

Assessment of the Effects of Quarry Activities on some Selected Communities in the Lower Manya Krobo District

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ABSTRACT

This study assessed the effects of quarrying activities on some selected communities in the lower Manya Krobo District. Questionnaires targeting inhabitants around the quarry sites, observations, collection of health records from well patronized hospitals/clinics and dust (PM₁₀) samplings were used as data gathering instruments. The study revealed that some of the men have been employed as quarry workers and a substantial number of women in the area have become food vendors at the quarry sites. In terms of infrastructural development, the Bueryonye-Klo- Begoro road has been gravelled and made motorable even in the wet season. The District assembly collects tolls from haul trucks as a means of generating revenue. Despite these benefits quarrying activities in the study area have distorted the balance of the environment. The distortions include encroachment upon limited prime agricultural land, destruction of buildings. Pollution of water bodies, incapacitation of farmlands by run offs due to poor drainage, air pollution from quarry dust and noise from vehicles, machinery and blasting. Environmental parameters such strong winds and dry weathers have facilitated emission of dust. Gravimetric concentrations of PM₁₀ measured during the period of study were very high.

Results of the study showed that PM₁₀ concentrations recorded in the study area in January are 125 μgm^{-3} , 116.2 μgm^{-3} and 109.3 μgm^{-3} for Bueryonye, Odugblase and Klo-Bogoro respectively. Only two concentrations, 69.4 μgm^{-3} and 54.6 μgm^{-3} recorded in June are below EPA's permissible limit of 70 μgm^{-3} . This means that PM₁₀ concentration is high during the dry season and quite low during the wet season. Thus, dust suppression during the dry season should be well effective. The controlled sampling site, Oterkpolu, had 50.5 μgm^{-3} in January and 29.0 μgm^{-3}

³ in June. The distance of Oterkpolu from the quarries may have accounted for the low impact of dust on the community. The indication is that communities close to quarries are impacted by quarrying activities more than those far away from the sites. The data collected from hospital records of the inhabitants portrayed their health profile. The prevalent health problems of the residents were elicited from a questionnaire survey conducted in these selected neighbouring communities of the quarries.

Records obtained from health facilities most patronized have shown that respiratory tract infections and malaria have hiked since the establishment of the quarries in 2004/2005. Health problems suffered by the residents before the advent of the quarries include cough (33.3%), catarrh (25%), asthma (301%), headache (40%). malaria (5%) etc. These health problems hiked during the quarrying period as cough, catarrh, asthma and headache increased to 60%, 45%, 39%, 57%, and 40% respectively. Although, the residents of neighbouring communities are aware of risks associated with those living near quarry sites, their general low socio-economic status made them incapable of taking any decisive measure towards relocating elsewhere. Approval for quarry operation should mandate environmental impact assessment and ensure strict implementation of outlined mitigation measures so as to guarantee environmental sustainability. Enforcement of regulations and laws through effective monitoring by the required institutions will create a balanced and sustainable environment.

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