

# **Noise Pollution from Religious Institutions and Its Impact on the Adjoining Land users: a Case Study of Some Churches and Mosques in the Accra Metropolis**

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## **ABSTRACT**

This study investigated the impact of noise pollution on the adjoining land users of 20 Religious Institutions located within Accra Metropolis. Out of the 20 religious institutions investigated, 14 are Christians forming 70% and 6 are Muslims forming 30%. The day and night time noise exposure levels (during services) of each religious institution were assessed. Data was used to estimate parameters such as equivalent noise level ( $L_{eq}$ ), intense noise level ( $L_{10}$ ), background noise level ( $L_{90}$ ), noise exposure level ( $L_{NE}$ ) and noise pollution level ( $L_{NP}$ ) which were also used for the noise assessment. This recorded a total of 47 (81 %) out of 58 day and night time mean hourly  $L_{eq}$  values for four (4) hours in each noise monitoring site, which ranged from 69.9-48.7 dB (A). The day and night time mean  $L_{10}$  values recorded 18 (31 %) out of the total 58 readings which ranged from 62.2-48.5 dB (A). When a total of 58 day and night time mean  $L_{NP}$  values were calculated, 55 (94.8 %) were above the national ambient noise level guideline with the readings ranging from 83.8-49.7 dB (A). Two of all the  $L_{NP}$  noise levels computed were above 10 dB (A) with the values ranging from 11.6-108 dB (A). The values of the various parameters used above indicate that a lot of the evaluated points are above the national ambient noise level limit. These high noise levels could have socioeconomic and health impact on the neighbours. By and large, the variation on diurnal noise levels at the noise monitoring sites was significant and the measured noise levels were high. In the study, the respondents who are older people are more sensitive to noise disturbance/nuisance than their younger counterparts. The religious affiliation or belongingness plays a vital role in perception of sound being noise or not. Noise emanating from religious institutions may be responsible for sleeplessness among people adjoining the religious institutions and may have other adverse

effects on their well-being. Most females stay home during worship hours. It is also realized that most of the religious institutions do not create buffer around their structures I hey do not plant trees in their compounds and some use storey (above ground floor) structures as places of worship which are all repository for noise pollution.

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