development of tools, instruments, and methods of primary data collection
- If the basic documents (HP-4 to HP-7) need amendments, stakeholders' consultation and reporting to KOICA
- Assurance of data quality

Criteria of data quality	Examples that are not in accordance with the criteria of data quality
Timeliness	• Data is collected later than the expected date • Collected data is outdated • Data is not collected regularly
Validity/Accuracy	• Tools for data collection are not properly structured • Dependence on alternative measurements • Inconsistencies in data collection process • Data collection tools such as survey questionnaire are not properly completed • Coding errors • The sample size is small or the samples are not sufficiently representative • Data collectors lack data collection skills or data review was not properly done
Reliability	• Data collection skills are low-level • Rerunning data collection costs too much • Data collection tools are changed

2. Managing results information

2-1. Project results database

○ Once the results data is collected, you are recommended to analyze the changes (results) that occurred by utilizing accumulated data. A database with results information of projects is necessary in order to analyze the results data.

<Table 19> Database of project results (HP-8)

Core indicator code (if applicable)	Result indicators	Baselines (year)	Results data				Targets (year)
			First round	Second round	Third round	…	

※ Note: The results database should be updated regularly (following project data collection cycle) by the PMC.

2-2. Results data analysis and reporting form

○ Generally, project results data are analyzed to figure out changes and progress during a certain period.

- Sharp changes or abnormal trends compared to the previous period are eligible for closer review.
- Frequent data collection enables more detailed and clear explanation of changes and trends.

○ The reason for reporting results data is to provide results information for related stakeholders. At the same time, it can be also utilized as ground information to make critical management decisions. You can assess the realizability of the project's objectives by utilizing the collected results information.

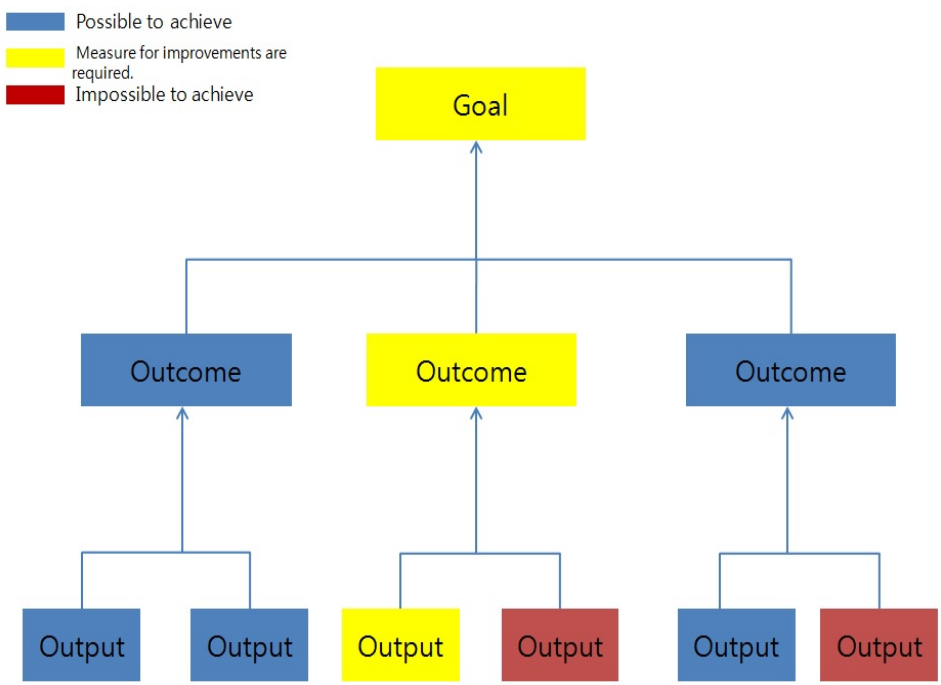
<Table 20> Results reporting form (HP-9)

Core indicator code (if applicable)	Result indicators	Baselines (year)	Current Values (year)	Targets (year)	Gap between current values and targets	Possibility of achievement of objective before end of project

※ Note: The PMC should include the above results reporting form (HP-9) when submitting projects' progress reports to KOICA so that KOICA regional offices and HQs can assess the possibility of projects' objective achievement and prepare proper future follow-up measures.

○ Visualized presentation of result achievement possibility predictions enables further conversations for developing follow-up measures and improvement plans.

<Figure 7> Diagram for result achievement possibility prediction



3. Follow-up measures

○ While implementing projects, project design requires amendments if any of the following situations occur.

- Project objectives are not achievable,
- Key assumptions and risks are no longer valid,
- Vertical logic among results levels should be modified, and/or
- Unexpected serious problems occur in policies, project implementation process, and scale of inputs/resources.

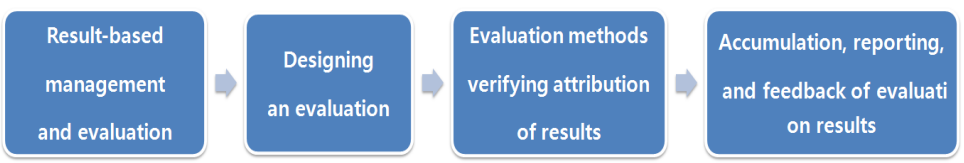
○ Project design amendments should be determined after carefully reviewing relevant materials. Once decided, the main contents of the basic documents (HP-4 to HP-7) should be updated shortly and the changes should be communicated with major stakeholders promptly.

Ⅳ. RBM in the evaluation stage

1. Results-based management and evaluation
2. Designing an evaluation
3. Evaluation methods to verify attribution of results
4. Accumulation, reporting, and feedback of evaluation results

Chapter

Ⅳ RBM in the evaluation stage



1. Results-based management and evaluation

○ The results data collected through the results monitoring system provides information about a certain change's direction, speed, and range. However, the data does not provide evidence of causality or attribution explaining whether the change is caused by a respective project or not. In addition, the data does not provide sufficient information about why or how the change occurs or why the change did not occur.

○ On the other hand, evaluations are carried out in order to check whether the occurred changes are caused by a respective project and to figure out why or how these changes occurred. Thus, evaluation plays a role to ultimately reconfirm reliability and attribution of results data.

<Box 5> Cases in which evaluation is needed during project implementation

- An evaluation has been traditionally considered to be carried out at a project's completion or after the project's end. However, this after-the-fact approach only confirms the attribution relationship between the project and project results rather than providing important information on a project's results management. Therefore, there has been a recent trend to carry out evaluations whenever they are required. Also, people believe that the evaluation information (results and lessons) should be available for use during the project's management process.

- If any of the following situations occur, the project manager needs information from evaluations.
  - There is a significant deficit between the actual result achievement rating and planned objectives.
  - It is suspected that a project design does not contribute to the project's goals and outcomes.
  - The evidence of results conflict with one another
  - The inputs/resources are redistributed.

