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Antarctica of Kishangarh: Boon or Bane

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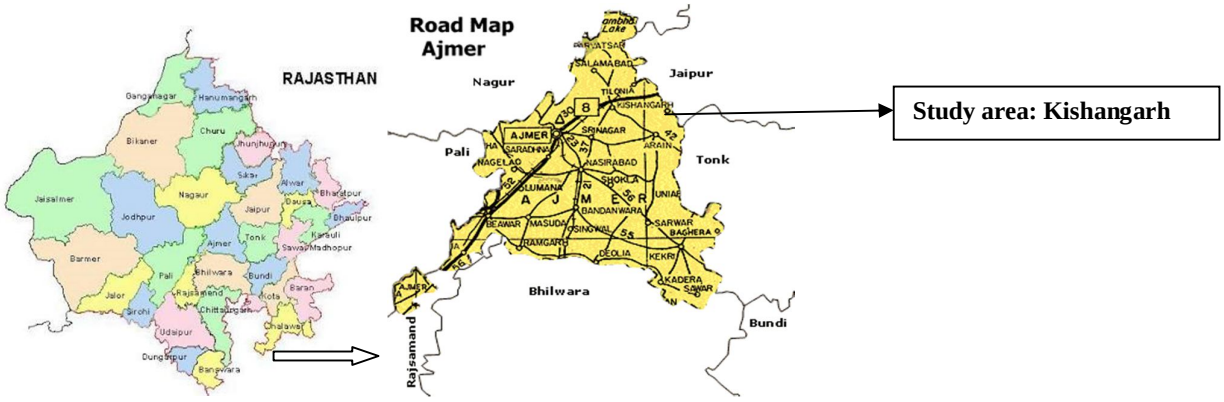
Abstract--Very few rocks have as many uses as marble. It is used for its beauty in architecture and sculpture. Kishangarh economy mainly depends on the marble trading. The widest range of Indian, Italian and Makrana marble is on display in this area. Marble slurry is a big problem as it occupies a lot of space and is an environmental hazard especially after the slurry dries up. Marble slurry is a processing and polishing waste of marble mining industry. The present dumping practices have been creating a number of nuisances and problems includingenvironmental and human health, but at the same time dumping yard present at Kishangarh is attracting tourism industry.The paper discusses how this dumping yard made up of marble slurry alluring the beauty, positive and negative impacts of marble slurry, strategies adopted by central and state government, uses of marble slurry, needed initiatives for proper utilization of slurry. Methodology used in this is based on both primary data(observations, interviews, informations gathered from tourists, laborers, and local residents to seek their views with regard to tourist attraction and impact of marble dust) and secondary data(information collected through government institutions, hospitals, marble industries present). Besides this necessary information have been collected from various books, brochures, magazines and journals

Keywords--Marble slurry, cement concrete, cement mortar, tourism, sustainable.

I. INTRODUCTION

Kishangarh in Ajmer district(Rajasthan) is the main area of marble industries in India. It lies 18 miles north-west of Ajmer. It is well connected via Indian Railways and National Highway 8. It is the birthplace of the Kishangarh style of painting, which is known for the beautiful depiction of a courtesan known as Bani Thani.The marble industries present here have not only provided occupation to large number of people but has also ignited the ways of attracting tourism industry at Dumping Yard which is situated at Harmara Rd, RICCO Industrial Area, Kishangarh,by dumping the marble slurry over there. Asia's biggest marble trading centerm Kishangarh is about 60 miles outside Jaipur.



A. Area

The area of this dumping yard is 332 beegha and the cost incurred was 2-50 Crore. The second dumping yard was built in conjunction with Indian and the state government's Cluster Project and was completed by the year 2009: area 532 beegha and cost 6.50 Crore. An artificial snow point made of Marble waste powder, all of this is made possible with the help of Kishangarh Marble Association. It's a unique place to visit.

