

## ABSTRACT

Recently the Metal industry has become very important with the growing rapid development needs of Sri Lanka. Blasting operations are an essential element in the metal quarrying industry; There are many laws and regulations to control and regulate the metal industry, But those are not sufficient to answer the current problems of the industry. Owners of the industry are trying to cater to the huge demand for metal in the country which has arisen due to a process of rapid infrastructure building, by way of illegal and improper techniques. Because of this situation several deaths have occurred in various parts of the country due to illegal, rash and negligent mining of metal by unscrupulous entrepreneurs. The objective of the study is to identify the Environmental impacts arising from the Metal industry in Sri Lanka with the rapid development needs and evaluation and analysis of current legal framework and it's regulatory mechanism in this respect. Primary data are obtained through field survey and personal interviews using structural questionnaires and those data have been analyzed using qualitative analysis.

Environmental impacts arising from metal quarries are categorized into two types as direct and indirect. Direct impacts are physical impacts come into contact with the human body and property. Lack of safety in the blasting area, flyrock, premature detonation, and misfire are major causes of blasting related injuries in quarries. Physical impacts cause death and bodily injuries to labour force and people of the surrounding area. This study is limited to environmental impacts which affect people and property in the surrounding areas of metal quarries and will be discussed exclusively in relation to public/ private nuisance law.

The Field survey was conducted in Hanwella (Seethawaka) Divisional Secretariat Area using questionnaire and used randomly selected metal quarries. Informations were taken by interviews with quarry owners and/or managers of the quarries.

Through this study recommendations have been made for improvements of the legal framework as well as in the regulatory mechanism.

The main environmental impacts of metal quarries are flyrock, structural damages to buildings, rock slopes, final excavation walls, buried pipes and utilities, to water wells and aquifers (Fountains). Further direct impact and disturbances may cause to wild animals, disturbances to work and transport in the surrounding areas. Creation of visual pollution by destroying the balance of natural scenery of the area, and large abandoned quarry pits filled with water etc. may also be the result of such impacts.

The existing legal framework of the metal industry is being operated by the Geological Survey and Mines Bureau, Central Environmental Authority, Defense Ministry, local government Authorities, and the Archaeological Department. In this research the focus is on law relating to impacts people living outside the blasting area. These types of activities are considered as nuisance. This type of environmental impacts can be controlled by enacting laws on private or public nuisance. These types of legal actions come under the civil and criminal law.

Technological Development has increased the production and mitigate the impact of the Metal Industry. Technically developed chemicals, machinery and safety equipments do mitigate environmental impacts of the industry.

Political Authorities want to accelerate the development according to their time frame and other authorities who are connected with the problem don't want to obstruct the political agenda. In some instances testing and consultancy authorities are the same resulting in conflict of interest. Therefore industry needs an independent testing Authority for this purpose and testing of pollution related activities should be decentralized.

These special blasting techniques with high cost can be replaced with locally developed low cost techniques. Non explosive blasting techniques for fragmentation can be promoted in highly populated areas.

Penalties for public nuisance and environment pollution must be evaluated and increased according to international standards.