

A CASE STUDY OF MINERAL RESOURCES AND ROCK FORMATIONS IN BASTAR REGION OF CHHATTISGARH STATE

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Abstract-The state to setup small, medium and heavy scale Mineral based Industries without importing any major raw minerals from other state. The workable economic deposits of almost all minor and major minerals located and also the state is reach in Power, Water and Human resources. Adequate quantity of different kinds raw minerals are available for sustaining the conventional Industries like Thermal Power Generation, Extraction, Cutting and Polishing units for Gem and Dimension Stones, Ancillary unit for derived from the Cement and Iron Industries.

I. INTRODUCTION

Chhattisgarh has the perfect geological set up to host a number of economic mineral deposits. With 28 known minerals the state is the richest in mineral wealth. Important minerals for which, the name of the State is intimately associated are Diamond, Coal, Iron ore, Limestone, Dolomite, Bauxites and Tin ore. Chhattisgarh state and their geological distribution have been reported by many Researchers, Agencies including Geological survey of India. Apart from extraction of raw minerals many other major Civil Engineering activities are being conducted in this region as underground construction for defense, tunnels making for Water Power project, Mining works for exploration of rocks. Rock Mass Classification and Engineering Properties of rocks available in that particular area could rocks available in that particular area could also be undertaken to suggest for construction works.

The natural forests, rivers and topographical features like plateau, caves and waterfalls are found in the region. The wide variety of minerals as igneous, sedimentary and metamorphic terrain is available in the state and the large deposits of Coal, Iron Ore, Limestone, Bauxite, Dolomite and Tin ore are also found. The substantial quantity of diamonds, various medium to small deposits as gold, base metals, quartzite, soapstone, fluorite, corundum, graphite are located. Bastar where engineer's has been to predict the performance of all these materials in works at to be constructed. Each rock formation has a unique 'character' that not only imprint of its geological history and also control its future behavior in different kind of

engineering works. Some of these, such as color, grain and size can be directly observed, where as others like durability and strength can be only measured by testing. The aggregate used in Water tank, Roads, Railway track may checked by conducting systematic standard test. The stability aspects of underground constructions and mining activities of these areas must be checked as per Engineering Properties of rocks and rocks masses.

The raw materials for the sensitive high-tech equipments, instruments and spare in the era of precision and sophistication. These high trends equipments essentially include the miniature energy storage devices, high quality glass and ceramics with high resistance to metal fatigue, electric and space vehicles etc. The different kinds of standard tests have suggested. The IS code and relevant test are Compressive Strength{As per IS 2386(Part IV) 1963}, Crushing Value{As per IS 2386(Part IV)1963},Water Absorption {As per IS 2386(Part III) 1963}, Specific Gravity {As per IS 2386(Part III) 1963}, Abrasion Value {As per IS 2386(Part IV) 1963} and Impact Value {As per IS 2386(Part IV) 1963}.

II. OBJECTIVE OF PRESENT WORK

The objective of the present study is that the high value and scarce minerals is available deep and shallow mantle originated basic. The acidic melt associated mineral is deposited at moderate to shallow depth. The exploration of Diamond, Gold and Polymetallic minerals have been opened up for investment. These may facilitate investing of explore the potential. The mining leases for exploration are required. By experimental work the synthetic investigation of rocks proceeds. To reproduce different rock types and to elucidate their origins and structures the investigation needs. No experiment is necessary for all kinds of explorations. The origin of clay, sand and gravels can be seen in the process at every stage. In some cases these have been converted into coherent shale, sandstone and conglomerates. The objective of work is to understand the prospect of exploration of minerals resources for different kinds of uses and to the Engineering Properties of Rocks Mass available in the Bastar region of the State.

III. LITERATURE REVIEW

The critical review has been done to related literatures.The data publication of Directorate of Geology and Mining Chhattisgarh in their official website gives idea about the Diamond, Coal, Iron Ore, Limestone, Sandstone, Dolomite, Bauxites and Tin Ore etc available in Bastar. Practice periodical

on Structural Design and Construction presents practical methods regarding blast design and risk management. Practices and special focus on the practical of blast design techniques that mitigate blast induced vibration and air overpressure generated by shaft and tunnel blast. ASCE Journal of Materials in Civil Engineering covered the effect of maximum aggregate size, on load carrying capacity of calcareous fines gravel. The sizes of aggregate were compared by using four different mixtures. In the study the compressive strength for mixtures containing smaller aggregate sizes was found higher side. The compressive strength of mass concrete was tested in laboratory and the compressive strength of mass concrete in dam was obtained from laboratory experiments and the results reveal the existence of significant size effect. The even distribution of aggregate particles in matrices is the target of random mixing processes.

