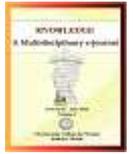


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Increasing Level of Noise in the Added Areas of Kolkata

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Abstract

Kolkata is experiencing tremendous population pressure during the last few decades. It is an ever growing urban region which results the mounting pressure on environment in forms of increasing pollution level. Such a type of pollution is noise pollution which creates various related problems to people and environment. The present paper deals with the scenario of increasing level of noise especially in the added areas of Kolkata.

Key words: *Noise Pollution, Added areas of Kolkata, Population Growth, Related problems*

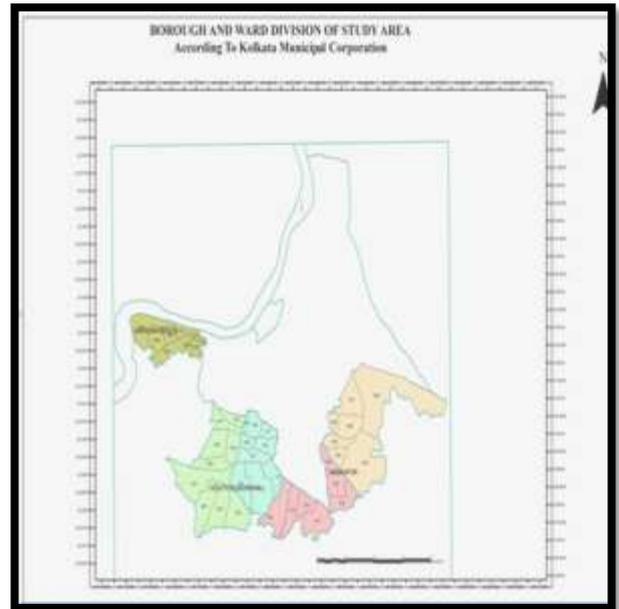
Introduction

Kolkata is an ever growing urban region, situated on the left bank of river Hugli in West Bengal. This most important urban region which is the capital of West Bengal extends towards south and south western part of the main urban area. After 1961 a huge part was added to Kolkata including Tollygunj municipality and after 1984 three suburban municipalities were added to main Kolkata i.e Jadavpur, South suburban and Garden Reach. The settlements started especially after the partition of India when West Bengal recorded an enormous population influx from East Bengal. To accommodate the sudden population increase, a large number of colonies emerged within Kolkata Corporation area. Along with the growing urban population and betterment of lifestyle, tremendous pressure is created on the environment. Noise Pollution is one of the consequences of this urban sprawl.

Study Area

The selected study area is located at the southern part of Kolkata, West Bengal, which includes borough 11 to 15 of Kolkata, consisting of a few municipalities Jadavpur, Garden Reach and South

suburban Unit. These three municipalities were added into Kolkata Municipal Corporation in the year 1984. Within the total 141 wards of Kolkata the study area covers 41 wards (101-141). The area is bound between $22^{\circ}27'11''\text{N}$ to $22^{\circ}33' 21.96''\text{N}$ and $88^{\circ}14'28.03''\text{E}$ to $88^{\circ}22'21.72''\text{E}$. The study area, under consideration, is 83.33 sq km, including 40 sq km of Jadavpur Unit, 30.38 sq km of South Suburban Unit, and 12.95 sq km of Garden Reach unit.



Objectives

The objectives of the present work can be summarised as follows:

- To study the changing scenario of noise level in study area.
- To study the reasons behind the increasing noise level.
- To study the problems related to the extreme noise pollution in the study regions.
- To advise some remedial measures to check the problems.

Methodology

To complete the work the following methodology has been followed:

A. Pre- field Method

- Collection of necessary maps and literature survey on the noise level and noise pollution.
- Collection of data from WBPCB.
- Collection of other necessary secondary information and data from Town Hall Library, New Secretariat.

B. Field Method

- Collection of primary data through household survey Discussion with local people regarding the problem of the noise.
- Primary survey with help of Noise Meter and GPS.

