

Environmental Study of Marble Mining : A Study of Degrading Environmental Condition

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Introduction :

Environment includes air, water, & land and the interrelation ship, which exists among them The ecosystem is a system of an environment in which the elements of living and non- living are integrated. The modern expression of relation between man and environment seems accordingly from ecological point of view. Prof. Moonish Raza stated."We cannot think of a non-humanised nature and not non-naturalised marl He (the man) alone among the known species of planet, just does not adopt to nature, He actually interacts with it, who is not only a passive elements but is an active factor in the eco system" Prof. Moonish Raza.

According to Odum (1971) "Ecology" refers to the whole environment "house" in which we live and the ecology stands for the totality of the man and environment"

The modern expression of relation of man and environments seems according to ecological point of view In which the man is an element of ecological system. Man and environment relationship depends upon action and reaction.

The biosphere Consists of both living and their non- living surroundings in an intimate relationship and is made up of a large number of big and small ecological systems, generally known as ecosystems. Man is a part of the environment and occupies a unique position in it, but at the same time it is He alone who is responsible for polluting the environment by his own activity. The functioning of ecosystem and of technological civilization involves a continuous flow and consumption of energy. Sun being the sources of it as regards ecosystem and fuels as regards technological civilization.

The biotic world, so defined, bears an intimate relationship with the physical environment. The later sustains the former. But this relationship is not unchanging. The physical world itself is changing, sometimes slowly and at other times dramatically. The solid surface of the earth, which is the home of man, is continuously changing and has changed dramatically within the life history of the mankind.

Man is the centre of this ecological web and directly responsible for pollution as well. "Environmental pollution may be defined as the unfavorable alteration of our surroundings, wholly or largely as a by product of man's actions, through direct or indirect effects of changes in energy patterns, radiation levels chemical and physical constitution and organisms.

Environmental Degradation in Marble Mining :

Environmental degradation and its non-realization by the common man have been one of the biggest tragedies of recent times today; the environmental crisis has become a worldwide phenomenon. Man's greed and his lust towards a more materialistic life with higher living standards have resulted into over exploitation of the natural resources, without any consideration of the ill effect on natural environment has become more pronounced in recent years.

In last two decades the marble sector activities had accelerated too much and showed a very high growth rate. On the one hand the increasing marble sector activities have contributed significantly in

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the socio-economic structure of society and state but at the same time In many marble potential pockets, the extraction and processing of marble have influenced the eco environmental protection procedures and planning and also the irrational approach towards resources utilization and product out put are the possible causes for the changing quality of the environmental system.

Environmental Problem of Makrana Mining :

Unfortunately the complete marble industry at Makraria in Rajasthan, at present is in raw hands. In the absence of up to date information regarding its vertical and lateral extension its three dimensional geometry and also the latest technical know-how in the field of cuffing and polishing technology the industry as a whole is still at a primitive stage. There is no proper planning for the mine layout. In addition, the in heart family subdivision of the parental property the marble mines are reducing in size every time.

In such circumstances mine layouts get spoiled. The size of the marble blocks mined out depends on the capacity of the mining equipment available with the individual mine owner and not on the maximum size of the material available in the mine. Small mine owners with their limited capacity of the equipments, break the large blocks that could fetch more money into smaller ones, only because of the fact that they do not have adequate equipments to handle them. As a result the mines that could produce large blocks get spoiled and produce small and poor quality blocks of less economical value.

On the other hand, in the absence of proper state control, the mining operations in the individual mines have become haphazard. No safety measures are being taken into consideration to avoid accidents and casualties. It is quite interesting to note the popular belief that since independence not even a single case of mine accident has been registered with the police and local administration in the history of the marble mining at Makrana or Ramgarh. It is almost impossible to believe that neither any accident has occurred in the mining activity nor any casualty has taken place so far at Makrana. Obviously, such accidents do occur in the mining industry every year and casualties take place frequently and it is the case with Makrana also. Only their reporting is not being done under pressure. It is said that there is a parallel system working in this democratic country that can sort out just all such serious matters by mutual settlements, out side the courts. Any one can realize the gravity of the matter and the system that do exist at Makrana. To talk of human rights job the labours engaged in the marble industry at Makrana is far off from the reality.

Recent investigation carried out around Makrana marble deposit revealed the structural style and deformation pattern of the marble body and its position in the Precambrian Stratigraphy of the north-western part of the Indian peninsular shield. The three dimensional picture of the marble deposit prepared by them and the mutual relationship so established amongst different marble ranges exposed in the area would help calculating total reserves and also facilitate planning a suitable mine lay-out in the Makrana area.

