



**LexQuest Foundation**

# **POLICY BRIEF**

**Actions Speak Louder than Words: What is India  
doing about Noise Pollution?**

**LexQuest Foundation**

**August, 2019**

**New Delhi, India**



**LexQuest Foundation**

## **Acknowledgements:**

### **Conceptualised and Created by:**

- ❑ Akanksha Arora, Chief Executive Officer & Founder Trustee
- ❑ Tanya Chandra, Chief Operating Officer & Founder Trustee

### **Author:**

- ❑ Parvathy Ramesh, Research Associate, Policy

## **About the Organisation:**

LexQuest Foundation (LQF) is an independent, non-profit, research and action organisation, established in 2014, in New Delhi. We are striving to create, advocate and implement effective solutions for a diverse range of development issues.

To endorse participative governance, we engage with a broad spectrum of stakeholders, from various sections of the society, to ensure that policy-making remains a democratic process. We utilize pragmatic and futuristic research to disseminate actionable knowledge to decision-makers, experts and the general public.

Our key activities include capacity and skill-building workshops, policy advisory programs, public outreach, and stakeholder consultations. We collaborate with the government, other organizations and individuals for impactful policy formulation and execution.

By employing sustainable and equitable solutions through our multidisciplinary, intersectional initiatives and programs, we are constantly working towards creating empowered communities.



## LexQuest Foundation

*Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, firecrackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise...*

-The Noise Pollution (Regulation and Control) Rules, 2000

Noise is defined as unwanted sound, which when reaching certain levels and intensities, can be annoying and can adversely impact people's mental and physical health. **An often underestimated threat, noise can interfere significantly with people's daily activities and affect the overall well-being of the individual by reducing their performance and creating undesirable changes in personal and social behavior. In India, it is estimated that 63 million (6.3%) suffer from hearing loss. Since noise can lead to several psychosocial and medical disturbances, noise pollution is considered a public health concern.** Sadly, like every other form of pollution, it is considered a necessary evil required to carry out the needs of the ever-growing and urbanizing population. Congested roads, transportation demands, and increasing migration are some of the factors that have led to an increase in noise pollution. In addition to road traffic, community events such as festivals, public announcements, fireworks, and construction sites also emit noise that can adversely affect the quality of life. Measures to eliminate such pollution would be fruitless, and so the focus has shifted to minimizing it.



**LexQuest Foundation**

## The Scenario in India

Human response to sound depends on two factors – the sound frequency, which is expressed in Hertz, as well as the sound pressure, expressed in decibels (dB). The average, healthy person has a hearing range of 20-20,000 Hertz. Sound pressure levels are measured via “A-weighting.” This measure correlates with a subjective response of the auditory system and is frequently used in studies of noise measurement despite the limitation of poor predictability. The **Central Pollution Control Board has set up regulations regarding permissible amounts of sound for areas falling under different categories (residential, commercial, industrial, and silence zones)**, as well as for day and night time:

	 6:00 AM TO 10:00 PM	 10:00 PM TO 6:00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

*Noise standards for different areas, noise levels in  $L_{eq}$  dB (A), Central Pollution Control Board*

Within the **National Environmental Policy (2006)**, ambient noise is included as an environmental quality parameter, and several studies have been conducted keeping this in mind:

In Delhi, both air and noise pollution have increased far beyond the level of tolerance. Diwali, the festival of lights, is one of the important festivals celebrated across the country from October to November and is also one of the events that cause the most noise and air pollution. A study on the average ambient noise



## **LexQuest Foundation**

levels in a residential neighborhood during Diwali and non-Diwali days showed that during non-Diwali days, the noise ranged from 57 to 69 dB (A) and ranged from 76 to 80 dB (A) on the day of Diwali. This means that the average ambient noise level is higher than that permitted by the Central Pollution Control Board even on normal days.

Another study conducted in Balasore, Orissa, to test the levels of noise pollution has shown the same results. In addition to an attempt to make out the major sources of noise, a questionnaire was distributed to assess public awareness and perception of noise and its effects on health. Results showed that the major contributor to noise in Balasore was rail and road transportation, followed by the community and religious activities. The questionnaire results revealed that while most people were aware of noise pollution in their surroundings, few understood its adverse effects on health. The majority of the respondents mentioned that noise pollution affected them more significantly than other forms of pollution such as water, air, or waste pollution. When questioned about government actions designed to reduce noise pollution, most respondents expressed support for the ban of hydraulic horns, improving traffic control, banning old vehicles and sound-amplifying mike for advertising, campaigning, and celebrations.