Experimental results were obtained from the concrete batching tests, designed and performed to compare two mixing methods. The comprehensive statistical analysis were conducted on collected data of the tri-axial test, the results of these analysis indicated that the geo grid inclusion within crushed. The limestone samples increased significantly their elastic modulus and ultimate shear strength. This paper presents finding of research study and focused on investigating influence of coarse aggregate morphologies on the strength and permanent deformation behavior of unbound aggregate materials. Rock mass characterization opposed to the rock mass classification. The Physical and Engineering response of artificially manufactured model material and its uses describe for determining the relative strength and classification of rock strata “Method of Testing the Integrity of Installed Rock Bolts” relates to a method of testing the integrity of installed rock bolts. JFGE Quarterly journal of Engineering geology and hydrology presents Classification of weathered rocks for Engineering Purpose. The debate of engineering geologist the description and Classification of weathered Rocks for Engineering.

Therefore Rock Mass Index (RMI) characterizing the strength of rock masses can be applied directly in stability analysis. The title of paper was on rock mass model three joint sets under tri-axial and true tri-axial stress states to assess the influence of joint geometry and stress ratios on deformational behavior of rock mass. The two empirical expressions for estimation and for deformation of modulus of rocks were suggested on the basis of the results. The uni-axial compressive strength and of the elastic modulus of jointed rock masses under different confining pressures is discussed. The uni-axial compressive strength of rock mass has been represented in a non dimensional form as the ratio of the

compressive strength of the jointed rock to the intact rock. The strength and deformation properties of jointed rock and the joint factor have been arrived by statistical analysis of the experimental data.

The Unconfined Compressive Strength, tensile Strength, Shear Strength, Young's Modulus, Poisson's Ratio are discussed. The rock mass classification including the rock mass with quality selection discussed here. Rock mass classification depends on the selection of rock mass quality. The character of rock masses can be used for quantitative probabilistic approach to use the Geological Strength Index (GSI) system. The influence of rock mass properties on the blasting efficiency can be seen. The ratio of the block size distribution of rock mass to the muck pile explained. The mechanical properties of the rock mass and block fragmentation under the same blasting conditions was studied which takes into account the variability of rock properties.

The stochastic nature of the rock failure process were discussed which entails determining probability distribution of rock properties. It is utilizing extreme value statistics and Monte Carlo simulation laboratory. The field test data were analyzed and presented to illustrate methodology. A substantially horizontal fracture in the subterranean rock mass to be processed emplacing an explosive charge in the mass in spaced juxtaposed position of the fracture, enlarging the fracture to create a void space thereat, an initial lifting of the overburden and to provide a free face juxtaposed to an arranged to cooperate with the emplaced explosive charge. The selection of suitable system of classification of rock mass for specific engineering purposes has been discussed. The engineering purposes were such as tunneling and shaft sinking, excavation of rock chambers, ground support, modification and stabilization of rock slopes and preparation of foundation and abutments. The classification systems of rock masses can be also used in work rip ability of rock, quality of construction materials, and erosion resistance.

The principal component and factor analysis were used to evaluate the different groups of interrelated factors. During experiments to determine the relative contribution of the individual variables in discriminate different types of roof conditions were analyses and has been used. Based on this analysis there were the five parameters were selected for the classification. It were spacing of bedding planes, rock strength, weather ability, groundwater condition and structural disturbances. A good understanding of rock mass strength band deformability is vital to arrive at safe and economical designs for structures built in and on rock masses. Strength of Rock mass and deformability will depends on (a) the discontinuity network, (b) the geo mechanical properties of discontinuities, (c) the geo mechanical properties of the intact rock and the in situ stress system and (e) the loading/unloading stress path. The method of test for determination of strength properties of natural building stones is given. Under this

part compressive strength of rocks masses has been discussed. This is an important method of test for determination of mechanical properties of aggregates.

IV. RESOURCES

The Geological Survey of India and scholars from the academy has also works in the subject. The endless source material for research in the various branches of earth science is the stone quarry. The geological evolution of rest of the Earth was started 4.57 billion years ago. India has rocks of all types belonging to different geologic periods in the different regions. Some of rocks available in different region of India badly deformed and transmuted. Some other are recently deposited alluvium and it has yet to undergo diagenesis. The mineral deposits are found in the subcontinent in huge quantity. The stromatolites, invertebrates, vertebrates and plant fossils are included in this category. The almost all of Maharashtra a part of Gujarat, Karnataka, Madhya Pradesh and Andhra Pradesh marginally were covered Deccan Trap firstly.