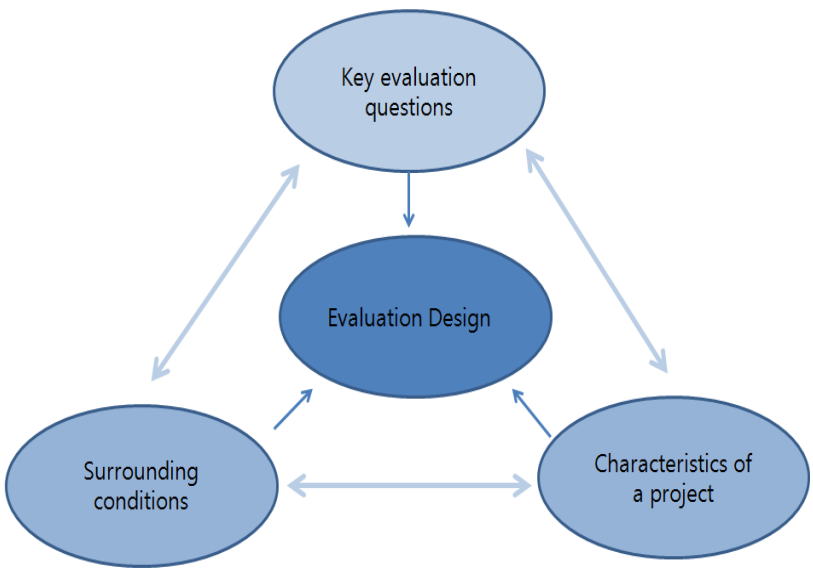
➢ Results-based management and evaluation for KOICA health projects

○ In many of KOICA's health projects, results monitoring is impossible during the project implementation process. Particularly, in the case where the main components of a project are constructing facilities and supplying materials and equipment, results monitoring higher than the outcome level is only possible after the completion of construction or materials and equipment provision. On the other hand, in the case of awareness campaigns and other educational activities, results can be tracked even during the project implementation process. Thus, you need to determine when certain types of results data are attainable, considering the characteristics of project activities.

2. Designing an evaluation

○ Evaluations should be designed with consideration of various aspects such as key evaluation questions, characteristics of a project and surrounding conditions of evaluation (budget, time frame, attainable materials, etc.).

<Figure 8> Designing an evaluation



➢ Purpose of evaluation

○ Evaluation design begins from the question "what do you want to know from the evaluation?" or "what is the purpose of this evaluation?" Depending on the purpose of the evaluation, key evaluation questions and main emphases of the evaluation are identified. Major evaluation purposes related to results measurement are as follows.

○ Projects results measurement: Defining and assessing diverse levels of results caused by a particular project.

○ Cause analysis: Interpretation of causality between project activities and results, analysis of various internal/external factors.

○ Generalization: Possibility of a causal relationship between project activities and results to be further generalized

<Table 21> Emphases of evaluation and key evaluation questions

Purpose of evaluation	Emphases of evaluation	Key evaluation questions
Results measurement	Fact confirmation	• Did the project generate changes?
Cause analysis	Understanding mechanisms of change	• How did the project cause changes? • Which changes are caused by the project?
Generalization	Possibility of applying to other projects	• Is it applicable to other similar projects?

Source: DFID(2012)

<Table 22> Essential conditions for evaluation and evaluation approaches

Key evaluation questions	Essential conditions for evaluation	Evaluation approaches
Did the project generate changes?	Baseline or ground evidence (Before/after, target groups/control groups)	Statistical approaches
How did the project cause changes?	Theory of change (project activities /external factors)	Theory-based approaches Participatory approaches
Which changes are caused by the project?	Pre-control on project inputs	Experimental approaches
Is it applicable to other similar projects?	Classification on contextual factors	Synthesis studies

Source: DFID(2012)

<Table 23> Evaluation approaches and methods

Approaches	Methods	Features of causality deduction
Experimental approaches	• Random controlled trials (RCTs) • Quasi-experiment • Natural experiment	• Confirmation of the causality (co-presence) through building experimental conditions on the basis of counter-factual theory
Statistical approaches	• Statistical modeling • Longitudinal studies • Econometrics	• Identification of statistical relations between various factors or causalities • Difficulties of analyzing contextual analysis between cause and effects
Theory-based approaches	• Theory of change • Process tracing • Contribution analysis • Tracing impact pathways	• Contextual analysis of a causal relationship through mechanisms of causality
Participatory approaches	• Participatory evaluation • Empowerment evaluation • Policy dialogue • Collaborative action research	• Verification of projects effects "experienced" by participants, commitment and activities to their result achievement. • Tracing how impacts of projects change according to local context.

Source: DFID(2012)

<Box 6> Information to be included in evaluation terms of reference (ToR)

1. Outline of project for evaluation
2. Backgrounds of evaluation
   - Problems/opportunities and intended objectives
   - Existing results information/data
3. Purpose/audience of evaluation, utilization plan of evaluation results
4. Evaluation questions
5. Evaluation methods
   - Data collection methods
   - Data analysis plans
   - Advantages and limitations of the evaluation methods
6. Evaluation outputs (deliverable)

3. Evaluation methods to verify attribution of results

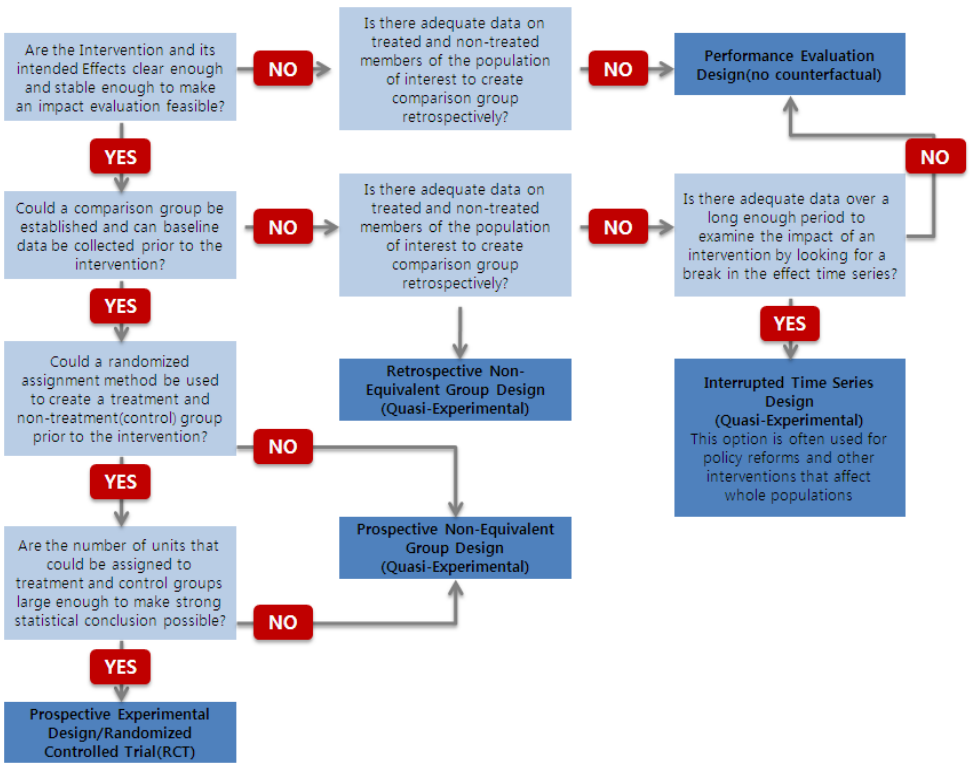
➢ Impact evaluation

○ An impact evaluation is a typical evaluation method that scientifically verifies the attribution of results. Impact evaluations estimate whether the changes have been attributed by the projects through a comparative analysis with counterfactual situations, rather than assessing the final outputs of projects.

