METRO MANILA AIR SHED
GOVERNING BOARD

MODULE 6

Monitoring and Evaluation System Manual

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Document Title:	Monitoring and Evaluation System Manual
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Revision:	
Revision Date:	
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Revision History

Revision	Description	Revision Date
Draft	1st Draft	June 13, 2006
0	Approved	November 21, 2006

Section 1: Introduction

This manual aims to provide the MMASGB with a suitable monitoring and evaluation system for monitoring programs and initiatives administered by the GB, beginning with the ongoing program. It also includes procedures for evaluation for use by the GB - initially, to evaluate the effectiveness of the current program upon its completion, and as a long-term tool for evaluation of results of future programs effectively.

The manual includes, in general:

- the objectives of the Monitoring and Evaluation (M&E);
- the issues for monitoring;
- the identification of indicators that measure its progress;
- the process proposed for testing indicators at the various levels;
- the methodologies for data collection in relation to the indicators;
- the management and feedback processes of data collected in future planning;
- the issues to be evaluated;
- the methodologies for carrying out the evaluation;
- the guidelines for writing up the Evaluation report; and
- the evaluation feedback process.

The guidelines and procedures in this document are based on the *integrated approach* to project cycle management. The integrated approach to project planning, implementation and evaluation ensures that the same criteria is used all along the program/project cycle. It means that the same elements are monitored throughout the project. This is realized by using the same basic format for all reports, including the monitoring reports. The elements of an intervention are structured using the *Logical Framework*.

The Logical Framework systematizes the setting of objectives and assumptions for a development project and the subsequent analysis of these. It summarizes, in a standard format –

- what the project is going to achieve;
- what activities will be carried out to achieve its outputs and purpose;
- what resources or inputs are required; and
- what are the potential problems which could affect the success of the project; and (5) how the progress and ultimate success of the project will be measured and verified.

Figure 1 below presents the Logical Framework matrix.

Figure 1: Logical Framework Matrix

Overall objectives	Objectively verifiable indicators	Sources of verification	
Project purpose	Objectively verifiable indicators	Sources of verification	Assumptions
Results	Objectively verifiable indicators	Sources of verification	Assumptions
Activities	Means	Costs	Assumptions
			Pre-conditions

The leftmost column of the Logical Framework shows the project's hierarchy of objectives. The next 3 columns describes – for a given level of objective - how the achievement of the objective will be measured or verified (indicators), how this information will be obtained (sources of verification), and what are the external factors that could prevent the project from achieving the next level objective (assumptions).

Section 2: Objectives and Purpose of Monitoring and Evaluation

Monitoring is the process of routine periodic measurements of program inputs, activities and outputs undertaken during program implementation. It takes place at all levels of management and uses both formal and informal communications.

The objective of monitoring is to keep track of daily activities on a continuous basis in order to indicate as early as possible any shortcomings with regard to delivery of inputs and the execution of activities or production of outputs, in order that corrective measures can be undertaken in time. Monitoring provides relevant information, to indicate to those concerned stakeholders (donors, executing agency, project management, etc.) if resources are used according to plan, if project objectives are being achieved and more practically, if the operation performance and impact of a project is on the right track or whether corrective measures are necessary. Monitored information which indicates inadequate operation, shortfall in performance and discrepancy between prescribed objectives or predicted impact and those achieved provide a basis for decision-making by project management. Inadequate objectives are modified to give the project more valid direction or to rectify deficiencies and to bring the project back on track. As a management tool, the priority task of a monitoring system is the provision of information that contribute to effective decision making. As such, monitoring is primarily a device for improving project or program management.

By contrast, evaluation is the process by which program inputs, activities and results are analyzed and assessed, in order to determine the effectiveness, impact and relevance of the implementation program in the light of the stated program objectives. It takes an objective look at what project/program management has been doing and identifies the reasons for both progress and failure. The objective of evaluation is to maximize the project/program's impact, and identify lessons learned throughout the implementation period and how future work can benefit from these.

Monitoring is mainly an internal process carried out by those implementing the project whereas, evaluation is carried out by people - with specialist skills - external to the project.

Monitoring activities (record, systematize and report information regularly) help provide relevant insight for ongoing evaluations (e.g. in the regular meetings), and help build up necessary information for more comprehensive evaluations (e.g. the project mid-term program reviews).

Section 3: MMAS Stakeholders and their Information Needs

Stakeholders of the MMAS consist of different groups with different interests in the program. The Monitoring and Evaluation system, being an information system, should be able to address the information needs of all concerned stakeholders. To do this, an analysis of the types of decision and information required for making decisions at different levels is very important with respect to:

- who needs information?
- on what?
- for what type of decisions?

Furthermore, questions arising from the answers given to the above concerns will need to be addressed:

- what type of information?
- from what sources?
- how precise and frequent?
- collected how and by whom?
- how will it be processed and analyzed?
- how will it be reported and to whom?
- how long will data collection, analysis and reporting back take?
- what staff and equipment is required?
- how much will it cost?

The information matrix in Table 1 below gives an analysis of the uses of information and the purpose for which the intended user is going to use the results.

Section 3: MMAS Stakeholders and their Information Needs

Table 1: MMAS Information Matrix

User/ Stakeholders	Information Required	Purpose for which Information is Required	Form in which Information is Required	When is the Information Required	Potential Sources of Basic Information
I.GOVERNMENT AGENCIES	Policies and guidelines, Copies of law and its IRR, Progress reports on the implementation of the program, Status of Air Quality	Guidance, decision making and enforcement, IEC	Copies of Memoranda, IEC materials, Progress Reports	When necessary; to be disseminated during every GB assembly; Monthly	GB members, EMB-DENR, DOTC, MMDA, DOH & other concerned government agencies
II.GOVERNORS AND MAYORS (LGUs) / LEAGUE OF CITIES, MUNICIPALITIES, PROVINCES	Policies and guidelines, Copies of law and its IRR, Progress reports on the implementation of the program, Status of Air Quality	Guidance, decision making and enforcement, IEC	Copies of Memoranda, IEC materials, Progress Reports	When necessary; to be disseminated during every GB assembly, Monthly	GB members, EMB-DENR, DOTC, MMDA, DOH & other concerned government agencies
III.NON-GOVERNMENT ORGANIZATIONS	Policies and guidelines, Copies of law and its IRR, Progress reports on the implementation of the program, Status of Air Quality	Guidance, decision making, and IEC	IEC materials	When requested	DENR-PAO/EEID
IV. PRIVATE SECTOR / INDUSTRY	Policies and guidelines, Copies of law and its IRR, Progress reports on the implementation of the program, Status of Air Quality	Guidance, decision making, and IEC	Copies of Memoranda, IEC materials,	When requested	DENR-PAO/EEID