The Deccan Trap was developed as result of subaerial volcanic activity. It was associated with the continental deviation. Gondwana the Indian Plate passed over a geologic hotspot and the Reunion hotspot. The cooling and solidification of the upper crust of the earth' s surface was marked. The Lalbagh massive rock exposure was associated to Geological Survey of India (GSI) and academies of the institutions abroad. It is known as Gondwanas of Archaean age. The dark biolite gneiss of granitic to granodioritic composition containing streaks of biolite is available in the Laabagh hill. The 2500 to 3400 million years ago and that accreted in three major episodes. It has been displayed a commemorative plaque in front of the rock tower. The geological term for complex mixture of granitic rocks and it is extensively developed in peninsular India. The term peninsular gneiss was defined in 1916.

Among the oldest rocks of the earth back to 10 years old. The erudite scientific papers on the evolution of the earth by the pioneers of the Mysore Geological Department it was the important topic. The exposure of gneisses and granites are represented. The Aravalli Range was remnant of an early Proterozoic Origen. It is called the Aravali Delhi Origen. Erosion of the mountains and further deformation of the sediments were seen in the second phase and it was formed due to volcanic activities and intrusions. The second phase was recorded in the composition of these sediments. From beginning to end the Proterozoic calcareous and arenaceous were deposited and it was due to humid and semiarid climatic regimes. The Proterozoic calcareous and arenaceous were deposited to the Cuddapah and

Vindhyan basins. These basins border is lie within the existing crystalline basement. It consists of southerly derived sediments eroded from the crystalline Craton. The Paleozoic rocks are deposited on the Indian platform. The Paleozoic, PermoCarboniferous glaciations leaves extensive glaciofluvial deposits in new basins created by sag normal faulting across central India.

The Paleozoic was coincided with the deformation and drift later on to the Gondwana supercontinent. The Vindhyan sediments uplift due to this drift and it was deposited on northern peripheral sediments in the Himalayan Sea can be attributed. The Cretaceous India was separated from Australia and Africa and it was moved northward towards Asia. The prior to the Deccan eruptions at that time uplift was happened in southern India. The sedimentation was composed in the adjacent nascent Indian Ocean. These rocks can be seen along the south Indian coast at Pondicherry and in Tamil Nadu. The greatest volcanic eruptions in earth's history occurred and the Deccan lava flows at the time of close of the Mesozoic. The Dharwar system rock is mainly sedimentary in origin of rocks and occurs in narrow elongated synclines.

These rocks are full of in manganese and iron ore. It is the significant resource of these metals. The gold is also available in the Kolar gold mines located in Kolar. This was further classified into the Bengal gneiss, the Bundelkhand gneiss and the Nilgiri gneiss. The Nilgiri system are converted charnockites ranging from granites to gabbros. Rocks are found in the Salt range in Punjab and the Spiti are in central Himalayas of the earliest part of the Cambrian Period. It consist of a thick sequence of fossiliferous sediments. The thickness is 137 m and it consists of dolomites and sandstones. It is made of unfossiliferous unfossiliferous and shows suncracks and worm burrows. It formed typical of sub aerial weathering. limestone, red quartzite, quartzites, sandstones and conglomerates. The siliceous limestone is the Silurian overlies the Ordovician rocks. Muth quartzite. Silurian rocks contain typical Silurian fauna.

The ammonite ceratite consists of arenaceous limestone, calcareous sandstones and marls available in the bed of earth. The Jurassic has two different distinct units. The Kioto limestone is formed from the lower the middle Jurassic and the thickness kioto is 610 m to 914 m. The upper Jurassic is known as the Spiti black shale. The sedimentary rocks has been divided into four stages, Niniyur, Ariyalur, Trichinopoly and the Utatur stages. It is an important source of phosphates in the country. The well developed beds of Lameta contain fossil records are found in the central provinces. Lameta contain fossil records is helpful in estimating the age of the Deccan Traps. This sequence of basaltic rocks was formed. The very fertile clayey loam particularly suited to cotton cultivation is also found in these

rocks. The volcanism associated with the Deccan Traps continued in the same periods. The rocks deposits of this era have very valuable deposits. The petroleum and coal are found in these rocks. The rocks found in the Simla area are divided into three series. The Nummulitic limestone is found in the Khasi hills and is the OligoMiocene age. The Himalayas and foothills of Himalayas the Siwalik molasse is formed. It was composed with sandstones, conglomerates and shale.