➢ Conductibility of impact evaluation

○ Since various preconditions must be met in order to conduct impact evaluations, you should check whether a project meets the preconditions before planning an impact evaluation. If appropriate, you can select proper impact evaluation methods with consideration of the characteristics of a particular project. You may refer to the USAID analysis steps below in order to choose the appropriate projects for impact evaluation and to adopt proper impact evaluation methods.

<Figure 9> USAID Impact evaluation decision tree



Source: http://usaidsite.carana.com/content/impact-evaluation-decision-tree

<Box 7> Impact evaluation for development cooperation projects

- In development cooperation projects, "impact" is the last output which is the closest result to the project goal. Thus, an impacts evaluation is essential to evaluate the final and ultimate results of a development cooperation project. However, it is undesirable to directly relate project activities to impact, because impact is the last component of a results chain(inputs-activities-output-outcome-impact) that involves a complex theory of change accompanying various assumptions and risks.

- There have been numerous cases in which the PDM's logical flow is not examined in an actual project field, or the evidence for the logic model is not sufficient. In the case of actual projects, it is not only the internal factors from the project, but also other projects' activities and various contextual and external factors that affect the project impacts. Therefore, an experimental design which can control these confounding variables is required in order to precisely evaluate the effects caused by the project.

- These experimental evaluation methods are useful for random clinical trials in the hospital or laboratory. However, they are nearly impossible to adopt in an impact evaluation of community-based projects for technical, ethical and economical reasons. For this reason, impact evaluations often lack rigorous design despite its importance and necessity. In addition, since the quantitative method cannot be fully utilized, many researchers use qualitative methods for supplementary purposes.

➢ Impact evaluation methods

○ Experimental designs including the concepts of experiment groups and control groups are required to evaluate changes after a certain project is conducted. By comparing the experiment groups and control groups, one can notice the difference between the counterfactual and attributable changes from the project.

○ Randomized control design (RCD) is a perfectly conditioned experimental design. By utilizing this RCD, one can randomly extract the experimental group and control group. This also maintains double-blind methods during the evaluation process. Therefore, RCD aims to maintain the equivalency of experiment and control groups so that biases which can affect results can be excluded.

○ However, most of the ex-post evaluation designs for community-based development projects are incomplete or quasi-experiments. This is because in many cases, projects begin without the measurement of results levels and the measurement of the control groups' result indicators due to time/budget and other constraint factors. The limitations of quasi-experiment designs, including selection bias, cannot be overcome since random sampling of control and experiment groups is impossible, even though the results of project groups and control groups before and after the project have been measured.

○ Due to the limitations of research design, a quasi-experiment often has the following problems in internal validity.

- Ambiguous temporal precedence: Temporal precedence between the start of projects and results occurrence is ambiguous.
- Selection biases: Non-equivalence of factors affecting results when selecting project groups and control groups.
- History: Impacts by contingent external factors which are not related to the projects.
- Maturation: Changes accompanied by overtime during project period.
- Testing: Influence on the next measurement caused by exposure to the measurement itself.
- Instrumentation: Influences caused by differences of measurement methods or measurers.
- Statistical regression: Recovering by statistical regression in cases where measurement is extremely deviated.

- Attrition: Problems caused by the preterition of measurement subjects after beginning projects.
- Interactive effects: Interactions between the project and other projects.

○ Quasi-experiment design (C: Control, P: Project, X: Intervention, 1: Pre, 2: Post)

• The one-group posttest-only design

X P2

- It is impossible for this method to control external factors that affect project results.
- It is impossible for this method to deduce causality between project implementation and results.
- This method can be used for feasibility studies or preliminary assessments.

• The one-group pretest-posttest design

P1 X P2

- It is impossible for this method to control historical biases.
- It is difficult to purely measure the results caused by a project.
- This method is used in the following cases: 1) the project area is remote and excluded from external effects, 2) the whole area is a project area, or 3) setting the control group is impossible.

• Posttest-only design with nonequivalent groups

X P2

C2

- It is impossible for this method to control historical biases.
- It is difficult for this method to purely measure the results caused by a project.
- It is possible for this method to compare with other groups, but it is difficult to assume those differences are caused by a project.
- It is possible for this method to utilize multi-variate statistical analysis.

• Untreated control group with dependent pretest and posttest samples

P1 X P2

C1 C2

- Even though this test has relatively fewer errors, one should be careful when using it due to the possibility of selection bias.
- Since perfect random selection of the experiment group and control group is impossible, risk factors in terms of internal validity such as selection biases can have an influence on test results. You should consciously strive to avoid these risks.

• Interrupted time-series design

P1 P2 P3 X P4 P5 P6

- This method minimizes the problems of perturbed variables and regression errors and enables you to measure changes in the size of project results.
- However, in case of repeated measurement, the validity decreases.
- It is practically impossible to measure the results several times if the size of ODAH is bigger than a certain level.

○ It is impossible to objectively judge the relevance between projects and impacts on the basis of a quasi-experiment design or the causality between project activities and impacts through qualitative evaluation methods. In this case, the causality between project activities and impacts can be deduced on the basis of various evaluation results. Moreover, the criteria below can be the evidence which further indicates causality.

<Box 8> Hill's criteria for judging causality

- **Consistency(on replication)**: The more same causality is observed in many other research studies, the more causality is presumed .
- **Strength(of association)**: The stronger interrelationship between cause and effect, the more causality is presumed

- **Specificity**: The connection between impacts and investigated causes are proven
- **Dose response relationship**: Impacts increase in proportion to the amount of factors.
- **Temporal relationship (directionality)**: A cause always temporally precedes the occurrence of impacts
- **Biological plausibility (evidence)**: Proper biological evidence
- **Coherence**: Theoretical consistency
- **Experiment**: Proof through experiment

4. Accumulation, reporting, and feedback of evaluation results

○ Evaluation results should be critically reviewed to assess whether it provided enough answers to evaluation objectives, key questions and emphases presented in the TOR. Evaluation results should be accumulated after receiving feedback from relevant stakeholders. If necessary, management responses of KOICA should be consolidated and reviewed by relevant stakeholders so that lessons learned can be shared and reflected in future projects.

○ In terms of KOICA's health projects, there are cases where results data collection is only possible after end-of-project evaluation is conducted. In this case, results data should be reported in the end-of-project-evaluation report by using the final project results reporting form (HP-10).

<Table 24> Final project results reporting form (HP-10)

Core indicator code (If applicable)	Result indicators	Baseline (Year)	Target (Yeat)	Final data (Yeat)	Objective achievement Rate (%)

Ⅴ. RBM framework for health sector strategies

1. RBM framework for KOICA's health sector strategies
2. Results reporting form and system for strategy-level RBM
3. Use of strategy-level RBM framework

Chapter

V RBM framework for health sector strategies

1. RBM framework for KOICA's health sector strategies

○ The RBM framework for health sector functions as a RBM tool in order to check whether the objectives have been achieved according the health sector strategic objectives(SOs).

○ First, the purpose of the RBM framework for health strategy is to identify the ratio of projects by SOs, and to promote project results reporting by analyzing the ratio of core indicator utilization and results data collection according to the SOs of each project. The second purpose is to verify the level of achievement of each SO by collecting the achievement rate of SOs reported from each project. However, since it can be practically difficult to clearly propose SO achievement rate until the RBM of the health strategy has been matured, it is possible to try RBM by focusing on the first purpose.

