# HOW TO INCREASE THE QUALITY AND IMPACT OF THE ENVIRONMENTAL AUDIT

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## 1.0 Introduction

Environmental audit is an independent and objective oriented examination of whether the practice complies with expected standards. Broadly, environmental audit means a check on some aspects of environmental management, and implies some kind of testing and verification. Environmental audit may be on financial, compliance or performance audit perspective.

This paper focuses on ***how the quality and impact of the conducted environmental audit may be increased***. Specifically the paper aims at referring the environmental audit on performance audit perspective and methodology used, results of the audit, success stories and lessons learned.

## 2.0 Framework for Quality Environmental Audits

Quality refers to the standard of something as measured against other things of a similar kind; the degree of excellence of something; or a distinctive attribute or characteristic possessed by someone or something.

Quality audits involve auditors:

- exhibiting appropriate values, ethics and attitudes;
- being sufficiently knowledgeable, skilled, and experienced; and
- having sufficient time allocated to them to perform the audit work.

These are called inputs factors. Within these input factors, quality attributes are further organized between those that apply directly at the audit engagement level, individual SAI level and to all SAIs as good practices.

At the engagement level, the engagement team is required to recognize that the audit is performed in the wider public interest; and the importance of complying with ethical requirements. They are also required to exhibit objectivity and integrity, be independent, professional competence and due care, and professional skepticism.

The SAI's culture has an important influence on the values, ethics and attitudes of top management and other members of the engagement team. Key attributes in relation to creating a culture where audit quality is valued are:

- governance arrangements that aims to safeguard the SAI's independence;
- necessary personal characteristics are promoted through appraisal and reward systems supporting audit quality;
- SAI emphasizes the importance of providing staff with continuing professional development opportunities and access to high-quality technical support; and
- promotion of a culture of consultation on difficult issues by a SAI.

INTOSAI has an important influence on the culture within SAIs and the values, ethics and attitudes of audit managers and other members of the engagement team. INTOSAI has issued International Standards that SAIs need to adhere to in order to ensure quality audit is undertaken.

Quality audits involve auditors applying a rigorous audit process and quality control procedures that comply with laws, regulations and applicable standards. These are process factors. The quality audit depends on the methodology used in conducting the audit, the quality of the people forming an audit team and the knowledge of the subject matter. Audit methodology that complies with professional standards, adopts best practices, and reflects key principles of quality assurance and quality control enhance the value and help to bring about improvements.

To apply audit methodology as intended and complete audits in a timely manner requires strong audit teams, consisting of the right people with the right skills for each project. The most effective performance auditors usually possess a combination of key skills, particularly professional judgment, critical thinking, creativity and innovation, and the ability to lead and supervise, and to manage relationships and communications, both internally and externally.

Different stakeholders receive different outputs from an audit. These outputs are likely to be evaluated in terms of their usefulness and timeliness, and be seen as aspects of audit quality.

## 3.0 Benefits accrued from the improved quality of environmental audit

The benefits accrued from the improved quality of environmental audit is that SAI will be responsive to changing environments and emerging risks and also communicating effectively with stakeholders. A quality environmental audit will effectively provide an indication to an institution's management about how the environmental organization system and equipment are performing hence safeguard the environment. The objective of safeguarding the environment and arresting its degradation cannot be achieved in isolation, and without the whole -hearted and close cooperation of the entire world community.

While environmental audits are designed to identify environmental problems, SAI's objective is to audit the government's or public sector's responses to such problems. SAI has understood the main biological resources in the country and the threats to those resources, it needs to understand what the government is doing to mitigate or prevent problems related to these resources (what programs exist and which policy tools are used) and who is responsible.

Through public audit, assurance is provided to the stakeholders as to whether government programs as regards to environment are being implemented in an efficient and effective manner with due regard to economy, efficiency and effectiveness.

## 4.0 Relationship between the improved quality and increased impact of the environmental audit

The impact of environmental audit may be measured based on the assessment of the value addition or the positive difference made by audit in relation to compliance to the laws, rules and regulations, the standards of financial propriety and performance. Impact of environmental audit as championed by the Supreme Audit Institutions (SAIs) may be observed on the improvement on the environmental management through implementation of the audit recommendations. Based on the environmental audit reports, citizens are able to hold the custodians of public resources accountable. In this way SAIs promote the efficiency, accountability, effectiveness and transparency of public administration.