Research conducted in a hospital in northern India indicated that the sound pressure level was higher than the permissible limits for all sites measured – outdoor, indoor, roadside and residential areas, at both daytime and night-time. A **concurrent survey of noise experience revealed that 97% of the respondents regarded traffic as the largest source of noise pollution. In addition to hearing problems caused by this noise, the patients and other members of public report irritation, headache caused by the noise, and lack of sleep due to constant noise. 8% reported hypertension, which could again be linked to the irritation caused by noise.** Having a quiet environment is crucial to the recovery of the patient as well as the smooth functioning of the hospital staff, and yet the reported amount of noise levels and disturbance indicates that people are not aware or choose to ignore this complication.

Unfortunately, humans are not the only victims of noise pollution. Studies conducted in India and abroad have found that **noise generated from construction activities, mining, etc causes behavioral disturbances,**



**LexQuest Foundation**

**stress, and change in breeding patterns of animals and birds.** Live Science reported in 2010 about the effect of noise in the ocean and how it has interfered with the ability of whales to find and communicate with their mates. Communicating via sounds is also crucial to birds, and loud noises in surroundings have been found to reduce their ability to find a partner by almost 15%. Several places in India have been designated as silent zones keeping this in mind, but measurements taken from deep within the forest in areas such as Baromasia show that ambient noise levels are almost 14.3 dB (A) above the maximum level set by the Noise Pollution Regulation and Control Rules. **It has been postulated that the high volume of noise in the Lalpahari Forest of West Bengal is partly responsible for the depletion in numbers and diversity of birds found there.** The authors of this survey have identified the quarrying and crushing industry as one of the causes of this depletion, as it contributes to the overall air and noise pollution levels near the forest area. Species' richness and the number of birds in a particular area can be seen as an important tool to identify the existing level of pollution in an area, as many species of animals and birds are unable to withstand long-term, adverse effects of pollution. The decreasing number of these "indicator species" is a very concerning trend indeed.



**LexQuest Foundation**

## **Noise Pollution Laws in India: A Critical Review**

Under **Section 268 of the Indian Penal Code (IPC)**, noise is considered a public nuisance ('Nuisance' includes any act, omission, place, or thing which causes or is likely to cause injury, danger or offense to the sense of sight, smell or hearing or which is, or maybe, dangerous to life or injurious to health or property.)

**Transport:** Noise created by the operation of trains can lead to intense medical and psychological problems, often suffered by those who work in the railways and live close to railway stations and tracks. The loud noises created by trains also startle and affect the behavior of animals that live in forests with railway tracks passing through them. While transport systems such as the **Delhi Metro** have taken steps to curb noise pollution, such as through regular greasing of tracks and construction of noise barriers, many of the major noise-polluting sources such as the **Mumbai suburban rail network** have yet to take significant steps to tackle this issue.

A notification published by the Ministry of Environment, Forest and Climate Change in June 2019 set out noise standards for airports across the country, in line with the accepted noise levels in 'Industrial Zones'. Along with the rise in "silent airports", one can remain hopeful that at least one source of transportation remains relatively noise-pollution reductive.

**Public Noise:** Under the **Police Act, 1861 (Section 34B)** the Superintendent(s) of Police are authorized to restrict and regulate music played in streets during occasions such as festivals and ceremonies.

Section 290 of the IPC states that "whoever commits a public nuisance in any case not otherwise punishable by the Code shall be punished with fine which may extend to two hundred rupees." **If an individual suffers hearing loss or any other injury on account of the government, the latter can be held liable for damages.** However, this may not completely take into account the majority of industrial and technological development that has led to the myriad ways in which noise pollution harms the population.



## LexQuest Foundation

Undeniably, there are many welcome steps formulated to curb the effects of noise pollution. Yet as we can see from the case studies above, these steps have not done much to reduce the levels of noise pollution in the country. Several factors render these laws ineffective. Some experts in **law have criticized the fact that the punishment meted out to those who create noise pollution are not severe enough to discourage them**, and that these “minor” fines and imprisonment lengths do not reflect the gravity of the effect noise pollution has on public health. There is also a lack of coordination about issues of noise pollution between different departments that oversee licensure and construction policies related to building activities, and such **a lapse in cooperation between different authorities may lead to lax control over the noise generated by construction activities.**

Lack of awareness about noise pollution may be another factor – however, some of the aforementioned studies have asked the public about noise pollution, and in general, it seems that the public is aware of the issue and can pinpoint the causes of noise pollution in their surroundings as well. There is, however, a gap in the knowledge of steps that one can take individually and at the policy-level to reduce noise pollution. This lack of personal responsibility often causes slowed progress in tackling several forms of pollution – it may range from something as simple as listening to videos on the phone in public without earphones, to outright contribution to noise pollution levels by using loudspeakers in public for personal functions. There is also a lack of awareness among the public about businesses, corporations, etc that are contributing to environmental pollution – and frequently, these major economic players have arrangements with political parties that allow them to continue their work without fear of consequences. In general, one can observe a gap between the framing of the law and its implementation – and unfortunately, this is not a problem restricted to laws on noise pollution.