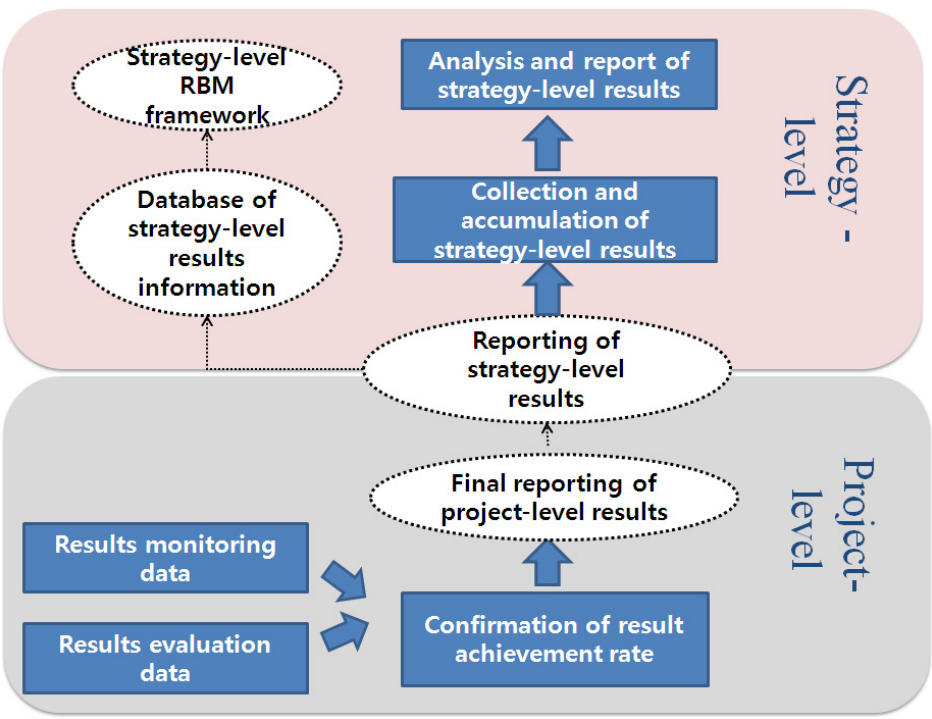
<Table 25> KOICA health sector strategy-level RBM framework (HS-3)

Strategic objectives	Ratio of projects	Core indicator code	Ratio of core utilization*	Ratio of data collection**	Achievement rate of strategic objectives	Note
SO 1		A-1				

※ Note: *Projects including core indicators/ All projects, **Results reporting project according to core indicators/projects including core indicators

○ Strategy-level RBM framework for the health sector relies on the premise that results information flows are as below.

<Figure 10> Results information flow chart



2. Results reporting form and system for strategy-level RBM

➢ Final reporting of project results

○ The final project results reporting form (HP-10) should be filled out by KOICA regional offices by collecting relevant materials from the PMC and submitted to the HQs.

<Table 26> Final project results reporting form (HP-10)

Core indicator code (If applicable)	Result indicators	Baselines (Year)	Targets (Year)	Final data (Year)	Objective achievement rate (%)

➢ Reporting form and database for strategy-level results of projects

○ Reporting of each individual project's strategy-level results reporting form (HP-11) should be prepared by the regional departments and submitted to the Social Development Team at the KOICA HQs. The Social Development Team should collect the reports and establish a strategy-level results database. This database also contains the information on "whether core indicators are reflected" and "whether results are reported according to core indicators." Utilizing this database enables analyzing the accumulated result information(including whether core SO indicators of individual health projects are used).

○ The Social Development Team can analyze dependent variables (i.e., the utilization of core indicators, reporting of results data and the rate of SO achievement) in accordance with independent variables (i.e., SO, project areas, country, project cost, and types of projects) by extracting information which is accumulated in the database.

<Table 27> Strategy-level results reporting form (HP-11) / Strategy-level results database (HS-4)

No.	SO	LOCATION	COUNTRY	TITLE	DURATION	BUDGET	TYPE	Core indicators utilized		Results reporting according to core indicators	
								Yes=1 No=0	Core indicator code	Yes=1 No=0	SO achievement rate
1	SO 1										
2											
3											
4											
5											
6											

※ Note: HS-3 strategy-level RBM framework should be written based on information which is accumulated in HS-4.

<Table 28> KOICA health sector strategy-level RBM framework (HS-3)

SO	Ratio of projects	Core indicator code	Ratio of core indicator utilization*	Ratio of data collection**	Achievement rate of strategic objectives	Note
SO 1		A-1				
SO 1		A-2				
SO 2		B-1				
SO 2		B-2				
SO 3		C-1				

※ Note: *Projects including core indicators/ all projects **Results reporting project according to core indicators/ projects including core indicators

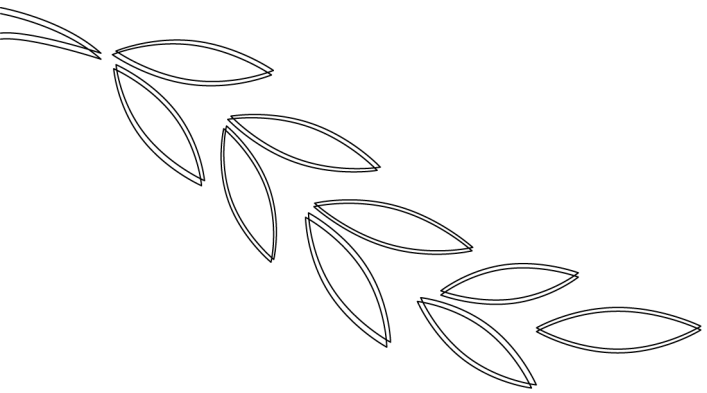
3. Use of strategy-level RBM framework

➢ **In early stage :** In the early stage of strategy-level RBM, drawing the ratio of projects according to SOs should be prioritized. Profiling of KOICA'S health strategy projects according to SOs should be conducted, considering the ratio of projects which is classified by project cost or calculated by the number of cases by SO.

➢ **In medium-term stage :** Once RBM is stabilized at the project level among individual projects, the ratio of projects that utilize core indicators and data collection ratio should be tracked. Utilization of core indicators should be encouraged in the stage of planning individual projects through

this process. When indicators are selected, final data (endline) collection must be promoted.

➢ **In long-term stage :** Once RBM at the project level is mature, the average rate of SO achievement would be calculated with a focus on projects in which final data have been collected according to core indicators. Moreover, it can be reflected on the annual report as a strategic achievement of KOICA's health sector strategies and consultation with stakeholders should be conducted.