C. Post field Method

- Processing of primary and secondary data by statistical techniques and cartograms.
- Analysis

Causes behind Increasing Noise Level

- 1. Transportation:** In the study area, the major source of traffic noise are the large no of vehicles on road, the motor cars with more than 15 years, buses, exhaust system of autos, motor cycles. The drivers always blow the horn continuously which create nuisance and results the sound pollution. Some types of noise can be augmented by narrow streets and tall buildings, which produce a canyon in which traffic noise reverberates. In the city region, maximum people belonging from middle and upper class purchase their personal vehicles according to their ability. So the no of vehicles on the road create extra pressure on the area which create traffic jam as well as noise pollution. The noise from locomotive engines, horns and whistles, and switching and shunting operation in rail yards can impact neighboring communities and railroad workers. In rail stations of Jadavpur, Santoshpur, Majherhat this situation is found.
- 2. Construction Activities:** Presently a breed's noise pollution than any other prime sources. Heavy machinery like hydraulic cranes, earth moving machineries or apparatus and other vehicles keep the study area alive with their thunder sound which rumble whole day long. Now it is metro construction abets this sound pollution to reach an unprecedented level where we see the earth moving vehicles dig the road deep for iron structure, cemented pillar hammered down into it, with maddening noise. Also we have seen the iron scaffolds are been erected for metro station. Here and there positive construction of small and big apartments is contributing to this daily hue and cry. In the study area, the upcoming metro project is going on from Taratala to Joka. Throughout the total area along Diamond Harbour road, the noise is in extreme position.
- 3. Industrialisation:** Although industrial noise is one of the less prevalent community noise problems, neighbors of noisy manufacturing plants can be disturbed by sources such as fans, motors, and compressors mounted on the outside of buildings Interior noise can also be transmitted to the community through open windows and doors, and even through building walls. These interior noise sources have significant impacts on industrial workers, among whom noise- induced hearing loss is unfortunately common. Most of the industries use big machines which are capable of producing large



amount of noise. Various equipments like compressors, generators, exhaust fans, grinding mills also produce big noise. The industrial workers face the problem tremendously. Garden Reach is an industrial area where the noise pollution is a leading problem for the workers. The ship buildings and other industrial regions are located here. A primary survey reveals that a few grill making shops are making window grill and shutters and making continuous noise which is intolerable,

4. Noise from Consumer products in housing chores:-

Certain household equipment, such as vacuum cleaners and some kitchen appliances have been and continue to be noisemakers, although their contribution to the daily noise dose is usually not very large. The urban life is surrounded by gadgets and uses them extensively in the daily life. Gadgets like TV, mobile, mixer grinder, pressure cooker, vacuum cleaners, kitchen appliances, washing machines air conditioner, air cooler are enhance the quality of life but these are the constitutors to the amount of noise.

5. Social Events: The tremendous noise can be created in most of the social events e.g. marriage, parties, pub, disc or place of worship. People generally create nuisance inn those area. They play song and music in full volume and dance till midnight which makes the condition of people of the neighborhood. In the market areas, the hawkers also selling their products via making loud noise to attract the attention of the people. The crackers before and after Dewali also creates problem for the old people and exam going students.

6. Poor Urban Planning: It plays an important role in the increasing level of noise. Congested house, large size of families, existence of slum and squatter settlement, sharing of common tap and small spaces, fight over parking, daily fights over basic amenities create the noise pollution. It also hampers the social environment. In and around Chanditala and Sirty of east Behala a huge number of industries, mostly illegal, are causing severe pollution in the locality. The mushrooming factories

include several chemical, plastic and plastic recycling, spray-painting, paints, metal plating and galvanizing factories.

7. Excessive Population Pressure and changing life style: The study area experiencing excessive population growth in last few decades. The changing life style, high standard of living is also a major cause behind the increasing level of noise in this area.

Results of noise pollution survey

Table1: Results of Primary Noise Survey

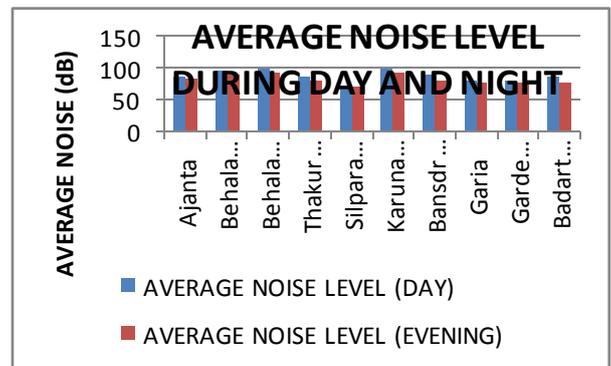
AREA	AVERAGE NOISE LEVEL IN 2015		AVERAGE NOISE LEVEL IN 2013	
	(DAY)	(EVENING)	(DAY)	(EVENING)
Ajanta	86.9	84.3	84.6	82.1
Behala Market	95.7	90.6	92.4	91.2
Behala Chowasta	98.4	91.2	90.4	90.1
Thakurpukur	85.6	79.2	80.3	7.2
Silpara James Long	71.4	69.8	70.2	66.5
Karunamoyee more	98.3	91.6	90.1	89.7
Bansdroni Market	89.5	81.3	88.4	80.3
Garia	81.2	76.9	78.6	75.4
Garden Reach Road, Raja bagan	80.1	76.4	76.1	74.5
Badartala, Garden Reach	85.9	77.4	85	76.9