II. BOON OR BANE

Over the years, the area swelled, stripping and affecting the locality of all its vegetation. Marble Slurry is basically calcium carbonate added with other minerals or chemicals like dolomite, gypsum and sulphates. It destroys the soil cover and contaminates ground water, prohibiting vegetation. The dust particles are so minute that the surrounding population inhales them and develops respiratory diseases like bronchitis as the lungs get affected, the quality of air is so poor that it prevents timely healing of wounds.The poor quality of air weakens the immune system of those who are exposed to the dust directly, most of those engaged in marble-cutting and polishing suffer from respiratory diseases but this has not stopped filmmakers of

bollywood, pop video producers and even newly married couples from rushing to the town of Kishangarh. Imagine this month filming on location in Rohtang Pass or Kashmir or foothills of Himalayas range, here Is the beautiful dumping yard of marble slurry which can be used as shooting destination i.e. Kishangarh – the Marble City Of The World. Over the past two months,three to four music videos, some in Punjabi, have been filmed here.

Snow city at Kishangarh made up of marble slurry

The Indian comedian Kapil Sharma is among those who have used the dump as a location for shooting. It is one of the manmade landforms that prove that our impact on our planet Earth can be beautiful . The snow white background makes pictures vivid. The white expanse is not snow, but marble slurry, spread all over an area that serves as the dumping yard for Asia's biggest marble trading centre. All day with tractors offloading marble slurry, this expanse was allocated by the Rajasthan government to the Kishangarh Marble Association in the 70s as a dumping yard.

III. IMPACTS

The marble slurry generated during the processing of marble causes the following environmental damage:
The porosity and permeability of the top soil is reduced tremendously and in due course of time it results in water logging problems at the surface and there by not allowed the water to percolate down.

Water level had adversely been affected and it has gone down to deeper levels.
The fine marble dust reduces the fertility of the soil by increasing its alkalinity. The percolation rate of rain water due to clogging of pores of top soil has also increased surface run-off which reduced recharging of ground water.
The waste thus dumped dries out and the fine marble dust suspends in the air and is slowly spread out through winds to the nearby area. It settles down on crops and vegetation, thus severely threatening the ecology of the marble clusters.

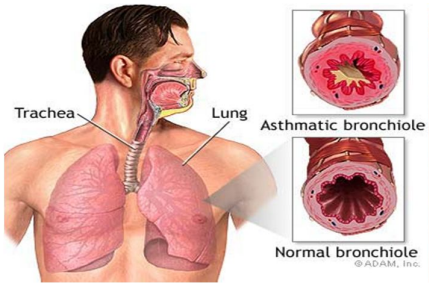
When dumped along the catchment area of natural rain water, it results in contamination of overground water reservoirs and

also causes drainage problem.

It causes contamination of underground water resources. The percolation rate of rain water due to clogging of pores of top soil has also increased surface run-off which reduced recharging of ground water. Disposing the slurry waste near to water bodies, road side areas deteriorate the surface and damage ground water quality by increasing obscurity, suspended solids, calcium and magnesium hardness.

It cause respiratory ailments in the nearby residential areas. Deposition of particulate dust on roads upto 2-5cm causes emission of particulate matter due to vehicular activities and strong wind. Blowing of slurry dust affects flora & fauna of surrounding areas. Continuous exposure to marble dust can cause severe respiratory disorders like Bronchitis, Asthma, Chronic Obstructive Pulmonary Disease (COPD) to the laborers. Dermal & eye irritation are most common problems.

Respiratory problems



Eye irritation

It has become a safety hazards on the highways along which it is dumped, due to its slippery nature when wet. It also has an adverse effect on the landscape beauty of the area.