Generally, the increase of quality and impact on the environmental audit depends on the coverage, Selection and Objective of Performance Audits; Publication and Dissemination of Performance Audit Report; and Follow-up on Implementation of Performance Audit Observations and Recommendations.

SAIs add value primarily through their outputs – relevant, user-friendly, accurate and timely information and environmental audit reports to the government and other stakeholders. This enables the audited entities to take action to address the issues concerned and contribute towards improving the governance of the public sector. Monitoring the actions taken by the auditees also adds value.

The quality environmental audit results into practical and positive recommendations in the audit reports, which can be easily understood and appreciated by the audited entities hence improved impact through value addition.

## 5.0 What should be done to increase the impact of environmental audits?

To have an impact, auditors must select the right issues to audit, prepare a report that addresses the main questions convincingly, and communicate their conclusions effectively—all of which require a sound knowledge of the subject matter. For environmental auditors, this generally means having a good understanding of current environmental issues and of relevant environmental laws, regulations, policies, standards, and international agreements (such as those involving climate change, protection of endangered species, and waste management). It may also involve consulting advisors and specialists who have related experience with the audit topic.

## 6.0 Improving the quality and impact of the Environmental audit - A case of the National Audit Office of Tanzania (NAOT)

In the conduct of environmental audits within NAOT the following specific issues are considered at different stage of an audit process in order to safeguard the quality of the environmnetal audit:

The selection of audit topics is based on a three years strategy and annual operational plan of the Performance and Specialised Audits Division. A pre-study is conducted to find indications of problems and design the audit. Key stakeholders are identified including engagement of scientists and subject matter experts.

During the main study, the audit team provide the audited entity with a proper introduction. Involvement of the audited entity and find arguments from various stakeholders is always emphasized. Focus group discussions may be used is some of the audit as one of the method of data collection. Invited participants of the focus group deliberate on whether the issue under discussion is really a problem, what could be the major cause and what should be done to improve the situation.

As a part of quality control, the draft report is reviewed by the team not participated in the audit – *'peer review'*. The draft is also subjected to subject matter experts who are assigned the role of reviewing and providing comments on whether:

- objectives, scope, description of the program audited and management responsibility have been clearly communicated to the reader;
- findings in the report have got all elements namely *Conditions, Criteria, Cause and Effects*, and conclusion made against each objective; and
- report and its recommendations will add value on how the government operates. i.e recommendations made convey what needs to be addressed;

Proper clearance with the audited entity is conducted. Draft report is sent to audited entity(ies) 21 days before exit meeting. The report is discussed in the exit meeting. Draft report including comments from the audited entity is submitted to the top management for review. The Controller and Auditor General issues final approval for the report to be printed and published upon being satisied that the report meets all quality requirements.

## 7.0 Challenges and Lesson learned

While striving to improve the quality and impact of the environmental audits, the following challenges were experienced: (1) unavailability of reliable data and inadequate awareness of the environmental audit, (2) Poor record on environmental issues in some of Government offices.

To overcome the said challenges NAOT auditors do compute estimated data using the set factor if in place. Likewise, some of the auditees were questioning the mandate of conducting an environmental audit while there is anaother institution *'National Environmental Management Council (NEMC)'* responsible for the carrying out of the environmental audit. Continuous awareness sensitization is unavoidable in order to minimize the expectation gaps.

## 8.0 Conclusion

For an audit to bring about the intended impact, proper planning is very important. The audit team has to define clearly area of focus based on the well searched and analysed information. The use of Subject matter expert needs also to be appropriately considered in order to give aasurance on the quality of the environmental audit conducted.

It is quite important for SAIs to build a robust quality assurance system for its envornmental audits with an intention of maximizing the imact its audits.

Similarly, SAIs should keep on striving to undergone periodical reviews from various peers with an intention of identfying areas for further impovements.

SAIs should work together to establish adequate mechanisms necessary for measuring the impact of environmental audits in our countries.