Amongst several problems that the marble industry at Makraria is facing these days. Some of them are very serious arid need urgent attention. Some of these problems are also being witnessed in Ramgarh area also these problem may be listed below.

1. Degrading environmental conditions around Makrana town.
2. Hazardous and risky mining operations going on at Makrana mining sites.

Uncontrolled and unplanned mining activities at Makrana are going on for the last many decades and as a result the environment around the town is deteriorating day by day. Factors that have been

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playing active role in the environmental degradation are related to-

Disposal Of The Industrial Waste

Marble industry produces two types of industrial waste (1) Debris produced during mining operations and cutting of marble blocks (2) Sludge lime mud produced during cutting of marble and preparing tiles. There is a serious problem of the disposal of this waste. To some extent the former type of waste can be utilized in marble chips if it is of good quality. The second category of the waste has not found any industrial or commercial use so far. This industrial waste is dumped very irregularly degrading the environment. Many times this waste is dumped at the roadsides and it slowly creeps down to the road and roads are damaged costing a lot of revenue on their maintenance. At times this waste is dumped on cultivable land.

The marble industry is helpless in tackling the problem of pollution created by marble slurry. Marble slurry is generated as a byproduct during cutting of marble. The waste is approximately in the range from 15 to 20 percent of the total marble handled. The amount of marble slurry generated in Makrana is thus about 1.2 lakh tons annually.

Soil Pollution and Mining

Degradation of land and changes in the land capability. Class is associated more with the surface mining. The mines are left without adopting any reclamation measures. Such hazards are acute in the mining of marble. It is only the disposal of mining debris, which degrades the land and makes them unproductive.

Open cast mining in Makrana and Ramgarh is done for excavating marble. As such it does not directly reduce agricultural land but the disposal of mining waste does great harm in the fertile areas. Due to the establishment of these industries the productivity of the land has been adversely affected near Makrana and Ramgarh.

Drainage Problem

The physiographic position of the Makrana town itself has given rise to a centripetal drainage system. The haphazard and unsystematic mining activity together with the irregular disposal of the industrial waste has worsened the situation of drainage and sewer system. This is the most conspicuous problem affecting public health in the town seriously and the environment as a whole is becoming worst. It is a very big day-to-day problem that further deteriorates during rainy season what to talk of infectious diseases in the town even movement on food becomes very difficult.

Water Pollution :

Water pollution means adding to water of an excess of material that is harmful to human's plants, animals or otherwise causes significant departure from the normal activities of various living communities. Water used in marble cutting industry gets accumulated on roadsides and pits and is polluted. In the absence of a proper drainage and disposal system it percolates down the surface and contaminates the ground water of the area.

Unplanned and gradual deepening of mining activity generally influences the hydro geological conditions especially change in subsurface water flow system, reduction in recharge intensity, lowering of water table, drying of existing aquifer etc. It has been observed that the fine particles of rocks and minerals along with thin slurry produced by wire sawing are finding their way to the lower part of the area. Their considerable amount will definitely reduce the permeability causing significant

reduction in recharge capacity.

Air and Noise Pollution:

Residential areas of the Makrana Township have a shoulder touch closeness with the mining sites and industries. As a result the industry, as a whole leaves a very strong environmental impact on the inhabitants of the town. Both drilling and blasting processes in the open cast mines cause air and noise pollution. In addition to the age old vehicles still engaged in the transportation of the material, produce dangerous smoke polluting air and intolerable noise round the clock. Cutting and polishing machines working day and night also add to it a lot.

Conclusion :

The marble entrepreneurs on the other hand leave the responsibility of tacking with slurry and residue on the government side, the research conducted so far as highlighted a different opportunities of recycle as below.

1. As mineral fillers in various industries plastic, rubber, paint paper etc.
2. In order to desulfurise the smoke of coal fueled powder plants.
3. In manufacture of cement
4. In order to acidity naturally basic soils

More arid more marbles are mining. These resources can damage the environment and ecology to an unacceptable degree, unless these operation as arid cone fully planned and controlled Absurd malign section activity con not only destroy the natural ecosystem but also introduces the reendows distortional to the socio economic fabric. The problem of deforestation water pollution air pollution noise and land degradation etc. commonly associated with mining environmental impact assessment process ten fore involves evaluation of environmental implications and incorporation of necessary safe guards for those activities having a bowing on environmental quality.

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