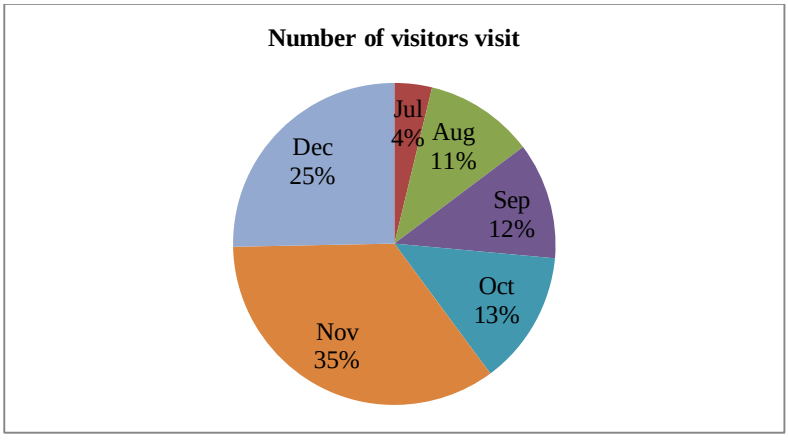
Accidents are occuring due to unscientific dumping and dry slippery road.

Due to dumping of marble slurry on road side causing dust in air(polluting air) and creating less visibility, due to less visibility number of accidents are happening these days.

Barren land

IV. POPULARITY OF DUMPING YARD KISHANGARH

This value is based on the number of visitors visited at dumping yard.



Most visitors in **November**

Months	Number of visitors
Jul	24
Aug	70
Sep	75
Oct	86
Nov	223
Dec	162

Dumping Yard at kishangarh has a total of **640** visitors.

A. Measures And Initiatives Taken By The Government Of India And Rajasthan Are:

Water (Prevention and Control of Pollution) Act, 1974, amended in 1988.
The Air (Prevention and Control of Pollution) Act, 1981, amended in 1988.
Forest (Conservation) Act, 1980, amended in 1988.
Environment (Protection) Act, 1986.
There are number of agencies of the central and state government for the enforcement of policies to safeguard environment of the place.
Number of NGOs such as Uparjal Paryavaran Samiti, Paryavaran Manch, Association of Geoenvironmentalists (AGE) are active in the field of Environmental Studies and conservation.
Impact of 'Paryavaran Darshan' program also played an important role by spreading awareness among the masses . Two episodes were prepared on marble slurry waste disposal options.

B. Needed Strategies

The concept that the waste are not waste but possible resource need to be developed, it has been observed from the waste production scenario that mechanization lead to reduction in the waste. Following measures can be taken to minimise marble waste:
Training of the staff in waste reduction measures.
Systematic and scientific investigation of the quarry lease through core drilling, ultrasound scanning before opening the face of the mine. Increased mechanization of the quarries.
Introduction of Filter Presses at processing plants may lead to a substantial reduction in the water content of slurry, thereby reducing the volume of the slurry produced substantially.
Development of a Participatory Approach, this can be achieved only if all the stakeholders are properly identified and get training through a well co-ordinated workshop regarding their role and responsibility in the containment of waste generation and protection of the environment.

C. Uses Of Marble Slurry

The areas where the utilization of marble waste and marble slurry needs to be explored durable for conventional raw materials are as follows:
It can be use as a filler material for roads and causeways.
For manufacture of bricks and ceramic tiles, hollow blocks and wall tiles.
For the manufacture of portland cement and lime.
Manufacture of activated calcium carbonate and ground calcium carbonate.
Making cement mortar and making cement concrete.
In production of synthetic agglomerated marble.
In manufacture of glass.
In chemical manufacture like lime, plastics, as diluents of pesticides.
In iron and steel metallurgy as a substitute for limestone (as flux in the refining of metals, etc.)
In non-ferrous metallurgy in the manufacture of magnesium and magnesia, uranium, alumina, lining of gold & silver.
In the construction of dam channels, harbors, and piers.
In the treatment of Sewage sludge to overcome unpleasant fumes.

V. CONCLUSION

From the research, analysis and the discussion and as per field survey, marble slurry shows a good and acceptable strength when added in cement mortar and cement concrete. It can be used as a filler material. At Kishangarh is the beautiful dumping yard of marble slurry which can be used as shooting destination, this dumping yard has become a picnic spot, film shooting location and bridal photo shoot location. It might be the most ordinary of locations, but put it in a Bollywood movie and this landscape will turn into a tourist spot overnight whereas there is significant growth in production of finished and unfinished marble products, there is also simultaneous rise in waste generation as well; thereby causing concern towards the deteriorating environmental quality. A wide spread need is being felt to make this industry environmentally sustainable.