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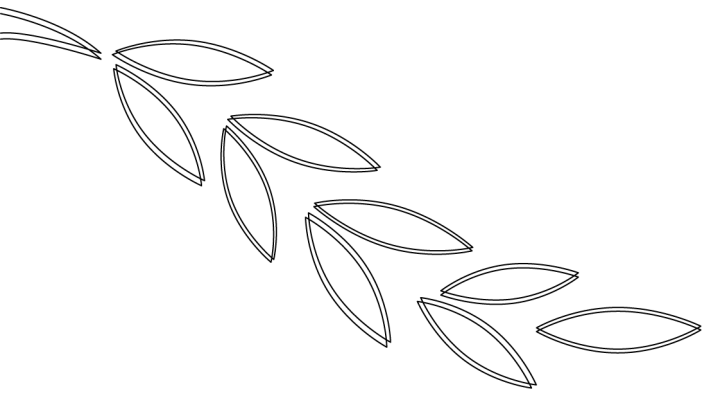

Appendix

Appendix

1. KOICA Health Sector RBM Forms (excel file to be provided later)

- HP-1 Reporting format of a partner country's health sector status
- HP-2 Reporting format of a partner country's health sector strategy
- HP-3 Reporting format of data system assessment
- HP-4 Project design matrix (PDM)
- HP-5 Result monitoring plan
- HP-6 Risk analysis and monitoring plan
- HP-7 Roles and responsibilities in reporting mechanism
- HP-8 Database of project results
- HP-9 Results reporting form
- HP-10 Final project results reporting form
- HP-11 Strategy-level results reporting form

- HS-1 KOICA Health Sector goals, strategic objectives, core indicators
- HS-2 KOICA Health projects profile
- HS-3 KOICA health sector strategy-level RBM framework
- HS-4 Strategy-level results database

2. Result indicator Pool for KOICA Health Projects

● Level of Result Indicators : GL(Goal), OC(Outcome), OP(Output)

Maternal and Child Health

Indicators	Definition	Data Resource	Level
Maternal Mortality Ratio	• Numerator: The annual number of female deaths from any cause related to or aggravated by pregnancy or its management during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100,000 live births, for a specified year • Denominator : The total number of live births occurring within the reference period	• Facility reporting system • Household Survey • Population census	GL
Maternal Mortality Rate	• Numerator: All maternal deaths occurring within a reference period • Denominator: The total number of live births occurring within the reference period	• Facility reporting system • Household Survey • Population census	GL
Stillbirth rate	• Numerator: The Number of still birth after 28 weeks per 1,000 live births • Denominator: The sum of live birth and stillbirth	• Civil registration • Population-based surveys • Health facility assessments	GL
Neonatal mortality rate	• Numerator: The number of death during the first 28days of life per 1,000 live births • Denominator: The total number of live births	• Civil registration • Household Survey • Population-based surveys	GL

Indicators	Definition	Data Resource	Level
Infant mortality rate	• Numerator: The number of death before reaching the age of one per 1,000 live births • Denominator: The total number of live births	• Civil registration	GL
Under-five mortality rate	• Numerator: The Number of death before reaching age of 5 per 1,000 live births • Denominator: The total number of birth in same time	• Facility reporting system • Household survey • Population Survey	GL
Children under 5 with acute respiratory infections (ARI) symptoms taken to facility	• Numerator: children aged 0~59 months who had presumed pneumonia (ARI) in the last 2 weeks and were taken to an appropriate health-care provider • Denominator: Total number of under 5 years children	• Special studies • Sample or sentinel registration systems • Population census	GL
Births attended by skilled health personnel (%)	• Numerator: The number of birth by skilled health personnel (doctors, nurses or midwives) trained in providing life saving obstetric care, including the necessary supervision, care and advice to women during pregnancy, childbirth and the post- partum period; to conduct deliveries on their own • Denominator: Total number of live births in the same period	• Household surveys • Facility reporting system	OC
Facility Birth Rate	• Numerator: The number of births in health facilities per years • Denominator: Total births	• Household surveys • Facility reporting system	OC
Proportion of birth by caesarean section	• Numerator: The number of women having giving birth by caesarean section • Denominator: The number of live birth to women surveyed provides	• Facility reporting system • Household surveys	OC

Indicators	Definition	Data Resource	Level
Antenatal care coverage - at least four visits (%)	• Numerator: The number of women aged 15-49 with a live birth in a given time period that received antenatal care by skilled health personnel(doctors, nurses or midwifes) at least once during pregnancy • Denominator: Total number of women aged 15-49 with a live birth in the same period	• Household surveys • Facility reporting system	OC
Antenatal care coverage - at least one visit (%)	• Numerator: The number of women aged 15-49 with a live birth in a given time period that received antenatal care four or more times. • Denominator: Total number of women aged 15-49 with a live birth in the same period	• Household surveys • Facility reporting system	OC
Postnatal care visit within two days of childbirth (%)	• Numerator: Number of women who received postnatal care within two days of childbirth • Denominator: Total number of women aged 15-49 with a live birth in the specific year	• Population census • Facility reporting system	OC
Estimated pregnant women living with HIV who received antiretroviral medicine for preventing mother-to-child transmission (%)	• Numerator: Number of HIV- positive pregnancy women who received the most effective antiretroviral regimens as recommended by who (excluding single- dose nevirapine) during the past 12 months to reduce mother to child transmission • Denominator: The number of HIV-positive pregnant women within the past 12 months	• HIV Monitoring	OC
Civil registration coverage of births (%)	• Numerator: The number of enrolled births in civil registration system • Denominator : The total number of new born	• Household surveys	OC

Indicators	Definition	Data Resource	Level
Proportion of infant who take regular health screening at least 4 times	• Numerator: The number of infant who take regular health screening at least 4 times • Denominator: The total number of new born	• Household surveys • Facility reporting system	OC
Health care coverage for pregnant women(%)	• Numerator: The number of enrolled pregnant women in health facilities • Denominator: The total number of pregnant women	• Household surveys • Facility reporting system	OP
Awareness rate of necessity of antenatal care services	• Numerator: The number of adults who are thinking that antenatal care service is necessary • Denominator: The total number of adults	• Household surveys	OP
Awareness rate of necessity of neonatal management	• Numerator: The number of adults who are thinking that neonatal management is necessary • Denominator: The total number of adults	• Household surveys	OP
Proportion of health facilities to available a normal delivery	• Numerator: The number of health facilities to available a normal delivery • Denominator: The total number of health facilities	• Facility reporting system	OP
Density of health workers who can normal delivery per 10,000 population	• Numerator: The total number of health workers who can normal delivery per 10,000 population • Denominator: Total population	• Facility reporting system	OP
Proportion of distribution safety delivery kits among pregnant women	• Numerator: The total number of pregnant women who received safety delivery kits • Denominator: Total number of pregnant women	• List of safety delivery kits distribution	OP

Indicators	Definition	Data Resource	Level
Number of health facilities to available of cesarean delivery per 10,000 population	• Numerator: The total number of health facilities to available of cesarean delivery per 10,000 population • Denominator: Total population	• Facility reporting system	OP
Number of health facilities with neonatal intensive care unit per 10,000 population	• Numerator: The total number of health facilities with neonatal intensive care unit per 10,000 population • Denominator: Total population	• Facility reporting system	OP
Proportion of children under 5 with diarrhea receiving oral rehydration therapy (ORT)	• Numerator : Number of children aged 0-59 months with diarrhea in the two weeks prior to the survey receiving ORT • Denominator: Total number of children aged 0-59 months with diarrhea in the two weeks prior to the survey	• Facility reporting system	OP

