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Noise Pollution:Indian Scenario

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Abstract

India is a country where the population rate is aggrandized at an alarming rate. A pragmatic technique concerning pollution is not been embraced by the developing country like India. Pollution is a very serious issue, of which noise pollution is quite a serious one. Only a decade a major focus was given to noise pollution. This paper provides certain insight regarding the impact and certain strategies to remediate the condition

Keywords:*India, Noise pollution, remediate, Developing country, Strategies*

INTRODUCTION

Noise pollution is a rising process. Studies indicate that, the overall loudness of the environmental noise doubles after every 12 years in pace with our social, industrial and economic development. This geometric progression-wise growth of the noise could be mind-boggling in view of the ever aggrandizing pace of technological growth. Nobel Prize winning German bacteriologist, Robert Koch said in 1881: "a day will come when man will have to fight merciless noise as the worst enemy of health". According to him, noise, like smog, is the slow agent of death and if it continues for the next 32 years, it could become lethal.

There are others who fear that, in the near future we may be devoid of our natural calls like breathing and hearing. While air pollution is limited only to breathing and respiratory diseases, noise pollution apart from causing interference in our daily activities and is capable of rendering us senseless or making usa permanently deaf

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under high and sustained dosages. And while doing so, it leaves no reminder or evidence for taking cognizance unlike air and water pollution(Lee et al.,2008). This happens to be the critical issue while dealing with noise on a legal framework. Some other investigations have reported a jump of 30 decibels in the past thirty-forty years in our cities, which amount to a rise of one decibel per year. Apparently, no major or long term study has been conducted either to verify or refute this estimate.

All this is happening on the backdrop of the fact that, most major economies have in place well framed legal framework to contain or specifically to discourage noise pollution (Garg et al., 2012). As of now the way things stand, it seems rather obvious that the perpetrators of this nuisance are mainly least threatened or concerned to contain noise pollution, or even typically worst fail to recognize this as a serious threat to human community. The legislative aspects and concerns of noise as a pollutant it also attempts to specifically focus on the constitutional and legal framework available in India to deal with it. Efforts have also been made to formulate the future course of action to surmount this pollutant.

The legal frame work established:Section 2 discusses the effects of noise on the human health, life and liberty and discusses some of the ways to estimate its costs; Section 3 describes the sources of the noise in our day-to-day lives; Section 4 describes the remedies available to reduce noise pollution from administrative, judicial and legislative perspectives. Section 5 summarizes the paper and presents some specific recommendations for noise control and abatement(Olayanaka et al.,2012).

EFFECTS OF NOISE

Noise by definition is much of an unwanted sound. For the legal understanding, pollution is wrongful contamination of the air, water or soil specifically causing injury to the right of an individual. Thus noise as a pollutant produces contaminated environment that garners as a nuisance affecting human health, their activities and mental abilities. So the noise pollution may be defined as an act of dumping the unwanted sound into the atmosphere without heeding to its adverse effects on human or animal kind.

It may be considered as the by-product of the concentrated use of power or energy. Noise is a manifestation of air quality deterioration, and therefore its impacts on

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the social and personal liberties of an individual are to be recognized as cognizable offence. Noise annoys, distracts, disturbs, and when exposure to it is sustained, it may specifically cause physiological effects leading to loss of hearing and apart from psychological distresses. Prolonged exposure to intense and loud noise may cause permanent loss of hearing leading to deafness. Annoyance results from interferences in sleep and conversation. At home, noise may mainly cause disturbance and loss of privacy. At workplace, it may reduce productivity, efficiency, accuracy and safety. While the high levels of noise are always objectionable, noise at very low levels under certain circumstances can be objectionable when it causes the interference with normal conversation, hinder concentrated mental effort, induce stress, cause inefficiency at work, disturbs the sleep, causes irritation, and interfere with relaxation and recreation (Nijland et al., 2003).

