CHAPTER-5

CONCLUSIONS/IMPORTANT FINDINGS

Marble production in the state has a great contribution in the market due to the different activities and these mines create a lot of jobs or employment in local area. There will be further improvement in infrastructure like education, roads, availability of drinking water, medical facilities in adjacent villages. However, there are some hazardous risks related to the environment and from the present study we have observed that environmental impacts are take place direct as well as indirect on various environmental attributes due to the mining activity in the surrounding activity, during the time of construction as well as operational phase. Due to different activities of mining a significant impact on the ecosystem was found.

The environmental hazards generate from the various quarrying and processing process. The dumped sites for marble slurry are not properly designated which causes variety of pollution. The marble slurry causes varied types of pollution when they dried it become air borne and causes air pollution even they destroy the flora by depositing the layer on the surface of the leaves and which in turn cause necrosis result in degradation of the growth of the plant.

Water pollution is also caused by slurry when it get mixed with the rain water it flows down to the nearby rivers, lakes or some drinking place and contaminate the quality of water and even when this slurry is wet then it becomes slippery and causes accidents.

Following significant conclusions were find out when we studied out from the improper marble mining practices we have identified a various potential impacts like the change in the land use/land cover and vegetation loss, Removal of the top soil loss in which the removal of the porosity and important nutrients, Sewerage water into land, Storm water Runoff, Leach ate into the Ground water, Dust generation, Generation of Gaseous pollutants and Noise Pollution, Adverse Impact
on the flora & fauna and the health of the workers. These are the impacts observed which are generated from the marble mines.

The data suggests that the result are seen above by the permissible limit and a comparable study was prepared in which the air and noise pollution is found maximum in summer season 2013 whereas as less in 2014 because in 2013 the mining is on the preliminary phase so the concentration of the pollutants is too high because the various mining activities increase the rate of the SPM and even the noise pollution is on the maximum because of the various machines, vehicles, drilling, blasting and by mining activities continuously generate the noise whereas in 2014 the maximum air pollutants encircled in the mine and the noise pollution is also decreased. As per the research conducted we found that the data has been decreased in 2014 in comparison to 2013. The research also revealed that it was maximum in summer season 2013 and but reduced in 2014.

From the precise study we have found that the data of the water samples are alkaline in nature and contained high quality of Ca and Mg. The other physicochemical parameters viz pH, TDS, TH, Ca, Mg, Cl are showed wide variation. By the sampling of water samples indicate that the drinking water used by the people residing in the villages of the study area is not potable. The slight excess of calcium and alkalinity causes bone diseases. In our survey we have found that a major part of residents of the study area are suffering from bone diseases. Under privilege community of the study area depends upon the surface and drinking water directly for drinking, bathing, washing and for the other domestic purposes. The results are found above the permissible limits due to the suspended mineral matter which affects the wellbeing of the local residents. Mining activity also disturbs the catchment area and creates the water logging problem which also reduces the level of the ground water.

From the present study we have observe that mining degrades the quality of the soil. Due to the blasting, drilling and stone crusher dust the particles intermingled with the soil and remove the porosity and permeability of the soil. A comparable study was made in Summer Season 2013 and 2014 in which the air &
noise pollution is found maximum whereas the vice versa results were observed in the soil parameters. In Summer Season 2013 results were found reduced than the Summer Season 2014. By the analysis of the samples we have observed that when the mine gets deeper it degrade the quality of the soil. In 2013 the mine was at initial phase so only the top soil was removed but in the 2014 the soil was mixed with the dust, boulders, stones and slurry which detroit the quality of the soil. The physical and chemical characteristics of the soil have been changed drastically which does not support any vegetation.

In the data analysis outcome shows that soil is very alkaline and the high organic matter which clearly states the contamination of the soil due to the mining. In the marble mine results of calcium found at very high pace. It means the excess of the calcium present the decrease of the availability nutrients available in the soil. Other nutrients like the Phosphorous; Magnesium decreases the availability of the N in the soil. Lack of Nitrogen presents in the soil which supports vegetation the trees and plants grow in this type of soil is very pale, yellow and immature type. We have also observe that slurry also damaged the soil quality the water logging with the soil and increase the alkalinity in the soil and reduce the process of photosynthesis and transpiration it also affect the growth rate of the plants.

In our survey we have found that mining and its allied activities causes various types of pollution but it also effect the health of the workers. Local residents & workers are suffering from many diseases like silicosis, asthma, cancer, eye vision problem, black lung, pneumoconiosis etc. The fine & dust particulates inhale by the workers the particulates and the pollutant are very micron in the size and creates a various types of diseases or reduces the life span of the workers and some time it caused a premature death of the workers. Marble Industry has continuously impacts the health of the local residents and the workers at an environmental risk.

The major negative impact we have seen the loss of the biodiversity due to the mining and their allied activities. Negative impacts will be seen at the last part of mining activity. Mining affects the directly and indirectly like the direct inhalation of
mine excavated material and the indirect by soil and water. Due to the slurry it causes severe problems it Detroit value of the crops and the agricultural activities and declines the long term productivity land. Marble dust and stone crusher dust mix with the soil and reduces the growth rate of the crops. Mining also causes the loss of habitat, fatalities, reproduction rate because change in the surrounding area the natural habitat, pH and the temperature. Some species are moderately resistant while some are extinct from the anthropogenic activities.

During the field survey and physic-chemical analysis we have observed that due to mining the study area has been continuously destroy and degrades the natural resources rapidly. The improper mining activity leads to change the ecosystem or potentially affects the quality of the surrounding area. No proper methods are used for the reclamation of air, water, soil & noise.

There income source of local villagers will rise, as they will get various occupational opportunities in the mine, so there is always a need for setting up an industry and mining, but it should also be keep in the mind that these mines and industries should be environmental friendly Therefore, we have to take proper attention, mitigative measures and suitable methods or reclamation management to save our existing resources. A management strategy should be planned to lead the mine in sustainable manner. So, it is essential to formulate a REIA report as per the MoEF/ SPCB norms to evaluate the positive and negative impacts on the environmental resources, before starting the mining operations.

Reclamation of the land which is degraded by marble slurry or marble mining is the most important perspective. By the use of the biodegradable waste it provides all the organic matter and nutrients to the soil by the composting and digestion. By the growth of the leguminous plants the land is converted into the agricultural land and used for the future purpose also. By the use of the biodegradable waste will act as a cost benefit ratio and it is a cheap technique to reclaim the land.