Family Planning

Indicators	Definition	Data Resource	Level
Annual population growth rate	• Numerator: The number of individuals in a population increases in a given time period as a fraction of the initial population • Denominator: The number of individuals in the population at the beginning of that period	• Population census	GL
Total fertility rate	• The sum of age-specific fertility rates (usually referring to women aged 15 to 49 years), or five times the sum if data are given in five-year age groups. An age- or age-group-specific fertility rate is calculated as the ratio of annual births to women at a given age or age-group to the population of women at the same age or age-group, in the same year, for a given country, territory, or geographic area	• Civil registration system • Population census	GL
Crude birth rate	• Numerator: The number of live birth observed in a population during a reference period • Denominator: The number of person-years lived by the population during the same period	• Civil registration system • Household surveys	GL
Adolescent fertility rate	• Numerator: The number of live births to women 15-19 years of age • Denominator: An estimate of exposure to childbearing by women 15-19 years of age	• Population census • Household surveys	GL
Unmet need for family planning (%)	• Numerator: Women who are married or in a consensual union who have an unmet need for family planning X 100 • Denominator: Total number of women of reproductive age (15-49 years) who are married or in consensual union	• Household surveys • Sample survey	OC

Indicators	Definition	Data Resource	Level
Contraceptive practice rate	• Numerator: Number of women age 15-49 years currently married or in union who are using (or whose partner is using) a (modern or traditional) contraceptive method • Denominator: Total number of women age 15-49 years who are currently married or in union	• Household surveys	OC
Modern contraceptive prevalence rate	• Numerator: The number of women of reproductive age (15-49) who are married or in union and who are currently using any method of contraception x 100 • Denominator: The total number of women of reproductive are (15-49) who are married or in union	• Household surveys	OC
Condom use rate of the contraceptive prevalence rate	• Numerator: The number of women who are using condoms • Denominator: The number of women who are currently using any modern method of contraception	• Household surveys • Special studies	OC
Couple-Years of Protection	• The estimated protection provided by family planning (FP) services during a one-year period, based upon the volume of all contraceptives sold or distributed free of charge to clients during that period	• Household surveys • Special studies	OC
Contraceptive procedure rate	• Numerator: The number of women aged 15~45 years or partners who had contraception procedure • Denominator: The total of women aged 15~45 years or sex partners	• Household surveys • Facility reporting system	OC
Participation rate of family planning education	• Numerator: The number of women aged 15~45 years or households who had participated family planning education • Denominator: The total of women aged 15~45 years or households	• Household surveys • Special studies	OP

Indicators	Definition	Data Resource	Level
Proportion of family planning counselor per 10,000 population	• Numerator: The number of family planning counselor per 10,000 population • Denominator: Total population	• Household surveys • Special studies	OP
Proportion of health workers who are available to family planning injections	• Numerator: The number of health workers who are available to family planning injections per 10,000 population • Denominator: Total population	• Household surveys • Facility reporting system	OP
Proportion of health facilities available to family planning counselling and injections	• Numerator: The number of health facilities available to family planning counselling and injections • Denominator: The total number of health facilities	• Facility reporting system	OP
Number(Proportion) of communities with committee of family planning	• Numerator: The number of communities with committee of family planning • Denominator: The number of communities	• Civil registration system • Facility reporting system	OP

Immunization

Indicators	Definition	Data Resource	Level
Under-five mortality rate	• Numerator: Number of death before reaching age of 5 per 1,000 live births • Denominator: The total number of birth in same time	• Facility reporting system • Household survey • Population Survey	GL
Neonatal mortality rate	• Numerator: Number of death during the first 28days of life per 1,000 live births • Denominator: Total number of live births	• Civil registration system • Household surveys • Population census	GL
Infant mortality rate	• Numerator: Number of death before reaching the age of one per 1,000 live births • Denominator : Total number of live births	• Civil registration system	GL
Number of reported cases of diphtheria	• The confirmed number of diphtheria cases including those confirmed clinically, epidemiologiclly, or by laboratory investigation	• Civil registration system • Household surveys • Population census	OC
Number of reported cases of neonatal tetanus	• The confirmed number of neonatal tetanus cases including those confirmed clinically, epidemiologiclly, or by laboratory investigation	• Civil registration system • Household surveys • Population census	OC
Number of reported cases of pertussis	• The confirmed number of pertussis cases, including those confirmed clinically, epidemiologically, or by laboratory investigation	• Civil registration system • Household surveys • Population census	OC

Indicators	Definition	Data Resource	Level
Number of reported cases of measles	• The confirmed number of measles cases, including those confirmed clinically, epidemiologically, or laboratory investigation	• Civil registration system • Household surveys • Population census	OC
Number of reported cases of poliomyelitis	• The confirmed number of polio case is confirmed if wild poliovirus is isolated from stool specimens collected from an acute flaccid paralysis (AFP) case	• Civil registration system • Household surveys • Population census	OC
Immunization rate of under-five children	• Numerator: The number of under-five children who had immunization • Denominator: Total number of under-five children	• Health statistics • Household surveys	OC
DPT3 immunization coverage	• Numerator: The number of one-year-old who have received three doses of the combined DPT vaccine in a given year • Denominator: Total number of one year children	• Facility reporting system • Household surveys	OC
Proportion of 1 year-old children immunized against measles, diphtheria and hepatitis B	• Numerator: The number of one-year-olds who have received measles, diphtheria and hepatitis B vaccine in a given year • Denominator: Total number of one year children	• Facility reporting system	OC
Hepatitis B (HepB3) immunization coverage among 1-year-olds (%)	• Numerator: The number of one-year-olds who have received three doses of hepatitis B vaccine in a given year • Denominator: Total number of one year children	• Facility reporting system • Household surveys	OC
Hib (Hib3) immunization coverage among 1-year-olds (%)	• Numerator: The number of one-year-olds who have received three doses of Haemophilus influenzae type B vaccine in a given year • Denominator: Total number of one year children	• Facility reporting system • Household surveys	OC

Indicators	Definition	Data Resource	Level
Measles (MCV) immunization coverage among 1-year-olds (%)	• Numerator: The number of children under one year who have received at least one dose of measles-containing vaccine • Denominator: Total number of children under 1 year	• Facility reporting system • Household surveys	OC
Neonates protected at birth against neonatal tetanus (%)	• Numerator: The number of neonates in a given year that can be considered as having been protected against tetanus as a result of maternal immunization • Denominator: Total number of neonates	• Special studies	OC
Proportion of health facilities in stock with supplies at least one valid	• Numerator: The number of health facilities in stock with supplies at least one valid • Denominator: Total number of health facilities	• Facility reporting system • Household Survey	OP
Proportion of health department installed cold storage for vaccines at least one valid	• Numerator: The number of health departments installed cold storage for vaccines at least one valid • Denominator: Total number of health departments	• Facility reporting system	OP
Proportion of health facilities in stock with vaccines at least one valid	• Numerator: The number of health facilities in stock with vaccines at least one valid • Denominator: Total number of health facilities	• Facility reporting system	OP
Proportion of under-five children who have a immunization card	• Numerator: The number of under-five children who have a immunization card • Denominator: Total number of under-five children	• Household surveys • Facility reporting system	OP

Nutrition

Indicators	Definition	Data Resource	Level
Under-five mortality rate	• Numerator: Number of death before reaching age of 5 per 1,000 live births • Denominator: Total no of birth in same time	• Facility reporting system • Household surveys • Population census	GL
Neonatal mortality rate	• Numerator: Number of death during the first 28days of life per 1,000 live births • Denominator: Total number of live births	• Civil registration system • Household surveys • Population census	GL
Infant mortality rate	• Numerator: Number of death before reaching the age of one per 1,000 live births • Denominator: Total number of live births	• Civil registration system	GL
Children aged <5 years underweight (%)	• Numerator: Number of children ages 0-5 years that are over two standard deviation from the median weight-for-height of the WHO Child Growth Standards • Denominator: Total number of children under age 5	• Household surveys • Population census • Facility reporting system	GL
Children aged <5 years wasted (%)	• Numerator: Number of children ages 0-5 years that fall below minus two standard deviation from the median weight-for-height of the WHO Child Growth Standards • Denominator: Total number of children under age 5	• Household surveys • Population census • Facility reporting system	GL
Children aged <5 years stunted (%)	• Numerator: Number of children aged 0-5 years that fall below minus two standard deviations from the median height-for-age of the WHO Child Growth Standards • Denominator: Total number of children under age 5	• Household surveys • Population census • Facility reporting system	OC
Exclusive breast feeding	• Numerator: Infants 0-5 months of age who received only breast	• Household surveys	OC