User/ Stakeholders	Information Required	Purpose for which Information is Required	Form in which Information is Required	When is the Information Required	Potential Sources of Basic Information
V. MMAS GB	Air quality data	Guidance & decision making	Metro Manila Air Shed Air Quality Status Report	Annually	EMB-DENR, TS, TWG 2
	Emission inventory	- do -	Updated emission inventory report on vehicle, stationary, point and area sources	Every 3 years	TS, TWG 1
	Emission monitoring data	- do -	Report on local emission factors	Once but subject to revision depending on technology development	TS, TWG 1
	Location of thoroughfares and pollution sources	- do -	GIS database	Once	TS, TWG 1
	Air quality data, emission inventory, emission monitoring data, Location of thoroughfares and pollution sources	- do -	Technical Reports on air quality carrying capacity of Metro Manila Air Shed	Once	TS, TWG 1
	Air quality data, morbidity data	- do -	DENR AO on updates on air quality guideline values	Every 2 years	TS, TWG 1, DENR-EMB, DOH
	CAA-IRR	- do -	Approved monitoring and implementation guidelines for CAA	Once	TS, TWG 1
	Guidelines	- do -	Approved guidelines for designation of attainment/non-attainment areas	Once	TS, TWG 1
	PETC policy	- do -	Draft policy to amend existing law on PETC	Once	TS, TWG 1
	Topics discussed	- do -	Proceedings of forums on CAA	Quarterly	TS, TWG 2
	Local Government Code (RA 7160)	- do -	Position paper supporting amendment to RA7160 regarding ENRO/MENRO creation for each LGU	Once	TS, TWG 2
	Competition guidelines	- do -	Competition guidelines and Proceedings of award ceremonies for best environmental/clean air practices	Annually	TS, TWG 2

User/ Stakeholders	Information Required	Purpose for which Information is Required	Form in which Information is Required	When is the Information Required	Potential Sources of Basic Information
	Topics discussed	- do -	IEC materials, news releases	Continuous	TS, TWG 2
	Training design	- do -	Training Modules; documentation of trainings conducted	Every 2 years	TS, TWG 2
	Topics discussed	- do -	Documentation of education campaigns conducted	Quarterly	TS, TWG 2
	Best practices	- do -	Documentation of best practices in CAA implementation	Continuing	TS, TWG 2
	Relevant CAA provisions	- do	Modules on CAA for integration in school curriculum	Continuing	TS, TWG 2
	Funding sources and requirements for access	- do -	Reports on funding sources identified and accessed	Continuing	TS, TWG 3
	Activities & budget	- do -	Work and Financial Plan	Annually	TS, TWG 3
	Financial data	- do -	Financial Reports	Monthly, Quarterly, Annually	TS, TWG 3

Section 4: Issues to be Monitored

Issues to be monitored include (1) progress of implementation, (2) environment of the project, and (3) its impact and effectiveness. These issues can be positioned on different levels of the intervention logic as presented below.

Table 2: Issues to be Monitored

	Progress/Environment	**Impact/Effectiveness**
Overall objectives		- Relevance of project - Impact of project
Project purpose		- Extent of achievement of Project Purpose - Effectiveness of project
Results	- Extent of achievement of results	- Sustainability of project
Activities	- Carrying out of activities	- Efficiency of activities
Means	- Delivery of means	
Assumptions	- Changes in environment	

Section 4: Issues to be Monitored

The other issues to be monitored are *institutional or management* issue and *collaborative* issue.

4.1 ***Progress of Implementation* Issues**

The *extent of the achievement of results* relates to how actual results compare with those planned in the GB Action Plan and the Work Plans using the established set of indicators.

The *carrying out of the activities* relates to how the activities performed compare with the milestones established in the Work Plans.

The *delivery of the means,* refers to the human resources and material inputs which have been made available to the project.

Changes in the *project environment* refers to external factors which may affect both the results, activities and means of the project as well as its impacts and effectiveness.

4.2 ***Impact/Effectiveness* Issues**

Relevance, concerns whether the results, purpose and overall objectives of the project/program are in line with the needs and aspirations of the beneficiaries, and with the policy environment of the project/program.

Impact, concerns whether there has been a change towards the achievement of the overall objective(s) as a consequence of the achievement of the project purpose. Both intended and unintended impacts are reviewed.

Effectiveness, describes how well the results achieved have furthered the achievement of the project purpose

Efficiency, concerns the relation between the results and means, i.e. whether the process of transforming the means into results has been cost-effective. Efficiency assessments are normally part of the planning and monitoring process. They may be included also in evaluations, especially if the evaluations cover management performance.

Sustainability - In terms of a single project, sustainability can be described as the degree to which the benefits produced by the project continue after the external assistance has come to an end. It is a central theme in all evaluation work and relates to all elements of the logical framework for a specific project.

4.3 ***Other* Issues**

Institutional or management issue pertains to the readiness of an agency to perform its duties as mandated by the CAA

Collaborative issue relates to how institutions are able to undertake together shared tasks under the Program.

In formal reporting, the issues to be monitored are addressed in progress and annual monitoring reports (Section VII).