The rich fossil vertebrate fauna including many fossil hominoids are found in these rocks. The alluvium deposits are found in the IndoGenetic plain and it is belongs to this era. These alluvial deposits are made of clay, loam, silt etc. The alluvium found in the ground above the flood level of the rivers is named as Bhangar. The alluvium is confined to the river channels and their flood plains are known as Khaddar. Some of the most fertile soil found in the country in this region. It is because the new silt is continually laid down by the rivers every year. The rock is a naturally occurring solid aggregate and consists of one or more minerals or mineraloids in geology. The granite is very common rock. The granite is consists of the quartz, feldspar and biotite minerals. by mankind throughout history. The rocks were used for tools in the Stone Age.. The rocks can be divided in the three major groups of rocks and they are igneous, sedimentary and metamorphic. The systematic and scientifically study of rocks is called petrology. The petrology is an essential component of geology. The rocks are consists of the grains of minerals.

The rocks are arranged in an orderly manner. The pieces of minerals forming the rock are held together by chemical bonds. The silica (SiO_2) is a compound of silicon and oxygen and it is formed 774.3% of the Earth's crust.. The geological classification of rocks is based on according to characteristics of mineral and chemical composition. The physical properties depend on processes that formed the rocks. The rocks can transform from one type into another. The three general classes of rocks are as igneous, sedimentary and metamorphic. The gradation into one another, the distinctive structures is also one kind of rock. The establishing rock nomenclature is merely more or less arbitrary. The Lithic technology gives an idea for their metal ore. It is the one of the most important factors of human advancement. The progress of exploration of rocks in different rates at different places is because of the kind of metals available from the rocks of a region. In the mining we find by the extraction of valuable minerals or other geological materials from the earth, as an ore body, vein or (coal) seam in the mining. The removal of soil is also includes by this term. The base metals, precious metals, iron, uranium, coal, diamonds, limestone, oil shale, rock salt and potash etc. materials recovered by mining. The processes involved prospecting for ore bodies. The analysis of potential of the profit for a proposed

mine is being done. Which is gives a bad impact to environment both, during the mining operations and for years after the mine is closed. This impact gives most of the world's nations adopting regulations to moderate the negative effects of mining operations.

V. GEOLOGICAL CLASSIFICATIONS

The geological classification depends on mineral and chemical composition, permeability, the texture of the constituent particles, and particle size. The name of igneous rocks has been taken from Latin word igneous and its meaning of fire. The meaning of ignis is fire forms during cooling and solidification of lava. The magma is a partial melts of preexisting rocks. The causes of melting rocks are firstly an increase in temperature, secondly a decrease in pressure, or a change in composition. The igneous rocks are formed by two main rocks, plutonic rock and volcanic. When magma cools and crystallizes slowly within the Earth's crust the Plutonic or intrusive rocks are formed. The rate of cooling of magma follows a sequence of Bowen's reaction series. The 66 % basalts and gabbros, 16 % granite and 17 % granodiorites and diorites are found in the igneous rocks. The Below the earth's thin crust is a layer of molten magma. When this molten magma's cool as well as gain hardness and it forms igneous rocks. Three factors contribute to the formation of igneous rocks, composition of the magma, solidification and rate of solidification.

The sedimentary rocks are formed by particles at or near the Earth's surface. The clastic sediments or organic particles to settle and accumulate or chemically precipitation are the process of sedimentation. The sandstone, limestone, shale, conglomerate, and gypsum are the examples of the sedimentary rocks. The mud shale also formed to sandstones 20 to 25. The carbonate rock is formed 10 to 15 % limestone and dolostone. The about 7.9 % of the earth's crust by volume composed by sedimentary rocks. The 82 % of those is being shale while the remaining consists of limestone (6 %) sandstone and arkoses (12 %). The sedimentary rocks consist of the granular materials that occur in sedimentation.

It is made by the physical breakdown and chemical alteration of rocks. it will start laid down in a different place accordingly. It is also include pieces of stones and shells and other objects, not just grains of pure minerals. Geologists use the term clasts to denote particles of all these kinds, and rocks made of clasts are called clastic rocks. The sand and mud is carried down rivers to the sea, mostly. Sand is made of quartz and mud is made of clay minerals. Under the pressure and low heat these sediments are

steadily buried over geologic time and they get packed together. In these conditions the sediment is cemented into a rock. Sand becomes sandstone and clay becomes shale. The conglomerate is made if gravel or pebbles are part of the sediment. If this sedimented rock is broken and recemented together it is called breccia. Some rocks commonly lumped in the igneous category are actually sedimentary. Tuff is consolidated ash that has fallen from the air in volcanic eruptions making it just as sedimentary as a marine claystone. There is some movement in the profession to recognize this truth.