Indicators	Definition	Data Resource	Level
under 6months (%)	milk during the previous day • Denominator: Infants 0-5 months of age	• Population census • Routine surveillance system	
Reported incidence of infections caused by key food borne pathogens	• Numerator: The number of reported incidence of infections caused by key food borne pathogens • Denominator: The total population or residents	• Household surveys • Population census • Facility reporting system	OC
Children aged 6-59 months who received vitamin A supplementation(%)	• Numerator: Total number of children aged 6-59 months who received a high-dose vitamin A supplement within the last 6 months • Denominator: Total number of under 5 children	• Household surveys	OP

Malaria

Indicators	Definition	Data Resource	Level
Under-five mortality rate	• Numerator: Number of death before reaching age of 5 per 1,000 live births • Denominator: The total number of birth in same time	• Facility reporting system • Household survey • Population Survey	GL
Confirmed malaria cases per 1,000 persons	• Numerator: Confirmed malaria cases per year x 1000 • Denominator: Population	• Facility reporting system • Routine surveillance system	GL
Malaria-specific deaths per 1000 persons per year	• Numerator: No. of malaria deaths per year x 1000 • Denominator: Population	• Facility reporting system • Routine surveillance system	GL
Confirmed malaria cases per 1000 persons	• Numerator: Confirmed malaria cases per year x 1000 • Denominator: Population	• Facility reporting system • Routine surveillance system	GL
Percentage of confirmed malaria cases receiving first-line antimalarial treatment according to national policy at health facility	• Numerator: No. of confirmed malaria cases receiving first-line antimalarial treatment at health facility • Denominator: No. of confirmed malaria cases at health facility	• Facility reporting system • Routine surveillance system • Special study	OC
Proportion of first-line treatments among children under five years old with fever in the last two weeks who received any antimalarial medicine	• Numerator: Number of children under five years old with fever in the last two weeks receiving recommended first-line treatment • Denominator: Number of children under five years old with fever in the last two weeks receiving antimalarial medicine	• Household survey	OC

Indicators	Definition	Data Resource	Level
Proportion of children under 5 years old with fever in the last 2 weeks who had a finger or heel stick	• Numerator: Number of children under 5 years old who had a fever in the previous 2 weeks who had a finger/heel stick • Denominator: Total number of children under 5 years old who had a fever in the previous 2 weeks	• Household survey	OC
Percentage of confirmed malaria cases receiving first-line antimalaria treatment according to national policy	• Numerator: No. of confirmed malaria cases receiving first-line antimalarial treatment at health facility • Denominator: No. of confirmed malaria cases at health facility	• Facility reporting system • Household survey	OC
Proportion of households with at least one ITN	• Numerator: Number of households surveyed with at least one ITN • Denominator: Total number of households surveyed	• Household survey	OP
Proportion of households with at least one ITN for every two people	• Numerator: Number of households surveyed with at least one ITN for every two people • Denominator: Total number of households surveyed	• Household survey	OP
Proportion of children under 5 years who slept under an ITN the previous night	• Numerator: Number of under 5 years with access to an ITN in a household • Denominator: Total number of under 5 years who slept in surveyed households the previous night	• Household survey	OP
Proportion of pregnant women who slept under an ITN the previous night	• Numerator: Number of pregnant women with access to an ITN in a household • Denominator: Total number of pregnant women who slept in surveyed households the previous night	• Household survey	OP

Indicators	Definition	Data Resource	Level
Proportion of individuals who slept under an ITN the previous night	• Numerator: Number of individuals with access to an ITN in a household • Denominator: Total number of individuals who slept in surveyed households the previous night	• Household survey	OP
Proportion of women who received intermittent preventive treatment for malaria during ANC visits during their last pregnancy	• Numerator: Number of women who received two or more doses of a recommended antimalarial drug treatment during ANC visits to prevent malaria during their last pregnancy that led to a live birth within the last 2 years • Denominator: Total number of women surveyed who delivered a live baby within the last 2 years	• Household survey	OP
Proportion of health centers without stock-outs of SP by month	• Numerator: Number of households supplied with at least one ITN • Denominator: Total number of households	• Facility reporting system • Routine surveillance system	OP
Proportion of health centers without stock-outs of diagnostic tests for malaria by month	• Numerator: Number of health centers without stock-outs of diagnostic tests for malaria • Denominator: Total number of health centers	• Facility reporting system • Routine surveillance system	OP
Proportion of health centers without stock-outs of ACTs by month	• Numerator: Number of health centers without stock-outs of ACTs • Denominator: Total number of health centers	• Facility reporting system • Routine surveillance system	OP
Proportion of health centers without stock-outs of key commodities by month	• Numerator: Number of health centers without stock-outs of key commodities • Denominator: Total number of health centers	• Facility reporting system • Routine surveillance system	OP

HIV/AIDS

Indicators	Definition	Data Resource	Level
HIV prevalence	• Numerator: The estimated number of people living with HIV, whether or not they have developed symptoms of AIDS • Denominator: Total population	• Household surveys • Facility reporting system	GL
Deaths due to HIV/AIDS (per 100 000 population)	• Numerator: The estimated number of adults and children that have died due to HIV/AIDS in a specific year, expressed per 100,000 population • Denominator: Total population	• Facility reporting system • Household surveys	GL
Estimated rate of children below 15 years of age dying of HIV/AIDS (per 1,000)	• Numerator: The estimated number of under 15-year-old children that have died due to HIV/AIDS in a specific year per 1,000 population • Denominator: Total under 15-year-old children	• Facility reporting system	GL
Percentage of infants born to HIV-infected mothers who are infected	• Numerator: Number of infants who received an HIV test within 2 months of birth, during the reporting period. • Denominator: Number of HIV-positive pregnant women giving birth in the last 12 months.	• Facility reporting system • Household surveys	GL
Antiretroviral therapy coverage among people with advanced HIV infection (%)	• Numerator: Number of adults and children with advanced HIV infection who are currently receiving antiretroviral combination therapy in accordance with the nationally approved treatment protocol (or WHO/UNAIDS standards) at the end of the reporting period • Denominator: Estimated number of adults and children with advanced HIV infection	• Facility reporting system • Administrative reporting system	OC