Section 5: Project Heirarchy Objectives

Good design of a monitoring and evaluation system is based on the clear setting of measurable objectives and assumptions for the project and its components, for which indicators are defined. The use of the Logical Framework - in which the project's overall objectives, purpose, and results are expressed in operational and measurable terms by using indicators – meets this requirement ***Figure 2*** illustrates MMASGB's hierarchy of objectives which will be the subject of monitoring and evaluation.

Goals:

1. Improve the capacity of the Governing Board to formulate policies with sound technical information.
1. Intensify stakeholders' awareness and encourage genuine commitment and participation
2. Achieve self-reliance and sufficiency in fund generation and mobilization.

Purpose: To achieve clean air within the Metro Manila Air Shed

Policy research & formulation and evaluation & monitoring

Improved knowledge base to support planning & decision making

Updated guideline values/ emission standards

Adoption of appropriate control technology

Updated status of air quality

Advocacy to create public awareness and elicit commitment & participation

Changed behavior to mitigate and prevent air pollution

Production & dissemination of IEC materials, e.g. posters, leaflets, flyers, etc.

Mass media linkages & promotion thru radio, tv, print

Interpersonal approach thru the conduct of forums, seminars, workshops, trainings, etc.

Policy advocacy thru publications, social marketing, and social mobilizations

Resource generation to support activities within the air shed

Sufficient funds available to finance GB program and activities

Funding sources and other resources identified and accessed.

Work and Financial Plans developed, approved and implemented

Financial Reporting System on resource generation and utilization established and implemented.

Section 6: Indicators

Monitoring and evaluation requires a set of indicators. *Indicators* are evidence, measures or observable outcomes that demonstrate whether the project's objectives have been achieved. They are observable facts which provide evidence of progress towards the project goal. Indicators represent a logical extension of the project objectives. The objectives are expressions of the project's aims, the indicators are tools to further clarify and more precisely define the objectives and the desired impact upon the intended beneficiaries.

An indicator is used to measure progress and therefore should be objective, verifiable and clearly understandable to all stakeholders. It needs to be something that is visible, experienced or can be recorded (e.g. number of people benefited in a given area, etc.)

Indicators come in all shapes and sizes and they can be divided using the acronyms SMART and SPICED.

SMART indicators used for gathering information on verification and planning.

Properties	Definition
Specific	Reflect what the project intends to change.
Measurable	Must be precisely defined; measurement and interpretation is unambiguous. Provide objective data, independent of who is collecting data. Comparable across projects allowing changes to be compared.
Attainable	Achievable by the project and sensitive to change.
Relevant	Feasible time and money to collect data using chosen indicators. Relevant to the project in question. It relates to an explicit objective
Timebound	Describes when a certain change is expected.

SPICED indicators used when collecting subjective information related to change.

Properties	Definition
Subjective	Contributors have a special position or experience that gives them unique insights which may yield a high return on the evaluators time. What may be seen by others as 'anecdotal' becomes critical data because of the source's value.

Participatory — Indicators should be developed together with those best placed to assess them. This means involving a project's ultimate beneficiaries, but it can also mean involving local staff and other stakeholders.

Interpretable — Locally defined indicators may be meaningless to other stakeholders, so they often need to be explained.

Cross-checked — The validity of assessment needs to be cross-checked, by comparing different indicators and progress, and by using different informants, methods, and researchers.

Empowering — The process of setting and assessing indicators should be empowering in itself and allow groups and individuals to reflect critically on their changing situation

Disaggregated — There should be a deliberate effort to seek out different indicators from a range of

There are two major categories of indicators:

(1) *process indicators* which measure the extent to which the program has achieved its stated objective (a.k.a. *compliance indicators*); a subset of this is the *result or output indicators* that give evidence on results or output; and

(2) *impact indicators* which help to monitor the achievement and the impact of the program itself

For the selected set of indicators, sources or means of verification are established and provisions made for collecting data and managing records.

In the Logical Framework, process indicators are the main tool for monitoring progress towards achieving the program objectives. Table 3 below gives the indicators and the means of verification for each of MMASGB's hierarchy objectives.

Table 3: MMAS Hierarchy Objective Indicators

Objectives	Indicator	Means of Verification
Goals: 1. Improve the capacity of the Governing Board to formulate policies with sound technical information.	▪ Baseline data on air quality indicators ▪ Emission inventory of vehicle, stationary point and area sources ▪ Local emission factors ▪ Updated air quality guideline values ▪ Carrying capacity studies ▪ Policy guidelines	• Publication (annual) of MMAS Air Quality Status report • Updated emission inventory report • Report on local emission factors. • DENR AO • Technical report • Policy documents
2. Intensify stakeholders' awareness and encourage genuine commitment and participation	▪ Forum conducted ▪ Policy recommendations formulated ▪ Electronic-based IEC materials produced ▪ Training modules developed ▪ Trainers' training conducted ▪ Education campaigns conducted • Speakers Bureau created	• Report on forums conducted • Policy documents • IEC materials disseminated • Training manuals • Report on training conducted • Report • Report
3. Achieve self-reliance and sufficiency in fund generation and mobilization.	▪ Amount of funds generated ▪ Amount of funds utilized/ disbursed ▪ Financial reporting system implemented	• Financial reports • Financial reports • Financial reports generated
Purpose: To achieve clean air within the Metro Manila Air Shed	• Quality of air in MMAS	• Comparison with baseline data