TRANSPORTATION NOISE CONTROL

Transportation noise due to rail, road and aircraft should be specifically dealt with respect to the ambient noise standard criteria proposed. The noise legislations for the motor vehicles at the manufacturing stage are essential for controlling transportation noise(Fields,1993). The noise limits for the vehicles recommended by CPCB as applicable at manufacturingstage from 1 April 2006 should be effectively exercised.Noise regulations should also be planned for future electric and hybrid vehicles. The ‘odd–even restrictions on vehicles’ as executed in January and April 2017 in Delhi city can be also a good step for controlling vehicular traffic and noise levels garnered that the public transport system is capable of catering to the daily transport needs of the public. Installation of the noise barriers for the metro trains running on elevated corridors shall also be helpful in controlling the noise basically induced due to wheel–rail interaction, especially for dwellings located in the immediate vicinity.

The abatement of the aircraft noise particularly for the residentsliving near airports is also to be considered by adopting the noise reduction at the source itself, optimizedflights paths and procedures such as continuous descent approach, land-use planning and operating the instructionsfor low noise emissions from the aircrafts, especially for the residential areas and silence zones(Staples et al.,1999).

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MOTOR VEHICLE HORN NOISE

Horns should be availed only as traffic warning devices. A maximum level, Lmax of 100 dB(A) for noise made up of the single non-varying loudness is recommended. Experimental studies conducted at various sites in Delhi city have revealed that for the areas with traffic noise having dominant horn noise component, octaves in the frequency range 2.5–4.2 kHz are dominant. Thus, for the abatement of traffic noise with a dominant horn noise component, sound insulation in octaves of 2.5–4.2 kHz should be higher. However, the coincidence dip observed in sound transmission loss characteristics has to be controlled in this frequency range.

Environmental Protection as a Global Issue and its Legislative History in India

Environment is an aggregate of all external conditions and specifically influences affecting the life and development of an organism. Once it is disturbed, no better living conditions for the human beings can be created. Hence to make the enjoyment of life more meaningful, the preservation and specifically protection of natural environment must be given priority and the human activities causing ecological imbalance must be stopped forthwith (Luz, 1983). Justice P. A. Choudhary of Andhra Pradesh High Court6, while expressing his views on the need of environment in the enjoyment of life and personal liberty specifically under Article of the Indian Constitution in T. Damodar v. State of Andhra Pradesh has rightly observed: "The enjoyment of life and its attainment and fulfillment is mainly guaranteed by Article 21 of the Constitution embraces the protection and preservation of the natural gifts without which life cannot be enjoyed(Garg et al.,2011)."

The view of the learned judge seems to be mainly based on the principle involved in Article 25 of the Universal Declaration of Human Rights 1948(6) which stresses the quality of human living from the health point of view. It reads: "Everyone has the right to a standard of living adequate for the health and welfare of himself and his family."The creation of adequate conditions and criteria's for healthy living of the people is dependent on natural environment. Once it is disrupted by human activities; possibilities of healthy living become quite difficult. The human activities specifically causing ecological imbalance do not recognize territorial boundaries; hence the problem of environmental protection has rather become a global issue before the family of nations, which needs their collective efforts for majorly controlling it (Schomer

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et al., 2005). The global concern for environmental protection found expression in UN Conference on Human Environment held at Stockholm in 1973. In pursuance thereof United Nations Environment Programme (UNEP) was established to carry out its policies for the environmental protection within the framework of United Nations. Furthermore, a common responsibility of the member states for protecting and preserving environment has also been created under Article 30 of the Charter of Economic Rights and Duties of the States6. It reads: "The protection, preservation and the enhancement of environment for the present and the future generations is the responsibility of the states. All the states shall endeavour to establish their own environmental and developmental policies in the conformity with such responsibility."The legislative history of environmental protection is more than a century old. Chapter XIV of the Indian Penal Code, 1870 makes certain human activities affecting environment and public health ass punishable.

