

Chapter 4: Noise

Introduction

Maintaining a calm environment void of noise has become one of the necessities of human life. Noise is defined as the sounds hated to be heard. It is considered one of the most common environmental problems all over the world. Concerning Egypt, the noise problem, as an environmental polluter, comes as the second environmental pollution problem according to the survey of the complaints received by EEAA. It is clear that noise level has worryingly increased in the Egyptian streets during last years to reach levels non-permissible locally and internationally in most Egyptian areas, especially major cities and Governorate capitals. Noise levels surpassed the levels permissible by the Executive Regulations of Law 4/1994 on Environment.

The most important achievements to implement the five-year plan (2007-2012) designed for noise abatement

Within the framework of MSEA plans and policies developed to protect environment against pollution, the five-year plan (2007–2012) has been developed to reduce Egypt noise levels to the safe levels permissible by Law 4/1994 and international standards. The plan is to be implemented in accordance with the following planned stages.

First: National Plan for Noise Control of Elimination of its Sources

This plan has been developed in collaboration with all line ministries. The responsibilities and roles of each ministry have been defined in accordance with the commitments of each. MSEA provides technical support and information required for noise control to the participating ministries and coordinates the implementation of the plan elements.

1. Ministry of Local Development (MoLD):

MoLD has coordinated with all the governorates to adopt the appropriate legal procedures against annoying factories and workshops and to stop the violating and non-licensed activities.

EEAA has provided the EMUs with noise measurement equipment, besides building capacities of and training EMU staff on using such equipment to measurement procedures in accordance with the standards. EEAA also raises awareness on noise problem, its health effects, and means of minimizing it.

2. Ministry of Interior (MOI):

A noise control plan has been developed in cooperation with MOI. Joint inspection campaigns between MSEA and MOI bodies have been intensified to achieve environmental compliance and noise control. The plan encompasses the following:

- a. Coordinating with the Traffic Department to intensify campaigns on vehicles to control horns use, and wedding processions, and setting standards for road and vehicle noise.

- b. Intensifying, in cooperation with the Environment and Water Police, campaigns to control noise from fixed sources (tourist facilities – wedding halls – clubs).
- c. Building capacity in the field of noise measurement. In this respect, Environment and Water Police was supplied with noise measurement equipment, and training on using such equipment was provided.

3. Ministry of Civil Aviation:

- a. Establishment of Airport Noise Monitoring Network

Coordination with the Ministry of Civil Aviation to establish Noise Monitoring Networks to minimize aircraft noise during landing and take off and noise effect on surrounding areas through reviewing the technical standards of airport monitoring networks. MSEA also coordinates with the Egyptian Holding Company for Airports and Navigation to define the locations of noise monitoring around Cairo International Airport and Sharm El-Sheikh International Airport, and to provide training courses on the operation of the network.

- b. Cooperation with EgyptAir Holding Company

Cooperation protocol has been signed between EgyptAir Holding Company and EEAA concerning the effect of aviation on environment, especially noise monitoring in the company facilities. Noise levels are monitored and measured in different places in the company. Technical reports on noise are prepared to complete the environmental registry procedures. Training is provided for those responsible for measuring work-environment noise and the surrounding noise. Technical cadres are qualified and trained on measurements. Capacities of the company noise-monitoring staff are built. Technical specifications are set for noise measurement and monitoring equipment used in the Company Environment Department.

4. Ministry of Religious Endowments:

- a. Coordination with the Ministry of Religious Endowments to adopt appropriate procedures to raise environmental awareness through the religious discourse directed to citizens. Appropriate procedures are taken against the violation of the Minister of Religious Endowments decree limiting the use of microphones to calls to prayers.
- b. Free awareness courses are conducted for Imams in governorates to raise religious and environmental awareness on environmental issues.

5. Ministry of Education (MoE):

Within the framework of the national plan for noise control, MSEA has coordinated with MoE to implement the following:

- a. General Authority for Educational Buildings (GAEB) is informed on the necessity of observing environmental requirements and compliance of architectural and sound designs when building schools.
- b. MSEA has conducted awareness program for the environmental and population education officials in all MoE Mudiriyas by the National Network for Distance Education (Video conference).
- c. Coordination with all Mudiriyas to take part in raising environmental awareness of students and to ensure that microphones are not used at schools and are replaced with internal receivers.

- d. Environmental dimension is integrated into modified curricula.