Objectives	Indicator	Means of Verification
Key Result Area 1: Policy research and formulation and evaluation and monitoring		
• **Result 1**		
• **Sub-result 1:** Current status of air quality within the Metro Manila air shed determined	• Baseline data on air quality indicators (up to latest available)	• Annual publication of Metro Manila Air Shed Air Quality Status report
• **Sub-Result 2:** Air shed emission inventory established.	• Emission inventory of vehicle, stationary point and area sources	• Updated emission inventory report on vehicle, stationary, point & area sources
• **Sub-Result 3:** Local emission factors developed	• Local emission factors	• Report on local emission factors
• **Sub-Result 4:** GIS system reflecting the location of the plants and main thoroughfares of vehicles established	• Database that can be used for modeling purposes	• GIS database
• **Sub-Result 5:** Air quality carrying capacity studies conducted for the Metro Manila Air shed	• Carrying capacity studies	• Technical Reports on air quality carrying capacity of Metro Manila Air Shed
• **Sub-Result 6**: Policy recommendations on management of vehicular and stationary emissions formulated	• Policy recommendations	• Policy recommendations
• **Sub-Result 7:** Revised air quality guideline values	• Updated air quality guideline values	• DENR AO
• **Sub-Result 8:** Monitoring systems and procedures of Clean Air Act implementation within the Metro Manila air shed reviewed	• Revised monitoring and implementation guidelines	• Approved monitoring guideline
• **Sub-Result 9:** Basis for designation of attainment /non-attainment areas established	• Guideline documents	• Approved guideline
• **Sub-Result 10:** Existing policy on private emission testing centers (PETC) assessed.	• Draft policy for Congress to amend existing law	• Draft policy submitted to Congress

Objectives	Indicator	Means of Verification
Key Result Area 2: Advocacy to create public awareness and elicit commitment and participation		
• **Result 1:**		
• **Sub-Result 1**: Annual report on air quality within the air shed packaged and published	• Annual Report	• Annual Report published
• **Sub-Result 2:** Forums on the provisions of CAA among the stakeholders conducted.	• Forums conducted	• No. of forums conducted; proceedings
• **Sub-Result 3**: ENRO and MENRO created for all municipalities.	• Policy recommendation	• Position paper supporting Amendment to RA7160 regarding ENRO/MENRO being required for all LGUs submitted
• **Sub-Result 4:** Anti-Smoke Belching Units (ASBU) created for all municipalities & guidelines in testing during apprehension formulated.	• Policy recommendation	• ASBU created for every LGU; guidelines for testing during apprehension in place
• **Sub-Result 5:** Program to recognize best environ-mental/clean air practices in all municipalities developed	• Competition guidelines	• Best environmental/clean air practices recognized
• **Sub-Result 6:** Electronic-based IEC materials (interactive games and website)developed & maintained; news releases continued	• Electronic-based IEC materials; news releases	• No. of IEC materials produced & disseminated; No. of news releases published
• **Sub-result 7:** Trainers' training to assist in advocacy conducted.	• Trainers' training conducted; Training Modules on salient features of CAA developed	• No. of trainers' training conducted; documentation; No. of training modules developed
• **Sub-Result 8:** Education campaigns for transport operators/drivers conducted	• Education campaigns conducted	• No. of education campaigns conducted; documentation; No. of target participants reached
• **Sub-Result 9:** Database on best practices in the implementation of the CAA established.	• Database on best practices	• No. of best practices documented / disseminated

Objectives	Indicator	Means of Verification
• **Sub-Result 10**: Speakers bureau on CAA created.	• Speakers Bureau created	• No. of active members in the speakers bureau
• **Sub-Result 11:** Integration of CAA in the school curriculum coordinated with DepEd.	• CAA modules integrated in science and social studies curricula at the elementary level	• No. of modules approved for integration in the curriculum
Key Result Area 3: **Resource generation to support activities within the air shed**		
• **Result 1:**		
• **Sub-Result 1:**Funding sources & other resources identified & accessed**.**	• No. of funding sources identified and accessed • Amount of funds generated	• Progress reports
• **Sub-Result 2:** Work & Financial Plans developed, approved & implemented.	• No. of WFP developed, approved and implemented. • Amount of funds budgeted. • Amount of funds utilized/disbursed.	• WFPs • WFPs • Financial reports
• **Sub-Result 3:** Financial Reporting System on resource generation and utilization established & implemented	• Financial reports prepared and submitted.	• Financial reports

6.1 Activity Input-Output Indicators

The other level that needs indicators is the activity level. The elements to be monitored are the inputs and outputs of each activity. The indicator that is suggested to be used as output indicator is its accomplishment, i.e. whether it was undertaken as planned or not. The means of verification for activity execution is the project report whereby the achievement of planned activities are reported, i.e. date by which a certain activity is completed. Also the report produced from the activity undertaken is a means of verification, e.g. survey reports, assessment report, financial records, etc.

The indicators for input level are:

- The number of equipment procured and received,
- The amount of budget expenditure against budget
- The amount of staff time spent of activities
- The availability of technical assistance required

Input indicators can be verified by means of :

- Project equipment and facilities inventory:
- Financial reports
- Staff field visit reports

Table 4 shows the type and elements of input-output that are to be monitored:

Table 4: Input and Output Indicators

Type	Elements to be Monitored	Data Collection Method	Data Analysis	Frequency
Inputs	Staff - Arrival date - Leave	Personnel records Personnel records	N/A	Daily
	Equipment - Arrival date - Quality - Cost - Stocks held - Maintenance	Records Records Records Physical inventory Records		Daily
	Other Project Inputs - Arrival date - Quality - Cost - Stock held	Records Records Records Records		Daily
Activity:				
KRA 1				
Activity/Process 1: Determine current status of air quality within the Metro Manila air shed	Air quality status	Monitoring station data	Compare with air quality standards	Monthly
Activity/Process 2: Establish air shed emission inventory	Mobile, point and area sources of pollution	Survey		Every 3 years
Activity/Process 3: Develop local emission factors	Report on local emission factors	Emission test data	Calculations	Once
Activity/Process 4: Establish a GIS system reflecting the location of the plants and main thoroughfares of vehicles	GIS database	Survey	N/A	Once
Activity/Process 5: Conduct air quality carrying capacity studies for the Metro Manila Air shed	Technical Reports on air quality carrying capacity of Metro Manila Air Shed	Dispersion modeling	Receptor analysis	Once