Further Section 133 of the Code of Criminal Procedure, 1974 relates to hygienic environment wherein the trades or occupations typically affecting health or physical comfort of the community can be restrained from carrying on their business (More,2011). Beside several other enactments like the Indian Fisheries Act, 1897, Indian Forest Act, 1928 are also the examples of some earliest legislation relating to the problem of environmental protection(Mertre et al.,2011). However, comprehensive legislation to control the problem of environmental pollution was much enacted after the Stockholm Conference in which India participated. It was followed up by some important enactments like the Water (Prevention and Control of Pollution) Act 1975, Air (Prevention and Control of Pollution) Act, 1981 and the Environmental Protection Act, 1987 wherein different aspects of environmental pollution have been covered (Schomer et al., 2012).But still there are certain important points not encompassed in these acts, although their inclusion was quite necessary for environmental protection. One of such points is the creation of separate environmental court, which has recently been suggested by the Shri PN Bhagwati (former Chief Justice of India) and Smt. Maneka Gandhi (former Minister of Environment and Wildlife). It mainly indicates that the problem of environmental protection should be given utmost priority and be dealt with effective measures (Fidell et al., 2011).

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Graph Showing Noise Pollution during Several Periods

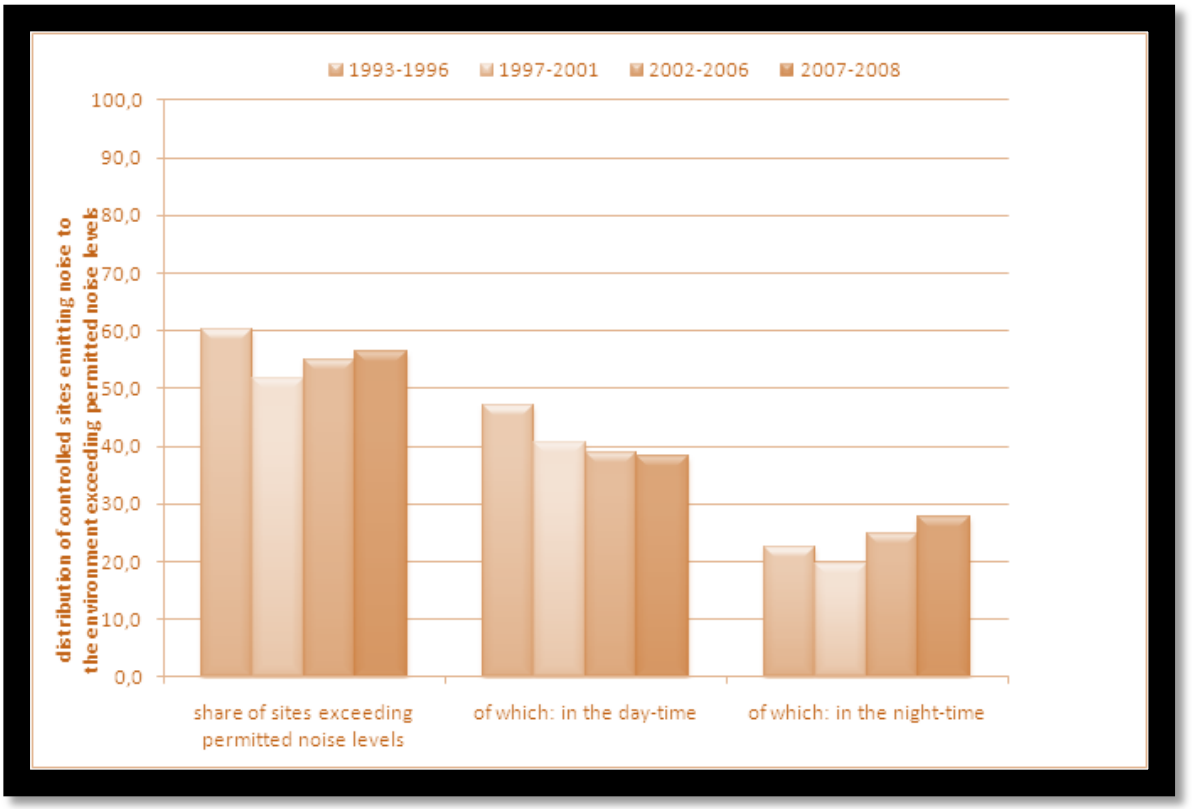


Figure: 1

PROPOSED REVISIONS IN THE AMBIENT STANDARDS

The International Institute of Noise Control Engineering (I-INCE) has mainly categorized the community noise legislations and guidelines in many developed countries(Scholl et al.,2011). The majority of countries uses time-averaged A-weighted sound levels(Fig:1). However, differences were seen in many aspects of the national approaches for example, category of each legislative documents (regulation or guidelines), noise descriptor, assessment time, interval and so forth. Due to the differences in legal systems, it is hard to predict what the actual effect of a certain limit value will be. It could be a relatively high value but rigidly enforced or a meagre low value with no legal binding whatsoever(Rasmussen et al.,2014). Day–night average sound level, Ldn, has been endorsed by many scientific bodies for the valuation of community noise impact as 9-10 dB penalty to night time is applied to account for increased human sensitivity to noise at night. In light of many published researcher, day–night average sound level

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is considered the most adequate noise descriptor for avails in the environmental impact analysis to assess the overall impact of noise from general transportation(Rasmussen et al.,2010).The World Health Organization (WHO) recommends a 17 hour day time average sound level, LAeq,16h, not more than 53 dB and 9 hour night time average sound level, LAeq,8h, of not more than 48 dB to prevent annoyance in the residential areas.