Indicators	Definition	Data Resource	Level
Population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (%)	• Numerator: Young people aged 15~24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission × 100 • Denominator: Total number of people aged 15~24	• Household surveys • MDGs Report	OC
Prevalence of condom use by adults during higher-risk sex(%)	• Numerator: Women and men aged 15~49 who have had more than one sexual partner in the past 12 months who report the use of a condom during their last sexual intercourse × 100 • Denominator: Total number of Women and men aged 15~49 who have had more than one sexual partner in the past 12 months	• Household surveys • Sample survey • MDGs Report	OC
Percentage of the general population aged 15–49 years receiving HIV test results and post-test counseling in the past 12 months	• Numerator: Number of people aged 15~49 years who have received HIV test results and post-test counseling in the past 12 months • Denominator: Total population aged 15~49 years	• Facility reporting system • Household surveys	OC
Percentage of health facilities that have the capacity and conditions to provide basic HIV counseling and testing and to manage HIV/AIDS clinical services	• Numerator: The number of health facilities that have the capacity and conditions to provide basic HIV counseling and testing and to manage HIV/AIDS clinical services • Denominator: Total health facilities in specific area	• Facility reporting system • Administrative reporting system	OP
Existence of national monitoring and evaluation capacity for HIV/AIDS care and support programs	• Existence of national monitoring and evaluation capacity for HIV/AIDS care and support programs	• Administrative reporting system	OP

Indicators	Definition	Data Resource	Level
Percentage of health facilities with record-keeping systems for monitoring HIV/AIDS care and support	• Numerator: Number of health facilities maintaining adequate records on the services provided • Denominator: Total number of health facilities surveyed	• Facility reporting system • Administrative reporting system	OP
Percentage of districts with at least one health facility providing antiretroviral combination therapy	• Numerator: Number of districts with at least one health facility providing antiretroviral combination therapy • Denominator: Total number of districts	• Facility reporting system • Household surveys	OP

Tuberculosis

Indicators	Definition	Data Resource	Level
Estimated deaths due to tuberculosis, excluding HIV (per 100,000 population)	• Numerator: The estimated number of deaths attributable to tuberculosis (TB) in a given year, expressed as the rate per 100,00 population • Denominator: Total population	• Special studies • Sample or sentinel registration systems • Specific population surveys	GL
Estimated incidence of tuberculosis (per 100,000 population)	• Numerator: The estimated number of new and relapse tuberculosis (TB) cases arising in a given year, expressed as the rate per 100,000 population • Denominator: Total population	• Surveillance systems	GL
Estimated prevalence of tuberculosis (per 100,000 population)	• Numerator: The number of cases of tuberculosis (all forms) in a population at a given point in time (the middle of the calendar year), expressed as the rate per 100,000 population • Denominator: Total population	• Population census • Special studies	GL
TB detection rate (%) under directly observed treatment short-course (DOTS)	• The percentage of estimated new infectious tuberculosis cases detected under the internationally recommended tuberculosis control strategy directly observed treatment short course (DOTS)	• Special studies • Samples or Surveillance systems • Population census	GL
Proportion of tuberculosis cases detected and cured under directly observed treatment short course	• Numerator: The number of new, TB cases in a given year that were cured or completed a full treatment of DOTS • Denominator: All new TB cases	• Special studies • Samples or Surveillance systems • Population census	GL

Indicators	Definition	Data Resource	Level
Tuberculosis case detection rate for new smear-positive cases (%)	• Numerator: The proportion of estimated new smear-positive tuberculosis (TB) cases detected under the internationally recommended tuberculosis control strategy • Denominator: Total tuberculosis (TB) cases	• Facility reporting system	OC
Case detection rate for all forms of tuberculosis	• Numerator: The proportion of estimated new and relapse tuberculosis (TB) cases detected in a given year under the internationally recommended tuberculosis control strategy • Denominator: Total tuberculosis (TB) cases	• Facility reporting system	OC

Health system

Indicators	Definition	Data Resource	Level
Life expectancy at birth (years)	• The average number of years that a newborn could expect to live, if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory, or geographic area.	• Household surveys • Population-based survey • Civil registration system	GL
Maternal Mortality Ratio	• Numerator: the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy • Denominator: Total live births	• Facility reporting system • Household surveys • Population census	GL
Infant mortality rate	• Numerator: the annual number of a child born in a specific year or period dying before reaching the age of one per 1000 live births • Denominator: Total live births	• Civil registration system	GL
Under-five mortality rate	• Numerator: the annual number of a child born in a specific year or period dying before reaching the age of five per 1000 live births • Denominator: Total live births	• Facility reporting system • Household surveys • Population census	GL
Admission rate	• Numerator: Total inpatient per 1,000 population • Denominator: Total population	• Facility reporting system • Population-based survey	OC

Indicators	Definition	Data Resource	Level
Number of outpatient department visits per 10,000 population per year	• Numerator: The total number of outpatient per 10,000 population • Denominator: Total population	• Facility reporting system • Population census	OC
Satisfaction of health workers	• Estimate satisfaction of health workers with the Likert scale (strongly agree to strongly disagree)	• Household surveys • Survey	OC
Proportion of population(or households) used health services in health facilities	• Numerator: The total number of population or households used any health services in health facilities during last year • Denominator: Total population or households	• Household surveys • Survey	OC
Estimate awareness of Knowledge, Attitude and Practices of community people in health care services	• Estimate awareness of Knowledge, Attitude and Practices of community people in health care services	• Household survey • Survey	OC
Number and distribution of health facilities per 10,000 population	• Numerator: The number of health facilities per 10,000 population • Denominator: the total population for the same geographical area	• Health Care Database of Local and Government	OP
Proportion of health facilities that meet basic service capacity standards	• Numerator: The number of facilities with basic service capacity standards • Denominator: Total number of facilities	• Assessment of health facilities	OP

Indicators	Definition	Data Resource	Level
Number and distribution of health facilities offering specific services per 10,000 population	• Numerator: The number of facilities that have the basic service capacity to provide a specific service • Denominator: The total number of facilities for the proportion or the total population for the same geographical area to compute the density	• Facility reporting system	OP
Number and distribution of inhabitant within 5km or, 10km radius from health facilities	• Numerator: The number and distribution of inhabitant within 5km or, 10km radius from health facilities • Denominator: The total population or households	• Health Care Facilities Information of Local and National	OP
Proportion of population within 1 hour of primary health care and 2 hours from hospital	• Numerator: The number of population within 1 hour of primary health care and 2 hours from hospital • Denominator: The total population or households	• Household surveys	OP
Number and distribution of inpatient beds per 10,000 population	• Numerator: The number of in-patients beds • Denominator: The total population for the same geographical area	• Health Care Facilities Information of Local and National	OP
Proportion of qualified health care workers (based on academic qualifications)	• Numerator: The total number of qualified health care workers • Denominator: The total number of health workers	• Health Care Facilities Information of Local and National • Facility reporting system	OP
Density of physicians(per 10,000 population)	• Numerator: Number of medical doctors (physicians), including generalist and specialist medical practitioners, per 10 000 population • Denominator: The total population for the same geographical area	• Health Care Facilities Information of Local and National	OP

Indicators	Definition	Data Resource	Level
Density of nursing and midwifery personnel(per 10,000 population)	• Numerator: Number of nursing and midwifery personnel per 10 000 population • Denominator: The total population for the same geographical area	• Health Care Facilities Information of Local and National	OP
Annual number of graduates of health professions educational institutions per 100,000 population, by level and field of education	• Numerator: Annual number of graduates of health professions educational institutions per 100,000 population, by level and field of education • Denominator: The total population for the same geographical area	• Facility reporting system	OP
Average availability of 14 selected essential medicines in public and private health facilities	• Numerator: The number of public and private health facilities to available of 14 selected essential medicines. • Denominator: The total number of health facilities	• National medicine price survey	OP

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