Type	Elements to be Monitored	Data Collection Method	Data Analysis	Frequency
Activity/Process 6: Formulate policy recommendations on management of vehicular and stationary emissions	Policy recommendations	Survey	N/A	As needed
Activity/Process 7: Review and revise the standards and air quality guideline values	DENR AO	Reports	N/A	Every 2 years
Activity/Process 8: Review of monitoring systems and procedures of Clean Air Act implementation within the Metro Manila air shed	Approved monitoring guideline	Reports	N/A	Once
Activity/Process 9: Establish basis for designation of attainment /non-attainment areas	Approved guideline	Reports	N/A	Once
Activity/Process 10: Assess existing policy on private emission testing centers (PETC)	Draft policy submitted to Congress	Reports	N/A	Once
KRA 2				
Activity/Process 1: Packaging of annual report on air quality publication	Status of production of publication	Progress Report	N / A	Annual
Activity/Process 2: Conduct forums on the provisions of CAA among the stakeholders	No. of forums conducted	Progress Report, Proceedings	Issues & concerns raised during the forums	Quarterly
Activity/Process 3: Advocate for the creation of ENRO and MENRO for all municipalities	No. of position paper	Reports	N / A	Once
Activity/Process 4: Advocate for the creation of Anti-Smoke Belching Units (ASBU) for all municipalities &	Municipal Resolutions	Minutes of SB meetings	N / A	Once

Type	Elements to be Monitored	Data Collection Method	Data Analysis	Frequency
formulation of guidelines in testing during apprehension				
Activity/Process 5: Develop a program to recognize best environmental/clean air practices in all municipalities	Competition guidelines, No. of entries	Reports	N / A	Annually
Activity/Process 6: Develop & maintain electronic-based IEC materials (interactive games and website); continuing news releases	No. of electronic-based IEC materials, no. of news releases written & published	Samples of IEC materials	N / A	Continuous (eg.CD, VCD, DVD, etc)
Activity/Process 7: Conduct trainers' training to assist in advocacy	No. of trainings conducted; no. of participants	Reports	N/A	Every 2 years
Activity/Process 8: Conduct education campaigns for transport operators/drivers	No. of IEC campaigns for transport operators & drivers, no. of participants	Reports	N/A	Quarterly
Activity/Process 9: Establish database on best practices in the implementation of the CAA	No. of best practices documented	Reports	N/A	Continuing
Activity/Process 10: Create a speakers bureau on CAA	No. of active experts in the pool	Reports	N/A	Once but continually updated
Activity/Process 11: Coordinate with DepEd in the integration of CAA in the school curriculum	No. of modules approved for integration in the curriculum	Sample of modules	N/A	Continuing
KRA 3				
Activity/Process 1: Identify & access funding & other sources	% of task achieved Activity cost	Internal reports Accounting records	Accounting & Audit	Monthly

Type	Elements to be Monitored	Data Collection Method	Data Analysis	Frequency
Activity/Process 2: Develop WFP	% of task achieved Activity cost	Internal reports Accounting records	Accounting records	Monthly
Activity/Process 3: Monitor resource utilization.	% of task achieved Activity cost	Internal reports Accounting records	Accounting records	Monthly

6.2 Impact (Technical)/Effectiveness Indicators

Impact indicators refer to the impact of the program itself. Impact indicators are concerned with the goal hierarchy level. The ultimate goal of the MMAS GB is to attain clean air for the benefit of the stakeholders within the MMAS. The issues of relevance, impact, effectiveness, efficiency and sustainability will be addressed when an evaluation of whether the MMAS GB's ultimate goal has been attained is conducted. Following is a tentative list of impact indicators that may be used in the evaluation:

- Improvement in ambient concentrations of criteria pollutants
- Reduction of emissions from stationary and mobile sources
- Reduction in the number of people exposed to high ambient concentrations
- Reduction of air pollution-related illnessess
- Improvement in number of vehicles that pass the emission test
- Improvement in traffic flow
- Increase in investment in air quality improvement

6.3 *Other Issues* Indicators

Institutional indicators pertain to the readiness of an agency to perform its duties mandated by the CAA. Such readiness is demonstrated by establishing within the agency of an organization complete with skilled staff and equipment needed to carry out the specified tasks and the setting up of administrative structures like budgets and offices to sustain the effort.

Collaborative indicators are those that gauge the level, extent, and coverage of how institutions are able to undertake together shared tasks under the program. Initially, this is manifested by the formation of joint action teams and the forging of memoranda of agreement between/among two or more agencies assigned to the same responsibilities. Other indicators include joint policy statements and jointly written reports.

Section 7: Data Collection and Analysis

Choosing the tools and methods of data gathering is dependent on the focus of evaluation, the capacity and skills of those involved and the resources available. For each goal and outcome, a specific data collection technique should be identified that can best provide the necessary information. Ensure that the methods used in collecting the data are appropriate, are understood by all and statistically reliable. The following are the various methodologies available for data gathering:

- record analysis
- observation
- interviews/focus group
- questionnaires and surveys
- special studies

Indicators of inputs and processes should come from project records. To measure output and impact may require the collection of data from sample surveys where quantifiable aspects are measured using standardized questionnaires and interviews or special studies (including, where appropriate participatory methods). Data collection on qualitative aspects is often carried out using direct observation by the evaluators. Since the evaluator cannot spend as a long time with the beneficiaries, the methods used are simplified. Group interviews, key informant or resource person interviews are cheap and quick to undertake. Choosing the ones to be interviewed and interpreting their views correctly, however, requires a lot of knowledge and skills from the evaluator.

In some evaluation work, the methodology is normally only outlined in the draft TOR for evaluation. Evaluators are asked to elaborate the methodology in their proposal on how to carry out the evaluation. Evaluators also propose resources required for using the proposed methodology. The team leader of the evaluation prepares a work plan in consultation with the management team of the intervention to be evaluated and other stakeholders.

Establishing a database is not the end. Data should be updated frequently to make it valid and relevant to decision making. It therefore needs to be updated to the proper timing for decision making. Data collection and updating should therefore be lined up with the frequency of the communication of information to the user.

Data collected should be analyzed and interpretations made to facilitate decision making. Valuable data can be rendered useless by inability to turn them into usable information. For the decision makers, simple explanatory analysis should be used to carefully present tabular materials, graphs or maps and not complex statistical techniques.