6. Ministry of Housing, Utilities, and Urban Communities (HUUC):

- a. A code for improving power efficiency in residential buildings is issued. In coordinating with HUUC, a code is being developed for improving power efficiency in commercial buildings to minimize the use of air conditioners and eliminate their noise.
- b. Procedures minimizing road noise are developed including installing sound barriers at the sides of highways passing through inhabited areas, and leaving an isolating distance when planning new highways.
- c. Public garages and parking areas in cities are provided. Building and shop owners are obliged to provide private garages. The environmental dimension as a basic element of planning new districts and cities is considered.

7. Ministry of Tourism:

- a. Inspection campaigns are launched on tourist facilities to measure noise and take the appropriate legal procedures against the violating ones.
- b. Coordination to adopt all procedures to eliminate noise from tourist facilities. Licenses are only issued after validating sound-proofing systems in celebration and wedding halls and disco such that noise is confined to halls. License may be issued for tourist facilities located at open areas to conduct weddings and organize parties such that noise does not exceed criteria specified in Law 4/ 1994.

8. Ministry of Foreign Trade and Industry (MoFTI)

- a. MSEA and Egyptian Organization for Standardization and Quality (EOSQ) collaborate in setting the Egyptian audio and noise standard specification, and in issuing statement of noise produced by machines and equipment and means of verifying it in accordance with the latest international publications.
- b. The item “Noise” has been added to environmental effects and their mitigation in the environmental screening forms when reviewing the Environmental Impact Assessment (EIA) studies and approving the activity environmentally. The activity owner must abide by Law 4/1994, including noise criteria, in approving the industrial activities and renewing industrial registry certificate.

9. Ministry of Health and Population (MoHP):

- a. Requirements of choosing locations for new hospitals are set in accordance with the environmental requirements and observing noise control requirements concerning planning and construction.
- b. Properly observing that visit instructions, concerning the time and number of visitors, are followed.
- c. Awareness campaigns on the unhealthy effects of noise are launched.

10. Ministry of Transport (MoT):

- a. Expanding establishing and developing ring roads, tree planting on road sides and road median to minimize noise and installing sound barriers in highways near to residential areas.

- b. Abiding by the road-paving standard specifications in order to reduce friction between car-tires and road surface.
- c. Conducting EIA studies for new roads, provided that means of noise control are observed during planning.
- d. Preparing data on traffic volume of roads and main corridors.
- e. Ensuring that the Egyptian National Railway Authority and the National Authority for Tunnels (NAT) comply with the local and international standards and criteria for noise levels in railway and subway lines.

11. Ministry of Communications and Information Technology (MCIT):

Within the framework of the cooperation protocol between MSEA and MCIT designed for protecting environment from the bad effects of mobile Base Transceiver Stations (BTS), a study on the levels of noise generated from mobile BTS operating equipment has been conducted to ensure that BTS noise levels comply with standards defined by Law 4/1994 and executive regulations thereof.

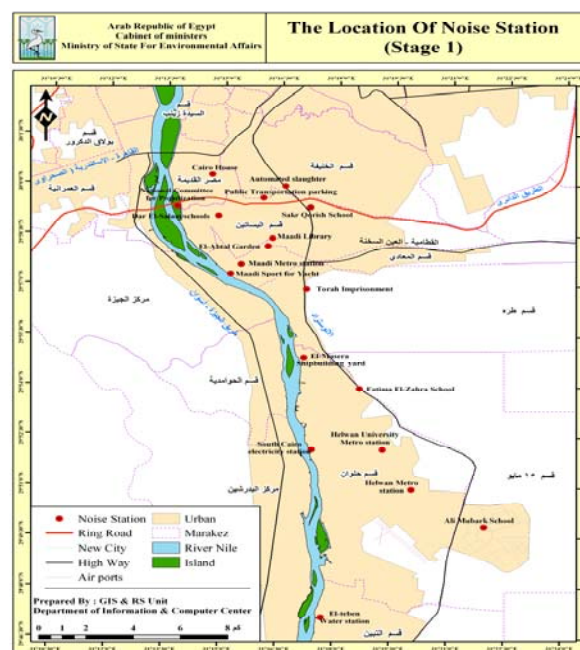


Picture (4-1) Noise measuring at mobile BTSs

Second: Establishment of Environmental Noise Monitoring Network Starting by Greater Cairo

Within the framework of the National Plan for Noise Control developed by MSEA in coordination with line ministries, and to activate the role of MSEA in this respect, a National Noise Monitoring Network (NNMN), containing 30 stations, has been established starting by Greater Cairo. NNMN has been first operated on March 2007. NNMN aims at preparing a database and a map for environmental noise, starting by different areas in Greater Cairo in order to develop plans for noise control, urban planning of the new infrastructure, and solving the existing problems in order to minimize noise level in major cities during the period from 2007 to 2010. In Phase 1, the following steps have been implemented to establish noise monitoring network:

1. Establishing noise monitoring network in Cairo Governorate, starting by south Cairo district. 25 locations representing different areas are chosen to monitor noise according to the international stan-



Map (4-1) Noise monitoring station locations at South Cairo

dards. These areas include all kind of activities (industrial, commercial, and tourist activities, roads, railways, residential areas). Coordinates of every area have been specified.