VI. SOURCES OF STONES

The hydrocarbons of source rock have been generated or are capable of being generated in petroleum geology. The process forms the necessary elements of a working petroleum system. The organic-rich sediments have been deposited in a variety of environments. These environments are deep water marine, lacustrine and deltaic. The oil shale is an organic-rich but it is immature source of rock. No oil has been generated and expelled as rocks. Subsurface source of rock mapping is a methodology to make it possible. To identify likely zones of petroleum occurrence in sedimentary basins as well as shale gas plays. The stones are obtained from rocks. Due to the effects of internal source rock overpressuring caused by hydrocarbon generation as well as by compaction, the hydrocarbons generated from thermally mature source rock are first expelled, along with other pore fluids. Once released into porous and permeable carrier beds or into faults planes, oil and gas then move towards the surface of overall buoyancy driven process known as secondary migration. Areas underlain by thermally mature generative source rocks in a sedimentary basin are called generative basins or it can be either called depressions or hydrocarbon kitchens. Mapping those regional oil and gas generative "hydrocarbon kitchens" is feasible by integrating the existing source rock data into seismic depth maps that structurally follow the source horizon. It has been statistically observed at a world's scale that zones of high success ratios in finding oil and gas generally correlate in most basin types. These basins are such as intracratonic or rift basins with the mapped generative depressions cases of oil migration for a long distance into shallow traps away from the generative depressions are usually found in foreland basins. Besides pointing to zones of high petroleum potential within a sedimentary basin, subsurface mapping of a source rock's degree of thermal maturity. This is also the basic tool to identify and broadly delineate shale gas plays.

VII. ROCK FORMING MINERALS

Many years later on similar experiments like Daubree, Delesse and others carried, but the first notable advance was made in 1878, when Fouque and Levy began their researches. They succeeded in producing rocks which well known in igneous rocks. These rocks are such as porphyrite, leucitetephrite, basalt and dolerite, and also obtained various structural modifications. For example porphyritic and ophitic. Incidentally they showed that while many basic rocks (basalts etc.) could be perfectly imitated in the laboratory, the acid rocks could not. The explanation in advanced that for the crystallization of the latter the gases never absent in natural rock where magmas were indispensable mineralizing agents. It has subsequently been proved that the formation of orthoclase, quartz and mica (the minerals of granite),. The metamorphic rocks by converting chalk into marble by heating it in a closed gunbarrel, which prevented the escape of the carbonic acid at high temperatures. In 1901 Adams and Nicholson carried this a head by subjecting marble to great pressures in hydraulic presses and have shown how the foliated structures, frequent in natural marbles. And also that artificially it may be produced.

VIII. MINERAL BASED INDUSTRIES

The Rock Industries Corporation is one the important industry to explore the minerals. It is dependable supplier for the Defense Department. The each Rock Industries Corporation project is unique. They are using rapid processing technologies as per demand of quick turnaround. The initial projects of Rock Industries Corporation ranged in complexity from boxes. The house are using for the dummy landing gear for helicopters. They have been serviced to wood sills used during the mast assembly for PATRIOT missiles. They are fabricating heat treating racks and baskets. The government and commercial customers are waiting for it. The sand, gravel, and crushed stone come under retailing services.

Additionally it provides cement and masonry cement importing, grinding, and blending services. India is one of them in mining and export of granite. The India is very rich in granite reserves. The abundance granite is found in Tamil Nadu, Andhra Pradesh and Karnataka. The India is using extensively stone material in building construction. The massive structural works are being done in India not only for its elegance and aesthetic quality but also for its durability. The granite industry is very popular and has corporate importance in the last few years. The granite industry is emerging now as a thrust export area. The several corporate houses supported by expert professionals trained in all aspects. The sophisticated world class machinery is used by industries. The export materials are considered to be the world's best variety. In the production and export of granite and other stones the India is one of the

leading nations. The granite is a very hard crystalline rock. The feldspar, quartz and lesser amount of dark minerals are available. About 110 varieties of granite with different colours and textures are found in India is used to produce monuments, building slabs, tiles, surface plates etc. The several attractive features as inter alias, include extra fine mirror polish, scratch free glossy surface and durability found in the granite.