Section 8: Monitoring Activities

The GB Action Plan is not precise in relation to activities/tasks and means. It usually is in the form of a “process document”, with emphasis on goals and objectives. During implementation, the Action Plan is translated into Work Plans. The Work Plans are derived from the Logical Framework matrix for the program. The activities, expressed as processes in the Action Plan, are broken down into more detailed tasks for which timing is specified. Operational responsibility for each task is fixed. The Work Plan is presented together with a budget which details the delivery of means.

As mentioned earlier, the issues to be monitored are addressed in *Progress Reports* and in *Annual Monitoring Reports.*

8.1 Progress Reports

The extent of the achievement of *results* is monitored by comparing the actual results with those planned in the GB Action Plan and the Work Plans using the established set of indicators.

The carrying out of the *activities* is monitored by comparing the activities performed with the milestones established in the Work Plans. The indicators are derived from the project records, e.g. dates of starting and completing a specific activity.

The delivery of the *means,* the human resources and material inputs, is monitored by using indicators that are either physical, e.g. appointment of staff, or financial, e.g. funds which have been made available. The data is derived from the project accounts and records.

Changes in the *project environment* may affect both the results, activities and means of the project as well as its impacts and effectiveness, The changes are monitored by assessing the likelihood of *assumptions* and *risks* (which are defined in project planning) to materialize, and by observing changes in the external environment of the project in general.

The following topics shall form the *minimum common content* for the Progress Reports:

- Extent of achievement of result
- Carrying out of activities
- Delivery of means
- Possible changes within the sector and in the project environment in general (including likelihood of assumptions and risks to materialize), and their effects on the project
- Institutional and collaborative issues

- Proposal for changes in the planned activities, their justification and, if necessary, a request to other stakeholders to approve the change formally.

The emphasis in the Progress Reports shall be on reporting results and changes in the environment to other levels of management using appropriate indicators. Activities and means are reported only in a summarized form.

The Progress Report is normally prepared monthly and quarterly. The last quarter's report shall cover the whole year and is included in the Annual Monitoring Report. The reports are approved by the Execom (?).

8.2 Annual Monitoring Reports

Certain elements of the project, such as its overall objectives, factors ensuring sustainability or compatibility with the strategic goals of the DENR, are not addressed in the progress reports unless there is a specific reason to do so. However, they must be under continuous review and assessed, at least, in annual monitoring reports.

Relevance is monitored by assessing the correspondence of the project with stakeholders´ priority needs in the changing project environment.

Overall objective, which describes the long-term development goal towards which the project contributes, and *Project purpose*, which states the direct effects of the project on the beneficiaries, are subject to *impact* and *effectiveness* monitoring. *Impact* can normally be assessed after the project has been implemented for a few years. Although the assessment can be a costly and complex task, it is the backbone of any evaluation exercise and must be addressed already during planning and implementation.

Project purpose is unlikely to materialise until the end of the project. However, the extent to which the project purpose has been (or is likely to be) achieved must be assessed. This cause-effect relation between the results achieved and the fulfillment of the project purpose as a consequence describes the *effectiveness* of the project.

Factors ensuring *sustainability* are monitored continuously using established indicators and/or direct observation. This includes an assessment of changes in the sector policies and in the institutional framework.

Efficiency concerns the relation between the results and means i.e. whether the quantity and quality of results achieved justify the quantity and quality of means used. Efficiency is monitored using cost-based indicators, e.g. the cost per square meter, and/or performance-based indicators, e.g. the time used for a specific task.

The issues to be monitored shall form the *minimum common content* for the Annual Monitoring Report, as follows:

1. *Summary*
2. *Proposals for changes* in the project, if any, and their justification
3. Correspondence of the project with the present priority needs of the beneficiaries, i.e. *relevance*
4. To the extent possible, assessment of *impact* of the project towards its long-term development goal
5. Extent of achievement of the *project purpose* as a consequence of the project results, i.e. *effectiveness*
6. Extent of achievement of *results*
7. Carrying out of *activities* (and delivery of *means,* if needed*)*
8. Possible changes in the project environment, including materialization of *assumptions* and *risks*, and their effects on the project
9. Factors ensuring *compatibility* and *sustainability*
   - 9.1 Compatibility with the strategic goals for Finnish development cooperation: reduction of poverty, promotion of equality, democracy and human rights, etc.
   - 9.2 Policy environment
   - 9.3 Economic and financial feasibility
   - 9.4 Institutional capacity
   - 9.5 Socio-cultural aspects
   - 9.6 Participation and ownership
   - 9.8 Environment
   - 9.9 Appropriate technology
10. Assessment of the *efficiency* of the implementation

The monitoring reports are normally prepared *annually*. The last quarterly progress report covers the whole fiscal year and is included in the annual monitoring.

Section 8: Monitoring Activities

In progress reports, it is the GB's management team reporting their own understanding of the results achieved and the activities performed. In monitoring reports, the beneficiaries' and other affected groups' views and perceptions are included, which are compiled and reported by the management team. Monitoring reports must make a clear distinction between the management team's and other stakeholders' views on the monitoring issues.

The management team must assess the project objectively and report even the critical views of other stakeholders. The management team should keep in mind that external mid-term reviews, evaluations and audits will address the same issues. Discrepancies between the external assessments and the management team's monitoring reports are major criteria in evaluating the management team's performance.

Table 5 below gives a summary of the monitoring activities.