The noise survey in 2013 and 2015 was conducted by the researcher herself. The results reveal moderate increase in the ambient noise level in various residential areas in some selected locations of the added areas of Kolkata. The selected locations are Behala Chowrasta, Taratola crossing, Behala Tram depot, bansdroni, Jadavpur Bus stand, Garden Reach Raja Bagan, Badartala etc. The main cause of increase in ambient noise level in day time is the notorious sounds of various types of vehicles, trade activities, noise of busy peoples. As the diamond Harbour road is one of the busiest roads in

Kolkata, the pollution level is comparatively high in the sampling locations on the road. Similarly, in the major market complex of Bansdroni, Jadavpur, Behala the various types of noise from sellers and buyers are make the situation notorious.

Table2: Noise Risk Zones

Intensity of noise, dB(A)	Category of the zones
<66	Safe
66- 71	Tolerable
71-76	Low risk
76-81	Moderate Risk
81- 86	High Risk
>86	Extremely high risk



(Banerjee et al, 2008)

- The primary survey reveals that near about 90% of the sampling stations fallen under high risk zone. The remaining 10 % area is under moderate risk zone. But in the both peak our and lean hour this situation prevails. A small difference exits within day and night time. It reveals the continuous source of noise in the selected areas.
- The increase of the noise level at the selected locations on the day of Kali Puja compared to a normal day in October, 2015 varies from 6 to 18 per cent. This is higher compared to the noise level of previous years,
- Between these two years the noise level has increased more or less in each and every sampling station.
- The level of noise decreases during night time. But sometimes the difference is negligible.
- Along with the increasing no of traffic in the roads, the noise levels have been increased during these two years.

Harmful Effects:

Noise has always been with the human civilization but unwanted and extreme sound can create Noise pollution which affects both of the physical and mental problems. The effect of noise pollution is multifaceted & inter related. The questionnaire survey of local people regarding the problems faced by them has revealed a few problems which are depicted as follows.



i) It decreases the efficiency of a man: - Regarding the impact of noise on human efficiency there are number of experiments which print out the fact that human efficiency increases with noise reduction. The respondents who are daily passengers in the study area have identified this problem.

ii) Lack of concentration: - For better quality of work there should be concentration, Noise causes lack of concentration. The noise of traffic or the loud speakers of different types of horns divert the attention of the people working in offices as well as students. The monotonous noise always distracts their concentration while studying or working. Even during examination the road noise and constructional activities also affect their examination. The students of road Side College and schools are victimized most.

iii) Fatigueness: - Because of excessive Noisy environment, as people cannot concentrate on their work. So they have to spend more time for completing the work and they feel fatigued.

iv) Increasing Blood Pressure: - Noise Pollution causes even certain diseases in human along with the disturbance in person's peace of mind. The noises are recognized as major contributing factors in accelerating the already existing tensions of modern living. These tensions result in certain disease like blood pressure or mental illness etc. A few people, who are living in noisy environment, identified that they are suffering from blood pressure related problems only for the excessive noise level.

v) Temporary or permanent Deafness: - The effect of noise on audition is well recognized. Mechanics, locomotive drivers, telephone operators etc. All have their hearing problem as a result of noise at the place of work. Physicians are of the view that continued exposure to noise level above. 80 to 100 db is unsafe, loud noise causes temporary or permanent deafness.

vi) Effect on Animal: - Noise pollution damages the nervous system of animal. Animal loses the control of its mind. They become dangerous. A few people, who have pet in their houses, had noticed some behavioral changes in their pets. They have blame on the increasing and continuous noise in their locality.

Conclusion

Conclusively it can be said that a strict management of noise level can be maintained through implementation of proper rules and regulations. People should be aware of the already implemented noise regulation acts. Special types of noise barrier should be constructed under flyover, overlying metro railways etc to control its intolerable noise.



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