# *Country Paper*
# *OAG Thailand*

# Performance Audit on Air Quality Control Measures : Bangkok Metropolitan Administration (BMA)

## I. Background and audit planning

Air pollution is one of major environmental issues in Bangkok mainly related to rapid growth in number of motor vehicles. This, in turn, causes direct environmental impacts and serious effects on public health. Respiratory illnesses are caused by particulate matter with diameter less than 10 microns ($PM_{10}$) or dust from emission of motor vehicles with incomplete combustion, uncovered construction sites, and emission from industrial plants or other establishments. Air pollution is more severe in roadside areas than in other areas.

As a result, Bangkok Metropolitan Administration (BMA) has set 3 main strategies to control air quality in Bangkok:

1. Control and reduce pollution from motor vehicles by imposing strict penalty measures on pollutant generating vehicles and any vehicle need to be complied with environment quality before license plate renewal.

2. Control and reduce pollution from other sources by keeping registry records of sources of pollution, monitoring pollution levels and encouraging clean technology application.

3. Encourage the air quality monitoring through records of air quality measurement to be maintained at acceptable standard.

These strategies have been translated into several activities BMA has operated activities to order to achieve such strategic goals. After preliminary

review, The Office of the Auditor General of Thailand (OAG) has decided to conduct a performance audit on 3 activities as followed.

1. Black smoke controlling and checking. BMA, working jointly with the Traffic Police Division and Pollution Control Department, have set up 50 emission check points, and the results directly link to the vehicle registration database held by Land Transport Department. This smoke detection data also links to the central database at BMA and is for decision making on air pollution control issues.

2. Road dust control Regular dust vacuuming and cleaning on roads and footpaths responsible by 50 district offices.

3. Dust and dirt control at construction areas. Law enforcement in dust and dirt control at construction sites responsible by 5 district offices

## II. Methodology

Data collection.

1. The primary data : questionnaire, interview and observation.

2. The secondary data : review documents from BMA and analysis.

For primary data detail are shown in the table below:

| Methodology | Source |
|---|---|
| Questionnaire | 50 directors of 50 district offices. |
| | 140 Traffic Polices who work in the areas that the $PM_{10}$ higher than a standard. |
| Interview | The director of Air Quality and Noise Management Division, Department of Environment of BMA and 2 staff of the division. |
| Observation | 44 construction sites in 5 district offices. |

## III. Finding and Recommendations

There are 3 major findings indicating weaknesses in BMA 's air quality control measures.

**(1) Results of black smoke detection had not been reported via the BMA data link system.**

There were only one from 48 district offices was found to report the detection result through the BMA data link system. The details are shown in the table 1.

**Table 1 :** Showing the number of district office that implement the black smoke detection and reporting.

| **The number of district office** | | | **Total** |
|---|---|---|---|
| **Implement black smoke detection.** | | **Not implement black smoke detection.** | |
| **Report through the system.** | **Do not report through the system.** | | |
| 1 | 47 | 2 | 50 |

OAG has recommend that BMA needs to corporate and consult with traffic police to determine the implementation guideline for smoke detection and to instruct the district offices to focus on the evaluation of smoke detection in order to take the evaluation result to improve their working performance.

**(2) The guidedance using for determine road dust vacuuming and cleaning frequency wasn't established**

It was found that BMA has not set up criteria for district offices to define the proper frequency of road cleaning in any areas.. As a result, some district offices had the identical targeted frequency number of road cleaning even though the seriousness of the problem was not the same.

**Table 2 :** Showing average number of road cleaning per month in year 2007 – 2009.

| **Frequency average of road cleaning per month 2007 - 2009** | **Inner area** | **Middle area** | **Suburb area** | **Total** | |
|---|---|---|---|---|---|
| | | | | **The Number frequency average of road cleaning** | **percentage** |
| 1-10 | 12 | 17 | 5 | 34 | 68.00 |
| >10-20 | 5 | 4 | 1 | 10 | 20.00 |
| >20 | 5 | 1 | 0 | 6 | 12.00 |
| Total | **22** | **22** | **6** | **50** | **100.00** |

**Source :** Air Quality and Noise Management Division, Department of Environment of BMA.

OAG recommends that BMA needs to prepare and launch a document that determine the criteria the district offices will use for setting their appropriate targeted number of road cleaning regarding their different level of problem.