Table 5: Summary of Monitoring Activities

Activity	Input by/From	Data Processing Report Writing	Submitted to / Feedback from	Frequency
1. Monthly progress report	ExeCom, TWGs, TS	TS	DENR-EMB	Monthly
2. Quarterly progress report	GB, TS	TS	DENR-EMB	Quarterly
3. Annual monitoring report	GB, TS	TS	DENR-EMB	Annually
4. Annual Work Plan & Budget	TS / Log Frame / Planning sessions	TS, TWG 3	DENR-EMB, DBM, Donors	Annually
5. Financial Reports	Accounting/financial records	TS, TWG 3	DENR-EMB, DBM, Donors	Monthly, Quarterly, Annual
6. Special reports (e.g. Commissioned Reports)	Consultants	Consultants	GB, DENR-EMB	As needed
7. Execom meetings	Work Plans & Budget, Progress reports, Annual monitoring report, Formulation documents, Project visits observations	TS, TWGs	DENR-EMB	Monthly

Activity	Input by/From	Data Processing Report Writing	Submitted to / Feedback from	Frequency
8. Field work & supervision	Staff's findings & observations	Reports of field work	TS	Per field work

Section 9: Modes of Communicating Monitoring Results

Monitoring results should be communicated in a way that could be readily understood and used. Outputs from the management information system can be communicated in the form of : (1) written reports, (2) verbal presentations, and (3) visual displays.

9.1 Monitoring Reports

Following are the recommended types of written reports on monitoring:

- Progress Reports: Every month and every three (3) months (This is the minimum reporting that should be required for the project implementers to be accountable.
- Annual Monitoring Reports Annually
- Financial Report On a monthly basis. A basic financial report should be made transparent to avoid accusation of mismanagement of funds.
- Audit Report: Annually
- Tour Reports of Field Visits These will be prepared by field staff. They will give observation and impressions from the field.
- Reports from Project Visitors: Project management should insist e.g. from donor etc. to submit a short report giving their impressions; the more external comments available, the fuller the impression one can get of the project.
- Reports by external Consultants: Where consultants are employed, they should maintain their contact with the project over a long period and participate in the reporting, reviewing and evaluating the process rather than be employed for short single visits. For this reason, local consultants have the advantage of being readily accessible for consultations.

Section 10: Evaluation

Evaluation generally performs two functions: (1) it is a learning tool to maximize the program's impact and improve future work and programs through feedback of lessons learned, and (2) it provides a basis for accountability. Donor agencies/countries, consultants/technical advisers and administrators are interested to improve aid policy, program and projects through evaluations. Their emphasis is on lessons to be learned for the future - rather than on whether projects succeeded or failed. Accountability is wanted by the Parliament, politicians, media, pressure groups etc. Emphasis is on success or failure in light of originally-defined objectives, and the reasons behind the successes or failures.

Baseline studies can be seen as a first step in the evaluation process. Baseline study is a collection of data, carried out normally during the project preparation phase, which describes and analyzes the socio-economic and other conditions in the project area. The indicators set through a baseline study are used at a later date as reference points to demonstrate that an objective of the project has been reached and that a change has occurred.

10.1 Types of Evaluation

Following are the different types of evaluation and other related assessments:

- *Project evaluation* is the most common evaluation type. If the project design is well done, the evaluator can base his work on fixed, clearly defined objectives with relevant and measurable indicators.

- *Program evaluation* will become more common with the planned shift away from individual project assistance towards program assistance. Program assistance may take the form of general program assistance (such as balance of payments support or import support, or sector program assistance), which is targeted at a particular sector and often linked to specific policy conditions. Program assistance involves many donors, and the partner country's own investments, and is difficult to evaluate without, at the same time, forming a judgment about the reform effort in general. The objectives of such reforms are often not as clearly stated as they generally are with specific projects, whilst success or failure may be influenced more by a number of external factors rather than by the actions taken by the partner country. For these reasons, program evaluations should be made jointly not only with the partner country but also with other donors.

- *Other non-project evaluations* include *policy evaluations* on issues such as the use of concessional credits or a NGO support program, and *thematic evaluations*, which focus on issues such as participation, gender or cost effectiveness. In *management evaluations* it is the organisational structure and behaviour under scrutiny.

Other related assessments include *audits*, which assess the conformity of the intervention to procedures, norms and criteria established in advance by the financiers. Since issues such as management performance are under scrutiny, audits can be considered part of the external monitoring of a project***.***

Reviews are mid way between monitoring and evaluation, as they involve a fresh look at the objectives, design and performance of a project. Compared to evaluations, reviews are more limited in scope, time and focus. Reviews are used to verify the relevance, sustainability and efficiency of the project, and that the project is going in a direction where the intended effects and impacts will be reached. There is, however, less emphasis on lessons learned or accountability.

Project Completion Reports document the status of the project at the time of the completion of the assistance. They can be seen as a link between monitoring and evaluation (last stage of monitoring and first stage of evaluation).

10.2 Issues to be Evaluated and their Relation to the Logical Framework

In evaluating a project or program, definition of issues to be addressed is essential. Following are the basic questions that need answers during the evaluation:

a. *Does the project make sense within the context of its environment (**relevance**)?* This refers to whether the results, purpose and overall objectives of the project are in line with the needs and aspirations of the beneficiaries, and with the policy environment of the project.

b. *What has happened (or is likely to happen) as a consequence of the project (**impact**)?* This relates to whether there has been a change towards the achievement of the overall objective(s) as a consequence of the achievement of the project purpose. Both intended and unintended impacts are reviewed.

c. *To what extent has (or is likely to be) the project purpose been achieved, and to what extent is the achievement a result of the project (**effectiveness**)? This* describes how well the results achieved have furthered the achievement of the project purpose.

d. *Does the quantity and quality of the results of the project justify the quantity and quality of the means used for achieving them (**efficiency**)?* This concerns the relation between the results and means i.e. whether the process of transforming the means into results has been cost-effective.

e. *What has happened (or is likely to happen) to the positive effects of the project after the external assistance has (or will) come to an end (**sustainability)**?* In terms of a single project, sustainability can be described as the degree to which the benefits produced by the project continue after the external assistance or after the current program has come to an end. It is a central theme in all evaluation work and relates to all elements of the logical framework for a specific project.