## LexQuest Foundation

### Recommendations

The good news about noise pollution and one of its most dangerous effects of noise-induced hearing loss is that it is largely preventable, even in the case of community noise. Some of the policy recommendations along these lines are:

#### Technical Implementations:

- **Vehicles-** The Delhi Pollution Control Committee has recommended **banning pressure horns, and promoting the use of noise-absorbent materials and phasing out three-wheeler autos**. However, due to the popularity of three-wheeler autos in India, this would not be feasible unless the government comes up with a more eco-friendly alternative and provides financial compensation to switch to these.
- **Sound Absorbent Material-** There have been studies that show that sound-absorbing ceiling panels and tiles help to reduce the amount of noise. The **popularity of noise-absorbent material also will not increase unless there is proper information dissemination about the availability and benefits of this product**.
- **Change in Material-** Public places such as parks, as well as enclosed spaces such as office rooms would benefit from replacing metal bins with plastic ones. Other measures would include fitting of furniture legs with rubber soles.

#### Workplace Interventions:

- **Protecting Workers:** Mandatory provision of protective equipment such as **earplugs and promoting shift-work so that employees are not exposed to loud noises for unnecessarily long periods**. Quiet kits have been provided to patients in some hospitals in the US – these **kits include sleep masks and earplugs to prevent adverse effects of noise pollution**.
- **Greener, Quieter Environment: Planting vegetation around office buildings**, which can help in reducing the amount of noise generated. This could add to the overall greenery and is good for the



## LexQuest Foundation

environment. For hospitals, **especially government hospitals where there are several beds in a limited space crowded together to make a ward, it is recommended that the ratio of beds to a room be reduced**, as this would also decrease the number of people walking and talking in a single area, thus leading to less noise.

- **Workplace Rules:** Enforcement of **“quiet times” in buildings** would ensure prolonged periods of quietness. There should be a **mandatory requirement of phones to be kept at minimum ringing noise**.

**Celebrations and Festivals:** There should be **clear guidelines about the acceptable level of noise produced from loudspeakers** used for functions. Venue hosts, equipment providers as well as members of the general public who make use of these services should be made aware of these levels.

**Public Places:** The use of **noise-producing instruments should be banned near hospitals and educational institutions. About traffic laws, strict compliance to a priority-only honking policy should be followed, with violators facing an adequate penalty for honking without sufficient cause.** Vehicles should mandatorily be checked periodically to ensure that they do not create noises above permitted levels.

### Research and Monitoring:

- **Monitoring-** Traffic signal-like **monitors have been used to track the level of noise** and change color to indicate higher noise levels. These **could be used to monitor the amount of noise in different areas for research**.
- **Areas of Research-** Research needs to be conducted to illuminate the kind of interventions that would **reduce noise levels through sustainable engineering practices** and the implementation of new techniques. To implement these, **areas that are facing a pressing need to reduce noise pollution and have reported higher levels than recommended ones would need to be identified** through surveying, followed by an in-depth study of effective policy stages and procedures for their execution.



**LexQuest Foundation**



*Proposed framework for community noise assessment and abatement in India by 2030 (Garg and Maji, 2016)*



**LexQuest Foundation**

## References:

1. [A retrospective view of noise pollution control policy in India: Status, Proposed Revisions and Control Measures](#), Naveen Garg and S. Maji
2. [Soundscape of Balasore City, India: A study on urban noise and community response. J. Acoust.](#), Shreerup Goswami and Bijay Kumar Swain
3. [Community noise pollution in urban India: Need for public health action. Indian journal of community medicine](#), Limalemla Jamir, Baridalyne Nongkynrih and Sanjeev Kumar Gupta
4. [Assessment of noise pollution in and around a sensitive zone in North India and its non-auditory impacts](#), R. Khaiwal, T. Singh, J. P. Tripathy, S. Mor, S. Munjal, B. Patro and N. Panda.
5. [Impact of Diwali celebrations on urban air and noise quality in Delhi City, India](#), Papiya Mandal, Mamta Prakash and J.K. Bassin
6. [Effect of air and noise pollution on species diversity and population density of forest birds at Lalpahari, West Bengal, India](#), Dulal C. Saha and Pratap K. Padhy
7. [Legal control of noise pollution in India: A critical evaluation](#), Ranjit Singh
8. [Say What?! Whales Shout over Noise Pollution](#), Live Science Staff