The granite elements are very comparable very well with other floor and wall application materials. These are ceramics and marble elements. The mining works granite is done manually. The mining machinery such as compressors and drilling machines for drilling are being used. The equipment used cranes for lifting big blocks and dampers and trucks for transport. Granites are being used in 14 units in Tamil Nadu and 1 unit in Odisha is functioning. As per demands existing companies are steadily increasing their production capacity. To increase the sales and reduce the cost the new technology investments are being made. In the last five years the capacity of these companies is increased by about 10 % annually. The companies having a capacity of manufacturing seven or more containers per month come under big companies. The grave stone industries are situated in the south of the country. The most granite quarries are available in the south zone of India. Present day the grave stone are exported about 180 to 200 containers to Europe per month. The grave stone are exported to 40 containers to Japan and rests are sent to Australia, New Zealand, South Africa and few other countries also.

The cost depends on the materials used and their complexity of the designs. For an entrepreneur to venture into this sector this is the best time. The all Indian granite and Stones are found the export market no more lucrative. The Rajasthan granite Industries has been grown up at 50 % annually. The water sources are going depleted. The farmers are going to become laborers due to the granite industries. The granite mining of Rajasthan is approximately Rs 800 crores worth industry today. The state can setup heavy, medium and small scale mineral based industries. The major raw minerals supplied are available in the state. The workable economic deposits are available in the state to almost all major and minor minerals. The Chhattisgarh state is reach in power, water and human resources. The conventional industries like thermal power generation, calcinations, aluminum extraction, cutting and polishing units (for gem and dimension stones), ancillary unit for derived from the cement and iron industries are running in the state.

In the Chhattisgarh a wide variety of minerals are found as igneous, sedimentary and metamorphic terrain. The large economic deposits are available in the state. The Coal, Iron Ore,

Limestone, Bauxite, Dolomite and Tin ore are located in different parts of the state. The medium to small deposits of gold, base metals, quartzite, soapstone/steatite, fluorite, corundum, graphite, amblygonite of workable size are also known found in the state. The alkali metals as lithium, rubidium and cesium and other rare metals like Beryllium, Gallium, Tantalum, Niobium are available in the state. These minerals make high-tech equipments essentially. These equipments are miniature energy storage devices, high quality glass and ceramics with high resistance to metal fatigue, electric and space vehicles etc.

One of the biggest Mineral Exploration Industry in India is National Mineral Development Corporation (NMDC) Kirandul, Chhattisgarh and also export of iron ore to the Japan. The NMDC Kirandul Chhattisgarh itself is fulfilling the requirement of iron ore throughout the India is. The Iron ore for more than hundred Small Scale Industries like Sponge Iron Industries etc is only NMDC Kirandul. ESSAR Industry is also working at Kirandul Chhattisgarh for transportation of Iron ore from Kirandul to Vishakhapatnam. Three Mineral Based major Steel and Iron ore Industries, NMDC Steel and Iron Industry at Nagar Jagdalpur, Tata Steel Plant at Lohandiguda Jagdalpur and ESSAR Steel and Iron Plant Bacheli Dantewada are going to be established in Bastar Chhattisgarh. More than hundred mineral based small scale industries Sponge Iron plant are working in the different part of Chhattisgarh.

IX. CONCLUSION

The state has the large deposits of Coal, Iron Ore, Limestone, Bauxite, Dolomite and Tin ore it found the linear North and South in Bastar, Kanker and Durg district. The Dongargarh Granite located in the area of Bhanupratapur-Keshkal, Narayanpur-Kondagaon Bijapur-Sukma and Geedam-Tongpal. Volcano-sedimentary sequence of the Khairagarh and Abujhmar groups in the Maikala range and Abujhmar plateau region are located. Meso-Neoproterozoic platform covers sequence of the Chhattisgarh Plains. The cover sediments of Indravati, Sabri and Pairi Groups, occupy Jagdalpur Plateau. Late rite with pockets of bauxite forms capping at a number of places over these rocks in Keshkal-Amabera area. The major and minor different types of construction works are going on where the engineering properties of rocks available in the area and used these constructions works can be used technically sound. The all Indian granite and Stones are found the export market no more lucrative. The cost depends on the materials used and their complexity of the designs. For an entrepreneur to venture into this sector this is the best time. We have developed multiple skills and capacities in our evolution in

very short time. We must be to become a world class machine production shop serving in the rock industries.

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