Each of the foregoing evaluation issues has a direct relation to a specific level or levels of the intervention logic and the logical framework as shown in **Figure 3** below:

Figure 3: Evaluation Issues and the Logical Framework

MEANS	ACTIVITIES	RESULTS	PURPOSE	OVERALL OBJECTIVE(S)
SUSTAINABILITY: The extent to which the positive effects of the project continue after the external assistance has come to an end.				
		RELEVANCE: The degree to which the project is justified in relation to the needs of the beneficiaries and the policy environment of the project		
			IMPACT : The intended and unintended impacts of the project.	
		EFFECTIVENESS: The extent to which the project purpose has been achieved.		
EFFICIENCY: The cost-effectiveness of transforming the means into results.				
INTERVENTION LOGIC				

10.3 General Requirements for the Conduct of an Evaluation

When conducting an evaluation, one must take into account the following general requirements: (1) impartiality, (2) independence, (3) credibility and (4) usefulness, as well as the purpose of the evaluation and the resources available.

Common practice dictates that people external to the project with specialist skills carry out the evaluation. However the current trend is towards a more participatory approach involving a broad cross-section of those involved in the project with or without consultants taking part.

Credibility of an evaluation depends on the expertise and independence of the evaluators and the degree of transparency of the evaluation process. The evaluators should have the required expertise to make relevant and realistic conclusions and recommendations based on the findings. The reliability of the findings, in turn, depends on the empirical evidence the evaluators can show to support the findings, including sources of information. Evaluation reports must show the evidence and clearly distinguish between the findings and conclusions/recommendations.

Besides the skills of the evaluators, the selection of appropriate methods for data collection and analysis affects the quality. A wide range of relevant methodologies and techniques is presented in evaluation and scientific literature. Only a few examples of issues to be considered in the selection of an appropriate methodology are briefly described here.

Identifying the standards against which performance is to be evaluated is important. Without any comparison with a control group or other interventions, the result is quite predictable: the project had some impact on various aspects but could have done better in others. Using a control group which has not been affected by the project and comparing it with a group of project beneficiaries before and/or after the project makes the comparison possible.

10.4 The Evaluation Report

Evaluation report must, in principle, answer the questions or issues presented in Chapter X.2 above. The suggested outline for the Evaluation Report is presented is presented below. The same format is used for mid-term reviews and for final evaluations, which take place after the donor intervention or the ongoing program has already ended. The scope in mid-term reviews, however, may vary and the evaluators may have to rely more on indicators which give an "early signal" of progress.

Following is the recommended outline for the **Evaluation Report**:

- Executive summary. 3-5 pages clearly separated from the rest of the report. Especially, conclusions and recommendations.

- Subject of the evaluation. Brief history of the intervention, changes in the project environment and their effects on the intervention, materialisation of risks and assumptions, etc.

- Background of the evaluation. Purpose of the evaluation, methodology used, limitations of the evaluation, etc.

- Evaluation issues
  - General evaluation issues:
    - Correspondence of the project with the priority needs of the beneficiaries i.e. *relevance*.
    - Assessment of *impact* of the project towards its long-term objectives.
    - Extent of achievement of the project purpose as a consequence of the project, i.e. *effectiveness*.
    - Assessment of the *efficiency* of the implementation.
  - Specific evaluation issues
    - Institutional or management issues
    - Collaborative issues

- Factors ensuring sustainability and compatibility
  - Compatibility with the CAA's strategic goals.
  - Policy environment
  - Economic and financial feasibility
  - Institutional capacity
  - Socio-cultural aspects
  - Participation and ownership
  - Environment
  - Appropriate technology

- Conclusions and recommendations. Suggestions for operational improvements and developmental lessons learnt.

Following the integrated approach to project cycle management, the standard format for evaluation reports is compatible with the project document and monitoring report formats.

Both positive and negative findings are reported. To the extent possible, the findings are supported with empirical evidence.

Conclusions and recommendations are based on the findings and clearly separated from them. To ensure that a conclusion or recommendation is relevant and realistic, it must be discussed with the stakeholders concerned before it is presented. Operational recommendations which are relevant only for the intervention in question are separated from the lessons learnt, which are relevant also for other interventions or for designing future policies.

10.5 Dissemination of Conclusions and Recommendations

The conclusions, recommendations and lessons learnt as contained in the Evaluation Report, are disseminated using different techniques; e.g. organisation of evaluation seminars during, and after, the evaluation exercise. In the seminars, evaluation results are presented by the evaluators and discussed by different stakeholders. If organised during the evaluation exercise, the seminars can be used for planning of evaluation work.

Other dissemination techniques used include printing of evaluation summaries, bibliographies and synthesis reports. While the evaluation seminars are aimed for the stakeholders who have a special interest and/or an involvement in the interventions, the printed material is meant for broader circulation. This includes the media and the public, as donors, if any.

The officer-in-charge of the evaluation must ensure that the objectives are clear in who will use the conclusions and recommendations, and for what purpose. This, together with an indication of seminars to be organised or special summaries to be written, gives the evaluators a basis for structuring their conclusions and recommendations.

The quality of the evaluation report, both in terms of contents and presentation, determines how easy or difficult the dissemination process will be thereafter. Concise but profound reports with good summaries, and organization of participatory presentation seminars, contribute to an effective dissemination.

10.6 Approval and Operationalization of Recommendations

The application of the evaluation results to existing or new interventions is in fact one of two main purposes of evaluation. All evaluation efforts are wasted if there is no change in organizational behavior as a consequence. Different institutional mechanisms are used for operationalizing the evaluation results.

In case of mid-term reviews, where the emphasis is in giving direction to the project, there is instant feedback through different levels of project management, such as steering committees or annual supervisory board meetings. They study, approve or disapprove, and put into action the recommendations. Responsibility for bringing relevant information from mid-term reviews to the attention of other projects lies with the DENR-EMB officer-in-charge of the mid-term review.

In the case of final evaluations, the emphasis is more on lessons learnt for new projects and for future strategies. The Head of EMB shall play a central role: all those involved in planning new projects, or in designing strategies, find relevant evaluation information there. As an example, planners of a new intervention must consult evaluation reports made earlier on similar interventions.

Evaluation results are also used in staff training, both on the level of individual interventions and within organizations in general.