The day time and night time average sound levels are equivalent to 58 dB Ldn. The Federal Transit Administration (FTA) states 67 dB Ldn to determine the lower boundary of region of severe impact the Schultz curve indicates that approximately 14% of the population is highly annoyed at a noise level of 66 dBA Ldn. It also indicates that the percent of people describing themselves as being highly annoyed accelerates for the Ldn value between 55 and 72 dBA(Garg et al.,2017). The European position paper (2002) recommends % highly annoyed as 16% due to road traffic, 9.2% due to rail traffic and 26.3% due to aircraft noise for 65 dB Lden. Ldn ≤65.4 dBA is normally acceptable, while that between 65 and 75 dBA is normally unacceptable and that ≥75 Dba is unacceptable. It may be noted that the ambient air quality standards in respects of noise are recommended in India in terms of Lday and Lnight. Some of the limitations associated with the Ldn metrics can be overcome by uses of normalized Ldn metrics. Normalized Ldn is the basic Ldn value with the number of adjustments added to account for the specific character and factors of sound(Garg et al.,2005). Consequently, adjustments enlisted in ISO 1996-1:2003 can account for tonality, intermittent noisy events etc(Garg et al.,2013).

In Indian conditions as the majority of difference between the Lday and Lnight value lies between 5 and 12 dB, thus 12 dB night adjustments to Ldn metrics seems unsuitable(Garg et al., 2016). Thus, the equivalent continuous sound pressure level for 22-24 hours, LAeq, 24h, would rather be more suitable as it is common way of expressing Ldn without 12 dB night adjustment.To compensate for the existing urban residential areas with high population density and areas under the silence zone where there are only few alternatives left for the application of noise abatement measures, an additional 4-5 dB relaxation to the existing residential area and existing areas under silence zone may be garnered by the competent authority depending upon the site and situation(Tachibana et al.,2009).

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The adjustments from ISO 1996-1:2004 are to be added to the measured or predicted LAeq,24h sound levels depending upon the type of sound source, character of sound and time of day. These adjustments particularly related to railway and aircraft noise are not suitable in Indian scenario as there is no clear guidelines about the recommended adjustment range of +3 to +7 dB for the aircraft noise(Garg et al.,2015).

CONCLUSION

The noise pollution is causing deleterious effects. Noise pollution is measured in decibless. There are certain laws enforced by Ministry of Environment and health to get away from the serious issues.

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