Picture (4-2) National Population Council Station



Picture (4-3) Maadi Library Station

2. Environmental noise monitoring stations locations are determined using two mobile monitoring units in conducting experimental measurements to determine and choose the appropriate locations. One of these units is installed in Environment and Water Police HQ to conduct experimental monitoring of Corniche road. The other unit is used to specify the appropriate locations in every area and in public squares to install monitoring networks there. Monitoring locations in other areas of Cairo Governorate, including the districts of North, East, and West Cairo, will be specified.



Picture (4-4) Tura Prison Station – Autostrad Road



Picture (4-5) Yacht Club Station in Maadi

3. MSEA Coordinates with Cairo Governorate to specify 5 locations at the main squares (Tahrir, Ataba, Ramses, Roxy, and Opera Squares). Stations have been permanently installed at these squares.



Picture (4-6) Noise Monitoring Station at Opera Square



Picture (4-7) Noise Monitoring Station at Ataba Square



Picture (4-8) Noise Monitoring Station at Ramses Square



Picture (4-9) Noise Monitoring Station at Roxy Square

Third: Plan of New Cities Assessment and Classification as Environment-Friendly

Within the framework of new cities classification as unpolluted environment-friendly, noise level studies have been conducted in these cities. Noise level monitoring has been carried out activity in Shorouk and Sheikh Zayed Cities using mobile monitoring stations in different locations in areas of activities. Noise sources have been defined by a data frequency analysis to make use of measurement results in developing technical solutions appropriate for reducing noise levels in these cities and properly utilizing lands when constructing projects and distributing activities.



Picture (4-10) Noise Monitoring in Shorouk City



Picture (4-11) Noise Monitoring in Sheikh Zayed City

Fourth: Noise in Vital Areas and Facilities

Many studies on environmental noise monitoring and noise effect on vital facilities have been conducted including the following

1. Study Noise Level at 26th of July Corridor:

Noise level is measured at 26th of July corridor through different times of the day. The results are sent to HUUC. Based on these results, noise barriers have been installed on the sides of 26th of July corridor in some inhabited areas.



Picture (4-12) Noise Barrier at 26th of July Corridor

2. Study on Noise-Safe distance at Cairo-Alexandria Agricultural Road:

Upon a request from the General Authority for Roads, Bridges, and Land Transport (GAFRBLT), noise level has been measured all over Cairo-Alexandria Agricultural Road on areas of 50 to 100 meters from the road throughout the day. These measurements are designed for determining noise-safe distance from the road to construct facilities.

3. Study on Noise Monitoring in Underground Metro (First and Second Lines):

Different noise measurements have been carried out in the first and second lines of the Underground Metro during morning and evening. The results are sent to MoT to help reduce noise levels in Metro lines, and include studying the expected noise levels within the EIA study on the construction of the third and fourth lines.



Picture (4-13) Underground Metro Noise Level Study (First and Second Lines)

4. Study on Noise Levels at Giza Square:

Within the framework of Giza Square Development Project, measurements have been carried out in different areas of Giza Square during the three periods of the day set forth in the Egyptian Law. The results are sent to Giza Governorate to adopt the technical procedures required for minimizing noise to levels permissible by the Executive Regulations implementing Law 4/1994 after developing the Square.

Fifth: Procedures for Measuring Noise Levels inside and outside Different Facilities

1. Noise measurement model inside work environment and the surrounding environment is developed in accordance with relevant international and local standards in order to be accredited by any international or local entity.
2. A database on the noise levels inside industrial, commercial, and tourist facilities on the national level has been established to be made available on the MSEA website.
3. Special regulations on measuring noise in facilities against small fees have been issued. The regulations are designed for providing services to different facilities in protection against noise and to create the environmental registry. Through such regulations, EEAA measures noise levels in work environment and the surrounding environment in accordance with the standards set forth in Law 4/1994, and prepares the required technical reports in accordance with the local and international standards for noise measuring.

Sixth: Development of Noise Standards Set Forth in Law 4/1994 and the Executive Regulations thereof

1. Developing standards of noise level inside work environment and the surrounding environment set forth in Law 4/1994.
2. Conducting a scientific study on standards and levels for vehicle and road noise, to be included within the noise standards set forth in the Executive Regulations implementing Law 4/1994.