**(3) The majority of construction contractors do not implement in compliance with BMA 's measures.**

According to the observation of 44 construction sites in 5 districts located in BKK inner area, it was found that most construction sites had not complied with the regulations. The details are shown in the table 3.

**Table 3 :** Observed construction sites' compliance with air quality control regulations

| BMA's air quality control in construction site | Observations | | | | Total | |
|---|---|---|---|---|---|---|
| | Compliance | | Incompliance | | | |
| | Number of sites | percentage | Number of sites | percentage | Number of sites | percentage |
| Spare enough space and equipment for cleaning vehicles | 38 | 86.36 | 6 | 13.64 | 44 | 100.00 |
| Vehicles are already cleaned before exiting the construction site. | 23 | 52.27 | 21 | 47.73 | 44 | 100.00 |
| Dusty items properly covered and kept in closed areas | 25 | 56.82 | 19 | 43.18 | 44 | 100.00 |
| Sprinkling water on the dusty items | 30 | 68.18 | 14 | 31.82 | 44 | 100.00 |

OAG recommends that BKK needs to assign staff to closely observe, survey and monitor the construction sites in the area to assure of compliance of the regulations.

## IV Impact and result

### (1) What actions were taken to respond to audit results?

BKK has already taken actions regarding the recommendations;

- BKK launched a meeting with Department of land transport and Pollution Control Department on 17th August 2011 to reach agreements on problem solutions and improvement of effectiveness and efficiency in black smoke detection plan in 50 districts of Bangkok.

- BKK enforces staff to input results in the BMA's data link system. The district offices also have to regularly use such results to determine and improve performance.

**(2) Were there any environmental benefits as a result of the audit and government's action?**

The air control management of BMA is slightly better after the audit. Though BMA has implement in accordance with OAG's recommendations, it does not have much effect an overall air quality in BKK. This is because there are so many factors and many related entities effecting the effectiveness and efficiency of air control. The details are shown in the table.

**Table :** Showing comparison the result of air quality examination in year 2009 and 2013.

| **The result of air quality examination in year 2009** | | | **The result of air quality examination in year 2013** | | |
|---|---|---|---|---|---|
| **The number of examination** | **$PM_{10}$ >Standard** | **percentage** | **The number of examination** | **$PM_{10}$ > Standard** | **percentage** |
| 1,709 | 326 | 19.08 | 1,879 | 350 | 18.63 |

**Source :** Air Quality and Noise Management Division, Department of Environment of BMA.

## V Challenges and barriers

This audit was conducted on air quality control activities only under BMS' powers and authorities. However, there are several government agencies responsible for air quality control even in Bangkok area. So, this audit might not have reflected the whole picture of air pollution control system in Bangkok. So, more integrated view of audit would be a good practice.

There is another thing, which always makes auditors to concern when conducting an environmental audit, is air quality control or any other environmental issues will not be accomplished in efficient and effective manner if it is only concerned in the government side. The public at large always plays critical and effective roles in protecting and improving environmental quality. So, it is an important role of the government to not only concern about law enforcement, but needs to consider the public participation. This is to assure sustainability in environmental management.

## VI Lessons learned

1. Even though a more integrated view would sometimes make an environmental audit more meaningful, it might be, in some situations, unnecessary or too costly. This audit needed to strike to the points which are drawbacks or problems related to air quality controls measures performed by the audited entities. So, the 3 major activities were selected because they were backed up by evidence to have critical contributions to air quality if they are performed in an effective manner. Under resource constraints such

as time and man power, auditing these major activities were optimal to have meaningful audit results and recommendations.

2. Generally, public participation is believed to be a major part in sustainable environmental management. Anyway, OAG Thailand's mandate allows auditors to audit just the government side. The auditors need to ensure that, by the audit results and recommendations, audited agencies will be on the right track. So, this audit focused on the 3 major activities related to law enforcement which is a basic task of any government entity. If an agency fails to do so, a hope for an upper level of solution such as public participation in environmental management can be said to be out of reach.

3. Even if this audit did not employ any new audit methodology, some traditional audit tools used in the audit namely document reviews, interviews and site observations, were still effective since the topic focused only on law enforcement. They were enough to bring about important information in order to conclude the audit in a timely manner.