VI. ACKNOWLEDGMENT

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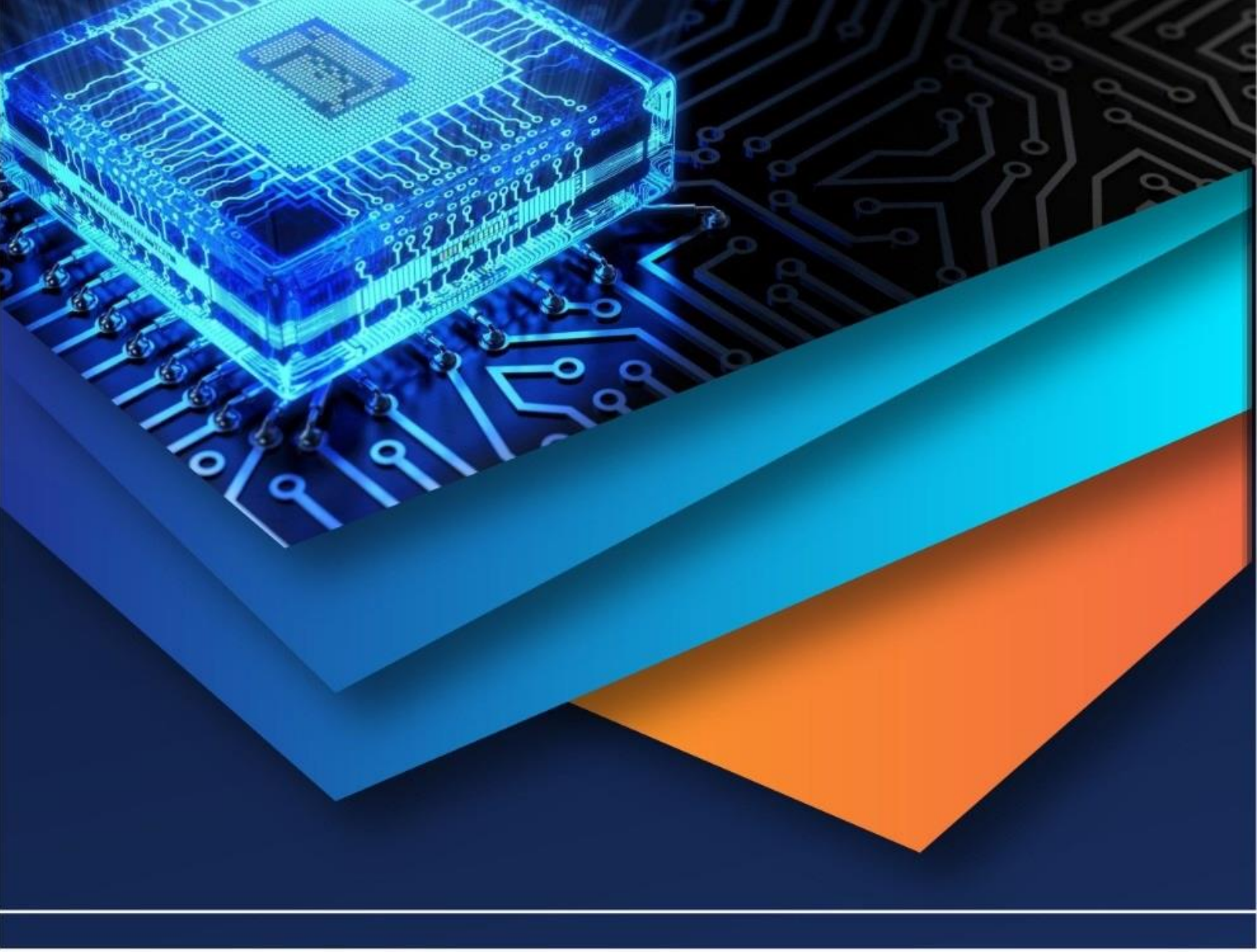

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